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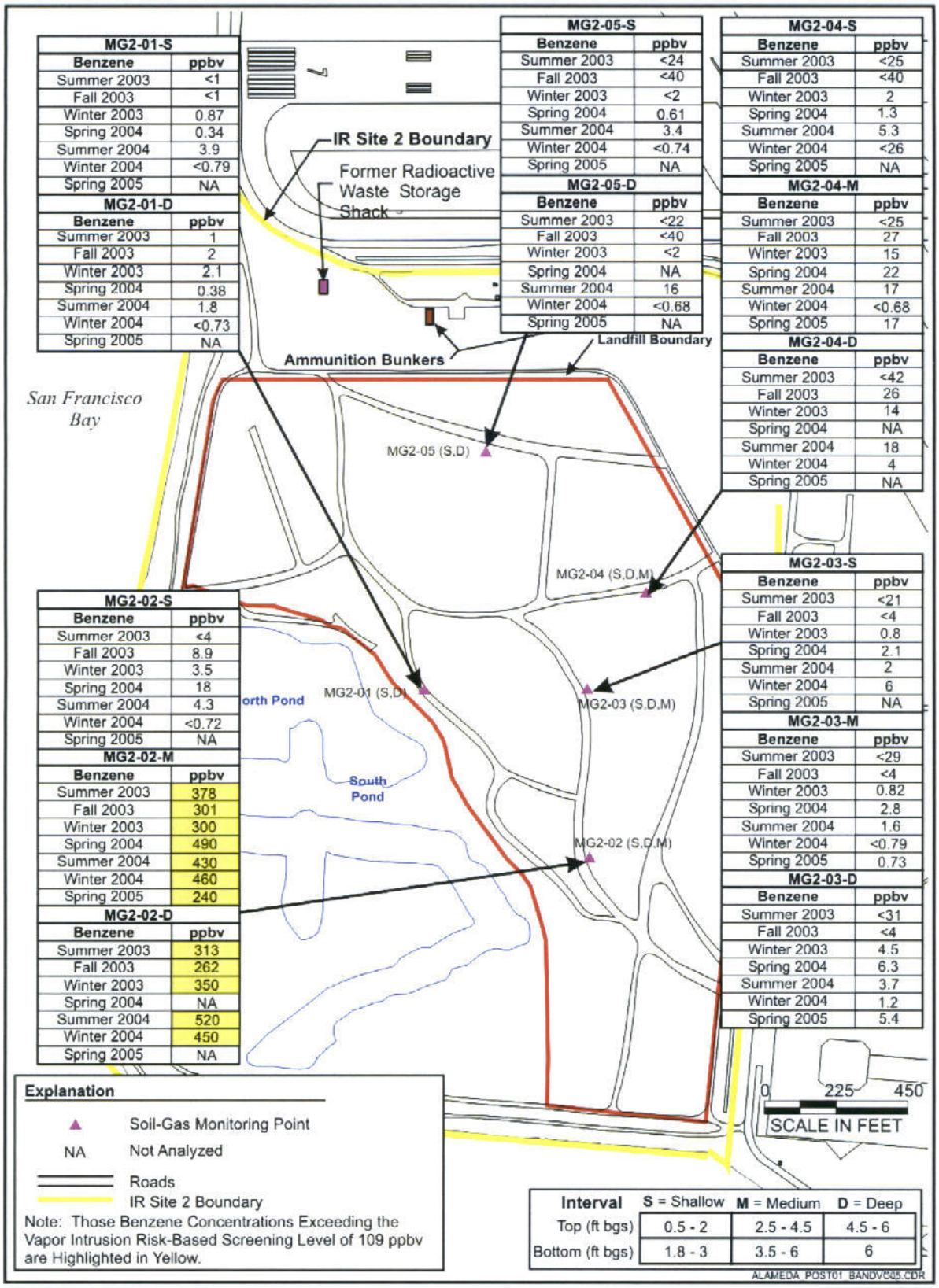
SECTION 6.0
FIGURES

FINAL
REMEDIAL INVESTIGATION REPORT
IR SITE 2, WEST BEACH LANDFILL AND WETLANDS

DATED 23 JUNE 2006



MG2-01-S	
Benzene	ppbv
Summer 2003	<1
Fall 2003	<1
Winter 2003	0.87
Spring 2004	0.34
Summer 2004	3.9
Winter 2004	<0.79
Spring 2005	NA

MG2-01-D	
Benzene	ppbv
Summer 2003	1
Fall 2003	2
Winter 2003	2.1
Spring 2004	0.38
Summer 2004	1.8
Winter 2004	<0.73
Spring 2005	NA

MG2-05-S	
Benzene	ppbv
Summer 2003	<24
Fall 2003	<40
Winter 2003	<2
Spring 2004	0.61
Summer 2004	3.4
Winter 2004	<0.74
Spring 2005	NA

MG2-05-D	
Benzene	ppbv
Summer 2003	<22
Fall 2003	<40
Winter 2003	<2
Spring 2004	NA
Summer 2004	16
Winter 2004	<0.68
Spring 2005	NA

MG2-04-S	
Benzene	ppbv
Summer 2003	<25
Fall 2003	<40
Winter 2003	2
Spring 2004	1.3
Summer 2004	5.3
Winter 2004	<26
Spring 2005	NA

MG2-04-M	
Benzene	ppbv
Summer 2003	<25
Fall 2003	27
Winter 2003	15
Spring 2004	22
Summer 2004	17
Winter 2004	<0.68
Spring 2005	17

MG2-04-D	
Benzene	ppbv
Summer 2003	<42
Fall 2003	26
Winter 2003	14
Spring 2004	NA
Summer 2004	18
Winter 2004	4
Spring 2005	NA

MG2-03-S	
Benzene	ppbv
Summer 2003	<21
Fall 2003	<4
Winter 2003	0.8
Spring 2004	2.1
Summer 2004	2
Winter 2004	6
Spring 2005	NA

MG2-03-M	
Benzene	ppbv
Summer 2003	<29
Fall 2003	<4
Winter 2003	0.82
Spring 2004	2.8
Summer 2004	1.6
Winter 2004	<0.79
Spring 2005	0.73

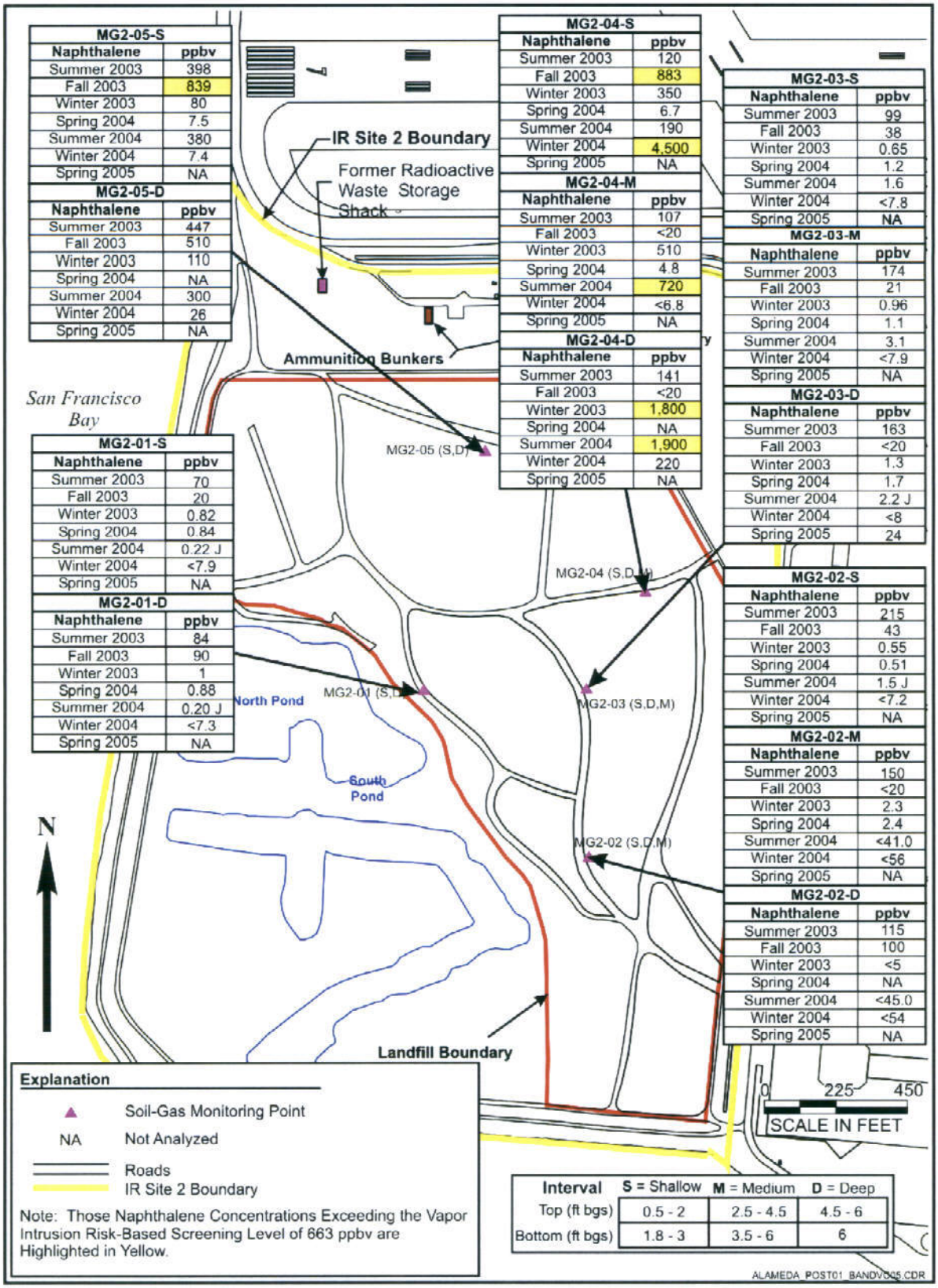
MG2-03-D	
Benzene	ppbv
Summer 2003	<31
Fall 2003	<4
Winter 2003	4.5
Spring 2004	6.3
Summer 2004	3.7
Winter 2004	1.2
Spring 2005	5.4

MG2-02-S	
Benzene	ppbv
Summer 2003	<4
Fall 2003	8.9
Winter 2003	3.5
Spring 2004	18
Summer 2004	4.3
Winter 2004	<0.72
Spring 2005	NA

MG2-02-M	
Benzene	ppbv
Summer 2003	378
Fall 2003	301
Winter 2003	300
Spring 2004	490
Summer 2004	430
Winter 2004	460
Spring 2005	240

MG2-02-D	
Benzene	ppbv
Summer 2003	313
Fall 2003	262
Winter 2003	350
Spring 2004	NA
Summer 2004	520
Winter 2004	450
Spring 2005	NA

Figure 6-1. Benzene in Soil Gas Above the Vapor Intrusion Residential Risk-Based Screening Level



MG2-05-S	
Naphthalene	ppbv
Summer 2003	398
Fall 2003	839
Winter 2003	80
Spring 2004	7.5
Summer 2004	380
Winter 2004	7.4
Spring 2005	NA

MG2-05-D	
Naphthalene	ppbv
Summer 2003	447
Fall 2003	510
Winter 2003	110
Spring 2004	NA
Summer 2004	300
Winter 2004	26
Spring 2005	NA

MG2-04-S	
Naphthalene	ppbv
Summer 2003	120
Fall 2003	883
Winter 2003	350
Spring 2004	6.7
Summer 2004	190
Winter 2004	4,500
Spring 2005	NA

MG2-04-M	
Naphthalene	ppbv
Summer 2003	107
Fall 2003	<20
Winter 2003	510
Spring 2004	4.8
Summer 2004	720
Winter 2004	<6.8
Spring 2005	NA

MG2-04-D	
Naphthalene	ppbv
Summer 2003	141
Fall 2003	<20
Winter 2003	1,800
Spring 2004	NA
Summer 2004	1,900
Winter 2004	220
Spring 2005	NA

MG2-03-S	
Naphthalene	ppbv
Summer 2003	99
Fall 2003	38
Winter 2003	0.65
Spring 2004	1.2
Summer 2004	1.6
Winter 2004	<7.8
Spring 2005	NA

MG2-03-M	
Naphthalene	ppbv
Summer 2003	174
Fall 2003	21
Winter 2003	0.96
Spring 2004	1.1
Summer 2004	3.1
Winter 2004	<7.9
Spring 2005	NA

MG2-03-D	
Naphthalene	ppbv
Summer 2003	163
Fall 2003	<20
Winter 2003	1.3
Spring 2004	1.7
Summer 2004	2.2 J
Winter 2004	<8
Spring 2005	24

MG2-01-S	
Naphthalene	ppbv
Summer 2003	70
Fall 2003	20
Winter 2003	0.82
Spring 2004	0.84
Summer 2004	0.22 J
Winter 2004	<7.9
Spring 2005	NA

MG2-01-D	
Naphthalene	ppbv
Summer 2003	84
Fall 2003	90
Winter 2003	1
Spring 2004	0.88
Summer 2004	0.20 J
Winter 2004	<7.3
Spring 2005	NA

MG2-02-S	
Naphthalene	ppbv
Summer 2003	215
Fall 2003	43
Winter 2003	0.55
Spring 2004	0.51
Summer 2004	1.5 J
Winter 2004	<7.2
Spring 2005	NA

MG2-02-M	
Naphthalene	ppbv
Summer 2003	150
Fall 2003	<20
Winter 2003	2.3
Spring 2004	2.4
Summer 2004	<41.0
Winter 2004	<56
Spring 2005	NA

MG2-02-D	
Naphthalene	ppbv
Summer 2003	115
Fall 2003	100
Winter 2003	<5
Spring 2004	NA
Summer 2004	<45.0
Winter 2004	<54
Spring 2005	NA

Figure 6-2. Naphthalene in Soil Gas Above the Vapor Intrusion Residential Risk-Based Screening Level

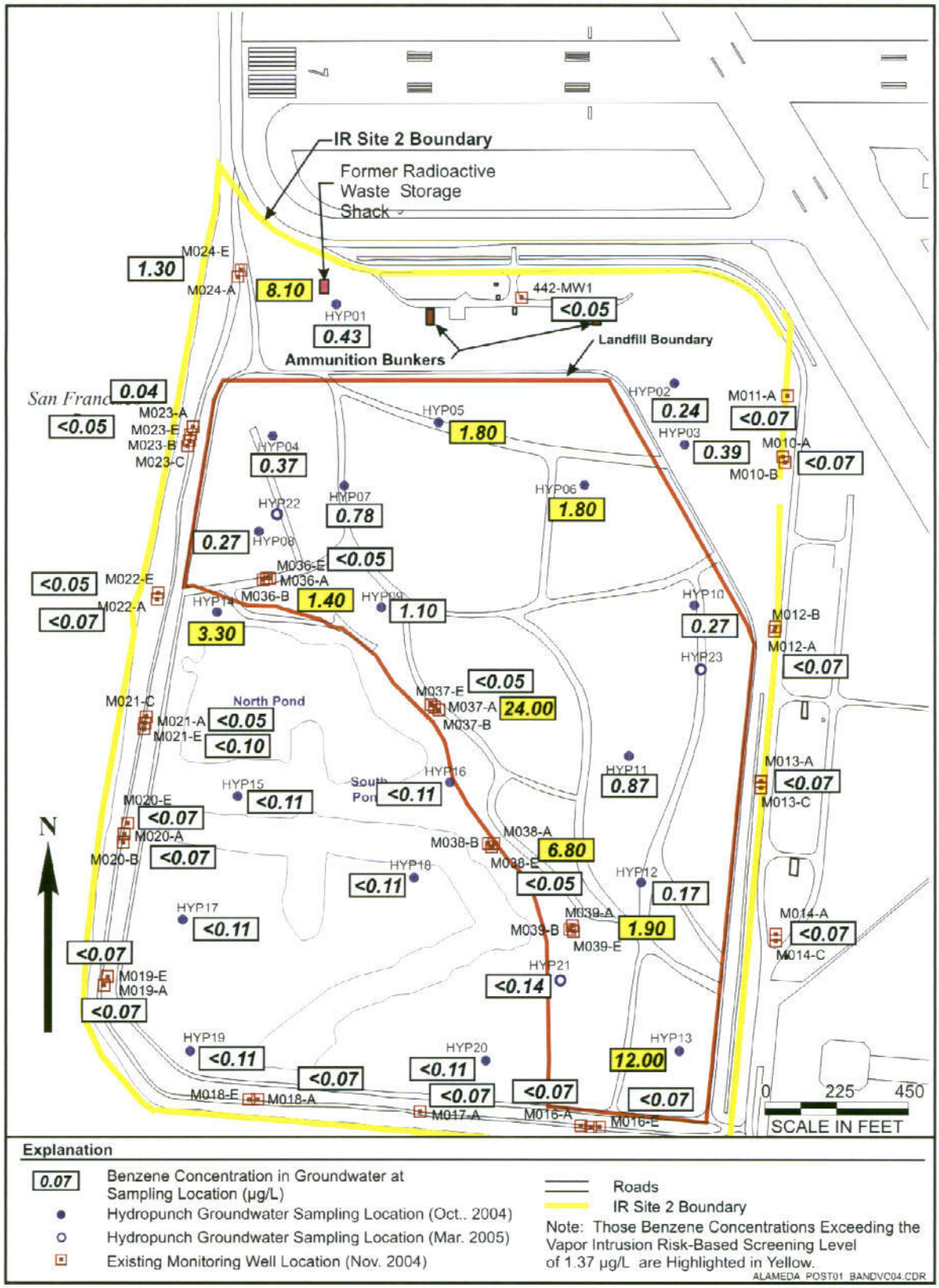


Figure 6-3. Benzene in Groundwater Above the Residential Vapor Intrusion Risk-Based Screening Level

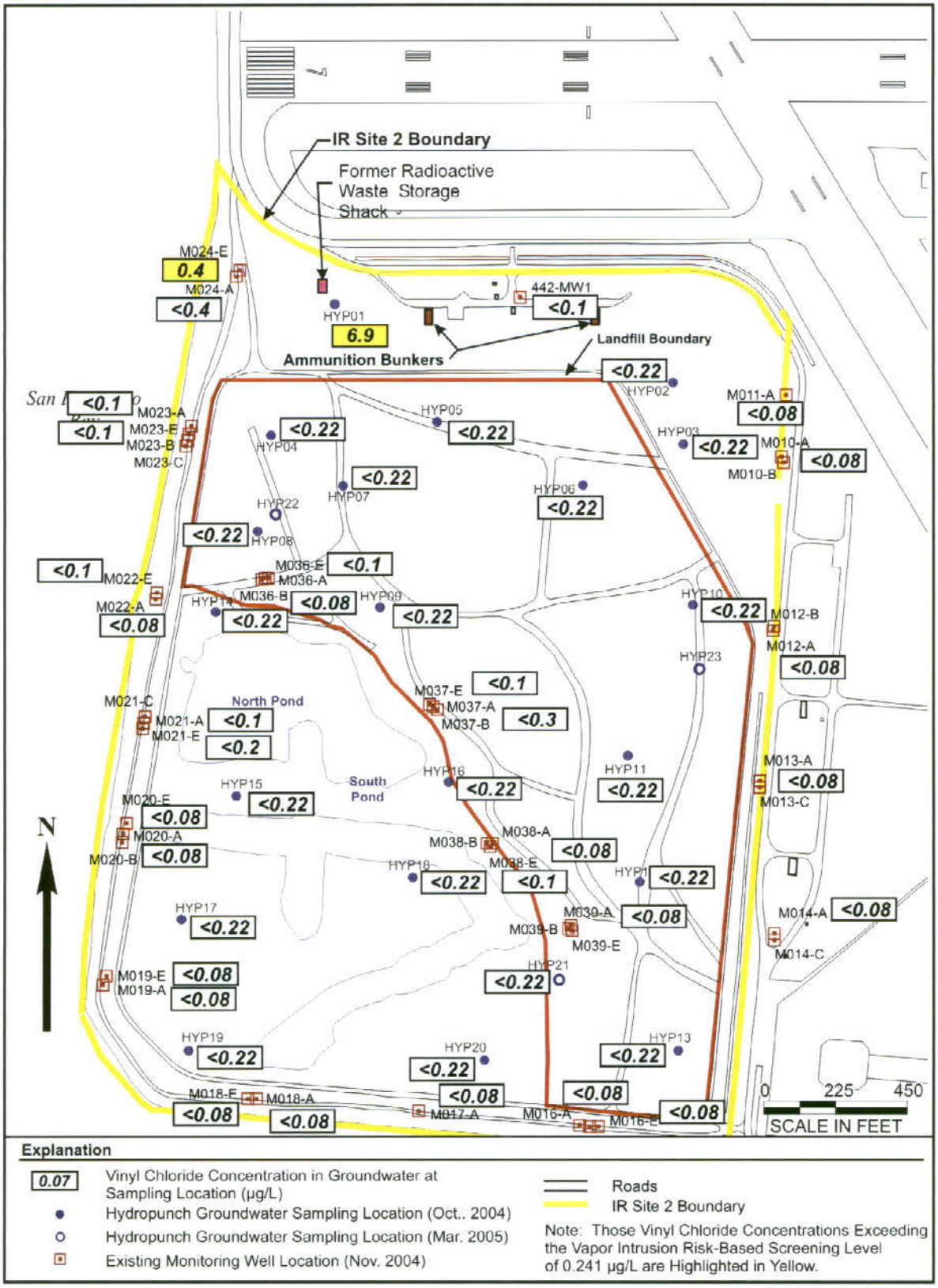


Figure 6-4. Vinyl Chloride in Groundwater Above the Residential Vapor Intrusion Risk-Based Screening Level

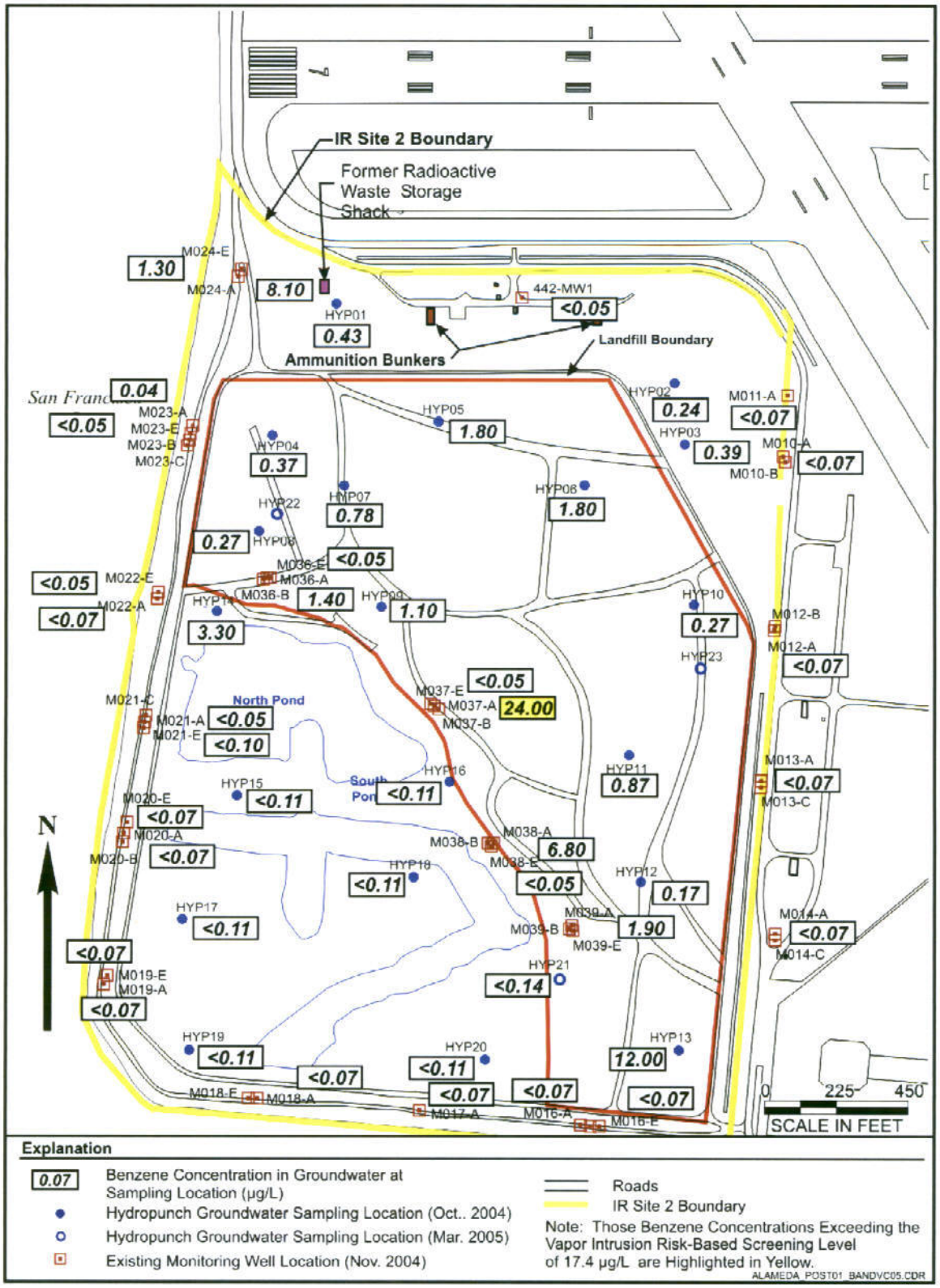


Figure 6-5. Benzene in Groundwater Above the Commercial Vapor Intrusion Risk-Based Screening Level

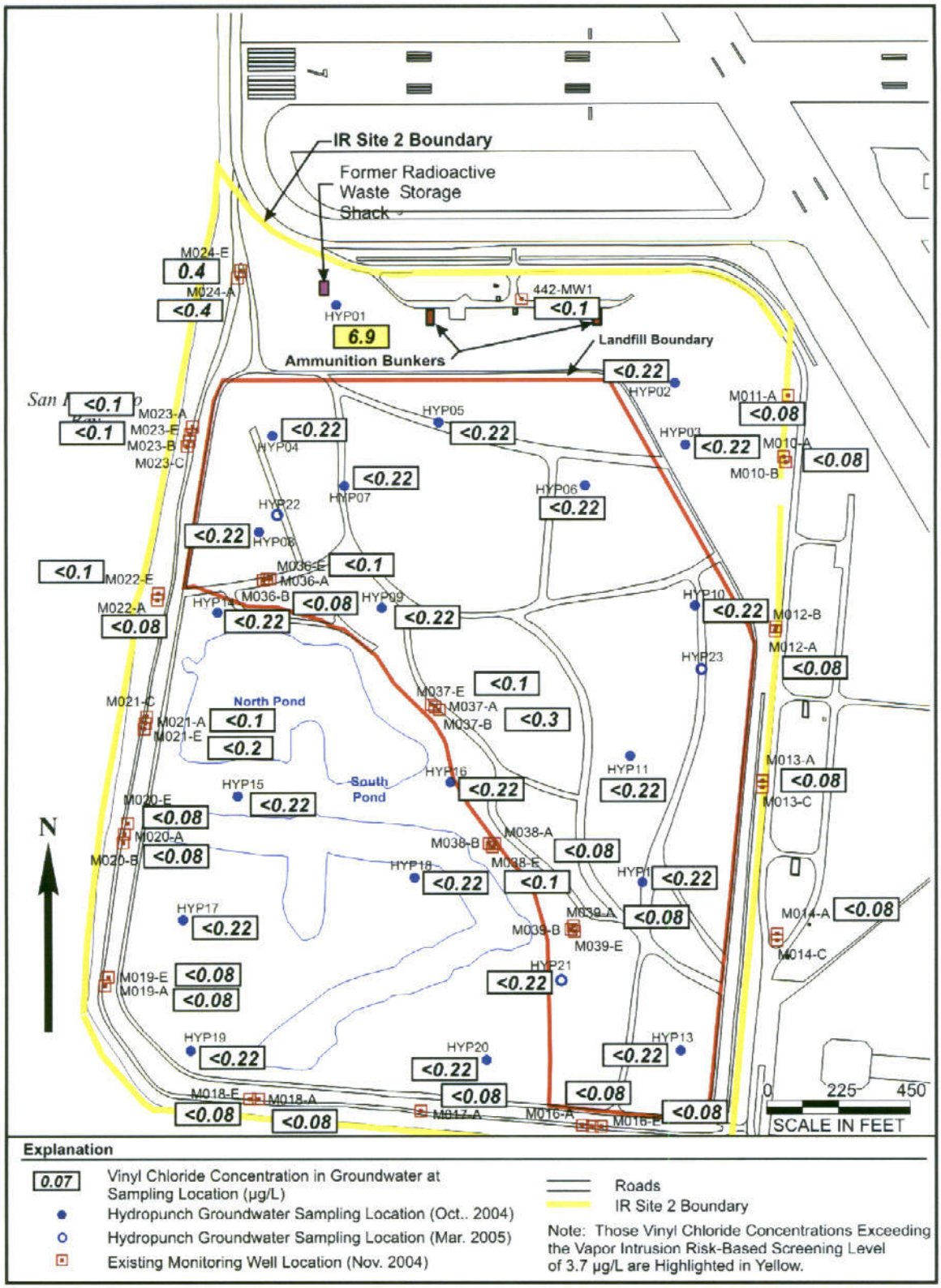


Figure 6-6. Vinyl Chloride in Groundwater Above the Commerical Vapor Intrusion Risk-Based Screening Level

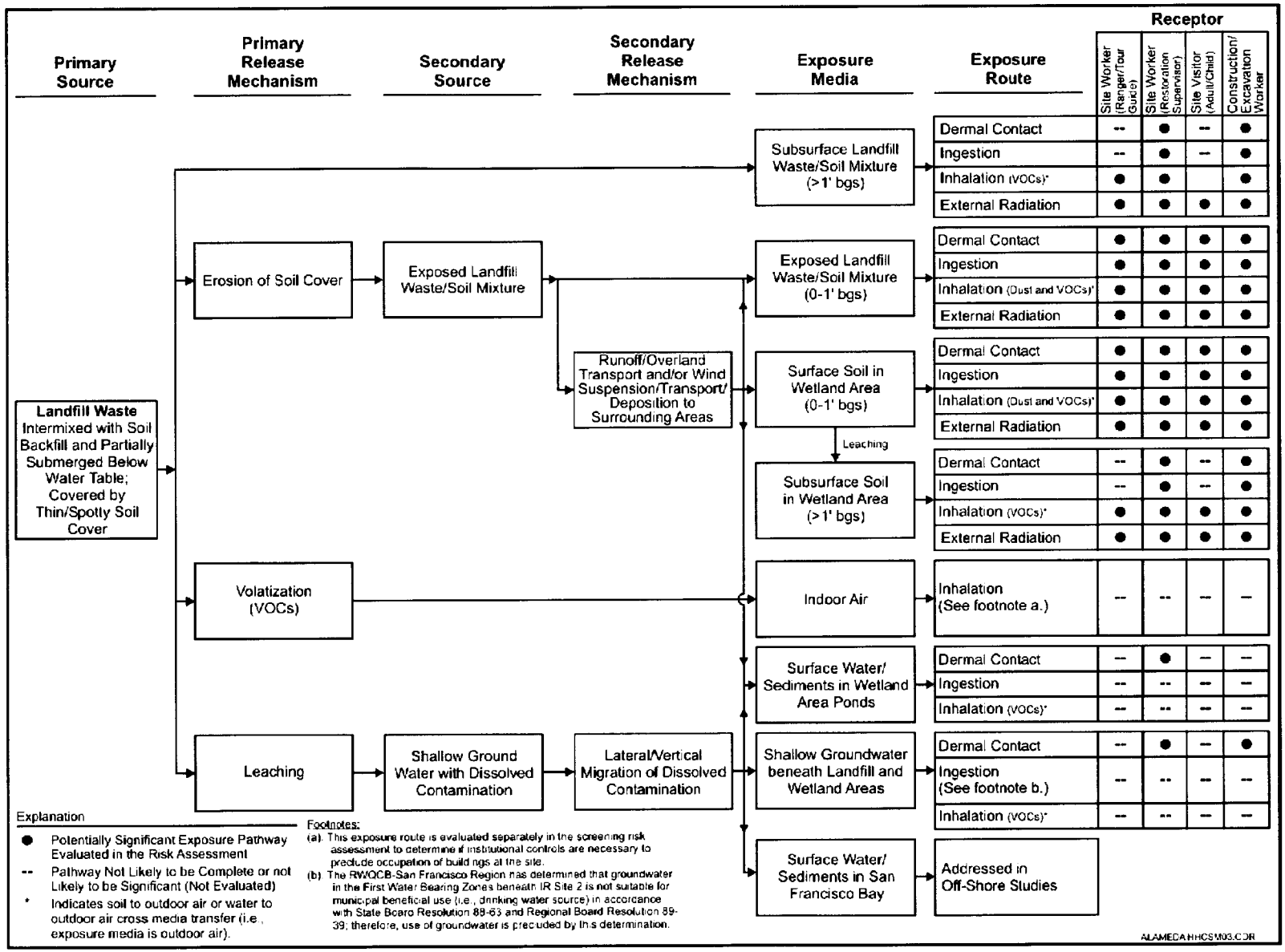


Figure 6-7. Conceptual Exposure Pathway Model for Human Health Risk Assessment

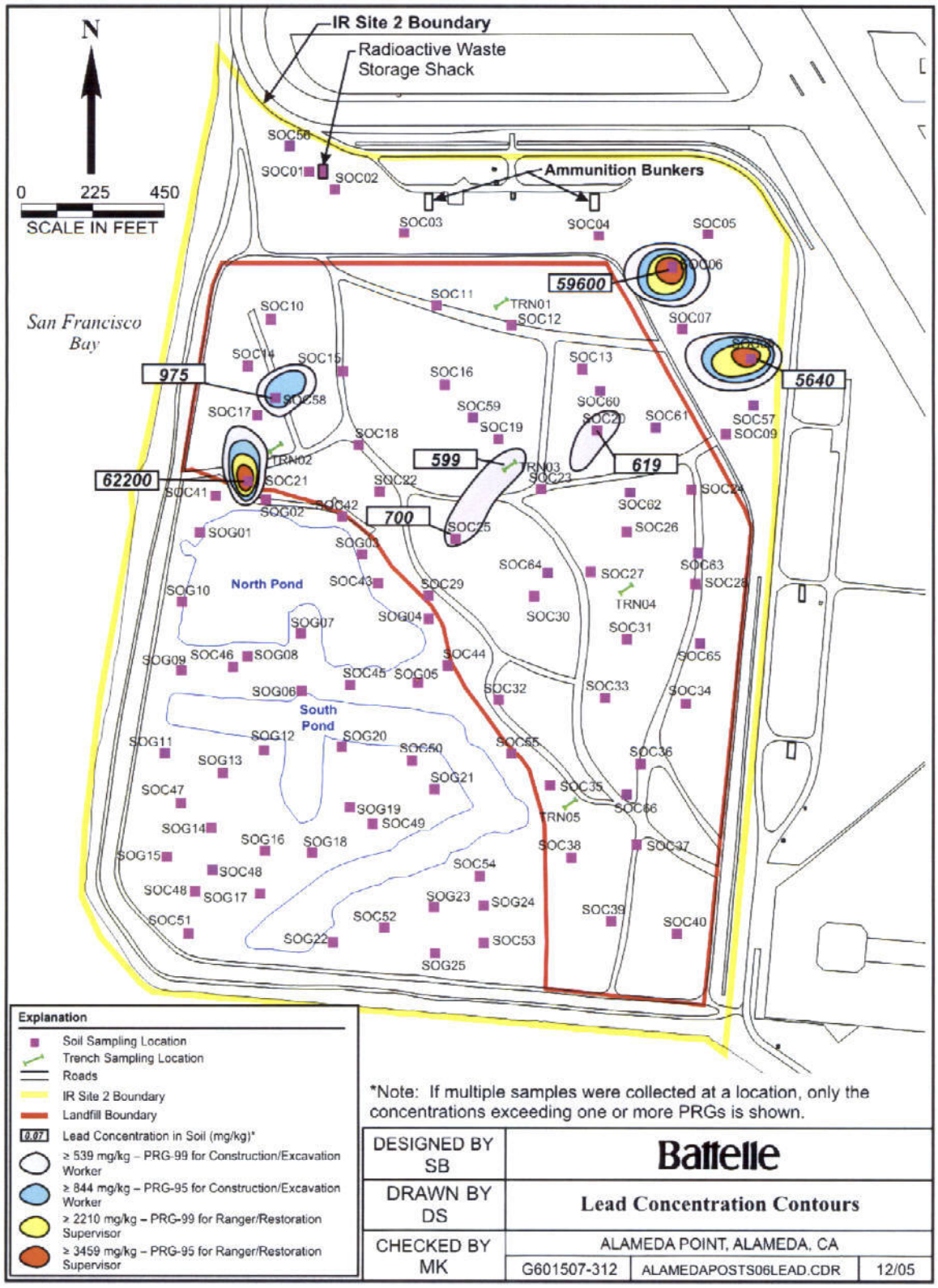


Figure 6-8. Isoconcentration Map of Lead Above PRGs in Subsurface Soil

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SECTION 6.0
TABLES

FINAL
REMEDIAL INVESTIGATION REPORT
IR SITE 2, WEST BEACH LANDFILL AND WETLANDS

DATED 23 JUNE 2006

Table 6-1. Chemical Classes Analyzed in Media Considered in the Human Health Risk Assessment

Chemical Class	U.S. EPA Method Number		Media				
			Soil		Groundwater		Surface Water
	Soil	Water	Landfill	Wetland	Landfill	Wetland	
PCDD/PCDF	8290	8290	X	X	X	--	--
Explosives	8330	8330	X	--	X	X	--
Metals	200.8/6010B	200.8/6010B	X	X	X	X	X
PCBs	BDO SOP 5-128	BDO SOP 5-128	X	X	X	X	X
Pesticides	BDO SOP 5-128	BDO SOP 5-128	X	X	X	X	X
Radionuclides	901.1	EML A-01-R/9315/900/9320	X	X	X	X	X
SVOCs	8270C	8270C-SIM/8270C	X	X	X	X	X
VOCs	8260B	8260B	X	X	X	X	X

X: Analyzed for that medium.

Table 6-2. Number of Human Health COPCs in Site Media

COPC Type	Landfill Soil		Wetland Soil		Groundwater		Surface Water
	0-1	0-TD	0-1	0-TD	Landfill	Wetland	
Total number of constituents*	193	193	193	193	193	193	193
Constituents analyzed	184	184	170	170	191	190	168
W	81	94	69	74	82	68	53
X	14	29	9	9	28	10	8
Y	3	5	2	2	22	24	15
Z	83	53	87	82	55	84	90
NA(1)	9	9	23	23	2	3	25
NA(2)	3	3	3	3	4	4	2

*193 is the total number of analytes measured across all media (i.e., soil, groundwater, surface water).

W: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is less than 1.
X: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is greater than 1.
Y: FOD for this chemical is zero and the ratio of its MDL to the available PRG is greater than 1.
Z: FOD for this chemical is zero and the ratio of its MDL to the available PRG is less than 1.

NA(1): Chemicals not analyzed in this medium.
NA(2): Chemical not classified because toxicity data are not available for this chemical to calculate a PRG.

Table 6-3. COPCs in Landfill Soil

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
1,1,1-Trichloroethane	71556	Z	ND	0.00	ND	1.0E+03	9.3E-04	Z	ND	0.00	ND	1.0E+03	1.7E-03
1,1,2,2-Tetrachloroethane	79345	Z	ND	0.00	ND	3.9E-01	1.2E-03	W	2.7E-03	0.01	4.3E-02	3.9E-01	1.5E-02
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	Z	ND	0.00	ND	1.1E+04	1.3E-03	Z	ND	0.00	ND	1.1E+04	2.2E-03
1,1,2-Trichloroethane	79005	Z	ND	0.00	ND	7.6E-01	1.2E-03	Z	ND	0.00	ND	7.6E-01	2.0E-03
1,1-Biphenyl	92524	W	3.1E-01	0.10	1.9E+00	2.9E+03	3.6E-01	W	3.0E+00	0.09	3.9E+01	2.9E+03	2.4E+00
1,1-Dichloroethane	75343	Z	ND	0.00	ND	2.6E+02	1.3E-03	Z	ND	0.00	ND	2.6E+02	2.3E-03
1,1-Dichloroethylene	75354	Z	ND	0.00	ND	6.3E+01	1.2E-03	Z	ND	0.00	ND	6.3E+01	2.0E-03
1,2,3-Trichlorobenzene	87616	Z	ND	0.00	ND	2.3E+02	1.5E-03	W	6.6E-04	0.01	1.5E-03	2.3E+02	2.6E-03
1,2,4,5-Tetrachlorobenzene	95943	W	3.6E-02	0.02	3.6E-02	1.8E+01	3.7E-01	W	1.2E-01	0.01	1.2E-01	1.8E+01	2.4E+00
1,2,4-Trichlorobenzene	120821	Z	ND	0.00	ND	3.2E+01	1.3E-03	W	6.1E-04	0.01	3.8E-03	3.2E+01	2.3E-03
1,2-Dibromo-3-chloropropane	96128	Z	ND	0.00	ND	3.5E-01	1.4E-03	Z	ND	0.00	ND	3.5E-01	2.5E-03
1,2-Dibromoethane	106934	Z	ND	0.00	ND	2.3E-02	1.3E-03	Z	ND	0.00	ND	2.3E-02	2.3E-03
1,2-Dichlorobenzene	95501	Z	ND	0.00	ND	6.0E+02	1.1E-03	W	6.2E-04	0.06	4.0E-03	6.0E+02	1.9E-03
1,2-Dichloroethane	107062	Z	ND	0.00	ND	2.5E-01	1.1E-03	Z	ND	0.00	ND	2.5E-01	2.0E-03
1,2-Dichloroethylene (cis)	156592	Z	ND	0.00	ND	2.2E+01	1.4E-03	W	7.7E-04	0.01	9.3E-03	2.2E+01	2.4E-03
1,2-Dichloroethylene (trans)	156605	Z	ND	0.00	ND	3.6E+01	1.2E-03	Z	ND	0.00	ND	3.6E+01	2.2E-03
1,2-Dichloropropane	78875	Z	ND	0.00	ND	3.4E-01	1.2E-03	Z	ND	0.00	ND	3.4E-01	2.1E-03
1,3,5-Trinitrobenzene	99354	Z	ND	0.00	ND	1.8E+03	7.1E-02	Z	ND	0.00	ND	1.8E+03	9.7E-02
1,3-Dichlorobenzene	541731	Z	ND	0.00	ND	2.6E+02	1.2E-03	W	5.4E-04	0.02	2.3E-03	2.6E+02	2.1E-03
1,3-Dichloropropene (cis)	10061015	Z	ND	0.00	ND	1.2E+00	1.3E-03	Z	ND	0.00	ND	1.2E+00	2.2E-03
1,3-Dichloropropene (trans)	10061026	Z	ND	0.00	ND	6.4E+00	9.8E-04	Z	ND	0.00	ND	6.4E+00	1.8E-03
1,3-Dinitrobenzene	99650	W	3.1E-01	0.50	3.1E-01	6.1E+00	6.0E-02	W	2.8E-01	0.17	3.1E-01	6.1E+00	8.3E-02
1,4-Dichlorobenzene	106467	Z	ND	0.00	ND	3.4E+00	1.4E-03	W	1.0E-02	0.26	5.0E-02	3.4E+00	2.4E-03
1,4-Dioxane	123911	NA (1)	NA (1)	NA (1)	NA (1)	4.4E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.4E+01	NA (1)
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA (1)	NA (1)	NA (1)	NA (1)	NA (2)	NA (1)	NA (1)	NA (1)	NA(1)	NA (1)	NA (2)	NA(1)
2,4,5-Trichlorophenol	95954	Z	ND	0.00	ND	6.1E+03	2.3E-01	Z	ND	0.00	ND	6.1E+03	1.5E+00
2,4,6-Trichlorophenol	88062	Z	ND	0.00	ND	6.1E+00	1.4E-01	Z	ND	0.00	ND	6.1E+00	8.8E-01
2,4,6-Trinitrotoluene	118967	Z	ND	0.00	ND	1.6E+01	9.0E-02	Z	ND	0.00	ND	1.6E+01	1.3E-01
2,4-Dichlorophenol	120832	Z	ND	0.00	ND	1.8E+02	1.4E-01	Z	ND	0.00	ND	1.8E+02	8.8E-01
2,4-Dimethylphenol	105679	Z	ND	0.00	ND	1.2E+03	4.2E-01	W	2.4E-01	0.01	3.3E+00	1.2E+03	2.7E+00
2,4-Dinitrophenol	51285	Z	ND	0.00	ND	1.2E+02	2.7E+00	Z	ND	0.00	ND	1.2E+02	1.8E+01
2,4-Dinitrotoluene	121142	W	2.8E-01	0.50	2.8E-01	1.2E+02	6.4E-02	W	2.5E-01	0.17	2.8E-01	1.2E+02	8.8E-02
2,6-Dinitrotoluene	606202	Z	ND	0.00	ND	6.1E+01	1.1E-01	Z	ND	0.00	ND	6.1E+01	1.5E-01
2-Amino-4,6-dinitrotoluene	35572782	Z	ND	0.00	ND	4.9E+01	1.1E-01	Z	ND	0.00	ND	4.9E+01	1.5E-01

Table 6-3. COPCs in Landfill Soil (page 2 of 6)

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
2-Chloronaphthalene	91587	W	3.5E-02	0.02	3.5E-02	2.8E+03	2.7E-01	W	1.3E-01	0.02	1.3E+00	2.8E+03	1.8E+00
2-Chlorophenol	95578	Z	ND	0.00	ND	3.5E+01	1.3E-01	W	7.1E-03	0.01	7.1E-03	3.5E+01	8.3E-01
2-Hexanone	591786	Z	ND	0.00	ND	3.7E+03	1.0E-02	Z	ND	0.00	ND	3.7E+03	1.8E-02
1-Methylnaphthalene	90120	NA(1)	NA(1)	NA(1)	NA(1)	5.5E+03	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	5.5E+03	NA(1)
2-Methylnaphthalene	91576	W	1.0E+00	0.78	6.9E+00	3.1E+02	9.0E-02	X	3.5E+01	0.75	3.7E+02	3.1E+02	2.4E+00
2-Methylphenol	95487	W	1.4E-02	0.04	1.4E-02	3.1E+03	2.6E-01	W	1.1E-01	0.03	8.1E-01	3.1E+03	1.7E+00
2-Nitroaniline	88744	W	1.4E-02	0.02	1.4E-02	1.8E+02	2.1E-01	W	1.4E-02	0.01	1.4E-02	1.8E+02	1.4E+00
2-Nitrophenol	88755	Z	ND	0.00	ND	1.6E+02	2.0E-01	Z	ND	0.00	ND	1.6E+02	1.3E+00
3,3'-Dichlorobenzidine	91941	W	4.2E-03	0.02	4.2E-03	1.1E+00	2.8E-01	W	4.2E-03	0.01	4.2E-03	1.1E+00	1.9E+00
3-Nitroaniline	99092	Z	ND	0.00	ND	1.8E+01	2.0E-01	Z	ND	0.00	ND	1.8E+01	1.3E+00
4,6-Dinitro-*o*-cresol	534521	Z	ND	0.00	ND	6.1E+00	1.3E-01	Z	ND	0.00	ND	6.1E+00	8.3E-01
4-Amino-2,6-dinitrotoluene	19406510	Z	ND	0.00	ND	4.9E+01	8.5E-02	Z	ND	0.00	ND	4.9E+01	1.2E-01
4-Bromophenylphenylether	101553	Y	ND	0.00	ND	3.2E-02	1.1E-01	Y	ND	0.00	ND	3.2E-02	6.9E-01
4-Chloro-3-methylphenol	59507	Z	ND	0.00	ND	3.1E+02	1.6E-01	Z	ND	0.00	ND	3.1E+02	1.1E+00
4-Chloroaniline	106478	W	3.6E-02	0.04	1.6E-01	2.4E+02	1.6E-01	W	6.1E-02	0.04	1.6E-01	2.4E+02	1.1E+00
4-Chlorophenylphenylether	7005723	Y	ND	0.00	ND	3.2E-02	1.5E-01	Y	ND	0.00	ND	3.2E-02	9.8E-01
4-Methylphenol	106445	W	1.5E-02	0.06	1.5E-02	3.1E+02	2.2E-01	W	1.8E-01	0.11	2.5E+00	3.1E+02	1.5E+00
4-Nitroaniline	100016	Z	ND	0.00	ND	2.3E+01	2.6E-01	Z	ND	0.00	ND	2.3E+01	1.7E+00
4-Nitrophenol	100027	Z	ND	0.00	ND	1.6E+02	2.3E+00	Z	ND	0.00	ND	1.6E+02	1.5E+01
Acenaphthene	83329	W	4.5E+00	0.64	2.0E+01	3.0E+03	2.2E-01	W	6.3E+01	0.66	6.3E+02	3.0E+03	4.9E+00
Acenaphthylene	208968	W	4.1E-02	0.80	2.1E-01	4.7E+03	1.1E-01	W	3.2E-01	0.55	5.4E+00	4.7E+03	6.9E-01
Acetone	67641	W	1.8E-02	0.18	5.6E-02	7.8E+03	1.7E-02	W	4.9E-02	0.56	1.6E-01	7.8E+03	2.9E-02
Acetophenone	98862	W	1.4E-01	0.14	2.2E-01	7.8E+03	9.0E-01	W	2.9E-01	0.14	2.9E-01	7.8E+03	5.9E+00
alpha-Chlordane	5103719	W	1.7E-02	0.93	6.3E-02	1.4E+00	2.2E-03	X	1.7E-01	0.76	1.9E+00	1.4E+00	2.2E-02
Aldrin	309002	W	1.7E-04	0.02	3.2E-04	2.9E-02	2.4E-03	W	1.6E-04	0.02	4.3E-04	2.9E-02	3.2E-03
Aluminum	7429905	W	1.2E+04	1.00	2.7E+04	7.4E+04	1.2E+01	X	1.4E+04	1.00	1.2E+05	7.4E+04	1.1E+02
Anthracene	120127	W	1.4E+00	0.90	9.1E+00	1.6E+04	1.1E-01	W	1.8E+01	0.77	2.1E+02	1.6E+04	6.9E-01
Antimony and compounds	7440360	W	2.7E+00	0.96	7.9E+00	3.1E+01	4.0E-02	X	6.9E+01	0.91	6.9E+02	3.1E+01	1.9E+00
Arsenic	7440382	X	5.3E+00	1.00	1.4E+01	4.3E-01	6.0E-02	X	7.4E+00	1.00	7.6E+01	4.3E-01	1.1E-01
Atrazine	1912249	Z	ND	0.00	ND	2.2E+00	1.7E-01	Z	ND	0.00	ND	2.2E+00	1.1E+00
Barium and compounds	7440393	W	1.1E+02	1.00	4.7E+02	5.3E+03	2.3E-01	W	9.6E+01	1.00	4.7E+02	5.3E+03	3.0E-01
Benz[a]anthracene	56553	X	9.3E-01	0.94	3.6E+00	6.7E-01	1.1E-01	X	5.8E+00	0.92	1.0E+02	6.7E-01	6.9E-01
Benzaldehyde	100527	W	1.3E-01	0.12	4.9E-01	2.0E+03	6.6E-01	W	2.7E-01	0.12	1.1E+00	2.0E+03	4.3E+00
Benzene	71432	Z	ND	0.00	ND	6.4E-01	1.3E-03	W	1.2E-03	0.09	7.8E-03	6.4E-01	2.3E-03

Table 6-3. COPCs in Landfill Soil (page 3 of 6)

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
Benzo(g,h,i)perylene	191242	W	3.5E-01	1.00	2.8E+00	1.8E+03	1.8E-01	W	8.0E-01	0.94	9.9E+00	1.8E+03	1.2E+00
Benzo[a]pyrene	50328	X	7.7E-01	0.96	3.8E+00	6.7E-02	1.2E-01	X	2.2E+00	0.91	3.5E+01	6.7E-02	7.9E-01
Benzo[b]fluoranthene	205992	X	4.8E-01	0.98	5.1E+00	6.7E-01	1.9E-01	X	3.3E+00	0.91	5.5E+01	6.7E-01	1.3E+00
Benzo[k]fluoranthene	207089	W	2.1E+02	0.86	1.6E+00	6.7E+00	1.9E-01	X	1.3E+00	0.67	2.1E+01	6.7E+00	1.3E+00
Benzoic Acid	65850	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+05	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+05	NA (1)
Beryllium and compounds	7440417	W	3.4E-01	0.96	8.9E-01	1.5E+02	1.2E-01	W	2.9E-01	0.97	8.9E-01	1.5E+02	1.3E-01
bis(2-chloroethoxy)methane	111911	Z	ND	0.00	ND	4.4E-01	9.8E-02	Y	ND	0.00	ND	4.4E-01	6.4E-01
bis(2-chloroethyl)ether	111444	Z	ND	0.00	ND	2.2E-01	1.8E-01	Y	ND	0.00	ND	2.2E-01	1.2E+00
bis(2-chloroisopropyl)ether	108601	Z	ND	0.00	ND	2.9E+00	9.0E-02	Z	ND	0.00	ND	2.9E+00	5.9E-01
bis(2-ethylhexyl)phthalate	117817	W	2.5E+00	0.72	7.4E+00	3.5E+01	1.3E-01	X	1.9E+01	0.69	1.8E+03	3.5E+01	1.8E+01
Bromochloromethane	74975	NA(2)	ND	0.00	ND	NA(2)	8.5E-04	NA(2)	ND	0.00	ND	NA(2)	1.5E-03
Bromodichloromethane	75274	Z	ND	0.00	ND	7.2E-01	8.7E-04	W	3.8E-04	0.01	8.2E-04	7.2E-01	1.6E-03
Bromoform	75252	Z	ND	0.00	ND	6.2E+01	1.1E-03	Z	ND	0.00	ND	6.2E+01	1.9E-03
Bromomethane	74839	Z	ND	0.00	ND	2.0E+00	1.4E-03	Z	ND	0.00	ND	2.0E+00	2.4E-03
Butylbenzylphthalate	85687	W	1.9E+00	0.82	1.3E+01	1.2E+04	1.7E-01	W	1.1E+02	0.66	2.2E+03	1.2E+04	1.6E+01
Cadmium and compounds	7440439	W	9.4E+00	0.58	2.6E+01	3.9E+01	1.0E+00	X	1.4E+01	0.63	1.3E+02	3.9E+01	1.0E+00
Caprolactam	105602	Z	ND	0.00	ND	3.1E+04	9.0E-01	W	7.2E+00	0.06	1.3E+02	3.1E+04	5.9E+00
Carbazole	86748	W	6.0E-01	0.52	4.0E+00	2.4E+01	9.8E-02	X	4.0E+00	0.41	3.7E+01	2.4E+01	6.4E-01
Carbondisulfide	75150	Z	ND	0.00	ND	2.3E+02	2.5E-03	W	1.2E-03	0.04	5.5E-03	2.3E+02	4.4E-03
Carbontetrachloride	56235	Z	ND	0.00	ND	2.6E-01	9.8E-04	Z	ND	0.00	ND	2.6E-01	1.8E-03
Chlorobenzene	108907	Z	ND	0.00	ND	7.9E+01	1.2E-03	W	1.2E-02	0.25	9.5E-02	7.9E+01	2.1E-03
Chloroethane	75003	Z	ND	0.00	ND	3.0E+00	1.3E-03	Z	ND	0.00	ND	3.0E+00	2.3E-03
Chloroform	67663	Z	ND	0.00	ND	2.2E-01	9.3E-04	Z	ND	0.00	ND	2.2E-01	1.7E-03
Chloromethane	74873	Z	ND	0.00	ND	3.4E+01	1.7E-03	Z	ND	0.00	ND	3.4E+01	2.9E-03
Chromium VI	18540299	W	3.1E-01	0.05	1.2E+00	3.0E+01	4.0E-01	W	2.2E-01	0.02	1.2E+00	3.0E+01	4.0E-01
Chrysene	218019	W	1.1E+00	1.00	3.9E+00	6.7E+01	1.1E-01	X	5.9E+00	0.96	9.7E+01	6.7E+01	6.9E-01
cis-nonachlor	5103731	W	3.8E-03	0.70	1.0E-02	1.4E+00	1.5E-03	W	5.0E-02	0.56	5.3E-01	1.4E+00	7.3E-03
Cobalt	7440484	W	9.5E+00	1.00	1.7E+01	8.9E+02	2.4E+00	W	1.1E+01	1.00	6.2E+01	8.9E+02	2.6E+00
Copper and compounds	7440508	W	6.8E+01	1.00	3.9E+02	3.1E+03	2.4E+00	X	5.0E+02	1.00	4.9E+03	3.1E+03	9.5E+00
Cumene	98828	Z	ND	0.00	ND	3.0E+02	1.2E-03	W	3.2E-03	0.16	4.2E-02	3.0E+02	2.0E-03
Cyclohexane	110827	Z	ND	0.00	ND	1.0E+04	1.1E-03	W	5.9E-04	0.03	4.3E-03	1.0E+04	2.0E-03
DDD	72548	W	1.2E-02	0.98	7.0E-02	2.0E+00	3.0E-05	W	3.3E-02	0.96	6.3E-01	2.0E+00	3.0E-04
DDE	72559	W	2.4E-03	0.93	1.5E-02	1.4E+00	3.0E-05	W	9.5E-03	0.92	1.5E-01	1.4E+00	3.0E-05
DDT	50293	W	6.5E-03	1.00	5.0E-02	1.4E+00	1.0E-05	W	6.2E-03	0.67	1.1E-01	1.4E+00	1.0E-05

Table 6-3. COPCs in Landfill Soil (page 4 of 6)

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
Dibenz[ah]anthracene	53703	X	7.1E-02	0.68	6.7E-01	6.7E-02	1.7E-01	X	2.3E-01	0.50	3.3E+00	6.7E-02	1.1E+00
Dibenzofuran	132649	W	1.4E+00	0.40	9.2E+00	9.7E+01	9.8E-02	X	2.4E+01	0.46	2.3E+02	9.7E+01	2.6E+00
Dibromochloromethane	124481	Z	ND	0.00	ND	5.8E+00	9.8E-04	Z	ND	0.00	ND	5.8E+00	1.8E-03
Dibutylphthalate	84742	W	4.6E-02	0.48	1.5E-01	6.1E+03	2.0E-01	W	1.3E-01	0.49	2.1E+00	6.1E+03	1.3E+00
Dichlorodifluoromethane	75718	Z	ND	0.00	ND	4.1E+01	1.2E-03	Z	ND	0.00	ND	4.1E+01	2.1E-03
Dieldrin	60571	W	4.3E-03	0.73	6.2E-03	3.0E-02	1.8E-03	X	7.5E-03	0.58	4.8E-02	3.0E-02	8.9E-03
Diethylphthalate	84662	W	4.1E-02	0.04	6.1E-02	4.9E+04	2.7E-01	W	1.0E-01	0.08	2.1E-01	4.9E+04	1.8E+00
Diisopropylether	108203	Z	ND	0.00	ND	1.1E+08	4.1E-04	Z	ND	0.00	ND	1.1E+08	7.2E-04
Dimethylphthalate	131113	W	1.6E-02	0.02	1.6E-02	6.1E+05	1.4E-01	W	9.1E-02	0.03	1.2E+00	6.1E+05	8.8E-01
di-*n*-Octylphthalate	117840	W	1.4E-02	0.02	3.0E-02	2.4E+03	9.0E-02	W	9.2E-02	0.03	1.3E+00	2.4E+03	5.9E-01
Endosulfan I	959988	W	1.1E-04	0.02	1.1E-04	1.2E+02	3.3E-03	W	2.5E-04	0.05	1.8E-03	1.2E+02	4.4E-03
Endosulfan II	33213659	W	2.4E-03	0.57	3.9E-03	1.2E+02	3.1E-03	W	2.3E-02	0.52	2.1E-01	1.2E+02	1.5E-02
Endosulfan Sulfate	1031078	W	3.4E-03	0.09	1.3E-02	3.7E+02	1.5E-03	W	2.2E-03	0.07	2.8E-02	3.7E+02	2.0E-03
Endrin	72208	Z	ND	0.00	ND	1.8E+01	2.5E-03	W	1.9E-04	0.01	1.8E-03	1.8E+01	3.4E-03
Endrin Aldehyde	7421934	W	5.2E-04	0.05	6.9E-04	1.8E+01	3.1E-03	W	5.2E-04	0.06	3.8E-03	1.8E+01	4.2E-03
Endrin Ketone	53494705	Z	ND	0.00	ND	1.8E+01	2.1E-03	W	3.6E-04	0.01	3.8E-03	1.8E+01	2.8E-03
Ethylbenzene	100414	Z	ND	0.00	ND	1.1E+03	9.3E-04	W	1.2E-03	0.10	1.3E-02	1.1E+03	1.7E-03
Fluoranthene	206440	W	3.7E+00	0.94	2.2E+01	2.4E+03	4.8E-01	W	4.7E+01	0.93	8.4E+02	2.4E+03	1.1E+01
Fluorene	86737	W	2.4E+00	0.44	1.6E+01	2.5E+03	3.7E-01	W	5.2E+01	0.54	6.0E+02	2.5E+03	8.3E+00
gamma-Chlordane	5103742	W	1.8E-02	0.77	6.6E-02	1.4E+00	1.3E-03	X	1.8E-01	0.64	2.0E+00	1.4E+00	1.3E-02
HCH (alpha)	319846	W	2.1E-04	0.02	2.1E-04	7.7E-02	5.9E-03	W	1.2E-03	0.06	1.7E-02	7.7E-02	7.8E-03
HCH (beta)	319857	W	3.3E-04	0.05	7.5E-04	2.7E-01	4.6E-03	W	3.0E-04	0.02	7.5E-04	2.7E-01	6.2E-03
HCH (delta)	319868	W	7.0E-05	0.02	7.0E-05	2.7E-01	3.6E-03	W	7.0E-05	0.01	7.0E-05	2.7E-01	4.8E-03
HCH (gamma) Lindane	58899	W	3.7E-04	0.18	7.6E-04	3.7E-01	2.0E-03	W	2.5E-04	0.13	2.2E-03	3.7E-01	2.6E-03
Heptachlor	76448	W	1.3E-04	0.02	1.9E-04	1.1E-01	2.0E-03	W	1.2E-04	0.02	1.9E-04	1.1E-01	2.6E-03
Heptachlorepoxide	1024573	W	3.3E-04	0.07	4.9E-04	5.3E-02	2.1E-03	W	1.9E-04	0.03	8.6E-04	5.3E-02	2.8E-03
Hexachlorobenzene	118741	W	2.4E-02	0.02	5.5E-02	3.0E-01	1.6E-01	W	5.5E-02	0.01	5.5E-02	3.0E-01	1.1E+00
Hexachlorobutadiene	87683	Z	ND	0.00	ND	6.2E+00	1.1E-01	Z	ND	0.00	ND	6.2E+00	6.9E-01
Hexachlorocyclopentadiene	77474	Z	ND	0.00	ND	3.6E+02	1.2E+00	Z	ND	0.00	ND	3.6E+02	7.4E+00
Hexachloroethane	67721	Z	ND	0.00	ND	3.5E+01	1.7E-01	Z	ND	0.00	ND	3.5E+01	1.1E+00
HMX	2691410	Z	ND	0.00	ND	3.1E+03	7.7E-02	W	3.6E-01	0.33	3.8E-01	3.1E+03	1.1E-01
Indeno[1,2,3-cd]pyrene	193395	X	3.0E-01	0.98	3.0E+00	6.7E-01	1.5E-01	X	8.2E-01	0.89	1.1E+01	6.7E-01	9.3E-01
Iron	7439896	X	2.3E+04	1.00	4.5E+04	2.3E+04	3.6E+00	X	3.3E+04	1.00	1.4E+05	2.3E+04	3.2E+01
Isophorone	78591	Z	ND	0.00	ND	5.1E+02	1.2E-01	Z	ND	0.00	ND	5.1E+02	7.9E-01
Lead (d)	7439921	X	9.0E+01	1.00	2.6E+02	1.5E+02	6.1E+00	X	4.8E+03	1.00	6.2E+04	1.5E+02	4.8E+01
Lead 210 (b),(c)	14255040	X	6.7E+02	0.13	7.9E+02	4.6E+02	1.5E+03	X	6.5E+02	0.13	1.1E+03	4.6E+02	1.5E+03

Table 6-3. COPCs in Landfill Soil (page 5 of 6)

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
m,p-xylene	7816600	Z	ND	0.00	ND	1.6E+05	2.5E-03	W	3.3E-03	0.04	4.2E-02	1.6E+05	4.4E-03
Magnesium	7439954	NA(2)	5.7E+03	1.00	1.3E+04	NA(2)	2.4E+00	NA(2)	4.7E+03	1.00	1.3E+04	NA(2)	5.3E+00
Manganese and compounds	7439965	W	3.1E+02	1.00	5.2E+02	1.7E+03	4.0E-01	W	3.5E+02	1.00	1.4E+03	1.7E+03	3.2E+00
Mercury (elemental)	7439976	W	4.9E-01	1.00	2.3E+00	2.6E+00	3.0E-03	X	1.1E+00	1.00	1.0E+01	2.6E+00	1.5E-02
Methoxychlor	72435	W	3.8E-03	0.05	3.8E-03	3.1E+02	5.5E-02	W	3.5E-03	0.05	3.8E-03	3.1E+02	7.4E-02
Methylacetate	79209	Z	ND	0.00	ND	6.1E+03	1.2E-03	Z	ND	0.00	ND	6.1E+03	2.2E-03
Methylcyclohexane	108872	Z	ND	0.00	ND	1.3E+03	1.2E-03	W	1.1E-03	0.07	9.8E-03	1.3E+03	2.1E-03
Methylenechloride	75092	W	6.9E-02	0.53	1.4E-01	7.7E+00	1.6E-03	W	2.1E-02	0.46	1.4E-01	7.7E+00	2.8E-03
Methylethylketone	78933	W	5.7E-03	0.03	1.2E-02	1.1E+04	1.4E-02	W	8.2E-03	0.11	3.2E-02	1.1E+04	2.5E-02
Methylisobutylketone	108101	W	3.7E-03	0.03	8.5E-03	4.6E+03	9.0E-03	W	3.9E-03	0.01	8.5E-03	4.6E+03	1.6E-02
Methyltertbutylether (MTBE)	1634044	Z	ND	0.00	ND	3.1E+01	1.1E-03	Z	ND	0.00	ND	3.1E+01	1.9E-03
m-Nitrotoluene (3-nitrotoluene)	99081	Z	ND	0.00	ND	4.8E+02	1.2E-01	Z	ND	0.00	ND	4.8E+02	1.6E-01
Molybdenum	7439987	W	1.9E+00	0.13	8.9E+00	3.9E+02	2.4E+00	W	5.1E+00	0.26	3.7E+01	3.9E+02	2.6E+00
Naphthalene	91203	W	3.2E+00	0.80	2.2E+01	3.5E+01	2.9E-01	X	1.2E+02	0.78	1.5E+03	3.5E+01	5.2E+00
Nickel (soluble salts)	7440020	W	5.1E+01	1.00	1.2E+02	1.6E+03	3.5E+00	W	5.4E+01	1.00	2.2E+02	1.6E+03	3.7E+00
Nitrobenzene	98953	Z	ND	0.00	ND	1.3E+01	8.3E-02	Z	ND	0.00	ND	1.3E+01	1.2E-01
n-Nitrosodimethylamine	62759	NA(1)	NA (1)	NA (1)	NA (1)	1.3E-02	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	1.3E-02	NA (1)
n-Nitrosodi-*n*-propylamine	621647	Y	ND	0.00	ND	6.9E-02	2.4E-01	Y	ND	0.00	ND	6.9E-02	1.6E+00
n-Nitrosodiphenylamine	86306	W	2.4E-02	0.02	2.8E-03	9.9E+01	1.7E-01	W	8.8E-02	0.13	6.2E-01	9.9E+01	1.1E+00
Nonachlor (trans)	39765805	W	9.8E-03	0.93	3.3E-02	1.4E+00	1.5E-03	W	9.3E-02	0.74	1.0E+00	1.4E+00	7.3E-03
o-Nitrotoluene (2-nitrotoluene)	88722	Z	ND	0.00	ND	8.8E-01	1.1E-01	Z	ND	0.00	ND	8.8E-01	1.5E-01
o-xylene	95476	Z	ND	0.00	ND	1.6E+05	1.2E-03	W	1.8E-03	0.06	2.4E-02	1.6E+05	2.0E-03
Pentachlorophenol	87865	W	7.6E-02	0.04	7.6E-02	4.1E+00	6.4E-01	W	3.7E-01	0.07	2.8E+00	4.1E+00	4.2E+00
Phenanthrene	85018	W	7.5E+00	0.98	5.0E+01	2.3E+03	2.9E-01	W	1.2E+02	0.94	1.4E+03	2.3E+03	6.4E+00
Phenol	108952	W	2.5E-02	0.16	5.9E-02	1.8E+04	1.5E-01	W	5.6E-02	0.11	1.7E-01	1.8E+04	9.3E-01
p-Nitrotoluene (4-nitrotoluene)	99990	Z	ND	0.00	ND	1.7E+01	1.3E-01	Z	ND	0.00	ND	1.7E+01	1.8E-01
Pyrene	129000	W	3.2E+00	1.00	1.8E+01	1.8E+03	2.9E-01	W	3.3E+01	1.00	5.8E+02	1.8E+03	6.4E+00
Radium 226 (c)	13982633	X	1.1E+03	0.64	1.8E+03	1.3E+01	1.2E+03	X	5.9E+02	0.65	1.8E+03	1.3E+01	1.2E+03
Radium 228 (c)	15262201	W	2.2E+03	0.36	3.2E+00	9.2E+01	5.8E+00	W	1.5E+03	0.28	3.2E+00	9.2E+01	5.8E+00
RDX (Cyclonite)	121824	Z	ND	0.00	ND	4.4E+00	1.1E-01	W	9.3E-02	0.17	1.3E-01	4.4E+00	1.4E-01
Selenium	7782492	W	3.4E-01	0.81	7.5E-01	3.9E+02	1.0E-01	W	2.9E-01	0.79	8.0E-01	3.9E+02	2.0E-01
Silver and compounds	7440224	W	9.2E-01	1.00	2.6E+00	3.9E+02	4.0E-03	W	4.0E+00	1.00	5.9E+01	3.9E+02	1.4E-02
Sodium	7440235	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)
Styrene	100425	Z	ND	0.00	ND	2.6E+03	1.2E-03	W	7.4E-04	0.03	8.7E-03	2.6E+03	2.2E-03

Table 6-3. COPCs in Landfill Soil (page 6 of 6)

Analyte	CAS #	Landfill Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
TEQ mamm	1746016	X	1.7E-05	1.00	4.1E-05	3.2E-06	NA(3)	X	2.4E-05	1.00	1.2E-04	3.2E-06	NA(3)
Tert-amyl-methyl-ether (TAME)	994058	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)
Tert-butyl-alcohol (TBA)	75650	NA(1)	NA (1)	NA (1)	NA (1)	7.0E+03	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	7.0E+03	NA (1)
Tert-butyl-ethyl-ether(TBE)	637923	NA(1)	NA (1)	NA (1)	NA (1)	7.8E+01	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	7.8E+01	NA (1)
Tetrachlorodibenzofuran	30402143	NA (2)	1.3E-04	1.00	7.3E-04	NA (2)	4.1E-07	NA(2)	1.8E-01	0.97	7.3E-04	NA(2)	4.7E-07
Tetrachloroethylene (PCE)	127184	Z	ND	0.00	ND	4.9E-01	5.1E-04	W	2.8E-04	0.02	2.9E-03	4.9E-01	9.0E-04
Thallium and compounds	7440280	W	1.1E-01	0.96	2.5E-01	5.2E+00	2.0E-03	W	2.6E-01	0.94	2.6E-01	5.2E+00	4.0E-03
Toluene	108883	Z	ND	0.00	ND	3.4E+02	1.4E-03	W	4.0E-03	0.03	7.3E-02	3.4E+02	2.5E-03
Total Chromium	7440473	W	6.6E+01	1.00	1.4E+02	1.2E+05	7.0E-01	W	1.5E+02	1.00	2.1E+03	1.2E+05	6.3E+00
Total PCB	1336363	X	8.7E-01	1.00	2.5E+00	2.2E-01	NA(3)	X	5.7E+00	1.00	5.2E+01	2.2E-01	NA(3)
Toxaphene	8001352	Z	ND	0.00	ND	4.4E-01	2.6E-01	Z	ND	0.00	ND	4.4E-01	3.5E-01
Trichloroethylene (TCE)	79016	Z	ND	0.00	ND	3.0E+00	4.6E-04	W	2.1E-01	0.02	8.2E-04	3.0E+00	8.1E-04
Trichlorofluoromethane	75694	Z	ND	0.00	ND	1.9E+02	1.2E-03	Z	ND	0.00	ND	1.9E+02	2.2E-03
Tri-*n*-butyltin Cation	36643284	W	1.5E-03	0.88	3.3E-03	1.8E+01	2.3E-04	W	2.2E-01	0.54	4.8E-01	1.8E+01	1.9E-03
Trinitrophenylmethylnitramine	479458	Z	ND	0.00	ND	6.1E+02	9.1E-02	Z	ND	0.00	ND	6.1E+02	1.3E-01
Uranium 234 (c)	13966295	W	4.5E+02	1.00	5.3E+02	1.56E+06	5.0E+01	W	4.1E+02	1.00	5.3E+02	1.56E+06	7.0E+01
Uranium 235 (c)	15117961	X	5.2E+01	0.63	8.4E+01	2.06E+01	6.8E+01	X	3.3E+01	0.39	8.4E+01	2.06E+01	9.1E+01
Uranium 238 (c)	7440611	W	4.3E+02	1.00	5.4E+02	9.79E+02	5.0E+01	W	4.0E+02	1.00	5.4E+02	9.79E+02	7.0E+01
Vanadium and compounds	7440622	X	4.0E+01	1.00	8.2E+01	7.8E+01	1.1E+00	X	3.3E+01	1.00	8.2E+01	7.8E+01	1.2E+00
Vinylchloride	75014	Z	ND	0.00	ND	1.5E-01	1.1E-03	Z	ND	0.00	ND	1.5E-01	1.8E-03
Zinc	7440666	W	1.7E+02	1.00	6.6E+02	2.3E+04	6.0E-01	W	9.2E+02	1.00	1.0E+04	2.3E+04	5.3E+00

PRGs were calculated based on the equations in the U.S. EPA Region 9 PRG User's Guide (U.S. EPA, 2004b) and available toxicity data.

NA(1) Chemical was not analyzed for this medium.
NA(2) Chemical not classified because toxicity data are not available for this chemical to calculate a PRG.

(a) All units are as indicated, except for radionuclides. In soil, they are expressed in pCi/kg and in water they are expressed in pCi/L.
(b) For Pb-210, PRG is the risk-based level value is from Table 2.3 on Pg 2-10 of U.S. EPA (2000a).
(c) For all radionuclides, the soil PRG is the soil screening level and the water PRG is MCL, respectively, from U.S. EPA (2000a).
(d) For Pb, the Cal-Modified residential PRG of 150 mg/kg is used.

W: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is less than 1.
X: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is greater than 1.
Y: FOD for this chemical is zero and the ratio of its MDL to the available PRG is greater than 1.
Z: FOD for this chemical is zero and the ratio of its MDL to the available PRG is less than 1.

Table 6-4. COPCs in Wetland Soil

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
1,1,1-Trichloroethane	71556	Z	ND	0.00	ND	1.0E+03	2.2E-03	Z	ND	0.00	ND	1.0E+03	2.2E-03
1,1,2,2-Tetrachloroethane	79345	Z	ND	0.00	ND	3.9E-01	2.8E-03	Z	ND	0.00	ND	3.9E-01	2.8E-03
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	Z	ND	0.00	ND	1.1E+04	2.8E-03	Z	ND	0.00	ND	1.1E+04	2.8E-03
1,1,2-Trichloroethane	79005	Z	ND	0.00	ND	7.6E-01	2.6E-03	Z	ND	0.00	ND	7.6E-01	2.6E-03
1,1-Biphenyl	92524	W	9.1E-03	0.14	9.1E-03	2.9E+03	9.6E-02	W	9.1E-03	0.12	9.1E-03	2.9E+03	9.6E-02
1,1-Dichloroethane	75343	Z	ND	0.00	ND	2.6E+02	3.0E-03	Z	ND	0.00	ND	2.6E+02	3.0E-03
1,1-Dichloroethylene	75354	Z	ND	0.00	ND	6.3E+01	2.7E-03	Z	ND	0.00	ND	6.3E+01	2.7E-03
1,2,3-Trichlorobenzene	87616	Z	ND	0.00	ND	2.3E+02	3.4E-03	Z	ND	0.00	ND	2.3E+02	3.4E-03
1,2,4,5-Tetrachlorobenzene	95943	Z	ND	0.00	ND	1.8E+01	9.8E-02	Z	ND	0.00	ND	1.8E+01	9.8E-02
1,2,4-Trichlorobenzene	120821	Z	ND	0.00	ND	3.2E+01	2.9E-03	Z	ND	0.00	ND	3.2E+01	2.9E-03
1,2-Dibromo-3-chloropropane	96128	Z	ND	0.00	ND	3.5E-01	3.2E-03	Z	ND	0.00	ND	3.5E-01	3.2E-03
1,2-Dibromoethane	106934	Z	ND	0.00	ND	2.3E-02	3.0E-03	Z	ND	0.00	ND	2.3E-02	3.0E-03
1,2-Dichlorobenzene	95501	Z	ND	0.00	ND	6.0E+02	2.5E-03	Z	ND	0.00	ND	6.0E+02	2.5E-03
1,2-Dichloroethane	107062	Z	ND	0.00	ND	2.5E-01	2.5E-03	Z	ND	0.00	ND	2.5E-01	2.5E-03
1,2-Dichloroethylene (cis)	156592	Z	ND	0.00	ND	2.2E+01	3.1E-03	Z	ND	0.00	ND	2.2E+01	3.1E-03
1,2-Dichloroethylene (trans)	156605	Z	ND	0.00	ND	3.6E+01	2.8E-03	Z	ND	0.00	ND	3.6E+01	2.8E-03
1,2-Dichloropropane	78875	Z	ND	0.00	ND	3.4E-01	2.7E-03	Z	ND	0.00	ND	3.4E-01	2.7E-03
1,3,5-Trinitrobenzene	99354	NA (1)	NA (1)	NA (1)	NA (1)	1.8E+03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.8E+03	NA (1)
1,3-Dichlorobenzene	541731	Z	ND	0.00	ND	2.6E+02	2.7E-03	Z	ND	0.00	ND	2.6E+02	2.7E-03
1,3-Dichloropropene (cis)	10061015	Z	ND	0.00	ND	1.2E+00	2.9E-03	Z	ND	0.00	ND	1.2E+00	2.9E-03
1,3-Dichloropropene (trans)	10061026	Z	ND	0.00	ND	6.4E+00	2.3E-03	Z	ND	0.00	ND	6.4E+00	2.3E-03
1,3-Dinitrobenzene	99650	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+00	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+00	NA (1)
1,4-Dichlorobenzene	106467	Z	ND	0.00	ND	3.4E+00	3.1E-03	W	7.1E-03	0.02	7.3E-02	3.4E+00	3.1E-03
1,4-Dioxane	123911	NA (1)	NA (1)	NA (1)	NA (1)	4.4E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.4E+01	NA (1)
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)
2,4,5-Trichlorophenol	95954	Z	ND	0.00	ND	6.1E+03	6.0E-02	Z	ND	0.00	ND	6.1E+03	6.0E-02
2,4,6-Trichlorophenol	88062	Z	ND	0.00	ND	6.1E+00	3.6E-02	Z	ND	0.00	ND	6.1E+00	3.6E-02
2,4,6-Trinitrotoluene	118967	NA (1)	NA (1)	NA (1)	NA (1)	1.6E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.6E+01	NA (1)
2,4-Dichlorophenol	120832	Z	ND	0.00	ND	1.8E+02	3.6E-02	Z	ND	0.00	ND	1.8E+02	3.6E-02
2,4-Dimethylphenol	105679	Z	ND	0.00	ND	1.2E+03	1.1E-01	Z	ND	0.00	ND	1.2E+03	1.1E-01
2,4-Dinitrophenol	51285	Z	ND	0.00	ND	1.2E+02	7.2E-01	Z	ND	0.00	ND	1.2E+02	7.2E-01
2,4-Dinitrotoluene	121142	NA (1)	NA (1)	NA (1)	NA (1)	1.2E+02	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.2E+02	NA (1)
2,6-Dinitrotoluene	606202	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+01	NA (1)
2-Amino-4,6-dinitrotoluene	35572782	NA (1)	NA (1)	NA (1)	NA (1)	4.9E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.9E+01	NA (1)

Table 6-4. COPCs in Wetland Soil (page 2 of 6)

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
2-Chloronaphthalene	91587	Z	ND	0.00	ND	2.8E+03	7.2E-02	Z	ND	0.00	ND	2.8E+03	7.2E-02
2-Chlorophenol	95578	Z	ND	0.00	ND	3.5E+01	3.4E-02	Z	ND	0.00	ND	3.5E+01	3.4E-02
2-Hexanone	591786	Z	ND	0.00	ND	3.7E+03	2.3E-02	Z	ND	0.00	ND	3.7E+03	2.3E-02
1-Methylnaphthalene	90120	NA(1)	NA(1)	NA(1)	NA(1)	5.5E+03	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	5.5E+03	NA(1)
2-Methylnaphthalene	91576	W	1.4E-02	0.50	1.8E-02	3.1E+02	2.4E-02	W	1.0E-02	0.48	2.9E-02	3.1E+02	2.4E-02
2-Methylphenol	95487	Z	ND	0.00	ND	3.1E+03	6.8E-02	Z	ND	0.00	ND	3.1E+03	6.8E-02
2-Nitroaniline	88744	Z	ND	0.00	ND	1.8E+02	5.4E-02	Z	ND	0.00	ND	1.8E+02	5.4E-02
2-Nitrophenol	88755	Z	ND	0.00	ND	1.6E+02	5.2E-02	Z	ND	0.00	ND	1.6E+02	5.2E-02
3,3'-Dichlorobenzidine	91941	Z	ND	0.00	ND	1.1E+00	7.4E-02	Z	ND	0.00	ND	1.1E+00	7.4E-02
3-Nitroaniline	99092	Z	ND	0.00	ND	1.8E+01	5.2E-02	Z	ND	0.00	ND	1.8E+01	5.2E-02
4,6-Dinitro-*o*-cresol	534521	Z	ND	0.00	ND	6.1E+00	3.4E-02	Z	ND	0.00	ND	6.1E+00	3.4E-02
4-Amino-2,6-dinitrotoluene	19406510	NA (1)	NA (1)	NA (1)	NA (1)	4.9E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.9E+01	NA (1)
4-Bromophenylphenylether	101553	Z	ND	0.00	ND	3.2E-02	2.8E-02	Z	ND	0.00	ND	3.2E-02	2.8E-02
4-Chloro-3-methylphenol	59507	W	5.7E-03	0.02	7.4E-03	3.1E+02	4.2E-02	W	5.0E-03	0.02	7.4E-03	3.1E+02	4.2E-02
4-Chloroaniline	106478	W	1.4E-02	0.27	2.0E-02	2.4E+02	4.2E-02	W	7.5E-03	0.22	2.0E-02	2.4E+02	4.2E-02
4-Chlorophenylphenylether	7005723	Y	ND	0.00	ND	3.2E-02	4.0E-02	Y	ND	0.00	ND	3.2E-02	4.0E-02
4-Methylphenol	106445	Z	ND	0.00	ND	3.1E+02	5.8E-02	Z	ND	0.00	ND	3.1E+02	5.8E-02
4-Nitroaniline	100016	Z	ND	0.00	ND	2.3E+01	6.8E-02	Z	ND	0.00	ND	2.3E+01	6.8E-02
4-Nitrophenol	100027	Z	ND	0.00	ND	1.6E+02	6.0E-01	Z	ND	0.00	ND	1.6E+02	6.0E-01
Acenaphthene	83329	W	1.1E-02	0.48	2.5E-02	3.0E+03	2.0E-02	W	6.9E-03	0.42	2.5E-02	3.0E+03	2.0E-02
Acenaphthylene	208968	W	1.7E-02	0.64	3.3E-02	4.7E+03	2.8E-02	W	1.2E-02	0.62	3.3E-02	4.7E+03	2.8E-02
Acetone	67641	W	1.0E-02	0.07	2.3E-02	7.8E+03	3.8E-02	W	1.1E-02	0.08	4.3E-02	7.8E+03	3.8E-02
Acetophenone	98862	W	3.8E-02	0.16	1.4E-01	7.8E+03	2.4E-01	W	3.4E-02	0.18	1.4E-01	7.8E+03	2.4E-01
alpha-Chlordane	5103719	W	2.5E-03	0.73	6.1E-03	1.4E+00	4.0E-05	W	4.7E-02	0.72	2.6E-01	1.4E+00	1.4E-03
Aldrin	309002	Z	ND	0.00	ND	2.9E-02	4.0E-05	Z	ND	0.00	ND	2.9E-02	4.0E-05
Aluminum	7429905	W	2.7E+04	1.00	3.8E+04	7.4E+04	1.2E+01	W	2.5E+04	1.00	3.8E+04	7.4E+04	1.2E+01
Anthracene	120127	W	2.8E-02	0.77	4.6E-02	1.6E+04	2.8E-02	W	1.9E-02	0.75	4.6E-02	1.6E+04	2.8E-02
Antimony and compounds	7440360	W	1.1E+00	0.59	3.1E+00	3.1E+01	2.5E-02	W	9.1E-01	0.57	3.2E+00	3.1E+01	2.5E-02
Arsenic	7440382	X	8.5E+00	1.00	1.1E+01	4.3E-01	6.0E-02	X	1.2E+01	1.00	7.2E+01	4.3E-01	1.0E-01
Atrazine	1912249	Z	ND	0.00	ND	2.2E+00	4.4E-02	Z	ND	0.00	ND	2.2E+00	4.4E-02
Barium and compounds	7440393	W	7.9E+01	1.00	1.3E+02	5.3E+03	2.5E-01	W	7.4E+01	1.00	1.3E+02	5.3E+03	2.5E-01
Benz[a]anthracene	56553	W	7.7E-02	0.89	9.3E-02	6.7E-01	2.8E-02	W	5.5E-02	0.90	9.3E-02	6.7E-01	2.8E-02
Benzaldehyde	100527	W	4.1E-02	0.14	2.2E-01	2.0E+03	1.8E-01	W	3.4E-02	0.12	2.2E-01	2.0E+03	1.8E-01
Benzene	71432	Z	ND	0.00	ND	6.4E-01	3.0E-03	W	7.0E-04	0.02	1.1E-03	6.4E-01	3.0E-03

Table 6-4. COPCs in Wetland Soil (page 3 of 6)

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
Benzo(g,h,i)perylene	191242	W	1.4E-01	0.86	2.2E-01	1.8E+03	4.6E-02	W	1.0E-01	0.88	2.2E-01	1.8E+03	4.6E-02
Benzo[a]pyrene	50328	X	1.0E-01	0.93	1.4E-01	6.7E-02	3.2E-02	X	7.7E-02	0.92	1.4E-01	6.7E-02	3.2E-02
Benzo[b]fluoranthene	205992	W	1.4E-01	0.86	2.0E-01	6.7E-01	5.0E-02	W	9.5E-02	0.85	2.0E-01	6.7E-01	5.0E-02
Benzo[k]fluoranthene	207089	W	9.3E+01	0.80	1.2E-01	6.7E+00	5.0E-02	W	6.4E-02	0.78	1.2E-01	6.7E+00	5.0E-02
Benzoic Acid	65850	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+05	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+05	NA (1)
Beryllium and compounds	7440417	W	7.8E-01	1.00	1.1E+00	1.5E+02	1.0E-01	W	7.3E-01	1.00	1.1E+00	1.5E+02	1.0E-01
bis(2-chloroethoxy)methane	111911	Z	ND	0.00	ND	4.4E-01	2.6E-02	Z	ND	0.00	ND	4.4E-01	2.6E-02
bis(2-chloroethyl)ether	111444	Z	ND	0.00	ND	2.2E-01	4.8E-02	Z	ND	0.00	ND	2.2E-01	4.8E-02
bis(2-chloroisopropyl)ether	108601	Z	ND	0.00	ND	2.9E+00	2.4E-02	Z	ND	0.00	ND	2.9E+00	2.4E-02
bis(2-ethylhexyl)phthalate	117817	W	8.2E-01	0.48	2.3E+00	3.5E+01	3.7E-02	W	9.0E-01	0.52	2.9E+00	3.5E+01	4.3E-02
Bromochloromethane	74975	NA(2)	ND	0.00	ND	NA(2)	3.7E-03	NA(2)	ND	0.00	ND	NA(2)	3.7E-03
Bromodichloromethane	75274	Z	ND	0.00	ND	7.2E-01	2.0E-03	Z	ND	0.00	ND	7.2E-01	2.0E-03
Bromoform	75252	Z	ND	0.00	ND	6.2E+01	2.9E-03	Z	ND	0.00	ND	6.2E+01	2.9E-03
Bromomethane	74839	Z	ND	0.00	ND	2.0E+00	3.0E-03	Z	ND	0.00	ND	2.0E+00	3.0E-03
Butylbenzylphthalate	85687	W	4.9E-02	0.86	7.0E-02	1.2E+04	3.0E-02	W	5.5E-02	0.87	2.5E-01	1.2E+04	3.0E-02
Cadmium and compounds	7440439	W	1.7E+00	0.66	3.3E+00	3.9E+01	9.6E-01	W	1.9E+00	0.70	6.5E+00	3.9E+01	9.6E-01
Caprolactam	105602	W	3.1E-02	0.02	3.5E-02	3.1E+04	2.4E-01	W	2.8E-02	0.02	3.5E-02	3.1E+04	2.4E-01
Carbazole	86748	W	1.3E-02	0.36	3.0E-02	2.4E+01	2.6E-02	W	6.5E-03	0.33	3.0E-02	2.4E+01	2.6E-02
Carbondisulfide	75150	Z	ND	0.00	ND	2.3E+02	5.6E-03	Z	ND	0.00	ND	2.3E+02	5.6E-03
Carbontetrachloride	56235	Z	ND	0.00	ND	2.6E-01	2.3E-03	Z	ND	0.00	ND	2.6E-01	2.3E-03
Chlorobenzene	108907	W	8.3E-04	0.02	4.7E-03	7.9E+01	2.7E-03	W	1.1E-03	0.03	4.8E-03	7.9E+01	2.7E-03
Chloroethane	75003	Z	ND	0.00	ND	3.0E+00	3.0E-03	Z	ND	0.00	ND	3.0E+00	3.0E-03
Chloroform	67663	Z	ND	0.00	ND	2.2E-01	2.2E-03	Z	ND	0.00	ND	2.2E-01	2.2E-03
Chloromethane	74873	Z	ND	0.00	ND	3.4E+01	3.7E-03	Z	ND	0.00	ND	3.4E+01	3.7E-03
Chromium VI	18540299	W	2.0E-01	0.11	2.0E-01	3.0E+01	4.0E-01	W	1.9E-01	0.10	2.0E-01	3.0E+01	4.0E-01
Chrysene	218019	W	1.2E-01	0.95	1.4E-01	6.7E+01	2.8E-02	W	8.4E-02	0.95	1.4E-01	6.7E+01	2.8E-02
cis-nonachlor	5103731	W	1.2E-03	0.78	2.6E-03	1.4E+00	3.0E-05	W	4.0E-03	0.75	3.1E-02	1.4E+00	9.4E-04
Cobalt	7440484	W	1.6E+01	1.00	2.4E+01	8.9E+02	2.4E+00	W	1.5E+01	1.00	2.4E+01	8.9E+02	2.4E+00
Copper and compounds	7440508	W	1.2E+02	1.00	3.0E+02	3.1E+03	2.5E+00	W	7.9E+01	1.00	3.0E+02	3.1E+03	2.5E+00
Cumene	98828	Z	ND	0.00	ND	3.0E+02	2.6E-03	W	6.1E-04	0.02	1.5E-03	3.0E+02	2.6E-03
Cyclohexane	110827	W	1.4E-03	0.07	6.9E-03	1.0E+04	2.5E-03	W	1.2E-03	0.05	6.9E-03	1.0E+04	2.5E-03
DDD	72548	W	5.6E-03	0.89	2.0E-02	2.0E+00	3.8E-04	W	5.3E-03	0.92	2.0E-02	2.0E+00	1.7E-03
DDE	72559	W	2.1E-03	0.91	8.3E-03	1.4E+00	4.0E-05	W	2.1E-03	0.92	8.3E-03	1.4E+00	4.0E-05
DDT	50293	W	1.5E-03	0.75	7.0E-03	1.4E+00	2.0E-05	W	1.6E-03	0.75	8.3E-03	1.4E+00	1.5E-04

Table 6-4. COPCs in Wetland Soil (page 4 of 6)

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
Dibenz[ah]anthracene	53703	W	2.1E-02	0.48	3.2E-02	6.7E-02	4.4E-02	W	1.4E-02	0.47	3.2E-02	6.7E-02	4.4E-02
Dibenzofuran	132649	W	1.1E-02	0.41	1.7E-02	9.7E+01	2.6E-02	W	7.2E-03	0.35	1.7E-02	9.7E+01	2.6E-02
Dibromochloromethane	124481	Z	ND	0.00	ND	5.8E+00	2.3E-03	Z	ND	0.00	ND	5.8E+00	2.3E-03
Dibutylphthalate	84742	W	9.0E-03	0.36	1.5E-02	6.1E+03	5.2E-02	W	1.2E-02	0.43	6.9E-02	6.1E+03	5.2E-02
Dichlorodifluoromethane	75718	Z	ND	0.00	ND	4.1E+01	2.7E-03	Z	ND	0.00	ND	4.1E+01	2.7E-03
Dieldrin	60571	W	3.7E-03	0.64	1.1E-02	3.0E-02	3.0E-05	W	3.0E-03	0.64	1.1E-02	3.0E-02	3.0E-05
Diethylphthalate	84662	W	4.8E-03	0.02	4.8E-03	4.9E+04	7.0E-02	W	4.8E-03	0.03	4.8E-03	4.9E+04	7.0E-02
Diisopropylether	108203	Z	ND	0.00	ND	1.1E+08	1.3E-03	Z	ND	0.00	ND	1.1E+08	1.3E-03
Dimethylphthalate	131113	Z	ND	0.00	ND	6.1E+05	3.6E-02	Z	ND	0.00	ND	6.1E+05	3.6E-02
di-*n*-Octylphthalate	117840	Z	ND	0.00	ND	2.4E+03	2.4E-02	Z	ND	0.00	ND	2.4E+03	2.4E-02
Endosulfan I	959988	Z	ND	0.00	ND	1.2E+02	6.0E-05	Z	ND	0.00	ND	1.2E+02	6.0E-05
Endosulfan II	33213659	W	1.4E-03	0.64	1.9E-03	1.2E+02	6.0E-05	W	9.6E-04	0.67	1.9E-03	1.2E+02	6.0E-05
Endosulfan Sulfate	1031078	Z	ND	0.00	ND	3.7E+02	3.0E-05	Z	ND	0.00	ND	3.7E+02	3.0E-05
Endrin	72208	Z	ND	0.00	ND	1.8E+01	5.0E-05	Z	ND	0.00	ND	1.8E+01	5.0E-05
Endrin Aldehyde	7421934	Z	ND	0.00	ND	1.8E+01	6.0E-05	Z	ND	0.00	ND	1.8E+01	6.0E-05
Endrin Ketone	53494705	Z	ND	0.00	ND	1.8E+01	4.0E-05	Z	ND	0.00	ND	1.8E+01	4.0E-05
Ethylbenzene	100414	Z	ND	0.00	ND	1.1E+03	2.2E-03	Z	ND	0.00	ND	1.1E+03	2.2E-03
Fluoranthene	206440	W	1.6E-01	0.98	2.4E-01	2.4E+03	4.4E-02	W	1.1E-01	0.97	2.4E-01	2.4E+03	4.4E-02
Fluorene	86737	W	7.8E-03	0.41	2.7E-02	2.5E+03	3.4E-02	W	6.7E-03	0.37	2.7E-02	2.5E+03	3.4E-02
gamma-Chlordane	5103742	W	3.0E-03	0.67	6.6E-03	1.4E+00	2.0E-05	W	4.4E-02	0.66	2.4E-01	1.4E+00	8.5E-04
HCH (alpha)	319846	Z	ND	0.00	ND	7.7E-02	1.0E-04	Z	ND	0.00	ND	7.7E-02	1.0E-04
HCH (beta)	319857	W	4.2E-05	0.04	1.8E-04	2.7E-01	8.0E-05	W	3.9E-05	0.03	1.8E-04	2.7E-01	8.0E-05
HCH (delta)	319868	Z	ND	0.00	ND	2.7E-01	6.0E-05	Z	ND	0.00	ND	2.7E-01	6.0E-05
HCH (gamma) Lindane	58899	W	5.1E-05	0.09	2.5E-04	3.7E-01	4.0E-05	W	5.3E-05	0.08	2.9E-04	3.7E-01	4.0E-05
Heptachlor	76448	Z	ND	0.00	ND	1.1E-01	4.0E-05	Z	ND	0.00	ND	1.1E-01	4.0E-05
Heptachlorepoxide	1024573	W	2.3E-05	0.02	1.7E-04	5.3E-02	4.0E-05	W	2.1E-05	0.02	1.7E-04	5.3E-02	4.0E-05
Hexachlorobenzene	118741	Z	ND	0.00	ND	3.0E-01	4.2E-02	Z	ND	0.00	ND	3.0E-01	4.2E-02
Hexachlorobutadiene	87683	Z	ND	0.00	ND	6.2E+00	2.8E-02	Z	ND	0.00	ND	6.2E+00	2.8E-02
Hexachlorocyclopentadiene	77474	Z	ND	0.00	ND	3.6E+02	3.0E-01	Z	ND	0.00	ND	3.6E+02	3.0E-01
Hexachloroethane	67721	Z	ND	0.00	ND	3.5E+01	4.4E-02	Z	ND	0.00	ND	3.5E+01	4.4E-02
HMX	2691410	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)
Indeno[1,2,3-cd]pyrene	193395	W	1.4E-01	0.91	1.7E-01	6.7E-01	3.8E-02	W	9.5E-02	0.92	1.7E-01	6.7E-01	3.8E-02
Iron	7439896	X	4.2E+04	1.00	5.5E+04	2.3E+04	3.6E+00	X	3.8E+04	1.00	5.5E+04	2.3E+04	3.6E+00
Isophorone	78591	Z	ND	0.00	ND	5.1E+02	3.2E-02	Z	ND	0.00	ND	5.1E+02	3.2E-02
Lead (d)	7439921	X	1.1E+02	1.00	2.7E+02	1.5E+02	2.4E-01	X	8.5E+01	1.00	2.7E+02	1.5E+02	2.4E-01
Lead 210 (b),(c)	14255040	Y	ND	0.00	ND	4.6E+02	1.8E+03	Y	ND	0.00	ND	4.6E+02	1.8E+03

Table 6-4. COPCs in Wetland Soil (page 5 of 6)

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
m,p-xylene	7816600	Z	ND	0.00	ND	1.6E+05	5.6E-03	Z	ND	0.00	ND	1.6E+05	5.6E-03
Magnesium	7439954	NA(2)	12326.73	1.00	1.9E+04	NA(2)	2.5E+00	NA(2)	1.1E+04	1.00	1.9E+04	NA(2)	2.5E+00
Manganese and compounds	7439965	W	478.4263	1.00	6.9E+02	1.7E+03	4.0E-01	W	4.5E+02	1.00	7.7E+02	1.7E+03	4.0E-01
Mercury (elemental)	7439976	W	8.2E-01	1.00	8.3E-01	2.6E+00	6.0E-03	W	6.3E-01	1.00	1.0E+00	2.6E+00	6.0E-03
Methoxychlor	72435	W	4.3E-04	0.07	1.7E-03	3.1E+02	9.9E-04	W	4.1E-04	0.07	1.7E-03	3.1E+02	9.9E-04
Methylacetate	79209	Z	ND	0.00	ND	6.1E+03	2.8E-03	Z	ND	0.00	ND	6.1E+03	2.8E-03
Methylcyclohexane	108872	W	2.5E-03	0.11	1.4E-02	1.3E+03	2.7E-03	W	2.0E-03	0.08	1.4E-02	1.3E+03	2.7E-03
Methylenechloride	75092	W	3.2E-02	0.43	7.3E-02	7.7E+00	9.4E-03	W	1.8E-02	0.50	7.3E-02	7.7E+00	9.4E-03
Methylethylketone	78933	W	5.8E-02	0.02	4.2E-01	1.1E+04	4.5E-02	W	4.4E-02	0.02	4.2E-01	1.1E+04	4.5E-02
Methylisobutylketone	108101	Z	ND	0.00	ND	4.6E+03	2.1E-02	Z	ND	0.00	ND	4.6E+03	2.1E-02
Methyltertbutylether (MTBE)	1634044	W	1.1E-03	0.14	3.8E-03	3.1E+01	2.5E-03	W	9.7E-04	0.10	3.8E-03	3.1E+01	2.5E-03
m-Nitrotoluene (3-nitrotoluene)	99081	NA (1)	NA (1)	NA (1)	NA (1)	4.8E+02	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.8E+02	NA (1)
Molybdenum	7439987	Z	ND	0.00	ND	3.9E+02	2.5E+00	W	1.2E+00	0.02	3.6E+00	3.9E+02	2.5E+00
Naphthalene	91203	W	2.4E-02	0.75	3.0E-02	3.5E+01	2.6E-02	W	1.9E-02	0.68	4.5E-02	3.5E+01	2.6E-02
Nickel (soluble salts)	7440020	W	9.1E+01	1.00	1.2E+02	1.6E+03	7.0E+00	W	8.5E+01	1.00	1.2E+02	1.6E+03	7.1E+00
Nitrobenzene	98953	NA (1)	NA (1)	NA (1)	NA (1)	1.3E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.3E+01	NA (1)
n-Nitrosodimethylamine	62759	NA(1)	NA (1)	NA (1)	NA (1)	1.3E-02	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.3E-02	NA (1)
n-Nitrosodi-*n*-propylamine	621647	Z	ND	0.00	ND	6.9E-02	6.4E-02	Z	ND	0.00	ND	6.9E-02	6.4E-02
n-Nitrosodiphenylamine	86306	Z	ND	0.00	ND	9.9E+01	4.4E-02	Z	ND	0.00	ND	9.9E+01	4.4E-02
Nonachlor (trans)	39765805	W	1.8E-03	0.78	4.8E-03	1.4E+00	3.0E-05	W	1.8E-02	0.75	9.7E-02	1.4E+00	9.4E-04
o-Nitrotoluene (2-nitrotoluene)	88722	NA (1)	NA (1)	NA (1)	NA (1)	8.8E-01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	8.8E-01	NA (1)
o-xylene	95476	Z	ND	0.00	ND	1.6E+05	2.6E-03	Z	ND	0.00	ND	1.6E+05	2.6E-03
Pentachlorophenol	87865	Z	ND	0.00	ND	4.1E+00	1.7E-01	W	3.0E-02	0.02	2.0E-01	4.1E+00	1.7E-01
Phenanthrene	85018	W	5.2E-02	0.93	1.5E-01	2.3E+03	2.6E-02	W	6.2E-02	0.93	1.5E-01	2.3E+03	2.6E-02
Phenol	108952	W	9.8E-03	0.11	5.3E-02	1.8E+04	3.8E-02	W	8.0E-03	0.08	5.3E-02	1.8E+04	3.8E-02
p-Nitrotoluene (4-nitrotoluene)	99990	NA (1)	NA (1)	NA (1)	NA (1)	1.7E+01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.7E+01	NA (1)
Pyrene	129000	W	1.9E-01	1.00	2.2E-01	1.8E+03	2.6E-02	W	1.4E-01	1.00	2.2E-01	1.8E+03	2.6E-02
Radium 226 (c)	13982633	X	5.2E+02	1.00	5.2E+02	1.3E+01	1.1E+02	X	4.6E+02	1.00	5.2E+02	1.3E+01	1.1E+02
Radium 228 (c)	15262201	W	1.1E+03	0.50	1.1E+00	9.2E+01	1.3E+00	W	8.4E+02	0.38	1.1E+00	9.2E+01	1.8E+00
RDX (Cyclonite)	121824	NA(1)	NA (1)	NA (1)	NA (1)	4.4E+00	NA(1)	NA (1)	NA (1)	NA (1)	NA (1)	4.4E+00	NA (1)
Selenium	7782492	W	9.5E-01	0.84	1.3E+00	3.9E+02	1.0E-01	W	6.5E-01	0.87	1.3E+00	3.9E+02	2.0E-01
Silver and compounds	7440224	W	1.4E+00	1.00	1.5E+00	3.9E+02	5.0E-03	W	1.3E+00	1.00	5.5E+00	3.9E+02	5.0E-03
Sodium	7440235	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)	NA(1)	NA(1)	NA(1)	NA(1)	NA(2)	NA(1)
Styrene	100425	Z	ND	0.00	ND	2.6E+03	2.8E-03	Z	ND	0.00	ND	2.6E+03	2.8E-03

Table 6-4. COPCs in Wetland Soil (page 6 of 6)

Analyte	CAS #	Wetland Soil											
		0-1						0-TD					
		Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]	Screening Classification	95% UCL (mg/kg)[a]	Frequency of Detection	Maximum Detection (mg/kg)[a]	Residential Soil PRG (mg/kg)[a]	MDL (mg/kg)[a]
TEQ mamm	1746016	X	7.1E-06	1.00	7.1E-06	3.2E-06	NA(3)	X	6.3E-06	0.88	1.0E-05	3.2E-06	NA(3)
Tert-amyl-methyl-ether (TAME)	994058	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	3.1E+03	NA (1)
Tert-butyl-alcohol (TBA)	75650	NA(1)	NA (1)	NA (1)	NA (1)	7.0E+03	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	7.0E+03	NA (1)
Tert-butyl-ethyl-ether(TBE)	637923	NA(1)	NA (1)	NA (1)	NA (1)	7.8E+01	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	7.8E+01	NA (1)
Tetrachlorodibenzofuran	30402143	NA(2)	1.8E-05	0.75	2.1E-05	NA(2)	8.9E-08	NA(2)	6.2E-05	0.63	2.1E-05	NA(2)	1.4E-07
Tetrachloroethylene (PCE)	127184	Z	ND	0.00	ND	4.9E-01	1.2E-03	Z	ND	0.00	ND	4.9E-01	1.2E-03
Thallium and compounds	7440280	W	2.6E-01	0.91	2.7E-01	5.2E+00	2.5E-03	W	2.1E-01	0.92	5.4E-01	5.2E+00	4.0E-03
Toluene	108883	Z	ND	0.00	ND	3.4E+02	3.2E-03	Z	ND	0.00	ND	3.4E+02	3.2E-03
Total Chromium	7440473	W	1.1E+02	1.00	1.5E+02	1.2E+05	7.0E-01	W	1.0E+02	1.00	1.5E+02	1.2E+05	7.0E-01
Total PCB	1336363	X	2.6E-01	0.96	4.7E-01	2.2E-01	5.4E-04	X	2.0E-01	0.97	4.9E-01	2.2E-01	5.4E-04
Toxaphene	8001352	Z	ND	0.00	ND	4.4E-01	9.5E-03	Z	ND	0.00	ND	4.4E-01	9.5E-03
Trichloroethylene (TCE)	79016	Z	ND	0.00	ND	3.0E+00	1.1E-03	Z	ND	0.00	ND	3.0E+00	1.1E-03
Trichlorofluoromethane	75694	Z	ND	0.00	ND	1.9E+02	2.8E-03	Z	ND	0.00	ND	1.9E+02	2.8E-03
Tri-*n*-butyltin Cation	36643284	W	1.2E-03	0.29	1.2E-03	1.8E+01	2.4E-04	W	6.4E-04	0.31	1.2E-03	1.8E+01	2.6E-04
Trinitrophenylmethylnitramine	479458	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+02	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.1E+02	NA (1)
Uranium 234 (c)	13966295	W	6.5E+02	1.00	6.5E+02	1.56E+06	3.0E+01	W	6.1E+02	1.00	6.5E+02	1.56E+06	3.0E+01
Uranium 235 (c)	15117961	X	3.8E+01	0.75	3.8E+01	2.06E+01	2.5E+01	X	3.4E+01	0.75	4.1E+01	2.06E+01	3.8E+01
Uranium 238 (c)	7440611	W	5.8E+02	1.00	5.8E+02	9.79E+02	2.0E+01	W	5.9E+02	1.00	6.5E+02	9.79E+02	2.2E+01
Vanadium and compounds	7440622	X	7.6E+01	1.00	1.0E+02	7.8E+01	1.1E+00	X	7.0E+01	1.00	1.0E+02	7.8E+01	1.1E+00
Vinylchloride	75014	Z	ND	0.00	ND	1.5E-01	2.4E-03	Z	ND	0.00	ND	1.5E-01	2.4E-03
Zinc	7440666	W	2.0E+02	1.00	5.3E+02	2.3E+04	6.0E-01	W	2.4E+02	1.00	8.0E+02	2.3E+04	6.0E-01

PRGs were calculated based on the equations in the U.S. EPA Region 9 PRG User's Guide (U.S. EPA, 2004b) and available toxicity data.

NA(1) Chemical was not analyzed for this medium.
NA(2) Chemical not classified because toxicity data are not available for this chemical to calculate a PRG.

(a) All units are as indicated, except for radionuclides. In soil, they are expressed in pCi/kg and in water they are expressed in pCi/L.
(b) For Pb-210, PRG is the risk-based level value is from Table 2.3 on Pg 2-10 of U.S. EPA (2000a).
(c) For all radionuclides, the soil PRG is the soil screening level and the water PRG is MCL, respectively, from U.S. EPA (2000a).
(d) For Pb, the Cal-Modified residential PRG of 150 mg/kg is used.

W: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is less than 1.
X: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is greater than 1.
Y: FOD for this chemical is zero and the ratio of its MDL to the available PRG is greater than 1.
Z: FOD for this chemical is zero and the ratio of its MDL to the available PRG is less than 1.

Table 6-5. COPCs in Groundwater

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
1,1,1-Trichloroethane	71556	Z	ND	0.00	ND	3.2E+03	1.2E-01	Z	ND	0.00	ND	3.2E+03	1.2E-01
1,1,2,2-Tetrachloroethane	79345	Y	ND	0.00	ND	5.5E-02	3.0E-01	Y	ND	0.00	ND	5.5E-02	1.4E-01
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	Z	ND	0.00	ND	5.9E+04	1.4E-01	Z	ND	0.00	ND	5.9E+04	1.4E-01
1,1,2-Trichloroethane	79005	Y	ND	0.00	ND	2.0E-01	4.0E-01	Z	ND	0.00	ND	2.0E-01	1.0E-01
1,1-Biphenyl	92524	Z	7.1E-01	0.00	ND	3.0E+02	2.4E-01	Z	ND	0.00	ND	3.0E+02	8.8E-02
1,1-Dichloroethane	75343	W	1.4E-01	0.07	4.8E-01	8.1E+02	2.0E-01	Z	ND	0.00	ND	8.1E+02	9.1E-02
1,1-Dichloroethylene	75354	W	8.2E-02	0.04	2.2E-01	3.4E+02	4.0E-01	Z	ND	0.00	ND	3.4E+02	1.2E-01
1,2,3-Trichlorobenzene	87616	Z	ND	0.00	ND	1.1E+02	3.3E-01	Z	ND	0.00	ND	1.1E+02	3.3E-01
1,2,4,5-Tetrachlorobenzene	95943	Z	ND	0.00	ND	1.1E+01	3.6E-01	Z	ND	0.00	ND	1.1E+01	1.4E-01
1,2,4-Trichlorobenzene	120821	Z	ND	0.00	ND	7.2E+00	5.0E-01	Z	ND	0.00	ND	7.2E+00	2.2E-01
1,2-Dibromo-3-chloropropane	96128	Y	ND	0.00	ND	4.7E-02	1.0E+00	Y	ND	0.00	ND	4.7E-02	1.0E+00
1,2-Dibromoethane	106934	Y	ND	0.00	ND	5.5E-03	3.0E-01	Y	ND	0.00	ND	5.5E-03	1.0E-01
1,2-Dichlorobenzene	95501	W	7.4E-01	0.52	1.1E+00	3.7E+02	3.0E-01	W	3.0E-01	0.08	6.8E-01	3.7E+02	8.8E-02
1,2-Dichloroethane	107062	X	3.0E-01	0.07	8.4E-01	1.2E-01	3.0E-01	Y	ND	0.00	ND	1.2E-01	2.0E-01
1,2-Dichloroethylene (cis)	156592	W	2.9E+00	0.37	6.9E+00	6.1E+01	6.0E-01	Z	ND	0.00	ND	6.1E+01	1.2E-01
1,2-Dichloroethylene (trans)	156605	W	2.1E-01	0.04	7.0E-01	1.2E+02	7.0E-01	Z	ND	0.00	ND	1.2E+02	1.5E-01
1,2-Dichloropropane	78875	Y	ND	0.00	ND	1.6E-01	3.0E-01	Z	ND	0.00	ND	1.6E-01	1.3E-01
1,3,5-Trinitrobenzene	99354	Z	ND	0.00	ND	1.1E+03	4.3E-01	Z	ND	0.00	ND	1.1E+03	6.4E-01
1,3-Dichlorobenzene	541731	W	9.8E-01	0.52	2.0E+00	1.8E+02	3.0E-01	W	1.6E-01	0.15	2.7E-01	1.8E+02	1.1E-01
1,3-Dichloropropene (cis)	10061015	Z	ND	0.00	ND	1.2E-01	1.1E-01	Z	ND	0.00	ND	1.2E-01	8.5E-02
1,3-Dichloropropene (trans)	10061026	Z	ND	0.00	ND	6.6E-01	9.0E-02	Z	ND	0.00	ND	6.6E-01	8.7E-02
1,3-Dinitrobenzene	99650	Z	ND	0.00	ND	3.7E+00	3.0E-01	Z	ND	0.00	ND	3.7E+00	4.5E-01
1,4-Dichlorobenzene	106467	X	1.7E+01	0.78	2.0E+01	5.0E-01	2.0E-01	X	5.2E+00	0.15	5.9E+00	5.0E-01	9.8E-02
1,4-Dioxane	123911	X	1.6E+01	0.93	5.3E+01	6.0E+00	4.7E-01	X	1.2E+02	0.57	1.3E+02	6.0E+00	4.7E-01
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA(2)	1.11E+01	1.00	1.2E+01	NA (2)	9.9E-03	NA(2)	8.9E-01	1.00	9.0E-01	NA (2)	9.9E-03
2,4,5-Trichlorophenol	95954	Z	ND	0.00	ND	3.7E+03	2.0E+00	Z	ND	0.00	ND	3.7E+03	1.9E+00
2,4,6-Trichlorophenol	88062	Z	ND	0.00	ND	3.7E+00	2.0E+00	Z	ND	0.00	ND	3.7E+00	1.8E+00
2,4,6-Trinitrotoluene	118967	Z	ND	0.00	ND	2.2E+00	5.6E-01	Z	ND	0.00	ND	2.2E+00	8.4E-01
2,4-Dichlorophenol	120832	W	4.5E-01	0.08	4.5E-01	1.1E+02	1.8E+00	Z	ND	0.00	ND	1.1E+02	1.8E+00
2,4-Dimethylphenol	105679	W	1.1E+00	0.04	3.5E+00	7.3E+02	2.3E+00	Z	ND	0.00	ND	7.3E+02	1.5E+00
2,4-Dinitrophenol	51285	Z	ND	0.00	ND	7.3E+01	3.4E+00	Z	ND	0.00	ND	7.3E+01	1.4E+00
2,4-Dinitrotoluene	121142	W	6.0E-01	0.07	1.0E+00	7.3E+01	9.0E-01	Z	ND	0.00	ND	7.3E+01	9.1E-01
2,6-Dinitrotoluene	606202	Z	ND	0.00	ND	3.7E+01	9.1E-01	Z	ND	0.00	ND	3.7E+01	9.3E-01
2-Amino-4,6-dinitrotoluene	35572782	Z	ND	0.00	ND	6.2E+00	5.2E-01	Z	ND	0.00	ND	6.2E+00	7.7E-01

Table 6-5. COPCs in Groundwater (page 2 of 6)

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
2-Chloronaphthalene	91587	Z	ND	0.00	ND	4.9E+02	8.3E-01	Z	ND	0.00	ND	4.9E+02	6.8E-01
2-Chlorophenol	95578	W	1.1E+00	0.36	1.1E+00	3.0E+01	1.7E+00	W	1.8E-01	0.08	1.8E-01	3.0E+01	1.6E+00
2-Hexanone	591786	Z	ND	0.00	ND	2.2E+03	4.0E+00	Z	ND	0.00	ND	2.2E+03	4.0E+00
1-Methylnaphthalene	90120	W	1.0E+02	1.00	1.2E+02	2.6E+03	5.9E+00	W	9.9E+01	1.00	1.0E+02	2.6E+03	5.2E+00
2-Methylnaphthalene	91576	W	4.9E+01	0.60	1.1E+02	1.5E+02	2.0E+00	W	5.7E-02	0.46	7.1E-02	1.5E+02	1.3E+00
2-Methylphenol	95487	W	9.1E-01	0.12	9.6E-01	1.8E+03	2.2E+00	Z	ND	0.00	ND	1.8E+03	1.7E+00
2-Nitroaniline	88744	Z	ND	0.00	ND	1.1E+02	2.1E+00	Z	ND	0.00	ND	1.1E+02	1.4E+00
2-Nitrophenol	88755	Z	ND	0.00	ND	7.3E+01	2.0E+00	Z	ND	0.00	ND	7.3E+01	1.9E+00
3,3'-Dichlorobenzidine	91941	Y	ND	0.00	ND	1.5E-01	2.7E+00	Y	ND	0.00	ND	1.5E-01	1.1E+00
3-Nitroaniline	99092	Z	ND	0.00	ND	3.2E+00	1.5E+00	Z	ND	0.00	ND	3.2E+00	1.5E+00
4,6-Dinitro-*o*-cresol	534521	Z	ND	0.00	ND	7.3E+01	1.9E+00	Z	ND	0.00	ND	7.3E+01	1.9E+00
4-Amino-2,6-dinitrotoluene	19406510	Z	ND	0.00	ND	6.6E+00	5.9E-01	Z	ND	0.00	ND	6.6E+00	8.9E-01
4-Bromophenylphenylether	101553	Y	ND	0.00	ND	4.4E-03	9.2E-01	Y	ND	0.00	ND	4.4E-03	8.4E-01
4-Chloro-3-methylphenol	59507	Z	ND	0.00	ND	1.8E+02	2.0E+00	W	5.9E-02	0.08	7.8E-02	1.8E+02	1.7E+00
4-Chloroaniline	106478	Z	ND	0.00	ND	1.5E+02	3.0E+00	Z	ND	0.00	ND	1.5E+02	3.0E+00
4-Chlorophenylphenylether	7005723	Y	ND	0.00	ND	4.4E-03	7.8E-01	Y	ND	0.00	ND	4.4E-03	7.8E-01
4-Methylphenol	106445	W	8.8E+00	0.32	1.5E+01	1.8E+02	2.0E+00	W	4.2E-01	0.31	4.2E-01	1.8E+02	1.5E+00
4-Nitroaniline	100016	Z	ND	0.00	ND	3.2E+00	1.7E+00	Z	ND	0.00	ND	3.2E+00	1.7E+00
4-Nitrophenol	100027	Z	ND	0.00	ND	7.3E+01	3.4E+00	Z	ND	0.00	ND	7.3E+01	1.8E+00
Acenaphthene	83329	W	5.8E+01	0.64	9.8E+01	3.7E+02	1.1E+00	W	4.1E+00	0.15	4.8E+00	3.7E+02	9.5E-01
Acenaphthylene	208968	W	3.3E-01	0.48	1.0E+00	2.2E+03	3.0E-01	W	7.7E-02	0.31	9.8E-02	2.2E+03	2.6E-01
Acetone	67641	W	1.1E+01	0.67	1.2E+01	5.5E+03	4.1E+00	W	1.4E+01	0.23	1.6E+01	5.5E+03	4.1E+00
Acetophenone	98862	Z	ND	0.00	ND	3.7E+03	1.0E+00	Z	ND	0.00	ND	3.7E+03	3.8E-01
alpha-Chlordane	5103719	W	8.1E-03	0.08	1.2E-02	1.9E-01	8.0E-03	W	1.8E-02	0.08	2.0E-02	1.9E-01	1.0E-02
Aldrin	309002	X	1.8E-02	0.19	3.0E-02	3.9E-03	8.0E-03	Y	ND	0.00	ND	3.9E-03	1.0E-02
Aluminum	7429905	W	3.5E+03	1.00	6.3E+03	3.7E+04	5.0E+01	W	8.0E+02	0.92	1.7E+03	3.7E+04	5.0E+01
Anthracene	120127	W	1.9E+00	0.72	3.1E+00	1.8E+03	1.0E-02	W	1.9E-01	0.54	2.4E-01	1.8E+03	1.0E-02
Antimony and compounds	7440360	X	1.0E+01	0.65	2.1E+01	1.5E+01	1.2E-01	W	1.8E+00	0.46	1.8E+00	1.5E+01	1.0E-01
Arsenic	7440382	X	9.7E+00	1.00	3.9E+01	4.4E-02	7.9E-01	X	1.7E+01	1.00	3.2E+01	4.4E-02	7.9E-01
Atrazine	1912249	Y	ND	0.00	ND	3.0E-01	3.4E-01	Z	ND	0.00	ND	3.0E-01	1.3E-01
Barium and compounds	7440393	W	6.7E+02	1.00	1.3E+03	2.6E+03	6.9E+00	W	5.6E+02	1.00	8.5E+02	2.6E+03	6.9E+00
Benz[a]anthracene	56553	X	2.4E-01	0.44	4.1E-01	9.1E-02	1.0E-02	Z	ND	0.00	ND	9.1E-02	1.0E-02
Benzaldehyde	100527	W	1.3E+00	0.85	1.7E+00	6.1E+02	2.9E-01	W	1.2E+00	1.00	1.2E+00	6.1E+02	1.1E-01
Benzene	71432	X	1.2E+01	0.67	2.4E+01	3.5E-01	1.4E-01	X	2.8E+00	0.08	3.3E+00	3.5E-01	1.1E-01

Table 6-5. COPCs in Groundwater (page 3 of 6)

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
Benzo(g,h,i)perylene	191242	W	4.8E-02	0.20	1.6E-01	1.1E+03	2.0E-02	Z	ND	0.00	ND	1.1E+03	2.0E-02
Benzo[a]pyrene	50328	X	8.4E-02	0.24	1.3E-01	9.1E-03	1.0E-02	X	7.2E-03	0.08	1.1E-02	9.1E-03	1.0E-02
Benzo[b]fluoranthene	205992	X	1.0E-01	0.20	1.5E-01	9.1E-02	3.0E-02	W	4.0E-03	0.08	4.6E-03	9.1E-02	2.0E-02
Benzo[k]fluoranthene	207089	W	3.5E-02	0.08	1.1E-01	9.1E-01	1.0E-02	W	3.9E-03	0.08	5.3E-03	9.1E-01	1.0E-02
Benzoic Acid	65850	W	2.0E+01	0.42	2.0E+01	1.5E+05	5.4E-01	Z	ND	0.00	ND	1.5E+05	5.4E-01
Beryllium and compounds	7440417	W	1.4E-01	0.54	2.2E-01	7.3E+01	1.4E-01	W	4.6E-02	0.54	4.6E-02	7.3E+01	1.4E-01
bis(2-chloroethoxy)methane	111911	Y	ND	0.00	ND	6.0E-02	8.9E-01	Y	ND	0.00	ND	6.0E-02	9.0E-01
bis(2-chloroethyl)ether	111444	Y	ND	0.00	ND	1.0E-02	1.4E+00	Y	ND	0.00	ND	1.0E-02	7.9E-01
bis(2-chloroisopropyl)ether	108601	Z	ND	0.00	ND	2.9E+00	1.2E+00	Z	ND	0.00	ND	2.9E+00	7.3E-01
bis(2-ethylhexyl)phthalate	117817	X	2.5E+00	0.36	7.3E+00	4.7E+00	3.0E+00	W	3.8E+00	0.23	3.8E+00	4.7E+00	3.0E+00
Bromochloromethane	74975	NA(2)	ND	0.00	ND	NA (2)	3.0E-01	NA(2)	ND	0.00	ND	NA (2)	1.3E-01
Bromodichloromethane	75274	Y	ND	0.00	ND	1.8E-01	2.0E-01	Z	ND	0.00	ND	1.8E-01	1.0E-01
Bromoform	75252	Z	ND	0.00	ND	8.4E+00	3.0E-01	W	1.0E-01	0.08	1.0E-01	8.4E+00	2.8E-01
Bromomethane	74839	Z	ND	0.00	ND	8.7E+00	1.8E+00	Z	ND	0.00	ND	8.7E+00	7.0E-01
Butylbenzylphthalate	85687	W	3.3E-01	0.04	5.9E-01	7.3E+03	7.6E-01	W	1.3E-01	0.08	1.6E-01	7.3E+03	7.8E-01
Cadmium and compounds	7440439	W	3.0E+00	0.54	4.0E+00	1.8E+01	2.0E-01	W	1.5E+00	0.69	1.5E+00	1.8E+01	2.0E-01
Caprolactam	105602	W	4.3E+00	0.08	9.7E+00	1.8E+04	1.4E+00	Z	ND	0.00	ND	1.8E+04	5.2E-01
Carbazole	86748	X	1.0E+01	0.46	1.2E+01	3.3E+00	7.9E-02	Z	ND	0.00	ND	3.3E+00	3.0E-02
Carbondisulfide	75150	W	1.7E-01	0.04	4.0E-01	1.0E+03	8.0E-01	W	9.3E+00	0.08	1.1E+01	1.0E+03	3.0E-01
Carbontetrachloride	56235	Y	ND	0.00	ND	1.7E-01	3.0E-01	Z	ND	0.00	ND	1.7E-01	1.3E-01
Chlorobenzene	108907	X	9.1E+01	0.67	2.7E+02	1.1E+02	1.9E+00	W	2.8E+01	0.15	3.3E+01	1.1E+02	9.4E-02
Chloroethane	75003	X	2.0E+00	0.11	4.6E+00	3.8E+00	1.3E+00	W	1.5E+00	0.15	1.8E+00	3.8E+00	2.3E-01
Chloroform	67663	Y	ND	0.00	ND	1.6E-01	2.0E-01	Z	ND	0.00	ND	1.6E-01	9.6E-02
Chloromethane	74873	Z	ND	0.00	ND	1.6E+02	5.0E-01	Z	ND	0.00	ND	1.6E+02	2.0E-01
Chromium VI	18540299	W	2.1E+01	0.86	3.1E-02	1.1E+02	7.0E-03	W	1.4E+01	1.00	1.5E-02	1.1E+02	7.0E-03
Chrysene	218019	W	1.8E-01	0.52	2.8E-01	9.1E+00	2.0E-02	W	4.6E-03	0.08	4.6E-03	9.1E+00	1.0E-02
cis-nonachlor	5103731	W	2.8E-03	0.07	6.1E-03	1.9E-01	2.6E-03	Z	ND	0.00	ND	1.9E-01	2.7E-03
Cobalt	7440484	W	6.3E+00	0.58	8.3E+00	7.3E+02	4.0E+00	W	1.6E+00	0.62	2.8E+00	7.3E+02	2.0E+00
Copper and compounds	7440508	W	4.6E+01	1.00	7.3E+01	1.5E+03	7.0E+00	W	4.5E+00	1.00	6.3E+00	1.5E+03	2.8E-01
Cumene	98828	W	1.8E+00	0.63	1.8E+00	6.6E+02	3.0E-01	W	2.5E-01	0.08	5.6E-01	6.6E+02	6.8E-02
Cyclohexane	110827	W	4.3E-01	0.50	5.5E-01	1.0E+04	2.0E-01	W	3.3E-01	0.14	4.0E-01	1.0E+04	2.0E-01
DDD	72548	W	1.4E-02	0.31	6.0E-02	2.8E-01	2.0E-02	W	8.6E-03	0.15	2.5E-02	2.8E-01	2.0E-02
DDE	72559	W	5.8E-03	0.15	2.0E-02	2.0E-01	1.0E-02	W	7.4E-03	0.15	3.0E-02	2.0E-01	3.0E-02
DDT	50293	W	1.1E-02	0.08	5.0E-02	2.0E-01	5.0E-02	Z	1.6E-02	0.00	ND	2.0E-01	2.0E-02

Table 6-5. COPCs in Groundwater (page 4 of 6)

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
Dibenz[ah]anthracene	53703	Y	ND	0.00	ND	9.1E-03	1.7E-01	W	3.2E-03	0.08	3.4E-03	9.1E-03	5.0E-02
Dibenzofuran	132649	Z	3.0E+01	0.00	ND	1.2E+01	1.5E+00	Z	1.4E+00	0.00	ND	1.2E+01	1.4E+00
Dibromochloromethane	124481	Z	ND	0.00	ND	7.9E-01	4.0E-01	Z	ND	0.00	ND	7.9E-01	9.0E-02
Dibutylphthalate	84742	Z	ND	0.00	ND	3.7E+03	8.0E-01	Z	ND	0.00	ND	3.7E+03	7.7E-01
Dichlorodifluoromethane	75718	Z	ND	0.00	ND	3.9E+02	5.0E-01	Z	ND	0.00	ND	3.9E+02	1.7E-01
Dieldrin	60571	X	4.6E-02	0.12	1.0E-01	4.1E-03	2.0E-02	X	2.2E+00	0.23	2.6E+00	4.1E-03	2.0E-02
Diethylphthalate	84662	Z	ND	0.00	ND	2.9E+04	8.5E-01	W	3.7E-01	0.08	3.7E-01	2.9E+04	8.1E-01
Diisopropylether	108203	W	3.6E-01	0.19	1.3E+00	8.0E+02	2.5E-01	Z	ND	0.00	ND	8.0E+02	2.5E-01
Dimethylphthalate	131113	Z	ND	0.00	ND	3.7E+05	8.4E-01	Z	ND	0.00	ND	3.7E+05	8.2E-01
di-*n*-Octylphthalate	117840	Z	ND	0.00	ND	1.5E+03	6.2E-01	Z	ND	0.00	ND	1.5E+03	6.3E-01
Endosulfan I	959988	Z	ND	0.00	ND	7.3E+01	9.0E-03	Z	ND	0.00	ND	7.3E+01	2.0E-02
Endosulfan II	33213659	W	2.2E-02	0.15	3.0E-02	2.2E+02	2.0E-02	W	3.3E-03	0.08	3.3E-03	2.2E+02	3.0E-02
Endosulfan Sulfate	1031078	W	1.2E-02	0.04	2.0E-02	2.2E+02	2.0E-02	Z	ND	0.00	ND	2.2E+02	4.0E-02
Endrin	72208	W	3.2E-02	0.08	6.0E-02	1.1E+01	2.0E-02	Z	ND	0.00	ND	1.1E+01	4.0E-02
Endrin Aldehyde	7421934	W	1.7E-02	0.04	3.0E-02	1.1E+01	2.0E-02	Z	ND	0.00	ND	1.1E+01	4.0E-02
Endrin Ketone	53494705	W	2.3E-02	0.12	3.0E-02	1.1E+01	2.0E-02	Z	ND	0.00	ND	1.1E+01	3.0E-02
Ethylbenzene	100414	W	1.6E+00	0.37	2.7E+00	1.3E+03	2.0E-01	Z	ND	0.00	ND	1.3E+03	1.3E-01
Fluoranthene	206440	W	4.6E+00	0.72	7.6E+00	1.5E+03	3.0E-02	W	3.6E-02	0.38	6.2E-02	1.5E+03	3.0E-02
Fluorene	86737	W	2.8E+01	0.68	5.2E+01	2.4E+02	5.2E-01	W	2.5E-01	0.23	2.7E-01	2.4E+02	1.2E-01
gamma-Chlordane	5103742	W	1.7E-02	0.15	3.2E-02	1.9E-01	9.0E-03	W	3.5E-03	0.15	6.0E-03	1.9E-01	1.0E-02
HCH (alpha)	319846	X	1.9E-02	0.12	3.0E-02	1.1E-02	1.0E-02	Y	ND	0.00	ND	1.1E-02	2.0E-02
HCH (beta)	319857	X	1.1E-01	0.12	2.0E-01	3.7E-02	4.0E-02	W	6.0E+00	0.08	6.0E-03	3.7E-02	9.0E-02
HCH (delta)	319868	W	7.9E+00	0.08	1.0E-02	3.7E-02	9.0E-03	Z	ND	0.00	ND	3.7E-02	2.0E-02
HCH (gamma) Lindane	58899	W	1.1E-02	0.08	2.0E-02	5.1E-02	1.0E-02	W	7.3E-03	0.08	7.3E-03	5.1E-02	2.0E-02
Heptachlor	76448	X	2.8E-02	0.23	4.0E-02	1.5E-02	1.0E-02	Y	ND	0.00	ND	1.5E-02	2.0E-02
Heptachlorepoxide	1024573	X	1.2E-02	0.19	3.3E-02	7.3E-03	1.0E-02	Y	ND	0.00	ND	7.3E-03	2.0E-02
Hexachlorobenzene	118741	Y	ND	0.00	ND	4.1E-02	9.3E-01	Y	ND	0.00	ND	4.1E-02	7.3E-01
Hexachlorobutadiene	87683	Z	ND	0.00	ND	8.5E-01	7.6E-01	Z	ND	0.00	ND	8.5E-01	7.6E-01
Hexachlorocyclopentadiene	77474	Z	ND	0.00	ND	2.2E+02	7.5E-01	Z	ND	0.00	ND	2.2E+02	7.5E-01
Hexachloroethane	67721	Z	ND	0.00	ND	4.7E+00	7.8E-01	Z	ND	0.00	ND	4.7E+00	7.6E-01
HMX	2691410	Z	ND	0.00	ND	1.8E+03	5.2E-01	Z	ND	0.00	ND	1.8E+03	7.7E-01
Indeno[1,2,3-cd]pyrene	193395	X	3.1E-02	0.16	1.1E-01	9.1E-02	1.0E-02	Z	ND	0.00	ND	9.1E-02	1.0E-02
Iron	7439896	X	1.5E+04	1.00	2.5E+04	1.1E+04	2.5E+03	X	2.8E+04	1.00	2.8E+04	1.1E+04	7.0E+00
Isophorone	78591	W	5.0E-01	0.04	5.0E-01	7.0E+01	8.9E-01	W	4.8E-01	0.54	7.9E-01	7.0E+01	7.2E-01
Lead (d)	7439921	X	1.1E+02	1.00	2.0E+02	1.5E+01	1.8E-01	W	1.1E+00	1.00	2.1E+00	1.5E+01	4.8E-02
Lead 210 (b),(c)	14255040	X	4.4E+00	0.20	4.4E+00	5.4E-02	1.2E+01	Y	ND	0.00	ND	5.4E-02	3.1E+01

Table 6-5. COPCs in Groundwater (page 5 of 6)

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
m,p-xylene	7816600	W	4.8E+00	0.41	1.1E+01	7.3E+04	7.0E-01	W	2.6E-01	0.08	4.9E-01	7.3E+04	2.2E-01
Magnesium	7439954	NA(2)	2.9E+05	1.00	8.6E+05	NA (2)	7.6E+03	NA(2)	9.2E+05	1.00	1.4E+06	NA (2)	1.5E+03
Manganese and compounds	7439965	X	4.2E+03	1.00	8.8E+03	8.8E+02	2.9E+01	X	3.0E+03	1.00	4.7E+03	8.8E+02	1.5E+02
Mercury (elemental)	7439976	W	1.2E-01	0.19	3.0E-01	6.3E-01	1.0E-01	X	1.0E+00	0.15	1.2E+00	6.3E-01	1.0E-01
Methoxychlor	72435	W	3.0E-02	0.08	3.0E-02	1.8E+02	1.0E-01	W	3.3E-02	0.15	3.3E-02	1.8E+02	2.0E-01
Methylacetate	79209	Z	ND	0.00	ND	6.1E+03	2.0E+00	Z	ND	0.00	ND	6.1E+03	3.0E-01
Methylcyclohexane	108872	W	3.7E-01	0.57	5.0E-01	5.2E+03	1.9E-01	W	3.3E-01	0.14	4.0E-01	5.2E+03	1.9E-01
Methylenechloride	75092	Z	ND	0.00	ND	4.2E+00	9.0E-01	Z	ND	0.00	ND	4.2E+00	2.0E-01
Methylethylketone	78933	W	2.0E+00	0.15	4.5E+00	7.0E+03	2.0E+00	W	4.0E+00	0.08	4.4E+00	7.0E+03	1.9E+00
Methylisobutylketone	108101	Z	ND	0.00	ND	2.0E+03	2.7E+00	Z	ND	0.00	ND	2.0E+03	1.8E+00
Methyltertbutylether (MTBE)	1634044	Z	ND	0.00	ND	1.0E+01	6.0E-01	W	1.2E-01	0.08	2.4E-01	1.0E+01	7.4E-02
m-Nitrotoluene (3-nitrotoluene)	99081	Z	ND	0.00	ND	1.2E+02	3.8E-01	Z	ND	0.00	ND	1.2E+02	5.7E-01
Molybdenum	7439987	W	6.2E+00	0.46	6.2E+00	1.8E+02	8.0E+00	W	6.2E+00	0.85	1.2E+01	1.8E+02	3.0E+00
Naphthalene	91203	X	6.4E+01	0.68	1.4E+02	6.2E+00	6.4E-01	W	1.4E-01	0.46	3.1E-01	6.2E+00	2.9E-01
Nickel (soluble salts)	7440020	W	1.2E+01	1.00	4.3E+01	7.3E+02	3.0E+00	W	1.1E+01	1.00	1.8E+01	7.3E+02	1.3E-01
Nitrobenzene	98953	Z	ND	0.00	ND	3.4E+00	1.1E+00	Z	ND	0.00	ND	3.4E+00	8.0E-01
n-Nitrosodimethylamine	62759	Y	ND	0.00	ND	1.3E-03	9.4E-01	Y	ND	0.00	ND	1.3E-03	9.4E-01
n-Nitrosodi-*n*-propylamine	621647	Y	ND	0.00	ND	9.5E-03	1.3E+00	Y	ND	0.00	ND	9.5E-03	7.9E-01
n-Nitrosodiphenylamine	86306	W	2.7E+00	0.56	1.3E+01	1.4E+01	7.7E-01	W	6.5E-01	0.15	6.5E-01	1.4E+01	7.9E-01
Nonachlor (trans)	39765805	W	3.3E+00	0.07	8.0E-03	1.9E-01	1.6E-03	Z	ND	0.00	ND	1.9E-01	1.7E-03
o-Nitrotoluene (2-nitrotoluene)	88722	Y	ND	0.00	ND	4.8E-02	3.6E-01	Y	ND	0.00	ND	4.8E-02	5.4E-01
o-xylene	95476	W	3.4E+00	0.52	7.5E+00	7.3E+04	3.0E-01	W	2.0E-01	0.08	4.4E-01	7.3E+04	7.9E-02
Pentachlorophenol	87865	Y	ND	0.00	ND	5.5E-01	1.8E+00	Y	ND	0.00	ND	5.5E-01	1.9E+00
Phenanthrene	85018	W	2.8E+01	0.68	5.8E+01	1.1E+03	6.4E-01	W	3.1E-02	0.54	5.5E-02	1.1E+03	2.0E-02
Phenol	108952	W	6.6E+00	0.08	1.4E+01	1.1E+04	2.2E+00	Z	ND	0.00	ND	1.1E+04	1.5E+00
p-Nitrotoluene (4-nitrotoluene)	99990	X	1.6E+00	0.33	1.6E+00	6.5E-01	5.6E-01	Y	ND	0.00	ND	6.5E-01	8.4E-01
Pyrene	129000	W	1.1E+00	0.72	4.3E+00	1.1E+03	1.0E-02	W	3.6E-02	0.54	5.5E-02	1.1E+03	1.0E-02
Radium 226 (c)	13982633	W	6.7E-01	0.60	9.1E-01	5.0E+00	3.7E-01	W	5.3E-07	1.00	5.3E-01	5.0E+00	7.0E-02
Radium 228 (c)	15262201	W	1.3E+00	0.10	1.6E+00	5.0E+00	3.2E+00	W	4.3E-06	0.38	5.0E+00	5.0E+00	3.3E+00
RDX (Cyclonite)	121824	Z	ND	0.00	ND	6.0E-01	4.3E-01	Y	ND	0.00	ND	6.0E-01	6.4E-01
Selenium	7782492	W	1.7E+01	0.27	2.2E+01	1.8E+02	5.8E-01	W	4.2E+01	0.23	4.2E+01	1.8E+02	5.8E-01
Silver and compounds	7440224	W	4.7E-01	0.54	7.2E-01	1.8E+02	1.6E-01	W	8.0E-02	0.31	4.3E-02	1.8E+02	1.6E-01
Sodium	7440235	NA(2)	5.8E+06	1.00	7.5E+06	NA (2)	2.1E+04	NA(2)	8.0E+06	1.00	8.0E+06	NA (2)	8.2E+03
Styrene	100425	W	7.3E-02	0.04	1.7E-01	1.6E+03	2.0E-01	Z	ND	0.00	ND	1.6E+03	9.5E-02

Table 6-5. COPCs in Groundwater (page 6 of 6)

Analyte	CAS #	Groundwater Water											
		Landfill						Wetland					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]	Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
TEQ_mamm	1746016	W	6.1E+00	1.00	1.2E-05	4.4E-07	NA(3)	NA(1)	NA(1)	NA(1)	NA(1)	4.4E-07	NA(1)
Tert-amyl-methyl-ether (TAME)	994058	Z	ND	0.00	ND	1.5E+03	3.0E-01	Z	ND	0.00	ND	1.5E+03	1.0E-01
Tert-butyl-alcohol (TBA)	75650	W	2.3E+01	0.31	2.3E+01	3.3E+03	2.1E+01	W	4.4E+00	0.83	4.4E+00	3.3E+03	8.6E+00
Tert-butyl-ethyl-ether(TBE)	637923	Z	ND	0.00	ND	3.7E+01	2.0E-01	Z	ND	0.00	ND	3.7E+01	6.0E-02
Tetrachlorodibenzofuran	30402143	NA(1)	NA (1)	NA (1)	NA (1)	NA (2)	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	NA (2)	NA (1)
Tetrachloroethylene (PCE)	127184	Y	ND	0.00	ND	1.0E-01	5.0E-01	Y	ND	0.00	ND	1.0E-01	1.1E-01
Thallium and compounds	7440280	W	1.6E-01	0.38	2.4E-01	2.4E+00	1.7E-01	W	2.2E-01	0.62	2.2E-01	2.4E+00	1.7E-01
Toluene	108883	W	1.6E-01	0.63	1.3E+01	7.2E+02	3.0E-01	W	3.3E-01	0.08	7.2E-01	7.2E+02	1.0E-01
Total Chromium	7440473	W	1.9E+01	0.62	3.0E+01	5.5E+04	3.0E+00	W	1.1E+01	0.77	1.1E+01	5.5E+04	2.0E+00
Total PCB	11097691	X	1.0E+00	0.79	2.0E+00	3.3E-02	3.2E-03	X	3.1E+00	0.43	3.1E+00	3.3E-02	3.4E-03
Toxaphene	8001352	Y	ND	0.00	ND	6.0E-02	7.0E-01	Y	ND	0.00	ND	6.0E-02	7.0E-01
Trichloroethylene (TCE)	79016	W	1.1E-01	0.04	5.0E-01	1.4E+00	3.0E-01	Z	ND	0.00	ND	1.4E+00	1.2E-01
Trichlorofluoromethane	75694	W	1.7E+01	0.04	4.1E+01	1.3E+03	4.0E-01	Z	ND	0.00	ND	1.3E+03	1.4E-01
Tri-*n*-butyltin Cation	36643284	NA(1)	NA (1)	NA (1)	NA (1)	1.1E+01	NA (1)	NA(1)	NA (1)	NA (1)	NA (1)	1.1E+01	NA (1)
Trinitrophenylmethylnitramine	479458	Z	ND	0.00	ND	3.7E+02	4.2E-01	Z	ND	0.00	ND	3.7E+02	6.2E-01
Uranium 234 (c)	13966295	W	1.4E+00	0.60	1.4E+00	2.0E+01	7.0E-02	W	2.3E-07	0.50	2.3E-01	2.0E+01	7.4E-02
Uranium 235 (c)	15117961	Z	4.2E-08	0.00	ND	2.0E+01	8.4E-02	Z	ND	0.00	ND	2.0E+01	1.0E-01
Uranium 238 (c)	7440611	W	8.5E-07	0.80	5.8E-01	2.0E+01	4.0E-02	W	2.3E-07	0.50	2.3E-01	2.0E+01	8.0E-02
Vanadium and compounds	7440622	W	9.5E+00	0.54	2.3E+01	3.7E+01	6.0E+00	W	4.9E+00	0.54	9.5E+00	3.7E+01	6.0E+00
Vinylchloride	75014	X	2.7E+00	0.04	6.6E+00	4.0E-02	4.0E-01	Y	ND	0.00	ND	4.0E-02	2.2E-01
Zinc	7440666	W	7.4E+01	1.00	1.9E+02	1.1E+04	3.0E+00	W	2.0E+01	1.00	2.0E+01	1.1E+04	1.6E-01

PRGs were calculated based on the equations in the U.S. EPA Region 9 PRG User's Guide (U.S. EPA, 2004b) and available toxicity data.

NA(1) Chemical was not analyzed for this medium.
NA(2) Chemical not classified because toxicity data are not available for this chemical to calculate a PRG.
NA(3) Chemical analyzed but not detected; MDL not available for TEQ and Total PCB because these are calculated parameters.

(a) All units are as indicated, except for radionuclides. In soil, they are expressed in pCi/kg and in water they are expressed in pCi/L.
(b) For Pb-210, PRG is the risk-based level value is from Table 2.3 on Pg 2-10 of U.S. EPA (2000a).
(c) For all radionuclides, the soil PRG is the soil screening level and the water PRG is the MCL, respectively, from U.S. EPA (2000a).
(d) For Pb, the MCL (15 µg/L) was used instead of the tap water PRG.

W: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is less than 1.
X: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is greater than 1.
Y: FOD for this chemical is zero and the ratio of its MDL to the available PRG is greater than 1.
Z: FOD for this chemical is zero and the ratio of its MDL to the available PRG is less than 1.

Table 6-6. COPCs in Surface Water

Analyte	CAS #	Surface Water					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
1,1,1-Trichloroethane	71556	Z	ND	0.00	ND	3.2E+03	1.2E-01
1,1,2,2-Tetrachloroethane	79345	Y	ND	0.00	ND	5.5E-02	1.4E-01
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	Z	ND	0.00	ND	5.9E+04	1.4E-01
1,1,2-Trichloroethane	79005	Z	ND	0.00	ND	2.0E-01	1.4E-01
1,1-Biphenyl	92524	Z	ND	0.00	ND	3.0E+02	3.7E-01
1,1-Dichloroethane	75343	Z	ND	0.00	ND	8.1E+02	1.1E-01
1,1-Dichloroethylene	75354	Z	ND	0.00	ND	3.4E+02	1.3E-01
1,2,3-Trichlorobenzene	87616	Z	ND	0.00	ND	1.1E+02	3.3E-01
1,2,4,5-Tetrachlorobenzene	95943	Z	ND	0.00	ND	1.1E+01	5.7E-01
1,2,4-Trichlorobenzene	120821	Z	ND	0.00	ND	7.2E+00	2.2E-01
1,2-Dibromo-3-chloropropane	96128	Y	ND	0.00	ND	4.7E-02	1.0E+00
1,2-Dibromoethane	106934	Y	ND	0.00	ND	5.5E-03	9.9E-02
1,2-Dichlorobenzene	95501	Z	ND	0.00	ND	3.7E+02	1.2E-01
1,2-Dichloroethane	107062	Z	ND	0.00	ND	1.2E-01	1.2E-01
1,2-Dichloroethylene (cis)	156592	Z	ND	0.00	ND	6.1E+01	1.2E-01
1,2-Dichloroethylene (trans)	156605	Z	ND	0.00	ND	1.2E+02	1.5E-01
1,2-Dichloropropane	78875	Z	ND	0.00	ND	1.6E-01	1.4E-01
1,3,5-Trinitrobenzene	99354	NA(1)	NA(1)	NA(1)	NA(1)	1.1E+03	NA(1)
1,3-Dichlorobenzene	541731	Z	ND	0.00	ND	1.8E+02	1.1E-01
1,3-Dichloropropene (cis)	10061015	Z	ND	0.00	ND	1.2E-01	1.1E-01
1,3-Dichloropropene (trans)	10061026	Z	ND	0.00	ND	6.6E-01	9.0E-02
1,3-Dinitrobenzene	99650	NA(1)	NA(1)	NA(1)	NA(1)	3.7E+00	NA(1)
1,4-Dichlorobenzene	106467	X	9.6E-01	0.27	1.5E+00	5.0E-01	1.2E-01
1,4-Dioxane	123911	W	1.5E+00	0.67	2.6E+00	6.0E+00	1.0E+00
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA(1)	NA(1)	NA(1)	NA(1)	NA (2)	NA(1)
2,4,5-Trichlorophenol	95954	Z	ND	0.00	ND	3.7E+03	2.6E-01
2,4,6-Trichlorophenol	88062	Z	ND	0.00	ND	3.7E+00	3.7E-01
2,4,6-Trinitrotoluene	118967	NA(1)	NA(1)	NA(1)	NA(1)	2.2E+00	NA(1)
2,4-Dichlorophenol	120832	Z	ND	0.00	ND	1.1E+02	2.4E-01
2,4-Dimethylphenol	105679	Z	ND	0.00	ND	7.3E+02	3.2E+00
2,4-Dinitrophenol	51285	Z	ND	0.00	ND	7.3E+01	5.3E+00
2,4-Dinitrotoluene	121142	NA(1)	NA(1)	NA(1)	NA(1)	7.3E+01	NA(1)
2,6-Dinitrotoluene	606202	NA(1)	NA(1)	NA(1)	NA(1)	3.7E+01	NA(1)
2-Amino-4,6-dinitrotoluene	35572782	NA(1)	NA(1)	NA(1)	NA(1)	6.2E+00	NA(1)
2-Chloronaphthalene	91587	Z	ND	0.00	ND	4.9E+02	1.6E-01
2-Chlorophenol	95578	Z	ND	0.00	ND	3.0E+01	1.5E-01
2-Hexanone	591786	Z	ND	0.00	ND	2.2E+03	4.0E+00
1-Methylnaphthalene	90120	NA(1)	NA(1)	NA(1)	NA(1)	2.6E+03	NA(1)
2-Methylnaphthalene	91576	W	2.8E-02	0.27	4.0E-02	1.5E+02	1.1E-01
2-Methylphenol	95487	W	2.0E-01	0.14	2.8E-01	1.8E+03	6.0E-01
2-Nitroaniline	88744	Z	ND	0.00	ND	1.1E+02	1.5E-01
2-Nitrophenol	88755	Z	ND	0.00	ND	7.3E+01	1.4E-01
3,3'-Dichlorobenzidine	91941	Y	ND	0.00	ND	1.5E-01	4.3E+00
3-Nitroaniline	99092	Z	ND	0.00	ND	3.2E+00	2.3E+00
4,6-Dinitro-*o*-cresol	534521	Z	ND	0.00	ND	7.3E+01	1.3E-01
4-Amino-2,6-dinitrotoluene	19406510	NA(1)	NA(1)	NA(1)	NA(1)	6.6E+00	NA(1)
4-Bromophenylphenylether	101553	Y	ND	0.00	ND	4.4E-03	1.8E-01
4-Chloro-3-methylphenol	59507	Z	ND	0.00	ND	1.8E+02	2.9E-01
4-Chloroaniline	106478	Z	ND	0.00	ND	1.5E+02	1.8E-01
4-Chlorophenylphenylether	7005723	Y	ND	0.00	ND	4.4E-03	8.5E-02
4-Methylphenol	106445	W	5.7E-01	0.50	1.6E+00	1.8E+02	5.1E-01
4-Nitroaniline	100016	W	5.1E-01	0.09	5.5E-01	3.2E+00	1.7E+00
4-Nitrophenol	100027	Z	ND	0.00	ND	7.3E+01	5.4E+00
Acenaphthene	83329	W	1.0E+00	0.41	3.5E+00	3.7E+02	5.5E-02
Acenaphthylene	208968	W	4.0E-02	0.91	8.2E-02	2.2E+03	3.6E-03
Acetone	67641	W	4.4E+01	0.73	5.0E+01	5.5E+03	4.1E+00
Acetophenone	98862	W	2.7E-01	0.09	2.7E-01	3.7E+03	1.6E+00
alpha-Chlordane	5103719	Z	ND	0.00	ND	1.9E-01	7.9E-04
Aldrin	309002	Z	ND	0.00	ND	3.9E-03	8.3E-04

Table 6-6. COPCs in Surface Water (page 2 of 4)

Analyte	CAS #	Surface Water					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
Aluminum	7429905	W	3.4E+02	0.59	5.7E+02	3.7E+04	5.0E+01
Anthracene	120127	W	2.3E-01	0.82	2.7E-01	1.8E+03	3.4E-01
Antimony and compounds	7440360	W	6.9E-01	0.27	9.0E-01	1.5E+01	6.0E-01
Arsenic	7440382	X	1.7E+01	0.95	3.6E+01	4.4E-02	2.5E+00
Atrazine	1912249	Y	ND	0.00	ND	3.0E-01	5.3E-01
Barium and compounds	7440393	W	2.9E+02	1.00	4.7E+02	2.6E+03	3.0E+00
Benz[a]anthracene	56553	W	2.9E-03	0.23	7.4E-03	9.1E-02	4.2E-03
Benzaldehyde	100527	W	7.1E-01	0.32	1.3E+00	6.1E+02	4.6E-01
Benzene	71432	W	7.4E-02	0.05	1.5E-01	3.5E-01	1.4E-01
Benzo(g,h,i)perylene	191242	W	8.5E-02	0.14	1.6E-01	1.1E+03	3.7E-02
Benzo[a]pyrene	50328	X	8.0E-02	0.14	1.5E-01	9.1E-03	1.6E-02
Benzo[b]fluoranthene	205992	X	9.0E-02	0.18	1.5E-01	9.1E-02	2.0E-02
Benzo[k]fluoranthene	207089	W	6.1E-02	0.18	1.2E-01	9.1E-01	1.4E-02
Benzoic Acid	65850	NA (1)	NA (1)	NA (1)	NA (1)	1.5E+05	NA (1)
Beryllium and compounds	7440417	Z	ND	0.00	ND	7.3E+01	7.0E-01
bis(2-chloroethoxy)methane	111911	Y	ND	0.00	ND	6.0E-02	1.2E-01
bis(2-chloroethyl)ether	111444	Y	ND	0.00	ND	1.0E-02	1.5E-01
bis(2-chloroisopropyl)ether	108601	Z	ND	0.00	ND	2.9E+00	1.7E-01
bis(2-ethylhexyl)phthalate	117817	Z	ND	0.00	ND	4.7E+00	2.7E+00
Bromochloromethane	74975	NA(2)	ND	0.00	ND	NA (2)	1.7E-01
Bromodichloromethane	75274	Z	ND	0.00	ND	1.8E-01	1.1E-01
Bromoform	75252	Z	ND	0.00	ND	8.4E+00	2.8E-01
Bromomethane	74839	W	1.6E-01	0.18	3.2E-01	8.7E+00	2.2E-01
Butylbenzylphthalate	85687	Z	ND	0.00	ND	7.3E+03	2.6E-01
Cadmium and compounds	7440439	W	3.0E-01	0.36	3.0E-01	1.8E+01	7.0E-01
Caprolactam	105602	W	9.4E-01	0.09	2.1E+00	1.8E+04	2.2E+00
Carbazole	86748	W	2.1E-01	0.18	2.6E-01	3.3E+00	1.3E-01
Carbondisulfide	75150	W	3.6E-01	0.86	6.4E-01	1.0E+03	1.6E-01
Carbontetrachloride	56235	Z	NA	0.00	ND	1.7E-01	1.4E-01
Chlorobenzene	108907	W	4.9E+00	0.27	7.8E+00	1.1E+02	1.4E-01
Chloroethane	75003	Z	ND	0.00	ND	3.8E+00	2.3E-01
Chloroform	67663	Z	ND	0.00	ND	1.6E-01	1.4E-01
Chloromethane	74873	W	3.1E-01	0.23	8.0E-01	1.6E+02	1.4E-01
Chromium VI	18540299	W	1.6E+01	0.33	2.3E-02	1.1E+02	2.0E-02
Chrysene	218019	W	4.4E-03	0.36	7.3E-03	9.1E+00	3.7E-03
cis-nonachlor	5103731	Z	ND	0.00	ND	1.9E-01	1.4E-03
Cobalt	7440484	W	1.2E+00	0.05	2.7E+00	7.3E+02	2.0E+00
Copper and compounds	7440508	Z	ND	0.00	ND	1.5E+03	7.0E+00
Cumene	98828	W	5.7E-02	0.05	1.3E-01	6.6E+02	1.1E-01
Cyclohexane	110827	Z	ND	0.00	ND	1.0E+04	2.0E-01
DDD	72548	Z	ND	0.00	ND	2.8E-01	2.0E-03
DDE	72559	Z	ND	0.00	ND	2.0E-01	1.5E-03
DDT	50293	Z	ND	0.00	ND	2.0E-01	1.2E-03
Dibenz[ah]anthracene	53703	Y	ND	0.00	ND	9.1E-03	3.1E-01
Dibenzofuran	132649	W	2.0E+00	0.27	2.6E+00	1.2E+01	1.4E-01
Dibromochloromethane	124481	Z	ND	0.00	ND	7.9E-01	1.1E-01
Dibutylphthalate	84742	Z	ND	0.00	ND	3.7E+03	2.7E-01
Dichlorodifluoromethane	75718	Z	ND	0.00	ND	3.9E+02	1.7E-01
Dieldrin	60571	Z	ND	0.00	ND	4.1E-03	1.6E-03
Diethylphthalate	84662	Z	ND	0.00	ND	2.9E+04	2.6E-01
Diisopropylether	108203	Z	ND	0.00	ND	8.0E+02	2.5E-01
Dimethylphthalate	131113	Z	ND	0.00	ND	3.7E+05	1.3E-01
di-*n*-Octylphthalate	117840	Z	ND	0.00	ND	1.5E+03	3.2E-01
Endosulfan I	959988	Z	ND	0.00	ND	7.3E+01	5.8E-04
Endosulfan II	33213659	Z	ND	0.00	ND	2.2E+02	1.5E-03
Endosulfan Sulfate	1031078	Z	ND	0.00	ND	2.2E+02	1.4E-03

Table 6-6. COPCs in Surface Water (page 3 of 4)

Analyte	CAS #	Surface Water					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
Endrin	72208	Z	ND	0.00	ND	1.1E+01	1.6E-03
Endrin Aldehyde	7421934	Z	ND	0.00	ND	1.1E+01	1.8E-03
Endrin Ketone	53494705	Z	ND	0.00	ND	1.1E+01	1.9E-03
Ethylbenzene	100414	Z	ND	0.00	ND	1.3E+03	1.3E-01
Fluoranthene	206440	W	2.4E-01	0.59	2.9E-01	1.5E+03	4.8E-03
Fluorene	86737	W	9.8E-01	0.41	1.2E+00	2.4E+02	5.3E-03
gamma-Chlordane	5103742	W	3.0E-03	0.05	1.1E-02	1.9E-01	8.5E-04
HCH (alpha)	319846	Z	ND	0.00	ND	1.1E-02	7.2E-04
HCH (beta)	319857	Z	ND	0.00	ND	3.7E-02	1.0E-03
HCH (delta)	319868	Z	ND	0.00	ND	3.7E-02	8.2E-04
HCH (gamma) Lindane	58899	Z	ND	0.00	ND	5.1E-02	1.0E-03
Heptachlor	76448	Z	ND	0.00	ND	1.5E-02	1.2E-03
Heptachlorepoxide	1024573	Z	ND	0.00	ND	7.3E-03	3.3E-03
Hexachlorobenzene	118741	Y	ND	0.00	ND	4.1E-02	1.5E-01
Hexachlorobutadiene	87683	Z	ND	0.00	ND	8.5E-01	2.0E-01
Hexachlorocyclopentadiene	77474	Z	ND	0.00	ND	2.2E+02	4.1E-01
Hexachloroethane	67721	Z	ND	0.00	ND	4.7E+00	1.9E-01
HMX	2691410	NA(1)	NA(1)	NA(1)	NA(1)	1.8E+03	NA(1)
Indeno[1,2,3-cd]pyrene	193395	X	8.5E-02	0.23	1.6E-01	9.1E-02	2.1E-02
Iron	7439896	W	6.1E+02	1.00	1.4E+03	1.1E+04	1.0E+01
Isophorone	78591	W	2.9E+00	0.91	4.0E+00	7.0E+01	8.5E-02
Lead (d)	7439921	W	8.9E-01	0.73	2.3E+00	1.5E+01	9.0E-01
Lead 210 (b),(c)	14255040	X	5.6E+00	0.25	5.6E+00	5.4E-02	7.8E+01
m,p-xylene	7816600	Z	ND	0.00	ND	7.3E+04	2.2E-01
Magnesium	7439954	NA(2)	3.4E+06	1.00	6.3E+06	NA (2)	4.0E+02
Manganese and compounds	7439965	X	5.3E+03	1.00	7.3E+03	8.8E+02	4.0E-01
Mercury (elemental)	7439976	W	1.3E-01	0.18	2.8E-01	6.3E-01	1.2E-01
Methoxychlor	72435	Z	ND	0.00	ND	1.8E+02	2.1E-03
Methylacetate	79209	Z	ND	0.00	ND	6.1E+03	3.6E-01
Methylcyclohexane	108872	Z	ND	0.00	ND	5.2E+03	1.9E-01
Methylenechloride	75092	W	1.2E-01	0.05	2.6E-01	4.2E+00	2.0E-01
Methylethylketone	78933	W	2.6E+00	0.18	4.6E+00	7.0E+03	2.0E+00
Methylisobutylketone	108101	Z	ND	0.00	ND	2.0E+03	2.7E+00
Methyltertbutylether (MTBE)	1634044	Z	ND	0.00	ND	1.0E+01	2.0E-01
m-Nitrotoluene (3-nitrotoluene)	99081	NA(1)	NA(1)	NA(1)	NA(1)	1.2E+02	NA(1)
Molybdenum	7439987	W	3.3E+00	0.32	6.5E+00	1.8E+02	5.0E+00
Naphthalene	91203	W	2.7E-01	0.18	7.6E-01	6.2E+00	2.9E-01
Nickel (soluble salts)	7440020	W	3.6E+01	0.68	4.3E+01	7.3E+02	3.0E+00
Nitrobenzene	98953	NA(1)	NA(1)	NA(1)	NA(1)	3.4E+00	NA(1)
n-Nitrosodimethylamine	62759	NA(1)	NA (1)	NA (1)	NA (1)	1.3E-03	NA (1)
n-Nitrosodi-*n*-propylamine	621647	Y	ND	0.00	ND	9.5E-03	3.3E-01
n-Nitrosodiphenylamine	86306	Z	ND	0.00	ND	1.4E+01	2.8E-01
Nonachlor (trans)	39765805	Z	ND	0.00	ND	1.9E-01	8.5E-04
o-Nitrotoluene (2-nitrotoluene)	88722	NA(1)	NA(1)	NA(1)	NA(1)	4.8E-02	NA(1)
o-xylene	95476	Z	ND	0.00	ND	7.3E+04	1.1E-01
Pentachlorophenol	87865	Z	ND	0.00	ND	5.5E-01	2.9E-01
Phenanthrene	85018	W	1.2E-01	0.59	1.2E-01	1.1E+03	3.1E-01
Phenol	108952	Z	ND	0.00	ND	1.1E+04	2.0E-01
p-Nitrotoluene (4-nitrotoluene)	99990	NA(1)	NA(1)	NA(1)	NA(1)	6.5E-01	NA(1)
Pyrene	129000	W	9.7E-02	0.59	1.3E-01	1.1E+03	4.5E-03
Radium 226 (c)	13982633	W	3.5E-01	0.50	4.4E-01	5.0E+00	3.5E-01
Radium 228 (c)	15262201	W	1.1E+00	0.25	0.0E+00	5.0E+00	1.6E+00
RDX (Cyclonite)	121824	NA(1)	NA(1)	NA(1)	NA(1)	6.0E-01	NA(1)
Selenium	7782492	Z	ND	0.00	ND	1.8E+02	3.0E-01
Silver and compounds	7440224	Z	ND	0.00	ND	1.8E+02	2.0E-01
Sodium	7440235	NA(1)	NA(1)	NA(1)	NA(1)	NA (2)	NA(1)
Styrene	100425	W	1.9E-01	0.14	5.3E-01	1.6E+03	9.5E-02

Table 6-6. COPCs in Surface Water (page 4 of 4)

Analyte	CAS #	Surface Water					
		Screening Classification	95% UCL (µg/L)[a]	Frequency of Detection	Maximum Detection (µg/L)[a]	Residential PRG Tap Water (µg/L)[a]	MDL (µg/L)[a]
TEQ_mamm	1746016	NA(1)	NA(1)	NA(1)	NA(1)	4.4E-07	NA(1)
Tert-amyl-methyl-ether (TAME)	994058	NA(1)	NA (1)	NA (1)	NA (1)	1.5E+03	NA (1)
Tert-butyl-alcohol (TBA)	75650	NA(1)	NA (1)	NA (1)	NA (1)	3.3E+03	NA (1)
Tert-butyl-ethyl-ether(TBE)	637923	NA(1)	NA (1)	NA (1)	NA (1)	3.7E+01	NA (1)
Tetrachlorodibenzofuran	30402143	NA(1)	NA(1)	NA(1)	NA(1)	NA (2)	NA(1)
Tetrachloroethylene (PCE)	127184	Y	ND	0.00	ND	1.0E-01	1.3E-01
Thallium and compounds	7440280	Z	ND	0.00	ND	2.4E+00	3.0E-01
Toluene	108883	W	4.0E-01	0.86	1.5E+00	7.2E+02	1.1E-01
Total Chromium	7440473	W	1.6E+00	0.09	4.2E+00	5.5E+04	3.0E+00
Total PCB	11097691	X	1.3E-02	0.05	4.9E-02	3.3E-02	1.7E-03
Toxaphene	8001352	Y	ND	0.00	ND	6.0E-02	8.8E-02
Trichloroethylene (TCE)	79016	Z	ND	0.00	ND	1.4E+00	1.4E-01
Trichlorofluoromethane	75694	Z	ND	0.00	ND	1.3E+03	1.4E-01
Tri-*n*-butyltin Cation	36643284	NA(1)	NA(1)	NA(1)	NA(1)	1.1E+01	NA(1)
Trinitrophenylmethylnitramine	479458	NA(1)	NA(1)	NA(1)	NA(1)	3.7E+02	NA(1)
Uranium 234 (c)	13966295	W	7.3E-01	0.88	1.0E+00	2.0E+01	5.0E-01
Uranium 235 (c)	15117961	Z	ND	0.00	ND	2.0E+01	5.0E-01
Uranium 238 (c)	7440611	W	5.8E-01	0.88	8.2E-01	2.0E+01	3.7E-01
Vanadium and compounds	7440622	W	1.0E+01	0.27	2.0E+01	3.7E+01	6.0E+00
Vinylchloride	75014	Y	ND	0.00	ND	4.0E-02	2.2E-01
Zinc	7440666	W	1.2E+01	0.68	2.9E+01	1.1E+04	3.0E+00

PRGs were calculated based on the equations in the U.S. EPA Region 9 PRG User's Guide (U.S. EPA, 2004b) and available toxicity data.

NA(1) Chemical was not analyzed for this medium.
NA(2) Chemical not classified because toxicity data are not available for this chemical to calculate a PRG.

(a) All units are as indicated, except for radionuclides. In soil, they are expressed in pCi/kg and in water they are expressed in pCi/L.
(b) For Pb-210, PRG is the risk-based level value is from Table 2.3 on Pg 2-10 of U.S. EPA (2000a).
(c) For all radionuclides, the soil PRG is the soil screening level and the water PRG is MCL, respectively, from U.S. EPA (2000a).
(d) For Pb, the MCL (15 µg/L) was used instead of the tap water PRG.

W: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is less than 1.
X: FOD for this chemical is greater than zero and the ratio of its maximum detected concentration to the available PRG is greater than 1.
Y: FOD for this chemical is zero and the ratio of its MDL to the available PRG is greater than 1.
Z: FOD for this chemical is zero and the ratio of its MDL to the available PRG is less than 1.

Table 6-7. Screening Risk Assessment Results

Exposure Media	Screening Cancer Risk	Screening Non-Cancer Risk[g]
Landfill Surface Soil (0-1 ft bgs)[a]	2.77E-04	10.5
Landfill Surface and Subsurface Soil Combined (0-TD ft bgs)[b]	1.46E-03	547
Wetland Surface Soil (0-1 ft bgs)[c]	7.32E-05	7.58
Wetland Surface and Subsurface Soil Combined (0-TD ft bgs)[d]	2.19E-04	7.87
Landfill Groundwater[e]	1.42E-03	46.1
Wetland Groundwater[f]	1.5E-03	17.2

a. Based on 95 of 184 constituents analyzed in this media (86 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
b. Based on 123 of 184 constituents analyzed in this media (58 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
c. Based on 78 of 170 constituents analyzed in this media (89 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
d. Based on 83 of 170 constituents analyzed in this media (84 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
e. Based on 110 of 191 constituents analyzed in this media (77 constituents had a FOD equal to zero and 4 constituents did not have toxicity data and thus were not included in the calculation).
f. Based on 78 of 190 constituents analyzed in this media (108 constituents had a FOD equal to zero and 4 constituents did not have toxicity data and thus were not included in the calculation).
g. For the purpose of calculating screening-level risks, lead was treated as a non-carcinogenic compound.

Table 6-8. Constituents in Landfill Surface Soil with a Maximum Concentration-to-PRG Ratio>1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
Arsenic	3.16E+01	---
Benz[a]anthracene	5.40E+00	---
Benzo[a]pyrene	5.70E+01	---
Benzo[b]fluoranthene	7.66E+00	---
Dibenz[ah]anthracene	1.01E+01	---
Indeno[1,2,3-cd]pyrene	4.50E+00	---
Iron	---	1.93E+00
Lead	---	1.73E+00
Lead 210	1.72E+00	---
Radium 226	1.33E+02	---
TEQ_mamm	1.25E+01	---
Total PCB	1.03E+01	2.04E+00
Vanadium and compounds	---	1.04E+00
Sum of Ratios for Detected Constituents[a]	2.77E+02	1.05E+01
Sum of Ratios for Constituents with Individual Ratio>1[b]	2.74E+02	6.75E+00

a. This value represents the sum of ratios for 95 of 184 constituents analyzed in this media (86 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
b. This value represents the sum of the ratios for only those constituents that have an individual ratio>1.

Table 6-9. Constituents in Landfill Surface and Subsurface Soil Combined with a Maximum Concentration-to-PRG Ratio>1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
2-Methylnaphthalene	---	1.18E+00
alpha-Chlordane	1.38E+00	---
Aluminum	---	1.59E+00
Antimony and compounds	---	2.20E+01
Arsenic	1.78E+02	---
Benz[a]anthracene	1.50E+02	---
Benzo[a]pyrene	5.25E+02	---
Benzo[b]fluoranthene	8.26E+01	---
Benzo[k]fluoranthene	3.15E+00	---
bis(2-ethylhexyl)phthalate	5.18E+01	1.47E+00
Cadmium and compounds	9.02E-02	3.21E+00
Carbazole	1.52E+00	---
Chrysene	1.46E+00	---
Copper and compounds	---	1.57E+00
Dibenzofuran	---	2.37E+00
Dieldrin	1.59E+00	1.58E-02
gamma-Chlordane	1.41E+00	---
Indeno[1,2,3-cd]pyrene	1.65E+01	---
Iron	---	6.14E+00
Lead	---	4.13E+02
Lead 210	2.33E+00	---
Mercury (elemental)	---	3.95E+00
Naphthalene	---	4.26E+01
Radium 226	1.33E+02	---
TEQ_mamm	3.58E+01	---
Total PCB	2.16E+02	4.29E+01
Vanadium and compounds	---	1.04E+00
Sum of Ratios for Detected Constituents[a]	1.46E+03	5.47E+02
Sum of Ratios for Constituents with Individual Ratio>1[b]	1.40E+03	5.38E+02

a. This value represents the sum of ratios for 123 of 184 constituents analyzed in this media (58 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).

b. This value represents the sum of the ratios for only those constituents that have an individual ratio >1.

Table 6-10. Constituents in Wetland Surface Soil with a Maximum Concentration-to-PRG Ratio >1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
Arsenic	2.51E+01	---
Benzo[a]pyrene	2.10E+00	---
Iron	---	2.35E+00
Lead	---	1.80E+00
Radium 226	3.94E+01	---
TEQ_mamm	2.20E+00	---
Total PCB	1.92E+00	3.83E-01
Vanadium and compounds	---	1.29E+00
Sum of Ratios for Detected Constituents[a]	7.32E+01	7.58E+00
Sum of Ratios for Constituents with Individual Ratio>1[b]	7.07E+01	3.64E+00

a. This value represents the sum of ratios for 78 of 170 constituents analyzed in this media (89 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
b. This value represents the sum of the ratios for only those constituents that have an individual ratio >1.

Table 6-11. Constituents in Wetland Surface and Subsurface Soil Combined with a Maximum Concentration-to-PRG Ratio>1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
Arsenic	1.69E+02	---
Benzo[a]pyrene	2.10E+00	---
Iron	---	2.35E+00
Lead	---	1.80E+00
Radium 226	3.94E+01	---
TEQ_mamm	3.12E+00	---
Total PCB	2.02E+00	4.02E-01
Vanadium and compounds	---	1.29E+00
Sum of Ratios for Detected Constituents[a]	2.19E+02	7.87E+00
Sum of Ratios for Constituents with Individual Ratio>1[b]	2.16E+02	3.64E+00

a. This value represents the sum of ratios for 83 of 170 constituents analyzed in this media (84 constituents had a FOD equal to zero and 3 constituents did not have toxicity data and thus were not included in the calculation).
b. This value represents the sum of the ratios for only those constituents that have an individual ratio >1.

Table 6-12. Constituents in Landfill Groundwater with a Maximum Concentration-to-PRG Ratio>1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
1,2-Dichloroethane	6.91E+00	8.33E-02
1,4-Dichlorobenzene	4.04E+01	---
1,4-Dioxane	8.78E+00	---
Aldrin	7.68E+00	2.74E-02
Antimony and compounds	---	1.44E+00
Arsenic	8.77E+02	---
Benz[a]anthracene	4.51E+00	---
Benzene	6.87E+01	---
Benzo[a]pyrene	1.43E+01	---
Benzo[b]fluoranthene	1.65E+00	---
bis(2-ethylhexyl)phthalate	1.54E+00	1.00E-02
Carbazole	3.62E+00	---
Chlorobenzene	---	2.55E+00
Chloroethane	1.21E+00	5.36E-04
Dieldrin	2.41E+01	5.48E-02
HCH (alpha)	2.85E+00	1.64E-03
HCH (beta)	5.42E+00	2.74E-02
Heptachlor	2.71E+00	2.19E-03
Heptachlorepoxide	4.58E+00	7.04E-02
Indeno[1,2,3-cd]pyrene	1.22E+00	---
Iron	---	2.28E+00
Lead 210	8.15E+01	---
Manganese and compounds	---	1.00E+01
Naphthalene	---	2.26E+01
p-Nitrotoluene (4-nitrotoluene)	2.46E+00	2.63E-02
TEQ	2.71E+01	---
Total PCB	5.92E+01	2.69E+00
Vinyl chloride	1.65E+02	9.19E-02
Sum of Ratios for Detected Constituents[a]	1.42E+03	4.61E+01
Sum of Ratios for Constituents with Individual Ratio>1[b]	1.41E+03	4.16E+01

a. Based on 110 of 191 constituents analyzed in this media (77 constituents had a FOD equal to zero and 4 constituents did not have toxicity data and thus were not included in the calculation).

b. This value represents the sum of the ratios for only those constituents that have an individual ratio >1.

Table 6-13. Constituents in Wetland Groundwater with a Maximum Concentration-to-PRG Ratio>1

Chemical	Ratio of Max. Concentration-to-Cancer PRG	Ratio of Max. Concentration-to-Non-Cancer PRG
1,4-Dichlorobenzene	1.19E+01	---
1,4-Dioxane	2.15E+01	---
Arsenic	7.30E+02	---
Benzene	9.45E+00	---
Benzo[a]pyrene	1.21E+00	---
Dieldrin	6.27E+02	1.42E+00
Iron	---	2.56E+00
Manganese and compounds	---	5.35E+00
Mercury (elemental)	---	1.92E+00
Total PCB	9.28E+01	4.22E+00
Sum of Ratios for Detected Constituents[a]	1.50E+03	1.72E+01
Sum of Ratios for Constitutents with a Ratio>1 [b]	1.49E+03	1.55E+01

a. Based on 78 of 190 constituents analyzed in this media (108 constituents had a FOD equal to zero and 4 constituents did not have toxicity data and thus were not included in the calculation).

b. This value represents the sum of the ratios for only those constituents that have an individual ratio >1.

Table 6-14a. Comparison of Measured Concentrations of VOCs in Soil Gas to Residential Risk-Based Screening Levels for the Vapor Intrusion Pathway

Soil Gas Monitoring Point	VOCs Detected in Soil Gas Above Residential RBSL[a,c]	Residential Risk-Based Screening Concentration (ppbv)[b]	Ratio of Concentration to Screening Value (ppbv/ppbv)						
			Summer 2003	Fall 2003	Winter 2003	Spring 2004	Summer 2004	Winter 2004	Spring 2005
MG2-02-M	Benzene	1.09 E+02	3.46	2.76	2.75	4.50	3.96	4.22	2.20
MG2-02-D	Benzene	1.09 E+02	2.87	2.41	3.20	NA	4.79	4.13	NA
MG2-04-S	Naphthalene	6.63 E+02	--	1.33	--	--		6.88	--
MG2-04-M	Naphthalene	6.63 E+02	--	--	--	--	1.09	--	--
MG2-04-D	Naphthalene	6.63 E+02	--	--	2.71	--	2.86	--	--
MG2-05-S	Naphthalene	6.63 E+02	--	1.27	--	--		--	--

Although ethylene bromide was not detected in soil gas at the site, it had analytical reporting limits that exceeded the risk-based screening level for the vapor intrusion pathway.

-- indicates maximum concentration in soil gas was below risk-based screening concentration for this sampling event.

(a) Only chemicals detected above the residential RBSL concentration are listed. A full listing of RI soil-gas data can be found in Table 5-6.

(b) Calculation of risk-based concentrations in soil gas is shown on Table J-7a in Appendix J.

Table 6-14b. Comparison of Maximum Measured VOC Concentration in Groundwater to Residential Risk-Based Screening Levels for the Vapor Intrusion Pathway

VOCs above Residential RBSLs in Groundwater [a]	CAS #	Maximum Concentration Detected in Groundwater (µg/L)[b]		Maximum MDL (µg/L)		Residential Risk-Based Screening Concentration in Groundwater (µg/L) [c]	Ratio Maximum Concentration/MDL-to-Screening Concentration	
		Wetland	Landfill	Wetland	Landfill		Wetland	Landfill
Benzene	71432	3.3E+00	2.4E+01	1.1E-01	1.4E-01	1.5E+00	2.2E+00	1.6E+01
Carbon Tetrachloride	56235	ND	ND	1.3E-01	3.0E-01	1.6E-01	8.2E-01	1.9E+00
Hexachlorobutadiene	87683	ND	ND	7.6E-01	7.6E-01	2.9E-01	2.6E+00	2.6E+00
Vinyl Chloride	75014	ND	6.6E+00	2.2E-01	4.0E-01	2.7E-01	8.2E-01	2.5E+01

(a) Only chemicals with a maximum detected concentration or MDL above the residential screening concentrations are listed. A complete listing of VOC concentrations in groundwater compared to residential risk-based screening criteria are presented in Table J-8a in Appendix J.

(b) Groundwater data are for samples collected during RI sampling activities in October 2004 and March 2005; only chemicals with a maximum detected concentration or MDL above the residential RBSL are listed. Table J-8a lists the calculated ratios for all VOCs measured in groundwater.

(c) Calculation of risk-based screening level in groundwater is shown on J-7a in Appendix J.

Table 6-15a. Comparison of Measured Concentrations of VOCs in Soil Gas to Commercial Risk-Based Screening Levels for the Vapor Intrusion Pathway

Soil Gas Monitoring Point	VOCs Detected in Soil Gas Above Residential RBSL[a]	Commercial Risk-Based Screening Concentration (ppbv) [b]	Ratio of Concentration to Screening Value (ppbv/ppbv)						
			Summer 2003	Fall 2003	Winter 2003	Spring 2004	Summer 2004	Winter 2004	Spring 2005
MG2-02-M	Benzene	5.97E+02	0.63	0.50	0.50	0.82	0.72	0.77	0.40
MG2-02-D	Benzene	5.97E+02	0.52	0.44	0.59	NA	0.87	0.75	NA
MG2-04-S	Naphthalene	6.33E+03	0.02	0.14	0.06	--	0.03	0.71	NA
MG2-04-D	Naphthalene	6.33E+03	0.02	--	0.28	--	0.30	0.03	NA
MG2-05-S	Naphthalene	6.33E+03	0.06	0.13	0.01	--	0.06	--	NA
Sum of ratios for ALL carcinogenic VOCs analyzed in soil gas (including but not limited to those in this table)			1.18	1.08	1.20	0.96	1.76	1.62	0.49
Sum of ratios for ALL non-carcinogenic VOCs analyzed in soil gas (including but not limited to those in this table)			0.38	0.40	0.47	0.01	0.58	0.73	0.01

-- Indicates that the concentration of the contaminant were below detectable limits.
NA: Data not available for that sampling event
a. No chemicals had a maximum concentration or MDL above commercial RBSLs; therefore, chemicals detected above the residential screening concentrations are listed. A full listing of RI soil-gas data can be found in Table 5-6.
b. Calculation of commercial risk-based concentrations in soil gas is shown on Table J-7b in Appendix J.

Table 6-15b. Comparison of Maximum Measured VOC Concentration in Groundwater to Commercial Risk-Based Screening Levels for the Vapor Intrusion Pathway

VOCs in Groundwater Above Commercial RBSLs [a]	CAS #	Maximum Concentration Detected in Groundwater(µg/L) [b]		Maximum MDL (µg/L)		Commercial Risk Based Screening Concentration in Groundwater (µg/L) [c]	Ratio Maximum Concentration/MDL-to-Screening Concentration	
		Wetland	Landfill	Wetland	Landfill		Wetland	Landfill
Benzene	71432	3.3E+00	2.4E+01	1.1E-01	1.40E-01	1.74E+01	1.9E-01	1.4E+00
Vinyl chloride	75014	ND	6.6E+00	2.2E-01	4.00E-01	3.07E+00	7.2E-02	2.2E+00
Sum of ratios for ALL carcinogenic VOCs analyzed in groundwater (including but not limited to those in this table)							6.7E-01	4.3E+00
Sum of ratios for ALL non-carcinogenic VOCs analyzed in groundwater (including but not limited to those in this table)							1.8E-02	1.1E-01

ND: Non-detect

(a) Only chemicals with a maximum detected concentration or MDL above the commercial screening concentrations are listed. A complete listing of VOC concentrations in groundwater compared to commercial risk-based screening criteria are presented in Table J-8b in Appendix J.

(b) Results are for samples collected in the Dry Season Sampling Event (Fall 2004) and the Wet Season Sampling Event (Winter 2004/Spring 2005).

(c) Calculation of risk-based concentrations in groundwater is shown on Table J-7b in Appendix J

Table 6-16. Exposure Parameters for the Park Ranger/Tour Guide

	Units	Site Worker (Park Ranger/Tour Guide)		
		Value	Rationale	Reference
GENERAL (for all exposure pathways)				
C_soil (Concentration of Chemical in Soil)	mg/kg (pCi/Kg for radionuclides)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
BW (Body Weight)	kg	70	default adult reference weight in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
EF (Exposure Frequency)	days/year	250	assumes 5 days per week, 50 weeks per year	(a)
ED (Exposure Duration)	years	25	upper bound time for employment at a job	(a)
AT_n (Averaging time, non-carcinogens)	years	ED	by convention	by convention
AT_c (Averaging time, carcinogens)	years	70	conventional human lifespan (exposure average over lifespan)	by convention
SOIL INGESTION				
IR (Soil Ingestion Rate)	mg/day	100	default adult worker ingestion rate recommended in EPA Soil Screening Guidance (2001a)	(c)
IFSadj (Age Adjusted Ingestion Factor)	(mg year/kg day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	(a)
CF (Conversion Factor)	kg/mg	0.000001	---	---
SOIL DERMAL CONTACT				
EV (Event Frequency)	event/day	1	assumes one soil contact event per day	judgment
SA (Exposed Skin Surface Area)	cm^2	5800	Approx equal to SA recommended in EPA July 2004c Dermal Guidance (5700) for adult resident	(b)
AF (Soil Adherence Factor)	mg/cm^2-event	0.08	Approx equal to AF recommended in EPA July 2004c Dermal Guidance (0.07) for adult resident	(b)
SFSadj (Age Adjusted Dermal Factor)	(mg year/kg event)	NA	not used for adult exposure scenario	---
ABS_d (Dermal Absorption Fraction)	unitless	chemical-specific	---	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	---	(b)
CF (Conversion Factor)	kg/mg	0.000001	---	---
INHALATION OF DUST AND VOCs FROM SOIL				
ET (Exposure Time)	hrs/day	2	Assumes receptor is on site 2 hrs per day (Seal Beach Exposure Scenario assumed 1 hr/d)	(a)
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
VF (Soil-to-Air Volatalization Factor)	unitless	chemical-specific	calculated parameter using Eqtn 4-8 and site-specific Q/C term	(c)
Site-Specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-Specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
Site-Specific Q/C for VF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-3; based on area of 77 acres	(c)
Site-Specific Q/C for VF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-3; based on area of 33 acres	(c)
SOIL INGESTION (Radionuclides)				
IR (Soil Ingestion Rate)	mg/day	100	default adult worker ingestion rate recommended in EPA Soil Screening Guidance (2001a)	(c)
IFSadj (Age Adjusted Ingestion Factor)	(mg/day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	(a)
CF (Conversion Factor)	kg/mg	0.000001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

Table 6-16. Exposure Parameters for the Park Ranger/Tour Guide (page 2 of 2)

	Units	Site Worker (Park Ranger/Tour Guide)		
		Value	Rationale	Reference
SOIL EXTERNAL RADIATION (Radionuclides)				
ACF (Area Correction Facto)	unitless	1	conservatively assumes area is >1000 m^2 and depth of contaminated soil is >15 cm	(g)
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
GSF (Gamma Shielding Factor)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
CF (Conversion Factor)	kg/g	0.001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
INHALATION OF DUST FROM SOIL (Radionuclides)				
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
Site-specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.7	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
InR (Inhalation Rate)	m^3/day	1.66	total daily inhalation rate while receptor is on site (0.83 m^3/hr × 2 hrs)	(a)
InRadj (Age Adjusted Inhalation Factor)	m^3/day	NA	not used for adult exposure scenario	---
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
DFi (Dilution Factor for Indoor Air Inhalation)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

(a) California Department of Toxic Substances Control (DTSC). Fax from Marcia Liao (DTSC) to Claudia Domingo (U.S. Navy) describing exposure parameters used to calculate risks to wildlife refuge personnel at Naval Weapons Station (NWS) Seal Beach Sites. See also Bechtel (2001).
(b) U.S. EPA, 2004c. Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final (EPA/540/R-99/005).
(c) U.S. EPA, 2001e. Supplemental Guidance for Developing Soil Screeing Levels for Superfund Sites, Interim Guidance (OSWER 9355.4-24).
(d) MADEP, 2004. S-3 Standards, Construction/Excavation Potential.
(e) ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).
(f) MDEQ, 2003. Part 213 – Tier 1 Criteria for Utility Worker, Groundwater Direct Contact (GWDC).
(g) U.S. EPA, 2000a. Soil Screening Guidance for Radionuclides: User's Guide (EPA/540-R-00-007).
(h) U.S. EPA, 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC.
(i) U.S. EPA, 2004b. User's Guide and Technical Background Document for U.S. EPA Region 9 Preliminary Remediation Goal (PRG) Table (October 2004) (see: http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf).

Table 6-17. Exposure Parameters for the Ranger/Restoration Supervisor

	Units	Site Worker (ranger/restoration supervisor)		
		Value	Rationale	Reference
GENERAL (for all exposure pathways)				
C_soil (Concentration of Chemical in Soil)	mg/kg (pCi/Kg for radionuclides)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
C_w (Concentration of Chemical in Water)	(mg/cm^3)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
BW (Body Weight)	kg	70	default adult reference weight in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
EF (Exposure Frequency)	days/year	100	assumes 2 days per week (weekends), 50 weeks per year	(a)
ED (Exposure Duration)	years	3	site-specific - see reference for rationale (equal to estimated duration of restoration)	(a)
AT_n (Averaging time, non-carcinogens)	years	ED	by convention	by convention
AT_c (Averaging time, carcinogens)	years	70	conventional human lifespan (exposure average over lifespan)	by convention
SOIL INGESTION				
IR (Soil Ingestion Rate)	mg/day	200	site-specific - see reference for rationale	(a)
IFSadj (Age Adjusted Ingestion Factor)	(mg year/kg day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	(a)
CF (Conversion Factor)	kg/mg	0.000001	---	---
SOIL DERMAL CONTACT				
EV (Event Frequency)	event/day	1	assumes one soil contact event per day	judgment
SA (Exposed Skin Surface Area)	cm^2	5800	Approx equal to SA recommended in EPA July 2004c Dermal Guidance (5700) for adult resident	(b)
AF (Soil Adherence Factor)	mg/cm^2-event	0.08	Approx equal to AF recommended in EPA July 2004c Dermal Guidance (0.07) for adult resident	(b)
SFSadj (Age Adjusted Dermal Factor)	(mg year/kg event)	NA	not used for adult exposure scenario	---
ABS_d (Dermal Absorption Fraction)	unitless	chemical-specific	---	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	---	(b)
CF (Conversion Factor)	kg/mg	0.000001	---	---
INHALATION OF DUST AND VOCs FROM SOIL				
ET (Exposure Time)	hrs/day	4	Accounts for daily exposure time of 4 hours	(a)
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
VF (Soil-to-Air Volatalization Factor)	unitless	chemical-specific	calculated parameter using Eqtn 4-8 and site-specific Q/C term	(c)
Site-Specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-Specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
Site-Specific Q/C for VF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-3; based on area of 77 acres	(c)
Site-Specific Q/C for VF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-3; based on area of 33 acres	(c)

Table 6-17. Exposure Parameters for the Ranger/Restoration Supervisor (page 2 of 3)

	Units	Site Worker (ranger/restoration supervisor)		
		Value	Rationale	Reference
DERMAL CONTACT WITH GROUND WATER				
EV (Event Frequency)	event/day	1	Assume contact ground water once per day	(a)
t_event (Event Duration)	hour/event	0.58	Equivalent to adult shower duration	(b)
SA (Exposed Skin Surface Area)	cm^2	5800	~area of head, hands, forearms, and lower legs (avg of 50th % for maile and females > 18 yrs)	(a)
K_p (Dermal Permeability Coefficient for Compound in Water)	cm/hr	chemical-specific	chemical-specific; calculated using Eqtn 3.8 (for organic chemicals); Kp for inorganics is look up	(b)
FA (Fraction Absorbed Water)	dimensionless	chemical-specific	chemical-specific - look up value	(b)
τ(Tau)_event (Lag time per Event)	hour/event	chemical-specific	chemical-specific; calculated using Eqtn A.1 for organic chemicals	(b)
t* (Time to Reach Steady State)	hrs	chemical-specific	chemical-specific; calculated using Eqtn A.5 and A.6 for organic chemicals	(b)
B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	dimensionless	chemical-specific	chemical-specific; calculated using Eqtn A.1 for organic chemicals	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	chemical-specific - look up value	(b)
DERMAL CONTACT WITH SURFACE WATER				
EV (Event Frequency)	event/day	1	Assume contact surface water once per day	(a)
t_event (Event Duration)	hour/event	0.58	Equivalent to recommended adult shower duration for RME scenario	(b)
SA (Exposed Skin Surface Area)	cm^2	5800	~area of head, hands, forearms, and lower legs (avg of 50th % for maile and females > 18 yrs)	(a)
K_p (Dermal Permeability Coefficient for Compound in Water)	cm/hr	chemical-specific	chemical-specific; calculated using Eqtn 3.8 (for organic chemicals); Kp for inorganics is look up	(b)
FA (Fraction Absorbed Water)	dimensionless	chemical-specific	chemical-specific - look up value	(b)
τ(Tau)_event (Lag time per Event)	hour/event	chemical-specific	chemical-specific; calculated using Eqtn A.4 for organic chemicals	(b)
t* (Time to Reach Steady State)	hrs	chemical-specific	chemical-specific; calculated using Eqtn A.5 and A.6 for organic chemicals	(b)
B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	dimensionless	chemical-specific	chemical-specific; calculated using Eqtn A.1 for organic chemicals	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	chemical-specific - look up value	(b)
SOIL INGESTION (Radionuclides)				
IR (Soil Ingestion Rate)	mg/day	200	see reference for rationale	(a)
IFSadj (Age Adjusted Ingestion Factor)	(mg/day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	(a)
CF (Conversion Factor)	kg/mg	0.000001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
SOIL EXTERNAL RADIATION (Radionuclides)				
ACF (Area Correction Facto)	unitless	1	conservatively assumes area is >1000 m^2 and depth of contaminated soil is >15 cm	(g)
ETo (Exposure Time fraction, Outdoors)	unitless	0.167	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
GSF (Gamma Shielding Factor)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
CF (Conversion Factor)	kg/g	0.001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

Table 6-17. Exposure Parameters for the Ranger/Restoration Supervisor (page 3 of 3)

	Units	Site Worker (ranger/restoration supervisor)		
		Value	Rationale	Reference
INHALATION OF DUST FROM SOIL (Radionuclides)				
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
Site-specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.7	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
InR (Inhalation Rate)	m^3/day	1.66	total daily inhalation rate while receptor is on site (0.83 m^3/hr × 2 hrs)	(a)
InRadj (Age Adjusted Inhalation Factor)	m^3/day	NA	not used for adult exposure scenario	---
ETo (Exposure Time fraction, Outdoors)	unitless	0.167	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
DFi (Dilution Factor for Indoor Air Inhalation)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

(a) California Department of Toxic Substances Control (DTSC). Fax from Marcia Liao (DTSC) to Claudia Domingo (U.S. Navy) describing exposure parameters used to calculate risks to wildlife refuge personnel at Naval Weapons Station (NWS) Seal Beach Sites. See also Bechtel (2001).

(b) U.S. EPA, 2004c. Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final (EPA/540/R-99/005).

(c) U.S. EPA, 2001e. Supplemental Guidance for Developing Soil Screeing Levels for Superfund Sites, Interim Guidance (OSWER 9355.4-24).

(d) MADEP, 2004. S-3 Standards, Construction/Excavation Potential.

(e) ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).

(f) MDEQ, 2003. Part 213 – Tier 1 Criteria for Utility Worker, Groundwater Direct Contact (GWDC).

(g) U.S. EPA, 2000a. Soil Screening Guidance for Radionuclides: User's Guide (EPA/540-R-00-007).

(h) U.S. EPA, 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC.

(i) U.S. EPA, 2004b. User's Guide and Technical Background Document for U.S. EPA Region 9 Preliminary Remediation Goal (PRG) Table (October 2004) (see: http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf).

Table 6-18. Exposure Parameters for the Adult Site Visitor

	Units	Site Visitor (Adult)		
		Value	Rationale	Reference
GENERAL (for all exposure pathways)				
C_soil (Concentration of Chemical in Soil)	mg/kg (pCi/Kg for radionuclides)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
BW (Body Weight)	kg	70	default adult reference weight in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
EF (Exposure Frequency)	days/year	52	assumes receptor visits site 1 day per week, 52 weeks per year	Judgment
ED (Exposure Duration)	years	24	number of years spent on site as an adult (total exposure duration is 30 yrs)	
AT_n (Averaging time, non-carcinogens)	years	ED	by convention	by convention
AT_c (Averaging time, carcinogens)	years	70	conventional human lifespan (exposure average over lifespan)	by convention
SOIL INGESTION				
IR (Soil Ingestion Rate)	mg/day	100	default adult resident ingestion rate in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
IFSadj (Age Adjusted Ingestion Factor)	(mg year/kg day)	114.29	average ingestion contact rate based on child (0-6 yrs) and adult (7-31 yrs) exposure	(c)
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
SOIL DERMAL CONTACT				
EV (Event Frequency)	event/day	1	assumes one soil contact event per day	judgment
SA (Exposed Skin Surface Area)	cm^2	5700	Area of head, hands, forearms, and lower legs (avg of 50th % for male and females > 18 yrs)	(b)
AF (Soil Adherence Factor)	mg/cm^2-event	0.07	Equal to AF recommended in EPA 2004c Dermal Guidance (0.07) for adult resident	(b)
SFSadj (Age Adjusted Dermal Factor)	(mg year/kg event)	360.8	average skin contact rate for child (0-6 yrs) and adult (7-31 yrs) exposure	(c)
ABS_d (Dermal Absorption Fraction)	unitless	chemical-specific	---	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	---	(b)
CF (Conversion Factor)	kg/mg	0.000001	---	---
INHALATION OF DUST AND VOCs FROM SOIL				
ET (Exposure Time)	hrs/day	2	Accounts for daily exposure time of 2 hours	judgment
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
VF (Soil-to-Air Volatalization Factor)	unitless	chemical-specific	calculated parameter using Eqtn 4-8 and site-specific Q/C term	(c)
Site-Specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-Specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
Site-Specific Q/C for VF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-3; based on area of 77 acres	(c)
Site-Specific Q/C for VF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-3; based on area of 33 acres	(c)

Table 6-18. Exposure Parameters for the Adult Site Visitor (page 2 of 2)

	Units	Site Visitor (Adult)		
		Value	Rationale	Reference
SOIL INGESTION (Radionuclides)				
IR (Soil Ingestion Rate)	mg/day	100	default adult resident ingestion rate in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
IFSadj (Age Adjusted Ingestion Factor)	(mg/day)	120.00	average ingestion contact rate based on child (0-6 yrs) and adult (7-31 yrs) exposure	(c)
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
SOIL EXTERNAL RADIATION (Radionuclides)				
ACF (Area Correction Facto)	unitless	1	conservatively assumes area is >1000 m^2 and depth of contaminated soil is >15 cm	(g)
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
GSF (Gamma Shielding Factor)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
CF (Conversion Factor)	kg/g	0.001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
INHALATION OF DUST FROM SOIL (Radionuclides)				
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
Site-specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.7	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
InR (Inhalation Rate)	m^3/day	1.66	total daily inhalation rate while receptor is on site (20 m^3/d / 24 hrs/d) * 2 hrs = 1.66 m^3/d	(i)
InRadj (Age Adjusted Inhalation Factor)	m^3/day	1.49	average inhalation contact rate for child (0-6 yrs) and adult (7-31 yrs) exposure	(c)
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
DFi (Dilution Factor for Indoor Air Inhalation)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

(a) California Department of Toxic Substances Control (DTSC). Fax from Marcia Liao (DTSC) to Claudia Domingo (U.S. Navy) describing exposure parameters used to calculate risks to wildlife refuge personnel at Naval Weapons Station (NWS) Seal Beach Sites. See also Bechtel (2001).
(b) U.S. EPA, 2004c. Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final (EPA/540/R-99/005).
(c) U.S. EPA, 2001e. Supplemental Guidance for Developing Soil Screeing Levels for Superfund Sites, Interim Guidance (OSWER 9355.4-24).
(d) MADEP, 2004. S-3 Standards, Construction/Excavation Potential.
(e) ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).
(f) MDEQ, 2003. Part 213 – Tier 1 Criteria for Utility Worker, Groundwater Direct Contact (GWDC).
(g) U.S. EPA, 2000a. Soil Screening Guidance for Radionuclides: User's Guide (EPA/540-R-00-007).
(h) U.S. EPA, 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC.
(i) U.S. EPA, 2004b. User's Guide and Technical Background Document for U.S. EPA Region 9 Preliminary Remediation Goal (PRG) Table (October 2004) (see: http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf).

Table 6-19. Exposure Parameters for the Child Site Visitor

	Units	Site Visitor (Child)		
		Value	Rationale	Reference
GENERAL (for all exposure pathways)				
C_soil (Concentration of Chemical in Soil)	mg/kg (pCi/Kg for radionuclides)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
BW (Body Weight)	kg	15	default child reference weight in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
EF (Exposure Frequency)	days/year	52	assumes receptor visits site 1 day per week, 52 weeks per year	judgment
ED (Exposure Duration)	years	6	number of years spent on site as a child (total exposure duration is 30 yrs)	
AT_n (Averaging time, non-carcinogens)	years	ED	by convention	by convention
AT_c (Averaging time, carcinogens)	years	70	conventional human lifespan (exposure average over lifespan)	
SOIL INGESTION				
IR (Soil Ingestion Rate)	mg/day	200	default child resident ingestion rate in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
IFSadj (Age Adjusted Ingestion Factor)	(mg year/kg day)	NA	not used for child exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
SOIL DERMAL CONTACT				
EV (Event Frequency)	event/day	1	assumes one soil contact event per day	judgment
SA (Exposed Skin Surface Area)	cm^2	2800	face, forearms, hands, lower legs, feet	(b)
AF (Soil Adherence Factor)	mg/cm^2-event	0.2		(b)
SFSadj (Age Adjusted Dermal Factor)	(mg year/kg event)	NA	not used for child exposure scenario	---
ABS_d (Dermal Absorption Fraction)	unitless	chemical-specific	---	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	---	(b)
CF (Conversion Factor)	kg/mg	0.000001	---	---
INHALATION OF DUST AND VOCs FROM SOIL				
ET (Exposure Time)	hrs/day	2	Accounts for daily exposure time of 2 hours	judgment
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
VF (Soil-to-Air Volatalization Factor)	unitless	chemical-specific	calculated parameter using Eqtn 4-8 and site-specific Q/C term	(c)
Site-Specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-Specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
Site-Specific Q/C for VF for Landfill	g/m^2-s per kg/m^3	30.71	calculated parameter using exhibit D-3; based on area of 77 acres	(c)
Site-Specific Q/C for VF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-3; based on area of 33 acres	(c)
SOIL INGESTION (Radionuclides)				
IR (Soil Ingestion Rate)	mg/day	200	default child resident ingestion rate in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
IFSadj (Age Adjusted Ingestion Factor)	(mg/day)	NA	not used for child exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	judgment	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

Table 6-19. Exposure Parameters for the Child Site Visitor (Page 2 of 2)

	Units	Site Visitor (Child)		
		Value	Rationale	Reference
SOIL EXTERNAL RADIATION (Radionuclides)				
ACF (Area Correction Facto)	unitless	1	conservatively assumes area is >1000 m^2 and depth of contaminated soil is >15 cm	(g)
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
GSF (Gamma Shielding Factor)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
CF (Conversion Factor)	kg/g	0.001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
INHALATION OF DUST FROM SOIL (Radionuclides)				
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	4.45E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	5.00E+08	calculated parameter using Eqtn 4-5 and site-specific Q/C term	(c)
Site-specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	30.7	calculated parameter using exhibit D-2; based on area of 77 acres	(c)
Site-specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	34.53	calculated parameter using exhibit D-2; based on area of 33 acres	(c)
InR (Inhalation Rate)	m^3/day	0.83	total daily inhalation rate while receptor is on site (10 m^3/d/24 hrs/d)*2 hrs/d = 0.83 m^3/d	(i)
InRadj (Age Adjusted Inhalation Factor)	m^3/day	NA	not used for child exposure scenario	---
ETo (Exposure Time fraction, Outdoors)	unitless	0.041	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0.041	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
DFi (Dilution Factor for Indoor Air Inhalation)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

(a) California Department of Toxic Substances Control (DTSC). Fax from Marcia Liao (DTSC) to Claudia Domingo (U.S. Navy) describing exposure parameters used to calculate risks to wildlife refuge personnel at Naval Weapons Station (NWS) Seal Beach Sites. See also Bechtel (2001).
(b) U.S. EPA, 2004c. Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final (EPA/540/R-99/005).
(c) U.S. EPA, 2001e. Supplemental Guidance for Developing Soil Screeing Levels for Superfund Sites, Interim Guidance (OSWER 9355.4-24).
(d) MADEP, 2004. S-3 Standards, Construction/Excavation Potential.
(e) ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).
(f) MDEQ, 2003. Part 213 – Tier 1 Criteria for Utility Worker, Groundwater Direct Contact (GWDC).
(g) U.S. EPA, 2000a. Soil Screening Guidance for Radionuclides: User's Guide (EPA/540-R-00-007).
(h) U.S. EPA, 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC.
(i) U.S. EPA, 2004b. User's Guide and Technical Background Document for U.S. EPA Region 9 Preliminary Remediation Goal (PRG) Table (October 2004) (see: http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf).

Table 6-20. Exposure Parameters for the Construction/Excavation Worker

	Units	Construction/Excavation Worker		
		Value	Rationale	Reference
GENERAL (for all exposure pathways)				
C_soil (Concentration of Chemical in Soil)	mg/kg (pCi/Kg for radionuclides)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
C_w (Concentration of Chemical in Water)	(mg/cm^3)	chemical-specific	95% Upper Confidence Limit of the Mean Concentration	site-specific
BW (Body Weight)	Kg	70	default adult reference weight in EPA 9285.6-03 Exposure Parameters (1991b)	(h)
EF (Exposure Frequency)	days/year	130	Assumes 5 days/wk over a 26 week (6 month) construction project	(d)
ED (Exposure Duration)	Years	1	When ED<1 yr, assume EF occurs over a period of 1 year to avoid "diluting" risk	per DTSC
AT_n (Averaging time, non-carcinogens)	years	ED	by convention	by convention
AT_c (Averaging time, carcinogens)	years	70	conventional human lifespan (exposure average over lifespan)	by convention
SOIL INGESTION				
IR (Soil Ingestion Rate)	mg/day	330	recommended default soil ingestion rate for Construction/Excavation Worker	(e)
IFSadj (Age Adjusted Ingestion Factor)	(mg year/kg day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
SOIL DERMAL CONTACT				
EV (Event Frequency)	event/day	1	assumes one soil contact event per day	judgment
SA (Exposed Skin Surface Area)	cm^2	5800	default SA for Construction/Excavation Worker	(j)
AF (Soil Adherence Factor)	mg/cm^2-event	0.3	default AF for Construction/Excavation Worker	(e)
SFSadj (Age Adjusted Dermal Factor)	(mg year/kg event)	NA	not used for adult exposure scenario	---
ABS_d (Dermal Absorption Fraction)	unitless	chemical-specific	---	(c)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	---	(b)
CF (Conversion Factor)	kg/mg	0.000001	---	---
INHALATION OF DUST AND VOCs FROM SOIL				
ET (Exposure Time)	hrs/day	8	assumes 8 hour work day	(d)
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	1.81E+06	calculated parameter using Eqtn 5-5 and site-specific Q/C	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	1.89E+06	calculated parameter using Eqtn 5-5 and site-specific Q/C	(c)
VF (Soil-to-Air Volatalization Factor)	unitless	chemical-specific	calculated parameter using Eqtn 5-14	(c)
Site-Specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	13.29	calculated parameter using Eqtn 5-6; based on area of 77 acres	(c)
Site-Specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	13.87	calculated parameter using Eqtn 5-6; based on area of 33 acres	(c)
Site-Specific Q/C for VF for Landfill	g/m^2-s per kg/m^3	6.19	calculated parameter using Eqtn 5-15; based on area of 77 acres	(c)
Site-Specific Q/C for VF for Wetland	g/m^2-s per kg/m^3	6.99	calculated parameter using Eqtn 5-15; based on area of 33 acres	(c)

Table 6-20. Exposure Parameters for the Construction/Excavation Worker (page 2 of 3)

	Units	Construction/Excavation Worker		
		Value	Rationale	Reference
DERMAL CONTACT WITH GROUND WATER				
EV (Event Frequency)	event/day	1	assumes daily contact with groundwater	(d)
t_event (Event Duration)	hour/event	2	assumes construction/utility worker will be in contact with groundwater 2 hrs per day	(f)
SA (Exposed Skin Surface Area)	cm^2	5800	default SA for Construction/Excavation Worker	(j)
K_p (Dermal Permeability Coefficient for Compound in Water)	cm/hr	chemical-specific	chemical-specific; calculated using Eqtn 3.8 (for organic chemicals); Kp for inorganics is look up	(b)
FA (Fraction Absorbed Water)	dimensionless	chemical-specific	chemical-specific - look up value	(b)
τ(Tau)_event (Lag time per Event)	hour/event	chemical-specific	chemical-specific; calculated using Eqtn A.1 for organic chemicals	(b)
t* (Time to Reach Steady State)	hrs	chemical-specific	chemical-specific; calculated using Eqtn A.5 and A.6 for organic chemicals	(b)
B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	dimensionless	chemical-specific	chemical-specific; calculated using Eqtn A.1 for organic chemicals	(b)
ABS_GI (Gatrointestinal Absorption Fraction)	unitless	chemical-specific	chemical-specific – look up value	(b)
SOIL INGESTION (Radionuclides)				
IR (Soil Ingestion Rate)	mg/day	330	recommended default soil ingestion rate for Construction/Excavation Worker	(e)
IFSadj (Age Adjusted Ingestion Factor)	(mg/day)	NA	not used for adult exposure scenario	---
FI (Fraction Soil Ingested per day that is Contaminated)	unitless	1	Conservatively assumes all soil ingested is from site	judgment
CF (Conversion Factor)	kg/mg	0.000001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)
SOIL EXTERNAL RADIATION (Radionuclides)				
ACF (Area Correction Facto)	unitless	1	conservatively assumes area is >1000 m^2 and depth of contaminated soil is >15 cm	(g)
ETo (Exposure Time fraction, Outdoors)	unitless	0.33	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
GSF (Gamma Shielding Factor)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
CF (Conversion Factor)	kg/g	0.001	---	---
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

Table 6-20. Exposure Parameters for the Construction/Excavation Worker (page 3 of 3)

	Units	Construction/Excavation Worker		
		Value	Rationale	Reference
INHALATION OF DUST FROM SOIL (Radionuclides)				
PEF for Landfill (Particulate Emmision Factor)	m^3/kg	1.81E+06	calculated parameter using Eqtn 5-5 and site-specific Q/C	(c)
PEF for Wetland (Particulate Emmision Factor)	m^3/kg	1.89E+06	calculated parameter using Eqtn 5-5 and site-specific Q/C	(c)
Site-specific Q/C for PEF for Landfill	g/m^2-s per kg/m^3	13.29	calculated parameter using Eqtn 5-6; based on area of 77 acres	(c)
Site-specific Q/C for PEF for Wetland	g/m^2-s per kg/m^3	13.87	calculated parameter using Eqtn 5-6; based on area of 33 acres	(c)
InR (Inhalation Rate)	m^3/day	20	total daily inhalation rate while receptor is on site	(e)
InRadj (Age Adjusted Inhalation Factor)	m^3/day	NA	not used for adult exposure scenario	---
ETo (Exposure Time fraction, Outdoors)	unitless	0.33	Equal to time (hrs) spent outdoors on site per day divided by 24 hrs	(g)
ETi (Exposure Time fraction, Indoors)	unitless	0	Equal to time (hrs) spent indoors on site per day divided by 24 hrs	(g)
DFi (Dilution Factor for Indoor Air Inhalation)	unitless	0.4	default indoor dilution factor; based on aboveground lightly constructed wood structure	(g)
t (exposure time)	yrs	equal to ED	used with λ to calculate radionuclide decay over exposure period	(e)
λ (decay rate)	yr^{-1}	chemical-specific	rate at which radionuclide decays	(g)

(a) California Department of Toxic Substances Control (DTSC). Fax from Marcia Liao (DTSC) to Claudia Domingo (U.S. Navy) describing exposure parameters used to calculate risks to wildlife refuge personnel at Naval Weapons Station (NWS) Seal Beach Sites. See also Bechtel (2001).

(b) U.S. EPA, 2004c. Risk Assessment for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final (EPA/540/R-99/005).

(c) U.S. EPA, 2001e. Supplemental Guidance for Developing Soil Screeing Levels for Superfund Sites, Interim Guidance (OSWER 9355.4-24).

(d) MADEP, 2004. S-3 Standards, Construction/Excavation Potential.

(e) ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).

(f) MDEQ, 2003. Part 213 – Tier 1 Criteria for Utility Worker, Groundwater Direct Contact (GWDC).

(g) U.S. EPA, 2000a. Soil Screening Guidance for Radionuclides: User's Guide (EPA/540-R-00-007).

(h) U.S. EPA, 1991b. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Publication 9285.6-03. Office of Emergency and Remedial Response, Washington, DC.

(i) U.S. EPA, 2004b. User's Guide and Technical Background Document for U.S. EPA Region 9 Preliminary Remediation Goal (PRG) Table (October 2004) (see: http://www.epa.gov/region09/waste/sfund/prg/files/04usersguide.pdf).

(j). The following reference from DTSC recommends 5,700 cm2; however, a value of 5,800 cm^2 was used for consistency with the other adult receptors evaluated in the risk assessment (see California Department of Toxic Substances Control (DTSC), Human and Ecological Risk Division (HERD). http://165.235.111.242/ AssessingRisk/upload/HHRA%20Note1.pdf. HERD HHRA NOTE NUMBER: 1, Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Military Facilities. ISSUE DATE: October 27, 2005). EPA recommends a value of 3,300 cm2 for construction/excavation worker (see ORNL, 2005. Risk Assessment Information System (RAIS) (http://risk.lsd.ornl.gov/homepage/tm/for_res_so.shtml).

Table 6-21. Chemical-Specific Parameters

Chemical	CAS No.	H' (Henrys Law Constant)	Koc (Organic Carbon Partition Coefficient)	Di (Diffusivity in Air)	Dw (Diffusivity in Air)	ABS_d (Dermal Absorption Fraction)	VF (Soil-to-Air Volatalization Factor) for Landfill - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Wetland - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Landfill - Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Wetland- Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Construction/Excavation Worker	VF (Soil-to-Air Volatalization Factor) for Wetland - Construction/Excavation Worker	K_p (Dermal Permeability Coefficient for Compound in Water)	FA (Fraction Absorbed Water)[a]	τ(Tau)_event (Lag time per Event)	t* (Time to Reach Steady State)	B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	ABS_GI (Gatrointestinal Absorption Fraction)
		unitless	cm^3/g	cm^2/s	cm^2/s	unitless	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	cm/hr	unitless	hr/event	hrs	unitless	unitless
1,1,1-Trichloroethane	71556	7.05E-01	1.10E+02	7.80E-02	8.80E-06	NA (4)	8.88E+02	9.98E+02	3.08E+02	3.46E+02	9.73E+02	1.09E+03	4.35E+02	4.89E+02	9.30E+01	1.05E+02	1.26E-02	1.00E+00	5.96E-01	1.43E+00	5.61E-02	1
1,1,2,2-Tetrachloroethane	79345	1.50E-02	9.33E+01	7.10E-02	7.90E-06	NA (4)	5.48E+03	6.17E+03	1.90E+03	2.14E+03	6.01E+03	6.76E+03	2.69E+03	3.02E+03	5.74E+02	6.49E+02	6.94E-03	1.00E+00	9.31E-01	2.23E+00	3.46E-02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	2.16E+01	1.60E+02	2.88E-02	8.07E-06	NA (4)	6.34E+02	7.13E+02	2.20E+02	2.47E+02	6.94E+02	7.81E+02	3.11E+02	3.49E+02	6.64E+01	7.50E+01	6.09E-03	1.00E+00	1.20E+00	2.88E+00	3.21E-02	1
1,1,2-Trichloroethane	79005	3.38E-02	5.01E+01	7.80E-02	8.80E-06	NA (4)	2.74E+03	3.08E+03	9.48E+02	1.07E+03	3.00E+03	3.37E+03	1.34E+03	1.51E+03	2.87E+02	3.24E+02	5.04E-03	1.00E+00	5.96E-01	1.43E+00	2.24E-02	1
1,1-Biphenyl	92524	1.67E-02	7.76E+03	4.04E-02	8.20E-06	0.13	5.79E+04	6.51E+04	2.00E+04	2.25E+04	6.34E+04	7.13E+04	2.83E+04	3.19E+04	6.06E+03	6.85E+03	9.46E-02	1.00E+00	7.78E-01	1.87E+00	4.51E-01	1
1,1-Dichloroethane	75343	2.30E-01	3.16E+01	7.42E-02	1.05E-05	NA (4)	9.73E+02	1.09E+03	3.37E+02	3.79E+02	1.07E+03	1.20E+03	4.76E+02	5.36E+02	1.02E+02	1.15E+02	6.75E-03	1.00E+00	3.82E-01	9.17E-01	2.58E-02	1
1,1-Dichloroethylene	75354	1.07E+00	5.89E+01	9.00E-02	1.04E-05	NA (4)	5.75E+02	6.47E+02	1.99E+02	2.24E+02	6.30E+02	7.08E+02	2.82E+02	3.17E+02	6.02E+01	6.81E+01	1.17E-02	1.00E+00	3.72E-01	8.94E-01	4.41E-02	1
1,2,3-Trichlorobenzene	87616	3.80E-02	7.18E+02	6.20E-02	7.71E-06	NA (4)	9.53E+03	1.07E+04	3.30E+03	3.71E+03	1.04E+04	1.17E+04	4.67E+03	5.25E+03	9.98E+02	1.13E+03	7.05E-02	1.00E+00	1.11E+00	2.66E+00	3.65E-01	1
1,2,4,5-Tetrachlorobenzene	95943	4.10E-02	1.19E+03	2.11E-02	8.75E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.17E-01	1.00E+00	1.73E+00	6.80E+00	6.60E-01	1
1,2,4-Trichlorobenzene	120821	5.82E-02	1.78E+03	3.00E-02	8.23E-06	NA (4)	1.73E+04	1.95E+04	6.00E+03	6.74E+03	1.90E+04	2.13E+04	8.48E+03	9.54E+03	1.81E+03	2.05E+03	7.05E-02	1.00E+00	1.11E+00	2.66E+00	3.65E-01	1
1,2-Dibromo-3-chloropropane	96128	6.03E-03	1.30E+02	2.12E-02	7.00E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.85E-03	1.00E+00	2.26E+00	5.41E+00	4.05E-02	1
1,2-Dibromoethane	106934	2.73E-02	4.40E+01	7.33E-02	8.06E-06	NA (4)	2.99E+03	3.36E+03	1.04E+03	1.16E+03	3.27E+03	3.68E+03	1.46E+03	1.65E+03	3.13E+02	3.54E+02	2.77E-03	1.00E+00	1.21E+00	2.89E+00	1.46E-02	1
1,2-Dichlorobenzene	95501	7.79E-02	6.17E+02	6.90E-02	7.90E-06	NA (4)	5.87E+03	6.60E+03	2.03E+03	2.29E+03	6.43E+03	7.23E+03	2.88E+03	3.23E+03	6.15E+02	6.95E+02	4.46E-02	1.00E+00	7.11E-01	1.71E+00	2.08E-01	1
1,2-Dichloroethane	107062	4.84E-02	1.74E+01	1.04E-01	9.90E-06	NA (4)	1.44E+03	1.61E+03	4.97E+02	5.59E+02	1.57E+03	1.77E+03	7.03E+02	7.91E+02	1.50E+02	1.70E+02	4.20E-03	1.00E+00	3.82E-01	9.17E-01	1.61E-02	1
1,2-Dichloroethylene (cis)	156592	1.67E-01	3.55E+01	7.36E-02	1.13E-05	NA (4)	1.17E+03	1.31E+03	4.04E+02	4.54E+02	1.28E+03	1.44E+03	5.71E+02	6.42E+02	1.22E+02	1.38E+02	7.71E-03	1.00E+00	3.72E-01	8.94E-01	2.92E-02	1
1,2-Dichloroethylene (trans)	156605	3.85E-01	5.25E+01	7.07E-02	1.19E-05	NA (4)	9.33E+02	1.05E+03	3.23E+02	3.63E+02	1.02E+03	1.15E+03	4.57E+02	5.14E+02	9.77E+01	1.10E+02	1.10E-02	1.00E+00	3.72E-01	8.94E-01	4.15E-02	1
1,2-Dichloropropane	78875	1.16E-01	4.37E+01	7.82E-02	8.73E-06	NA (4)	1.44E+03	1.61E+03	4.97E+02	5.59E+02	1.57E+03	1.77E+03	7.03E+02	7.91E+02	1.50E+02	1.70E+02	1.14E-02	1.00E+00	4.58E-01	1.10E+00	4.65E-02	1
1,3,5-Trinitrobenzene	99354	1.36E-08	1.09E+03	8.00E-02	8.00E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.07E-04	1.00E+00	1.67E+00	4.01E+00	3.41E-03	1
1,3-Dichlorobenzene	541731	1.08E-01	6.17E+02	6.90E-02	7.90E-06	NA (4)	4.99E+03	5.61E+03	1.73E+03	1.95E+03	5.47E+03	6.15E+03	2.45E+03	2.75E+03	5.23E+02	5.91E+02	5.20E-02	1.00E+00	7.11E-01	1.71E+00	2.42E-01	1
1,3-Dichloropropene (cis)	10061015	9.15E-02	8.08E+01	7.94E-02	8.00E-06	NA (4)	2.01E+03	2.25E+03	6.95E+02	7.81E+02	2.20E+03	2.47E+03	9.82E+02	1.10E+03	2.10E+02	2.37E+02	3.88E-03	1.00E+00	4.46E-01	1.07E+00	1.57E-02	1
1,3-Dichloropropene (trans)	10061026	9.15E-02	8.08E+01	7.94E-02	9.20E-06	NA (4)	2.01E+03	2.25E+03	6.95E+02	7.81E+02	2.20E+03	2.47E+03	9.82E+02	1.10E+03	2.10E+02	2.37E+02	3.88E-03	1.00E+00	4.46E-01	1.07E+00	1.57E-02	1
1,3-Dinitrobenzene	99650	1.53E-05	2.20E+02	2.79E-01	7.64E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.74E-03	1.00E+00	9.34E-01	2.24E+00	8.70E-03	1
1,4-Dichlorobenzene	106467	9.84E-02	6.17E+02	6.90E-02	7.90E-06	NA (4)	5.23E+03	5.88E+03	1.81E+03	2.04E+03	5.72E+03	6.44E+03	2.56E+03	2.88E+03	5.47E+02	6.19E+02	4.53E-02	1.00E+00	7.11E-01	1.71E+00	2.11E-01	1
1,4-Dioxane	123911	1.97E-04	1.00E+00	2.30E-01	1.00E-05	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.32E-04	1.00E+00	3.32E-01	7.97E-01	1.20E-03	1
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA (2)	NA (2)	NA (2)	NA (2)	NA (4)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.57E-03	1.00E+00	1.06E-01	2.55E-01	NA (2)	1
2,4,5-Trichlorophenol	95954	1.78E-04	1.19E+03	2.91E-02	7.03E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.62E-02	1.00E+00	1.36E+00	3.27E+00	1.96E-01	1
2,4,6-Trichlorophenol	88062	3.19E-04	1.19E+03	3.18E-02	6.25E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.46E-02	1.00E+00	1.36E+00	3.27E+00	1.87E-01	1
2,4,6-Trinitrotoluene	118967	1.87E-05	1.83E+03	2.45E-02	6.36E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	9.63E-04	1.00E+00	2.00E+00	4.81E+00	5.58E-03	1
2,4-Dichlorophenol	120832	1.30E-04	7.18E+02	3.46E-02	8.77E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.06E-02	1.00E+00	8.74E-01	2.10E+00	1.01E-01	1
2,4-Dimethylphenol	105679	8.20E-05	7.18E+02	5.84E-02	8.69E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.09E-02	1.00E+00	5.15E-01	1.24E+00	4.65E-02	1
2,4-Dinitrophenol	51285	1.82E-05	3.64E+02	2.73E-02	9.06E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.87E-03	1.00E+00	1.15E+00	2.76E+00	9.75E-03	1
2,4-Dinitrotoluene	121142	5.33E-06	3.64E+02	2.03E-01	7.06E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.08E-03	1.00E+00	1.12E+00	2.69E+00	1.60E-02	1
2,6-Dinitrotoluene	606202	3.06E-05	3.71E+02	3.27E-02	7.26E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.70E-03	1.00E+00	1.12E+00	2.69E+00	1.92E-02	1
2-Amino-4,6-dinitrotoluene	35572782	1.19E-07	1.01E+02	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.05E-03	1.00E+00	1.36E+00	3.26E+00	1.11E-02	1
2-Chloronaphthalene	91587	1.31E-02	1.55E+03	3.47E-02	8.80E-06	NA (4)	3.16E+04	3.56E+04	1.10E+04	1.23E+04	3.46E+04	3.90E+04	1.55E+04	1.74E+04	3.31E+03	3.74E+03	8.46E-02	1.00E+00	8.70E-01	2.09E+00	4.15E-01	1
2-Chlorophenol	95578	1.60E-02	3.98E+02	5.01E-01	9.46E-06	NA (4)	3.88E+03	4.36E+03	1.34E+03	1.51E+03	4.25E+03	4.78E+03	1.90E+03	2.14E+03	4.06E+02	4.59E+02	7.99E-03	1.00E+00	5.60E-01	1.34E+00	3.48E-02	1
2-Hexanone	591786	3.81E-03	1.30E+01	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.55E-03	1.00E+00	3.88E-01	9.32E-01	1.37E-02	1
1-Methylnaphthalene	90120	2.1E-02	1.82E+01	4.80E-02	7.84E-06	NA(4)	2.24E+03	2.51E+03	7.75E+02	8.71E+02	2.45E+03	2.76E+03	1.1E+03	1.23E+03	2.65E+02	2.34E+02	7.4E-02	1.00E+00	6.68E-01	1.60E+00	3.39E-01	1
2-Methylnaphthalene	91576	2.12E-02	2.98E+03	4.80E-02	7.84E-06	NA (4)	2.93E+04	3.29E+04	1.01E+04	1.14E+04	3.20E+04	3.60E+04	1.43E+04	1.61E+04	3.06E+03	3.46E+03	9.17E-02	1.00E+00	6.68E-01	1.60E+00	4.20E-01	1
2-Methylphenol	95487	4.92E-05	4.43E+02	7.40E-02	8.30E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	7.66E-03	1.00E+00	4.30E-01	1.03E+00	3.06E-02	1
2-Nitroaniline	88744	7.42E-07	5.27E+01	4.73E-02	8.58E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.46E-03	1.00E+00	6.34E-01	1.52E+00	2.02E-02	1
2-Nitrophenol	88755	2.21E-05	2.09E+01	6.87E-02	8.47E-06	NA (4)	6.58E+04	7.40E+04	2.28E+04	2.56E+04	7.21E+04	8.10E+04	3.22E+04	3.62E+04	6.89E+03	7.79E+03	9.45E-03	1.00E+00	6.42E-01	1.54E+00	4.29E-02	1
3,3'-Dichlorobenzidine	91941	1.16E-09	7.49E+03	1.94E-02	6.74E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.28E-02	1.00E+00	2.80E+00	6.72E+00	7.83E-02	1
3-Nitroaniline	99092	5.90E-06	5.16E+01	6.73E-02	8.59E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.14E-03	1.00E+00	6.34E-01	1.52E+00	9.67E-03	1
4,6-Dinitro-o-cresol	534521	5.74E-05	6.02E+02	2.93E-02	6.91E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.10E-03	1.00E+00	1.38E+00	3.30E+00	1.68E-02	1
4-Amino-2,6-dinitrotoluene	19406510	1.74E-07	NA (2)	5.60E-02	7.31E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.76E-03	1.00E+00	1.36E+00	3.26E+00	3.65E-02	1
4-Bromophenylphenylether	101553	4.78E-03	4.16E+03	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.20E-01	1.00E+00	2.66E+00	1.03E+01	7.30E-01	1
4-Chloro-3-methylphenol	59507	1.00E-04	7.18E+02	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.85E-02	1.00E+00	6.72E-01	1.61E+00	1.31E-01	1
4-Chloroaniline	106478	4.76E-05	7.25E+01	4.83E-02	1.01E-05	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.96E-03	1.00E+00	5.53E-01	1.33E+00	2.15E-02	1
4-Chlorophenylphenylether	7005723	1.30E-02	NA (2)	4.89E-02	6.19E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.48E-01	1.00E+00	1.50E+00	5.90E+00	1.36E+00	1
4-Methylphenol	106445	4.10E-05	4.34E+02	7.40E-02	1.00E-05	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	7.54E-03	1.00E+00	4.30E-01	1.03E+00	3.02E-02	1

Table 6-21. Chemical-Specific Parameters (page 2 of 4)

Chemical	CAS No.	H' (Henrys Law Constant)	Koc (Organic Carbon Partition Coefficient)	Di (Diffusivity in Air)	Dw (Diffusivity in Air)	ABS_d (Dermal Absorption Fraction)	VF (Soil-to-Air Volatalization Factor) for Landfill - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Wetland - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Landfill - Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Wetland- Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Construction/Excavation Worker	VF (Soil-to-Air Volatalization Factor) for Wetland - Construction/Excavation Worker	K_p (Dermal Permeability Coefficient for Compound in Water)	FA (Fraction Absorbed Water)[a]	τ(Tau)_event (Lag time per Event)	t* (Time to Reach Steady State)	B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	ABS_GI (Gatrointestinal Absorption Fraction)
		unitless	cm^3/g	cm^2/s	cm^2/s	unitless	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	cm/hr	unitless	hr/event	hrs	unitless	unitless
4-Nitroaniline	100016	7.42E-07	5.16E+01	6.69E-02	8.59E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.21E-03	1.00E+00	6.34E-01	1.52E+00	9.97E-03	1
4-Nitrophenol	100027	1.70E-08	3.09E+02	4.30E-02	9.61E-06	NA (4)	2.88E+05	3.24E+05	9.97E+04	1.12E+05	3.15E+05	3.54E+05	1.41E+05	1.58E+05	3.01E+04	3.41E+04	4.83E-03	1.00E+00	6.42E-01	1.54E+00	2.19E-02	1
Acenaphthene	83329	6.36E-03	4.90E+03	4.21E-02	7.69E-06	0.13	7.30E+04	8.21E+04	2.53E+04	2.84E+04	8.00E+04	8.99E+04	3.58E+04	4.02E+04	7.65E+03	8.64E+03	8.60E-02	1.00E+00	7.80E-01	1.87E+00	4.11E-01	1
Acenaphthylene	208968	5.11E-03	6.12E+03	4.39E-02	7.53E-06	0.13	8.91E+04	1.00E+05	3.09E+04	3.47E+04	9.76E+04	1.10E+05	4.37E+04	4.91E+04	9.33E+03	1.05E+04	9.11E-02	1.00E+00	7.60E-01	1.82E+00	4.32E-01	1
Acetone	67641	1.63E-03	5.75E-01	1.24E-01	1.14E-05	NA (4)	4.98E+03	5.60E+03	1.72E+03	1.94E+03	5.45E+03	6.13E+03	2.44E+03	2.74E+03	5.21E+02	5.89E+02	5.12E-04	1.00E+00	2.25E-01	5.41E-01	1.50E-03	1
Acetophenone	98862	4.25E-04	4.62E+01	6.00E-02	8.73E-06	NA (4)	2.63E+04	2.95E+04	9.10E+03	1.02E+04	2.88E+04	3.24E+04	1.29E+04	1.45E+04	2.75E+03	3.11E+03	3.72E-03	1.00E+00	5.03E-01	1.21E+00	1.57E-02	1
alpha-Chlordane	5103719	4.11E-03	NA (2)	3.32E-02	4.66E-06	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.37E-01	1.00E+00	2.12E+01	8.86E+01	2.62E+00	1
Aldrin	309002	2.02E-02	1.06E+05	1.32E-02	4.86E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.93E-01	1.00E+00	1.19E+01	4.88E+01	2.15E+00	1
Aluminum	7429905	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Anthracene	120127	2.95E-02	2.04E+04	3.24E-02	7.74E-06	0.13	7.88E+04	8.86E+04	2.73E+04	3.07E+04	8.63E+04	9.71E+04	3.86E+04	4.34E+04	8.25E+03	9.33E+03	1.42E-01	1.00E+00	1.06E+00	4.12E+00	7.29E-01	1
Antimony and compounds	7440360	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.15
Arsenic	7440382	NA (2)	1.43E+01	NA (2)	NA (2)	0.03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Atrazine	1912249	1.83E-07	2.30E+02	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.24E-03	1.00E+00	1.73E+00	4.15E+00	2.96E-02	1
Barium and compounds	7440393	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	1.00E+00	NA (2)	NA (2)	NA (2)	0.07
Benz[a]anthracene	56553	3.29E-04	2.31E+05	5.10E-02	9.00E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.52E-01	1.00E+00	2.03E+00	8.63E+00	3.21E+00	1
Benzaldehyde	100527	1.09E-03	3.27E+01	7.30E-02	9.00E-06	NA (4)	1.33E+04	1.50E+04	4.62E+03	5.19E+03	1.46E+04	1.64E+04	6.53E+03	7.34E+03	1.40E+03	1.58E+03	3.83E-03	1.00E+00	4.19E-01	1.01E+00	1.52E-02	1
Benzene	71432	2.28E-01	5.89E+01	8.80E-02	9.80E-06	NA (4)	1.10E+03	1.23E+03	3.80E+02	4.27E+02	1.20E+03	1.35E+03	5.37E+02	6.04E+02	1.15E+02	1.30E+02	1.49E-02	1.00E+00	2.92E-01	7.01E-01	5.05E-02	1
Benzo(g,h,i)perylene	191242	1.35E-05	2.68E+06	NA (2)	NA (2)	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.12E+00	1.00E+00	3.78E+00	1.69E+01	7.18E+00	1
Benzo[a]pyrene	50328	1.00E-04	7.87E+05	4.30E-02	9.00E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.58E-01	1.00E+00	2.77E+00	1.18E+01	3.41E+00	1
Benzo[b]fluoranthene	205992	4.55E-03	8.03E+05	2.26E-02	5.56E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.17E-01	1.00E+00	2.77E+00	1.16E+01	2.55E+00	1
Benzo[k]fluoranthene	207089	1.64E-05	7.87E+05	2.26E-02	5.56E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.91E-01	1.00E+00	2.77E+00	1.20E+01	4.22E+00	1
Benzoic Acid	65850	1.39E-05	5.00E-01	5.36E-02	7.97E-06	NA (4)	5.43E+04	6.11E+04	1.88E+04	2.12E+04	5.95E+04	6.69E+04	2.66E+04	2.99E+04	5.69E+03	6.43E+03	5.69E-03	1.00E+00	5.16E-01	1.24E+00	2.42E-02	1
Beryllium and compounds	7440417	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.007
bis(2-chloroethoxy)methane	111911	6.91E-06	2.77E+00	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.22E-03	1.00E+00	9.95E-01	2.39E+00	6.19E-03	1
bis(2-chloroethyl)ether	111444	6.97E-04	7.60E+01	6.92E-02	7.53E-06	NA (4)	2.34E+04	2.64E+04	8.12E+03	9.13E+03	2.57E+04	2.89E+04	1.15E+04	1.29E+04	2.45E+03	2.77E+03	1.78E-03	1.00E+00	6.75E-01	1.62E+00	8.17E-03	1
bis(2-chloroisopropyl)ether	108601	4.63E-03	6.10E+01	6.31E-02	6.40E-06	NA (4)	8.79E+03	9.89E+03	3.05E+03	3.43E+03	9.63E+03	1.08E+04	4.31E+03	4.84E+03	9.21E+02	1.04E+03	8.91E-03	1.00E+00	9.69E-01	2.33E+00	4.48E-02	0
bis(2-ethylhexyl)phthalate	117817	6.03E-04	1.65E+05	3.51E-02	3.66E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.13E+00	8.00E-01	1.65E+01	7.45E+01	8.61E+00	1
Bromochloromethane	74975	5.97E-02	2.37E+01	4.74E-02	1.00E-05	NA (4)	2.09E+03	2.35E+03	7.23E+02	8.12E+02	2.28E+03	2.57E+03	1.02E+03	1.15E+03	2.18E+02	2.47E+02	2.55E-03	1.00E+00	5.66E-01	1.36E+00	1.11E-02	1
Bromodichloromethane	75274	8.69E-02	5.50E+01	2.98E-02	1.06E-05	NA (4)	2.89E+03	3.25E+03	1.00E+03	1.13E+03	3.17E+03	3.56E+03	1.42E+03	1.59E+03	3.03E+02	3.42E+02	4.02E-03	1.00E+00	8.84E-01	2.12E+00	1.98E-02	1
Bromoform	75252	2.19E-02	3.50E+01	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.35E-03	1.00E+00	2.79E+00	6.69E+00	1.44E-02	1
Bromomethane	74839	2.56E-01	9.00E+00	7.28E-02	1.21E-05	NA (4)	7.26E+02	8.17E+02	2.52E+02	2.83E+02	7.96E+02	8.95E+02	3.56E+02	4.00E+02	7.61E+01	8.60E+01	2.84E-03	1.00E+00	3.63E-01	8.71E-01	1.06E-02	1
Butylbenzylphthalate	85687	5.17E-05	9.36E+03	1.74E-02	4.83E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.07E-02	1.00E+00	6.02E+00	1.45E+01	3.45E-01	1
Cadmium and compounds	7440439	NA (2)	1.43E+01	NA (2)	NA (2)	0.001	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.05
Caprolactam	105602	1.04E-06	5.74E+01	6.54E-02	8.99E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.71E-04	1.00E+00	4.59E-01	1.10E+00	1.11E-03	1
Carbazole	86748	3.55E-06	1.13E+04	3.90E-02	7.03E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.36E-02	1.00E+00	9.23E-01	2.22E+00	2.66E-01	1
Carbondisulfide	75150	5.90E-01	4.57E+01	1.04E-01	1.00E-05	NA (4)	6.20E+02	6.97E+02	2.15E+02	2.41E+02	6.79E+02	7.63E+02	3.04E+02	3.41E+02	6.49E+01	7.34E+01	1.55E-02	1.00E+00	2.85E-01	6.83E-01	5.20E-02	1
Carbontetrachloride	56235	1.13E+00	1.74E+02	7.80E-02	8.80E-06	NA (4)	8.64E+02	9.72E+02	2.99E+02	3.37E+02	9.47E+02	1.06E+03	4.23E+02	4.76E+02	9.05E+01	1.02E+02	1.63E-02	1.00E+00	7.76E-01	1.86E+00	7.78E-02	1
Chlorobenzene	108907	1.55E-01	2.19E+02	7.30E-02	8.70E-06	NA (4)	2.49E+03	2.80E+03	8.63E+02	9.71E+02	2.73E+03	3.07E+03	1.22E+03	1.37E+03	2.61E+02	2.95E+02	2.82E-02	1.00E+00	4.56E-01	1.09E+00	1.15E-01	1
Chloroethane	75003	4.55E-01	1.47E+01	1.04E-01	1.15E-05	NA (4)	5.30E+02	5.96E+02	1.84E+02	2.07E+02	5.81E+02	6.53E+02	2.60E+02	2.92E+02	5.55E+01	6.27E+01	6.07E-03	1.00E+00	2.45E-01	5.88E-01	1.88E-02	1
Chloroform	67663	1.50E-01	3.98E+01	1.04E-01	1.00E-05	NA (4)	1.07E+03	1.20E+03	3.70E+02	4.16E+02	1.17E+03	1.31E+03	5.23E+02	5.88E+02	1.12E+02	1.26E+02	6.83E-03	1.00E+00	4.98E-01	1.19E+00	2.87E-02	1
Chloromethane	74873	3.62E-01	3.50E+01	1.09E-01	6.50E-06	NA (4)	6.83E+02	7.68E+02	2.37E+02	2.66E+02	7.48E+02	8.41E+02	3.35E+02	3.76E+02	7.15E+01	8.08E+01	3.28E-03	1.00E+00	2.04E-01	4.90E-01	8.97E-03	1
Chromium VI	18540299	NA (2)	NA (2)	NA (2)	NA (2)	NA (4)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.025
Chrysene	218019	3.88E-03	3.98E+05	2.48E-02	6.21E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.71E-01	1.00E+00	2.03E+00	8.35E+00	2.15E+00	1
Nonachlor (cis)	5103731	2.02E-03	NA (2)	1.18E-02	4.37E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.92E-01	1.00E+00	2.12E+01	8.42E+01	1.49E+00	1
Cobalt	7440484	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.00E-04	NA (2)	NA (2)	NA (2)	NA (2)	1
Copper and compounds	7440508	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Cumene	98828	4.72E-01	2.20E+02	7.50E-02	7.10E-06	NA (4)	1.44E+03	1.62E+03	4.99E+02	5.61E+02	1.58E+03	1.77E+03	7.05E+02	7.93E+02	1.51E+02	1.70E+02	8.97E-02	1.00E+00	5.03E-01	1.21E+00	3.78E-01	1
Cyclohexane	110827	6.15E-02	1.60E+02	8.00E-02	9.00E-06	NA (4)	3.25E+03	3.66E+03	1.13E+03	1.27E+03	3.56E+03	4.00E+03	1.59E+03	1.79E+03	3.40E+02	3.85E+02	1.02E-01	1.00E+00	3.16E-01	7.58E-01	3.60E-01	1
DDD	72548	1.64E-04	1.53E+05	1.69E-02	4.76E-06	0.03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.51E-01	8.00E-01	6.65E+00	2.68E+01	1.73E+00	1
DDE	72559	8.61E-04	1.53E+05	1.44E-02	5.87E-06	0.03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.45E-01	8.00E-01	6.48E+00	2.79E+01	3.74E+00	1

Table 6-21. Chemical-Specific Parameters (page 3 of 4)

Chemical	CAS No.	H' (Henrys Law Constant)	Koc (Organic Carbon Partition Coefficient)	Di (Diffusivity in Air)	Dw (Diffusivity in Air)	ABS_d (Dermal Absorption Fraction)	VF (Soil-to-Air Volatalization Factor) for Landfill - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Wetland - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Landfill - Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Wetland- Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Construction/Excavation Worker	VF (Soil-to-Air Volatalization Factor) for Wetland - Construction/Excavation Worker	K_p (Dermal Permeability Coefficient for Compound in Water)	FA (Fraction Absorbed Water)[a]	τ(Tau)_event (Lag time per Event)	t* (Time to Reach Steady State)	B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	ABS_GI (Gatrointestinal Absorption Fraction)
		unitless	cm^3/g	cm^2/s	cm^2/s	unitless	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	cm/hr	unitless	hr/event	hrs	unitless	unitless
DDT	50293	3.40E-04	2.20E+05	1.37E-02	4.95E-06	0.03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.28E-01	7.00E-01	1.04E+01	4.52E+01	4.55E+00	1
Dibenz[ah]anthracene	53703	4.72E-03	2.62E+06	2.02E-02	5.18E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.31E+00	6.00E-01	3.88E+00	1.75E+01	8.44E+00	1
Dibenzofuran	132649	8.73E-03	7.76E+03	6.01E-02	1.00E-05	NA (4)	6.56E+04	7.38E+04	2.27E+04	2.56E+04	7.19E+04	8.08E+04	3.21E+04	3.61E+04	6.87E+03	7.77E+03	9.75E-02	1.00E+00	9.35E-01	2.24E+00	4.86E-01	1
Dibromochloromethane	124481	3.21E-02	4.68E+02	9.60E-02	1.00E-05	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.89E-03	1.00E+00	1.57E+00	3.77E+00	1.61E-02	1
Dibutylphthalate	84742	7.42E-05	1.46E+03	4.38E-02	7.86E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.88E-02	9.00E-01	3.88E+00	9.31E+00	3.78E-01	1
Dichlorodifluoromethane	75718	1.41E+01	5.80E+01	8.00E-02	1.05E-05	NA (4)	3.66E+02	4.12E+02	1.27E+02	1.43E+02	4.01E+02	4.51E+02	1.79E+02	2.02E+02	3.84E+01	4.34E+01	8.95E-03	1.00E+00	5.07E-01	1.22E+00	3.79E-02	1
Dieldrin	60571	2.38E-03	1.06E+04	1.25E-02	4.74E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.43E-02	8.00E-01	1.46E+01	3.51E+01	3.32E-01	1
Diethylphthalate	84662	1.85E-05	1.26E+02	2.56E-02	6.35E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.88E-03	1.00E+00	1.88E+00	4.51E+00	2.23E-02	1
Diisopropylether	108203	4.10E-04	1.05E+01	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.28E-03	1.00E+00	3.98E-01	9.56E-01	1.66E-02	1
Dimethylphthalate	131113	4.31E-06	3.71E+01	5.68E-02	6.29E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.39E-03	1.00E+00	1.31E+00	3.14E+00	7.43E-03	1
di-*n*-Octylphthalate	117840	1.82E-05	1.96E+05	1.51E-02	3.58E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.29E+00	1.00E+00	1.65E+01	7.62E+01	1.74E+01	1
Endosulfan I	959988	3.55E-05	NA (2)	3.22E-02	4.67E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.33E-02	1.00E+00	2.04E+01	4.91E+01	1.81E-01	1
Endosulfan II	33213659	3.55E-05	NA (2)	3.22E-02	4.67E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.33E-02	1.00E+00	2.04E+01	4.91E+01	1.81E-01	1
Endosulfan Sulfate	1031078	3.65E-05	NA (2)	3.00E-02	4.63E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.54E-02	1.00E+00	2.51E+01	6.03E+01	5.17E-01	1
Endrin	72208	3.08E-04	1.06E+04	1.25E-02	4.74E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.26E-02	8.00E-01	1.46E+01	3.51E+01	2.45E-01	1
Endrin Aldehyde	7421934	1.80E-02	NA (2)	2.97E-02	3.83E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.17E-01	1.00E+00	1.46E+01	5.85E+01	1.63E+00	1
Endrin Ketone	53494705	3.66E-05	NA (2)	3.10E-02	4.46E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.98E-02	1.00E+00	1.46E+01	3.51E+01	2.99E-01	1
Ethylbenzene	100414	3.23E-01	3.63E+02	7.50E-02	7.80E-06	NA (4)	2.16E+03	2.43E+03	7.50E+02	8.43E+02	2.37E+03	2.67E+03	1.06E+03	1.19E+03	2.27E+02	2.56E+02	4.93E-02	1.00E+00	4.19E-01	1.01E+00	1.95E-01	1
Fluoranthene	206440	5.58E-03	7.09E+04	3.02E-02	6.35E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.08E-01	1.00E+00	1.45E+00	5.83E+00	1.69E+00	1
Fluorene	86737	4.10E-03	1.13E+04	3.63E-02	7.88E-06	0.13	1.48E+05	1.67E+05	5.14E+04	5.78E+04	1.63E+05	1.83E+05	7.27E+04	8.17E+04	1.55E+04	1.76E+04	1.10E-01	1.00E+00	9.11E-01	2.19E+00	5.44E-01	1
gamma-Chlordane	5103742	4.11E-03	NA (2)	3.32E-02	4.65E-06	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.35E-01	1.00E+00	2.12E+01	8.86E+01	2.61E+00	1
HCH (alpha)	319846	4.35E-04	3.38E+03	1.42E-02	7.34E-06	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.23E-02	1.00E+00	4.56E+00	1.09E+01	8.04E-02	1
HCH (beta)	319857	3.05E-05	3.38E+03	1.42E-02	7.34E-06	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.19E-02	1.00E+00	4.56E+00	1.09E+01	7.80E-02	1
HCH (delta)	319868	2.10E-04	3.38E+03	NA (2)	NA (2)	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.06E-02	1.00E+00	4.56E+00	1.09E+01	1.35E-01	1
HCH (gamma) Lindane	58899	8.20E-05	3.38E+03	1.42E-02	7.34E-06	0.04	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.08E-02	9.00E-01	4.56E+00	1.09E+01	7.11E-02	1
Heptachlor	76448	6.07E-02	5.24E+04	1.12E-02	5.69E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.69E-02	8.00E-01	1.32E+01	3.18E+01	4.23E-01	1
Heptachlorepoxide	1024573	1.31E-03	5.26E+03	1.32E-02	4.23E-06	0.05	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.09E-02	1.00E+00	1.63E+01	3.91E+01	1.58E-01	1
Hexachlorobenzene	118741	6.97E-02	3.38E+03	5.42E-02	5.91E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.54E-01	9.00E-01	4.22E+00	1.69E+01	1.65E+00	1
Hexachlorobutadiene	87683	4.22E-01	9.94E+02	5.61E-02	6.16E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	8.10E-02	9.00E-01	3.09E+00	7.42E+00	5.03E-01	1
Hexachlorocyclopentadiene	77474	1.11E+00	1.67E+03	1.61E-02	7.21E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.03E-01	1.00E+00	3.61E+00	1.42E+01	6.56E-01	1
Hexachloroethane	67721	1.59E-01	2.25E+02	2.50E-03	6.80E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.92E-02	1.00E+00	2.27E+00	5.44E+00	1.73E-01	1
HMX	2691410	3.55E-08	1.85E+03	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.23E-08	1.00E+00	4.89E+00	1.17E+01	8.15E-08	1
Indeno[1,2,3-cd]pyrene	193395	6.56E-05	2.68E+06	1.90E-02	5.66E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.25E+00	6.00E-01	3.78E+00	1.70E+01	7.99E+00	1
Iron	7439896	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.34E-04	1.00E+00	2.19E-01	5.25E-01	6.73E-04	1
Isophorone	78591	2.48E-04	5.83E+01	6.23E-02	6.76E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.54E-03	1.00E+00	6.35E-01	1.52E+00	1.60E-02	1
Lead 210	14255040	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
m,p-xylene	7816600	3.20E-01	4.34E+02	7.00E-02	7.80E-06	NA (4)	2.45E+03	2.75E+03	8.48E+02	9.53E+02	2.68E+03	3.01E+03	1.20E+03	1.35E+03	2.56E+02	2.90E+02	5.32E-02	1.00E+00	4.19E-01	1.01E+00	2.11E-01	1
Magnesium	7439954	NA (2)	NA (2)	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.57E-03	1.00E+00	1.06E-01	2.55E-01	NA (2)	1
Manganese and compounds	7439965	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.04
Mercury (elemental)	7439976	3.53E-01	1.43E+01	3.07E-02	6.30E-06	0.01	1.53E+04	1.72E+04	5.29E+03	5.95E+03	1.67E+04	1.88E+04	7.48E+03	8.42E+03	1.60E+03	1.81E+03	2.40E-01	NA (2)	NA (2)	NA (2)	NA (2)	1
Mercury and compounds	7487947	1.33E-04	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.07
Methoxychlor	72435	6.48E-04	4.26E+04	1.56E-02	4.46E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.28E-02	1.00E+00	9.26E+00	2.22E+01	3.06E-01	1
Methylacetate	79209	4.72E-03	2.20E+00	1.03E-01	1.00E-05	NA (4)	3.37E+03	3.79E+03	1.17E+03	1.31E+03	3.69E+03	4.15E+03	1.65E+03	1.86E+03	3.53E+02	3.99E+02	7.92E-04	1.00E+00	2.77E-01	6.65E-01	2.62E-03	1
Methylcyclohexane	108872	1.76E+01	2.19E+03	7.00E-02	9.00E-06	NA (4)	8.07E+02	9.08E+02	2.80E+02	3.14E+02	8.84E+02	9.94E+02	3.95E+02	4.45E+02	8.45E+01	9.55E+01	1.10E-01	1.00E+00	3.78E-01	9.08E-01	4.21E-01	1
Methylenechloride	75092	1.33E-01	1.17E+01	1.01E-01	1.17E-05	NA (4)	8.40E+02	9.44E+02	2.91E+02	3.27E+02	9.20E+02	1.03E+03	4.11E+02	4.62E+02	8.79E+01	9.94E+01	3.54E-03	1.00E+00	3.19E-01	7.65E-01	1.25E-02	1
Methylethylketone	78933	2.33E-03	4.50E+00	8.95E-02	9.80E-06	NA (4)	5.43E+03	6.10E+03	1.88E+03	2.11E+03	5.95E+03	6.69E+03	2.66E+03	2.99E+03	5.68E+02	6.42E+02	9.62E-04	1.00E+00	2.70E-01	6.48E-01	3.14E-03	1
Methylisobutylketone	108101	5.66E-03	1.34E+02	7.50E-02	7.80E-06	NA (4)	1.02E+04	1.14E+04	3.52E+03	3.96E+03	1.11E+04	1.25E+04	4.98E+03	5.60E+03	1.06E+03	1.20E+03	3.19E-03	1.00E+00	3.88E-01	9.32E-01	1.23E-02	1
Methyltertbutylether (MTBE)	1634044	2.41E-02	6.00E+00	8.00E-02	1.00E-05	NA (4)	1.88E+03	2.12E+03	6.52E+02	7.33E+02	2.06E+03	2.32E+03	9.22E+02	1.04E+03	1.97E+02	2.23E+02	2.11E-03	1.00E+00	3.32E-01	7.98E-01	7.63E-03	1
m-Nitrotoluene (3-nitrotoluene)	99081	9.64E-04	6.46E+01	7.60E-02	8.60E-06	NA (4)	1.79E+04	2.01E+04	6.19E+03	6.96E+03	1.96E+04	2.20E+04	8.75E+03	9.84E+03	1.87E+03	2.11E+03	1.13E-02	1.00E+00	6.26E-01	1.50E+00	5.10E-02	1
Molybdenum	7439987	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Naphthalene	91203	1.98E-02	1.84E+03	5.90E-02	7.50E-06	0.01	2.15E+04	2.42E+04	7.44E+03	8.37E+03	2.35E+04	2.65E+04	1.05E+04	1.18E+04	2.25E+03	2.54E+03	4.66E-02	1.00E+00	5.57E-01	1.34E+00	2.03E-01	1

Table 6-21. Chemical-Specific Parameters (page 4 of 4)

Chemical	CAS No.	H' (Henrys Law Constant)	Koc (Organic Carbon Partition Coefficient)	Di (Diffusivity in Air)	Dw (Diffusivity in Air)	ABS_d (Dermal Absorption Fraction)	VF (Soil-to-Air Volatalization Factor) for Landfill - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Wetland - Ranger/Tour Guide	VF (Soil-to-Air Volatalization Factor) for Landfill - Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Wetland- Restoration Supervisor	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Adlut/Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Wetland - Site Visitor (Child/Non-Carcinogens)	VF (Soil-to-Air Volatalization Factor) for Landfill - Construction/Excavation Worker	VF (Soil-to-Air Volatalization Factor) for Wetland - Construction/Excavation Worker	K_p (Dermal Permeability Coefficient for Compound in Water)	FA (Fraction Absorbed Water)[a]	τ(Tau)_event (Lag time per Event)	t* (Time to Reach Steady State)	B (Ratio of Stratum Corneum:Viable Epidermis Permeability Coefficients)	ABS_GI (Gatrointestinal Absorption Fraction)
		unitless	cm^3/g	cm^2/s	cm^2/s	unitless	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	m^3/kg	cm/hr	unitless	hr/event	hrs	unitless	unitless
Nickel (soluble salts)	7440020	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.00E-04	NA (2)	NA (2)	NA (2)	NA (2)	0.04
Nitrobenzene	98953	9.84E-04	6.46E+01	7.60E-02	8.60E-06	NA (4)	1.77E+04	1.99E+04	6.12E+03	6.88E+03	1.94E+04	2.18E+04	8.66E+03	9.74E+03	1.85E+03	2.09E+03	5.41E-03	1.00E+00	5.22E-01	1.25E+00	2.31E-02	1
n-Nitrosodimethylamine	62759	2.16E-05	3.60E+00	1.34E-01	9.72E-06	NA (4)	3.82E+04	4.29E+04	1.32E+04	1.49E+04	4.18E+04	4.70E+04	1.87E+04	2.10E+04	4.00E+03	4.52E+03	2.26E-04	1.00E+00	2.77E-01	6.65E-01	7.49E-04	1
n-Nitrosodi-*n*-propylamine	621647	2.21E-04	4.85E+02	5.45E-02	8.17E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.33E-03	1.00E+00	5.72E-01	1.37E+00	1.02E-02	1
n-Nitrosodiphenylamine	86306	4.96E-05	6.15E+03	3.12E-02	6.35E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.45E-02	1.00E+00	1.38E+00	3.31E+00	7.88E-02	1
Nonachlor (trans)	39765805	2.02E-03	NA (2)	5.31E-02	7.27E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.86E-04	1.00E+00	2.12E+01	5.09E+01	1.45E-03	1
o-Nitrotoluene (2-nitrotoluene)	88722	9.64E-04	6.50E+01	7.60E-02	8.60E-06	NA (4)	1.79E+04	2.01E+04	6.20E+03	6.97E+03	1.96E+04	2.21E+04	8.77E+03	9.86E+03	1.87E+03	2.12E+03	8.99E-03	1.00E+00	6.26E-01	1.50E+00	4.05E-02	1
o-xylene	95476	2.20E-01	4.43E+02	8.70E-02	1.00E-05	NA (4)	2.64E+03	2.97E+03	9.14E+02	1.03E+03	2.89E+03	3.25E+03	1.29E+03	1.45E+03	2.76E+02	3.12E+02	4.71E-02	1.00E+00	4.19E-01	1.01E+00	1.86E-01	1
Pentachlorophenol	87865	1.00E-06	3.38E+03	5.60E-02	6.10E-06	0.25	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.27E-01	9.00E-01	3.32E+00	1.28E+01	7.96E-01	1
Phenanthrene	85018	1.73E-03	2.08E+04	3.33E-02	7.47E-06	0.13	3.22E+05	3.62E+05	1.12E+05	1.25E+05	3.53E+05	3.97E+05	1.58E+05	1.77E+05	3.37E+04	3.81E+04	1.44E-01	1.00E+00	1.06E+00	4.11E+00	7.40E-01	1
Phenol	108952	1.37E-05	2.68E+02	8.20E-02	9.10E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.34E-03	1.00E+00	3.59E-01	8.61E-01	1.62E-02	1
p-Nitrotoluene (4-nitrotoluene)	99990	1.96E-03	3.09E+02	4.78E-02	8.61E-06	NA (4)	3.17E+04	3.56E+04	1.10E+04	1.23E+04	3.47E+04	3.90E+04	1.55E+04	1.75E+04	3.32E+03	3.75E+03	1.00E-02	1.00E+00	6.26E-01	1.50E+00	4.51E-02	1
Pyrene	129000	4.51E-04	1.05E+05	2.72E-02	7.24E-06	0.13	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	2.01E-01	1.00E+00	1.45E+00	5.63E+00	1.10E+00	1
Radium 226	13982633	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
Radium 228	15262201	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
RDX (Cyclonite)	121824	2.59E-06	1.95E+02	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	3.36E-04	1.00E+00	1.88E+00	4.50E+00	1.93E-03	1
Selenium	7782492	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Silver and compounds	7440224	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.00E-04	NA (2)	NA (2)	NA (2)	NA (2)	0.04
Sodium	7440235	NA (2)	NA (2)	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.57E-03	1.00E+00	1.06E-01	2.55E-01	NA (2)	1
Styrene	100425	1.13E-01	7.76E+02	7.10E-02	8.00E-06	NA (4)	5.38E+03	6.05E+03	1.86E+03	2.10E+03	5.90E+03	6.63E+03	2.64E+03	2.96E+03	5.64E+02	6.37E+02	3.72E-02	1.00E+00	4.09E-01	9.81E-01	1.46E-01	1
TEQ_mamm	1746016	1.47E-03	NA (2)	1.18E-02	4.37E-06	0.03	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.97E-01	1.00E+00	6.82E+00	2.95E+01	4.12E+00	1
Tert-amyl-methyl-ether (TAME)	994058	1.30E-01	4.17E+01	6.99E-02	7.37E-06	NA (4)	1.41E+03	1.59E+03	4.90E+02	5.51E+02	1.55E+03	1.74E+03	6.93E+02	7.79E+02	1.48E+02	1.67E+02	8.27E-03	1.00E+00	3.98E-01	9.56E-01	3.22E-02	1
Tert-butyl-alcohol (TBA)	75650	5.42E-04	4.21E+00	8.52E-02	9.11E-06	NA (4)	1.14E+04	1.28E+04	3.93E+03	4.42E+03	1.24E+04	1.40E+04	5.56E+03	6.25E+03	1.19E+03	1.34E+03	1.73E-03	1.00E+00	2.77E-01	6.65E-01	5.72E-03	1
Tert-butyl-ethyl-ether (TBE)	637923	9.99E-02	3.71E+01	6.95E-02	7.34E-06	NA (4)	1.55E+03	1.74E+03	5.35E+02	6.02E+02	1.69E+03	1.90E+03	7.57E+02	8.51E+02	1.62E+02	1.83E+02	7.47E-03	1.00E+00	3.98E-01	9.56E-01	2.90E-02	1
Tetrachlorodibenzofuran	30402143	NA (2)	NA (2)	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.57E-03	1.00E+00	1.06E-01	2.55E-01	NA (2)	1
Tetrachloroethylene (PCE)	127184	7.26E-01	1.55E+02	7.20E-02	8.20E-06	NA (4)	1.04E+03	1.17E+03	3.61E+02	4.06E+02	1.14E+03	1.28E+03	5.10E+02	5.74E+02	1.09E+02	1.23E+02	3.34E-02	1.00E+00	9.07E-01	2.18E+00	1.65E-01	1
Thallium and compounds	7440280	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Toluene	108883	2.72E-01	1.82E+02	8.70E-02	8.60E-06	NA (4)	1.60E+03	1.80E+03	5.53E+02	6.22E+02	1.75E+03	1.97E+03	7.82E+02	8.79E+02	1.67E+02	1.89E+02	3.11E-02	1.00E+00	3.50E-01	8.40E-01	1.15E-01	1
Total Chromium	7440473	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	1
Total PCB	11097691	1.16E-02	7.56E+04	NA (2)	NA (2)	0.14	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	4.82E-01	1.00E+00	7.22E+00	3.08E+01	3.35E+00	1
Toxaphene	8001352	2.46E-04	9.93E+04	1.16E-02	4.34E-06	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	7.63E-03	8.00E-01	3.49E+01	8.37E+01	6.22E-02	1
Trichloroethylene (TCE)	79016	4.04E-01	1.66E+02	7.90E-02	9.10E-06	NA (4)	1.34E+03	1.50E+03	4.63E+02	5.20E+02	1.46E+03	1.65E+03	6.54E+02	7.36E+02	1.40E+02	1.58E+02	1.16E-02	1.00E+00	5.81E-01	1.39E+00	5.13E-02	1
Trichlorofluoromethane	75694	3.98E+00	1.60E+02	8.70E-02	1.30E-05	NA (4)	5.04E+02	5.67E+02	1.75E+02	1.96E+02	5.52E+02	6.21E+02	2.47E+02	2.78E+02	5.28E+01	5.97E+01	1.27E-02	1.00E+00	6.28E-01	1.51E+00	5.75E-02	1
Tri-*n*-butyltin Cation	36643284	2.08E-03	3.75E+07	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	5.03E-03	1.00E+00	2.36E+02	5.65E+02	4.72E-02	1
Trinitrophenylmethylnitramine	479458	1.11E-07	2.14E+03	NA (2)	NA (2)	0.1	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	2.00E+00	4.35E+00	1.04E+01	6.52E-03	1
Uranium 234	13966295	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
Uranium 235	15117961	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
Uranium 238	7440611	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	NA (3)	0
Vanadium and compounds	7440622	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	1.00E-03	NA (2)	NA (2)	NA (2)	NA (2)	0.026
Vinylchloride	75014	1.14E+00	1.86E+01	1.06E-01	1.23E-06	NA (4)	4.14E+02	4.66E+02	1.44E+02	1.61E+02	4.54E+02	5.10E+02	2.03E+02	2.28E+02	4.34E+01	4.90E+01	8.33E-03	1.00E+00	2.39E-01	5.73E-01	2.53E-02	1
Zinc	7440666	NA (2)	1.43E+01	NA (2)	NA (2)	0.01	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	NA (1)	6.00E-04	NA (2)	NA (2)	NA (2)	NA (2)	1

NA (1): Not Applicable, chemical is either semi-volatile or non-volatile; NA (2): Not Applicable, physical Chemistry data are not available; NA (3): Not Applicable, constituent is radionuclide; NA (4): Not Applicable, constituent does not have ABSd value

(a) Chemicals not listed in risk assessment guidance were assumed to have FA = 1.

Information on the table was obtained from:

- Howard, P.H., and W.M.Meylan. 1971. Handbook of Physical Properties of Organic Chemicals.Boca Raton: CRC Lewis Publishers.
- ORNL, The Risk Assessment Information System (http://risk.lsd.ornl.gov/cgi-bin/tox/TOX_select?select=nrad)
- Syracuse Research Coorporation. Environmental Science Center Database (http://www.syrres.com/esc/physdemo.htm)
- Texas Natural Resources Conservation Committee (TNRCC) (http://www.tnrcc.state.tx.us/permitting/remed/techsupp/trrptoxchph.xls)
- U.S. EPA Technical Factsheet on Xylene (http://www.epa.gov/OGWDW/dwh/t-voc/xylenes.html)
- U.S. EPA. Waste and Cleanup Risk Assessment. (http://www.epa.gov/oswer/riskassessment/ragse/index.htm).
- DTSC, 1999. Preliminary Endangerment Assessment, Guidance Manual

Table 6-22. Site Parameters for Calculating Q/C, PEF, and VF (All receptors except Construction Worker)

Symbol	Parameter	Units	Landfill	Wetland
A	Constant	unitless	11.91	11.91
B	Constant	unitless	18.44	18.44
C	Constant	unitless	209.78	209.78
Asite	Area of Site	acres	77	33
V	Fraction Vegetative Cover	unitless	0.50	0.50
Um	Mean annual windspeed	m/s	4.69	4.69
Ut	Equivalent threshold value of windspeed at 7m	m/s	11.32	11.32
F(x)	Function dependent on Um/Ut	unitless	0.19	0.19
ρ_b	Soil bulk density	g/cm^3	1.50	1.50
θa	Air-filled soil porosity	Lair/Lsoil	0.28	0.28
θw	Water-filled soil porosity	Lair/Lsoil	0.15	0.15
n	Total soil porosity	Lair/Lsoil	0.43	0.43
f_{oc}	Fraction organic carbon	g/g	0.01	0.01

Table 6-23. Site Parameters for Calculating Q/C, PEF, and VF for the Excavation/Construction Worker

Symbol	Parameter	Units	Landfill[(a)]	Wetland[(a)]
A	Constant	unitless	2.45 (12.94)	2.45 (12.94)
B	Constant	unitless	17.57 (5.74)	17.57 (5.74)
C	Constant	unitless	189.04 (71.77)	189.04 (71.77)
Asite	Area of Site	acres	77	33
T	Total time over which construction occurs (assumed to be 260 8-hr work days)	seconds	7.49E+06	7.49E+06
AR	Area of Roads	m^2	3402.98	2227.78
W	Mean Vehicle Weight	tons	8	8
p	Number of days with at least 0.01 inches of precipitation	days/yr	60	60
ΣVKt	Sum of fleet vehicle kiloneters traveled during exposure duration	km	1451.39	950.16
V	Number of vehicles that traverse the site in a day	unitless	20	20
K	Length of dirt road segment that is traversed per day	km/day	0.56	0.37
t	Number of days on which vehicle traffic occurs	days	130	130
FD	Dispersion Correction Factor	unitless	0.19	0.19
ρ_b	Soil bulk density	g/cm^3	1.50	1.50
θa	Air-filled soil porosity	Lair/Lsoil	0.28	0.28
θw	Water-filled soil porosity	Lair/Lsoil	0.15	0.15
n	Total soil porosity	Lair/Lsoil	0.43	0.43
f_{oc}	Fraction organic carbon	g/g	0.01	0.01

(a) A,B,C values in parentheses were used for PEF calculation. A, B, C values outside parentheses were used for VF calculation.

Table 6-24. Toxicity Data for Chemicals

Chemical	CAS No.	Cancer Class[(o),(p)]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo (mg/kg-d)$^{-1}$	Reference	CSFi (mg/kg-d)$^{-1}$	Reference	URF (µg/m^3)$^{-1}$	Reference
1,1,1-Trichloroethane	71556	D	2.80E-01	d	6.30E-01	c	2.21E+00	c	NA		NA		NA	
1,1,2,2-Tetrachloroethane	79345	C	6.00E-02	c	6.00E-02	f	2.10E-01	f	2.00E-01	a	2.03E-01	a	5.80E-05	a
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	NA	3.00E+01	a	8.57E+00	e	3.00E+01	e	NA		NA		NA	
1,1,2-Trichloroethane	79005	C	4.00E-03	a	4.00E-03	f	1.40E-02	f	5.70E-02	a	5.60E-02	a	1.60E-05	a
1,1-Biphenyl	92524	D	5.00E-02	a	5.00E-02	f	1.75E-01	f	NA		NA		NA	
1,1-Dichloroethane	75343	C	1.00E-01	e	1.43E-01	e	5.00E-01	e	NA		NA		NA	
1,1-Dichloroethylene	75354	C	5.00E-02	a	5.70E-02	a	2.00E-01	a	NA		NA		NA	
1,2,3-Trichlorobenzene	87616	NA	3.00E-03	m	NA		4.00E-02	m	NA		NA		NA	
1,2,4,5-Tetrachlorobenzene	95943	NA	3.00E-04	a	3.00E-04	f	1.05E-03	f	NA		NA		NA	
1,2,4-Trichlorobenzene	120821	D	1.00E-02	a	1.00E-03	c	3.50E-03	c	NA		NA		NA	
1,2-Dibromo-3-chloropropane	96128	B2	5.70E-05	f	5.71E-05	a	2.00E-04	a	1.40E+00	e	2.40E-03	g	6.86E-07	
1,2-Dibromoethane	106934	B2	9.00E-03	a	2.60E-03	a	9.10E-03	a	2.00E+00	a	2.00E+00	a	5.71E-04	a
1,2-Dichlorobenzene	95501	D	9.00E-02	a	5.71E-02	e	2.00E-01	e	NA		NA		NA	
1,2-Dichloroethane	107062	B2	2.00E-02	d	1.40E-03	d	4.90E-03	d	9.10E-02	a	9.10E-02	a	2.60E-05	a
1,2-Dichloroethylene (cis)	156592	D	1.00E-02	c	1.00E-02	f	3.50E-02	f	NA		NA		NA	
1,2-Dichloroethylene (trans)	156605	NA	2.00E-02	a	2.00E-02	f	7.00E-02	f	NA		NA		NA	
1,2-Dichloropropane	78875	B2	1.10E-03	f	1.14E-03	a	4.00E-03	a	6.80E-02	e	6.80E-02	f	1.94E-05	f
1,3,5-Trinitrobenzene	99354	NA	3.00E-02	a	3.00E-02	f	1.05E-01	f	NA		NA		NA	
1,3-Dichlorobenzene	541731	3	3.00E-02	d	3.00E-02	f	1.05E-01	f	NA		NA		NA	
1,3-Dichloropropene (cis)	10061015	NA	1.00E-04	m	NA		6.70E-03	m	5.40E-01	m	NA		NA	
1,3-Dichloropropene (trans)	10061026	NA	3.00E-02	m	NA		2.00E-02	m	1.00E-01	m	NA		4.00E-06	m
1,3-Dinitrobenzene	99650	D	1.00E-04	a	1.00E-04	f	3.50E-04	f	NA		NA		NA	
1,4-Dichlorobenzene	106467	C	3.00E-02	d	2.30E-01	a	8.05E-01	a	2.40E-02	e	2.20E-02	d	6.29E-06	d
1,4-Dioxane	123911	B2	NA		NA		NA		1.10E-02	a	1.10E-02	f	3.14E-06	f
2,4,5,6-Tetrachloro-*m*-xylene	877098	NA	NA		NA		NA		NA		NA		NA	
2,4,5-Trichlorophenol	95954	NA	1.00E-01	a	1.00E-01	f	3.50E-01	f	NA		NA		NA	
2,4,6-Trichlorophenol	88062	B2	1.00E-04	d	1.00E-04	f	3.50E-04	f	1.10E-02	a	1.09E-02	a	3.10E-06	a
2,4,6-Trinitrotoluene	118967	C	5.00E-04	a	5.00E-04	f	1.75E-03	f	3.00E-02	a	3.00E-02	f	8.57E-06	f
2,4-Dichlorophenol	120832	NA	3.00E-03	a	3.00E-03	f	1.05E-02	f	NA		NA		NA	
2,4-Dimethylphenol	105679	NA	2.00E-02	a	2.00E-02	f	7.00E-02	f	NA		NA		NA	
2,4-Dinitrophenol	51285	NA	2.00E-03	a	2.00E-03	f	7.00E-03	f	NA		NA		NA	
2,4-Dinitrotoluene	121142	B2	2.00E-03	a	2.00E-03	f	7.00E-03	f	NA		NA		NA	
2,6-Dinitrotoluene	606202	B2	1.00E-03	e	1.00E-03	f	3.50E-03	f	NA		NA		NA	
2-Amino-4,6-dinitrotoluene	35572782	NA	1.70E-04	m	NA		1.00E-04	m	1.00E-02	m	NA		NA	
2-Chloronaphthalene	91587	NA	8.00E-02	a	8.00E-02	f	2.80E-01	f	NA		NA		NA	
2-Chlorophenol	95578	NA	5.00E-03	a	5.00E-03	f	1.75E-02	f	NA		NA		NA	

Table 6-24. Toxicity Data for Chemicals (page 2 of 6)

Chemical	CAS No.	Cancer Class[o],[p]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo $(mg/kg\text{-}d)^{-1}$	Reference	CSFi $(mg/kg\text{-}d)^{-1}$	Reference	URF $(\mu g/m^3)^{-1}$	Reference
2-Hexanone	591786	NA	6.00E-02	m	NA		4.00E-03	m	NA		NA		NA	
1-Methylnaphthalene	90120		7.0E-02	k	NA		NA		NA		NA		NA	
2-Methylnaphthalene	91576	D	4.00E-03	k	NA		NA		NA		NA		NA	
2-Methylphenol	95487	C	5.00E-02	a	5.00E-02	f	1.75E-01	f	NA		NA		NA	
2-Nitroaniline	88744	D	3.00E-03	c	3.00E-05	c	1.05E-04	c	NA		NA		NA	
2-Nitrophenol	88755		2.00E-03	m	NA		4.00E-03	m	NA		NA		NA	
3,3'-Dichlorobenzidine	91941	B2	NA		NA		NA		4.50E-01	a	4.50E-01	f	1.29E-04	f
3-Nitroaniline	99092	C	3.00E-04	c	3.00E-04	c	1.05E-03	c	2.10E-02	c	2.10E-02	f	6.00E-06	f
4,6-Dinitro-o-cresol	534521	NA	1.00E-04	c	1.00E-04	f	3.50E-04	f	NA		NA		NA	
4-Amino-2,6-dinitrotoluene	19406510	NA	1.67E-04	m	NA		1.00E-04	m	1.00E-02	m	NA		NA	
4-Bromophenylphenylether	101553	NA	NA		NA		NA		1.50E+01	m	NA		3.30E-03	m
4-Chloro-3-methylphenol	59507	NA	5.00E-03	m	NA		3.00E-02	m	NA		NA		NA	
4-Chloroaniline	106478	2B	4.00E-03	a	4.00E-03	f	1.40E-02	f	NA		NA		NA	
4-Chlorophenylphenylether	7005723	NA	NA		NA		NA		1.50E+01	m	NA		3.30E-03	m
4-Methylphenol	106445	C	5.00E-03	e	5.00E-03	f	1.75E-02	f			NA			
4-Nitroaniline	100016	C	3.00E-03	c	1.00E-03	c	3.50E-03	c	2.10E-02	c	2.10E-02	f	6.00E-06	f
4-Nitrophenol	100027	NA	2.00E-03	m	NA		1.00E-03	m	NA		NA		NA	
Acenaphthene	83329	NA	6.00E-02	a	6.00E-02	f	2.10E-01	f	NA		NA		NA	
Acenaphthylene	208968	D	6.00E-02	m	NA		NA		NA		NA		NA	
Acetone	67641	D	9.00E-01	a	9.00E-01	f	3.15E+00	f	NA		NA		NA	
Acetophenone	98862	D	1.00E-01	k	NA		4.90E-02	m	NA		NA		NA	
alpha-Chlordane	5103719	B2	5.00E-04	m	NA		7.00E-04	m	3.50E-01	m	NA		1.00E-04	m
Aldrin	309002	B2	3.00E-05	a	3.00E-05	f	1.05E-04	f	1.70E+01	a	1.72E+01	a	4.90E-03	a
Aluminum	7429905	NA	1.00E+00	c	1.40E-03	c	4.90E-03	c	NA		NA		NA	
Anthracene	120127	D	3.00E-01	a	3.00E-01	f	1.05E+00	f	NA		NA		NA	
Antimony and compounds	7440360	NA	4.00E-04	a	NA		NA		NA		NA		NA	
Arsenic	7440382	A	3.00E-04	a	NA		NA		1.50E+00	a	1.51E+01	a	4.30E-03	a
Atrazine	1912249	C	3.50E-02	a	3.50E-02	f	1.23E-01	f	2.22E-01	e	2.20E-01	f	6.29E-05	f
Barium and compounds	7440393	D	7.00E-02	a	1.43E-04	e	5.00E-04	e	NA		NA		NA	
Benz[a]anthracene	56553	B2	NA		NA		NA		7.30E-01	d	7.30E-01	f	2.09E-04	f
Benzaldehyde	100527	NA	1.00E-01	a	1.00E-01	f	3.50E-01	f	NA		NA		NA	
Benzene	71432	A	4.00E-03	a	8.60E-03	a	3.01E-02	a	5.50E-02	a	2.70E-02	a	7.71E-06	a
Benzo(g,h,i)perylene	191242	3	3.00E-02	m	NA		NA		NA		NA		NA	
Benzo[a]pyrene	50328	B2	NA		NA		NA		7.30E+00	a	7.30E+00	f	2.09E-03	f
Benzo[b]fluoranthene	205992	B2	NA		NA		NA		7.30E-01	d	7.30E-01	f	2.09E-04	f
Benzo[k]fluoranthene	207089	B2	NA		NA		NA		7.30E-02	d	7.30E-02	f	2.09E-05	f
Benzoic Acid	65850	D	4.00E+00	m	NA		5.00E-03	m	NA		NA		NA	

Table 6-24. Toxicity Data for Chemicals (page 3 of 6)

Chemical	CAS No.	Cancer Class[(o),(p)]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo (mg/kg-d)$^{-1}$	Reference	CSFi (mg/kg-d)$^{-1}$	Reference	URF (µg/m^3)$^{-1}$	Reference
Beryllium and compounds	7440417	B1	2.00E-03	a	5.71E-06	a	2.00E-05	a	NA		8.40E+00	a	2.40E-03	a
bis(2-chloroethoxy)methane	111911	A	NA		NA		NA		1.10E+00	m	NA		3.30E-04	m
bis(2-chloroethyl)ether	111444	B2	NA		NA		NA		1.10E+00	a	1.10E+00	a	3.14E-04	a
bis(2-chloroisopropyl)ether	108601	C	4.00E-02	a	4.00E-02	f	NA		7.00E-02		3.50E-02	g	NA	
bis(2-ethylhexyl)phthalate	117817	B2	2.00E-02	a	2.00E-02	f	7.00E-02	f	1.40E-02	a	1.40E-02	f	4.00E-06	f
Bromochloromethane	74975		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	75274	B2	2.00E-02	a	2.00E-02	f	7.00E-02	f	6.20E-02	a	6.20E-02	f	1.77E-05	f
Bromoform	75252	B2	2.00E-02	a	2.00E-02	f	7.00E-02	f	7.90E-03	a	3.85E-03	a	1.10E-06	a
Bromomethane	74839	D	1.40E-03	a	1.43E-03	a	5.00E-03	a	NA		NA		NA	
Butylbenzylphthalate	85687	C	2.00E-01	a	2.00E-01	f	7.00E-01	f	NA		NA		NA	
Cadmium and compounds	7440439	B1	5.00E-04	a	NA		NA		NA		6.30E+00	a	1.80E-03	a
Caprolactam	105602	NA	5.00E-01	a	5.00E-01	f	1.75E+00	f	NA		NA		NA	
Carbazole	86748	B2	NA		NA		NA		2.00E-02	e	2.00E-02	f	5.71E-06	f
Carbondisulfide	75150	NA	1.00E-01	a	2.00E-01	a	7.00E-01	a	NA		NA		NA	
Carbontetrachloride	56235	B2	7.00E-04	a	7.00E-04	f	2.45E-03	f	1.30E-01	a	5.25E-02	a	1.50E-05	a
Chlorobenzene	108907	D	2.00E-02	a	1.70E-02	d	5.95E-02	d	NA		NA		NA	
Chloroethane	75003	3	4.00E-01	d	2.86E+00	a	1.00E+01	a	2.90E-03	d	2.90E-03	f	8.29E-07	f
Chloroform	67663	B1	1.00E-02	a	1.40E-02	d	4.90E-02	d	NA		8.10E-02	a	2.31E-05	a
Chloromethane	74873	D	2.60E-02	f	2.60E-02	a	9.10E-02	a	NA		NA		NA	
Chromium VI	18540299	A	3.00E-03	a	2.20E-06	a	7.70E-06	a	NA		2.94E+02	a	8.40E-02	a
Chrysene	218019	B2	NA		NA		NA		7.30E-03	d	7.30E-03	f	2.09E-06	f
Nonachlor (cis)	5103731	B2	5.00E-04	m	NA		7.00E-04	m	3.50E-01	m	NA		1.00E-04	m
Cobalt	7440484	2B	2.00E-02	c	5.70E-06	c	2.00E-05	c	NA		9.80E+00	c	2.80E-03	c
Copper and compounds	7440508	D	4.00E-02	e	NA		NA		NA		NA		NA	
Cumene	98828	D	1.00E-01	a	1.10E-01	a	3.85E-01	a	NA		NA		NA	
Cyclohexane	110827	D	1.70E+00	f	1.70E+00	a	5.95E+00	a	NA		NA		NA	
DDD	72548	B2	NA		NA		NA		2.40E-01	a	2.40E-01	f	6.86E-05	f
DDE	72559	B2	NA		NA		NA		3.40E-01	a	3.40E-01	f	9.71E-05	f
DDT	50293	B2	5.00E-04	a	5.00E-04	f	1.75E-03	f	3.40E-01	a	3.40E-01	a	9.70E-05	a
Dibenz[ah]anthracene	53703	B2	NA		NA		NA		7.30E+00	d	7.30E+00	f	2.09E-03	f
Dibenzofuran	132649	D	2.00E-03	d	2.00E-03	f	7.00E-03	f	NA		NA		NA	
Dibromochloromethane	124481	C	2.00E-02	a	2.00E-02	f	7.00E-02	f	8.40E-02	a	8.40E-02	f	2.40E-05	f
Dibutylphthalate	84742	D	1.00E-01	a	1.00E-01	f	3.50E-01	f	NA		NA		NA	
Dichlorodifluoromethane	75718	NA	2.00E-01	a	5.71E-02	e	2.00E-01	e	NA		NA		NA	
Dieldrin	60571	B2	5.00E-05	a	5.00E-05	f	1.75E-04	f	1.60E+01	a	1.61E+01	a	4.60E-03	a
Diethylphthalate	84662	D	8.00E-01	a	8.00E-01	f	2.80E+00	f	NA		NA		NA	

Table 6-24. Toxicity Data for Chemicals (page 4 of 6)

Chemical	CAS No.	Cancer Class[(o),(p)]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo (mg/kg-d)$^{-1}$	Reference	CSFi (mg/kg-d)$^{-1}$	Reference	URF (µg/m^3)$^{-1}$	Reference
Diisopropylether	108203	NA	NA		1.10E-01	c	3.85E-01	c	NA		NA		NA	
Dimethylphthalate	131113	D	1.00E+01	e	1.00E+01	f	3.50E+01	f	NA		NA		NA	
di-*n*-Octylphthalate	117840	D	4.00E-02	c	4.00E-02	f	1.40E-01	f	NA		NA		NA	
Endosulfan I	959988	NA	2.00E-03	m	NA		3.33E-05	m	NA		NA		NA	
Endosulfan II	33213659	NA	6.00E-03	m	NA		NA		NA		NA		NA	
Endosulfan Sulfate	1031078	NA	6.00E-03	m	NA		NA		NA		NA		NA	
Endrin	72208	D	3.00E-04	a	3.00E-04	f	1.05E-03	f	NA		NA		NA	
Endrin Aldehyde	7421934	D	3.00E-04	m	NA		NA		NA		NA		NA	
Endrin Ketone	53494705	D	3.00E-04	m	NA		1.00E-04	m	NA		NA		NA	
Ethylbenzene	100414	B2	1.00E-01	a	2.90E-01	a	1.02E+00	a	NA		NA		NA	
Fluoranthene	206440	D	4.00E-02	a	4.00E-02	f	1.40E-01	f	NA		NA		NA	
Fluorene	86737	D	4.00E-02	a	4.00E-02	f	1.40E-01	f	NA		NA		NA	
gamma-Chlordane	5103742		5.00E-04	m	NA		7.00E-04	m	3.50E-01	m	NA		1.00E-04	m
HCH (alpha)	319846	B2	5.00E-04	d	5.00E-04	f	1.75E-03	f	6.30E+00	a	6.30E+00	a	1.80E-03	a
HCH (beta)	319857	C	2.00E-04	d	2.00E-04	f	7.00E-04	f	1.80E+00	a	1.80E+00	a	5.14E-04	a
HCH (delta)	319868	B2	3.00E-04	m	NA		NA		1.80E+00	m	NA		5.10E-04	m
HCH (gamma) Lindane	58899	B2-C	3.00E-04	a	3.00E-04	f	1.05E-03	f	1.30E+00	e	1.30E+00	f	3.71E-04	f
Heptachlor	76448	B2	5.00E-04	a	5.00E-04	f	1.75E-03	f	4.50E+00	a	4.55E+00	a	1.30E-03	a
Heptachlorepoxide	1024573	B2	1.30E-05	a	1.30E-05	f	4.55E-05	f	9.10E+00	a	9.10E+00	a	2.60E-03	a
Hexachlorobenzene	118741	B2	8.00E-04	a	8.00E-04	f	2.80E-03	f	1.60E+00	a	1.61E+00	a	4.60E-04	a
Hexachlorobutadiene	87683	C	3.00E-04	d	3.00E-04	f	1.05E-03	f	7.80E-02	a	7.80E-02	a	2.23E-05	a
Hexachlorocyclopentadiene	77474	E	6.00E-03	a	5.70E-05	a	2.00E-04	a	NA		NA		NA	
Hexachloroethane	67721	C	1.00E-03	a	1.00E-03	f	3.50E-03	f	1.40E-02	a	1.40E-02	a	4.00E-06	a
HMX	2691410	D	5.00E-02	a	5.00E-02	f	1.75E-01	f	NA		NA		NA	
Indeno[1,2,3-cd]pyrene	193395	B2	NA		NA		NA		7.30E-01	d	7.30E-01	f	2.09E-04	f
Iron	7439896	NA	3.00E-01	d	NA		NA		NA		NA		NA	
Isophorone	78591	C	2.00E-01	a	2.00E-01	f	7.00E-01	f	9.50E-04	a	9.50E-04	f	2.71E-07	f
Lead 210	14255040	NA	NA		NA		NA		NA		NA		NA	
m,p-xylene	7816600	NA	2.00E+00	l	NA		4.30E-01	m	NA		NA		NA	
Magnesium	7439954	NA	NA		NA		NA		NA		NA		NA	
Manganese and compounds	7439965	D	2.40E-02	a	1.40E-05	a	4.90E-05	a	NA		NA		NA	
Mercury (elemental)	7439976	D	NA		8.57E-05	a	3.00E-04	a	NA		NA		NA	
Mercury and compounds	7487947	C	3.00E-04	a	NA		NA		NA		NA		NA	
Methoxychlor	72435	D	5.00E-03	a	5.00E-03	f	1.75E-02	f	NA		NA		NA	
Methylacetate	79209	NA	1.00E+00	e	1.00E+00	f	3.50E+00	f	NA		NA		NA	
Methylcyclohexane	108872	NA	8.60E-01	f	8.57E-01	e	3.00E+00	e	NA		NA		NA	

Table 6-24. Toxicity Data for Chemicals (page 5 of 6)

Chemical	CAS No.	Cancer Class[(o),(p)]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo (mg/kg-d)$^{-1}$	Reference	CSFi (mg/kg-d)$^{-1}$	Reference	URF (µg/m^3)$^{-1}$	Reference
Methylenechloride	75092	B2	6.00E-02	a	8.57E-01	e	3.00E+00	e	7.50E-03	a	1.65E-03	a	4.70E-07	a
Methylethylketone	78933	D	6.00E-01		1.40E+00	a	4.90E+00	a	NA		NA		NA	
Methylisobutylketone	108101	D	8.00E-02	e	8.60E-01	a	3.01E+00	a	NA		NA		NA	
Methyltertbutylether (MTBE)	1634044	3	8.57E-01	f	8.57E-01	a	3.00E+00	a	1.80E-03	b	9.10E-04	b	2.60E-07	b
m-Nitrotoluene (3-nitrotoluene)	99081	D	2.00E-02	c	2.00E-02	f	7.00E-02	f	NA		NA		NA	
Molybdenum	7439987	NA	5.00E-03	a	NA		NA		NA		NA		NA	
Naphthalene	91203	C	2.00E-02	a	8.57E-04	a	3.00E-03	a	NA		NA		NA	
Nickel (soluble salts)	7440020	A	2.00E-02	a	NA		NA		NA		NA		NA	
Nitrobenzene	98953	D	5.00E-04	a	5.71E-04	e	2.00E-03	e	NA		NA		NA	
n-Nitrosodimethylamine	62759	B2	NA		NA		NA		5.10E+01	m	NA		1.40E-02	m
n-Nitrosodi-*n*-propylamine	621647	B2	NA		NA		NA		7.00E+00	a	7.00E+00	f	2.00E-03	f
n-Nitrosodiphenylamine	86306	B2	2.00E-02	c	2.00E-02	f	7.00E-02	f	4.90E-03	a	4.90E-03	f	1.40E-06	f
Nonachlor (trans)	39765805	B2	5.00E-04	m	NA		7.00E-04	m	3.50E-01	m	NA		1.00E-04	m
o-Nitrotoluene (2-nitrotoluene)	88722	B2	1.00E-02	e	1.00E-02	f	3.50E-02	f	2.30E-01	c	2.30E-01	f	6.57E-05	f
o-xylene	95476	3	2.00E+00	l	NA		4.30E-01	m	NA		NA		NA	
Pentachlorophenol	87865	B2	3.00E-02	a	3.00E-02	f	1.05E-01	f	1.20E-01	a	1.20E-01	f	3.43E-05	f
Phenanthrene	85018	D	3.00E-02	m	NA		NA		NA		NA		NA	
Phenol	108952	D	3.00E-01	a	3.00E-01	f	1.05E+00	f	NA		NA		NA	
p-Nitrotoluene (4-nitrotoluene)	99990	C	1.00E-02	c	1.00E-02	f	3.50E-02	f	1.70E-02	c	1.70E-02	f	4.86E-06	f
Pyrene	129000	D	3.00E-02	a	3.00E-02	f	1.05E-01	f	NA		NA		NA	
Radium 226	13982633	NA	NA		NA		NA		NA		NA		NA	
Radium 228	15262201	NA	NA		NA		NA		NA		NA		NA	
RDX (Cyclonite)	121824	C	3.00E-03	a	3.00E-03	f	1.05E-02	f	1.10E-01	a	1.10E-01	f	3.14E-05	f
Selenium	7782492	D	5.00E-03	a	NA		NA		NA		NA		NA	
Silver and compounds	7440224	D	5.00E-03	a	NA		NA		NA		NA		NA	
Sodium	7440235	NA	NA		NA		NA		NA		NA		NA	
Styrene	100425	2B	2.00E-01	a	2.90E-01	a	1.02E+00	a	NA		NA		NA	
TEQ_mamm	1746016	B2	NA		NA		NA		1.50E+05	a	1.50E+05	a	4.29E+01	a
Tert-amyl-methyl-ether (TAME)	994058	NA	4.00E-02	m	NA		NA		NA		NA		NA	
Tert-butyl-alcohol (TBA)	75650	NA	9.00E-02	m	NA		3.00E-01	m	NA		NA		NA	
Tert-butyl-ethyl-ether(TBE)	637923	NA	1.00E-03	m	NA		3.00E-01	m	NA		NA		NA	
Tetrachlorodibenzofuran	30402143	NA	NA		NA		NA		NA		NA		NA	
Tetrachloroethylene (PCE)	127184	B2	1.00E-02	a	1.00E-02	b	3.50E-02	b	5.40E-01	b	2.10E-02	b	6.00E-06	b
Thallium and compounds	7440280	NA	6.60E-05	a	NA		NA		NA		NA		NA	
Toluene	108883	D	2.00E-01	a	1.10E-01	a	3.85E-01	a	NA		NA		NA	
Total Chromium	7440473	3	1.50E+00	a	NA		NA		NA		NA		NA	

Table 6-24. Toxicity Data for Chemicals (page 6 of 6)

Chemical	CAS No.	Cancer Class[o],[p]	RfDo (mg/kg-d)	Reference	RfDi (mg/kg-d)	Reference	RfC (mg/m^3)	Reference	CSFo $(mg/kg\text{-}d)^{-1}$	Reference	CSFi $(mg/kg\text{-}d)^{-1}$	Reference	URF $(\mu g/m^3)^{-1}$	Reference
Total PCB	11097691	NA	2.00E-05	a	2.00E-05	f	7.00E-05	f	2.00E+00	a	2.00E+00	a	5.71E-04	a
Toxaphene	8001352	B2	NA		NA		NA		1.10E+00	a	1.12E+00	a	3.20E-04	a
Trichloroethylene (TCE)	79016	B2	NA		1.70E-01	b	5.95E-01	d	1.30E-02	b	7.00E-03	b	2.00E-06	d
Trichlorofluoromethane	75694	NA	3.00E-01	a	2.00E-01	e	7.00E-01	e	NA		NA		NA	
Tri-*n*-butyltin Cation	36643284	NA	3.00E-04	k	NA		5.00E-05	m	NA		NA		NA	
Trinitrophenylmethylnitramine	479458	NA	1.00E-02	e	1.00E-02	f	3.50E-02	f	NA		NA		NA	
Uranium 234	13966295	NA	NA		NA		NA		NA		NA		NA	
Uranium 235	15117961	NA	NA		NA		NA		NA		NA		NA	
Uranium 238	7440611	NA	NA		NA		NA		NA		NA		NA	
Vanadium and compounds	7440622	NA	1.00E-03	d	NA		NA		NA		NA		NA	
Vinylchloride	75014	A	3.00E-03	a	2.86E-02	a	1.00E-01	a	1.50E+00	a	3.10E-02	a	8.86E-06	a
Zinc	7440666	D	3.00E-01	a	NA		NA		NA		NA		NA	

NA: Not Available or Not Applicable

a. IRIS value obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
b. California EPA value, obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
c. PPRTV value obtained from October 2004 Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
d. NCEA value, obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
e. HEAST value obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
f. Route-Extrapolation value, obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
g. Withdrawn value obtained from Region 9 Preliminary Remediation Goal (PRG) Table (http://www.epa.gov/region09/waste/sfund/prg/files/prgtable2004.xls).
h. Value obtained from U.S. EPA (2004c) Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). Exhibit 3-4. Page 3-16.
i. U.S. EPA value for other PAH compound. Classification of PAHs compounds was based on USGS's parameter list for PAH Table (http://pubs.usgs.gov/of/2002/of02-403/HTMLdocs/pcbplist.htm).
j. U.S. EPA value for other semivolatile compound. Classification of semivolatile compounds was based on any organic compound which is not volatile.
k. IRIS value obtained from Texas Natural Resources Conservation Committee (TNRCC) (http://www.tnrcc.state.tx.us/permitting/remed/techsupp/trrptoxchph.xls.
l. HEAST value obtained from Texas Natural Resource Conservation Committee (TNRCC)(http://www.tnrcc.state.tx.us/permitting/remed/techsupp/trrptoxchph.xls).
m. Value obtained from Texas Natural Resources Conservation Committee (TNRCC) (http://www.tnrcc.state.tx.us/permitting/remed/techsupp/trrptoxchph.xls).
o. EPA Weight of Evidence Classification System for Carcinogenicity
   Class A : Human Carcinogen
   Class B1 : Probable Human Carcinogen (limited human data are available)
   Class B2 : Probable Human Carcinogen (sufficient evidence in animals or no evidence in humans)
   Class C : Possible Human Carcinogen
   Class D : Not classifiable as to human carcinogenicity
   Class E : Evidence of non-carcinogenicity for humans
p. Cancer group classification obtained from IARC Monographs database of International Agency for Research on Cancer (IARC) (http://www.iarc.fr/ENG/Databases/index.php)
   Group 1: Constituent is carcinogenic to human
   Group 2A: The constituent is probably carcinogenic to human
   Group 2B: The constituent is possibly carcinogenic to human
   Group 3: The constituent is not classifiable as to carcinogenicity in human
   Group 4: The constituent is probably not carcinogenic to human

Table 6-25. Toxicity Data for Radionuclides

Radionuclides	CAS Number	λ (decay rate) yr^{-1}	CSFo (Risk/pCi)	CSFi (Risk/pCi)	CSF (Risk/y)/(pCi/g)
Lead 210	14255040	3.11E-02	2.66E-09	1.39E-08	4.21E-09
Radium 226	13982633	4.33E-04	7.30E-10	1.16E-08	8.49E-06
Radium 228	15262201	1.21E-01	2.29E-09	5.23E-09	4.53E-06
Uranium 234	13966295	2.83E-06	1.58E-10	1.14E-08	2.52E-10
Uranium 235	15117961	9.85E-10	1.57E-10	1.01E-08	5.18E-07
Uranium 238	7440611	1.55E-10	2.10E-10	9.35E-09	1.14E-07

Information on this table was obtained from U.S. EPA (1999).

Table 6-26. Input Parameters and Values for LeadSpread

Input Parameter	Value	Comment
Lead in Air	0.008 μg/m^3	From nearest monitoring station
Lead in Soil/Dust	95% UCL	Varies with location and receptor, see Table 6-27
Lead in Drinking Water	15 μg/L	Default set by DTSC based on MCL for Lead
Homegrown Produce	0%	No residential receptors
Respirable Dust	20 μg/m^3	From nearest monitoring stations

Table 6-27. Concentrations of Lead in Soil

Area	Soil Interval	95% UCL Lead Concentration (mg/kg)	Mean Lead Concentration (mg/kg)	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)
Landfill	Surface Soil (0-1 ft)	89.5	69.1	5.84	260
	Surface/Subsurface Soil Combined (0-10 ft)	4788.6[(a)]	1014.8	2.27	62,200
Wetland	Surface Soil (0-1 ft)	113.6	45.6	2.16	271
	Surface/Subsurface Soil Combined (0-10 ft)	84.6	45.5	2.02	271

(a) The 95% UCL value for the landfill's combined surface and subsurface soil (0-10 ft or depth to groundwater) is largely driven by two elevated lead concentrations observed below surface soils in the landfill (62,200 mg/kg at 2-3 ft depth and 59,600 mg/kg at 7-8 ft depth).

Table 6-28. Receptor-Specific Exposure Parameter Values Used in LeadSpread Modeling

Exposure Parameter	SiteWorker (Ranger/Tour Guide)	Site Worker (Ranger/ Restoration Supervisor)	Site Visitor (Adult)	Site Visitor (Child)	Construction/ Excavation Worker
Days per Week	5	2	1	1	5
Skin Area (cm^2)	5800	5800	5700	2800	5800
Soil Ingestion Rate (mg/day)	100	200	100	200	330

Table 6-29. Receptor-Specific Exposure Parameter Values Used in the Adult Lead Methodology

Exposure Parameter	Site Worker (Ranger/Tour Guide)	Site Worker (Ranger/ Restoration Supervisor)	Site Visitor (Adult)	Construction/ Excavation Worker
Exposure Frequency (days/yr)	250	100	52	130
Soil Ingestion Rate (mg/day)	100	200	100	330

Table 6-30. Summary of LeadSpread Results for the Landfill and Wetland Areas using 95% UCL Concentrations

Receptor	Landfill			Wetland			PRG-99[a] (mg/kg)	PRG-95[b] (mg/kg)
	Lead in Soil - 95% UCL (mg/kg)	99th Percentile Estimate of PbB (µg/dl)	95th Percentile Estimate of PbB (µg/dl)	Lead in Soil - 95% UCL (mg/kg)	99th Percentile Estimate of PbB (µg/dl)	95th Percentile Estimate of PbB (µg/dl)		
Ranger/Tour Guide[c]	90	3.6	2.6	114	3.7	2.7	1729	2708
Ranger/Restoration Supervisor[d]	4,789	17.9	13.0	85	3.5	2.5	2210	3459
Adult Site Visitor[c]	90	3.3	2.4	114	3.3	2.4	8677	13576
Child Site Visitor[c]	90	5.0	3.6	114	5.2	3.7	910	1543
Construction/ Excavation Worker[d]	4,789	63.4	45.8	85	4.3	3.1	539	844

(a) Concentration in soil that will result in a 99th percentile estimate of PbB equal to the PbB level of concern (i.e., 10 µg/dl).
(b) Concentration in soil that will result in a 95th percentile estimate of PbB equal to the PbB level of concern (i.e., 10 µg/dl).
(c) Receptor is exposed to surface soil (0-1 ft depth) only.
(d) Receptor is exposed to combined surface and subsurface soil (0-10 ft depth).

Table 6-31. LeadSpread Results Using the Average Concentrations for the Landfill Surface and Subsurface Soils Combined

Receptor	Lead in Soil – Mean Concentration (mg/kg)	99th Percentile Estimate of PbB (µg/dl)	95th Percentile Estimate of PbB (µg/dl)	PRG-99	PRG-95
Ranger/Restoration Supervisor	1,015	6.3	4.6	2,210	3,459
Construction/Excavation Worker	1,015	16.0	11.6	539	844
Construction/Excavation Worker*	1,015	8.8	6.9	1213	1629

*Calculated using the updated values for geometric standard deviation (1.4) and for bioavailability (0.30) that were recommended in the Navy's standard operating procedures for investigating lead risk (DeGrandchamp, 2005).

Table 6-32. Summary of Adult Lead Model Results for the Landfill and Wetland Areas using 95% UCL Concentrations

Receptor	Landfill		Wetland		PRG (mg/kg)
	Adult Worker PbB (µg/dl)	Fetal PbB (µg/dl)	Adult Worker PbB (µg/dl)	Fetal PbB (µg/dl)	
Ranger/Tour Guide	1.7	5.2	1.8	5.5	564
Ranger/Restoration Supervisor	**14**	**43**	1.6	5.0	705
Adult Site Visitor	1.5	4.5	1.5	4.5	2,710
Construction/Excavation Worker	**28.4**	**87.4**	1.9	5.8	328

Table 6-33. ALM Results Using the Mean Lead Concentration for the Combined Surface and Subsurface Soils (0-10 ft Depth Interval) at the Landfill

Receptor	Mean = 1014 mg/kg		PRG (mg/kg)
	Adult Worker Blood Pb Geometric Mean (µg/dl)	Fetal Blood Pb 95th Percentile (µg/dl)	
Ranger/Restoration Supervisor	4.1	**12.5**	705
Construction/Excavation Worker	7.1	**21.9**	328

Table 6-34. Summary of Risk Results for the Landfill Area, Summarized by Receptor and Exposure Route

Receptor		Exposure Route							Total Risk
		Soil Ingestion	Soil Dermal	Soil Inhalation VOCs	Soil Inhalation Dust	Ground-water Dermal	Surface Water Dermal	External Radiation	
Park Ranger/Tour Guide	Cancer	1.47E-05	5.73E-06	7.84E-15	4.37E-11	N/A	N/A	7.11E-06	2.75E-05
	Non-Cancer	2.39E-01	1.31E-01	1.24E-01	1.22E-03	N/A	N/A	N/A	4.95E-01
Park Ranger/Habitat Rest Supervisor	Cancer	2.05E-06	4.18E-07	2.17E-15	7.71E-12	3.17E-06	N/A	1.49E-06	7.13E-06
	Non-Cancer	5.93E-01	1.37E-01	2.87E-01	9.75E-04	8.92E-01	N/A	N/A	1.91E+00
Site Visitor	Cancer	8.85E-06	2.60E-06	1.79E-15	1.16E-15	N/A	N/A	1.70E-06	1.31E-05
	Non-Cancer	4.64E-01	1.53E-01	5.27E-02	2.54E-04	N/A	N/A	N/A	6.70E-01
Construction/Excavation Worker	Cancer	1.48E-06	6.79E-07	6.23E-15	2.03E-08	1.02E-05	N/A	1.36E-06	1.38E-05
	Non-Cancer	1.27E+00	6.67E-01	2.47E+00	6.25E-01	8.78E+00	N/A	N/A	1.38E+01

N/A = not applicable.

Table 6-35. Summary of Risk Results for the Wetland Area, Summarized by Receptor and Exposure Route

Receptor		Exposure Route							Total Risk
		Soil Ingestion	Soil Dermal	Soil Inhalation VOCs	Soil Inhalation Dust	Ground-water Dermal	Surface Water Dermal	External Radiation	
Park Ranger/Tour Guide	Cancer	8.68E-06	2.47E-06	4.29E-16	2.50E-11	N/A	N/A	5.10E-06	1.62E-05
	Non-Cancer	3.21E-01	1.88E-01	6.94E-03	1.87E-03	N/A	N/A	N/A	5.17E-01
Park Ranger/Habitat Rest Supervisor	Cancer	8.36E-07	5.95E-08	1.19E-16	4.00E-12	6.82E-06	2.53E-06	9.88E-07	1.12E-05
	Non-Cancer	2.47E-01	6.98E-02	1.60E-02	1.50E-03	2.49E+00	1.33E-01	N/A	2.95E+00
Site Visitor	Cancer	5.46E-06	1.12E-06	9.77E-17	5.54E-12	N/A	N/A	1.23E-06	7.80E-06
	Non-Cancer	6.23E-01	2.20E-01	2.95E-03	3.89E-04	N/A	N/A	N/A	8.46E-01
Construction/Excavation Worker	Cancer	6.06E-07	9.67E-08	3.39E-16	1.12E-08	2.20E-05	N/A	8.92E-07	2.36E-05
	Non-Cancer	5.30E-01	3.40E-01	1.37E-01	1.03E+00	2.41E+01	N/A	N/A	2.62E+01

N/A = not applicable.

Table 6-36. Summary of Potential Risk Driving Constituents for the Landfill Area, Summarized by Receptor and Exposure Route

Receptor	Endpoint	Chemical	CAS No.	Exposure Route							Total Risk
				Soil Ingestion	Soil Dermal	Soil Inhalation VOCs	Soil Inhalation Dust	Groundwater Dermal	Surface Water Dermal	External Radiation	
Park Ranger/ Tour Guide	Cancer	Arsenic	7440382	2.80E-06	3.89E-07	N/A	1.05E-15	N/A	N/A	N/A	3.18E-06
		Benzo[a]pyrene	50328	1.97E-06	1.19E-06	N/A	7.39E-17	N/A	N/A	N/A	3.16E-06
		Benzo[k]fluoranthene	207089	5.37E-06	3.24E-06	N/A	2.01E-16	N/A	N/A	N/A	8.61E-06
		Total PCB	11097691	6.09E-07	3.95E-07	N/A	2.28E-17	N/A	N/A	N/A	1.00E-06
		Radium 226	13982633	5.03E-07	N/A	N/A	1.71E-11	N/A	N/A	4.93E-06	5.44E-06
		Radium 228	15262201	1.01E-06	N/A	N/A	4.94E-12	N/A	N/A	2.12E-06	3.12E-06
	Non-Cancer		No Potential Risk Drivers								
Park Ranger/ Restoration Supervisor	Cancer	Total PCB	11097691	3.85E-07	1.25E-07	N/A	2.19E-18	1.38E-06	N/A	N/A	1.89E-06
	Non-Cancer	Total PCB	11097691	2.24E-01	7.29E-02	N/A	1.28E-06	8.06E-01	N/A	N/A	1.10E+00
Site Visitor	Cancer	Arsenic	7440382	1.86E-06	1.76E-07	N/A	2.62E-16	N/A	N/A	N/A	2.04E-06
		Benzo[a]pyrene	50328	1.31E-06	5.39E-07	N/A	1.84E-17	N/A	N/A	N/A	1.85E-06
		Benzo[k]fluoranthene	207089	3.57E-06	1.47E-06	N/A	5.02E-17	N/A	N/A	N/A	5.04E-06
		Radium 226	13982633	1.51E-07	N/A	N/A	N/A	N/A	N/A	1.23E-06	1.38E-06
	Non-Cancer		No Potential Risk Drivers								
Construction/ Excavation Worker	Cancer	Benzo[a]pyrene	50328	3.81E-07	2.61E-07	N/A	1.51E-15	9.42E-07	N/A	N/A	1.58E-06
		HCH (delta)	319868	3.02E-12	6.37E-13	N/A	3.35E-20	1.03E-06	N/A	N/A	1.03E-06
		Total PCB	11097691	2.75E-07	2.03E-07	N/A	4.67E-16	4.45E-06	N/A	N/A	4.93E-06
		TEQ	1746016	8.76E-08	1.39E-08	N/A	6.66E-16	2.34E-06	N/A	N/A	2.44E-06
	Non-Cancer	Naphthalene	91203	1.02E-02	6.96E-03	2.13E+00	N/A	1.31E-02	N/A	N/A	2.16E+00
		Total PCB	11097691	4.81E-01	3.55E-01	N/A	8.18E-04	7.79E+00	N/A	N/A	8.62E+00

Note: A potential risk driver is a carcinogenic constituent that has a cancer risk $>1 \times 10^{-6}$ or a non-cancer hazard index >1.0 or non-carcinogenic constituent that has a non-cancer hazard index >1.0 when all exposure routes are considered.
N/A = not applicable.

Table 6-37. Summary of Potential Risk Driving Constituents for the Wetland Area, Summarized by Receptor and Exposure Route

Receptor	Endpoint	Chemical	CAS No.	Exposure Route							
				Soil Ingestion	Soil Dermal	Soil Inhalation VOCs	Soil Inhalation Dust	Groundwater Dermal	Surface Water Dermal	External Radiation	Total Risk
Park Ranger/ Tour Guide	Cancer	Arsenic	7440382	4.44E-06	6.18E-07	N/A	1.48E-15	N/A	N/A	N/A	5.05E-06
		Benzo[k]fluoranthene	207089	2.37E-06	1.43E-06	N/A	7.89E-17	N/A	N/A	N/A	3.80E-06
		Radium 226	13982633	2.36E-07	N/A	N/A	7.14E-12	N/A	N/A	3.84E-06	4.08E-06
		Radium 228	15262201	5.06E-07	N/A	N/A	2.20E-12	N/A	N/A	1.18E-06	1.68E-06
	Non-Cancer		No Potential Risk Drivers								
Park Ranger/ Restoration Supervisor	Cancer	Benzo[a]pyrene	50328	1.89E-08	5.69E-09	N/A	8.48E-19	2.51E-08	1.11E-06	N/A	1.16E-06
		Dibenz[ah]anthracene	53703	3.43E-09	1.03E-09	N/A	1.67E-19	1.88E-08	1.04E-06	N/A	1.06E-06
		Dieldrin	60571	1.60E-09	1.85E-10	N/A	6.58E-20	2.43E-06	N/A	N/A	2.43E-06
		Total PCB	11097691	1.36E-08	4.43E-09	N/A	5.73E-19	4.08E-06	7.01E-08	N/A	4.17E-06
	Non-Cancer	Total PCB	11097691	7.96E-03	2.58E-03	N/A	3.34E-07	2.38E+00	4.09E-02	N/A	2.43E+00
Site Visitor	Cancer	Arsenic	7440382	2.95E-06	2.80E-07	N/A	3.70E-16	N/A	N/A	N/A	3.23E-06
		Benzo[k]fluoranthene	207089	1.58E-06	6.47E-07	N/A	1.97E-17	N/A	N/A	N/A	2.22E-06
		Radium 226	13982633	7.07E-08	N/A	N/A	1.60E-12	N/A	N/A	9.58E-07	1.03E-06
	Non-Cancer		No Potential Risk Drivers								
Construction/ Excavation Worker	Cancer	Dieldrin	60571	1.14E-09	3.01E-10	N/A	1.15E-17	7.82E-06	N/A	N/A	7.82E-06
		Total PCB	11097691	9.75E-09	7.20E-09	N/A	1.32E-16	1.31E-05	N/A	N/A	1.32E-05
	Non-Cancer	Total PCB	11097691	1.71E-02	1.26E-02	N/A	2.31E-04	2.30E+01	N/A	N/A	2.30E+01

Note: A potential risk driver is a carcinogenic constituent that has a cancer risk $>1 \times 10^{-6}$ or a non-cancer hazard index >1.0 or non-carcinogenic constituent that has a non-cancer hazard index >1.0 when all exposure routes are considered.
N/A = not applicable.

Table 6-38. Summary of Potential Risk Drivers in the Landfill Area, Summarized by Media

Media	Endpoint	Chemical	CAS No.	Receptor 1 (Park Ranger/Tour Guide)	Receptor 2 (Park Ranger/Restoration Supervisor)	Receptor 3 (Site Visitor)	Receptor 4 (Construction/Excavation Worker)
Surface Soil[a]	Cancer	Arsenic*	7440382	3.18E-06	<1E-06	2.04E-06	<1E-06
		Benzo[a]pyrene*	50328	3.16E-06	<1E-06	1.85E-06	<1E-06
		Benzo[k]fluoranthene*	207089	8.61E-06	<1E-06	5.04E-06	<1E-06
		Radium 228	15262201	1.01E-06	<1E-06	<1E-06	<1E-06
		Total PCBs	11097691	1.00E-06	<1E-06	<1E-06	<1E-06
	Non-Cancer			No Potential Risk Drivers			
Combined Surface/ Subsurface Soil[b]	Cancer	Radium 226*	13982633	4.93E-06	<1E-06	1.23E-06	<1E-06
		Radium 228	15262201	2.12E-06	<1E-06	<1E-06	<1E-06
	Non-Cancer	Naphthalene	91203	HQ<1	HQ<1	HQ<1	2.14E+00
Groundwater[c]	Cancer	Total PCB	11097691	N/A	1.38E-06	N/A	4.45E-06
		HCH (delta)	319868	N/A	<1E-06	N/A	1.03E-06
		TEQ	1746016	N/A	<1E-06	N/A	2.34E-06
	Non-Cancer	Total PCB	11097691	N/A	HQ<1	N/A	7.79E+00

* Calcuated risks are approximately the same as background or ambient risks for this constituent (see Section 6.4.7.3)

a. For Receptors 1 and 3, the risks presented on this table represent the sum of risks from the following surface soil exposure routes: soil ingestion, soil dermal contact, dust inhalation. For Receptors 2 and 4, the risks presented on this table represent the risk from fugituve dust inhalation only.

b. For Receptors 1 and 3, the risks presented on this table represent the risk from VOC inhalation only. For Receptors 2 and 4, the risks presented on this table represent the sum of risks from the following surface/subsurface soil exposure routes: soil ingestion, soil dermal contact, VOC inhalation.

c. Receptors 1 and 3 are not exposed to groundwater. For receptors 2 and 4, the risks presented on this table represent the risk from dermal contact with groundwater.

N/A = not applicable.

Table 6-39. Summary of Potential Risk Drivers in the Wetland Area, Summarized by Media

Media	Endpoint	Chemical	CAS No.	Receptor 1 (Park Ranger/Tour Guide)	Receptor 2 (Park Ranger/ Restoration Supervisor)	Receptor 3 (Site Visitor)	Receptor 4 (Construction/ Excavation Worker)
Surface Soil[a]	Cancer	Arsenic*	7440382	5.05E-06	<1E-06	3.23E-06	<1E-06
		Benzo[k]fluoranthene	207089	3.80E-06	<1E-06	2.22E-06	<1E-06
	Non-Cancer			No Potential Risk Drivers			
Combined Surface/ Subsurface Soil[b]	Cancer	Radium 226*	13982633	3.84E-06	<1E-06	<1E-06	<1E-06
		Radium 228	15262201	1.18E-06	<1E-06	<1E-06	<1E-06
	Non-Cancer			No Potential Risk Drivers			
Groundwater[c]	Carcinogenic	Dieldrin	60571	<1E-06	2.43E-06	<1E-06	7.82E-06
		Total PCB	11097691	<1E-06	4.08E-06	<1E-06	1.31E-05
	Non-Carcinogenic	Total PCB	11097691	HQ<1	2.38E+00	HQ<1	2.30E+01
Surface Water[d]	Carcinogenic	Benzo[a]pyrene	50328	N/A	1.11E-06	N/A	N/A
		Dibenz[ah]anthracene	53703	N/A	1.04E-06	N/A	N/A
	Non-carcinogenic			No Potential Risk Drivers			

* Calcuated risks are approximately the same as background or ambient risks for this constituent (see Section 6.4.7.3)

a. For Receptors 1 and 3, the risks presented on this table represent the sum of risks from the following surface soil exposure routes: soil ingestion, soil dermal contact, dust inhalation. For Receptors 2 and 4, the risks presented on this table represent the risk from fugituve dust inhalation only.

b. For Receptors 1 and 3, the risks presented on this table represent the risk from VOC inhalation only. For Receptors 2 and 4, the risks presented on this table represent the sum of risks from the following surface/subsurface soil exposure routes: soil ingestion, soil dermal contact, VOC inhalation.

c. Receptors 1 and 3 are not exposed to groundwater. For receptors 2 and 4, the risks presented on this table represent the risk from dermal contact with groundwater.

N/A = not applicable.

Table 6-40. Comparison of Total Risk and Background Risk for Arsenic

Area	Receptor	Total Risk[a]	Background Risk[b]
Landfill	Park Ranger/Tour Guide	3.18E-06	5.61E-06
	Site Visitor	2.04E-06	3.59E-06
Wetland	Park Ranger/Tour Guide	5.05E-06	5.61E-06
	Site Visitor	3.23E-06	3.59E-06

(a) Total risk represents the risk to this receptor from exposure to the calculated exposure point concentration (see Tables 6-38 and 6-39).
(b) Background risk represents the risk from exposure to the average concentration of arsenic in soil at Alameda Point (9.4 mg/kg).

Table 6-41. Comparison of Total Risk and Background Risk for Potential Risk Driving Constituents Analyzed in Reference Area Soil Samples from CCSP

Area	Constituent	Receptor	Total Risk[a]	Background Risk[b]
Landfill	Benzo(a)pyrene[c]	Park Ranger/Tour Guide	3.16E-06	5.86E-06 (upland)
		Site Visitor	1.85E-06	3.43E-06 (upland)
	Benzo(k)fluoranthene[c]	Park Ranger/Tour Guide	8.61E-06	2.18E-08
		Site Visitor	5.04E-06	1.28E-08
	Total PCBs[c]	Park Ranger/Tour Guide	1.00E-06 (3.97E-06[f])	3.93E-10 (ND[f])
	Naphthalene[d]	Construction/Excvation Worker	2.14 (HQ)	ND[e] (upland)
Wetland	Benzo(k)fluoranthene[c]	Park Ranger/Tour Guide	3.80E-06	ND[e] (wetland)
		Site Visitor	2.22E-06	ND[e] (wetland)

(a) Total risk represents the risk to this receptor from exposure to the calculated exposure poin concentration (see Tables 6-38 and 6-39).
(b) Background risk represents the risk from exposure to the average concentration of the constituent in upland or wetland soil samples collected at the CCSP reference area.
(c) Potential risk driver in surface soil.
(d) Potential risk driver in subsurface soil.
(e) Constituent not detected in CCSP reference area; therefore, background risk not calculated.
(f) Total PCB concentrations were estimated using two methods and both results are provided here (see Section 6.4.7.4 in Volume I for additional explanation). The first value is based on the NOAA NS&T method and the second value is based on the sum of the most conservative Aroclor data.

Table 6-42. Comparison of Total Risk and Background Risk for Radium 226 and Radium 228

Area	Constituent	Receptor	Total Risk[a]	Background Risk[b]
Landfill	Radium 228[c,d]	Park Ranger/Tour Guide	1.01E-06/ 2.12E-06	NA[e]
	Radium 226[d]	Park Ranger/Tour Guide	4.93E-06	3.03E-06
		Site Visitor	1.23E-06	7.55E-07
Wetland	Radium 226[d]	Park Ranger/Tour Guide	3.84E-06	3.03E-06
	Radium 228[d]	Park Ranger/Tour Guide	1.18E-06	NA[e]

(a) Total risk represents the risk to this receptor from exposure to the calculated exposure point concentration (see Tables 6-38 and 6-39).
(b) Background risk represents the risk from exposure to the average concentration of Ra-226 in soil samples collected at Alameda Point (TTFW, 2005).
(c) Potential risk driver in surface soil.
(d) Potential risk driver in subsurface soil.
(e) Background risk cannot be estimated because no background concentration is available; howeverm it is likely that the presence of Ra-228 is a result of natural processes (i.e., the decay of thorium-232) rather than historic site activities.

Table 6-43. Summary of Major Uncertainties in the Human Health Risk Assessment and Estimated Impacts on Calculated Risks

Risk Assessment Step	Source of Parameter Uncertainty	Relative Level of Uncertainty	Impact on Calculated Risks
Hazard Identification	Identification of constituents of potential concern for quantitative evaluation in the risk assessment	Low. Comprehensive laboratory analyses were performed on all relevant environmental media, including soil, groundwater, surface water and sediment, for a broad suite of chemical and radiological constituents.	Extensive analyses performed on the various environmental media that were evaluated in the risk assessment decreases the uncertainty of the calculated risks.
	Same as above	Low. In general, analytical methods were employed that are capable of achieving MDLs that are below conservative health-based screening levels, further increasing the probability that all constituents of potential concern are detected. A few constituents that were not detected had detection limits that were higher than conservative health-based screening benchmarks. Table 6-44 identifies constituents with a FOD equal to zero (i.e., compounds that were not detected) but with a MDL in one or more samples that exceeds a conservative health-based screening level. Five such constituents are associated with landfill soil analyses and two constituents with wetland soil. Groundwater analytical results included 31 non-detect constituents with a MDL above conservative benchmark and surface water has 15 of these constituents. The relatively high number of such constituents for groundwater and surface water is due to the fact that MDLs were compared to drinking water criteria.	These constituents were not included in the risk assessment because they were not detected. If they are present, the actual site risks could be slightly underestimated.
	Same as above	Low. All constituents that were detected were included in the BRA. No constituents were "screened out" based on essential nutrient status, FOD, or other criteria (e.g., maximum detected concentration below conservative Tier 1 screening benchmarks).	Constituents that are naturally occurring in the environment were included in the risk assessment. This inflates the calculated risks, in some cases significantly (e.g., Arsenic, Ra-226). Similarly, risks could be overestimated if constituents that are present in the environment because of regional anthropogenic sources other than Site 2 were included in the risk assessment. Examples include e.g., benzo(a)pyrene and possibly other PAHs associated with imported fill material).
	Same as above	Low. Discrepancies between total PCB values estimated using NOAA NS&T method and sum of most conservative Aroclor data results in uncertainty in the total PCB concentrations used to evaluate risk.	Risks from total PCBs may be over or underestimated. Total PCBs have been estimated using two methods and these results have been used to calculate a range of possible PCB risks and cumulative risks.

Table 6-43. Summary of Major Uncertainties in the Human Health Risk Assessment and Estimated Impacts on Calculated Risks (page 2 of 4)

Risk Assessment Step	Source of Parameter Uncertainty	Relative Level of Uncertainty	Impact on Calculated Risks
Exposure Assessment	Exposure point concentrations (soil, groundwater, surface water)	Low. 95% UCLs were calculated from measured data collected from numerous samples distributed across the exposure area and used as the exposure point concentration to calculate risk. However, if the calculated UCL exceeded the measured maximum concentration, the maximum concentration was used to calculate risk.	High sample density decreases uncertainty in UCLs. Also, use of UCLs as the exposure point concentration to calculate risks is consistent with reasonable maximum exposure (RME) scenario defined by U.S. EPA. To minimize uncertainty in the EPCs, UCLs were calculated using several statistical methods (see Appendix G for a discussion of methods used to calculate UCLs) and the most appropriate value was selected based on factors such as distribution of the raw data (e.g., normal, lognormal) and FOD. Risks may be overestimated for constituents that had a UCL > the maximum measured concentration because risks for theses constituents were calculated based on the maximum measured concentration rather than an average concentration.
	Receptors and exposure parameters	Moderate. While it is known that the site will be used for recreational purposes in the future, there is uncertainty regarding the human receptors and their activities/habits that could expose them to site contamination. Four receptors were identified and evaluated in the risk assessment, including two future site workers (Ranger/Tour Guide and Ranger/Habitat Restoration Supervisor), a Site Visitor, and a short-term Construction/Excavation Worker. At the request of the U.S. EPA, exposure parameters for the Ranger/Tour Guide and Ranger/Habitat Restoration Supervisor were based on identical receptors evaluated in the NWS Seal Beach BRA. A combination of professional judgment and standard default exposure values recommended by U.S. EPA and other regulatory agencies was used to describe the Site Visitor and the Construction/Excavation Worker activity patterns.	In general, risks are more likely to be overestimated than underestimated because of the conservative nature of the exposure assumptions. For example: The Habitat Restoration Supervisor scenario may be overly conservative in the way that it deals with groundwater and surface water exposure because it assumes daily exposure (0.58 hr per day) with groundwater and surface water throughout the exposure duration. The Site Visitor exposure scenario may be overly conservative because it assumes the individual visits the site once per week for a 30-yr period. The Construction/Excavation Worker scenario may be overly conservative in the way that it deals with groundwater and surface water exposure because it assumes daily exposure with groundwater (2 hrs per day) throughout the exposure duration.

Table 6-43. Summary of Major Uncertainties in the Human Health Risk Assessment and Estimated Impacts on Calculated Risks (page 3 of 4)

Risk Assessment Step	Source of Parameter Uncertainty	Relative Level of Uncertainty	Impact on Calculated Risks
Exposure Assessment (cont'd)	Site physical parameters used to calculate VF and PEF (Ranger/Site Tour Guide, Ranger/Habitat Restoration Supervisor, and Site Visitor)	Moderate. Soil properties (e.g., bulk density, porosity, moisture content) and site parameters (e.g., vegetative cover fraction, wind speed, area of site) are needed to calculate VF and PEF which in turn are used to predict contaminant concentrations in outdoor air due to volatilization and dust suspension, respectively. Soil properties used in the risk assessment are based on measured data or conservative default parameters. Site parameters (wind speed) are based on meteorological data collected near the site.	While use of site-specific soil properties (e.g., bulk density, porosity, moisture content) and site data (e.g., vegetative cover fraction, wind speed, area of site) reduces uncertainty in calculated risks, it is likely that inhalation risks are overestimated for these receptors because VF and PEF were calculated based on a conservative site area equal to 77 acres (landfill) and 33 acres (wetland). Increasing the site area has the affect of decreasing Q/C, which in turn decreases PEF and VF and increases risk. Also, a conservative vegetative cover fraction of 0.5 was used to calculate the PEF, which assumes half of the site area is bare soil and susceptible to wind suspension.
	Site physical parameters used to calculate PEF for the Construction/Excavation Worker	High. The PEF for the Construction/Excavation Worker is used to predict dust suspension from vehicular traffic and thus requires information about the magnitude and duration of the future construction activities at the site (e.g., number and weigh of vehicles traversing the site per day, distance traversed per day). It is not certain that construction will occur on site in the future; therefore, a hypothetical construction scenario was developed and evaluated in this risk assessment.	The Construction/Excavation scenario is hypothetical because it is not certain that construction will occur on site in the future. Even if construction does occur, the inhalation risks for the Construction/Excavation Worker are probably overestimated because conservative assumptions were used to describe the hypothetical construction scenario. For example, it was assumed that construction activities would occur over a six-month period (130 work days) and that 20 construction vehicles would make a trip across the site each day during this period.
Toxicity Assessment	Toxicity data (general)	Moderate. Toxicity values are based on result of tests performed on animals and extrapolated to humans.	Because toxicity values are typically most conservative values available, risks are more likely to be overestimated than underestimated.
	Lack of sub-chronic toxicity data	Unknown. Chronic toxicity data were used to calculate risks for the Construction/Excavation Worker even though the exposure duration is considered subchronic. However, subchronic toxicity data are not available for most constituents evaluated in the risk assessment; therefore, risks for this receptor were calculated based on chronic toxicity data.	Use of chronic toxicity data rather than subchronic data will result in overestimation of risks for the Construction/Excavation Worker. The magnitude cannot be determined.

Table 6-43. Summary of Major Uncertainties in the Human Health Risk Assessment and Estimated Impacts on Calculated Risks (page 4 of 4)

Risk Assessment Step	Source of Parameter Uncertainty	Relative Level of Uncertainty	Impact on Calculated Risks
Toxicity Assessment (cont'd)	Constituents that lack toxicity data	Low. Of the 192 constituents analyzed in soil, groundwater or surface water at IR Site 2, only 4 constituents could not be evaluated because of a lack of toxicity data (2,4,5,6-tetrachloro-*m*-xylene, bromochloromethane, magnesium, and sodium). Of these, bromochloromethane was never detected in any media at the site.	If any of these constituents are present in the exposure media at the site, risks will be underestimated because contributions from these constituents are not included. However, the magnitude of risk is low because of the small number of constituents. Of these, bromochloromethane was never detected in any media at the site. Also, two of these constituents are essential nutrients (magnesium and sodium).
	Mercury toxicity data	Elemental mercury has different toxicity data than inorganic mercury (elemental mercury has only an oral RfD; whereas inorganic mercury has only an inhalation RfD). Laboratory results do not identify the species of mercury present; therefore, it was conservatively assumed that both forms of mercury are present.	Mercury risks are likely overestimated because both forms of mercury were included in the risk assessment.
Risk Characterization	Segregation of non-cancer hazard	Unknown. Non-cancer risks (hazard indices) has not been segregated according to effect and mechanism. It is conservatively assumed that all non-carcinogenic constituents illicit the same effect on the same target organ.	Non-cancer risks (hazard) are overestimated because they have not been segregated.
	Distinguishing site-related risks from background and/or ambient risks	Moderate. A portion of the calculated risks may be due to the presence of naturally occurring constituents (e.g., Arsenic) or constituents that are present at the site because of regional anthropogenic sources (i.e., sources other than Site 2).	The affect of including background and ambient constituents in the risk assessment is that the calculated risks overestimate the actual risk that is attributable to chemical releases from IR Site 2 (i.e., incremental risks).

Table 6-44. Constituents with Frequency of Detection Equal to Zero but with MDL Above Conservative Health-Based Screening Criteria in One or More Samples

Media	Constituents with Frequency of Detection Equal to Zero
Landfill Soil	4-bromophenylphenylether
	4-chlorophenylphenylether
	n-nitrosodi-*n*-propylamine
	bis(2-chloroethoxy)methane [a]
	bis(2-chloroethyl)ether [a]
Wetland Soil	4-chlorophenylphenylether
	Pb-210
Groundwater	1,1,2,2-Tetrachloroethane
	1,1,2-Trichloroethane [b]
	1,2-Dibromo-3-chloropropane
	1,2-Dibromoethane
	1,2-Dichloroethane [c]
	1,2-Dichloropropane [b]
	3,3'-Dichlorobenzidine
	4-Bromophenylphenylether
	4-Chlorophenylphenylether
	Aldrin [c]
	Atrazine [b]
	bis(2-chloroethoxy)methane
	bis(2-chloroethyl)ether
	Bromodichloromethane [b]
	Carbontetrachloride [b]
	Chloroform [b]
	Dibenz[ah]anthracene [b]
	HCH (alpha) [c]
	Heptachlor [c]
	Heptachlorepoxide [b]
	Hexachlorobenzene
	Lead 210 (b),(c), [b]
	n-Nitrosodimethylamine
	n-Nitrosodi-*n*-propylamine
	o-Nitrotoluene (2-nitrotoluene)
	Pentachlorophenol
	p-Nitrotoluene (4-nitrotoluene) [c]
	RDX (Cyclonite) [c]
	Tetrachloroethylene (PCE)
	Toxaphene
	Vinylchloride [c]
Surface Water	1,1,2,2-Tetrachloroethane
	1,2-Dibromo-3-chloropropane
	1,2-Dibromoethane
	3,3'-Dichlorobenzidine
	4-Bromophenylphenylether
	4-Chlorophenylphenylether
	Atrazine
	bis(2-chloroethoxy)methane
	bis(2-chloroethyl)ether
	Dibenz[ah]anthracene
	Hexachlorobenzene
	n-Nitrosodi-*n*-propylamine
	Tetrachloroethylene (PCE)
	Toxaphene
	Vinylchloride

(a) Subsurface soil only (>1 ft bgs).
(b) Landfill groundwater only.
(c) Wetland groundwater only.
Except for radionuclides, U.S. EPA Region 9 PRGs for residential soil and tap water were used as the screening levels for soil and water, respectively. For radionuclides, the soil PRG is the soil screening level and the water PRG is MCL, respectively, from U.S. EPA (2000a).

Table 6-45. Comparison of Cancer Risk Based on Total PCB Concentrations Estimated Using NOAA NS&T Method and Sum of Most Conservative Aroclor Data

Area	Receptor	NOAA NS&T Method		Sum Aroclor Method	
		PCB Risk	Total Risk	PCB Risk	Total Risk
Landfill	Park Ranger/Tour Guide	1.00E-06	2.75E-05	3.97E-06	3.05E-05
	Park Ranger/ Habitat Rest Supervisor	1.89E-06	7.13E-06	7.55E-06	1.28E-05
	Site Visitor	5.84E-07	1.31E-05	2.31E-06	1.49E-05
	Construction/Excavation Worker	4.93E-06	1.38E-05	2.22E-05	3.10E-05
Wetland	Park Ranger/Tour Guide	2.96E-07	1.62E-05	6.16E-07	1.66E-05
	Park Ranger/ Habitat Rest Supervisor	4.17E-06	1.12E-05	4.19E-06	1.13E-05
	Site Visitor	1.72E-07	7.80E-06	3.59E-07	7.99E-06
	Construction/Excavation Worker	1.32E-05	2.36E-05	1.32E-05	2.36E-05

Note: PCB risk is the risk associated with PCBs only; total risk is the cumulative risk from all chemicals. In both cases, all exposure routes have been included.

Table 6-46. Comparison of Non-Cancer Risk Based on Total PCB Concentrations Estimated Using NOAA NS&T Method and Sum of Most Conservative Aroclor Data

Area	Receptor	NOAA NS&T Method		Sum Aroclor Method	
		PCB Risk	Total Risk	PCB Risk	Total Risk
Landfill	Park Ranger/Tour Guide	7.03E-02	4.95E-01	2.78E-01	7.03E-01
	Park Ranger/ Habitat Rest Supervisor	1.10E+00	1.91E+00	4.41E+00	5.21E+00
	Site Visitor	1.15E-01	6.70E-01	4.55E-01	1.01E+00
	Construction/Excavation Worker	8.62E+00	1.38E+01	3.89E+01	4.40E+01
Wetland	Park Ranger/Tour Guide	2.07E-02	5.17E-01	4.31E-02	5.40E-01
	Park Ranger/ Habitat Rest Supervisor	2.43E+00	2.95E+00	2.45E+00	2.97E+00
	Site Visitor	3.39E-02	8.46E-01	7.07E-02	8.83E-01
	Construction/Excavation Worker	2.30E+01	2.62E+01	2.31E+01	2.62E+01

Note: PCB risk is the risk associated with PCBs only; total risk is the cumulative risk from all chemicals. In both cases, all exposure routes have been included.

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FIGURES

FINAL
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DATED 23 JUNE 2006

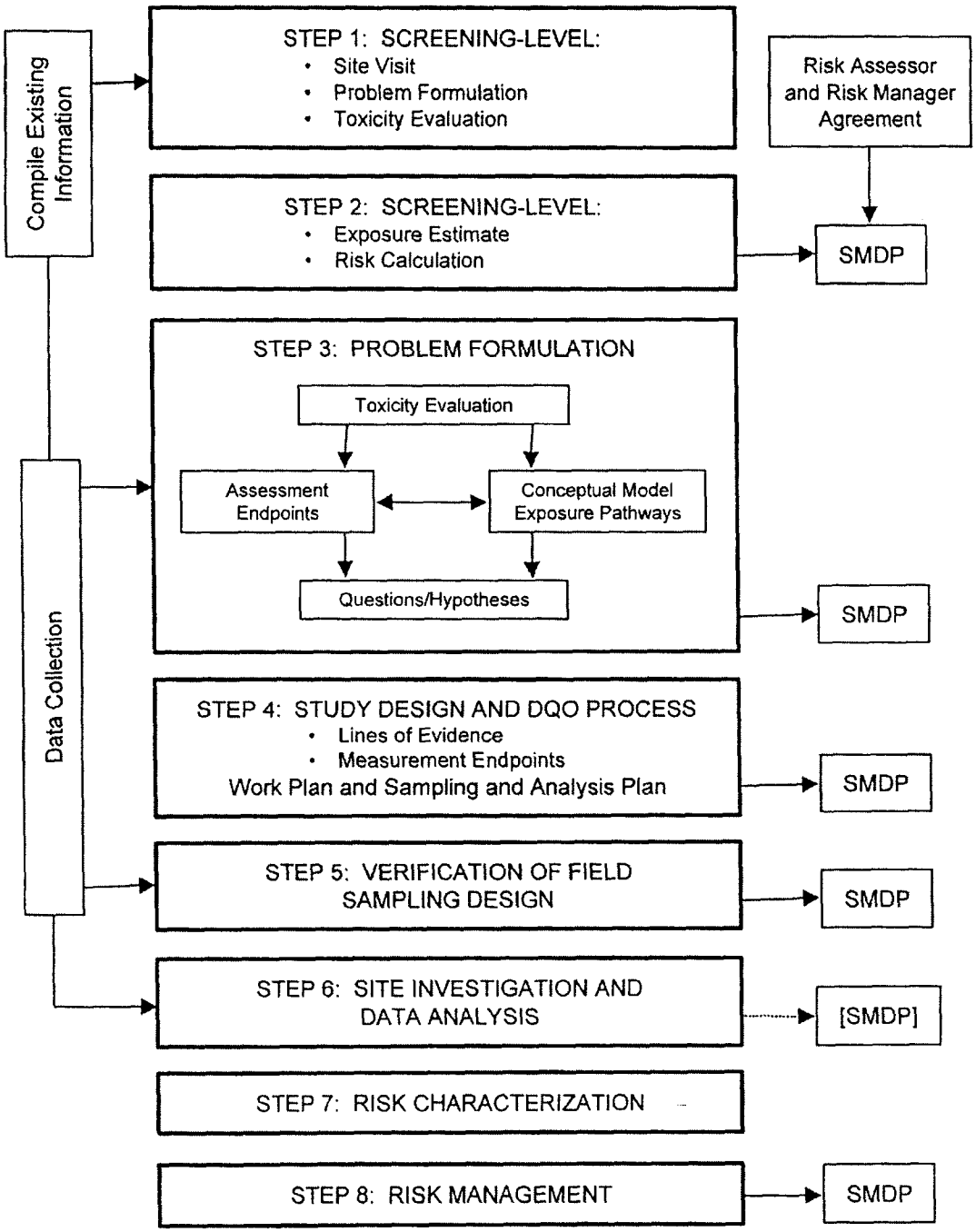

Figure 7-1. Overview of 8-Step U.S. EPA Ecological Risk Assessment Process (U.S. EPA, 1997d)

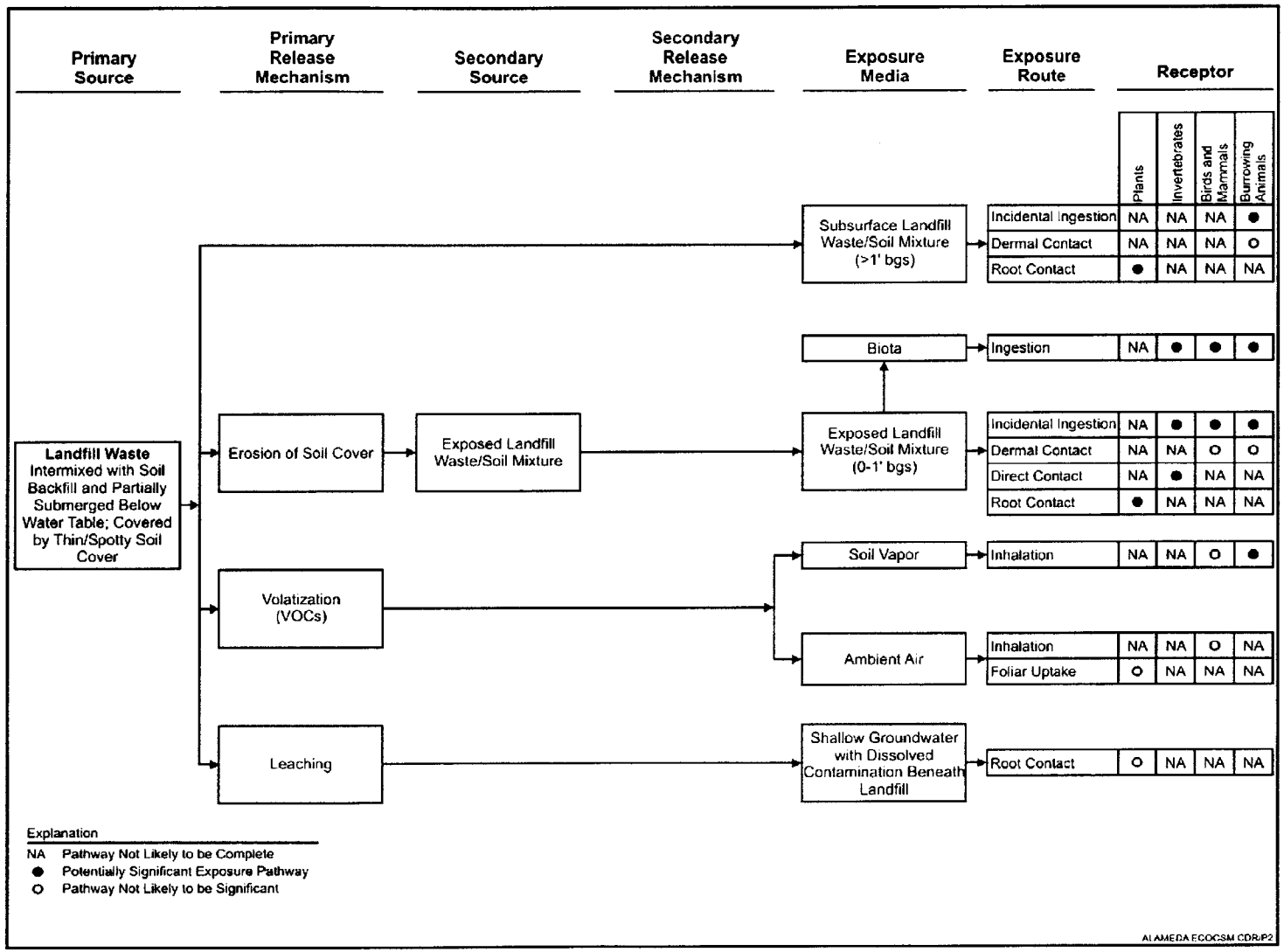

Figure 7-2. Conceptual Site Model for Ecological Risk Assessment (Upland Habitat) at IR Site 2

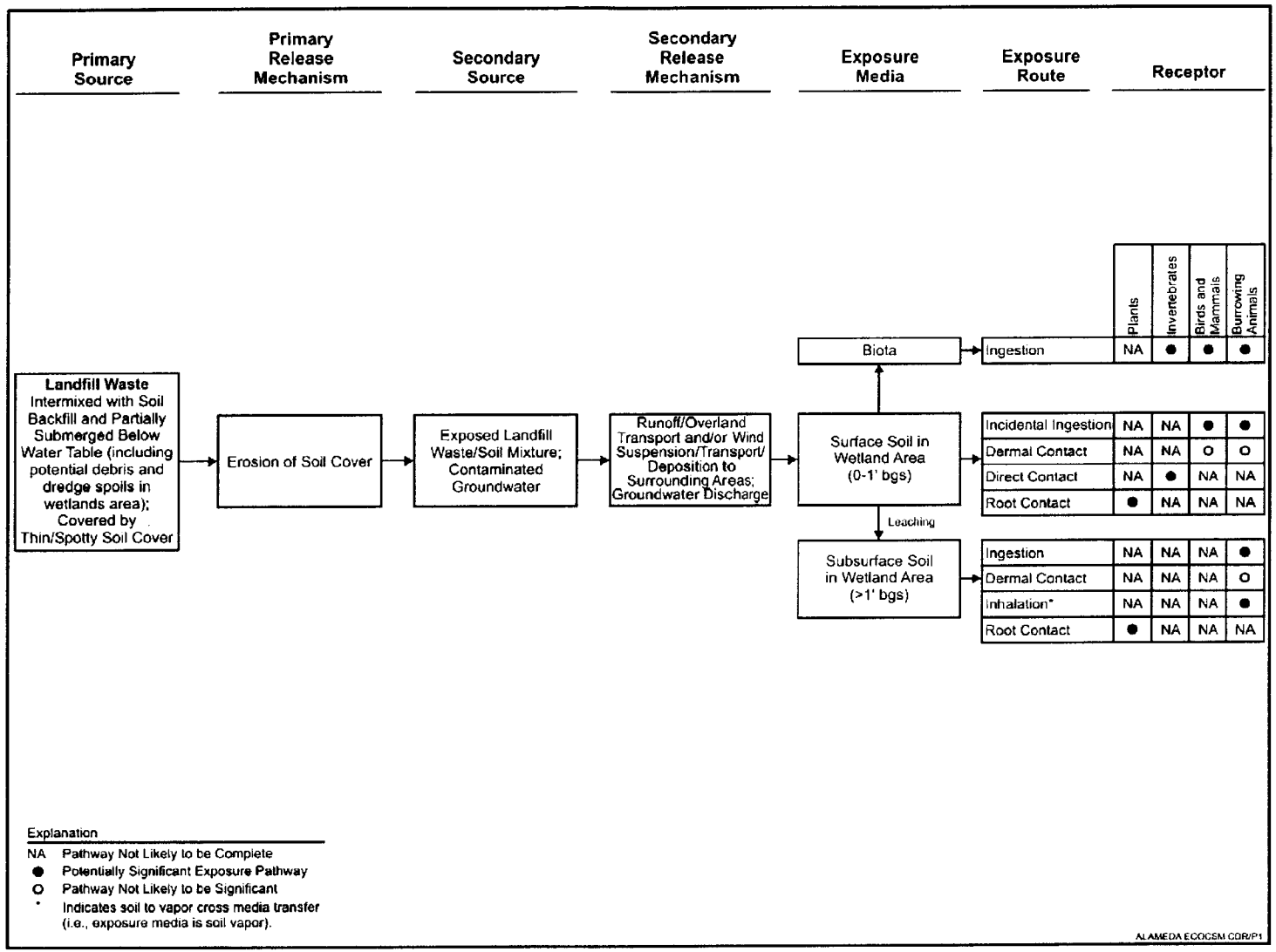

Figure 7-3. Conceptual Site Model for Ecological Risk Assessment (Wetland Habitat) at IR Site 2

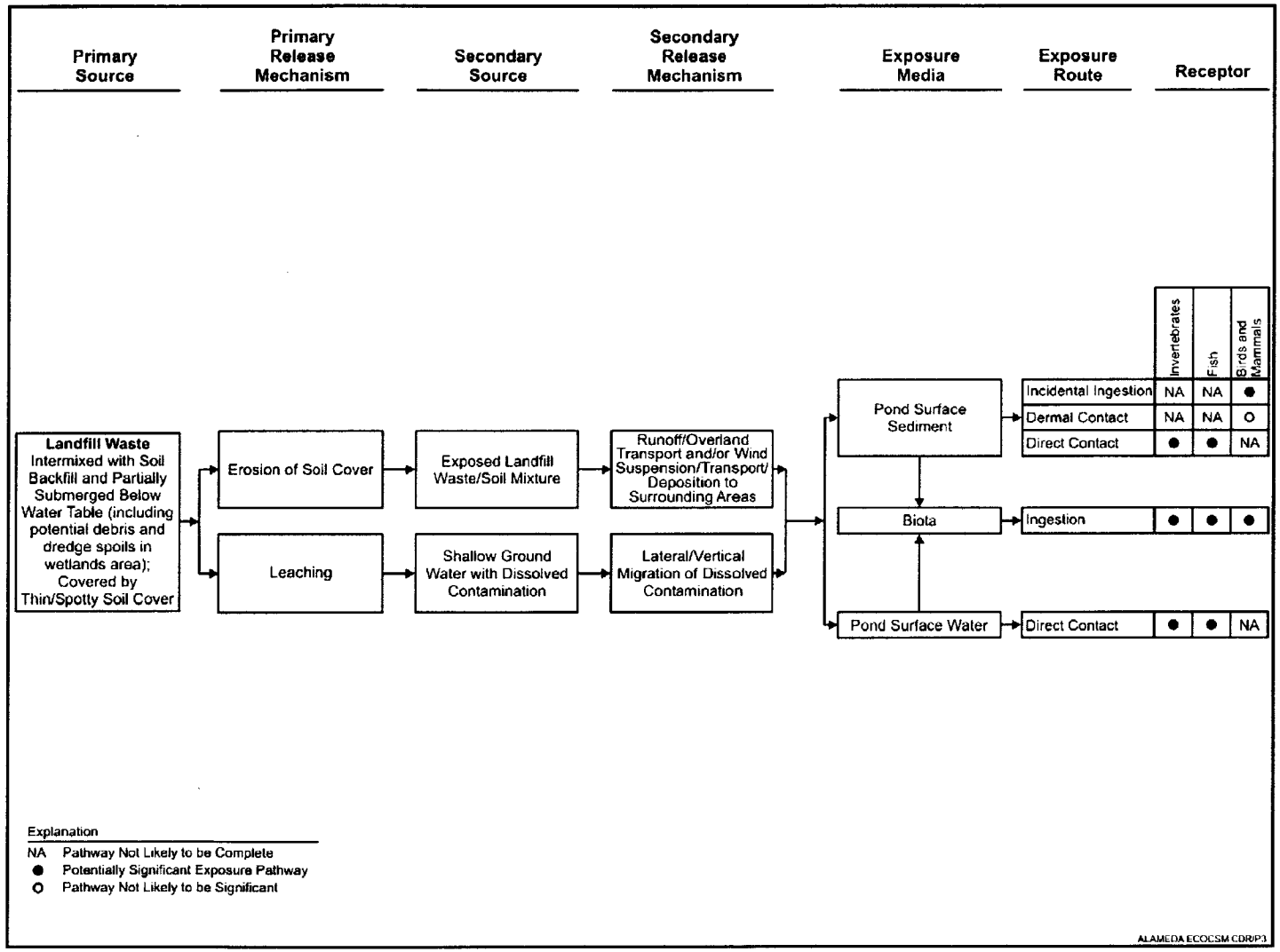

Figure 7-4. Conceptual Site Model for Ecological Risk Assessment (Wetland Pond Habitat) at IR Site 2

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TABLES

FINAL
REMEDIAL INVESTIGATION REPORT
IR SITE 2, WEST BEACH LANDFILL AND WETLANDS

DATED 23 JUNE 2006

Table 7-1. Upland Exposure Parameters for Dose Calculations for the Western Meadowlark

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.013	kg/day	Calculated with body weight of 88.7 grams using the equation for the food requirement for dry matter intake for passerines (food ingestion rate = $[0.630(25)^{0.683}]/1000$) (Nagy 2001).
Ingestion $Rate_{soil}$	0.0013	kg/day	10 percent of food ingestion rate, woodcock used as surrogate (dry weight) (Beyer, Connor, and Gerould 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on existing dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on upland plant tissue concentrations measured from the site. Invertebrate tissue concentrations will be estimated using BAFs and upland soil measurements based on dry weight.
Diet Composition	37 (plant tissue) 63 (insect tissue)	Percent	Annual diet about 63% animal matter, mostly insects, spiders, sowbugs, snails, and 37% grass and forb seeds and grains (Bryant 1914) as cited in Zeiner et al. 1990a.
Foraging Range	3 - 32	Acre	In Wisconsin, territory varied from 3 to 15 acres, and mostly were 7to 8 acres (Lanyon 1956). Four territories in Iowa were 10, 21, 24, and 32 acres (Kendeigh 1941) as cited in Zeiner et al. 1990a.
Site Use Factor[(a)]	Screening Level =1.0 Baseline = 1.0	Unitless	Available foraging range data indicate the Western meadowlark foraging range is smaller than the upland area of the site.
Body Weight	0.089	Kilogram	Based on average of adult male and female mean weights from Lanyan 1962, cited in Cal Ecotox database.

(a) A default value of 1.0 was used for SUFs with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.
BW = Body weight
kg/day = Kilograms per day
mg/kg = Milligrams per kilogram
mg/g BW-day = Milligrams per gram body weight per day

Table 7-2. Upland Exposure Parameters for Dose Calculations for the Northern Harrier

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.048	kg/day	Calculated with body weight of 441 grams using the equation for the food requirement for intake of dry matter for carnivorous birds (food ingestion rate = $[0.849(441)^{0.663}]/1000$) (Nagy 2001).
Ingestion $Rate_{soil}$	0.0012	kg/day	Based on red-tailed hawks (dry weight) (Research Triangle Institute 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on existing dry weight upland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	Small mammal BAFs and upland soil measurements will be used to calculate food tissue concentrations based on dry weight.
Diet Composition	100 (rodent tissue)	Percent	In a study conducted in Davis, California, harriers attacked rodents almost exclusively (Temeles 1989). Although most of their diet consists of rodents, harriers will also feed on birds, reptiles, crustaceans, and insects (Brown and Amadon 1968). Nearby Caspian and least tern colonies are protected from predation by raptors.
Foraging Range	335	Acre	Median of daily foraging range in Michigan (30 to 640 acres) (Craighead and Craighead 1956). Data on home range of the northern harrier are quite variable, and home range is likely dependent on food abundance. The median of the range presented in Craighead and Craighead (1956) is on the low end of the data cited at California Wildlife Habitat Relationships (http://www.dfg.ca.gov/whdab/html/ cawildlife.html). In Utah, 5 breeding home ranges averaged 1060 acres, and varied from 896 to 1280 acres. In Michigan, individuals flew 1.6 to 8.8 km (1 to 5.5 mi) daily from a communal roost to foraging areas. Also in Michigan, 15 breeding home ranges averaged 1000 acres, and varied from 243 to 1920 acres. In Wisconsin, the breeding home range of one radio-tagged pair included an area 2 × 4.4 km (1.25 × 2.75 mi), or 2200 acres (Hamerstrom and Wilde 1973).
Site Use Factor	Screening Level = 1.0 Baseline = 0.23	unitless	Ratio of area of IR 2 upland to foraging range (site use factor = 77 acres/335 acres).
Body Weight	0.441	Kilogram	Average of males and females from Dunning (1984).

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-3. Upland Exposure Parameters for Dose Calculations for the Burrowing Owl

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.026	kg/day	Calculated with body weight of 170 grams using the equation for the food requirement for intake of dry matter for carnivorous birds (food ingestion rate = $[0.849(441)^{0.663}]/1000$) (Nagy 2001).
Ingestion $Rate_{soil}$	0.0012	kg/day	Based on red-tailed hawks (dry weight) (Research Triangle Institute 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on upland dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	Small mammal BAFs and upland soil measurements will be used to calculate food tissue concentrations based on dry weight.
Diet Composition	86.7 (rodent tissue) 13.3 (insects)	Percent	Eats mostly insects, but small rodents make up majority of biomass. Also eats reptiles, birds, and carrion. Diet composition data are from study in Columbia Basin, Oregon (Green et al., 1993), as cited in Cal Ecotox. Based on percent biomass in 5,559 pellets of both male and female adults collected April to July.
Foraging Range	1.98	Acre	From study at Oakland International Airport, California (Thomsen 1971).
Site Use Factor[(a)]	Screening Level = 1.0 Baseline = 1.0	unitless	Ratio of area of IR 2 upland to foraging range (site use factor = 77 acres/1.98 acres).
Body Weight	0.17	Kilogram	Average of males and females from Thomsen (1971).

(a) A default value of 1.0 was used for SUFs with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-4. Upland Exposure Parameters for Dose Calculations for the California Vole

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.011	kg/day	Calculated from ingestion rate of 247 mg/g BW-day using body weight of 42.2 grams body weight for the California vole (both IR and BW from Cal Ecotox database). This ingestion rate is the higher of two reported from Batzli and Pitelka, 1971. This ingestion rate is for voles fed bromegrass; a lower ingestion rate was measured when voles were fed rye seed.
Ingestion $Rate_{soil}$	0.00026	kg/day	2.4 percent of food ingestion rate for meadow vole (dry weight) (Beyer, Connor, and Gerould, 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight upland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on upland plant tissue concentrations measured from the site.
Diet Composition	100 – plant tissue	Percent	The diet of the California vole is dominated by green vegetation much of the year. They eat grasses and forbs most of the year, with seeds dominant in the summer. Their diet is influenced by availability of food plants, and they eat more green vegetation in the winter (Batzli and Pitelka, 1971 as cited in Cal Ecotox database).
Foraging Range	0.026	Acre	Based on average of low end of range of measured home ranges for male and female voles at the Richmond Field Station in Contra Costa County, California (Ostfield, 1986 as cited in Cal Ecotox database).
Site Use Factor[(a)]	Screening Level = 1.0 Baseline = 1.0	Unitless	Ratio of upland area of site to foraging range (site use factor = 77 acres/0.026 acre).
Body Weight	0.043	Kilogram	Average of mid-ranges of body weights for adult males and females (Cockburn and Lidicker, 1983 as cited in the Cal Ecotox database).

(a) A default value of 1.0 was used for SUFs with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-5. Upland Exposure Parameters for Dose Calculations for the Raccoon

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.15	kg/day	Calculated with body weight of 5.78 kilograms using the equation for the food requirement for intake of dry matter for omnivorous mammals (total ingestion rate = $[0.432(5780)^{0.678}]/1000$) (Nagy 2001).
Ingestion $Rate_{soil}$	0.014	kg/day	9.4 percent of food ingestion rate for raccoon (dry weight) (Beyer, Connor, and Gerould 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1]= 95% UCL (0-1 ft)	mg/kg	To be determined based on upland dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on upland plant tissue concentrations measured from the site. For the upland area risk evaluation for the raccoon, terrestrial invertebrate tissue and vertebrate concentrations will be calculated using BAFs and upland soil measurements based on dry weight.
Diet Composition	58 - plant tissue 18 - invertebrates 24 – vertebrates	Percent	Raccoons are omnivorous and opportunistic feeders. Raccoons feed primarily on fleshy fruits, nuts, acorns, and corn (Kaufmann 1982, as cited in U.S. EPA 1993) but also eat grains, insects, frogs, crayfish, eggs, and virtually any animal and vegetable matter (Palmer and Fowler 1975, as cited in U.S. EPA 1993). The proportion of different foods in their diet depends on location and season, although plants are usually a more important component of the diet. The proportion of dietary items is based on information from the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).
Foraging Range	96.4	Acre	Based on data in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).
Site Use Factor	Screening Level = 1 Baseline = 1	Unitless	Although the foraging range of the raccoon exceeds the upland area of the site, due to the site's isolation from other suitable habitat, an SUF of 1 will be used in the baseline risk assessment.
Body Weight	5.78	Kilogram	Average of mean body weights of adult males and females (3.67 to 7.6 kilograms) presented in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).

kg/day Kilograms per day
mg/kg Milligrams per kilogram
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-6. Upland Exposure Parameters for Dose Calculations for the Red Fox

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.34	kg/day	From Sergeant (1978) adult ingestion rate before whelp, in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).
Ingestion $Rate_{soil}$	0.0095	kg/day	2.8 percent of food ingestion rate (dry weight) (Beyer, Connor, and Gerould 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on upland dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on upland plant tissue concentrations measured from the site. For the upland area risk evaluation for the raccoon, terrestrial invertebrate tissue and vertebrate concentrations will be calculated using BAFs and upland soil measurements based on dry weight.
Diet Composition	7.0 – plant tissue 2.8 – invertebrates 86.2 – vertebrates 4.0 – unknown	Percent	The red fox feeds on both animal and plant material, mainly small mammals, birds, insects and fruit. The proportion of dietary components varies throughout the year depending on availability. The proportion of dietary items is based on information from Hockman and Chapman (1983) presented in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993). The unknown portion of the red fox's diet was apportioned to the other dietary components. The values used in the food web model were: plant tissue – 8%, invertebrates – 4%, and vertebrates – 88%. Vertebrates will be represented by mammal tissue only. Neither bird tissue data nor BAFs are available to estimate bird tissue concentrations.
Foraging Range	1004	Acre	Based on average of male and female home ranges from Ables (1969) in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).
Site Use Factor	Screening Level = 1.0 Baseline =1.0	Unitless	Although the foraging range of the red fox exceeds the upland area of the site, due to the site's isolation from other suitable habitat, an SUF of 1 will be used in the baseline risk assessment.
Body Weight	4.54	Kilogram	Average of mean body weights of adult males and females, spring and fall weights (3.94 to 5.25 kilograms) from Storm et al. 1976 in the U.S. EPA Exposure Factors Handbook (U.S. EPA 1993).

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-7. Exposure Parameters for Dose Calculations for the Alameda Song Sparrow

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.0057	kg/day	Calculated with body weight of 25 grams using the equation for the food requirement for dry matter intake for passerines (food ingestion rate = [0.630(25)^0.683]/1000) (Nagy 2001).
Ingestion $Rate_{soil}$	0.0005	kg/day	8 percent of food ingestion rate for sparrows (dry weight) (Williams 1987).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on existing dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1]= 95% UCL	mg/kg	To be determined based on plant tissue concentrations measured from the site. Invertebrate tissue concentrations will be estimated using wetland soil measurements from the site and BAFs based on dry weight.
Diet Composition	50 (plant tissue) 50 (insect tissue)	Percent	Seeds are the most important foods in the annual diet of the song sparrow; however, during the nesting season, insects, spiders, and other small invertebrates make up almost half of the diet (Martin et al., 1961, as cited in Zeiner et al., 1990a). In San Francisco Bay, song sparrows are found in areas of Salicornia adjacent to Spartina along small channels or sloughs with Grindelia bushes nearby (Johnston 1956a and 1956b, as cited in Cogswell 2000) and have been observed scratching in the mud for small snails and catching flying salt marsh flies (Johnson 1968, as cited in Aldrich 1984). Coastal birds regularly feed on small marine life such as crustaceans and mollusks, which they forage for on the ground or in low vegetation under cover of dense thickets or wetland vegetation (Aldrich 1984; Ehrlich et al., 1988; Zeiner et al., 1990a).
Foraging Range	0.10	Acre	Based on average territory in unaltered habitat in the San Francisco Bay Region (Walton 1978, as cited in Zeiner et al., 1990a).
Site Use Factor[(a)]	Screening Level = 1.0 Baseline = 1.0	Unitless	Ratio of area of IR 2 wetland to foraging range (site use factor = 17 acres/0.1 acre).
Body Weight	0.025	Kilogram	Based on average of adult and juvenile male and female Song Sparrows at Mandarte Island, Canada (Smith et al., 1986 as cited in Cal Ecotox database). No statistical differences in body weight were observed between hatching years or yearling and adult birds.

(a) A default value of 1.0 was used for SUFs with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-8. Exposure Parameters for Dose Calculations for the Least Sandpiper

Parameter	Average Adult	Units	Reference
Ingestion $Rate_{food}$	0.0054	kg/day	Calculated with body weight of 20.9 grams using the equation for the food requirement for dry matter intake for charadriiformes (total ingestion rate = $[0.522(24)^{0.769}]/1000$) (Nagy, 2001).
Ingestion $Rate_{sediment}$	0.001	kg/day	18 percent of ingestion rate, based on mean of four sandpiper species (Beyer, Connor, and Gerould, 1994).
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on existing sediment data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on invertebrate tissue concentrations measured from bioaccumulation bioassays, as available. If invertebrate tissue concentrations were not available for some chemical suites, BAFs and wetland soil measurements were used to calculate invertebrate concentrations based on dry weight.
Diet Composition	100 (invertebrate tissue)	Percent	The diet of the least sandpiper consists primarily of terrestrial and benthic invertebrates. The least sandpiper feeds by searching, pecking, and probing in mud or soft earth for invertebrates including crustaceans, worms, adult insects, and insect larvae (Baker and Baker 1973 and Bent 1927 as cited in Zeiner et al.,, 1990a). Also may take some seeds and other plant material. Prefers to feed along narrow channels, in mud holes, or along the edge of a marsh (Cogswell 1977 as cited in Zeiner et al.,, 1990a). Prefers shores of aquatic habitats with abundant invertebrate food.
Foraging Range[(a)]	12	Acre	Mean home range for spotted sandpiper in a Michigan study was about 12 acres (Miller and Miller 1948 as cited in Zeiner et al.,, 1990a). No data were found for the least sandpiper.
Site Use Factor	Screening Level = 1.0 Baseline = 1.0	Unitless	Ratio of area of IR 2 wetland to foraging range (site use factor = 33 acres/12 acres).
Body Weight	0.0209	Kilogram	Average of male and female body weights from British Columbia (Dunning, 1984).

(a) A default value of 1.0 was used for site use factors with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-9. Wetland Exposure Parameters for Dose Calculations for the Northern Harrier

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight wetland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	Small mammal BAFs will be used to calculate food tissue concentrations based on dry weight wetland soil data collected from the site.
Site Use Factor	Screening Level = 1.0 Baseline = 0.10	unitless	Ratio of area of IR 2 wetland area to foraging range (site use factor = 33 acres/335 acres).

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-10. Wetland Exposure Parameters for Dose Calculations for the Burrowing Owl

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight wetland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1]= 95% UCL	mg/kg	Small mammal BAFs were used to calculate food tissue concentrations based on dry weight wetland soil data collected from the site.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-11. Wetland Exposure Parameters for Dose Calculations for the California Vole

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight wetland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on wetland plant tissue concentrations measured from the site.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-12. Wetland Exposure Parameters for Dose Calculations for the Raccoon

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight wetland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on wetland plant tissue concentrations measured from the site. For the wetland area risk evaluation for the raccoon, terrestrial invertebrate tissue and vertebrate concentrations were calculated using BAFs and wetland soil measurements based on dry weight.
Site Use Factor	Screening Level = 1.0 Baseline = 1.0	Unitless	Although the foraging range of the raccoon exceeds the wetland area of the site, due to the site's isolation from other suitable habitat, a SUF of 1 was used in the baseline risk assessment.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-13. Wetland Exposure Parameters for Dose Calculations for the Red Fox

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on existing dry weight soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on wetland plant tissue concentrations measured from the site. For the wetland area risk evaluation for the red fox, terrestrial invertebrate tissue and vertebrate concentrations will be calculated using BAFs and wetland soil measurements based on dry weight.
Site Use Factor	Screening Level = 1.0 Baseline = 1.0	Unitless	Although the foraging range of the red fox exceeds the wetland area of the site, due to the site's isolation from other suitable habitat, an SUF of 1 will be used in the baseline risk assessment.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-14. Wetland Pond Exposure Parameters for Dose Calculations for the Mallard

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.078	kg/day	Calculated with body weight of 1,121 grams using the equation for the food requirement for dry matter intake for all birds (food ingestion rate = $[0.638*(1121)^{0.685}]/1,000$) (Nagy 2001).
Ingestion $Rate_{sediment}$	0.0026	kg/day	3.3 percent of food ingestion rate for mallards (dry weight) (Beyer, Connor, and Gerould 1994)
Sediment Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight sediment data collected from the site.
Food Concentrations	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on wetland plant tissue concentrations measured from the site and invertebrate tissue concentrations measured from bioaccumulation bioassays, as available. If invertebrate tissue concentrations were not available for some chemical suites, BAFs and site sediment data were used to calculate invertebrate concentrations based on dry weight.
Diet Composition	70 (plant tissue) 30 (invertebrate tissue)	percent	The diet of mallards consists of grains, seeds, leaves, aquatic plants, grasses, mollusks, and insects (Bent 1923; Martin et al., 1961). Fall and winter diet consists of almost 100 percent plants by dry weight and the spring and summer diet consists of 28 to 63 percent plants and 37 to 72 percent invertebrates by dry weight (U.S. EPA 1993).
Foraging Range	230	Acre	Based on the Lower Klamath National Wildlife Refuge, California (Mauser et al., 1994).
Site Use Factor[(a)]	Screening Level = 1.0 Baseline = 0.14	Unitless	Ratio of area of IR 2 wetland pond area to foraging range (site use factor = 33 acres/230 acres).
Body Weight	1.121	Kilogram	Average of male and female body weights from Tule Lake National Wildlife Refuge in northeast California (California Department of Fish and Game 1987).

(a) Because the literature value was not exact less than 247 acres, a conservative default value of 230 acres was assumed.

Table 7-15. Wetland Pond Exposure Parameters for Dose Calculations for the Least Sandpiper

Parameter	Average Adult	Units	Reference
Sediment Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on sediment data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on invertebrate tissue concentrations measured from bioaccumulation bioassays, as available. If invertebrate tissue concentrations were not available for some chemical suites, BAFs and sediment concentrations were used to calculate concentrations based on dry weight.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-16. Wetland Pond Exposure Parameters for Dose Calculations for the Great Blue Heron

Parameter	Average Adult	Unit	Reference
Ingestion $Rate_{food}$	0.13	kg/day	Calculated with body weight of 2,340 grams using the equation for the food requirement for intake of dry matter for all birds (food ingestion rate = $[0.638(2340)^{0.685}]/1000$) (Nagy 2001).
Ingestion $Rate_{sediment}$	0.0035	kg/day	2.7 percent of food ingestion rate (median of the range of non-probing aquatic birds) (dry weight) (Beyer, Connor, and Gerould 1994).
Sediment Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight sediment data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	Benthic invertebrate tissue concentrations measured from bioaccumulation bioassays were used, as available. If invertebrate tissue concentrations were not available for some chemical suites, BAFs and sediment concentrations were used to calculate invertebrate concentrations based on dry weight. Benthic invertebrate tissue concentrations were used as surrogates for fish tissue concentrations.
Diet Composition	90 (fish tissue) 10 (invertebrate tissue)	Percent	Diet is based on an approximation of the diet composition as presented in the *Wildlife Exposure Factors Handbook* (U.S. EPA 1993) and what the bird might be expected to consume at OU4. Great blue herons are known to be primarily piscivorous, with a diet comprising fish, small rodents (such as pocket gophers and field mice), frogs, lizards, and insects (such as grasshoppers) (Palmer 1962; Butler 1997).
Foraging Range	21	Acre	Based on Oregon estuary from Bayer (1978).
Site Use Factor[(a)]	Screening Level = 1.0 Baseline = 1.0	Unitless	Ratio of area of wetland pond area to foraging range (site use factor = 33 acres/21 acres).
Body Weight	2.34	Kilogram	Average of male and female body weights from central Oregon presented in the *Wildlife Exposure Factors Handbook* (Bayer 1981, as cited in U.S. EPA 1993).

(a) A default value of 1.0 was used for SUFs with ratios greater than 1.0.
[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-17. Wetland Exposure Parameters for Dose Calculations for the Raccoon

Parameter	Average Adult	Unit	Reference
Soil Concentration	Screening Level = Max Detect (0-1 ft) Baseline[1] = 95% UCL (0-1 ft)	mg/kg	To be determined based on dry weight wetland soil data collected from the site.
Food Concentration	Screening Level = Max Concentration Baseline[1] = 95% UCL	mg/kg	To be determined based on wetland plant tissue concentrations measured from the site. For the wetland area risk evaluation for the raccoon, terrestrial invertebrate tissue and vertebrate concentrations will be calculated using BAFs and wetland soil measurements based on dry weight.
Site Use Factor	Screening Level = 1.0 Baseline = 1.0	Unitless	Although the foraging range of the raccoon exceeds the wetland pond area of the site, due to the site's isolation from other suitable habitat, an SUF of 1 will be used in the baseline risk assessment.

[1] = Max detect was used if 95% UCL was greater than max detect.

Table 7-18. Summary of Approaches Used to Estimate COPEC Concentrations in Tissue

Prey Item	Order of Priority ►►►					
	Site-Specific Media Measurements	Site-Specific Bioaccumulation Assays	Site-Specific or Alameda-Specific BAFs	ORNL Uptake Models	U.S. EPA Uptake Models	Other Sources (literature, surrogates & conservative assumptions)
Upland Plants	X					X
Wetland Plants	X					X
Wetland Pond Plants[(a)]	X					
Benthic Invertebrates		X				X
Wetland Invertebrates			X			X
Fish			X			X
Upland Invertebrates				X	X	X
Upland/Wetland Small Mammals				X	X	X

(a) Wetland ponds do not currently support aquatic vegetation. For the purpose of evaluating a hypothetical plant eating bird in the wetland ponds (i.e., the mallard), wetland plant tissue EPCs were used to conservatively represent wetland pond plant tissue EPCs. The assumption of conservatism is supported by data which indicate that COPEC concentrations in the wetland are generally higher than in the wetland ponds.

Table 7-19. Upland Dose Summary

CAS Number	Constituent	California Vole	Western Meadowlark	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
			Metals				
7429-90-5	Aluminum	1.90E+02	NA	NA	NA	NA	NA
7440-36-0	Antimony	8.35E-02	8.49E-01	2.68E-01	6.42E-02	6.03E-02	6.68E-02
7440-38-2	Arsenic	2.34E-01	3.68E-01	1.37E-01	4.39E-02	4.90E-02	4.07E-02
7440-39-3	Barium	1.22E+01	1.28E+01	1.13E+01	7.07E+00	2.22E+00	4.84E+00
7440-41-7	Beryllium	6.51E-03	1.69E-02	1.31E-02	7.27E-03	2.69E-03	4.95E-03
7440-43-9	Cadmium	1.41E+00	1.08E+01	2.60E+00	2.18E-01	6.58E-01	5.03E-01
7440-47-3	Total Chromium	1.19E+00	4.34E+01	1.12E+01	1.33E+00	2.50E+00	2.21E+00
18540-29-9	Chromium (VI)	NA	NA	NA	NA	NA	NA
7440-48-4	Cobalt	2.28E-01	4.67E-01	3.92E-01	2.33E-01	6.90E-02	1.58E-01
7440-50-8	Copper	5.16E+00	8.61E+00	6.13E+00	3.37E+00	1.36E+00	2.36E+00
7439-89-6	Iron	3.50E+02	NA	NA	1.72E+02	NA	NA
7439-92-1	Lead	2.03E+00	1.05E+01	5.00E+00	2.08E+00	1.07E+00	1.60E+00
7439-95-4	Magnesium	9.52E+02	NA	NA	NA	NA	NA
7439-96-5	Manganese	3.37E+01	1.68E+01	5.83E+00	2.59E+00	3.24E+00	2.60E+00
7439-97-6	Mercury	1.44E-02	8.47E-02	8.57E-02	5.39E-02	1.09E-02	3.53E-02
7439-98-7	Molybdenum	1.82E+00	2.30E+00	1.91E+00	1.22E+00	2.83E-01	8.40E-01
7440-02-0	Nickel	3.20E+00	5.34E+01	1.31E+01	1.10E+00	3.06E+00	2.44E+00
7782-49-2	Selenium	8.33E-02	9.65E-02	9.92E-02	6.65E-02	1.35E-02	4.47E-02
7440-22-4	Silver	5.68E-02	5.34E-01	1.27E-01	8.14E-03	3.33E-02	2.28E-02
7440-28-0	Thallium	8.38E-03	NA	NA	3.41E-02	NA	NA
7440-62-2	Vanadium	6.75E-01	1.54E+00	1.99E+00	1.31E+00	2.87E-01	8.47E-01
7440-66-6	Zinc	2.49E+01	8.05E+01	3.81E+01	1.72E+01	7.05E+00	1.33E+01
			PAHs/SVOCs				
92-52-4	1,1'-Biphenyl	2.63E-02	NA	NA	NA	NA	NA
95-94-3	1,2,4,5-Tetrachlorobenzene	1.67E-03	NA	NA	NA	NA	NA
121-14-2	2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA
91-58-7	2-Chloronaphthalene	1.86E-02	NA	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene	4.49E-02	NA	NA	NA	NA	NA
95-48-7	2-Methylphenol	4.59E-02	NA	NA	NA	NA	NA
88-74-4	2-Nitroaniline	7.87E-02	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine	6.68E-01	NA	NA	NA	NA	NA
106-47-8	4-Chloroaniline	6.11E-03	NA	NA	NA	NA	NA
106-44-5	4-Methylphenol	3.68E-02	NA	NA	NA	NA	NA
98-86-2	Acetophenone	5.11E-02	NA	NA	NA	NA	NA
100-52-7	Benzaldehyde	6.32E-01	NA	NA	NA	NA	NA
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.46E-01	NA	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	9.36E-02	NA	NA	NA	NA	NA
86-74-8	Carbazole	5.40E-02	NA	NA	NA	NA	NA
132-64-9	Dibenzofuran	5.85E-02	NA	NA	NA	NA	NA
84-66-2	Diethyl Phthalate	6.85E-02	NA	NA	NA	NA	NA

Table 7-19. Upland Dose Summary (page 2 of 2)

CAS Number	Constituent	California Vole	Western Meadowlark	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
131-11-3	Dimethyl Phthalate	1.58E-02	NA	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	3.76E-02	NA	NA	NA	NA	NA
117-84-0	Di-*n*-octyl Phthalate	1.12E-02	NA	NA	NA	NA	NA
118-74-1	Hexachlorobenzene	5.45E-03	NA	NA	NA	NA	NA
86-30-6	N-Nitrosodiphenylamine	2.88E-02	NA	NA	NA	NA	NA
87-86-5	Pentachlorophenol	2.67E-02	1.01E+01	2.39E+00	1.36E-01	5.20E-01	4.11E-01
108-95-2	Phenol	4.23E-02	NA	NA	NA	NA	NA
11-84-7	Diesel	NA	NA	NA	NA	NA	NA
8006-61-9	Gasoline	NA	NA	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	NA	NA	NA	NA	NA	NA
NAV1000	Sum LPAHs	7.46E-01	4.94E+01	1.13E+01	3.19E-01	2.70E+00	1.79E+00
NAV1001	Sum HPAHs	3.46E-01	7.16E+00	1.78E+00	1.42E-01	4.51E-01	3.17E-01
VOCs							
78-93-3	2-Butanone (MEK)	3.22E-03	1.93E-03	1.92E-03	1.34E-03	3.41E-04	9.25E-04
108-10-1	4-Methyl-2-pentanone (MIBK)	2.28E-03	1.37E-03	1.36E-03	9.48E-04	2.41E-04	6.55E-04
67-64-1	Acetone	1.50E-02	9.00E-03	8.97E-03	6.25E-03	1.59E-03	4.32E-03
75-09-2	Methylene Chloride	3.75E-02	2.25E-02	2.24E-02	1.56E-02	3.97E-03	1.08E-02
PCBs/Pesticides							
1336-36-3	Total PCBs	2.70E-02	1.35E+00	4.40E-01	1.16E-01	7.95E-02	1.14E-01
NAV123	Total DDT	1.02E-03	9.25E-02	2.94E-01	2.25E-01	1.77E-02	1.39E-01
319-84-6	*alpha*-BHC	1.62E-04	NA	NA	NA	NA	NA
319-85-7	*beta*-BHC	2.16E-04	NA	NA	NA	NA	NA
319-86-8	*delta*-BHC	1.95E-04	NA	NA	NA	NA	NA
58-89-9	*gamma*-BHC (Lindane)	1.74E-04	NA	NA	NA	NA	NA
5103-71-9	*alpha*- Chlordane	6.83E-04	NA	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	5.31E-04	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	2.58E-04	NA	NA	NA	NA	NA
76-44-8	Heptachlor	2.12E-04	NA	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	1.47E-04	NA	NA	NA	NA	NA
5103-73-1	*cis*-Nonachlor	2.26E-04	NA	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	4.18E-04	NA	NA	NA	NA	NA
309-00-2	Aldrin	1.54E-04	NA	NA	NA	NA	NA
60-57-1	Dieldrin	1.91E-04	1.06E-02	4.52E-02	3.52E-02	2.57E-03	2.17E-02
959-98-8	Endosulfan I	2.20E-04	NA	NA	NA	NA	NA
33213-65-9	Endosulfan II	2.02E-04	NA	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	3.35E-04	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	2.58E-04	NA	NA	NA	NA	NA
72-43-5	Methoxychlor	3.28E-04	NA	NA	NA	NA	NA
PCDD/PCDF							
NAV128	TEQ Birds	2.74E-07	2.28E-05	9.98E-06	4.05E-06	1.45E-06	3.20E-06
NAV129	TEQ Mammals	2.55E-07	2.10E-05	9.21E-06	3.75E-06	1.34E-06	2.95E-06
Explosives							
99-65-0	1,3-Dinitrobenzene	NA	NA	NA	8.44E-04	NA	NA

Table 7-20. Wetland Dose Summary

CAS Number	Constituent	Song Sparrow	California Vole	Least Sandpiper	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
			Metals					
7429-90-5	Aluminum	8.71E+02	2.51E+02	2.02E+03	NA	NA	NA	NA
7440-36-0	Antimony	2.30E-01	7.50E-02	4.68E-01	6.79E-02	2.49E-02	1.76E-02	2.16E-02
7440-38-2	Arsenic	7.43E+00	3.09E-01	1.66E+01	1.35E+00	3.51E-02	3.32E-01	2.19E-01
7440-39-3	Barium	5.08E+00	5.05E+00	7.38E+00	2.90E+00	1.88E+00	6.74E-01	1.31E+00
7440-41-7	Beryllium	2.23E-02	7.21E-03	5.16E-02	1.49E-02	8.73E-03	3.01E-03	5.81E-03
7440-43-9	Cadmium	6.45E-01	7.72E-01	7.07E-01	1.23E-01	5.49E-02	6.49E-02	5.88E-02
7440-47-3	Total Chromium	3.52E+00	1.18E+00	7.96E+00	2.37E+00	1.41E+00	4.56E-01	9.38E-01
7440-48-4	Cobalt	9.86E-01	2.08E-01	2.21E+00	5.73E-01	3.24E-01	9.64E-02	2.21E-01
7440-50-8	Copper	1.30E+01	6.16E+00	2.55E+01	5.67E+00	2.95E+00	1.31E+00	2.16E+00
7439-89-6	Iron	1.35E+03	3.76E+02	3.10E+03	5.05E+02	2.05E+02	1.49E+02	1.56E+02
7439-92-1	Lead	6.70E+00	1.94E+00	1.53E+01	3.87E+00	2.14E+00	8.07E-01	1.45E+00
7439-95-4	Magnesium	1.71E+03	1.47E+03	2.53E+03	NA	NA	NA	NA
7439-96-5	Manganese	3.08E+01	3.70E+01	3.77E+01	7.29E+00	3.43E+00	3.80E+00	3.22E+00
7439-97-6	Mercury	1.64E-02	5.08E-03	3.85E-02	2.70E-02	1.96E-02	3.01E-03	1.22E-02
7439-98-7	Molybdenum	NA	1.27E+00	NA	NA	NA	NA	NA
7440-02-0	Nickel	4.37E+00	2.65E+00	8.16E+00	2.04E+00	1.12E+00	4.99E-01	8.10E-01
7782-49-2	Selenium	2.74E-01	8.47E-02	5.46E-01	1.44E-01	8.28E-02	2.10E-02	5.82E-02
7440-22-4	Silver	1.12E-01	2.25E-02	2.43E-01	2.52E-02	4.73E-03	7.61E-03	5.86E-03
7440-28-0	Thallium	1.46E-02	1.98E-02	1.52E-02	4.62E-02	3.69E-02	3.84E-03	2.29E-02
7440-62-2	Vanadium	2.50E+00	8.96E-01	5.55E+00	2.44E+00	1.63E+00	3.55E-01	1.05E+00
7440-66-6	Zinc	8.61E+01	1.74E+01	1.82E+02	3.46E+01	1.66E+01	5.83E+00	1.24E+01
			PAHs/SVOCs					
92-52-4	1,1'-Biphenyl	3.08E-03	4.40E-03	2.60E-03	NA	NA	NA	NA
95-94-3	1,2,4,5-Tetrachlorobenzene	NA	1.84E-03	NA	NA	NA	NA	NA
95-95-4	2,4,5-Trichlorophenol	NA	1.03E-02	NA	NA	NA	NA	NA
88-06-2	2,4,6-Trichlorophenol	NA	8.17E-03	NA	NA	NA	NA	NA
120-83-2	2,4-Dichlorophenol	NA	1.11E-02	NA	NA	NA	NA	NA
105-67-9	2,4-Dimethylphenol	NA	1.22E-02	NA	NA	NA	NA	NA
51-28-5	2,4-Dinitrophenol	NA	2.40E-02	NA	NA	NA	NA	NA
91-58-7	2-Chloronaphthalene	NA	5.72E-03	NA	NA	NA	NA	NA
95-57-8	2-Chlorophenol	NA	1.02E-02	NA	NA	NA	NA	NA
534-52-1	2-Methyl-4,6-dinitrophenol	NA	1.42E-02	NA	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene	3.33E-03	1.08E-03	6.60E-03	NA	NA	NA	NA
95-48-7	2-Methylphenol	NA	4.88E-02	NA	NA	NA	NA	NA
88-74-4	2-Nitroaniline	NA	2.45E-02	NA	NA	NA	NA	NA
88-75-5	2-Nitrophenol	NA	1.42E-02	NA	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine	NA	7.17E-01	NA	NA	NA	NA	NA
99-09-2	3-Nitroaniline	NA	8.35E-03	NA	NA	NA	NA	NA
101-55-3	4-Bromophenyl Phenyl Ether	NA	5.20E-03	NA	NA	NA	NA	NA
59-50-7	4-Chloro-3-methylphenol	5.55E-02	6.66E-02	5.86E-02	NA	NA	NA	NA
106-47-8	4-Chloroaniline	8.83E-03	5.62E-03	1.45E-02	NA	NA	NA	NA
7005-72-3	4-Chlorophenyl Phenyl Ether	NA	4.34E-03	NA	NA	NA	NA	NA
106-44-5	4-Methylphenol	NA	3.09E-02	NA	NA	NA	NA	NA
100-01-6	4-Nitroaniline	NA	2.45E-02	NA	NA	NA	NA	NA
100-02-7	4-Nitrophenol	NA	8.75E-03	NA	NA	NA	NA	NA
98-86-2	Acetophenone	5.97E-02	8.78E-02	4.78E-02	NA	NA	NA	NA
120-12-7	Anthracene	4.19E-03	7.43E-04	9.11E-03	8.79E-04	1.25E-04	2.65E-04	1.88E-04
100-52-7	Benzaldehyde	5.32E+00	6.79E-01	1.14E+01	NA	NA	NA	NA
111-91-1	*bis*(2-chloroethoxy)methane	NA	4.68E-03	NA	NA	NA	NA	NA
111-44-4	*bis*(2-chloroethyl) Ether	NA	8.21E-03	NA	NA	NA	NA	NA
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.83E+00	1.60E-01	4.00E+00	NA	NA	NA	NA
108-60-1	*bis*(chloroisopropyl) Ether	NA	1.02E-02	NA	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	6.25E-01	1.32E-02	1.40E+00	NA	NA	NA	NA
105-60-2	Caprolactam	9.99E-03	1.21E-02	1.07E-02	NA	NA	NA	NA
86-74-8	Carbazole	9.43E-02	3.09E-02	1.83E-01	NA	NA	NA	NA

Table 7-20. Wetland Dose Summary (page 2 of 2)

CAS Number	Constituent	Song Sparrow	California Vole	Least Sandpiper	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
132-64-9	Dibenzofuran	8.72E-03	1.67E-02	2.99E-03	NA	NA	NA	NA
84-66-2	Diethyl Phthalate	2.70E-02	5.63E-02	4.42E-03	NA	NA	NA	NA
131-11-3	Dimethyl Phthalate	NA	4.84E-03	NA	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	4.35E-02	6.15E-02	3.66E-02	NA	NA	NA	NA
117-84-0	Di-*n*-octyl Phthalate	NA	1.20E-02	NA	NA	NA	NA	NA
118-74-1	Hexachlorobenzene	NA	5.63E-03	NA	NA	NA	NA	NA
87-68-3	Hexachlorobutadiene	NA	7.89E-03	NA	NA	NA	NA	NA
77-47-4	Hexachlorocyclopentadiene	NA	4.61E+00	NA	NA	NA	NA	NA
67-72-1	Hexachloroethane	NA	7.94E-03	NA	NA	NA	NA	NA
78-59-1	Isophorone	NA	5.47E-03	NA	NA	NA	NA	NA
621-64-7	N-Nitrosodi-*n*-propylamine	NA	7.74E-03	NA	NA	NA	NA	NA
86-30-6	N-Nitrosodiphenylamine	NA	8.83E-03	NA	NA	NA	NA	NA
87-86-5	Pentachlorophenol	NA	2.99E-02	NA	NA	NA	NA	NA
108-95-2	Phenol	2.56E-01	4.86E-01	9.03E-02	NA	NA	NA	NA
NAV1000	Sum LPAHs	1.44E-01	1.98E-02	3.08E-01	2.51E-02	7.07E-04	7.05E-03	4.40E-03
NAV1001	Sum HPAHs	1.01E-01	1.68E-02	2.22E-01	2.24E-02	3.75E-03	6.71E-03	4.92E-03
			VOCs					
78-93-3	2-Butanone (MEK)	1.04E-01	1.10E-01	1.28E-01	6.73E-02	4.69E-02	1.19E-02	3.24E-02
67-64-1	Acetone	5.70E-03	6.02E-03	7.01E-03	3.68E-03	2.57E-03	6.53E-04	1.77E-03
108-90-7	Chlorobenzene	1.16E-03	1.23E-03	1.43E-03	7.53E-04	5.24E-04	1.33E-04	3.62E-04
110-82-7	Cyclohexane	1.71E-03	1.81E-03	2.10E-03	1.10E-03	7.70E-04	1.96E-04	5.32E-04
1634-04-4	Methyl tert-Butyl Ether	9.42E-04	9.95E-04	1.16E-03	6.08E-04	4.24E-04	1.08E-04	2.93E-04
108-87-2	Methylcyclohexane	3.47E-03	3.67E-03	4.27E-03	2.24E-03	1.56E-03	3.97E-04	1.08E-03
75-09-2	Methylene Chloride	1.81E-02	1.91E-02	2.23E-02	1.17E-02	8.14E-03	2.07E-03	5.63E-03
			PCBs/Pesticides					
1336-36-3	Total PCBs	2.83E-01	3.15E-03	6.43E-01	7.71E-02	2.16E-02	1.36E-02	2.05E-02
NAV123	Total DDT	7.66E-03	8.92E-04	1.65E-02	3.17E-01	2.59E-01	1.52E-02	1.57E-01
319-84-6	*alpha*-BHC	NA	2.10E-04	NA	NA	NA	NA	NA
319-85-7	*beta*-BHC	4.83E-04	2.66E-04	8.28E-04	NA	NA	NA	NA
319-86-8	*delta*-BHC	NA	2.47E-04	NA	NA	NA	NA	NA
58-89-9	*gamma*-BHC (Lindane)	7.41E-04	2.70E-04	1.41E-03	NA	NA	NA	NA
5103-71-9	*alpha*- Chlordane	2.27E-02	1.76E-04	5.14E-02	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	2.61E-02	1.72E-04	5.89E-02	NA	NA	NA	NA
72-20-8	Endrin	NA	2.01E-04	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	NA	3.29E-04	NA	NA	NA	NA	NA
53494-70-5	Endrin ketone	NA	3.02E-04	NA	NA	NA	NA	NA
76-44-8	Heptachlor	NA	2.65E-04	NA	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	9.56E-04	1.93E-04	1.97E-03	NA	NA	NA	NA
5103-73-1	*cis*-Nonachlor	5.92E-03	1.17E-04	1.33E-02	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	1.14E-02	1.60E-04	2.57E-02	NA	NA	NA	NA
309-00-2	Aldrin	NA	1.92E-04	NA	NA	NA	NA	NA
60-57-1	Dieldrin	2.64E-02	7.62E-04	5.91E-02	6.37E-02	4.85E-02	3.90E-03	3.01E-02
959-98-8	Endosulfan I	NA	5.39E-05	NA	NA	NA	NA	NA
33213-65-9	Endosulfan II	3.58E-03	2.40E-04	7.89E-03	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	NA	1.43E-04	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	NA	3.29E-04	NA	NA	NA	NA	NA
72-43-5	Methoxychlor	1.14E-03	3.14E-04	2.27E-03	NA	NA	NA	NA
8001-35-2	Toxaphene	NA	7.43E-03	NA	NA	NA	NA	NA
			PCDD/PCDF					
NAV128	TEQ Birds	4.11E-06	5.11E-08	9.33E-06	1.54E-06	6.61E-07	2.18E-07	5.08E-07
NAV129	TEQ Mammals	3.43E-06	4.38E-08	7.77E-06	1.29E-06	5.58E-07	1.83E-07	4.28E-07

Table 7-21. Pond Dose Summary

CAS Number	Constituent	Mallard	Great Blue Heron	Least Sandpiper	Raccoon
	Metals				
7429-90-5	Aluminum	3.36E+01	NA	3.08E+02	1.87E+01
7440-36-0	Antimony	1.29E-02	8.72E-04	2.65E-02	3.95E-03
7440-38-2	Arsenic	6.32E-01	2.66E-01	7.24E+00	1.48E-01
7440-39-3	Barium	9.38E-01	NA	1.36E+00	3.09E-01
7440-41-7	Beryllium	6.62E-04	NA	5.12E-03	4.19E-04
7440-43-9	Cadmium	1.63E-01	1.07E-02	2.38E-01	4.99E-02
7440-47-3	Total Chromium	1.45E-01	NA	9.60E-01	7.43E-02
7440-48-4	Cobalt	6.25E-02	NA	6.01E-01	1.97E-02
7440-50-8	Copper	1.06E+00	5.00E-01	2.68E+00	3.33E-01
7439-89-6	Iron	5.36E+01	NA	4.87E+02	2.72E+01
7439-92-1	Lead	1.11E-01	8.77E-02	6.10E-01	4.90E-02
7439-95-4	Magnesium	3.81E+02	NA	1.49E+03	1.14E+02
7439-96-5	Manganese	7.92E+00	NA	1.58E+01	3.14E+00
7439-97-6	Mercury	8.87E-04	9.88E-02	1.30E-03	1.81E-03
7439-98-7	Molybdenum	3.55E-01	NA	1.42E+00	1.01E-01
7440-02-0	Nickel	5.18E-01	1.26E-01	1.73E+00	1.78E-01
7782-49-2	Selenium	6.35E-02	2.94E-01	6.00E-01	1.63E-02
7440-22-4	Silver	1.26E-02	5.16E-03	1.22E-01	3.41E-03
7440-28-0	Thallium	3.84E-03	NA	3.97E-03	1.27E-03
7440-62-2	Vanadium	1.39E-01	9.95E-01	9.00E-01	6.27E-02
7440-66-6	Zinc	6.11E+00	4.88E+00	4.19E+01	1.66E+00
	PAHs/SVOCs				
95-94-3	1,2,4,5-Tetrachlorobenzene	4.28E-04	NA	1.68E-03	1.21E-04
95-95-4	2,4,5-Trichlorophenol	2.79E-03	NA	1.07E-02	7.88E-04
88-06-2	2,4,6-Trichlorophenol	2.23E-03	NA	8.66E-03	6.31E-04
120-83-2	2,4-Dichlorophenol	3.04E-03	NA	1.18E-02	8.60E-04
105-67-9	2,4-Dimethylphenol	3.29E-03	NA	1.27E-02	9.29E-04
51-28-5	2,4-Dinitrophenol	6.02E-03	NA	2.33E-02	1.70E-03
91-58-7	2-Chloronaphthalene	1.52E-03	NA	5.81E-03	4.29E-04
95-57-8	2-Chlorophenol	2.79E-03	NA	1.07E-02	7.88E-04
534-52-1	2-Methyl-4,6-dinitrophenol	3.93E-03	NA	1.55E-02	1.11E-03
91-57-6	2-Methylnaphthalene	3.42E-04	4.47E-05	1.94E-03	9.34E-05
95-48-7	2-Methylphenol	1.72E-02	NA	9.82E-02	4.63E-03
88-74-4	2-Nitroaniline	6.71E-03	NA	2.58E-02	1.90E-03
88-75-5	2-Nitrophenol	3.93E-03	NA	1.55E-02	1.11E-03
91-94-1	3,3'-Dichlorobenzidine	1.98E-01	NA	7.62E-01	5.59E-02
99-09-2	3-Nitroaniline	2.26E-03	NA	8.66E-03	6.38E-04
101-55-3	4-Bromophenyl Phenyl Ether	1.41E-03	NA	5.43E-03	3.99E-04
59-50-7	4-Chloro-3-methylphenol	1.84E-02	NA	7.11E-02	5.20E-03
106-47-8	4-Chloroaniline	1.52E-03	NA	5.81E-03	4.29E-04
7005-72-3	4-Chlorophenyl Phenyl Ether	1.16E-03	NA	4.39E-03	3.28E-04
106-44-5	4-Methylphenol	2.40E-02	NA	2.25E-01	5.91E-03
100-01-6	4-Nitroaniline	1.05E-02	NA	7.23E-02	2.74E-03
100-02-7	4-Nitrophenol	1.91E-03	NA	7.36E-03	5.40E-04
98-86-2	Acetophenone	1.82E-02	NA	2.07E-02	5.52E-03
1912-24-9	Atrazine	1.41E-03	NA	5.43E-03	3.99E-04
100-52-7	Benzaldehyde	5.26E-01	NA	4.91E+00	1.29E-01
111-91-1	*bis*(2-chloroethoxy)methane	1.27E-03	NA	4.91E-03	3.60E-04
111-44-4	*bis*(2-chloroethyl) Ether	2.22E-03	NA	8.53E-03	6.28E-04
117-81-7	*bis*(2-ethylhexyl) Phthalate	3.93E-02	NA	1.42E-01	1.12E-02
108-60-1	*bis*(chloroisopropyl) Ether	2.79E-03	NA	1.07E-02	7.88E-04
85-68-7	Butyl Benzyl Phthalate	3.38E-02	NA	3.88E-01	7.77E-03
105-60-2	Caprolactam	3.29E-03	NA	1.27E-02	9.29E-04
86-74-8	Carbazole	8.45E-03	NA	3.23E-02	2.39E-03
132-64-9	Dibenzofuran	3.24E-03	NA	9.06E-04	9.98E-04
84-66-2	Diethyl Phthalate	1.38E-02	NA	3.88E-02	4.01E-03
131-11-3	Dimethyl Phthalate	1.31E-03	NA	5.04E-03	3.70E-04
84-74-2	Di-*n*-butyl Phthalate	1.96E-02	NA	9.82E-02	5.40E-03
117-84-0	Di-*n*-octyl Phthalate	3.29E-03	NA	1.27E-02	9.29E-04

Table 7-21. Pond Dose Summary (page 2 of 2)

CAS Number	Constituent	Mallard	Great Blue Heron	Least Sandpiper	Raccoon
118-74-1	Hexachlorobenzene	1.52E-03	NA	5.81E-03	4.29E-04
87-68-3	Hexachlorobutadiene	2.15E-03	NA	8.27E-03	6.09E-04
77-47-4	Hexachlorocyclopentadiene	1.27E+00	NA	4.91E+00	3.60E-01
67-72-1	Hexachloroethane	2.15E-03	NA	8.27E-03	6.09E-04
78-59-1	Isophorone	1.48E-03	NA	5.68E-03	4.19E-04
621-64-7	N-Nitrosodi-*n*-propylamine	2.08E-03	NA	8.01E-03	5.89E-04
86-30-6	N-Nitrosodiphenylamine	2.41E-03	NA	9.30E-03	6.80E-04
87-86-5	Pentachlorophenol	8.11E-03	NA	3.10E-02	2.29E-03
108-95-2	Phenol	9.74E-02	NA	5.95E-02	2.97E-02
NAV1000	LPAHs	4.18E-03	4.38E-04	8.65E-03	1.28E-03
NAV1001	HPAHs	9.19E-03	2.40E-03	9.29E-02	2.40E-03
VOCs					
78-93-3	2-Butanone (MEK)	NA	NA	1.14E-02	NA
67-64-1	Acetone	NA	NA	1.06E-01	NA
75-15-0	Carbon Disulfide	NA	NA	1.14E-02	NA
108-90-7	Chlorobenzene	NA	NA	1.34E-03	NA
75-09-2	Methylene Chloride	NA	NA	5.69E-03	NA
PCBs/Pesticides					
1336-36-3	Total PCBs	4.73E-03	2.14E-02	5.77E-02	1.10E-03
NAV123	Total DDT	7.02E-04	3.69E-04	6.67E-03	1.74E-04
319-84-6	*alpha*-BHC	1.08E-04	NA	8.41E-04	2.76E-05
319-85-7	*beta*-BHC	1.39E-04	NA	1.10E-03	3.54E-05
319-86-8	*delta*-BHC	1.29E-04	NA	1.01E-03	3.28E-05
58-89-9	*gamma*-BHC (Lindane)	5.52E-04	NA	6.20E-03	1.28E-04
5103-71-9	*alpha*- Chlordane	1.36E-04	7.76E-05	1.35E-03	3.28E-05
5103-74-2	*gamma*-Chlordane	1.04E-04	4.00E-05	9.80E-04	2.57E-05
5103-73-1	*cis*-Nonachlor	1.37E-04	NA	1.46E-03	3.24E-05
72-20-8	Endrin	1.03E-04	NA	8.04E-04	2.64E-05
7421-93-4	Endrin aldehyde	1.70E-04	NA	1.33E-03	4.34E-05
53494-70-5	Endrin ketone	1.56E-04	NA	1.22E-03	3.97E-05
76-44-8	Heptachlor	1.38E-04	NA	1.09E-03	3.53E-05
1024-57-3	Heptachlor epoxide	9.91E-05	1.70E-05	7.74E-04	2.54E-05
39765-80-5	*trans*-nonachlor	4.66E-04	NA	5.45E-03	1.06E-04
309-00-2	Aldrin	9.90E-05	NA	7.74E-04	2.53E-05
60-57-1	Dieldrin	2.46E-04	5.49E-05	1.40E-03	6.66E-05
959-98-8	Endosulfan I	1.02E-04	NA	1.14E-03	2.38E-05
33213-65-9	Endosulfan II	1.18E-04	2.13E-05	9.17E-04	3.04E-05
1031-07-8	Endosulfan sulfate	1.34E-04	3.03E-05	1.31E-03	3.26E-05
7421-93-4	Endrin aldehyde	1.70E-04	NA	1.33E-03	4.34E-05
72-43-5	Methoxychlor	6.44E-04	1.56E-04	7.25E-03	1.49E-04

Table 7-22. Direct Contact Benchmark Summary

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
METALS												
Antimony	5	NA	Efroymson et al., 1997a	78	NA	U.S. EPA, 2005	2	25	Long and Morgan, 1991	500	1500	Buchman, 1999
Arsenic	18	NA	EPA, 2005	60	NA	Efroymson et al., 1997b	8.2	70	Long and Morgan, 1995	36	69	EPA 2000b, 2004
Barium	500	NA	Efroymson et al., 1997a	330	NA	EPA, 2005	NA	NA	NA	NA	NA	NA
Beryllium	10	NA	Efroymson et al., 1997a	40	NA	EPA, 2005	NA	NA	NA	NA	NA	NA
Cadmium	32	NA	EPA, 2005	140	NA	EPA, 2005	1.2	9.6	Long and Morgan, 1995	8.8	40	EPA, 2004
Chromium	1	NA	Efroymson et al., 1997a	0.4	NA	Efroymson et al., 1997b	81	370	Long and Morgan, 1995	1030	10300	Buchman, 1999
Cobalt	13	NA	EPA, 2005	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	100	NA	Efroymson et al., 1997a	50	NA	Efroymson et al., 1997b	34	270	Long and Morgan, 1995	3.1	4.8	EPA 2000b, 2004
Hexavalent Chromium	1	NA	Efroymson et al., 1997a	0.4	NA	Efroymson et al., 1997b	NA	NA	NA	50	1100	EPA 2000b, 2004
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	120	NA	EPA, 2005	1700	NA	EPA, 2005	46.7	218	Long and Morgan, 1995	8.1	210	EPA 2000b, 2004
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	500	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.3	NA	Efroymson et al., 1997a	0.1	NA	Efroymson et al., 1997b	0.15	0.71	Long and Morgan, 1995	0.94	1.8	EPA 2004
Molybdenum	2	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	NA	Efroymson et al., 1997a	200	NA	Efroymson et al., 1997b	20.9	51.6	Long and Morgan, 1995	8.2	74	EPA 2000b, 2004
Selenium	1	NA	Efroymson et al., 1997a	70	NA	Efroymson et al., 1997b	NA	NA	NA	71	290	EPA 2000b, 2004
Silver	2	NA	Efroymson et al., 1997a	NA	NA	NA	1	3.7	Long and Morgan, 1995	0.19	1.9	EPA 2000b, 2004
Thallium	1	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	213	2130	Buchman, 1999
Vanadium	2	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	50	NA	Efroymson et al., 1997a	200	NA	Efroymson et al., 1997b	150	410	Long and Morgan, 1995	81	90	EPA 2000b, 2004
PAH/SVOCs												
1,1'-Biphenyl	60	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	129	160	Buchman, 1999
2,4,5-Trichlorophenol	4	NA	Efroymson et al., 1997a	9	NA	Efroymson et al., 1997b	NA	NA	NA	11	240	Buchman, 1999
2,4,6-Trichlorophenol	NA	NA	NA	10	NA	Efroymson et al., 1997b	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	0.029	0.21	EPA 1989a	NA	NA	NA
2,4-Dinitrophenol	20	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	485	4850	Buchman, 1999
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	370	590	Buchman, 1999
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methyl-4,6-dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	0.07	0.67	Long and Morgan, 1995	30	300	Buchman, 1999
2-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7-22. Direct Contact Benchmark Summary (page 2 of 6)

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
4-Bromophenyl Phenyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	129	160	Buchman, 1999
4-Chlorophenyl Phenyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	7	NA	Efroymson et al., 1997b	NA	NA	NA	485	4850	Buchman, 1999
Acenaphthene	3	61	CCME, 1999	31	107	Sverdrup et al., 2002	0.016	0.5	Long and Morgan, 1995	710	970	Buchman, 1999
Acenaphthylene	3	61	CCME, 1999	23	145	Sverdrup et al., 2002	0.044	0.64	Long and Morgan, 1995	30	300	Buchman, 1999
Acetophenone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3	61	CCME, 1999	5	67	Sverdrup et al., 2002	0.0853	1.1	Long and Morgan, 1995	30	300	Buchman, 1999
Atrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1.2	3.3	CCME, 1999	980	NA	Sverdrup et al., 2002	0.261	1.6	Long and Morgan, 1995	30	300	Buchman, 1999
Benzo(a)pyrene	1.2	3.3	CCME, 1999	840	NA	Sverdrup et al., 2002	0.43	1.6	Long and Morgan, 1995	30	300	Buchman, 1999
Benzo(b)fluoranthene	1.2	3.3	CCME, 1999	360	NA	Sverdrup et al., 2002	NA	NA	NA	30	300	Buchman, 1999
Benzo(g,h,i)perylene	1.2	3.3	CCME, 1999	NA	NA	NA	NA	NA	NA	30	300	Buchman, 1999
Benzo(k)fluoranthene	1.2	3.3	CCME, 1999	560	NA	Sverdrup et al., 2002	NA	NA	NA	30	300	Buchman, 1999
bis(2-chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	6400	12000	Buchman, 1999
bis(2-chloroethyl) Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl) Phthalate	NA	NA	NA	NA	NA	NA	1.3	1.9	NA	360	400	Buchman, 1999
bis(chloroisopropyl) Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl Benzyl Phthalate	NA	NA	NA	NA	NA	NA	0.9	0.9	NA	3.4	2944	Buchman, 1999
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1.2	3.3	CCME, 1999	1030	NA	Sverdrup et al., 2002	0.384	2.8	NA	30	300	Buchman, 1999
Dibenz(a,h)anthracene	1.2	3.3	CCME, 1999	780	NA	Sverdrup et al., 2002	0.0634	0.26	NA	30	300	Buchman, 1999
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl Phthalate	100	NA	Efroymson et al., 1997a	NA	NA	NA	0.2	0.2	EPA, 1989a	3.4	2944	Buchman, 1999
Dimethyl Phthalate	NA	NA	NA	200	NA	Efroymson et al., 1997b	0.16	0.16	EPA, 1989a	3.4	2944	Buchman, 1999
Di-*n*-butyl Phthalate	200	NA	Efroymson et al., 1997a	NA	NA	NA	1.4	1.4	EPA, 1989a	3.4	2944	Buchman, 1999
Di-*n*-octyl Phthalate	NA	NA	NA	NA	NA	NA	6.2	6.2	EPA, 1989a	3.4	2944	Buchman, 1999
Fluoranthene	1.2	3.3	CCME, 1999	37	81	Sverdrup et al., 2002	0.6	5.1	NA	16	40	Buchman, 1999
Fluorene	3	61	CCME, 1999	7.7	39	Sverdrup et al., 2002	0.019	0.54	NA	30	300	Buchman, 1999

Table 7-22. Direct Contact Benchmark Summary (page 3 of 6)

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	0.022	0.23	EPA, 1989a	129	160	Buchman, 1999
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	0.011	0.27	EPA, 1989a	3.2	32	Buchman, 1999
Hexachlorocyclopentadiene	10	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	0.7	7	Buchman, 1999
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	94	940	Buchman, 1999
Indeno(1,2,3-cd)pyrene	1.2	3.3	CCME, 1999	910	NA	NA	0.69	2.6	NA	30	300	Buchman, 1999
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	1290	12900	Buchman, 1999
Naphthalene	3	61	CCME, 1999	20	167	Sverdrup et al., 2002	0.16	2.1	NA	235	2350	Buchman, 1999
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	668	6680	Buchman, 1999
N-Nitrosodi-*n*-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	NA	NA	NA	20	NA	Efroymson et al., 1997b	0.028	0.13	EPA, 1989a	33000	3300000	Buchman, 1999
Pentachlorophenol	5	NA	EPA, 2005	31	NA	EPA, 2005	NA	NA	NA	7.9	13	EPA 2000b, 2004
Phenanthrene	3	61	CCME, 1999	23	41	Sverdrup et al., 2002	0.24	1.5	Long and Morgan, 1995	4.6	7.7	Buchman, 1999
Phenol	70	NA	Efroymson et al., 1997a	30	NA	Efroymson et al., 1997b	0.42	1.2	Long and Morgan, 1995	580	5800	Buchman, 1999
Pyrene	1.2	3.3	CCME, 1999	10	53	Sverdrup et al., 2002	0.665	2.6	Long and Morgan, 1995	30	300	Buchman, 1999
LPAH	3	61	CCME, 1999	20	167	Sverdrup et al., 2002	0.552	3.16	Long and Morgan, 1995	235	2350	Buchman, 1999
HPAH	1.2	3.3	CCME, 1999	840	NA	Sverdrup et al., 2002	1.7	9.6	Long and Morgan, 1995	30	300	Buchman, 1999
VOCs												
1,1,1-Trichloroethane (TCA)	NA	NA	NA	NA	NA	NA	NA	NA	NA	3120	31200	Buchman, 1999
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	902	9020	Buchman, 1999
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	20	NA	Efroymson et al., 1997b	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	20	NA	Efroymson et al., 1997b	0.051	0.064	EPA, 1989a	129	160	Buchman, 1999
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	0.05	0.05	EPA, 1989a	129	1970	Buchman, 1999
1,2-Dichloroethane (EDC)	NA	NA	NA	NA	NA	NA	NA	NA	NA	11300	113000	Buchman, 1999
1,2-Dichloropropane	NA	NA	NA	700	NA	Efroymson et al., 1997b	NA	NA	NA	3040	10300	Buchman, 1999
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	20	NA	Efroymson et al., 1997b	0.11	0.12	EPA, 1989a	129	1970	Buchman, 1999
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7-22. Direct Contact Benchmark Summary (page 4 of 6)

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	700	5100	Buchman, 1999
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	6400	12000	Buchman, 1999
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	5000	50000	Buchman, 1999
Chlorobenzene	NA	NA	NA	40	NA	Efroymson et al., 1997b	NA	NA	NA	129	160	Buchman, 1999
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	6400	12000	Buchman, 1999
Ethylbenzene	NA	NA	NA	NA	NA	NA	0.01	0.037	EPA, 1989a	43	430	Buchman, 1999
Isopropyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylenes	NA	NA	NA	NA	NA	NA	0.04	0.12	EPA, 1989a	NA	NA	NA
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	6400	12000	Buchman, 1999
o-Xylene	NA	NA	NA	NA	NA	NA	0.04	0.12	EPA, 1989a	NA	NA	NA
Styrene	300	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene (PCE)	NA	NA	NA	NA	NA	NA	0.057	0.14	EPA, 1989a	450	10200	Buchman, 1999
Toluene	200	NA	Efroymson et al., 1997a	NA	NA	NA	NA	NA	NA	5000	6300	Buchman, 1999
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	200	2000	Buchman, 1999
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	6400	12000	Buchman, 1999
Trichlorotrifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7-22. Direct Contact Benchmark Summary (page 5 of 6)

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
PCB/Pesticides												
Total PCBs	40	NA	Efroymson et al., 1997a	NA	NA	NA	0.0227	0.18	Long and Morgan, 1995	0.03	NA	EPA 2000b, 2004
2,4 DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4 DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4 DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4 DDD	NA	NA	NA	NA	NA	NA	0.00122	0.00781	Macdonald et al 1994	0.36	3.6	Buchman, 1999
4,4 DDE	NA	NA	NA	NA	NA	NA	0.0022	0.027	Long and Morgan, 1995	1.4	14	Buchman, 1999
4,4 DDT	NA	NA	NA	NA	NA	NA	0.00119	0.00477	Macdonald et al 1994	0.001	0.13	EPA 2004
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA	NA	NA	0.00032	0.00099	Macdonald et al 1994	0.016	0.16	EPA 2000b, 2004
alpha-Chlordane	NA	NA	NA	NA	NA	NA	0.0005	0.006	Long and Morgan, 1991	0.004	0.09	EPA 2000b, 2004
cis-Nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	0.00002	0.045	Long and Morgan, 1995	0.0023	0.037	EPA 2000b, 2004
Endrin aldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA	NA	NA	0.0005	0.006	Long and Morgan, 1991	0.004	0.09	EPA 2000b, 2004
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036	0.053	EPA 2000b, 2004
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036	0.053	EPA 2000b, 2004
trans-nonachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.13	1.3	EPA 2000b, 2004
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA	NA	NA	0.000715	0.0043	Macdonald et al 1994	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	0.00002	0.008	Long and Morgan, 1991	0.0019	0.71	EPA 2000b, 2004
Endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0087	0.034	EPA 2000b, 2004
Endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0087	0.034	EPA 2000b, 2004
Endosulfan sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.03	NA	Buchman, 1999
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0002	0.21	EPA 2000b, 2004

Table 7-22. Direct Contact Benchmark Summary (page 6 of 6)

CONSTITUENT	PLANTS			TERRESTRIAL INVERTEBRATES			BENTHIC INVERTEBRATES			AQUATIC BIOTA		
	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (mg/kg)	High (mg/kg)	Reference	Low (µg/L)	High (µg/L)	Reference
PCDD/PCDF												
1,2,3,4,6,7,8-HpCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,4,6,7,8-HpCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,4,7,8,9-HpCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,4,7,8-HxCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,4,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,6,7,8-HxCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,6,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,7,8,9-HxCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,7,8,9-HxCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,7,8-PeCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,2,3,7,8-PeCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2,3,4,6,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2,3,4,7,8-PeCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
OCDD	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
OCDF	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
Explosives												
1,3,5-Trinitrobenzene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
1-Chloro-3-nitrobenzene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2,4,6-Trinitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2-Amino-4,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
2-Nitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
3-Nitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
4-Amino-2,6-dinitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
4-Nitrotoluene	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	NA	NA	NA	NA	NA	NA	NM	NM	NM	NM	NM	NM

Table 7-23. Inhalation TRVs for Burrowing Mammals

CAS Number	Constituent	Species	Effect/Endpoint	Duration	Secondary Source	Primary Source	Exposure Regime	Study NOAEL (mg/m^3)	Study LOAEL (mg/m^3)	Conversion Factors (hr/d)	(day/week)	(%t)	Low TRV (mg/m^3)	High TRV (mg/m^3)
67-64-1	Acetone	rats and mice	maternal weight, weight gain		IRIS RfC Study	Mast et al., 1988	unknown	26,094	--	1.00	1.00	1.25	32618	--
71-43-2	Benzene	--	hematopoetic	50 days		Green et al., 1981	6 hr/day, 5 day/wk	31	--	0.25	0.71	1.25	6.8	--
71-43-2	Benzene	--	reproductive	10+ wk		Kuna et al., 1981	6 hr/day, 5 day/wk	--	957	0.25	0.71	1.25	--	212
75-15-0	Carbon Disulfide	rats	developmental, maternal toxicity	gestation	IRIS RfC Study	Tabacova, 1989, Tabacova et al., 1978, 1983	8 hr/day	10	100	1.00	1.00	1.25	13	125
108-90-7	Chlorobenzene	rats	liver, kidney, testes	11 wk	OEHHA CRL	Nair et al., 1987	6 hr/day, 7 day/wk	225	675	0.25	1.00	1.25	70	211
67-66-3	Chloroform	mice	developmental	gest days 6-15	IRIS RfC Study	Scortichini et al., 1986	6 hr/day	4,000	13,000	1.00	1.00	1.25	5,000	16,250
74-87-3	Chloromethane	mice	cerebellar lesions, central nervous system	11 days	IRIS RfC Study	Landry et al., 1983	22-22.5 hr/day, 5 day/wk	103	206	0.92	1.00	1.25	118	237
106-46-7	1,4-Dichlorobenzene	rat	reproductive	10 wk	IRIS RfC Study	CPA, 1986	6 hr/day, 7 day/wk	301	902	0.25	1.00	1.25	94	282
156-59-2	*cis*-1,2-Dichloroethene	rat	hepatic (pathology, fatty accumulation)	8 wk	ATSDR MRL	Freundt et al., 1977	5 day/wk	--	793	1.00	0.71	1.25	--	708
100-41-4	Ethylbenzene	rat, rabbit	developmental	gest days 1-19, 1-24 resp.	IRIS RfC Study	Andrew et al., 1981 and Hardin et al., 1981	6 to 7 hr/day, 7 day/wk	434	1,000	1.00	1.00	1.25	543	1250
98-82-8	Isopropylbenzene	rats	kidney, adrenal	13 wk	IRIS RfC Study	Cushman et al., 1995	6 hr/day, 5 day/wk	2,438	5,909	0.25	0.71	1.25	544	1319
78-93-3	2-Butanone (MEK)	mice	developmental, maternal toxicity	gest days 6-15	IRIS RfC Study	Deacon et al., 1981	7 hr/day	2,955	8,865	1.00	1.00	1.25	3,694	11,081
75-09-2	Methylene Chloride	rats	body weight, estrous cycle duration, serum prolactin	15 to 19 days	OEHHA	Breslin and Landry, 1986	6 hr/day, 7 day/wk	--	12,168	0.25	1.00	1.25	--	3,802

Table 7-23. Inhalation TRVs for Burrowing Mammals (page 2 of 2)

CAS Number	Constituent	Species	Effect/Endpoint	Duration	Secondary Source	Primary Source	Exposure Regime	Study NOAEL (mg/m^3)	Study LOAEL (mg/m^3)	Conversion Factors (hr/d)	(day/week)	(%t)	Low TRV (mg/m^3)	High TRV (mg/m^3)
75-09-2	Methylene Chloride	rats	reproductive, developmental	14 wk	OEHHA	Nitschke et al., 1985	6 hr/day, 5 day/wk	5,215	--	0.25	0.71	1.25	1164	--
91-20-3	Naphthalene	mice	nasal inflammation, respiratory lesions	103 wk	IRIS RfC Study, OEHHA CREL Study, ATSDR MRL	NTP, 1992. 2000	6 hr/day, 5 day/wk	--	52	0.25	0.71	1.25	1.2	12
100-42-5	Styrene	mice	developmental	gest days 6-16	IRIS	Kankaanpaa et al., 1980	6 hr/day	1,065	--	1.00	1.00	1.25	1,331	--
100-42-5	Styrene	hamsters	developmental	gest days 6-18	IRIS	Kankaanpaa et al., 1980	6 hr/day	--	4,260	1.00	1.00	1.25	--	5,325
108-88-3	Toluene	rat	degeneration of nasal epithelium	2 yr	IRIS RfC Study	NTP, 1990	6.5 hr/day, 5 days/wk	--	2,261	0.27	0.71	1.25	55	547
79-01-6	Trichloroethene (TCE)	gerbils	neurotoxicity (GABA levels)	12 mo	OEHHA	Briving et al., 1986	unknown	--	266	1.00	1.00	1.25	33	332
75-01-4	Vinyl Chloride	rats	reproductive	11 wks	IRIS	Short et al., 1977	6 hr/day, 5 days/wk	129	644	0.25	0.71	1.25	29	144
1330-20-7	Xylenes, total	rats	motor function	3 mo or 6 mo	IRIS RfC Study	Korsak et al., 1994	6 hr/day, 5 day/wk	225	450	0.25	0.71	1.25	50	100

Notes
-- = Value not available or not calculable.
ppmv = Parts per million by volume.
mg/m^3 = milligrams per cubic meter.
Benchmarks were calculated using the following equation:

Benchmark = NOAEL or LOAEL × (hr/d CF) × (d/wk CF) × (% t CF)

where NOAEL = No observed adverse effect level.
LOAEL = Lowest observed adverse effect level.
hr/d CF = Conversion factor for converting the hours per day of exposure in the toxicity study to receptor exposure (e.g., a conversion factor of 0.25 = 6 hours of exposure divided by 24 hours per day)
d/wk CF = Conversion factor for converting the days per week of exposure in the toxicity study to receptor exposure (e.g., a conversion factor of 0.71 = 5 days of exposure divided by 7 days per week)
% t CF = Conversion factor for estimating the time the receptor is expected to spend in the burrow, conservatively estimated at 80% (i.e., 1.25 = 100% divided by 80%).

Table 7-24. TRV Summary for Birds and Mammals

CAS Number	Constituent	Birds				Small Mammals			
		Low TRV (mg/kg/day)	ref	High TRV (mg/kg/day)	ref	Low TRV (mg/kg/day)	ref	High TRV (mg/kg/day)	ref
Metals									
7440-36-0	Antimony					5.90E-02	1	2.76E+00	1
7440-38-2	Arsenic	5.50E+00	2	2.20E+01	2	3.20E-01	2	4.70E+00	2
7440-39-3	Barium	2.08E+01	3	4.17E+01	3	5.18E+01	1	8.27E+01	1
7440-41-7	Beryllium					5.23E-01	1	6.30E-01	1
7440-43-9	Cadmium	8.00E-02	2	6.34E+00	2	6.00E-02	2	6.90E+00	2
18540-29-9	Chromium (VI)					3.28E+00	3	1.31E+01	3
16065-83-1	Chromium(III)	2.66E+00	1	1.56E+01	1	2.40E+00	1	5.82E+01	1
7440-47-3	Total Chromium	2.66E+00	1	1.56E+01	1	2.40E+00	1	5.82E+01	1
7440-48-4	Cobalt					1.20E+00	2	2.00E+01	2
7440-50-8	Copper	2.30E+00	2	5.23E+01	2	2.67E+00	2	6.32E+02	2
7439-92-1	Lead	1.40E-02	2	8.75E+00	2	1.00E+00	2	2.41E+02	2
7439-96-5	Manganese	7.76E+01	2	7.76E+02	2	1.37E+01	2	1.59E+02	2
7439-97-6	Mercury	3.90E-02	2	1.80E-01	2	2.50E-01	2	4.00E+00	2
7439-98-7	Molybdenum	3.50E+00	3	3.53E+01	3	2.60E-01	3	2.60E+00	3
7440-02-0	Nickel	1.38E+00	2	5.63E+01	2	1.33E-01	2	3.16E+01	2
7782-49-2	Selenium	2.30E-01	2	9.30E-01	2	5.00E-02	2	1.21E+00	2
7440-28-0	Thallium					4.80E-01	2	1.43E+00	2
36643-28-4	Butyltins	7.30E-01	2	4.59E+01	2	2.50E-01	2	1.50E+01	2
7440-62-2	Vanadium	3.44E-01	1	1.70E+00	1	4.16E+00	1	9.43E+00	1
7440-66-6	Zinc	7.00E+00	2	1.72E+02	2	9.60E+00	2	4.11E+02	2
PAHs/SVOCs									
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.10E+00	3			1.83E+01	3	1.83E+02	3
84-66-2	Diethyl Phthalate					4.58E+03	3		
84-74-2	Di-*n*-butyl Phthalate	1.10E-01	3	1.10E+00	3	5.50E+02	3	1.83E+03	3
87-86-5	Pentachlorophenol	6.73E+00	1	5.20E+01	1	8.42E+00	1	2.27E+01	1
129-00-0	Pyrene	3.25E+01	4	3.25E+02	4	7.50E+01	5	1.25E+02	5
NAV1000	Sum LPAHs	2.69E+01	7	2.69E+02	7	5.00E+01	2	1.50E+02	2
NAV1001	Sum HPAHs	3.25E+01	4	3.25E+02	4	1.31E+00	2	3.28E+01	2
VOCs									
71-55-6	1,1,1-Trichloroethane (TCA)					1.00E+03	3		
107-06-2	1,2-Dichloroethane (EDC)	1.72E+01	3	3.44E+01	3	5.00E+01	3		
108-10-1	4-Methyl-2-pentanone (MIBK)					2.50E+01	3		
67-64-1	Acetone					1.00E+01	3	5.00E+01	3
71-43-2	Benzene					2.64E+01	3	2.64E+02	3
67-66-3	Chloroform					1.50E+01	3	4.10E+01	3
7816-60-0	m,p-Xylenes					2.10E+00	3	2.60E+00	3
75-09-2	Methylene Chloride					5.85E+00	3	5.00E+01	3
95-47-6	o-Xylene					2.10E+00	3	2.60E+00	3
108-88-3	Toluene					2.60E+01	3	2.60E+02	3

Table 7-24. TRV Summary for Birds and Mammals (page 2 of 2)

CAS Number	Constituent	Birds				Small Mammals			
		Low TRV (mg/kg/day)	ref	High TRV (mg/kg/day)	ref	Low TRV (mg/kg/day)	ref	High TRV (mg/kg/day)	ref
PCBs/Pesticides									
1336-36-3	Total PCBs	9.00E-02	2	1.27E+00	2	3.60E-01	2	1.28E+00	2
NAV123	Total DDT	9.00E-03	2	6.00E-02	2	8.00E-01	2	1.60E+01	2
58-89-9	*gamma*-BHC (Lindane)					5.00E-01	2	3.75E+00	2
5103-71-9	*alpha*-Chlordane	1.40E-03	8	1.07E+01	3	4.60E+00	3	9.20E+00	3
5103-73-1	*cis*-Nonachlor	1.40E-03	8	1.07E+01	3	4.60E+00	3	9.20E+00	3
72-20-8	Endrin	1.00E-02	3	1.00E-01	3	9.20E-02	3	9.20E-01	3
5103-74-2	*gamma*-Chlordane	1.40E-03	8	1.07E+01	3	4.60E+00	3	9.20E+00	3
76-44-8	Heptachlor					1.30E-01	2	6.80E+00	2
39765-80-5	*trans*-nonachlor	1.40E-03	8	1.07E+01	3	4.60E+00	3	9.20E+00	3
309-00-2	Aldrin					1.00E-01	2	1.00E+00	2
319-85-7	*beta*-BHC					4.00E-01	3	2.00E+00	3
60-57-1	Dieldrin	7.09E-02	1	8.01E-01	1	1.50E-02	1	1.27E+00	1
72-43-5	Methoxychlor					2.50E+00	2	5.00E+01	2
8001-35-2	Toxaphene					8.00E+00	3		
PCDD/PCDF									
NAV128	TEQ Birds	1.40E-05	3	1.40E-04	3				
NAV129	TEQ Mammals					1.00E-06	3	1.00E-05	3
Explosives									
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)					1.00E+00	9	5.00E+00	9
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.65E+00	10	8.14E+00	10	1.19E+00	10	2.73E+00	10
99-35-4	1,3,5-Trinitrobenzene					2.68E+00	11	1.33E+01	11
99-65-0	1,3-Dinitrobenzene					4.00E-02	13	2.00E-01	13
118-96-7	2,4,6-Trinitrotoluene	7.00E-02	12	1.80E+00	12	2.00E-01	12	3.00E-01	12
19406-51-0	4-Amino-2,6-dinitrotoluene					9.00E+00	14	4.80E+01	14
35572-78-2	2-Amino-4,6-dinitrotoluene					9.00E+00	14	4.80E+01	14

TRV = Toxicity Reference Value

References for TRVs
1 = U.S. EPA 2005
2 = DTSC, 2001.
3 = Sample, 1996.
4 = Patton and Dieter, 1980.
5= U.S. EPA, 2001.
6 = Mackenzie and Angevine, 1981.
7 = Wildlife Int
8 = Biotox, 1969.
9 = U.S. Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for HMX. 2001.
10 = U.S.Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for RDX. 2001.
11 = U.S.Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for 1,3,5 TNB. 2001.
12 = U.S.Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for 1, 3 dinitrobenze. 2001.
13 = U.S.Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for TNT. 2000.
14 = U.S.Army Center for Health Promotion and Preventive Medicine: Wildlife Toxicity Report for 2-amino 4, 6 dinitrotolene. 2001.

Table 7-25. Screening-Level HQ for Upland Plants

CAS NUMBER	CONSTITUENT	Upland Soil EPC[1] (mg/kg)	Screening-Level Benchmark (mg/kg)	Upland Plants Screening-Level HQ (unitless)	Tier 2 COPEC
	METALS				
7440-36-0	Antimony	3.81E+02	5.00E+00	7.62E+01	YES
7440-38-2	Arsenic	1.35E+01	1.80E+01	7.50E-01	NO
7440-39-3	Barium	4.74E+02	5.00E+02	9.48E-01	NO
7440-41-7	Beryllium	8.90E-01	1.00E+01	8.90E-02	NO
7440-43-9	Cadmium	1.25E+02	3.20E+01	3.91E+00	YES
7440-47-3	Chromium	2.14E+03	1.00E+00	2.14E+03	YES
7440-48-4	Cobalt	4.02E+01	1.30E+01	3.09E+00	YES
7440-50-8	Copper	4.02E+03	1.00E+02	4.02E+01	YES
18540-29-9	Hexavalent Chromium	1.20E+00	1.00E+00	1.20E+00	YES
7439-89-6	Iron	9.10E+04	NA	NA	YES
7439-92-1	Lead	6.22E+04	1.20E+02	5.18E+02	YES
7439-95-4	Magnesium	1.32E+04	NA	NA	YES
7439-96-5	Manganese	1.42E+03	5.00E+02	2.84E+00	YES
7439-97-6	Mercury	1.01E+01	3.00E-01	3.37E+01	YES
7439-98-7	Molybdenum	3.71E+01	2.00E+00	1.86E+01	YES
7440-02-0	Nickel	2.23E+02	3.00E+01	7.43E+00	YES
7782-49-2	Selenium	8.00E-01	1.00E+00	8.00E-01	NO
7440-22-4	Silver	5.91E+01	2.00E+00	2.96E+01	YES
36643-28-4	Tri-*n*-butyltin Cation	3.30E-03	NA	NA	YES
7440-28-0	Thallium	2.50E-01	1.00E+00	2.50E-01	NO
7440-62-2	Vanadium	8.16E+01	2.00E+00	4.08E+01	YES
7440-66-6	Zinc	1.01E+04	5.00E+01	2.02E+02	YES
	PAHs/SVOCs				
92-52-4	1,1'-Biphenyl	3.30E+00	6.00E+01	5.50E-02	NO
95-94-3	1,2,4,5-Tetrachlorobenzene	1.20E-01	NA	NA	YES
121-14-2	2,4-Dinitrotoluene	2.80E-01	NA	NA	YES
91-58-7	2-Chloronaphthalene	3.50E-02	NA	NA	YES
95-57-8	2-Chlorophenol	7.10E-03	NA	NA	YES
91-57-6	2-Methylnaphthalene	2.30E+01	NA	NA	YES
95-48-7	2-Methylphenol	1.40E-02	NA	NA	YES
88-74-4	2-Nitroaniline	1.40E-02	NA	NA	YES
91-94-1	3,3'-Dichlorobenzidine	4.20E-03	NA	NA	YES
106-47-8	4-Chloroaniline	1.60E-01	NA	NA	YES
106-44-5	4-Methylphenol	1.50E-01	NA	NA	YES
83-32-9	Acenaphthene	2.20E+01	3.00E+00	7.33E+00	YES
208-96-8	Acenaphthylene	6.70E-01	3.00E+00	2.23E-01	NO
98-86-2	Acetophenone	2.90E-01	NA	NA	YES
120-12-7	Anthracene	9.10E+00	3.00E+00	3.03E+00	YES
100-52-7	Benzaldehyde	4.90E-01	NA	NA	YES
56-55-3	Benzo(a)anthracene	8.10E+00	1.20E+00	6.75E+00	YES
50-32-8	Benzo(a)pyrene	3.90E+00	1.20E+00	3.25E+00	YES
205-99-2	Benzo(b)fluoranthene	7.70E+00	1.20E+00	6.42E+00	YES
191-24-2	Benzo(g,h,i)perylene	2.80E+00	1.20E+00	2.33E+00	YES
207-08-9	Benzo(k)fluoranthene	2.50E+00	1.20E+00	2.08E+00	YES
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.80E+03	NA	NA	YES
85-68-7	Butyl Benzyl Phthalate	2.20E+03	NA	NA	YES
105-60-2	Caprolactam	3.90E+00	NA	NA	YES
86-74-8	Carbazole	4.00E+00	NA	NA	YES
218-01-9	Chrysene	1.40E+01	1.20E+00	1.17E+01	YES
53-70-3	Dibenz(a,h)anthracene	6.70E-01	1.20E+00	5.58E-01	NO
132-64-9	Dibenzofuran	1.40E+01	NA	NA	YES
84-66-2	Diethyl Phthalate	2.10E-01	1.00E+02	2.10E-03	NO
131-11-3	Dimethyl Phthalate	1.30E-01	NA	NA	YES
84-74-2	Di-*n*-butyl Phthalate	1.80E+00	2.00E+02	9.00E-03	NO
117-84-0	Di-*n*-octyl Phthalate	3.50E-01	NA	NA	YES
206-44-0	Fluoranthene	4.10E+01	1.20E+00	3.42E+01	YES
86-73-7	Fluorene	1.80E+01	3.00E+00	6.00E+00	YES

Table 7-25. Screening-Level HQ for Upland Plants (page 2 of 3)

CAS NUMBER	CONSTITUENT	Upland Soil EPC1	Screening-Level Benchmark	Upland Plants Screening-Level HQ	Tier 2 COPEC
118-74-1	Hexachlorobenzene	5.50E-02	NA	NA	YES
193-39-5	Indeno(1,2,3-cd)pyrene	3.00E+00	1.20E+00	2.50E+00	YES
91-20-3	Naphthalene	8.60E+01	3.00E+00	2.87E+01	YES
86-30-6	N-Nitrosodiphenylamine	1.80E-01	NA	NA	YES
87-86-5	Pentachlorophenol	1.80E+00	5.00E+00	3.60E-01	NO
85-01-8	Phenanthrene	6.00E+01	3.00E+00	2.00E+01	YES
108-95-2	Phenol	8.80E-02	7.00E+01	1.26E-03	NO
129-00-0	Pyrene	3.20E+01	1.20E+00	2.67E+01	YES
11-84-7	Diesel	2.60E+03	NA	NA	YES
8006-61-9	Gasoline	6.30E+02	NA	NA	YES
NAV0087	Residual Range Organics (RRO)	1.40E+04	NA	NA	YES
NAV1000	LPAH	1.96E+02	3.00E+00	6.52E+01	YES
NAV1001	HPAH	1.13E+02	1.20E+00	9.45E+01	YES
VOCs					
95-50-1	1,2-Dichlorobenzene	4.00E-03	NA	NA	YES
541-73-1	1,3-Dichlorobenzene	1.30E-03	NA	NA	YES
106-46-7	1,4-Dichlorobenzene	5.00E-02	NA	NA	YES
78-93-3	2-Butanone (MEK)	3.20E-02	NA	NA	YES
108-10-1	4-Methyl-2-pentanone (MIBK)	8.50E-03	NA	NA	YES
67-64-1	Acetone	1.30E-01	NA	NA	YES
71-43-2	Benzene	5.20E-03	NA	NA	YES
75-15-0	Carbon Disulfide	2.50E-03	NA	NA	YES
108-90-7	Chlorobenzene	4.00E-02	NA	NA	YES
110-82-7	Cyclohexane	2.30E-03	NA	NA	YES
100-41-4	Ethylbenzene	2.30E-03	NA	NA	YES
98-82-8	Isopropylbenzene	1.70E-02	NA	NA	YES
7816-60-0	m,p-Xylenes	3.30E-03	NA	NA	YES
108-87-2	Methylcyclohexane	4.40E-03	NA	NA	YES
75-09-2	Methylene Chloride	1.40E-01	NA	NA	YES
95-47-6	o-Xylene	5.30E-03	NA	NA	YES
100-42-5	Styrene	3.80E-03	3.00E+02	1.27E-05	NO
127-18-4	Tetrachloroethene (PCE)	9.70E-04	NA	NA	YES
108-88-3	Toluene	3.40E-03	2.00E+02	1.70E-05	NO
79-01-6	Trichloroethene (TCE)	7.30E-04	NA	NA	YES
PCBs/Pesticides					
1336-36-3	Total PCBs	3.92E+01	4.00E+01	9.79E-01	NO
53-19-0	2,4 DDD	1.15E-01	NA	NA	YES
3424-82-6	2,4 DDE	2.08E-03	NA	NA	YES
789-02-6	2,4 DDT	1.05E-01	NA	NA	YES
72-54-8	4,4 DDD	2.35E-01	NA	NA	YES
72-55-9	4,4 DDE	1.49E-01	NA	NA	YES
50-29-3	4,4 DDT	4.44E-02	NA	NA	YES
319-84-6	*alpha*-BHC	1.62E-03	NA	NA	YES
58-89-9	*gamma*-BHC (Lindane)	7.60E-04	NA	NA	YES
5103-71-9	*alpha*-Chlordane	1.92E+00	NA	NA	YES
5103-73-1	*cis*-Nonachlor	5.34E-01	NA	NA	YES
72-20-8	Endrin	1.75E-03	NA	NA	YES
7421-93-4	Endrin aldehyde	3.83E-03	NA	NA	YES
53494-70-5	Endrin ketone	3.79E-03	NA	NA	YES
5103-74-2	*gamma*-Chlordane	1.96E+00	NA	NA	YES
76-44-8	Heptachlor	1.90E-04	NA	NA	YES
1024-57-3	Heptachlor epoxide	8.60E-04	NA	NA	YES
39765-80-5	*trans*-nonachlor	1.03E+00	NA	NA	YES

Table 7-25. Screening-Level HQ for Upland Plants (page 3 of 3)

CAS NUMBER	CONSTITUENT	Upland Soil EPC1	Screening-Level Benchmark	Upland Plants Screening-Level HQ	Tier 2 COPEC
309-00-2	Aldrin	4.30E-04	NA	NA	YES
319-85-7	*beta*-BHC	7.50E-04	NA	NA	YES
319-86-8	*delta*-BHC	7.00E-05	NA	NA	YES
60-57-1	Dieldrin	4.83E-02	NA	NA	YES
959-98-8	Endosulfan I	1.80E-03	NA	NA	YES
33213-65-9	Endosulfan II	2.12E-01	NA	NA	YES
1031-07-8	Endosulfan sulfate	2.80E-02	NA	NA	YES
72-43-5	Methoxychlor	3.81E-03	NA	NA	YES
NAV120	Total DDDs	2.93E-01	NA	NA	YES
NAV121	Total DDEs	1.49E-01	NA	NA	YES
NAV123	Total DDT	3.42E-01	NA	NA	YES
NAV122	Total DDTs	1.05E-01	NA	NA	YES
DIOXIN/FURANS					
35822-46-9	1,2,3,4,6,7,8-HpCDD	7.06E-03	NA	NA	YES
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.18E-03	NA	NA	YES
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.79E-04	NA	NA	YES
39227-28-6	1,2,3,4,7,8-HxCDD	5.05E-06	NA	NA	YES
70648-26-9	1,2,3,4,7,8-HxCDF	2.49E-04	NA	NA	YES
57653-85-7	1,2,3,6,7,8-HxCDD	5.49E-05	NA	NA	YES
57117-44-9	1,2,3,6,7,8-HxCDF	1.35E-05	NA	NA	YES
19408-74-3	1,2,3,7,8,9-HxCDD	2.23E-05	NA	NA	YES
72918-21-9	1,2,3,7,8,9-HxCDF	2.72E-06	NA	NA	YES
40321-76-4	1,2,3,7,8-PeCDD	4.01E-06	NA	NA	YES
57117-41-6	1,2,3,7,8-PeCDF	8.78E-06	NA	NA	YES
60851-34-5	2,3,4,6,7,8-HxCDF	8.29E-05	NA	NA	YES
57117-31-4	2,3,4,7,8-PeCDF	2.51E-05	NA	NA	YES
1746-01-6	2,3,7,8-TCDD	4.01E-06	NA	NA	YES
51207-31-9	2,3,7,8-TCDF	2.19E-05	NA	NA	YES
3268-87-9	OCDD	1.49E-01	NA	NA	YES
39001-02-0	OCDF	6.73E-03	NA	NA	YES
30402-14-3	Tetrachlorodibenzofuran	7.27E-04	NA	NA	YES
37871-00-4	Total HpCDD	1.98E-02	NA	NA	YES
38998-75-3	Total HpCDF	2.68E-03	NA	NA	YES
34465-46-8	Total HxCDD	9.00E-04	NA	NA	YES
55684-94-1	Total HxCDF	8.53E-04	NA	NA	YES
36088-22-9	Total PeCDD	8.53E-05	NA	NA	YES
30402-15-4	Total PeCDF	7.56E-04	NA	NA	YES
41903-57-5	Total TCDD	4.05E-05	NA	NA	YES
NAV128	TEQ Birds	8.17E-05	NA	NA	YES
NAV129	TEQ Mammals	1.14E-04	NA	NA	YES
EXPLOSIVES					
99-65-0	1,3-Dinitrobenzene	3.10E-01	NA	NA	YES
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.30E-01	NA	NA	YES
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.40E-01	NA	NA	YES

1. EPC for upland plants screening-level evaluation is the maximum concentration from the 0-6 foot depth strata.

Table 7-26. Screening-Level HQ for Upland Invertebrates

CAS NUMBER	CONSTITUENT	Upland Soil EPC[1] (mg/kg)	Screening-Level Benchmark (mg/kg)	Terrestrial Invertebrates Screening-Level HQ (Unitless)	Tier 2 COPEC
		METALS			
7440-36-0	Antimony	7.86E+00	7.80E+01	1.01E-01	NO
7440-38-2	Arsenic	1.35E+01	6.00E+01	2.25E-01	NO
7440-39-3	Barium	4.74E+02	3.30E+02	1.44E+00	YES
7440-41-7	Beryllium	8.90E-01	4.00E+01	2.23E-02	NO
7440-43-9	Cadmium	2.59E+01	1.40E+02	1.85E-01	NO
7440-47-3	Chromium	1.40E+02	4.00E-01	3.49E+02	YES
7440-48-4	Cobalt	1.71E+01	NA	NA	YES
7440-50-8	Copper	3.88E+02	5.00E+01	7.76E+00	YES
18540-29-9	Hexavalent Chromium	1.20E+00	4.00E-01	3.00E+00	YES
7439-89-6	Iron	4.52E+04	NA	NA	YES
7439-92-1	Lead	2.60E+02	1.70E+03	1.53E-01	NO
7439-95-4	Magnesium	1.32E+04	NA	NA	YES
7439-96-5	Manganese	5.23E+02	NA	NA	YES
7439-97-6	Mercury	2.28E+00	1.00E-01	2.28E+01	YES
7439-98-7	Molybdenum	8.90E+00	NA	NA	YES
7440-02-0	Nickel	1.17E+02	2.00E+02	5.85E-01	NO
7782-49-2	Selenium	7.50E-01	7.00E+01	1.07E-02	NO
7440-22-4	Silver	2.58E+00	NA	NA	YES
36643-28-4	Tri-*n*-butyltin Cation	3.30E-03	NA	NA	YES
7440-28-0	Thallium	2.50E-01	NA	NA	YES
7440-62-2	Vanadium	8.16E+01	NA	NA	YES
7440-66-6	Zinc	6.62E+02	2.00E+02	3.31E+00	YES
		PAHs/SVOCs			
92-52-4	1,1'-Biphenyl	1.90E+00	NA	NA	YES
95-94-3	1,2,4,5-Tetrachlorobenzene	3.60E-02	NA	NA	YES
121-14-2	2,4-Dinitrotoluene	2.80E-01	NA	NA	YES
91-58-7	2-Chloronaphthalene	3.50E-02	NA	NA	YES
91-57-6	2-Methylnaphthalene	6.90E+00	NA	NA	YES
95-48-7	2-Methylphenol	1.40E-02	NA	NA	YES
88-74-4	2-Nitroaniline	1.40E-02	NA	NA	YES
91-94-1	3,3'-Dichlorobenzidine	4.20E-03	NA	NA	YES
106-47-8	4-Chloroaniline	1.60E-01	NA	NA	YES
106-44-5	4-Methylphenol	1.50E-02	NA	NA	YES
83-32-9	Acenaphthene	2.00E+01	3.10E+01	6.45E-01	NO
208-96-8	Acenaphthylene	2.10E-01	2.30E+01	9.13E-03	NO
98-86-2	Acetophenone	2.20E-01	NA	NA	YES
120-12-7	Anthracene	9.10E+00	5.00E+00	1.82E+00	YES
100-52-7	Benzaldehyde	4.90E-01	NA	NA	YES
56-55-3	Benzo(a)anthracene	3.60E+00	9.80E+02	3.67E-03	NO
50-32-8	Benzo(a)pyrene	3.80E+00	8.40E+02	4.52E-03	NO
205-99-2	Benzo(b)fluoranthene	5.10E+00	3.60E+02	1.42E-02	NO
191-24-2	Benzo(g,h,i)perylene	2.80E+00	NA	NA	YES
207-08-9	Benzo(k)fluoranthene	1.60E+00	5.60E+02	2.86E-03	NO
117-81-7	*bis*(2-ethylhexyl) Phthalate	7.40E+00	NA	NA	YES
85-68-7	Butyl Benzyl Phthalate	1.30E+01	NA	NA	YES
86-74-8	Carbazole	4.00E+00	NA	NA	YES
218-01-9	Chrysene	3.90E+00	1.03E+03	3.79E-03	NO
53-70-3	Dibenz(a,h)anthracene	6.70E-01	7.80E+02	8.59E-04	NO
132-64-9	Dibenzofuran	9.20E+00	NA	NA	YES
84-66-2	Diethyl Phthalate	6.10E-02	NA	NA	YES
131-11-3	Dimethyl Phthalate	1.60E-02	2.00E+02	8.00E-05	NO
84-74-2	Di-*n*-butyl Phthalate	1.50E-01	NA	NA	YES
117-84-0	Di-*n*-octyl Phthalate	3.00E-02	NA	NA	YES
206-44-0	Fluoranthene	2.20E+01	3.70E+01	5.95E-01	NO
86-73-7	Fluorene	1.60E+01	7.70E+00	2.08E+00	YES

Table 7-26. Screening-Level HQ for Upland Invertebrates (page 2 of 3)

CAS NUMBER	CONSTITUENT	Upland Soil EPC1	Screening-Level Benchmark	Terrestrial Invertebrates Screening-Level HQ	Tier 2 COPEC
118-74-1	Hexachlorobenzene	5.50E-02	NA	NA	YES
193-39-5	Indeno(1,2,3-cd)pyrene	3.00E+00	9.10E+02	3.30E-03	NO
91-20-3	Naphthalene	2.20E+01	2.00E+01	1.10E+00	YES
86-30-6	N-Nitrosodiphenylamine	2.80E-03	2.00E+01	1.40E-04	NO
87-86-5	Pentachlorophenol	7.60E-02	3.10E+01	2.45E-03	NO
85-01-8	Phenanthrene	5.00E+01	2.30E+01	2.17E+00	YES
108-95-2	Phenol	5.90E-02	3.00E+01	1.97E-03	NO
129-00-0	Pyrene	1.80E+01	1.00E+01	1.80E+00	YES
11-84-7	Diesel	1.20E+03	NA	NA	YES
8006-61-9	Gasoline	4.90E+01	NA	NA	YES
NAV0087	Residual Range Organics (RRO)	1.00E+04	NA	NA	YES
NAV1000	LPAH	1.17E+02	2.00E+01	5.86E+00	YES
NAV1001	HPAH	5.20E+01	8.40E+02	6.19E-02	NO
		VOCs			
78-93-3	2-Butanone (MEK)	1.20E-02	NA	NA	YES
108-10-1	4-Methyl-2-pentanone (MIBK)	8.50E-03	NA	NA	YES
67-64-1	Acetone	5.60E-02	NA	NA	YES
75-09-2	Methylene Chloride	1.40E-01	NA	NA	YES
		PCBs/PESTICIDES			
1336-36-3	Total PCBs	2.50E+00	NA	NA	YES
53-19-0	2,4 DDD	2.00E-02	NA	NA	YES
3424-82-6	2,4 DDE	1.19E-03	NA	NA	YES
789-02-6	2,4 DDT	5.31E-03	NA	NA	YES
72-54-8	4,4 DDD	4.97E-02	NA	NA	YES
72-55-9	4,4 DDE	1.46E-02	NA	NA	YES
50-29-3	4,4 DDT	4.44E-02	NA	NA	YES
319-84-6	*alpha*-BHC	2.10E-04	NA	NA	YES
58-89-9	*gamma*-BHC (Lindane)	7.60E-04	NA	NA	YES
5103-71-9	*alpha*-Chlordane	6.30E-02	NA	NA	YES
5103-73-1	*cis*-Nonachlor	1.04E-02	NA	NA	YES
7421-93-4	Endrin aldehyde	6.90E-04	NA	NA	YES
5103-74-2	*gamma*-Chlordane	6.56E-02	NA	NA	YES
76-44-8	Heptachlor	1.90E-04	NA	NA	YES
1024-57-3	Heptachlor epoxide	4.90E-04	NA	NA	YES
39765-80-5	*trans*-nonachlor	3.30E-02	NA	NA	YES
309-00-2	Aldrin	3.15E-04	NA	NA	YES
319-85-7	*beta*-BHC	7.50E-04	NA	NA	YES
319-86-8	*delta*-BHC	7.00E-05	NA	NA	YES
60-57-1	Dieldrin	6.21E-03	NA	NA	YES
959-98-8	Endosulfan I	1.10E-04	NA	NA	YES
33213-65-9	Endosulfan II	3.88E-03	NA	NA	YES
1031-07-8	Endosulfan sulfate	1.30E-02	NA	NA	YES
72-43-5	Methoxychlor	3.81E-03	NA	NA	YES
NAV120	Total DDDs	6.97E-02	NA	NA	YES
NAV121	Total DDEs	1.46E-02	NA	NA	YES
NAV123	Total DDT	8.19E-02	NA	NA	YES
NAV122	Total DDTs	4.97E-02	NA	NA	YES

Table 7-26. Screening-Level HQ for Upland Invertebrates (page 3 of 3)

CAS NUMBER	CONSTITUENT	Upland Soil EPC1	Screening-Level Benchmark	Terrestrial Invertebrates Screening-Level HQ	Tier 2 COPEC
		DIOXIN/FURANS			
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.85E-03	NA	NA	YES
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.02E-04	NA	NA	YES
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.36E-05	NA	NA	YES
39227-28-6	1,2,3,4,7,8-HxCDD	5.05E-06	NA	NA	YES
70648-26-9	1,2,3,4,7,8-HxCDF	1.94E-05	NA	NA	YES
57653-85-7	1,2,3,6,7,8-HxCDD	3.46E-05	NA	NA	YES
57117-44-9	1,2,3,6,7,8-HxCDF	7.64E-06	NA	NA	YES
19408-74-3	1,2,3,7,8,9-HxCDD	1.57E-05	NA	NA	YES
72918-21-9	1,2,3,7,8,9-HxCDF	7.77E-07	NA	NA	YES
40321-76-4	1,2,3,7,8-PeCDD	2.75E-06	NA	NA	YES
57117-41-6	1,2,3,7,8-PeCDF	7.89E-06	NA	NA	YES
60851-34-5	2,3,4,6,7,8-HxCDF	7.59E-06	NA	NA	YES
57117-31-4	2,3,4,7,8-PeCDF	2.51E-05	NA	NA	YES
1746-01-6	2,3,7,8-TCDD	1.73E-06	NA	NA	YES
51207-31-9	2,3,7,8-TCDF	1.06E-05	NA	NA	YES
1746-01-6	2,3,7,8-TCDD	1.73E-06	NA	NA	YES
51207-31-9	2,3,7,8-TCDF	1.06E-05	NA	NA	YES
3268-87-9	OCDD	2.97E-02	NA	NA	YES
39001-02-0	OCDF	2.54E-03	NA	NA	YES
30402-14-3	Tetrachlorodibenzofuran	7.27E-04	NA	NA	YES
37871-00-4	Total HpCDD	4.60E-03	NA	NA	YES
38998-75-3	Total HpCDF	1.37E-03	NA	NA	YES
34465-46-8	Total HxCDD	2.91E-04	NA	NA	YES
55684-94-1	Total HxCDF	3.25E-04	NA	NA	YES
36088-22-9	Total PeCDD	1.77E-05	NA	NA	YES
30402-15-4	Total PeCDF	2.38E-04	NA	NA	YES
41903-57-5	Total TCDD	1.21E-05	NA	NA	YES
NAV128	TEQ Birds	4.35E-05	NA	NA	YES
NAV129	TEQ Mammals	4.05E-05	NA	NA	YES
		EXPLOSIVES			
99-65-0	1,3-Dinitrobenzene	3.10E-01	NA	NA	YES

[1]. EPC for upland invertebrates screening-level evaluation is the maximum concentration from the 0-1 foot depth strata.

Table 7-27. Screening-Level HQ for Upland Birds and Mammals

CAS Number	Constituent	California Vole	Western Meadowlark	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
		Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs
Metals							
7429-90-5	Aluminum	NA	NA	NA	NA	NA	NA
7440-36-0	Antimony	1.41E+00	NA	NA	NA	1.02E+00	1.13E+00
7440-38-2	Arsenic	7.32E-01	6.69E-02	2.48E-02	7.99E-03	1.53E-01	1.27E-01
7440-39-3	Barium	2.35E-01	6.15E-01	5.45E-01	3.40E-01	4.28E-02	9.35E-02
7440-41-7	Beryllium	1.24E-02	NA	NA	NA	5.14E-03	9.46E-03
7440-43-9	Cadmium	2.36E+01	1.35E+02	3.26E+01	2.72E+00	1.10E+01	8.38E+00
7440-47-3	Total Chromium	4.96E-01	1.63E+01	4.22E+00	4.99E-01	1.04E+00	9.22E-01
18540-29-9	Chromium (VI)	NA	NA	NA	NA	NA	NA
7440-48-4	Cobalt	1.90E-01	NA	NA	NA	5.75E-02	1.31E-01
7440-50-8	Copper	1.93E+00	3.74E+00	2.67E+00	1.47E+00	5.08E-01	8.83E-01
7439-89-6	Iron	NA	NA	NA	NA	NA	NA
7439-92-1	Lead	2.03E+00	7.49E+02	3.57E+02	1.49E+02	1.07E+00	1.60E+00
7439-95-4	Magnesium	NA	NA	NA	NA	NA	NA
7439-96-5	Manganese	2.46E+00	2.16E-01	7.51E-02	3.34E-02	2.36E-01	1.90E-01
7439-97-6	Mercury	5.74E-02	2.17E+00	2.20E+00	1.38E+00	4.35E-02	1.41E-01
7439-98-7	Molybdenum	7.00E+00	6.58E-01	5.47E-01	3.47E-01	1.09E+00	3.23E+00
7440-02-0	Nickel	2.40E+01	3.87E+01	9.46E+00	7.97E-01	2.30E+01	1.83E+01
7782-49-2	Selenium	1.67E+00	4.20E-01	4.31E-01	2.89E-01	2.71E-01	8.94E-01
7440-22-4	Silver	NA	NA	NA	NA	NA	NA
36643-28-4	Butyltins	NA	NA	NA	NA	NA	NA
7440-28-0	Thallium	1.75E-02	NA	NA	NA	NA	NA
7440-62-2	Vanadium	1.62E-01	4.48E+00	5.78E+00	3.82E+00	6.90E-02	2.04E-01
7440-66-6	Zinc	2.60E+00	1.15E+01	5.45E+00	2.45E+00	7.35E-01	1.39E+00
PAHs/SVOCs							
117-81-7	*bis*(2-ethylhexyl) Phthalate	7.98E-03	NA	NA	NA	NA	NA
84-66-2	Diethyl Phthalate	1.49E-05	NA	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	6.84E-05	NA	NA	NA	NA	NA
87-86-5	Pentachlorophenol	3.17E-03	1.50E+00	3.55E-01	2.02E-02	6.17E-02	4.88E-02
NAV1000	Sum LPAHs	1.49E-02	1.84E+00	4.22E-01	1.19E-02	5.39E-02	3.59E-02
NAV1001	Sum HPAHs	2.64E-01	2.20E-01	5.48E-02	4.36E-03	3.44E-01	2.42E-01
VOCs							
108-10-1	4-Methyl-2-pentanone (MIBK)	9.12E-05	NA	NA	NA	9.65E-06	2.62E-05
67-64-1	Acetone	1.50E-03	NA	NA	NA	1.59E-04	4.32E-04
75-09-2	Methylene Chloride	6.42E-03	NA	NA	NA	6.79E-04	1.84E-03
PCBs/Pesticides							
1336-36-3	Total PCBs	7.49E-02	1.51E+01	4.89E+00	1.28E+00	2.21E-01	3.17E-01
NAV123	Total DDT	1.28E-03	1.03E+01	3.27E+01	2.50E+01	2.21E-02	1.74E-01
319-84-6	*alpha*-BHC	NA	NA	NA	NA	NA	NA
319-85-7	*beta*-BHC	5.40E-04	NA	NA	NA	NA	NA
319-86-8	*delta*-BHC	NA	NA	NA	NA	NA	NA
58-89-9	*gamma*-BHC (Lindane)	3.47E-04	NA	NA	NA	NA	NA
5103-71-9	*alpha*- Chlordane	1.49E-04	NA	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	1.15E-04	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	NA	NA	NA	NA	NA	NA
76-44-8	Heptachlor	1.63E-03	NA	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	NA	NA	NA	NA	NA	NA
5103-73-1	*cis*-Nonachlor	4.91E-05	NA	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	9.09E-05	NA	NA	NA	NA	NA
309-00-2	Aldrin	1.54E-03	NA	NA	NA	NA	NA
60-57-1	Dieldrin	1.27E-02	1.50E-01	6.38E-01	4.96E-01	1.71E-01	1.45E+00
959-98-8	Endosulfan I	NA	NA	NA	NA	NA	NA
33213-65-9	Endosulfan II	NA	NA	NA	NA	NA	NA

Table 7-27. Screening-Level HQ for Upland Birds and Mammals (page 2 of 2)

CAS Number	Constituent	California Vole	Western Meadowlark	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
		Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs
1031-07-8	Endosulfan sulfate	NA	NA	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	NA	NA	NA	NA	NA	NA
72-43-5	Methoxychlor	1.31E-04	NA	NA	NA	NA	NA
8001-35-2	Toxaphene	8.14E-04	NA	NA	NA	NA	NA
PCDD/PCDF							
NAV128	TEQ Birds	NA	1.63E+00	7.13E-01	2.90E-01	NA	NA
NAV129	TEQ Mammals	2.55E-01	NA	NA	NA	1.34E+00	2.95E+00
Explosives							
99-65-0	1,3-Dinitrobenzene	NA	NA	NA	NA	NA	NA
121-14-2	2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA

NA = Not able to calculate HQ

Table 7-28. RAD Screening for Upland Receptors

Nuclide	Maximum Soil Concentration (pCi/g)	BCG (pCi/g)	Ratio	Limiting Organism
Ra-226	1.76E+00	5.06E+01	3.48E-02	Terrestrial Animal
Ra-228	3.20E+00	4.39E+01	7.29E-02	Terrestrial Animal
U-234	5.30E-01	5.13E+03	1.03E-04	Terrestrial Animal
U-235	8.40E-02	2.77E+03	3.03E-05	Terrestrial Animal
U-238	5.40E-01	1.58E+03	3.42E-04	Terrestrial Animal
Sum of Ratios			**1.08E-01**	

BCG = Biota Concentration Guideline
pCi/g = picoCuries per gram

Table 7-29. Inhalation Screening for Upland Receptors

CAS Number	Constituent	Soil Gas EPC (mg/m^3)	Low TRV (mg/m^3)	Low HQ (unitless)	Tier 2 COPEC
		VOCs			
67-64-1	Acetone	3.57E-01	3.26E+04	1.09E-05	NO
71-43-2	Benzene	1.57E+00	6.80E+00	2.31E-01	NO
75-15-0	Carbon Disulfide	1.25E-02	1.25E+01	9.97E-04	NO
108-90-7	Chlorobenzene	3.65E+00	7.03E+01	5.19E-02	NO
67-66-3	Chloroform	2.66E-02	5.00E+03	5.31E-06	NO
74-87-3	Chloromethane	2.93E-03	1.18E+02	2.47E-05	NO
541-73-1	1,3-Dichlorobenzene	4.43E-02	9.41E+01	4.71E-04	NO
106-46-7	1,4-Dichlorobenzene	3.38E-01	9.41E+01	3.59E-03	NO
75-34-3	1,1-Dichloroethane	1.87E-03	NA	NA	NO
156-60-5	*cis*-1,2-Dichloroethene	1.99E-02	7.08E+01	2.81E-04	NO
100-41-4	Ethylbenzene	2.52E-01	5.43E+02	4.65E-04	NO
98-82-8	Isopropylbenzene	3.79E-01	5.44E+02	6.96E-04	NO
78-93-3	Methyl ethyl ketone	3.54E-02	3.69E+03	9.59E-06	NO
75-09-2	Methylene Chloride	1.95E-02	1.16E+03	1.68E-05	NO
91-20-3	Naphthalene	2.40E+01	1.16E+00	**2.07E+01**	YES
103-65-1	n-propylbenzene	2.31E-02	NA	NA	NO
100-42-5	Styrene	1.56E-03	1.33E+03	1.17E-06	NO
127-18-4	Tetrachloroethene	2.30E-02	NA	NA	NO
108-88-3	Toluene	3.09E-01	5.47E+01	5.65E-03	NO
79-01-6	Trichloroethene	4.32E-03	3.32E+01	1.30E-04	NO
75-69-4	Trichlorofluoromethane	9.18E-03	NA	NA	NO
95-63-6	1,2,4-Trimethylbenzene	1.18E-01	NA	NA	NO
108-67-8	1,3,5-Trimethylbenzene	3.59E-02	NA	NA	NO
75-01-4	Vinyl Chloride	5.94E-02	2.88E+01	2.07E-03	NO
108-38-3	m-Xylene	1.31E-01	5.02E+01	2.60E-03	NO
m,p-Xylenes	m,p-Xylenes	4.51E-01	5.02E+01	8.98E-03	NO
95-47-6	o-Xylene	2.61E-01	5.02E+01	5.21E-03	NO
1330-20-7	Xylenes, total	2.75E-01	5.02E+01	5.48E-03	NO

Notes:
Bolded HQs exceed a value of one.
EPC = Exposure point concentration.
HQ = Hazard Quotient.
NA = Insufficient toxicity data were available to develop a low benchmark for these compounds.

Table 7-30. Screening-Level HQ for Wetland Plants

CAS Number	Constituent	Wetland Soil EPC[1] (mg/kg)	Screening-Level Benchmark (mg/kg)	Reference	Wetland Plant HQ (unitless)	Tier 2 COPEC
			METALS			
7440-36-0	Antimony	3.18E+00	5.00E+00	Efroymson et al., 1997a	6.36E-01	NO
7440-38-2	Arsenic	7.23E+01	1.80E+01	EPA, 2005	4.02E+00	YES
7440-39-3	Barium	1.26E+02	5.00E+02	Efroymson et al., 1997a	2.52E-01	NO
7440-41-7	Beryllium	1.07E+00	1.00E+01	Efroymson et al., 1997a	1.07E-01	NO
7440-43-9	Cadmium	6.50E+00	3.20E+01	EPA, 2005	2.03E-01	NO
7440-47-3	Chromium	1.50E+02	1.00E+00	Efroymson et al., 1997a	1.50E+02	YES
7440-48-4	Cobalt	2.38E+01	1.30E+01	EPA, 2005	1.83E+00	YES
7440-50-8	Copper	2.95E+02	1.00E+02	Efroymson et al., 1997a	2.95E+00	YES
18540-29-9	Hexavalent Chromium	2.00E-01	1.00E+00	Efroymson et al., 1997a	2.00E-01	NO
7439-89-6	Iron	5.51E+04	NA	NA	NA	YES
7439-92-1	Lead	2.71E+02	1.20E+02	EPA, 2005	2.26E+00	YES
7439-95-4	Magnesium	1.94E+04	NA	NA	NA	YES
7439-96-5	Manganese	7.68E+02	5.00E+02	Efroymson et al., 1997a	1.54E+00	YES
7439-97-6	Mercury	1.00E+00	3.00E-01	Efroymson et al., 1997a	3.33E+00	YES
7439-98-7	Molybdenum	3.60E+00	2.00E+00	Efroymson et al., 1997a	1.80E+00	YES
7440-02-0	Nickel	1.21E+02	3.00E+01	Efroymson et al., 1997a	4.03E+00	YES
7782-49-2	Selenium	1.30E+00	1.00E+00	Efroymson et al., 1997a	1.30E+00	YES
7440-22-4	Silver	5.52E+00	2.00E+00	Efroymson et al., 1997a	2.76E+00	YES
36643-28-4	Tri-*n*-butyltins Cation	1.20E-03	NA	NA	NA	YES
7440-28-0	Thallium	5.38E-01	1.00E+00	Efroymson et al., 1997a	5.38E-01	NO
7440-62-2	Vanadium	1.01E+02	2.00E+00	Efroymson et al., 1997a	5.05E+01	YES
7440-66-6	Zinc	8.01E+02	5.00E+01	Efroymson et al., 1997a	1.60E+01	YES
			PAHs/SVOCs			
92-52-4	1,1'-Biphenyl	9.10E-03	6.00E+01	Efroymson et al., 1997a	1.52E-04	NO
91-57-6	2-Methylnaphthalene	2.90E-02	NA	NA	NA	YES
59-50-7	4-Chloro-3-methylphenol	7.40E-03	NA	NA	NA	YES
106-47-8	4-Chloroaniline	2.00E-02	NA	NA	NA	YES
83-32-9	Acenaphthene	2.50E-02	3.00E+00	CCME, 1999	8.33E-03	NO
208-96-8	Acenaphthylene	3.30E-02	3.00E+00	CCME, 1999	1.10E-02	NO
98-86-2	Acetophenone	1.40E-01	NA	NA	NA	YES
120-12-7	Anthracene	4.60E-02	3.00E+00	CCME, 1999	1.53E-02	NO
100-52-7	Benzaldehyde	2.20E-01	NA	NA	NA	YES
56-55-3	Benzo(a)anthracene	9.30E-02	1.20E+00	CCME, 1999	7.75E-02	NO
50-32-8	Benzo(a)pyrene	1.40E-01	1.20E+00	CCME, 1999	1.17E-01	NO
205-99-2	Benzo(b)fluoranthene	2.00E-01	1.20E+00	CCME, 1999	1.67E-01	NO
191-24-2	Benzo(g,h,i)perylene	2.20E-01	1.20E+00	CCME, 1999	1.83E-01	NO
207-08-9	Benzo(k)fluoranthene	1.20E-01	1.20E+00	CCME, 1999	1.00E-01	NO
117-81-7	*bis*(2-ethylhexyl) Phthalate	2.90E+00	NA	NA	NA	YES
85-68-7	Butyl Benzyl Phthalate	2.50E-01	NA	NA	NA	YES
105-60-2	Caprolactam	3.50E-02	NA	NA	NA	YES
86-74-8	Carbazole	3.00E-02	NA	NA	NA	YES
218-01-9	Chrysene	1.40E-01	1.20E+00	CCME, 1999	1.17E-01	NO
53-70-3	Dibenz(a,h)anthracene	3.20E-02	1.20E+00	CCME, 1999	2.67E-02	NO
132-64-9	Dibenzofuran	1.70E-02	NA	NA	NA	YES
84-66-2	Diethyl Phthalate	4.80E-03	1.00E+02	Efroymson et al., 1997a	4.80E-05	NO
84-74-2	Di-*n*-butyl Phthalate	6.90E-02	2.00E+02	Efroymson et al., 1997a	3.45E-04	NO
206-44-0	Fluoranthene	2.40E-01	1.20E+00	CCME, 1999	2.00E-01	NO
86-73-7	Fluorene	2.70E-02	3.00E+00	CCME, 1999	9.00E-03	NO
193-39-5	Indeno(1,2,3-cd)pyrene	1.70E-01	1.20E+00	CCME, 1999	1.42E-01	NO
91-20-3	Naphthalene	4.50E-02	3.00E+00	CCME, 1999	1.50E-02	NO
87-86-5	Pentachlorophenol	2.00E-01	5.00E+00	EPA, 2005	4.00E-02	NO
85-01-8	Phenanthrene	1.50E-01	3.00E+00	CCME, 1999	5.00E-02	NO
108-95-2	Phenol	5.30E-02	7.00E+01	Efroymson et al., 1997a	7.57E-04	NO
129-00-0	Pyrene	2.20E-01	1.20E+00	CCME, 1999	1.83E-01	NO
11-84-7	Diesel	1.50E+02	NA	NA	NA	YES
8006-61-9	Gasoline	3.40E+01	NA	NA	NA	YES

Table 7-30. Screening-Level HQ for Wetland Plants (page 2 of 3)

CAS Number	Constituent	Wetland Soil EPC1 (mg/kg)	Screening-Level Benchmark (mg/kg)	Reference	Wetland Plant HQ (unitless)	Tier 2 COPEC
NAV0087	Residual Range Organics (RRO)	3.70E+02	NA	NA	NA	YES
NAV1000	LPAH	2.60E-01	3.00E+00	0	8.67E-02	NO
NAV1001	HPAH	1.38E+00	1.20E+00	0	1.15E+00	YES
VOCs						
106-46-7	1,4-Dichlorobenzene	7.30E-02	NA	NA	NA	YES
78-93-3	2-Butanone (MEK)	4.20E-01	NA	NA	NA	YES
67-64-1	Acetone	4.30E-02	NA	NA	NA	YES
71-43-2	Benzene	1.10E-03	NA	NA	NA	YES
108-90-7	Chlorobenzene	4.80E-03	NA	NA	NA	YES
110-82-7	Cyclohexane	6.90E-03	NA	NA	NA	YES
98-82-8	Isopropylbenzene	1.50E-03	NA	NA	NA	YES
1634-04-4	Methyl tert-Butyl Ether	3.80E-03	NA	NA	NA	YES
108-87-2	Methylcyclohexane	1.40E-02	NA	NA	NA	YES
75-09-2	Methylene Chloride	7.30E-02	NA	NA	NA	YES
PCBs/PESTICIDES						
1336-36-3	Total PCBs	4.91E-01	4.00E+01	Efroymson et al., 1997a	1.23E-02	NO
53-19-0	2,4'-DDD	9.68E-03	NA	NA	NA	YES
3424-82-6	2,4'-DDE	2.50E-04	NA	NA	NA	YES
789-02-6	2,4'-DDT	1.95E-03	NA	NA	NA	YES
72-54-8	4,4'-DDD	1.20E-02	NA	NA	NA	YES
72-55-9	4,4'-DDE	8.33E-03	NA	NA	NA	YES
50-29-3	4,4'-DDT	7.01E-03	NA	NA	NA	YES
58-89-9	*gamma*-BHC (Lindane)	2.90E-04	NA	NA	NA	YES
5103-71-9	*alpha*-Chlordane	2.58E-01	NA	NA	NA	YES
5103-73-1	*cis*-Nonachlor	3.09E-02	NA	NA	NA	YES
5103-74-2	*gamma*-Chlordane	2.41E-01	NA	NA	NA	YES
1024-57-3	Heptachlor epoxide	1.70E-04	NA	NA	NA	YES
39765-80-5	*trans*-nonachlor	9.72E-02	NA	NA	NA	YES
319-85-7	*beta*-BHC	1.80E-04	NA	NA	NA	YES
60-57-1	Dieldrin	1.05E-02	NA	NA	NA	YES
33213-65-9	Endosulfan II	1.91E-03	NA	NA	NA	YES
72-43-5	Methoxychlor	1.65E-03	NA	NA	NA	YES
NAV120	Total DDDs	2.00E-02	NA	NA	NA	YES
NAV121	Total DDEs	8.33E-03	NA	NA	NA	YES
NAV123	Total DDT	2.83E-02	NA	NA	NA	YES
NAV122	Total DDTs	8.32E-03	NA	NA	NA	YES
DIOXIN/FURANS						
35822-46-9	1,2,3,4,6,7,8-HpCDD	4.34E-04	NA	NA	NA	YES
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.77E-05	NA	NA	NA	YES
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.71E-06	NA	NA	NA	YES
39227-28-6	1,2,3,4,7,8-HxCDD	2.87E-06	NA	NA	NA	YES
70648-26-9	1,2,3,4,7,8-HxCDF	3.01E-06	NA	NA	NA	YES
57653-85-7	1,2,3,6,7,8-HxCDD	1.16E-05	NA	NA	NA	YES
57117-44-9	1,2,3,6,7,8-HxCDF	1.34E-06	NA	NA	NA	YES
19408-74-3	1,2,3,7,8,9-HxCDD	8.23E-06	NA	NA	NA	YES
72918-21-9	1,2,3,7,8,9-HxCDF	3.59E-07	NA	NA	NA	YES
40321-76-4	1,2,3,7,8-PeCDD	1.72E-06	NA	NA	NA	YES
57117-41-6	1,2,3,7,8-PeCDF	8.41E-07	NA	NA	NA	YES
60851-34-5	2,3,4,6,7,8-HxCDF	2.07E-06	NA	NA	NA	YES
57117-31-4	2,3,4,7,8-PeCDF	1.53E-06	NA	NA	NA	YES
1746-01-6	2,3,7,8-TCDD	1.30E-06	NA	NA	NA	YES
51207-31-9	2,3,7,8-TCDF	2.31E-06	NA	NA	NA	YES
3268-87-9	OCDD	3.88E-03	NA	NA	NA	YES
39001-02-0	OCDF	6.05E-05	NA	NA	NA	YES

Table 7-30. Screening-Level HQ for Wetland Plants (page 3 of 3)

CAS Number	Constituent	Wetland Soil EPC1 (mg/kg)	Screening-Level Benchmark (mg/kg)	Reference	Wetland Plant HQ (unitless)	Tier 2 COPEC
30402-14-3	Tetrachlorodibenzofuran	2.13E-05	NA	NA	NA	YES
37871-00-4	Total HpCDD	8.38E-04	NA	NA	NA	YES
38998-75-3	Total HpCDF	9.66E-05	NA	NA	NA	YES
34465-46-8	Total HxCDD	8.10E-05	NA	NA	NA	YES
55684-94-1	Total HxCDF	3.57E-05	NA	NA	NA	YES
36088-22-9	Total PeCDD	9.63E-06	NA	NA	NA	YES
30402-15-4	Total PeCDF	2.80E-05	NA	NA	NA	YES
41903-57-5	Total TCDD	4.28E-06	NA	NA	NA	YES
NAV128	TEQ Birds	8.32E-06	NA	NA	NA	YES
NAV129	TEQ Mammals	1.01E-05	NA	NA	NA	YES

[1]. EPC for wetland plants screening-level evaluation is the maximum concentration from the 0-6 foot depth strata.

Table 7-31. Screening-Level HQ for Wetland Invertebrates

CAS Number	Constituent	Wetland Inverts EPC[1] (mg/kg)	Screening-Level Benchmarks (mg/kg)	Reference	Screening -Level HQ (unitless)	Tier 2 COPEC
			METALS			
7440-36-0	Antimony	3.05E+00	7.80E+01	EPA, 2005	3.91E-02	NO
7440-38-2	Arsenic	1.07E+01	6.00E+01	Efroymson et al., 1997b	1.78E-01	NO
7440-39-3	Barium	1.26E+02	3.30E+02	EPA, 2005	3.82E-01	NO
7440-41-7	Beryllium	1.07E+00	4.00E+01	EPA, 2005	2.68E-02	NO
7440-43-9	Cadmium	3.30E+00	1.40E+02	EPA, 2005	2.36E-02	NO
7440-47-3	Chromium	1.50E+02	4.00E-01	Efroymson et al., 1997b	3.75E+02	YES
7440-48-4	Cobalt	2.38E+01	NA	NA	NA	YES
7440-50-8	Copper	2.95E+02	5.00E+01	Efroymson et al., 1997b	5.90E+00	YES
18540-29-9	Hexavalent Chromium	2.00E-01	4.00E-01	Efroymson et al., 1997b	5.00E-01	NO
7439-89-6	Iron	5.51E+04	NA	NA	NA	YES
7439-92-1	Lead	2.71E+02	1.70E+03	EPA, 2005	1.59E-01	NO
7439-95-4	Magnesium	1.94E+04	NA	NA	NA	YES
7439-96-5	Manganese	6.92E+02	NA	NA	NA	YES
7439-97-6	Mercury	8.28E-01	1.00E-01	Efroymson et al., 1997b	8.28E+00	YES
7440-02-0	Nickel	1.21E+02	2.00E+02	Efroymson et al., 1997b	6.05E-01	NO
7782-49-2	Selenium	1.30E+00	7.00E+01	Efroymson et al., 1997b	1.86E-02	NO
7440-22-4	Silver	1.50E+00	NA	NA	NA	YES
36643-28-4	Tri-*n*-butyltins Cation	1.20E-03	NA	NA	NA	YES
7440-28-0	Thallium	2.70E-01	NA	NA	NA	YES
7440-62-2	Vanadium	1.01E+02	NA	NA	NA	YES
7440-66-6	Zinc	5.33E+02	2.00E+02	Efroymson et al., 1997b	2.67E+00	YES
			PAHs/SVOCs			
92-52-4	1,1'-Byphenyl	9.10E-03	NA	NA	NA	YES
91-57-6	2-Methylnaphthalene	1.80E-02	NA	NA	NA	YES
59-50-7	4-Chloro-3-methylphenol	7.40E-03	NA	NA	NA	YES
106-47-8	4-Chloroaniline	2.00E-02	NA	NA	NA	YES
83-32-9	Acenaphthene	2.50E-02	3.10E+01	Sverdrup et al., 2002	8.06E-04	NO
208-96-8	Acenaphthylene	3.30E-02	2.30E+01	Sverdrup et al., 2002	1.43E-03	NO
98-86-2	Acetophenone	1.40E-01	NA	NA	NA	YES
120-12-7	Anthracene	4.60E-02	5.00E+00	Sverdrup et al., 2002	9.20E-03	NO
100-52-7	Benzaldehyde	2.20E-01	NA	NA	NA	YES
56-55-3	Benzo(a)anthracene	9.30E-02	9.80E+02	Sverdrup et al., 2002	9.49E-05	NO
50-32-8	Benzo(a)pyrene	1.40E-01	8.40E+02	Sverdrup et al., 2002	1.67E-04	NO
205-99-2	Benzo(b)fluoranthene	2.00E-01	3.60E+02	Sverdrup et al., 2002	5.56E-04	NO
191-24-2	Benzo(g,h,i)perylene	2.20E-01	NA	NA	NA	YES
207-08-9	Benzo(k)fluoranthene	1.20E-01	5.60E+02	Sverdrup et al., 2002	2.14E-04	NO
117-81-7	*bis*(2-ethylhexyl) Phthalate	2.30E+00	NA	NA	NA	YES
85-68-7	Butyl Benzyl Phthalate	7.00E-02	NA	NA	NA	YES
105-60-2	Caprolactam	3.50E-02	NA	NA	NA	YES
86-74-8	Carbazole	3.00E-02	NA	NA	NA	YES
218-01-9	Chrysene	1.40E-01	1.03E+03	Sverdrup et al., 2002	1.36E-04	NO
53-70-3	Dibenz(a,h)anthracene	3.20E-02	7.80E+02	Sverdrup et al., 2002	4.10E-05	NO
132-64-9	Dibenzofuran	1.70E-02	NA	NA	NA	YES
84-66-2	Diethyl Phthalate	4.80E-03	NA	NA	NA	YES
84-74-2	Di-*n*-butyl Phthalate	1.50E-02	NA	NA	NA	YES
206-44-0	Fluoranthene	2.40E-01	3.70E+01	Sverdrup et al., 2002	6.49E-03	NO
86-73-7	Fluorene	2.70E-02	7.70E+00	Sverdrup et al., 2002	3.51E-03	NO
193-39-5	Indeno(1,2,3-cd)pyrene	1.70E-01	9.10E+02	0	1.87E-04	NO
91-20-3	Naphthalene	3.00E-02	2.00E+01	Sverdrup et al., 2002	1.50E-03	NO
85-01-8	Phenanthrene	1.50E-01	2.30E+01	Sverdrup et al., 2002	6.52E-03	NO
108-95-2	Phenol	5.30E-02	3.00E+01	Efroymson et al., 1997b	1.77E-03	NO
129-00-0	Pyrene	2.20E-01	1.00E+01	Sverdrup et al., 2002	2.20E-02	NO
11-84-7	Diesel	8.60E+01	NA	NA	NA	YES
NAV0087	Residual Range Organics (RRO)	3.30E+02	NA	NA	NA	YES
NAV1000	LPAH	2.60E-01	2.00E+01	Sverdrup et al., 2002	1.30E-02	NO
NAV1001	HPAH	1.38E+00	8.40E+02	Sverdrup et al., 2002	1.64E-03	NO
			VOCs			
78-93-3	2-Butanone (MEK)	4.20E-01	NA	NA	NA	YES
67-64-1	Acetone	2.30E-02	NA	NA	NA	YES

Table 7-31. Screening-Level HQ for Wetland Invertebrates (page 2 of 2)

CAS Number	Constituent	Wetland Inverts EPC1 (mg/kg)	Screening-Level Benchmarks (mg/kg)	Reference	Screening-Level HQ (unitless)	Tier 2 COPEC
108-90-7	Chlorobenzene	4.70E-03	4.00E+01	Efroymson et al., 1997b	1.18E-04	NO
110-82-7	Cyclohexane	6.90E-03	NA	NA	NA	YES
1634-04-4	Methyl tert-Butyl Ether	3.80E-03	NA	NA	NA	YES
108-87-2	Methylcyclohexane	1.40E-02	NA	NA	NA	YES
75-09-2	Methylene Chloride	7.30E-02	NA	NA	NA	YES
PCBs/PESTICIDES						
1336-36-3	Total PCBs	4.68E-01	NA	NA	NA	YES
53-19-0	2,4 DDD	9.68E-03	NA	NA	NA	YES
3424-82-6	2,4 DDE	2.50E-04	NA	NA	NA	YES
789-02-6	2,4 DDT	1.95E-03	NA	NA	NA	YES
72-54-8	4,4 DDD	1.20E-02	NA	NA	NA	YES
72-55-9	4,4 DDE	8.33E-03	NA	NA	NA	YES
50-29-3	4,4 DDT	7.01E-03	NA	NA	NA	YES
58-89-9	*gamma*-BHC (Lindane)	2.50E-04	NA	NA	NA	YES
5103-71-9	*alpha*-Chlordane	6.06E-03	NA	NA	NA	YES
5103-73-1	*cis*-Nonachlor	2.61E-03	NA	NA	NA	YES
5103-74-2	*gamma*-Chlordane	6.63E-03	NA	NA	NA	YES
1024-57-3	Heptachlor epoxide	1.70E-04	NA	NA	NA	YES
39765-80-5	*trans*-nonachlor	4.80E-03	NA	NA	NA	YES
319-85-7	*beta*-BHC	1.80E-04	NA	NA	NA	YES
60-57-1	Dieldrin	1.05E-02	NA	NA	NA	YES
33213-65-9	Endosulfan II	1.91E-03	NA	NA	NA	YES
72-43-5	Methoxychlor	1.65E-03	NA	NA	NA	YES
NAV120	Total DDDs	2.00E-02	NA	NA	NA	YES
NAV121	Total DDEs	8.33E-03	NA	NA	NA	YES
NAV123	Total DDT	7.01E-03	NA	NA	NA	YES
NAV122	Total DDTs	2.83E-02	NA	NA	NA	YES
DIOXIN/FURANS						
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.09E-04	NA	NA	NA	YES
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.48E-05	NA	NA	NA	YES
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.34E-06	NA	NA	NA	YES
39227-28-6	1,2,3,4,7,8-HxCDD	9.71E-07	NA	NA	NA	YES
70648-26-9	1,2,3,4,7,8-HxCDF	3.01E-06	NA	NA	NA	YES
57653-85-7	1,2,3,6,7,8-HxCDD	6.10E-06	NA	NA	NA	YES
57117-44-9	1,2,3,6,7,8-HxCDF	1.22E-06	NA	NA	NA	YES
19408-74-3	1,2,3,7,8,9-HxCDD	4.32E-06	NA	NA	NA	YES
72918-21-9	1,2,3,7,8,9-HxCDF	3.59E-07	NA	NA	NA	YES
40321-76-4	1,2,3,7,8-PeCDD	1.65E-06	NA	NA	NA	YES
57117-41-6	1,2,3,7,8-PeCDF	8.41E-07	NA	NA	NA	YES
60851-34-5	2,3,4,6,7,8-HxCDF	1.77E-06	NA	NA	NA	YES
57117-31-4	2,3,4,7,8-PeCDF	1.53E-06	NA	NA	NA	YES
1746-01-6	2,3,7,8-TCDD	1.30E-06	NA	NA	NA	YES
51207-31-9	2,3,7,8-TCDF	2.31E-06	NA	NA	NA	YES
3268-87-9	OCDD	8.26E-04	NA	NA	NA	YES
39001-02-0	OCDF	5.34E-05	NA	NA	NA	YES
30402-14-3	Tetrachlorodibenzofuran	2.13E-05	NA	NA	NA	YES
37871-00-4	Total HpCDD	3.15E-04	NA	NA	NA	YES
38998-75-3	Total HpCDF	7.28E-05	NA	NA	NA	YES
34465-46-8	Total HxCDD	6.48E-05	NA	NA	NA	YES
55684-94-1	Total HxCDF	3.48E-05	NA	NA	NA	YES
36088-22-9	Total PeCDD	9.63E-06	NA	NA	NA	YES
30402-15-4	Total PeCDF	2.80E-05	NA	NA	NA	YES
41903-57-5	Total TCDD	4.28E-06	NA	NA	NA	YES
NAV128	TEQ Birds	8.32E-06	NA	NA	NA	YES
NAV129	TEQ Mammals	7.13E-06	NA	NA	NA	YES

[1]. EPC for wetland invertebrates screening-level evaluation is the maximum concentration from the 0-1 foot depth strata.

Table 7-32. Screening-Level HQ for Wetland Birds and Mammals

CAS Number	Constituent	Song Sparrow	California Vole	Least Sandpiper	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
		Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs
Metals								
7429-90-5	Aluminum	NA	NA	NA	NA	NA	NA	NA
7440-36-0	Antimony	NA	1.27E+00	NA	NA	NA	2.98E-01	3.66E-01
7440-38-2	Arsenic	1.35E+00	9.65E-01	3.02E+00	2.46E-01	6.38E-03	1.04E+00	6.84E-01
7440-39-3	Barium	2.44E-01	9.74E-02	3.55E-01	1.39E-01	9.04E-02	1.30E-02	2.54E-02
7440-41-7	Beryllium	NA	1.38E-02	NA	NA	NA	5.76E-03	1.11E-02
7440-43-9	Cadmium	8.06E+00	1.29E+01	8.84E+00	1.54E+00	6.87E-01	1.08E+00	9.81E-01
7440-47-3	Total Chromium	1.32E+00	4.90E-01	2.99E+00	8.92E-01	5.29E-01	1.90E-01	3.91E-01
18540-29-9	Chromium (VI)	NA	NA	NA	NA	NA	NA	NA
7440-48-4	Cobalt	NA	1.73E-01	NA	NA	NA	8.04E-02	1.84E-01
7440-50-8	Copper	5.64E+00	2.31E+00	1.11E+01	2.46E+00	1.28E+00	4.91E-01	8.10E-01
7439-89-6	Iron	NA	NA	NA	NA	NA	NA	NA
7439-92-1	Lead	4.79E+02	1.94E+00	1.10E+03	2.76E+02	1.53E+02	8.07E-01	1.45E+00
7439-95-4	Magnesium	NA	NA	NA	NA	NA	NA	NA
7439-96-5	Manganese	3.96E-01	2.70E+00	4.86E-01	9.39E-02	4.42E-02	2.78E-01	2.35E-01
7439-97-6	Mercury	4.21E-01	2.03E-02	9.88E-01	6.93E-01	5.01E-01	1.20E-02	4.89E-02
7439-98-7	Molybdenum	NA	4.87E+00	NA	NA	NA	NA	NA
7440-02-0	Nickel	3.16E+00	1.99E+01	5.91E+00	1.48E+00	8.14E-01	3.75E+00	6.09E+00
7782-49-2	Selenium	1.19E+00	1.69E+00	2.37E+00	6.27E-01	3.60E-01	4.20E-01	1.16E+00
7440-22-4	Silver	NA	NA	NA	NA	NA	NA	NA
36643-28-4	Butyltins	NA	NA	NA	NA	NA	NA	NA
7440-28-0	Thallium	NA	4.13E-02	NA	NA	NA	8.01E-03	4.78E-02
7440-62-2	Vanadium	7.28E+00	2.15E-01	1.61E+01	7.09E+00	4.73E+00	8.54E-02	2.52E-01
7440-66-6	Zinc	1.23E+01	1.81E+00	2.59E+01	4.94E+00	2.37E+00	6.08E-01	1.30E+00
PAHs/SVOCs								
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.66E+00	8.74E-03	3.63E+00	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	3.95E-01	1.12E-04	3.33E-01	NA	NA	NA	NA
87-86-5	Pentachlorophenol	NA	3.56E-03	NA	NA	NA	NA	NA
NAV1000	Sum LPAHs	5.34E-03	3.95E-04	1.14E-02	9.35E-04	2.63E-05	1.41E-04	8.80E-05
NAV1001	Sum HPAHs	3.10E-03	1.28E-02	6.84E-03	6.88E-04	1.15E-04	5.12E-03	3.76E-03
VOCs								
78-93-3	2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA
67-64-1	Acetone	NA	6.02E-04	NA	NA	NA	6.53E-05	1.77E-04
108-90-7	Chlorobenzene	NA	NA	NA	NA	NA	NA	NA
110-82-7	Cyclohexane	NA	NA	NA	NA	NA	NA	NA
1634-04-4	Methyl tert-Butyl Ether	NA	NA	NA	NA	NA	NA	NA
108-87-2	Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA
75-09-2	Methylene Chloride	NA	3.27E-03	NA	NA	NA	3.54E-04	9.62E-04
PCBs/Pesticides								
1336-36-3	Total PCBs	3.15E+00	8.76E-03	7.14E+00	8.56E-01	2.40E-01	3.76E-02	5.70E-02
NAV123	Total DDT	8.51E-01	1.11E-03	1.84E+00	3.53E+01	2.88E+01	1.90E-02	1.97E-01
319-85-7	*beta*-BHC	NA	6.65E-04	NA	NA	NA	NA	NA
58-89-9	*gamma*-BHC (Lindane)	NA	5.40E-04	NA	NA	NA	NA	NA
5103-71-9	*alpha*-Chlordane	1.62E+01	3.82E-05	3.67E+01	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	1.86E+01	3.73E-05	4.21E+01	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA
5103-73-1	*cis*-Nonachlor	4.23E+00	2.54E-05	9.52E+00	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	8.13E+00	3.49E-05	1.83E+01	NA	NA	NA	NA
60-57-1	Dieldrin	3.72E-01	5.08E-02	8.34E-01	8.99E-01	6.84E-01	2.60E-01	2.01E+00
33213-65-9	Endosulfan II	NA	NA	NA	NA	NA	NA	NA
72-43-5	Methoxychlor	NA	1.26E-04	NA	NA	NA	NA	NA
PCDD/PCDF								
NAV128	TEQ Birds	2.94E-01	NA	6.66E-01	1.10E-01	4.72E-02	NA	NA
NAV129	TEQ Mammals	NA	4.38E-02	NA	NA	NA	1.83E-01	4.28E-01

NA = HQ not able to be calculated

Table 7-33. RAD Screening for Wetland Receptors

Nuclide	Maximum Soil Concentration (pCi/g)	BCG (pCi/g)	Ratio	Limiting Organism
Ra-226	5.20E-01	5.06E+01	1.03E-02	Terrestrial Animal
Ra-228	1.13E+00	4.39E+01	2.57E-02	Terrestrial Animal
U-234	6.45E-01	5.13E+03	1.26E-04	Terrestrial Animal
U-235	3.75E-02	2.77E+03	1.35E-05	Terrestrial Animal
U-238	5.80E-01	1.58E+03	3.68E-04	Terrestrial Animal
Sum of Ratios			**3.65E-02**	

BCG = Biota Concentration Guideline
pCi/g = picoCuries per gram

Table 7-34. Screening-Level HQ for Benthic Biota

CAS Number	Constituent	North Pond Sediment EPC (wet and dry)	South Pond EPC (wet and dry)	Screening-Level Benchmark	North Pond Screening-Level HQ for Benthic Biota	Tier 2 COPEC	South Pond Screening-Level HQ for Benthic Biota	Tier 2 COPEC
		mg/kg	mg/kg	mg/kg	unitless		unitless	
			METALS					
7429-90-5	Aluminum	3.350E+04	1.975E+04	NA	NA	YES	NA	YES
7440-36-0	Antimony	3.000E-01	4.400E-01	2	1.500E-01	NO	2.200E-01	NO
7440-38-2	Arsenic	7.090E+00	4.310E+00	8.2	8.646E-01	NO	5.256E-01	NO
7440-39-3	Barium	9.240E+01	8.620E+01	NA	NA	YES	NA	YES
7440-41-7	Beryllium	8.000E-01	4.000E-01	NA	NA	YES	NA	YES
7440-43-9	Cadmium	2.400E+00	3.600E+00	1.2	2.000E+00	YES	3.000E+00	YES
7440-47-3	Chromium	1.160E+02	6.220E+01	81	1.432E+00	YES	7.679E-01	NO
7440-48-4	Cobalt	1.450E+01	9.600E+00	NA	NA	YES	NA	YES
7440-50-8	Copper	8.060E+01	4.350E+01	34	2.371E+00	YES	1.279E+00	YES
7439-89-6	Iron	4.490E+04	2.635E+04	NA	NA	YES	NA	YES
7439-92-1	Lead	6.020E+01	2.320E+01	46.7	1.289E+00	YES	4.968E-01	NO
7439-95-4	Magnesium	2.060E+04	2.090E+04	NA	NA	YES	NA	YES
7439-96-5	Manganese	6.210E+02	2.575E+03	NA	NA	YES	NA	YES
7439-97-6	Mercury	4.940E+00	3.090E-01	0.15	3.293E+01	YES	2.060E+00	YES
7439-98-7	Molybdenum	4.100E+00	ND	NA	NA	YES	NA	NO
7440-02-0	Nickel	9.440E+01	5.190E+01	20.9	4.517E+00	YES	2.483E+00	YES
7782-49-2	Selenium	1.600E+00	2.600E+00	NA	NA	YES	NA	YES
7440-22-4	Silver	1.160E+00	5.640E-01	1	1.160E+00	YES	5.640E-01	NO
7440-28-0	Thallium	3.570E-01	1.560E-01	NA	NA	YES	NA	YES
7440-62-2	Vanadium	8.350E+01	4.975E+01	NA	NA	YES	NA	YES
7440-66-6	Zinc	1.990E+02	1.101E+02	150	1.327E+00	YES	7.337E-01	NO
			PAHs/SVOCs					
105-67-9	2,4-Dimethylphenol	ND	ND	0.029	NA	NO	NA	NO
91-57-6	2-Methylnaphthalene	3.200E-03	ND	0.07	4.571E-02	NO	NA	NO
59-50-7	4-Chloro-3-methylphenol	ND	1.000E-02	NA	NA	NO	NA	YES
106-44-5	4-Methylphenol	1.200E-01	ND	NA	NA	YES	NA	NO
83-32-9	Acenaphthene	2.700E-02	2.000E-02	0.016	1.688E+00	YES	1.250E+00	YES
208-96-8	Acenaphthylene	1.100E-02	1.200E-02	0.044	2.500E-01	NO	2.727E-01	NO
98-86-2	Acetophenone	8.300E-02	8.700E-02	NA	NA	YES	NA	YES
120-12-7	Anthracene	2.200E-02	1.300E-02	0.0853	2.579E-01	NO	1.524E-01	NO
100-52-7	Benzaldehyde	8.600E-02	1.200E-01	NA	NA	YES	NA	YES
56-55-3	Benzo(a)anthracene	4.800E-02	4.400E-02	0.261	1.839E-01	NO	1.686E-01	NO
50-32-8	Benzo(a)pyrene	7.000E-02	5.500E-02	0.43	1.628E-01	NO	1.279E-01	NO
205-99-2	Benzo(b)fluoranthene	7.600E-02	5.600E-02	NA	NA	YES	NA	YES
191-24-2	Benzo(g,h,i)perylene	7.300E-02	4.600E-02	NA	NA	YES	NA	YES
207-08-9	Benzo(k)fluoranthene	3.400E-02	3.100E-02	NA	NA	YES	NA	YES
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.400E-01	6.200E-02	1.3	1.077E-01	NO	4.769E-02	NO
85-68-7	Butyl Benzyl Phthalate	2.700E-02	1.200E-02	0.9	3.000E-02	NO	1.333E-02	NO
86-74-8	Carbazole	2.400E-03	1.600E-03	NA	NA	YES	NA	YES
218-01-9	Chrysene	5.700E-02	5.200E-02	0.384	1.484E-01	NO	1.354E-01	NO
53-70-3	Dibenz(a,h)anthracene	6.700E-03	6.200E-03	0.0634	1.057E-01	NO	9.779E-02	NO
132-64-9	Dibenzofuran	7.700E-03	ND	NA	NA	YES	NA	NO
84-74-2	Di-*n*-butyl Phthalate	3.700E-02	ND	1.4	2.643E-02	NO	NA	NO
206-44-0	Fluoranthene	9.100E-02	1.400E-01	0.6	1.517E-01	NO	2.333E-01	NO
86-73-7	Fluorene	8.200E-03	7.500E-03	0.019	4.316E-01	NO	3.947E-01	NO
193-39-5	Indeno(1,2,3-cd)pyrene	5.700E-02	4.400E-02	0.69	8.261E-02	NO	6.377E-02	NO
91-20-3	Naphthalene	8.500E-03	2.700E-03	0.16	5.313E-02	NO	1.688E-02	NO
85-01-8	Phenanthrene	4.700E-02	1.100E-01	0.24	1.958E-01	NO	4.583E-01	NO
108-95-2	Phenol	1.700E-01	4.200E-02	0.42	4.048E-01	NO	1.000E-01	NO
129-00-0	Pyrene	1.400E-01	1.500E-01	0.665	2.105E-01	NO	2.256E-01	NO
11-84-7	Diesel	1.900E+02	9.600E+01	NA	NA	YES	NA	YES
8006-61-9	Gasoline	1.700E+01	1.850E+01	NA	NA	YES	NA	YES

Table 7-34. Screening-Level HQ for Benthic Biota (page 2 of 2)

CAS Number	Constituent	North Pond Sediment EPC (wet and dry)	South Pond EPC (wet and dry)	Screening-Level Benchmark	North Pond Screening-Level HQ for Benthic Biota	Tier 2 COPEC	South Pond Screening-Level HQ for Benthic Biota	Tier 2 COPEC
NAV0087	Residual Range Organics (RRO)	8.200E+02	6.500E+02	NA	NA	YES	NA	YES
NAV1000	LPAH	9.220E-02	1.640E-01	NA	NA	YES	NA	YES
NAV1001	HPAH	6.270E-01	5.932E-01	NA	NA	YES	NA	YES
VOCs								
78-93-3	2-Butanone (MEK)	ND	4.400E-02	NA	NA	NO	NA	YES
67-64-1	Acetone	2.900E-01	4.100E-01	NA	NA	YES	NA	YES
75-15-0	Carbon Disulfide	1.700E-02	4.400E-02	NA	NA	YES	NA	YES
108-90-7	Chlorobenzene	5.200E-03	ND	NA	NA	YES	NA	NO
75-09-2	Methylene Chloride	2.200E-02	1.600E-02	NA	NA	YES	NA	YES
PCBs/PESTICIDES								
34883-43-7	Cl2(08)	2.860E-03	3.500E-04	NA	NA	YES	NA	YES
37680-65-2	Cl3(18)	3.920E-03	7.100E-04	NA	NA	YES	NA	YES
7012-37-5	Cl3(28)	2.030E-03	1.140E-03	NA	NA	YES	NA	YES
41464-39-5	Cl4(44)	2.540E-03	1.160E-03	NA	NA	YES	NA	YES
35693-99-3	Cl4(52)	2.920E-03	1.970E-03	NA	NA	YES	NA	YES
32598-10-0	Cl4(66)	1.950E-03	1.260E-03	NA	NA	YES	NA	YES
32598-13-3	Cl4(77)	4.100E-04	ND	NA	NA	YES	NA	NO
37680-73-2	Cl5(101)	4.800E-03	5.000E-03	NA	NA	YES	NA	YES
32598-14-4	Cl5(105)	1.660E-03	1.310E-03	NA	NA	YES	NA	YES
38380-03-9	Cl5(110)(7)	4.760E-03	5.410E-03	NA	NA	YES	NA	YES
31508-00-6	Cl5(118)	1.201E-02	3.780E-03	NA	NA	YES	NA	YES
57465-28-8	Cl5(126)	7.100E-04	1.050E-03	NA	NA	YES	NA	YES
38380-07-3	Cl6(128)	1.820E-03	9.700E-04	NA	NA	YES	NA	YES
55215-18-4	Cl6(129)(7)	5.500E-04	1.700E-04	NA	NA	YES	NA	YES
35065-28-2	Cl6(138)	8.970E-03	8.530E-03	NA	NA	YES	NA	YES
35065-27-1	Cl6(153)	8.090E-03	1.126E-02	NA	NA	YES	NA	YES
35065-30-6	Cl7(170)	3.670E-03	2.110E-03	NA	NA	YES	NA	YES
35065-29-3	Cl7(180)	5.630E-03	5.190E-03	NA	NA	YES	NA	YES
52663-68-0	Cl7(187)	3.490E-03	3.000E-03	NA	NA	YES	NA	YES
52663-78-2	Cl8(195)	3.300E-04	6.100E-04	NA	NA	YES	NA	YES
40186-72-9	Cl9(206)	2.300E-04	4.400E-04	NA	NA	YES	NA	YES
2051-24-3	Cl10(209)	7.100E-04	2.430E-03	NA	NA	YES	NA	YES
1336-36-3	Total PCBs	1.061E-01	9.690E-02	0.0227	4.673E+00	YES	4.269E+00	YES
53-19-0	2,4′-DDD	1.100E-03	1.610E-03	NA	NA	YES	NA	YES
3424-82-6	2,4′-DDE	1.400E-04	1.000E-05	NA	NA	YES	NA	YES
72-54-8	4,4′-DDD	3.670E-03	6.590E-03	0.00122	3.008E+00	YES	5.402E+00	YES
72-55-9	4,4′-DDE	2.280E-03	3.610E-03	0.0022	1.036E+00	YES	1.641E+00	YES
50-29-3	4,4′-DDT	4.200E-04	2.110E-03	0.00119	3.529E-01	NO	1.773E+00	YES
5103-71-9	*alpha*-Chlordane	2.500E-04	6.300E-04	0.0005	5.000E-01	NO	1.260E+00	YES
5103-73-1	*cis*-Nonachlor	3.100E-04	4.500E-04	NA	NA	YES	NA	YES
5103-74-2	*gamma*-Chlordane	7.200E-04	5.900E-04	0.0005	1.440E+00	YES	1.180E+00	YES
1024-57-3	Heptachlor epoxide	2.100E-04	ND	NA	NA	YES	NA	NO
39765-80-5	*trans*-nonachlor	3.800E-04	2.600E-04	NA	NA	YES	NA	YES
60-57-1	Dieldrin	6.300E-04	ND	0.00002	3.150E+01	YES	NA	NO
33213-65-9	Endosulfan II	9.900E-04	2.100E-04	NA	NA	YES	NA	YES
1031-07-8	Endosulfan sulfate	1.130E-03	ND	NA	NA	YES	NA	NO
72-43-5	Methoxychlor	2.100E-04	ND	NA	NA	YES	NA	NO
NAV120	Total DDDs	4.630E-03	8.200E-03	0.002	2.315E+00	YES	4.100E+00	YES
NAV121	Total DDEs	2.280E-03	3.610E-03	0.002	1.140E+00	YES	1.805E+00	YES
NAV123	Total DDT	7.090E-03	1.066E-02	0.00158	4.487E+00	YES	6.747E+00	YES
NAV122	Total DDTs	4.200E-04	2.110E-03	0.001	4.200E-01	NO	2.110E+00	YES

Table 7-35. RAD Screening for Pond Receptors

Nuclide	Maximum Water Concentration (pCi/L)	BCG (pCi/L)	Ratio	Limiting Organism
Ra-226	4.36E-01	4.08E+00	1.07E-01	Riparian Animal
Ra-228	1.53E+00	3.40E+00	4.51E-01	Riparian Animal
U-234	1.03E+00	2.02E+02	5.08E-03	Aquatic Animal
U-235	0.00E+00	2.17E+02	0.00E+00	Aquatic Animal
U-238	8.15E-01	2.23E+02	3.65E-03	Aquatic Animal
Sum of Water Ratios			**5.66E-01**	
Nuclide	**Maximum Sediment Concentration (pCi/g)**	**BCG (pCi/g)**	**Ratio**	**Limiting Organism**
Ra-226	4.95E-01	1.01E+02	4.90E-03	Riparian Animal
Ra-228	0.00E+00	8.78E+01	0.00E+00	Riparian Animal
U-234	9.50E-01	5.27E+03	1.80E-04	Riparian Animal
U-235	2.50E-02	3.73E+03	6.71E-06	Riparian Animal
U-238	8.80E-01	2.49E+03	3.54E-04	Riparian Animal
Sum of Sediment Ratios			**5.44E-03**	
Sum of All Media Ratios			**5.72E-01**	

BCG = Biota Concentration Guideline
pCi/L = picoCuries per liter
pCi/g = picoCuries per gram

Table 7-36. Screening-Level HQ for Aquatic Biota

CAS NUMBER	CONSTITUENT	North Pond Water Max Conc (Wet and Dry Season) (µg/L)	South Pond Water Max Conc (Wet and Dry Season) (µg/L)	Screening-Level Benchmark (µg/L)	North Pond Screening-Level HQ (unitless)	North Pond Tier 2 COPEC	South Pond Screening-Level HQ (unitless)	South Pond Tier 2 COPEC
			METALS (Dissolved Fraction)					
7429-90-5	Aluminum	5.370E+01	ND	NA	NA	YES	NA	NO
7440-38-2	Arsenic	1.530E+01	1.970E+01	36	4.250E-01	NO	5.472E-01	NO
7440-39-3	Barium	2.710E+02	4.420E+02	NA	NA	YES	NA	YES
7439-89-6	Iron	9.940E+02	9.930E+01	NA	NA	YES	NA	YES
7439-92-1	Lead	3.760E-01	9.600E-01	8.1	4.642E-02	NO	1.185E-01	NO
7439-95-4	Magnesium	3.770E+06	5.810E+06	NA	NA	YES	NA	YES
7439-96-5	Manganese	8.020E+02	6.480E+03	NA	NA	YES	NA	YES
7439-98-7	Molybdenum	4.300E+00	ND	NA	NA	YES	NA	NO
7440-02-0	Nickel	4.100E+00	3.780E+01	8.2	5.000E-01	NO	4.610E+00	YES
7440-62-2	Vanadium	1.520E+01	1.640E+01	NA	NA	YES	NA	YES
7440-66-6	Zinc	2.230E+01	ND	81	2.753E-01	NO	NA	NO
			PAHs/SVOCs (Total Fraction)					
123-91-1	1,4 Dioxane	2.600E+00	1.200E+00	NA	NA	YES	NA	YES
91-57-6	2-Methylnaphthalene	4.000E-02	ND	30	1.333E-03	NO	NA	NO
95-48-7	2-Methylphenol	1.900E-01	2.800E-01	NA	NA	YES	NA	YES
106-44-5	4-Methylphenol	1.400E+00	1.600E+00	NA	NA	YES	NA	YES
100-01-6	4-Nitroaniline	5.500E-01	ND	NA	NA	YES	NA	NO
83-32-9	Acenaphthene	3.500E+00	5.300E-02	710	4.930E-03	NO	7.465E-05	NO
208-96-8	Acenaphthylene	8.200E-02	5.800E-02	30	2.733E-03	NO	1.933E-03	NO
98-86-2	Acetophenone	2.200E-01	2.700E-01	NA	NA	YES	NA	YES
120-12-7	Anthracene	1.200E-01	2.700E-01	30	4.000E-03	NO	9.000E-03	NO
100-52-7	Benzaldehyde	1.300E+00	5.900E-01	NA	NA	YES	NA	YES
56-55-3	Benzo(a)anthracene	7.400E-03	ND	30	2.467E-04	NO	NA	NO
50-32-8	Benzo(a)pyrene	2.000E-03	1.500E-01	30	6.667E-05	NO	5.000E-03	NO
205-99-2	Benzo(b)fluoranthene	4.800E-03	1.500E-01	30	1.600E-04	NO	5.000E-03	NO
191-24-2	Benzo(g,h,i)perylene	4.200E-03	1.600E-01	30	1.400E-04	NO	5.333E-03	NO
207-08-9	Benzo(k)fluoranthene	2.150E-03	1.200E-01	30	7.167E-05	NO	4.000E-03	NO
105-60-2	Caprolactam	2.100E+00	ND	NA	NA	YES	NA	NO
86-74-8	Carbazole	2.600E-01	ND	NA	NA	YES	NA	NO
218-01-9	Chrysene	7.300E-03	ND	30	2.433E-04	NO	NA	NO
53-70-3	Dibenz(a,h)anthracene	ND	8.700E-02	30	NA	NO	2.900E-03	NO
132-64-9	Dibenzofuran	1.700E+00	ND	NA	NA	YES	NA	NO
206-44-0	Fluoranthene	2.900E-01	8.000E-03	16	1.813E-02	NO	5.000E-04	NO
86-73-7	Fluorene	1.200E+00	ND	30	4.000E-02	NO	NA	NO
193-39-5	Indeno(1,2,3-cd)pyrene	4.500E-03	1.600E-01	30	1.500E-04	NO	5.333E-03	NO
78-59-1	Isophorone	8.800E-01	4.000E+00	1290	6.822E-04	NO	3.101E-03	NO
91-20-3	Naphthalene	7.600E-01	ND	235	3.234E-03	NO	NA	NO
85-01-8	Phenanthrene	1.200E-01	9.000E-03	4.6	2.609E-02	NO	1.957E-03	NO
129-00-0	Pyrene	1.300E-01	1.400E-02	30	4.333E-03	NO	4.667E-04	NO
11-84-7	Diesel	2.500E+03	3.600E+03	NA	NA	YES	NA	YES
8006-61-9	Gasoline	5.700E+02	6.900E+02	NA	NA	YES	NA	YES
NAV0087	Residual Range Organics (RRO)	1.900E+03	3.200E+03	NA	NA	YES	NA	YES
NAV1000	LPAH	6.331E+00	3.210E-01	235	2.694E-02	NO	1.366E-03	NO
NAV1001	HPAH	4.482E-01	8.270E-01	30	1.494E-02	NO	2.757E-02	NO
			VOCs					
106-46-7	1,4-Dichlorobenzene	1.500E+00	ND	129	1.163E-02	NO	NA	NO
78-93-3	2-Butanone (MEK)	4.500E+00	4.600E+00	NA	NA	YES	NA	YES
67-64-1	Acetone	4.100E+01	5.000E+01	NA	NA	YES	NA	YES
71-43-2	Benzene	1.500E-01	ND	700	2.143E-04	NO	NA	NO
74-83-9	Bromomethane	ND	3.200E-01	NA	NA	NO	NA	YES
75-15-0	Carbon Disulfide	6.400E-01	4.200E-01	NA	NA	YES	NA	YES
108-90-7	Chlorobenzene	7.800E+00	ND	129	6.047E-02	NO	NA	NO
74-87-3	Chloromethane	1.500E-01	8.000E-01	NA	NA	YES	NA	YES
98-82-8	Isopropylbenzene	1.300E-01	ND	NA	NA	YES	NA	NO
75-09-2	Methylene Chloride	2.600E-01	ND	6400	4.063E-05	NO	NA	NO
100-42-5	Styrene	5.300E-01	1.000E-01	NA	NA	YES	NA	YES
108-88-3	Toluene	1.500E+00	4.300E-01	5000	3.000E-04	NO	8.600E-05	NO
			PCBs/PESTICIDES					
37680-73-2	Cl5(101)	ND	2.473E-02	NA	NA	NO	NA	YES
1336-36-3	Total PCBs	ND	4.946E-02	0.03	NA	NO	1.649E+00	YES
5103-74-2	g-Chlordane	ND	1.051E-02	0.004	NA	NO	2.628E+00	YES

Table 7-37. Screening-Level HQ for Pond Receptors

CAS Number	Constituent	Mallard	Great Blue Heron	Least Sandpiper	Raccoon
		Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs	Low Benchmark HQs
Metals					
7429-90-5	Aluminum	NA	NA	NA	NA
7440-36-0	Antimony	NA	NA	NA	6.69E-02
7440-38-2	Arsenic	1.15E-01	4.85E-02	1.32E+00	4.62E-01
7440-39-3	Barium	4.51E-02	NA	6.56E-02	5.97E-03
7440-41-7	Beryllium	NA	NA	NA	8.01E-04
7440-43-9	Cadmium	2.04E+00	1.33E-01	2.97E+00	8.31E-01
7440-47-3	Total Chromium	5.44E-02	NA	3.61E-01	3.10E-02
7440-48-4	Cobalt	NA	NA	NA	1.64E-02
7440-50-8	Copper	4.60E-01	2.17E-01	1.17E+00	1.25E-01
7439-89-6	Iron	NA	NA	NA	NA
7439-92-1	Lead	7.96E+00	6.27E+00	4.36E+01	4.90E-02
7439-95-4	Magnesium	NA	NA	NA	NA
7439-96-5	Manganese	1.02E-01	NA	2.04E-01	2.29E-01
7439-97-6	Mercury	2.27E-02	2.53E+00	3.33E-02	7.23E-03
7439-98-7	Molybdenum	1.01E-01	NA	4.05E-01	3.89E-01
7440-02-0	Nickel	3.75E-01	9.12E-02	1.25E+00	1.34E+00
7782-49-2	Selenium	2.76E-01	1.28E+00	2.61E+00	3.26E-01
7440-22-4	Silver	NA	NA	NA	NA
7440-28-0	Thallium	NA	NA	NA	2.64E-03
7440-62-2	Vanadium	4.03E-01	2.89E+00	2.62E+00	1.51E-02
7440-66-6	Zinc	8.73E-01	6.97E-01	5.99E+00	1.73E-01
PAHs/SVOCs					
NAV1000	LPAHs	1.55E-04	1.63E-05	3.21E-04	2.57E-05
NAV1001	HPAHs	2.83E-04	7.38E-05	2.86E-03	1.83E-03
VOCs					
78-93-3	2-Butanone (MEK)	NA	NA	NA	NA
67-64-1	Acetone	NA	NA	NA	NA
75-15-0	Carbon Disulfide	NA	NA	NA	NA
108-90-7	Chlorobenzene	NA	NA	NA	NA
75-09-2	Methylene Chloride	NA	NA	NA	NA
PCBs/Pesticides					
1336-36-3	Total PCBs	5.26E-02	2.38E-01	6.41E-01	3.05E-03
NAV123	Total DDT	7.80E-02	4.10E-02	7.41E-01	2.18E-04
5103-71-9	*alpha*-Chlordane	9.69E-02	5.55E-02	9.66E-01	7.14E-06
5103-74-2	*gamma*-Chlordane	7.45E-02	2.86E-02	7.00E-01	5.58E-06
5103-73-1	*cis*-Nonachlor	9.78E-02	NA	1.04E+00	7.05E-06
1024-57-3	Heptachlor epoxide	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	3.33E-01	NA	3.89E+00	2.31E-05
60-57-1	Dieldrin	3.47E-03	7.74E-04	1.98E-02	4.44E-03
33213-65-9	Endosulfan II	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	NA	NA	NA	NA
72-43-5	Methoxychlor	NA	NA	NA	5.96E-05

Table 7-38. Upland Baseline Dose Summary

CAS Number	Constituent	California Vole	Western Meadowlark	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
Metals							
7440-36-0	Antimony	4.47E-02	2.97E-01	9.28E-02	5.10E-03	2.18E-02	2.35E-02
7440-43-9	Cadmium	1.02E+00	4.90E+00	1.17E+00	2.50E-02	3.14E-01	2.41E-01
7440-47-3	Total Chromium	6.12E-01	2.04E+01	5.41E+00	1.66E-01	1.19E+00	1.10E+00
18540-29-9	Chromium (VI)	NA	NA	NA	NA	NA	NA
7440-50-8	Copper	2.64E+00	2.97E+00	2.59E+00	3.77E-01	4.57E-01	1.13E+00
7439-92-1	Lead	7.81E-01	4.15E+00	2.30E+00	2.53E-01	4.22E-01	8.04E-01
7439-96-5	Manganese	2.14E+01	1.07E+01	3.54E+00	3.55E-01	2.05E+00	1.60E+00
7439-97-6	Mercury	3.01E-03	8.57E-02	3.33E-02	2.66E-03	5.75E-03	9.77E-03
7439-98-7	Molybdenum	1.40E+00	NA	NA	NA	NA	NA
7440-02-0	Nickel	2.04E+00	2.34E+01	5.92E+00	1.54E-01	1.38E+00	1.19E+00
7782-49-2	Selenium	4.59E-02	5.31E-02	6.93E-02	1.12E-02	8.11E-03	3.20E-02
7440-62-2	Vanadium	3.78E-01	7.63E-01	9.67E-01	1.47E-01	1.43E-01	4.14E-01
7440-66-6	Zinc	1.38E+01	4.82E+01	2.77E+01	3.31E+00	4.14E+00	1.05E+01
PAHs/SVOCs							
87-86-5	Pentachlorophenol	2.60E-02	1.01E+01	2.39E+00	3.12E-02	5.20E-01	4.11E-01
108-95-2	Phenol	3.04E-02	NA	NA	NA	NA	NA
NAV1000	Sum LPAHs	1.08E-01	7.41E+00	1.70E+00	1.10E-02	4.04E-01	2.69E-01
NAV1001	Sum HPAHs	6.94E-02	1.55E+00	3.87E-01	7.07E-03	9.78E-02	6.88E-02
PCBs/Pesticides							
1336-36-3	Total PCBs	1.64E-02	3.29E-01	1.21E-01	9.27E-03	2.08E-02	3.52E-02
53-19-0	2,4 DDD	2.11E-04	1.22E-02	1.81E-02	2.91E-03	1.36E-03	8.06E-03
3424-82-6	2,4 DDE	1.11E-04	1.54E-03	4.19E-02	7.86E-03	2.04E-03	2.08E-02
789-02-6	2,4 DDT	2.16E-04	4.89E-03	7.27E-03	1.17E-03	5.53E-04	3.25E-03
72-54-8	4,4 DDD	2.59E-04	1.42E-02	2.12E-02	3.41E-03	1.59E-03	9.45E-03
72-55-9	4,4 DDE	2.89E-04	1.36E-02	2.07E-01	3.86E-02	1.03E-02	1.02E-01
50-29-3	4,4 DDT	3.16E-04	2.32E-02	2.80E-02	4.32E-03	2.29E-03	1.22E-02
NAV120	Total DDDs	1.04E-04	1.74E-02	2.62E-02	4.22E-03	1.96E-03	1.17E-02
NAV121	Total DDEs	1.99E-05	7.13E-03	1.30E-01	2.42E-02	6.38E-03	6.40E-02
NAV122	Total DDTs	4.84E-04	2.56E-02	3.04E-02	4.68E-03	2.50E-03	1.32E-02
NAV123	Total DDT	5.70E-04	3.67E-02	1.42E-01	2.53E-02	8.21E-03	6.78E-02

Table 7-39. Wetland Baseline Dose Summary

CAS Number	Constituent	Song Sparrow	California Vole	Least Sandpiper	Burrowing Owl	Northern Harrier	Raccoon	Red Fox
Metals								
7440-36-0	Antimony	9.29E-02	4.30E-02	1.76E-01	2.55E-02	9.36E-04	7.49E-03	8.46E-03
7440-38-2	Arsenic	5.85E+00	1.74E-01	1.31E+01	1.07E+00	2.79E-03	2.59E-01	1.72E-01
7440-43-9	Cadmium	3.37E-01	4.10E-01	3.63E-01	7.30E-02	3.61E-03	3.46E-02	3.53E-02
7440-47-3	Total Chromium	2.65E+00	9.10E-01	5.97E+00	1.85E+00	1.11E-01	3.47E-01	7.40E-01
7440-50-8	Copper	5.63E+00	3.27E+00	1.04E+01	3.30E+00	2.02E-01	6.26E-01	1.39E+00
7439-92-1	Lead	2.85E+00	8.98E-01	6.43E+00	2.07E+00	1.26E-01	3.64E-01	8.34E-01
7439-96-5	Manganese	2.04E+01	2.35E+01	2.61E+01	5.04E+00	2.37E-01	2.51E+00	2.18E+00
7439-98-7	Molybdenum	NA	7.10E-01	NA	NA	NA	NA	NA
7440-02-0	Nickel	3.19E+00	1.82E+00	6.11E+00	1.65E+00	9.41E-02	3.69E-01	6.63E-01
7782-49-2	Selenium	1.97E-01	5.20E-02	4.01E-01	1.21E-01	7.31E-03	1.55E-02	5.00E-02
7440-62-2	Vanadium	1.87E+00	6.33E-01	4.19E+00	1.84E+00	1.23E-01	2.66E-01	7.90E-01
7440-66-6	Zinc	3.32E+01	9.05E+00	6.76E+01	2.32E+01	1.46E+00	2.80E+00	9.80E+00
PAHs/SVOCs								
117-81-7	*bis*(2-ethylhexyl) Phthalate	6.79E-01	1.14E-01	1.43E+00	NA	NA	NA	NA
PCBs/Pesticides								
1336-36-3	Total PCBs	1.56E-01	1.86E-03	3.53E-01	4.23E-02	1.19E-03	7.44E-03	1.13E-02
53-19-0	2,4 DDD	1.41E-02	1.07E-04	3.19E-02	1.08E-02	6.76E-04	9.76E-04	4.47E-03
3424-82-6	2,4 DDE	3.84E-04	8.98E-05	7.81E-04	9.71E-03	7.92E-04	4.73E-04	4.81E-03
789-02-6	2,4 DDT	5.21E-04	2.63E-04	9.24E-04	3.28E-03	2.63E-04	1.84E-04	1.61E-03
72-54-8	4,4 DDD	8.26E-03	2.28E-04	1.86E-02	1.62E-02	1.21E-03	1.05E-03	7.55E-03
72-55-9	4,4 DDE	1.31E-03	2.62E-04	2.73E-03	1.19E-01	9.74E-03	5.64E-03	5.91E-02
50-29-3	4,4 DDT	1.24E-03	3.02E-04	2.53E-03	7.15E-03	5.70E-04	3.94E-04	3.49E-03
NAV120	Total DDDs	1.20E-02	4.02E-04	2.69E-02	2.15E-02	1.59E-03	1.43E-03	9.94E-03
NAV121	Total DDEs	2.47E-03	3.34E-04	5.29E-03	1.21E-01	9.87E-03	5.76E-03	5.99E-02
NAV122	Total DDTs	2.18E-03	4.38E-04	4.52E-03	8.50E-03	6.68E-04	4.94E-04	4.11E-03
NAV123	Total DDT	7.52E-03	5.61E-04	1.65E-02	5.49E-02	4.40E-03	2.86E-03	2.69E-02
5103-71-9	*alpha*-Chlordane	9.38E-03	1.54E-04	2.11E-02	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	1.18E-02	1.38E-04	2.66E-02	NA	NA	NA	NA
60-57-1	Dieldrin	9.19E-03	3.00E-04	2.06E-02	3.27E-02	2.55E-03	1.85E-03	1.57E-02

Table 7-40. Pond Baseline Dose Summary

CAS Number	Constituent	Mallard	Great Blue Heron	Least Sandpiper	Raccoon
Metals					
7440-38-2	Arsenic	7.88E-02	2.19E-01	6.67E+00	1.30E-01
7440-43-9	Cadmium	1.32E-02	8.13E-03	2.18E-01	2.83E-02
7440-50-8	Copper	9.29E-02	3.70E-01	2.14E+00	2.09E-01
7439-92-1	Lead	1.16E-02	7.67E-02	4.47E-01	3.94E-02
7439-97-6	Mercury	NA	2.31E-02	3.14E-04	NA
7440-02-0	Nickel	4.97E-02	8.72E-02	1.29E+00	1.21E-01
7782-49-2	Selenium	8.05E-03	1.69E-01	6.00E-01	1.41E-02
7440-22-4	Silver	1.36E-03	4.40E-03	8.66E-02	2.77E-03
36643-28-4	Butyltins	#N/A	#N/A	#N/A	#N/A
7440-62-2	Vanadium	1.32E-02	9.38E-01	6.25E-01	4.96E-02
7440-66-6	Zinc	6.50E-01	4.74E+00	3.87E+01	1.23E+00
PCBs/Pesticides					
5103-73-1	*cis*-Nonachlor	1.67E-05	NA	1.24E-03	2.85E-05
39765-80-5	*trans*-nonachlor	3.37E-05	NA	2.67E-03	5.61E-05

Table 7-41. Baseline HQ for Upland Plants

CAS Number	Constituent	Upland Soil EPC[1] (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Terrestrial Plants Low HQ (unitless)	Terrestrial Plants High HQ (unitless)
			METALS			
7440-36-0	Antimony	3.32E+01	5.00E+00	NA	6.65E+00	NA
7440-43-9	Cadmium	1.66E+01	3.20E+01	NA	5.19E-01	NA
7440-47-3	Chromium	1.66E+02	1.00E+00	NA	1.66E+02	NA
7440-48-4	Cobalt	9.98E+00	1.30E+01	NA	7.68E-01	NA
7440-50-8	Copper	4.56E+02	1.00E+02	NA	4.56E+00	NA
18540-29-9	Hexavalent Chromium	2.33E-01	1.00E+00	NA	2.33E-01	NA
7439-89-6	Iron	3.11E+04	NA	NA	NA	NA
7439-92-1	Lead	4.26E+03	1.20E+02	NA	3.55E+01	NA
7439-95-4	Magnesium	4.75E+03	NA	NA	NA	NA
7439-96-5	Manganese	3.49E+02	5.00E+02	NA	6.98E-01	NA
7439-97-6	Mercury	8.31E-01	3.00E-01	NA	2.77E+00	NA
7439-98-7	Molybdenum	4.85E+00	2.00E+00	NA	2.42E+00	NA
7440-02-0	Nickel	5.40E+01	3.00E+01	NA	1.80E+00	NA
7440-22-4	Silver	4.77E+00	2.00E+00	NA	2.38E+00	NA
36643-28-4	Tri-*n*-butyltin Cation	2.27E-03	NA	NA	NA	NA
7440-62-2	Vanadium	3.44E+01	2.00E+00	NA	1.72E+01	NA
7440-66-6	Zinc	9.96E+02	5.00E+01	NA	1.99E+01	NA
			PAHs/SVOCs			
95-94-3	1,2,4,5-Tetrachlorobenzene	6.75E-02	NA	NA	NA	NA
121-14-2	2,4-Dinitrotoluene	2.80E-01	NA	NA	NA	NA
91-58-7	2-Chloronaphthalene	3.50E-02	NA	NA	NA	NA
95-57-8	2-Chlorophenol	7.10E-03	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene	2.23E+00	NA	NA	NA	NA
95-48-7	2-Methylphenol	1.40E-02	NA	NA	NA	NA
88-74-4	2-Nitroaniline	1.40E-02	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine	4.20E-03	NA	NA	NA	NA
106-47-8	4-Chloroaniline	3.28E-02	NA	NA	NA	NA
106-44-5	4-Methylphenol	4.38E-02	NA	NA	NA	NA
83-32-9	Acenaphthene	4.14E+00	3.00E+00	61	1.38E+00	0.07
98-86-2	Acetophenone	1.69E-01	NA	NA	NA	NA
120-12-7	Anthracene	1.15E+00	3.00E+00	61	3.83E-01	0.02
100-52-7	Benzaldehyde	1.38E-01	NA	NA	NA	NA
56-55-3	Benzo(a)anthracene	9.05E-01	1.20E+00	3.3	7.54E-01	0.27
50-32-8	Benzo(a)pyrene	3.55E-01	1.20E+00	3.3	2.96E-01	0.11
205-99-2	Benzo(b)fluoranthene	9.64E-01	1.20E+00	3.3	8.03E-01	0.29
191-24-2	Benzo(g,h,i)perylene	4.94E-01	1.20E+00	3.3	4.12E-01	0.15
207-08-9	Benzo(k)fluoranthene	3.26E-01	1.20E+00	3.3	2.71E-01	0.10
117-81-7	*bis*(2-ethylhexyl) Phthalate	1.85E+02	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	1.49E+02	NA	NA	NA	NA
105-60-2	Caprolactam	3.61E-01	NA	NA	NA	NA
86-74-8	Carbazole	4.40E-01	NA	NA	NA	NA
218-01-9	Chrysene	1.37E+00	1.20E+00	3.3	1.14E+00	0.41
132-64-9	Dibenzofuran	2.24E+00	NA	NA	NA	NA
131-11-3	Dimethyl Phthalate	2.81E-02	NA	NA	NA	NA
117-84-0	Di-*n*-octyl Phthalate	3.38E-02	NA	NA	NA	NA
206-44-0	Fluoranthene	4.16E+00	1.20E+00	NA	3.47E+00	NA
86-73-7	Fluorene	3.14E+00	3.00E+00	61	1.05E+00	0.05
118-74-1	Hexachlorobenzene	2.91E-02	NA	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	4.66E-01	1.20E+00	3.3	3.88E-01	0.14
91-20-3	Naphthalene	6.57E+00	3.00E+00	61	2.19E+00	0.11
86-30-6	N-Nitrosodiphenylamine	3.86E-02	NA	NA	NA	NA
85-01-8	Phenanthrene	7.18E+00	3.00E+00	61	2.39E+00	0.12
129-00-0	Pyrene	3.43E+00	1.20E+00	3.3	2.86E+00	1.04
11-84-7	Diesel	2.31E+03	NA	NA	NA	NA
8006-61-9	Gasoline	3.30E+02	NA	NA	NA	NA

Table 7-41. Baseline HQ for Upland Plants (page 2 of 3)

CAS Number	Constituent	Upland Soil EPC1 (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Terrestrial Plants Low HQ (unitless)	Terrestrial Plants High HQ (unitless)
NAV0087	Residual Range Organics (RRO)	3.07E+03	NA	NA	NA	NA
NAV1000	LPAH	1.94E+01	3.00E+00	61	6.48E+00	0.32
NAV1001	HPAH	1.13E+02	1.20E+00	3.3	9.45E+01	34.36
		VOCs				
95-50-1	1,2-Dichlorobenzene	5.94E-04	NA	NA	NA	NA
541-73-1	1,3-Dichlorobenzene	5.07E-04	NA	NA	NA	NA
106-46-7	1,4-Dichlorobenzene	5.80E-03	NA	NA	NA	NA
78-93-3	2-Butanone (MEK)	7.75E-03	NA	NA	NA	NA
108-10-1	4-Methyl-2-pentanone (MIBK)	3.88E-03	NA	NA	NA	NA
67-64-1	Acetone	3.80E-02	NA	NA	NA	NA
71-43-2	Benzene	7.94E-04	NA	NA	NA	NA
75-15-0	Carbon Disulfide	1.08E-03	NA	NA	NA	NA
108-90-7	Chlorobenzene	6.69E-03	NA	NA	NA	NA
110-82-7	Cyclohexane	5.40E-04	NA	NA	NA	NA
100-41-4	Ethylbenzene	4.81E-04	NA	NA	NA	NA
98-82-8	Isopropylbenzene	1.80E-03	NA	NA	NA	NA
7816-60-0	m,p-Xylenes	1.14E-03	NA	NA	NA	NA
108-87-2	Methylcyclohexane	9.67E-04	NA	NA	NA	NA
75-09-2	Methylene Chloride	2.69E-02	NA	NA	NA	NA
95-47-6	o-Xylene	6.76E-04	NA	NA	NA	NA
127-18-4	Tetrachloroethene (PCE)	2.31E-04	NA	NA	NA	NA
79-01-6	Trichloroethene (TCE)	2.05E-04	NA	NA	NA	NA
		PCBs/PESTICIDES				
53-19-0	2,4 DDD	2.90E-02	NA	NA	NA	NA
3424-82-6	2,4 DDE	4.41E-04	NA	NA	NA	NA
789-02-6	2,4 DDT	1.55E-02	NA	NA	NA	NA
72-54-8	4,4 DDD	4.32E-02	NA	NA	NA	NA
72-55-9	4,4 DDE	2.05E-02	NA	NA	NA	NA
50-29-3	4,4 DDT	1.23E-02	NA	NA	NA	NA
319-84-6	*alpha*-BHC	4.02E-04	NA	NA	NA	NA
58-89-9	*gamma*-BHC (Lindane)	1.97E-04	NA	NA	NA	NA
5103-71-9	*alpha*-Chlordane	2.33E-01	NA	NA	NA	NA
5103-73-1	*cis*-Nonachlor	6.65E-02	NA	NA	NA	NA
72-20-8	Endrin	2.12E-04	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	5.84E-04	NA	NA	NA	NA
53494-70-5	Endrin ketone	4.52E-04	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	2.38E-01	NA	NA	NA	NA
76-44-8	Heptachlor	1.25E-04	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	2.07E-04	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	1.25E-01	NA	NA	NA	NA
309-00-2	Aldrin	1.63E-04	NA	NA	NA	NA
319-85-7	*beta*-BHC	3.03E-04	NA	NA	NA	NA
319-86-8	*delta*-BHC	7.00E-05	NA	NA	NA	NA
60-57-1	Dieldrin	9.60E-03	NA	NA	NA	NA
959-98-8	Endosulfan I	3.43E-04	NA	NA	NA	NA
33213-65-9	Endosulfan II	3.00E-02	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	2.89E-03	NA	NA	NA	NA
72-43-5	Methoxychlor	3.55E-03	NA	NA	NA	NA
NAV120	Total DDDs	6.09E-02	NA	NA	NA	NA
NAV121	Total DDEs	2.07E-02	NA	NA	NA	NA
NAV123	Total DDT	8.74E-02	NA	NA	NA	NA
NAV122	Total DDTs	2.28E-02	NA	NA	NA	NA

Table 7-41. Baseline HQ for Upland Plants (page 3 of 3)

CAS Number	Constituent	Upland Soil EPC1 (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Terrestrial Plants Low HQ (unitless)	Terrestrial Plants High HQ (unitless)
		DIOXIN/FURANS				
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.90E-03	NA	NA	NA	NA
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.53E-04	NA	NA	NA	NA
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.60E-05	NA	NA	NA	NA
39227-28-6	1,2,3,4,7,8-HxCDD	1.73E-06	NA	NA	NA	NA
70648-26-9	1,2,3,4,7,8-HxCDF	1.80E-05	NA	NA	NA	NA
57653-85-7	1,2,3,6,7,8-HxCDD	1.74E-05	NA	NA	NA	NA
57117-44-9	1,2,3,6,7,8-HxCDF	3.70E-06	NA	NA	NA	NA
19408-74-3	1,2,3,7,8,9-HxCDD	7.94E-06	NA	NA	NA	NA
72918-21-9	1,2,3,7,8,9-HxCDF	4.28E-07	NA	NA	NA	NA
40321-76-4	1,2,3,7,8-PeCDD	1.52E-06	NA	NA	NA	NA
57117-41-6	1,2,3,7,8-PeCDF	2.01E-06	NA	NA	NA	NA
60851-34-5	2,3,4,6,7,8-HxCDF	2.25E-05	NA	NA	NA	NA
57117-31-4	2,3,4,7,8-PeCDF	4.04E-06	NA	NA	NA	NA
1746-01-6	2,3,7,8-TCDD	1.27E-06	NA	NA	NA	NA
51207-31-9	2,3,7,8-TCDF	5.39E-06	NA	NA	NA	NA
3268-87-9	OCDD	2.49E-02	NA	NA	NA	NA
39001-02-0	OCDF	1.54E-03	NA	NA	NA	NA
30402-14-3	Tetrachlorodibenzofuran	2.73E-04	NA	NA	NA	NA
37871-00-4	Total HpCDD	5.68E-03	NA	NA	NA	NA
38998-75-3	Total HpCDF	6.52E-04	NA	NA	NA	NA
34465-46-8	Total HxCDD	1.89E-04	NA	NA	NA	NA
55684-94-1	Total HxCDF	2.10E-04	NA	NA	NA	NA
36088-22-9	Total PeCDD	1.39E-05	NA	NA	NA	NA
30402-15-4	Total PeCDF	1.18E-04	NA	NA	NA	NA
41903-57-5	Total TCDD	7.66E-06	NA	NA	NA	NA
NAV128	TEQ Birds	1.93E-05	NA	NA	NA	NA
NAV129	TEQ Mammals	2.30E-05	NA	NA	NA	NA
		EXPLOSIVES				
99-65-0	1,3-Dinitrobenzene	3.10E-01	NA	NA	NA	NA
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.30E-01	NA	NA	NA	NA
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.40E-01	NA	NA	NA	NA

[1]. EPC for upland plants baseline evaluation is the lesser of the 95% UCL or the maximum concentration from the 0-6 foot depth strata.

Table 7-42. Baseline HQ for Upland Invertebrates

CAS NUMBER	CONSTITUENT	Upland Soil EPC[1] (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Terrestrial Invertebrates Low HQ (unitless)	Terrestiral Invertebrates High HQ (unitless)
		METALS				
7440-39-3	Barium	1.09E+02	3.30E+02	NA	3.29E-01	NA
7440-47-3	Chromium	6.57E+01	4.00E-01	NA	1.64E+02	NA
7440-48-4	Cobalt	9.49E+00	NA	NA	NA	NA
7440-50-8	Copper	6.84E+01	5.00E+01	NA	1.37E+00	NA
18540-29-9	Hexavalent Chromium	3.10E-01	4.00E-01	NA	7.74E-01	NA
7439-89-6	Iron	2.29E+04	NA	NA	NA	NA
7439-95-4	Magnesium	5.74E+03	NA	NA	NA	NA
7439-96-5	Manganese	3.11E+02	NA	NA	NA	NA
7439-97-6	Mercury	4.89E-01	1.00E-01	NA	4.89E+00	NA
7439-98-7	Molybdenum	1.89E+00	NA	NA	NA	NA
7440-22-4	Silver	9.18E-01	NA	NA	NA	NA
36643-28-4	Tri-*n*-butyltins Cation	1.53E-03	NA	NA	NA	NA
7440-28-0	Thallium	1.07E-01	NA	NA	NA	NA
7440-62-2	Vanadium	3.97E+01	NA	NA	NA	NA
7440-66-6	Zinc	1.74E+02	2.00E+02	NA	8.69E-01	NA
		PAHs/SVOCs				
92-52-4	1,1'-Byphenyl	3.07E-01	NA	NA	NA	NA
95-94-3	1,2,4,5-Tetrachlorobenzene	3.60E-02	NA	NA	NA	NA
121-14-2	2,4-Dinitrotoluene	ND	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene	1.05E+00	NA	NA	NA	NA
95-48-7	2-Methylphenol	1.40E-02	NA	NA	NA	NA
88-74-4	2-Nitroaniline	1.40E-02	NA	NA	NA	NA
91-94-1	3,3'-Dichlorobenzidine	4.20E-03	NA	NA	NA	NA
106-47-8	4-Chloroaniline	3.57E-02	NA	NA	NA	NA
106-44-5	4-Methylphenol	1.50E-02	NA	NA	NA	NA
98-86-2	Acetophenone	1.37E-01	NA	NA	NA	NA
120-12-7	Anthracene	1.45E+00	5.00E+00	6.70E+01	2.90E-01	2.163E-02
100-52-7	Benzaldehyde	1.32E-01	NA	NA	NA	NA
191-24-2	Benzo(g,h,i)perylene	3.47E-01	NA	NA	NA	NA
117-81-7	*bis*(2-ethylhexyl) Phthalate	2.45E+00	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	1.94E+00	NA	NA	NA	NA
86-74-8	Carbazole	6.04E-01	NA	NA	NA	NA
132-64-9	Dibenzofuran	1.38E+00	NA	NA	NA	NA
84-66-2	Diethyl Phthalate	4.10E-02	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	4.56E-02	NA	NA	NA	NA
117-84-0	Di-*n*-octyl Phthalate	1.38E-02	NA	NA	NA	NA
86-73-7	Fluorene	2.39E+00	7.70E+00	3.90E+01	3.10E-01	6.121E-02
118-74-1	Hexachlorobenzene	2.43E-02	NA	NA	NA	NA
91-20-3	Naphthalene	3.23E+00	2.00E+01	1.67E+02	1.62E-01	1.936E-02
85-01-8	Phenanthrene	7.55E+00	2.30E+01	4.10E+01	3.28E-01	1.841E-01
129-00-0	Pyrene	3.17E+00	1.00E+01	5.30E+01	3.17E-01	5.987E-02
11-84-7	Diesel	5.08E+02	NA	NA	NA	NA
8006-61-9	Gasoline	3.94E+01	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	6.49E+03	NA	NA	NA	NA
NAV1000	LPAH	1.76E+01	2.00E+01	NA	8.79E-01	NA
NAV1001	HPAH	1.13E+01	8.40E+02	NA	1.35E-02	NA
		VOCs				
78-93-3	2-Butanone (MEK)	5.71E-03	NA	NA	NA	NA
108-10-1	4-Methyl-2-pentanone (MIBK)	3.69E-03	NA	NA	NA	NA
67-64-1	Acetone	1.78E-02	NA	NA	NA	NA
75-09-2	Methylene Chloride	6.88E-02	NA	NA	NA	NA
		PCBs/PESTICIDES				
1336-36-3	Total PCBs	8.71E-01	NA	NA	NA	NA

Table 7-42. Baseline HQ for Upland Invertebrates (page 2 of 2)

CAS NUMBER	CONSTITUENT	Upland Soil EPC1 (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Terrestrial Invertebrates Low HQ (unitless)	Terrestiral Invertebrates High HQ (unitless)
53-19-0	2,4 DDD	1.01E-02	NA	NA	NA	NA
3424-82-6	2,4 DDE	5.60E-04	NA	NA	NA	NA
789-02-6	2,4 DDT	2.89E-03	NA	NA	NA	NA
72-54-8	4,4 DDD	1.26E-02	NA	NA	NA	NA
72-55-9	4,4 DDE	6.71E-03	NA	NA	NA	NA
50-29-3	4,4 DDT	1.74E-02	NA	NA	NA	NA
319-84-6	a-BHC	2.10E-04	NA	NA	NA	NA
58-89-9	g-BHC (Lindane)	3.69E-04	NA	NA	NA	NA
5103-71-9	a- Chlordane	1.77E-02	NA	NA	NA	NA
5103-73-1	cis Nonachlor	3.77E-03	NA	NA	NA	NA
7421-93-4	Endrin aldehyde	5.20E-04	NA	NA	NA	NA
5103-74-2	g-Chlordane	1.79E-02	NA	NA	NA	NA
76-44-8	Heptachlor	1.33E-04	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	3.33E-04	NA	NA	NA	NA
39765-80-5	trans-nonachlor	9.85E-03	NA	NA	NA	NA
309-00-2	Aldrin	1.68E-04	NA	NA	NA	NA
319-85-7	*beta*-BHC	3.35E-04	NA	NA	NA	NA
319-86-8	delta-BHC	7.00E-05	NA	NA	NA	NA
60-57-1	Dieldrin	4.26E-03	NA	NA	NA	NA
959-98-8	Endosulfan I	1.10E-04	NA	NA	NA	NA
33213-65-9	Endosulfan II	2.43E-03	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	3.45E-03	NA	NA	NA	NA
72-43-5	Methoxychlor	3.78E-03	NA	NA	NA	NA
NAV120	Total DDDs	1.69E-02	NA	NA	NA	NA
NAV121	Total DDEs	3.24E-03	NA	NA	NA	NA
NAV123	Total DDT	2.79E-02	NA	NA	NA	NA
NAV122	Total DDTs	1.94E-02	NA	NA	NA	NA
		DIOXIN/FURANS				
35822-46-9	1,2,3,4,6,7,8-HpCDD	5.54E-04	NA	NA	NA	NA
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.08E-04	NA	NA	NA	NA
55673-89-7	1,2,3,4,7,8,9-HpCDF	5.80E-06	NA	NA	NA	NA
39227-28-6	1,2,3,4,7,8-HxCDD	1.99E-06	NA	NA	NA	NA
70648-26-9	1,2,3,4,7,8-HxCDF	9.20E-06	NA	NA	NA	NA
57653-85-7	1,2,3,6,7,8-HxCDD	1.43E-05	NA	NA	NA	NA
57117-44-9	1,2,3,6,7,8-HxCDF	3.48E-06	NA	NA	NA	NA
19408-74-3	1,2,3,7,8,9-HxCDD	7.22E-06	NA	NA	NA	NA
72918-21-9	1,2,3,7,8,9-HxCDF	2.81E-07	NA	NA	NA	NA
40321-76-4	1,2,3,7,8-PeCDD	1.62E-06	NA	NA	NA	NA
57117-41-6	1,2,3,7,8-PeCDF	1.95E-06	NA	NA	NA	NA
60851-34-5	2,3,4,6,7,8-HxCDF	4.23E-06	NA	NA	NA	NA
57117-31-4	2,3,4,7,8-PeCDF	5.14E-06	NA	NA	NA	NA
1746-01-6	2,3,7,8-TCDD	1.04E-06	NA	NA	NA	NA
51207-31-9	2,3,7,8-TCDF	4.06E-06	NA	NA	NA	NA
3268-87-9	OCDD	7.33E-03	NA	NA	NA	NA
39001-02-0	OCDF	5.10E-04	NA	NA	NA	NA
30402-14-3	Tetrachlorodibenzofuran	1.27E-04	NA	NA	NA	NA
37871-00-4	Total HpCDD	1.37E-03	NA	NA	NA	NA
38998-75-3	Total HpCDF	4.40E-04	NA	NA	NA	NA
34465-46-8	Total HxCDD	1.27E-04	NA	NA	NA	NA
55684-94-1	Total HxCDF	1.47E-04	NA	NA	NA	NA
36088-22-9	Total PeCDD	1.05E-05	NA	NA	NA	NA
30402-15-4	Total PeCDF	1.02E-04	NA	NA	NA	NA
41903-57-5	Total TCDD	6.83E-06	NA	NA	NA	NA
NAV128	TEQ Birds	1.60E-05	NA	NA	NA	NA
NAV129	TEQ Mammals	1.66E-05	NA	NA	NA	NA

[1]. EPC for upland invertebrates baseline evaluation is the lesser of the 95% UCL or the maximum concentration from the 0-1 foot depth strata.

Table 7-43. Baseline HQ for Upland Receptors

CAS Number	Constituent	California Vole		Western Meadowlark		Burrowing Owl		Northern Harrier		Raccoon		Red Fox	
		Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs
Metals													
7440-36-0	Antimony	7.57E-01	1.62E-02	NA	NA	NA	NA	NA	NA	3.69E-01	7.90E-03	3.98E-01	8.50E-03
7440-43-9	Cadmium	1.69E+01	1.47E-01	6.12E+01	7.72E-01	1.46E+01	1.85E-01	3.13E-01	3.95E-03	5.24E+00	4.56E-02	4.01E+00	3.49E-02
7440-47-3	Total Chromium	2.55E-01	1.05E-02	7.68E+00	1.31E+00	2.03E+00	3.46E-01	6.26E-02	1.07E-02	4.94E-01	2.04E-02	4.60E-01	1.90E-02
7440-50-8	Copper	9.89E-01	4.18E-03	1.29E+00	5.68E-02	1.13E+00	4.96E-02	1.64E-01	7.21E-03	1.71E-01	7.23E-04	4.22E-01	1.78E-03
7439-92-1	Lead	7.81E-01	3.24E-03	2.97E+02	4.75E-01	1.65E+02	2.63E-01	1.81E+01	2.89E-02	4.22E-01	1.75E-03	8.04E-01	3.33E-03
7439-96-5	Manganese	1.56E+00	1.35E-01	1.38E-01	1.38E-02	4.56E-02	4.56E-03	4.57E-03	4.57E-04	1.50E-01	1.29E-02	1.17E-01	1.01E-02
7439-97-6	Mercury	1.21E-02	7.53E-04	2.20E+00	4.76E-01	8.53E-01	1.85E-01	6.81E-02	1.48E-02	2.30E-02	1.44E-03	3.91E-02	2.44E-03
7439-98-7	Molybdenum	5.37E+00	5.37E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7440-02-0	Nickel	1.53E+01	6.44E-02	1.70E+01	4.16E-01	4.29E+00	1.05E-01	1.12E-01	2.74E-03	1.04E+01	4.38E-02	8.97E+00	3.78E-02
7782-49-2	Selenium	9.18E-01	3.79E-02	2.31E-01	5.71E-02	3.01E-01	7.45E-02	4.88E-02	1.21E-02	1.62E-01	6.71E-03	6.40E-01	2.65E-02
7440-62-2	Vanadium	9.09E-02	4.01E-02	2.22E+00	4.49E-01	2.81E+00	5.69E-01	4.28E-01	8.66E-02	3.44E-02	1.52E-02	9.95E-02	4.39E-02
7440-66-6	Zinc	1.44E+00	3.37E-02	6.88E+00	2.80E-01	3.95E+00	1.61E-01	4.73E-01	1.93E-02	4.32E-01	1.01E-02	1.09E+00	2.56E-02
PAHs/SVOCs													
NAV1000	Sum LPAHs	2.16E-03	7.20E-04	2.76E-01	2.76E-02	6.32E-02	6.32E-03	4.09E-04	4.09E-05	8.09E-03	2.70E-03	5.38E-03	1.79E-03
NAV1001	Sum HPAHs	5.30E-02	2.12E-03	4.78E-02	4.78E-03	1.19E-02	1.19E-03	2.18E-04	2.18E-05	7.46E-02	2.98E-03	5.25E-02	2.10E-03
PCBs/Pesticides													
1336-36-3	Total PCBs	4.54E-02	1.28E-02	3.65E+00	2.59E-01	1.35E+00	9.56E-02	1.03E-01	7.30E-03	5.78E-02	1.62E-02	9.79E-02	2.75E-02
NAV123	Total DDT	7.12E-04	3.56E-05	4.08E+00	6.12E-01	1.58E+01	2.37E+00	2.81E+00	4.21E-01	1.03E-02	5.13E-04	8.48E-02	4.24E-03
60-57-1	Dieldrin	1.16E-02	1.38E-04	1.08E-01	9.56E-03	5.05E-01	4.47E-02	9.08E-02	8.04E-03	1.34E-01	1.58E-03	1.15E+00	1.36E-02
72-43-5	Methoxychlor	1.28E-04	6.41E-06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8001-35-2	Toxaphene	7.95E-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCDD/PCDF													
NAV128	TEQ Birds	NA	NA	5.01E-01	5.01E-02	2.29E-01	2.29E-02	2.22E-02	2.22E-03	NA	NA	NA	NA
NAV129	TEQ Mammals	1.02E-01	1.02E-02	NA	NA	NA	NA	NA	NA	4.75E-01	4.75E-02	1.09E+00	1.09E-01

NA = HQ were not able to be calculated

Table 7-44. Baseline HQ for Wetland Plants

CAS Number	Constituent	Wetland Plants EPC[1] (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Low HQ (unitless)	High HQ (unitless)
		METALS				
7440-38-2	Arsenic	1.25E+01	1.80E+01	NA	6.94E-01	NA
7440-47-3	Chromium	1.05E+02	1.00E+00	NA	1.05E+02	NA
7440-48-4	Cobalt	1.50E+01	1.30E+01	NA	1.15E+00	NA
7440-50-8	Copper	7.95E+01	1.00E+02	NA	7.95E-01	NA
7439-89-6	Iron	3.84E+04	NA	NA	NA	NA
7439-92-1	Lead	8.46E+01	1.20E+02	NA	7.05E-01	NA
7439-95-4	Magnesium	1.14E+04	NA	NA	NA	NA
7439-96-5	Manganese	4.50E+02	5.00E+02	NA	9.01E-01	NA
7439-97-6	Mercury	6.25E-01	3.00E-01	NA	2.08E+00	NA
7439-98-7	Molybdenum	1.22E+00	2.00E+00	NA	6.10E-01	NA
7440-02-0	Nickel	8.54E+01	3.00E+01	NA	2.85E+00	NA
7782-49-2	Selenium	6.49E-01	1.00E+00	NA	6.49E-01	NA
7440-22-4	Silver	1.31E+00	2.00E+00	NA	6.56E-01	NA
36643-28-4	Tri-*n*-butyltins Cation	6.44E-04	NA	0.00E+00	NA	NA
7440-62-2	Vanadium	7.04E+01	2.00E+00	NA	3.52E+01	NA
7440-66-6	Zinc	2.43E+02	5.00E+01	NA	4.85E+00	NA
		PAHs/SVOCs				
91-57-6	2-Methylnaphthalene	1.05E-02	NA	NA	NA	NA
59-50-7	4-Chloro-3-methylphenol	4.98E-03	NA	NA	NA	NA
106-47-8	4-Chloroaniline	7.46E-03	NA	NA	NA	NA
83-32-9	Acenaphthene	6.85E-03	3.00E+00	6.10E+01	2.28E-03	1.12E-04
208-96-8	Acenaphthylene	1.18E-02	3.00E+00	6.10E+01	3.94E-03	1.94E-04
98-86-2	Acetophenone	3.41E-02	NA	NA	NA	NA
100-52-7	Benzaldehyde	3.39E-02	NA	NA	NA	NA
56-55-3	Benzo(a)anthracene	5.51E-02	1.20E+00	3.30E+00	4.59E-02	1.67E-02
50-32-8	Benzo(a)pyrene	7.70E-02	1.20E+00	3.30E+00	6.42E-02	2.33E-02
205-99-2	Benzo(b)fluoranthene	9.54E-02	1.20E+00	3.30E+00	7.95E-02	2.89E-02
191-24-2	Benzo(g,h,i)perylene	1.04E-01	1.20E+00	3.30E+00	8.68E-02	3.16E-02
207-08-9	Benzo(k)fluoranthene	6.40E-02	1.20E+00	3.30E+00	5.33E-02	1.94E-02
111-91-1	*bis*(2-chloroethoxy)methane	ND	NA	NA	NA	NA
111-44-4	*bis*(2-chloroethyl) Ether	ND	NA	NA	NA	NA
117-81-7	*bis*(2-ethylhexyl) Phthalate	9.03E-01	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	5.54E-02	NA	NA	NA	NA
105-60-2	Caprolactam	2.82E-02	NA	NA	NA	NA
86-74-8	Carbazole	6.48E-03	NA	NA	NA	NA
132-64-9	Dibenzofuran	7.18E-03	NA	NA	NA	NA
11-84-7	Diesel	1.32E+02	NA	NA	NA	NA
8006-61-9	Gasoline	8.28E+00	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	3.70E+02	NA	NA	NA	NA
NAV1000	LPAH	1.18E-01	NA	NA	NA	NA
NAV1001	HPAH	8.21E-01	1.20E+00	3.30E+00	6.84E-01	2.49E-01
		VOCs				
106-46-7	1,4-Dichlorobenzene	7.13E-03	NA	NA	NA	NA
78-93-3	2-Butanone (MEK)	4.41E-02	NA	NA	NA	NA
67-64-1	Acetone	1.12E-02	NA	NA	NA	NA
71-43-2	Benzene	6.95E-04	NA	NA	NA	NA
108-90-7	Chlorobenzene	1.15E-03	NA	NA	NA	NA
110-82-7	Cyclohexane	1.18E-03	NA	NA	NA	NA
98-82-8	Isopropylbenzene	6.11E-04	NA	NA	NA	NA
1634-04-4	Methyl tert-Butyl Ether	9.66E-04	NA	NA	NA	NA
108-87-2	Methylcyclohexane	1.98E-03	NA	NA	NA	NA
75-09-2	Methylene Chloride	1.80E-02	NA	NA	NA	NA
		PCBs/PESTICIDES				
1336-36-3	Total PCBs	2.03E-01	4.00E+01	NA	5.08E-03	NA
53-19-0	2,4 DDD	3.47E-03	NA	NA	NA	NA
3424-82-6	2,4 DDE	4.69E-05	NA	NA	NA	NA
789-02-6	2,4 DDT	1.05E-03	NA	NA	NA	NA

Table 7-44. Baseline HQ for Wetland Plants (page 2 of 2)

CAS Number	Constituent	Wetland Plants EPC1 (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Low HQ (unitless)	High HQ (unitless)
72-54-8	4,4 DDD	8.42E-03	NA	NA	NA	NA
72-55-9	4,4 DDE	4.63E-03	NA	NA	NA	NA
50-29-3	4,4 DDT	3.44E-03	NA	NA	NA	NA
58-89-9	g-BHC (Lindane)	5.29E-05	NA	NA	NA	NA
5103-71-9	a- Chlordane	4.70E-02	NA	NA	NA	NA
5103-73-1	cis Nonachlor	4.04E-03	NA	NA	NA	NA
5103-74-2	g-Chlordane	4.42E-02	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	2.06E-05	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	1.79E-02	NA	NA	NA	NA
319-85-7	*beta*-BHC	3.90E-05	NA	NA	NA	NA
60-57-1	Dieldrin	2.98E-03	NA	NA	NA	NA
33213-65-9	Endosulfan II	9.60E-04	NA	NA	NA	NA
72-43-5	Methoxychlor	4.10E-04	NA	NA	NA	NA
NAV120	Total DDDs	1.18E-02	NA	NA	NA	NA
NAV121	Total DDEs	3.79E-03	NA	NA	NA	NA
NAV123	Total DDT	1.95E-02	NA	NA	NA	NA
NAV122	Total DDTs	4.25E-03	NA	NA	NA	NA
		DIOXIN/FURANS				
35822-46-9	1,2,3,4,6,7,8-HpCDD	4.34E-04	NA	NA	NA	NA
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.77E-05	NA	NA	NA	NA
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.71E-06	NA	NA	NA	NA
39227-28-6	1,2,3,4,7,8-HxCDD	2.49E-06	NA	NA	NA	NA
70648-26-9	1,2,3,4,7,8-HxCDF	2.26E-06	NA	NA	NA	NA
57653-85-7	1,2,3,6,7,8-HxCDD	6.17E-06	NA	NA	NA	NA
57117-44-9	1,2,3,6,7,8-HxCDF	1.34E-06	NA	NA	NA	NA
19408-74-3	1,2,3,7,8,9-HxCDD	4.43E-06	NA	NA	NA	NA
72918-21-9	1,2,3,7,8,9-HxCDF	2.16E-07	NA	NA	NA	NA
40321-76-4	1,2,3,7,8-PeCDD	1.72E-06	NA	NA	NA	NA
57117-41-6	1,2,3,7,8-PeCDF	8.41E-07	NA	NA	NA	NA
60851-34-5	2,3,4,6,7,8-HxCDF	1.25E-06	NA	NA	NA	NA
57117-31-4	2,3,4,7,8-PeCDF	1.53E-06	NA	NA	NA	NA
1746-01-6	2,3,7,8-TCDD	1.30E-06	NA	NA	NA	NA
51207-31-9	2,3,7,8-TCDF	2.19E-06	NA	NA	NA	NA
3268-87-9	OCDD	3.88E-03	NA	NA	NA	NA
39001-02-0	OCDF	4.40E-05	NA	NA	NA	NA
30402-14-3	Tetrachlorodibenzofuran	2.13E-05	NA	NA	NA	NA
37871-00-4	Total HpCDD	8.38E-04	NA	NA	NA	NA
38998-75-3	Total HpCDF	6.47E-05	NA	NA	NA	NA
34465-46-8	Total HxCDD	5.31E-05	NA	NA	NA	NA
55684-94-1	Total HxCDF	3.57E-05	NA	NA	NA	NA
36088-22-9	Total PeCDD	9.63E-06	NA	NA	NA	NA
30402-15-4	Total PeCDF	2.80E-05	NA	NA	NA	NA
41903-57-5	Total TCDD	4.28E-06	NA	NA	NA	NA
NAV128	TEQ Birds	8.32E-06	NA	NA	NA	NA
NAV129	TEQ Mammals	6.32E-06	NA	NA	NA	NA

1. EPC for wetland plants baseline evaluation is the lesser of the 95% UCL or the maximum concentration from the 0-6 foot depth strata.

Table 7-45. Baseline HQ for Wetland Invertebrates

CAS Number	Constituent	Wetland Soil EPC[1] (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Low HQ (unitless)	High HQ (unitless)
		METALS				
7440-47-3	Chromium	1.12E+02	4.00E-01	NA	2.81E+02	NA
7440-48-4	Cobalt	1.59E+01	NA	NA	NA	NA
7440-50-8	Copper	1.20E+02	5.00E+01	NA	2.41E+00	NA
7439-89-6	Iron	4.17E+04	NA	NA	NA	NA
7439-95-4	Magnesium	1.23E+04	NA	NA	NA	NA
7439-96-5	Manganese	4.78E+02	NA	NA	NA	NA
7439-97-6	Mercury	8.22E-01	1.00E-01	NA	8.22E+00	NA
7440-22-4	Silver	1.39E+00	NA	NA	NA	NA
36643-28-4	Tri-*n*-butyltins Cation	1.20E-03	0.00E+00	0.00E+00	NA	NA
7440-28-0	Thallium	2.58E-01	NA	NA	NA	NA
7440-62-2	Vanadium	7.62E+01	NA	NA	NA	NA
7440-66-6	Zinc	1.98E+02	2.00E+02	NA	9.91E-01	NA
		PAHs/SVOCs				
92-52-4	1,1'-Byphenyl	9.10E-03	NA	NA	NA	NA
91-57-6	2-Methylnaphthalene	1.39E-02	NA	NA	NA	NA
59-50-7	4-Chloro-3-methylphenol	5.48E-03	NA	NA	NA	NA
106-47-8	4-Chloroaniline	1.35E-02	NA	NA	NA	NA
98-86-2	Acetophenone	3.80E-02	NA	NA	NA	NA
100-52-7	Benzaldehyde	4.12E-02	NA	NA	NA	NA
191-24-2	Benzo(g,h,i)perylene	1.44E-01	NA	NA	NA	NA
117-81-7	*bis*(2-ethylhexyl) Phthalate	8.23E-01	NA	NA	NA	NA
85-68-7	Butyl Benzyl Phthalate	4.90E-02	NA	NA	NA	NA
105-60-2	Caprolactam	3.09E-02	NA	NA	NA	NA
86-74-8	Carbazole	1.31E-02	NA	NA	NA	NA
132-64-9	Dibenzofuran	1.10E-02	NA	NA	NA	NA
84-66-2	Diethyl Phthalate	4.80E-03	NA	NA	NA	NA
84-74-2	Di-*n*-butyl Phthalate	9.05E-03	NA	NA	NA	NA
11-84-7	Diesel	8.60E+01	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	2.02E+02	NA	NA	NA	NA
NAV1000	LPAH	1.75E-01	2.00E+01	1.67E+02	8.74E-03	1.05E-03
NAV1001	HPAH	1.15E+00	8.40E+02	NA	1.37E-03	NA
		VOCs				
78-93-3	2-Butanone (MEK)	5.78E-02	NA	NA	NA	NA
67-64-1	Acetone	1.02E-02	NA	NA	NA	NA
110-82-7	Cyclohexane	1.41E-03	NA	NA	NA	NA
1634-04-4	Methyl tert-Butyl Ether	1.13E-03	NA	NA	NA	NA
108-87-2	Methylcyclohexane	2.49E-03	NA	NA	NA	NA
75-09-2	Methylene Chloride	3.20E-02	NA	NA	NA	NA
		PCBs/PESTICIDES				
1336-36-3	Total PCBs	2.56E-01	NA	NA	NA	NA
53-19-0	2,4 DDD	4.26E-03	NA	NA	NA	NA
3424-82-6	2,4 DDE	5.73E-05	NA	NA	NA	NA
789-02-6	2,4 DDT	1.16E-03	NA	NA	NA	NA
72-54-8	4,4 DDD	9.49E-03	NA	NA	NA	NA
72-55-9	4,4 DDE	2.87E-03	NA	NA	NA	NA
50-29-3	4,4 DDT	3.37E-03	NA	NA	NA	NA
58-89-9	g-BHC (Lindane)	5.05E-05	NA	NA	NA	NA
5103-71-9	a- Chlordane	2.49E-03	NA	NA	NA	NA
5103-73-1	cis Nonachlor	1.16E-03	NA	NA	NA	NA
5103-74-2	g-Chlordane	3.00E-03	NA	NA	NA	NA
1024-57-3	Heptachlor epoxide	2.30E-05	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	1.80E-03	NA	NA	NA	NA
319-85-7	*beta*-BHC	4.19E-05	NA	NA	NA	NA
60-57-1	Dieldrin	3.66E-03	NA	NA	NA	NA

Table 7-45. Baseline HQ for Wetland Invertebrates (page 2 of 2)

CAS Number	Constituent	Wetland Soil EPC1 (mg/kg)	Low Benchmark (mg/kg)	High Benchmark (mg/kg)	Low HQ (unitless)	High HQ (unitless)
33213-65-9	Endosulfan II	1.37E-03	NA	NA	NA	NA
72-43-5	Methoxychlor	4.26E-04	NA	NA	NA	NA
NAV120	Total DDDs	1.38E-02	NA	NA	NA	NA
NAV121	Total DDEs	2.93E-03	NA	NA	NA	NA
NAV123	Total DDT	7.01E-03	NA	NA	NA	NA
NAV122	Total DDTs	4.19E-03	NA	NA	NA	NA
DIOXIN/FURANS						
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.09E-04	NA	NA	NA	NA
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.48E-05	NA	NA	NA	NA
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.18E-06	NA	NA	NA	NA
39227-28-6	1,2,3,4,7,8-HxCDD	9.71E-07	NA	NA	NA	NA
70648-26-9	1,2,3,4,7,8-HxCDF	3.01E-06	NA	NA	NA	NA
57653-85-7	1,2,3,6,7,8-HxCDD	6.10E-06	NA	NA	NA	NA
57117-44-9	1,2,3,6,7,8-HxCDF	1.22E-06	NA	NA	NA	NA
19408-74-3	1,2,3,7,8,9-HxCDD	4.32E-06	NA	NA	NA	NA
72918-21-9	1,2,3,7,8,9-HxCDF	3.20E-07	NA	NA	NA	NA
40321-76-4	1,2,3,7,8-PeCDD	1.65E-06	NA	NA	NA	NA
57117-41-6	1,2,3,7,8-PeCDF	8.41E-07	NA	NA	NA	NA
60851-34-5	2,3,4,6,7,8-HxCDF	1.77E-06	NA	NA	NA	NA
57117-31-4	2,3,4,7,8-PeCDF	1.53E-06	NA	NA	NA	NA
1746-01-6	2,3,7,8-TCDD	1.30E-06	NA	NA	NA	NA
51207-31-9	2,3,7,8-TCDF	2.27E-06	NA	NA	NA	NA
3268-87-9	OCDD	8.26E-04	NA	NA	NA	NA
39001-02-0	OCDF	5.34E-05	NA	NA	NA	NA
30402-14-3	Tetrachlorodibenzofuran	1.83E-05	NA	NA	NA	NA
37871-00-4	Total HpCDD	3.15E-04	NA	NA	NA	NA
38998-75-3	Total HpCDF	7.28E-05	NA	NA	NA	NA
34465-46-8	Total HxCDD	6.48E-05	NA	NA	NA	NA
55684-94-1	Total HxCDF	3.48E-05	NA	NA	NA	NA
36088-22-9	Total PeCDD	9.63E-06	NA	NA	NA	NA
30402-15-4	Total PeCDF	2.80E-05	NA	NA	NA	NA
41903-57-5	Total TCDD	4.25E-06	NA	NA	NA	NA
NAV128	TEQ Birds	8.32E-06	NA	NA	NA	NA
NAV129	TEQ Mammals	7.13E-06	NA	NA	NA	NA

1. EPC for wetland invertebrates baseline evaluation is the lesser of the 95% UCL or the maximum concentration from the 0-1 foot depth strata.

Table 7-46. Baseline HQ for Wetland Receptors

CAS Number	Constituent	Song Sparrow		California Vole		Least Sandpiper		Burrowing Owl		Northern Harrier		Raccoon		Red Fox	
		Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs
Metals															
7440-36-0	Antimony	NA	NA	7.29E-01	1.56E-02	NA	NA	NA	NA	NA	NA	1.27E-01	2.71E-03	1.43E-01	3.06E-03
7440-38-2	Arsenic	1.06E+00	2.66E-01	5.43E-01	3.70E-02	2.39E+00	5.98E-01	1.95E-01	4.87E-02	5.08E-04	1.27E-04	8.08E-01	5.50E-02	5.36E-01	3.65E-02
7440-43-9	Cadmium	4.22E+00	5.32E-02	6.84E+00	5.95E-02	4.54E+00	5.73E-02	9.12E-01	1.15E-02	4.52E-02	5.70E-04	5.77E-01	5.02E-03	5.89E-01	5.12E-03
7440-47-3	Total Chromium	9.97E-01	1.70E-01	3.79E-01	1.56E-02	2.24E+00	3.82E-01	6.96E-01	1.19E-01	4.19E-02	7.14E-03	1.44E-01	5.96E-03	3.08E-01	1.27E-02
7440-50-8	Copper	2.45E+00	1.08E-01	1.22E+00	5.17E-03	4.52E+00	1.99E-01	1.44E+00	6.32E-02	8.78E-02	3.86E-03	2.34E-01	9.90E-04	5.22E-01	2.20E-03
7439-92-1	Lead	2.03E+02	3.26E-01	8.98E-01	3.73E-03	4.59E+02	7.35E-01	1.48E+02	2.36E-01	9.01E+00	1.44E-02	3.64E-01	1.51E-03	8.34E-01	3.46E-03
7439-96-5	Manganese	2.62E-01	2.62E-02	1.72E+00	1.48E-01	3.36E-01	3.36E-02	6.49E-02	6.49E-03	3.05E-03	3.05E-04	1.83E-01	1.58E-02	1.59E-01	1.37E-02
7439-98-7	Molybdenum	NA	NA	2.73E+00	2.73E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7440-02-0	Nickel	2.32E+00	5.67E-02	1.37E+01	5.76E-02	4.42E+00	1.08E-01	1.19E+00	2.92E-02	6.82E-02	1.67E-03	2.78E+00	1.17E-02	4.98E+00	2.10E-02
7782-49-2	Selenium	8.55E-01	2.12E-01	1.04E+00	4.30E-02	1.74E+00	4.31E-01	5.25E-01	1.30E-01	3.18E-02	7.86E-03	3.10E-01	1.28E-02	1.00E+00	4.13E-02
7440-62-2	Vanadium	5.43E+00	1.10E+00	1.52E-01	6.71E-02	1.22E+01	2.46E+00	5.35E+00	1.08E+00	3.57E-01	7.22E-02	6.38E-02	2.82E-02	1.90E-01	8.37E-02
7440-66-6	Zinc	4.74E+00	1.93E-01	9.43E-01	2.20E-02	9.65E+00	3.93E-01	3.31E+00	1.35E-01	2.09E-01	8.49E-03	2.92E-01	6.82E-03	1.02E+00	2.39E-02
PAHs/SVOCs															
117-81-7	*bis*(2-ethylhexyl) Phthalate	6.17E-01	NA	6.21E-03	6.21E-04	1.30E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs/Pesticides															
1336-36-3	Total PCBs	1.73E+00	1.22E-01	5.16E-03	1.45E-03	3.92E+00	2.78E-01	4.70E-01	3.33E-02	1.32E-02	9.34E-04	2.07E-02	5.81E-03	3.13E-02	8.80E-03
NAV123	Total DDT	8.35E-01	1.25E-01	7.01E-04	3.51E-05	1.84E+00	2.75E-01	6.10E+00	9.16E-01	4.89E-01	7.34E-02	3.57E-03	1.79E-04	3.36E-02	1.68E-03
5103-71-9	*alpha*- Chlordane	6.70E+00	8.77E-04	3.34E-05	1.67E-05	1.51E+01	1.97E-03	NA	NA	NA	NA	NA	NA	NA	NA
5103-74-2	*gamma*-Chlordane	8.44E+00	1.10E-03	2.99E-05	1.50E-05	1.90E+01	2.49E-03	NA	NA	NA	NA	NA	NA	NA	NA
5103-73-1	cis Nonachlor	1.91E+00	2.49E-04	2.34E-05	1.17E-05	4.25E+00	5.56E-04	NA	NA	NA	NA	NA	NA	NA	NA
39765-80-5	*trans*-nonachlor	3.07E+00	4.01E-04	3.09E-05	1.54E-05	6.86E+00	8.97E-04	NA	NA	NA	NA	NA	NA	NA	NA
60-57-1	Dieldrin	1.30E-01	1.15E-02	2.00E-02	2.36E-04	2.90E-01	2.57E-02	4.61E-01	4.08E-02	3.60E-02	3.19E-03	1.24E-01	1.46E-03	1.05E+00	1.24E-02

NA = HQ not able to be calculated

Table 7-47. Baseline HQ for North Pond Benthic Biota

CAS Number	Constituent	North Pond Sediment EPC (wet and dry)	Low Benchmark	High Benchmark	North Pond Low HQ	North Pond High HQ
		METALS				
7429-90-5	Aluminum	3.155E+04	NA	NA	NA	NA
7440-39-3	Barium	8.579E+01	NA	NA	NA	NA
7440-41-7	Beryllium	7.093E-01	NA	NA	NA	NA
7440-43-9	Cadmium	2.400E+00	1.2	9.6	2.000E+00	2.500E-01
7440-47-3	Chromium	1.126E+02	81	370	1.390E+00	3.043E-01
7440-48-4	Cobalt	1.435E+01	NA	NA	NA	NA
7440-50-8	Copper	7.623E+01	34	270	2.242E+00	2.823E-01
7439-89-6	Iron	4.383E+04	NA	NA	NA	NA
7439-92-1	Lead	5.467E+01	46.7	218	1.171E+00	2.508E-01
7439-95-4	Magnesium	1.860E+04	NA	NA	NA	NA
7439-96-5	Manganese	4.988E+02	0	NA	NA	NA
7439-97-6	Mercury	3.125E+00	0.15	0.71	2.083E+01	4.401E+00
7439-98-7	Molybdenum	3.196E+00	NA	NA	NA	NA
7440-02-0	Nickel	7.890E+01	20.9	51.6	3.775E+00	1.529E+00
7782-49-2	Selenium	1.384E+00	NA	NA	NA	NA
7440-22-4	Silver	9.741E-01	1	3.7	9.741E-01	2.633E-01
7440-28-0	Thallium	2.996E-01	NA	NA	NA	NA
7440-62-2	Vanadium	7.956E+01	NA	NA	NA	NA
7440-66-6	Zinc	1.937E+02	150	410	1.291E+00	4.724E-01
		PAHs/SVOCs				
106-44-5	4-Methylphenol	7.352E-02	NA	NA	NA	NA
83-32-9	Acenaphthene	1.594E-02	0.016	0.5	9.963E-01	3.188E-02
98-86-2	Acetophenone	8.300E-02	NA	NA	NA	NA
100-52-7	Benzaldehyde	7.437E-02	NA	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	5.741E-02	NA	NA	NA	NA
191-24-2	Benzo(g,h,i)perylene	5.361E-02	NA	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	2.866E-02	NA	NA	NA	NA
86-74-8	Carbazole	2.400E-03	NA	NA	NA	NA
132-64-9	Dibenzofuran	7.700E-03	NA	NA	NA	NA
11-84-7	Diesel	1.613E+02	NA	NA	NA	NA
8006-61-9	Gasoline	1.376E+01	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	7.328E+02	NA	NA	NA	NA
NAV1000	LPAH	7.160E-02	0.552	3.16	1.297E-01	2.266E-02
NAV1001	HPAH	4.683E-01	1.7	9.6	2.755E-01	4.878E-02
		VOCs				
67-64-1	Acetone	1.631E-01	NA	NA	NA	NA
75-15-0	Carbon Disulfide	1.582E-02	NA	NA	NA	NA
108-90-7	Chlorobenzene	2.912E-03	NA	NA	NA	NA
75-09-2	Methylene Chloride	1.651E-02	NA	NA	NA	NA
		PCBs/PESTICIDES				
1336-36-3	Total PCBs	8.423E-02	0.0227	0.18	3.711E+00	4.680E-01
5103-73-1	cis Nonachlor	3.100E-04	NA	NA	NA	NA
5103-74-2	g-Chlordane	7.200E-04	0.0005	0.006	1.440E+00	1.200E-01
1024-57-3	Heptachlor epoxide	1.675E-04	NA	NA	NA	NA
39765-80-5	trans-nonachlor	2.031E-04	NA	NA	NA	NA
60-57-1	Dieldrin	6.300E-04	0.00002	0.008	3.150E+01	7.875E-02
33213-65-9	Endosulfan II	9.900E-04	NA	NA	NA	NA
1031-07-8	Endosulfan sulfate	1.130E-03	NA	NA	NA	NA
72-43-5	Methoxychlor	2.100E-04	NA	NA	NA	NA
NAV120	Total DDDs	3.528E-03	0.002	0.02	1.764E+00	1.764E-01
NAV121	Total DDEs	2.011E-03	0.002	0.015	1.005E+00	1.340E-01
NAV123	Total DDT	5.645E-03	0.00158	0.0461	3.573E+00	1.225E-01

Table 7-48. Baseline HQ for South Pond Benthic Biota

CAS Number	Constituent	South Pond EPC (wet and dry)		Low Benchmark	High Benchmark	South Pond Low Level HQ	South Pond High Level HQ
			METALS				
7429-90-5	Aluminum	1.368E+04	MG/KG_DRYWT	NA	NA	NA	NA
7440-39-3	Barium	7.117E+01	MG/KG_DRYWT	NA	NA	NA	NA
7440-41-7	Beryllium	4.000E-01	MG/KG_DRYWT	NA	NA	NA	NA
7440-43-9	Cadmium	2.920E+00	MG/KG_DRYWT	1.20E+00	9.60E+00	2.43E+00	3.04E-01
7440-48-4	Cobalt	8.226E+00	MG/KG_DRYWT	NA	NA	NA	NA
7440-50-8	Copper	3.298E+01	MG/KG_DRYWT	3.40E+01	2.70E+02	9.70E-01	1.22E-01
18540-29-9	Hexavalent Chromium	ND	MG/KG_DRYWT	NA	NA	NA	NA
7439-89-6	Iron	2.033E+04	MG/KG_DRYWT	NA	NA	NA	NA
7439-95-4	Magnesium	1.626E+04	MG/KG_DRYWT	NA	NA	NA	NA
7439-96-5	Manganese	1.624E+03	MG/KG_DRYWT	NA	NA	NA	NA
7439-97-6	Mercury	2.183E-01	NG/G_DRYWT	1.50E-01	7.10E-01	1.46E+00	3.07E-01
7440-02-0	Nickel	4.581E+01	MG/KG_DRYWT	2.09E+01	5.16E+01	2.19E+00	8.88E-01
7782-49-2	Selenium	1.658E+00	MG/KG_DRYWT	NA	NA	NA	NA
7440-28-0	Thallium	1.262E-01	MG/KG_DRYWT	NA	NA	NA	NA
7440-62-2	Vanadium	3.961E+01	MG/KG_DRYWT	NA	NA	NA	NA
			PAHs/SVOCs				
59-50-7	4-Chloro-3-methylphenol	8.992E-03	UG/KG_DRYWT	NA	NA	NA	NA
83-32-9	Acenaphthene	1.002E-02	UG/KG_DRYWT	1.60E-02	5.00E-01	6.26E-01	2.00E-02
98-86-2	Acetophenone	6.254E-02	UG/KG_DRYWT	NA	NA	NA	NA
100-52-7	Benzaldehyde	7.211E-02	UG/KG_DRYWT	NA	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	3.512E-02	UG/KG_DRYWT	NA	NA	NA	NA
191-24-2	Benzo(g,h,i)perylene	3.655E-02	UG/KG_DRYWT	NA	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	1.901E-02	UG/KG_DRYWT	NA	NA	NA	NA
86-74-8	Carbazole	1.600E-03	UG/KG_DRYWT	NA	NA	NA	NA
11-84-7	Diesel	9.600E+01		NA	NA	NA	NA
8006-61-9	Gasoline	1.850E+01		NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	6.500E+02		NA	NA	NA	NA
NAV1000	LPAH	9.938E-02		5.52E-01	3.16E+00	1.80E-01	3.14E-02
NAV1001	HPAH	3.544E-01		1.70E+00	9.60E+00	2.08E-01	3.69E-02
			VOCs				
78-93-3	2-Butanone (MEK)	2.686E-02	UG/KG_DRYWT	NA	NA	NA	NA
67-64-1	Acetone	3.092E-01	UG/KG_DRYWT	NA	NA	NA	NA
75-15-0	Carbon Disulfide	2.511E-02	UG/KG_DRYWT	NA	NA	NA	NA
75-09-2	Methylene Chloride	8.625E-03	UG/KG_DRYWT	NA	NA	NA	NA
			PCBs/PESTICIDES				
1336-36-3	Total PCBs	5.303E-02	NG/G_DRYWT	2.27E-02	1.80E-01	2.34E+00	2.95E-01
5103-71-9	a- Chlordane	3.591E-04	NG/G_DRYWT	5.00E-04	6.00E-03	7.18E-01	5.99E-02
5103-73-1	cis Nonachlor	2.531E-04	NG/G_DRYWT	NA	NA	NA	NA
5103-74-2	g-Chlordane	5.900E-04	NG/G_DRYWT	5.00E-04	6.00E-03	1.18E+00	9.83E-02
39765-80-5	*trans*-nonachlor	1.710E-04	NG/G_DRYWT	NA	NA	NA	NA
33213-65-9	Endosulfan II	1.388E-04	NG/G_DRYWT	NA	NA	NA	NA
NAV120	Total DDDs	6.115E-03		2.00E-03	2.00E-02	3.06E+00	3.06E-01
NAV121	Total DDEs	2.233E-03		2.00E-03	1.50E-02	1.12E+00	1.49E-01
NAV123	Total DDT	6.601E-03		1.58E-03	4.61E-02	4.18E+00	1.43E-01
NAV122	Total DDTs	1.624E-03		1.00E-03	7.00E-03	1.62E+00	2.32E-01

Table 7-49. Baseline HQ for North Pond Aquatic Biota

CAS Number	Constituent	North Pond Water EPC (Wet and Dry Season)	Low Benchmark	High Benchmark	North Pond Low HQ	North Pond High HQ
		METALS				
7429-90-5	Aluminum	3.827E+01	NA	NA	NA	NA
7440-39-3	Barium	2.104E+02	NA	NA	NA	NA
7439-89-6	Iron	9.940E+02	NA	NA	NA	NA
7439-95-4	Magnesium	3.175E+06	NA	NA	NA	NA
7439-96-5	Manganese	5.592E+02	NA	NA	NA	NA
7439-98-7	Molybdenum	2.820E+00	NA	NA	NA	NA
7440-62-2	Vanadium	1.318E+01	NA	NA	NA	NA
		PAHs/SVOCs				
123-91-1	1,4 Dioxane	2.600E+00	NA	NA	NA	NA
95-48-7	2-Methylphenol	1.776E-01	NA	NA	NA	NA
106-44-5	4-Methylphenol	6.030E-01	NA	NA	NA	NA
100-01-6	4-Nitroaniline	5.002E-01	NA	NA	NA	NA
98-86-2	Acetophenone	2.200E-01	NA	NA	NA	NA
100-52-7	Benzaldehyde	1.300E+00	NA	NA	NA	NA
105-60-2	Caprolactam	2.100E+00	NA	NA	NA	NA
86-74-8	Carbazole	2.600E-01	NA	NA	NA	NA
132-64-9	Dibenzofuran	1.700E+00	NA	NA	NA	NA
11-84-7	Diesel	2.048E+03	NA	NA	NA	NA
8006-61-9	Gasoline	4.829E+02	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	1.693E+03	NA	NA	NA	NA
NAV1000	LPAH	6.331E+00	235	2350	2.694E-02	2.694E-03
NAV1001	HPAH	4.482E-01	30	300	1.494E-02	1.494E-03
		VOCs				
78-93-3	2-Butanone (MEK)	1.929E+00	NA	NA	NA	NA
67-64-1	Acetone	1.990E+01	NA	NA	NA	NA
75-15-0	Carbon Disulfide	4.566E-01	NA	NA	NA	NA
74-87-3	Chloromethane	8.864E-02	NA	NA	NA	NA
98-82-8	Isopropylbenzene	6.478E-02	NA	NA	NA	NA
100-42-5	Styrene	2.990E-01	NA	NA	NA	NA

Table 7-50. Baseline HQ for South Pond Aquatic Biota

CAS Number	Constituent	South Pond Water EPC (Wet and Dry Season)	Low Benchmark	High Benchmark	South Pond Low HQ	South Pond High HQ
METALS						
7440-39-3	Barium	3.685E+02	NA	NA	NA	NA
7439-89-6	Iron	6.980E+01	NA	NA	NA	NA
7439-95-4	Magnesium	5.810E+06	NA	NA	NA	NA
7439-96-5	Manganese	6.480E+03	NA	NA	NA	NA
7440-02-0	Nickel	2.378E+01	8.2	74	2.900E+00	3.213E-01
7440-62-2	Vanadium	1.088E+01	NA	NA	NA	NA
PAHs/SVOCs						
123-91-1	1,4 Dioxane	1.200E+00	NA	NA	NA	NA
95-48-7	2-Methylphenol	2.215E-01	NA	NA	NA	NA
106-44-5	4-Methylphenol	9.035E-01	NA	NA	NA	NA
98-86-2	Acetophenone	2.700E-01	NA	NA	NA	NA
100-52-7	Benzaldehyde	5.900E-01	NA	NA	NA	NA
11-84-7	Diesel	3.600E+03	NA	NA	NA	NA
8006-61-9	Gasoline	6.900E+02	NA	NA	NA	NA
NAV0087	Residual Range Organics (RRO)	2.458E+03	NA	NA	NA	NA
NAV1000	LPAH	3.210E-01	235	2350	1.366E-03	1.366E-04
NAV1001	HPAH	8.270E-01	30	300	2.757E-02	2.757E-03
VOCs						
78-93-3	2-Butanone (MEK)	3.550E+00	NA	NA	NA	NA
67-64-1	Acetone	5.000E+01	NA	NA	NA	NA
74-83-9	Bromomethane	2.211E-01	NA	NA	NA	NA
75-15-0	Carbon Disulfide	3.002E-01	NA	NA	NA	NA
74-87-3	Chloromethane	5.764E-01	NA	NA	NA	NA
100-42-5	Styrene	6.237E-02	NA	NA	NA	NA
PCBs/PESTICIDES						
37680-73-2	Cl5(101)	2.473E-02	NA	NA	NA	NA
1336-36-3	Total PCBs	4.946E-02	0.03	NA	1.649E+00	NA
5103-74-2	g-Chlordane	1.051E-02	0.004	0.09	2.628E+00	1.168E-01

Table 7-51. Baseline HQ for Pond Receptors

CAS Number	Constituent	Mallard		Great Blue Heron		Least Sandpiper		Raccoon	
		Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs
Metals									
7440-38-2	Arsenic	1.43E-02	3.58E-03	3.99E-02	9.97E-03	1.21E+00	3.03E-01	4.05E-01	2.76E-02
7440-43-9	Cadmium	1.65E-01	2.08E-03	1.02E-01	1.28E-03	2.73E+00	3.44E-02	4.71E-01	4.10E-03
7440-50-8	Copper	4.04E-02	1.78E-03	1.61E-01	7.08E-03	9.32E-01	4.10E-02	7.82E-02	3.30E-04
7439-92-1	Lead	8.29E-01	1.33E-03	5.48E+00	8.76E-03	3.19E+01	5.11E-02	3.94E-02	1.64E-04
7439-97-6	Mercury	NA	NA	5.92E-01	1.28E-01	8.05E-03	1.74E-03	NA	NA
7440-02-0	Nickel	3.60E-02	8.83E-04	6.32E-02	1.55E-03	9.37E-01	2.30E-02	9.07E-01	3.82E-03
7782-49-2	Selenium	3.50E-02	8.65E-03	7.34E-01	1.82E-01	2.61E+00	6.45E-01	2.82E-01	1.16E-02
7440-62-2	Vanadium	3.84E-02	7.78E-03	2.73E+00	5.52E-01	1.82E+00	3.68E-01	1.19E-02	5.26E-03
7440-66-6	Zinc	9.29E-02	3.78E-03	6.76E-01	2.75E-02	5.52E+00	2.25E-01	1.28E-01	2.99E-03
PCBs/Pesticides									
5103-73-1	cis Nonachlor	1.19E-02	1.56E-06	NA	NA	8.86E-01	1.16E-04	6.20E-06	3.10E-06
39765-80-5	*trans*-nonachlor	2.41E-02	3.15E-06	NA	NA	1.91E+00	2.50E-04	1.22E-05	6.09E-06

Table 7-52. Comparison of PCB Results Based on NOAA and Sum of Aroclors Concentrations

Parameter	California Vole		Western Meadowlark		Burrowing Owl		Northern Harrier		Raccoon		Red Fox		Song Sparrow		Least Sandpiper		Mallard		Great Blue Heron	
	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs	Low Benchmark HQs	High Benchmark HQs
Upland Total PCB (NOAA)	4.54E-02	1.28E-02	3.65E+00	2.59E-01	1.35E+00	9.56E-02	1.03E-01	7.30E-03	5.78E-02	1.62E-02	9.79E-02	2.75E-02								
Upland Total PCB (Aroclor)	8.92E-02	2.51E-02	2.32E+01	1.64E+00	7.28E+00	5.16E-01	4.07E-01	2.88E-02	3.35E-01	9.41E-02	4.56E-01	1.28E-01								
Wetland Total PCB (NOAA)	5.16E-03	1.45E-03			4.70E-01	3.33E-02	1.32E-02	9.34E-04	2.07E-02	5.81E-03	3.13E-02	8.80E-03	1.73E+00	1.22E-01	3.92E+00	2.78E-01				
Wetland Total PCB (Aroclor)	1.00E-02	2.82E-03			9.95E-01	7.05E-02	2.79E-02	1.98E-03	4.37E-02	1.23E-02	6.63E-02	1.86E-02	3.66E+00	2.59E-01	8.30E+00	5.88E-01				
Pond Total PCB (NOAA)									2.03E-03	5.69E-04					4.33E-01	3.07E-02	4.91E-03	3.48E-04	1.47E-01	1.04E-02
Pond Total PCB (Aroclor)									2.03E-03	5.72E-04					4.33E-01	3.07E-02	4.92E-03	3.48E-04	1.72E-01	1.22E-02

Table 7-53. Potential Risk Driver Summary Table

CAS Number	Constituent	Upland				Wetland				Ponds			
		Mammals	Birds	Inverts	Plants	Mammals	Birds	Inverts	Plants	Mammals	Birds	Benthic Inverts	Water Column
7440-36-0	Antimony	bIHQ<1	NE/SL	sIHQ<1	X	bIHQ<1	NE/SL	sIHQ<1	sIHQ<1	sIHQ<1	NE/SL	sIHQ<1	
7440-38-2	Arsenic	sIHQ<1	sIHQ<1	sIHQ<1	sIHQ<1	bIHQ<1	X	sIHQ<1	bIHQ<1	sIHQ<1	X	sIHQ<1	sIHQ<1
7440-43-9	Cadmium	X	X	sIHQ<1	bIHQ<1	X	X	sIHQ<1	sIHQ<1	sIHQ<1	X	X	
7440-47-3	Chromium	bIHQ<1	X	X	X	X	X	X	X	sIHQ<1	sIHQ<1	X	
7440-48-4	Cobalt	sIHQ<1	NE/SL	NE/SL	bIHQ<1	sIHQ<1	NE/SL	NE/SL	bIHQ<1	sIHQ<1	NE/SL	NE/SL	
7440-50-8	Copper	bIHQ<1	X	X	X	X	X	X	bIHQ<1	sIHQ<1	bIHQ<1	X	
7439-92-1	Lead	bIHQ<1	X	sIHQ<1	X	bIHQ<1	X	sIHQ<1	bIHQ<1	sIHQ<1	X	X	sIHQ<1
7439-96-5	Manganese	X	bIHQ<1	NE/SL	bIHQ<1	X	sIHQ<1	NE/SL	bIHQ<1	sIHQ<1	sIHQ<1	NE/SL	NE/SL
7439-97-6	Mercury	bIHQ<1	X	X	X	sIHQ<1	sIHQ<1	X	X	sIHQ<1	bIHQ<1	X	
7439-98-7	Molybdenum	X	sIHQ<1	NE/SL	X	X	X	NE/SL	bIHQ<1	sIHQ<1	sIHQ<1	NE/SL	NE/SL
7440-02-0	Nickel	X	X	sIHQ<1	X	X	X	sIHQ<1	X	sIHQ<1	bIHQ<1	X	X
7782-49-2	Selenium	bIHQ<1	bIHQ<1	sIHQ<1	sIHQ<1	X	X	sIHQ<1	bIHQ<1	sIHQ<1	X		
7440-22-4	Silver	NE/SL	NE/SL	NE/SL	X	NE/SL	NE/SL	NE/SL	bIHQ<1	NE/SL	NE/SL	X	
7440-62-2	Vanadium	bIHQ<1	X	NE/SL	X	bIHQ<1	X	NE/SL	X	sIHQ<1	X		NE/SL
7440-66-6	Zinc	X	X	bIHQ<1	X	X	X	bIHQ<1	X	sIHQ<1	X	X	
83-32-9	Acenaphthene	NE/SL	NE/SL	sIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	X	sIHQ<1
218-01-9	Chrysene	NE/SL	NE/SL	sIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	
206-44-0	Fluoranthene	NE/SL	NE/SL	sIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	sIHQ<1
86-73-7	Fluorene	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	
91-20-3	Naphthalene	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	
85-01-8	Phenanthrene	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	sIHQ<1
129-00-0	Pyrene	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	NE/SL	NE/SL	sIHQ<1	sIHQ<1
NAVLMW	LPAH	bIHQ<1	bIHQ<1	bIHQ<1	X	sIHQ<1	sIHQ<1	sIHQ<1	sIHQ<1	sIHQ<1	sIHQ<1	NE/SL	
NAVHMW	HPAH	bIHQ<1	bIHQ<1	sIHQ<1	X	sIHQ<1	sIHQ<1	sIHQ<1	bIHQ<1	sIHQ<1	sIHQ<1	NE/SL	
1336-36-3	Total PCBs	bIHQ<1	X	NE/SL	sIHQ<1	bIHQ<1	X	NE/SL	sIHQ<1	sIHQ<1	sIHQ<1	X	X
	a-chlordane	sIHQ<1	NE/SL	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1		
5103-74-2	g-chlordane	sIHQ<1	NE/SL	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	X	X
39765-80-5	*trans*-nonachlor	sIHQ<1	NE/SL	NE/SL	NE/SL	sIHQ<1	NE/SL	NE/SL	NE/SL	sIHQ<1	X	NE/SL	
60-57-1	Dieldrin	X	bIHQ<1	NE/SL	NE/SL	X	bIHQ<1	NE/SL	NE/SL	sIHQ<1	sIHQ<1	X	
NAV123	Total DDT	bIHQ<1	X	NE/SL	NE/SL	bIHQ<1	X	NE/SL	NE/SL	sIHQ<1	sIHQ<1	X	
NAV128	TEQ Birds	NA	bIHQ<1	NA	NA	NA	sIHQ<1	NA	NA	NA	NE/SL	NA	NA
NAV129	TEQ Mammals	X	NA	NA	NA	sIHQ<1	NA	NA	NA	NE/SL	NA	NA	NA

Notes:

X	= Low Baseline Assessment HQ>1
X	= Low Baseline Assessment HQ>100 and/or High HQ>1
	= COPECs not considered as potential risk drivers as representative site-specific bioassays indicate no toxicity.
sIHQ<1	= Screening level HQ <1, not evaluated in baseline assessment
bIHQ<1	= Baseline HQs for high and low thresholds below 1
NE/SL	= Not evaluated in screening-level assessment due to lack of necessary inputs (e.g., BAFs)
NA	= Not Applicable

Table 7-54. Summary of IR Site 2 and CCSP Low TRV Baseline HQs for Metals, Avian Receptors in Wetland Area

COPEC	IR Site 2 Low TRV Baseline HQ	CCSP Low TRV Baseline HQ
Arsenic	2.4	3.0
Chromium	2.2	2.4
Copper	4.5 (0.1)	2.3
Lead	459 (0.05)	132
Nickel	4.4	4.2
Selenium	1.7	2.4
Vanadium	12.2	16.3
Zinc	9.7 (0.4)	7.6

Note: high TRV HQs are in parentheses.

Table 7-55. Summary of IR Site 2 and CCSP Low TRV Baseline HQs for Metals, Mammals in Wetland Area

COPEC	IR Site 2 Low TRV Baseline HQ	CCSP Low TRV Baseline HQ
Manganese	1.7	3.0
Molybdenum	2.7	6.7
Nickel	13.68	13.56

Table 7-56. Summary of IR Site 2 and CCSP Low TRV Baseline HQs for Metals, Avian Receptors in Wetland Pond

COPEC	IR Site 2 Low Baseline HQ	CCSP Low Baseline HQ
Arsenic	1.2	3.1
Lead	3.2	3.2
Selenium	2.6	2.6
Vanadium	1.8	2.5
Zinc	5.5	6.4

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SSIC NO. 5090.3

TABLES

FINAL
REMEDIAL INVESTIGATION REPORT
IR SITE 2, WEST BEACH LANDFILL AND WETLANDS

DATED 23 JUNE 2006

Table 8-1. Potential Human Health and Ecological Risk Drivers for the Landfill Portion of IR Site 2

Exposure Media	Exposure Route	Chemical	Receptors: Human				Receptors: Ecological			
			1 - Park Ranger/Tour Guide	2 - Park Ranger/Restoration Supervisor	3 - Site Visitor	4 - Construction/Excavation Worker	Mammals	Birds	Invertebrates	Plants
Surface Soil	Dermal/Direct Contact	Chromium							x	
		Copper							x	
		Mercury							x	
		Benzo[a]pyrene	x							
		Benzo[k]fluoranthene	x		x					
		Total PCBs[a]	x							
	External Radiation	Ra-228	x							
	Ingestion	Arsenic	x		x					
		Cadmium					x	x		
		Chromium						x		
		Copper						x		
		Lead						x		
		Manganese					x			
		Mercury						x		
		Molybdenum					x			
		Nickel					x	x		
		Vanadium						x		
		Zinc					x	x		
		Benzo[a]pyrene	x		x					
		Benzo[k]fluoranthene	x		x					
		Dieldrin					x			
		Total PCBs[a]	x							
		Total DDx						x		
		TEQ (PCDD/PCDF)					x			
		Ra-228	x							
Combined Surface/Subsurface Soil	External Radiation	Ra-226	x		x					
		Ra-228	x							
	Inhalation	Naphthalene				x				
	Root Contact	Antimony								x
		Chromium								x
		Copper								x
		Lead								x
		Mercury								x
		Nickel								x
		Molybdenum								x
		Silver								x
		Vanadium								x
		Zinc								x
		Acenaphthene								x
		Chrysene								x
		Fluoranthene								x
		Fluorene								x
		Naphthalene								x
		Phenanthrene								x
		Pyrene								x
		HPAHs								x
		LPAHs								x
Shallow Groundwater	Dermal Contact	Total PCBs		x		x				
		HCH (delta)				x				
		TEQ (PCDD/PCDF)				x				

Yellow shading indicates CCSP mean concentration is higher than that detected in IR Site 2 media.

Orange shading indicates CCSP mean and maximum concentration is higher than that detected in IR Site 2 media.

(a) Total PCBs for these individual exposure routes do not sum to unacceptable risks in and of themselves; however, they do present a potentially unacceptable risk when summed together.

Table 8-2. Potential Human Health and Ecological Risk Drivers for the Wetland Portion of IR Site 2

			Receptors									
			Human				Ecological					
Exposure Media	Exposure Route	Chemical	1 - Park Ranger/Tour Guide	2 - Park Ranger/Restoration Supervisor	3 - Site Visitor	4 - Construction/Excavation Worker	Mammals	Birds	Terrestrial Invertebrates	Plants	Benthic Invertebrates	Fish and/or Water Column Invertebrates
Surface Soil	Dermal/Direct Contact	Arsenic	x		x							
		Chromium							x			
		Copper							x			
		Mercury							x			
		Benzo[k]fluoranthene	x		x							
	Ingestion	Arsenic	x		x			x				
		Cadmium					x	x				
		Chromium					x	x				
		Copper					x	x				
		Lead						x				
		Manganese					x					
		Molybdenum					x	x				
		Nickel					x	x				
		Selenium					x	x				
		Vanadium						x				
		Zinc					x	x				
		Benzo[k]fluoranthene	x		x							
		alpha-chlordane						x				
		gamma-chlordane						x				
		Dieldrin					x					
		Total DDx						x				
		Total PCBs						x				
Combined Surface/Subsurface Soil	External Radiation	Ra-226	x									
		Ra-228	x									
	Root Contact	Chromium								x		
		Mercury								x		
		Nickel								x		
		Vanadium								x		
		Zinc								x		
Shallow Groundwater	Dermal/Direct Contact	Dieldrin		x		x						
		Total PCBs		x		x						
Sediment	Ingestion	Arsenic						x				
		Cadmium						x				
		Lead[a]						x[a]				
		Selenium						x				
		Vanadium						x				
		Zinc[a]						x[a]				
		trans-Nonachlor						x				
Surface Water	Dermal/Direct Contact	Nickel										
		Benzo[a]pyrene		x								
		Dibenz[a,h]anthracene		x								
		gamma-Chlordane										
		Total PCBs										

Yellow shading indicates CCSP mean concentration is higher than that detected in IR Site 2 media.
Orange shading indicates CCSP mean and maximum concentration is higher than that detected in IR Site 2 media.
(a) CCSP mean and maximum concentration higher than that detected in South Pond, but not the North Pond.

APPENDIX A

AERIAL PHOTOGRAPH REVIEW

AERIAL PHOTOGRAPHS AVAILABLE

11-18-1930 (Photograph ID A-21)
8-9-1938 (Photograph ID 113)
5-30-1940 (Photograph ID A-18)
3-24-1947 (Photograph ID A-13)
9-6-1949 (Photograph ID A-25)
8-14-1953 (Photograph ID A-29)
5-3-1957 (Photograph ID A-28)
7-25-1963 (Photograph ID 120/A-6)
4-20-1966 (Photograph ID A-31)
4-10-1968 (Photograph ID AV-844)
5-19-1969 (Photograph ID AV-902)
9-4-1975 (Photograph ID A-36)
5-13-1985 (Photograph ID A-38)
6-12-1990 (Photograph ID A-15)
4-8-1992 (Photograph ID A-40)
9-30-1993 (Photograph ID A-33)
12-23-1994 (Photograph ID 5097-01)

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
11-18-1930 (Photograph ID A-21)

OBSERVATIONS
In 1930, the United States Army acquired the installation property that would later become NAS Alameda from the City of Alameda. Construction of the NAS began in roughly 1931 with the creation of land on shallow intertidal and marginal open water areas through dredging and filling. The intertidal areas reportedly consisted of deep deposits of Bay Mud interspersed with numerous drainage channels and sloughs. Overall, very little activity towards the construction Alameda Point appears to have begun by the time of the 11-18-1930 photograph. A portion of the Oakland Inner Harbor is present at the northern end of what will become NAS Alameda, but the harbor does not extend as far west as it currently does. The West Beach Landfill and Wetlands do not exist in the 11-18-1930 photograph, and no activities specifically related to the construction of this portion of NAS Alameda are apparent. The area where the West Beach Landfill and Wetlands will ultimately be constructed is characterized by open water in the 11-18-1930 photograph.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
8-9-1938 (Photograph ID 113)

OBSERVATIONS
In 1936, the Navy acquired from the Army title to the area being developed as NAS Alameda. Portions of NAS Alameda (primarily the eastern and northeastern sections of the facility) are visibly under construction in the 8-9-1938 photograph. Dredging and filling activities appear to be underway, but only a minor amount of civil infrastructure (e.g., roads and buildings) appears to exist across the constructed portions of the facility. The West Beach Landfill and Wetlands do not exist in the 8-9-1938 photograph, and no activities specifically related to the construction of this portion of NAS Alameda are apparent. The area where the West Beach Landfill and Wetlands will ultimately be constructed is still characterized by open water in the 8-9-1938 photograph.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
5-30-1940 (Photograph ID A-18)

OBSERVATIONS
Additional portions of NAS Alameda are visibly under construction in the 5-30-1940 photograph (primarily the central portion of the facility) through dredging and filling, including the area immediately east of the area that will ultimately become the West Beach Landfill and Wetlands. The far eastern portion of the NAS appears to contain roadways and several buildings, and the Seaplane Lagoon (in the southeastern corner of the NAS) appears nearly complete. The West Beach Landfill and Wetlands do not exist in the 5-3-1940 photograph, and no activities specifically related to the construction of this portion of NAS Alameda are apparent (although the seawall that will ultimately form the eastern boundary of the area containing the West Beach Landfill and Wetlands is apparently under construction). The area where the West Beach Landfill and Wetlands will ultimately be constructed is still characterized by open water in the 5-30-1940 photograph. Historical information indicates that the NAS was officially commissioned in November 1940.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
3-24-1947 (Photograph ID A-13)

OBSERVATIONS
The majority of NAS Alameda appears to have been completely constructed by the time of the 3-24-1947 photograph. The eastern and central portions of the facility include numerous buildings and extensive roadways. The main runway and tarmac area of the facility immediately east of the location of the West Beach Landfill and Wetlands appears to be largely complete. In addition, Seaplane Lagoon appears complete and the main ship berthing piers are present southeast of the lagoon. The extreme northwestern portion of the NAS is present, which includes the area presently defined as the 1943 to 1956 disposal area (i.e., IR Site 1). Some degree of waste disposal is apparent in the far northwest corner of the NAS. The West Beach Landfill and Wetlands do not exist in the 3-24-1947 photograph, and no activities specifically related to the construction of this portion of the NAS are apparent. A small area along the seawall that will form the eastern boundary of the area containing the West Beach Landfill and Wetlands appears disturbed, but the nature of this disturbance cannot be determined from the photograph. This area could be related to additional dredging in the offshore area, construction at the runway/tarmac area, or repair of the seawall, but given the documented history of IR Site 2 it does not likely reflect activities specifically related to the West Beach Landfill and Wetlands. The area where the West Beach Landfill and Wetlands will ultimately be constructed is characterized by open water and intertidal land (likely created during the construction of surrounding land) in the 3-24-1947 photograph. It appears from the 3-24-1947 photograph that the only substantial portions of NAS Alameda yet to be completed are the area that will become the West Beach Landfill and Wetlands and additional land that will ultimately be added immediately west of Seaplane Lagoon.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
9-6-1949 (Photograph ID A-25)

OBSERVATIONS
The 9-6-1949 photograph shows only the far northwestern portion of NAS Alameda, including the far northern portion of the area that will ultimately become the West Beach Landfill and Wetlands. Based on the portions of the NAS that are visible, there are no substantial differences between the 3-24-1947 photograph and the 9-6-1949 photograph. The West Beach Landfill and Wetlands do not appear to exist, and no activities specifically related to the construction of this portion of the NAS are apparent. This area remains characterized by open water and intertidal land in the 9-6-1949 photograph.

A-25

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
8-14-1953 (Photograph ID A-29)

OBSERVATIONS
Like the 9-6-1949 photograph, the 8-14-1953 photograph shows only the far northwestern portion of NAS Alameda, including the far northern portion of the area that will ultimately become the West Beach Landfill and Wetlands. Limited construction activities appear to have been completed in the area that will ultimately be the West Beach Landfill and Wetlands. Specifically, a small amount of land appears to have been created in what will become the far northern part of IR Site 2 (i.e., the interior margin), and it appears that two bunkers and an access road have been constructed in this location. The location and appearance of the two bunkers are consistent with two earthen ammunition bunkers that currently exist at the former NAS. The majority of the area that will become the West Beach Landfill and Wetlands remains characterized by open water and intertidal land. Additional runway and tarmac infrastructure appears to have been constructed in the area immediately north of what will become the West Beach Landfill and Wetlands.

A-29

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
5-3-1957 (Photograph ID A-28)

OBSERVATIONS
Like the 9-6-1949 and 8-14-1953 photographs, the 5-3-1957 photograph shows only the far northwestern portion of NAS Alameda, including the far northern portion of the West Beach Landfill and Wetlands. Conditions throughout the portion of NAS Alameda visible in the 5-3-1957 photograph appear largely unchanged from the 8-14-1953 photograph. At the location that will ultimately become the West Beach Landfill and Wetlands, additional construction appears to be underway. Specifically, it appears that a seawall has been constructed along the western edge of what will become IR Site 2 (only the northern portion of the site is visible in the photograph, so it is not possible to verify the existence of this seawall around the entire site), and some amount of filling and/or dewatering appears to be occurring inside this seawall. No disposal activities appear to be occurring as yet at IR Site 2, and the majority of the site appears to be intertidal mudflat or shallow open water. This evidence of preliminary construction of the West Beach Landfill and Wetlands is consistent with historical facility information, which suggests that construction of the site began in approximately 1956.

A-28

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
7-25-1963 (Photograph ID 120/A-6)

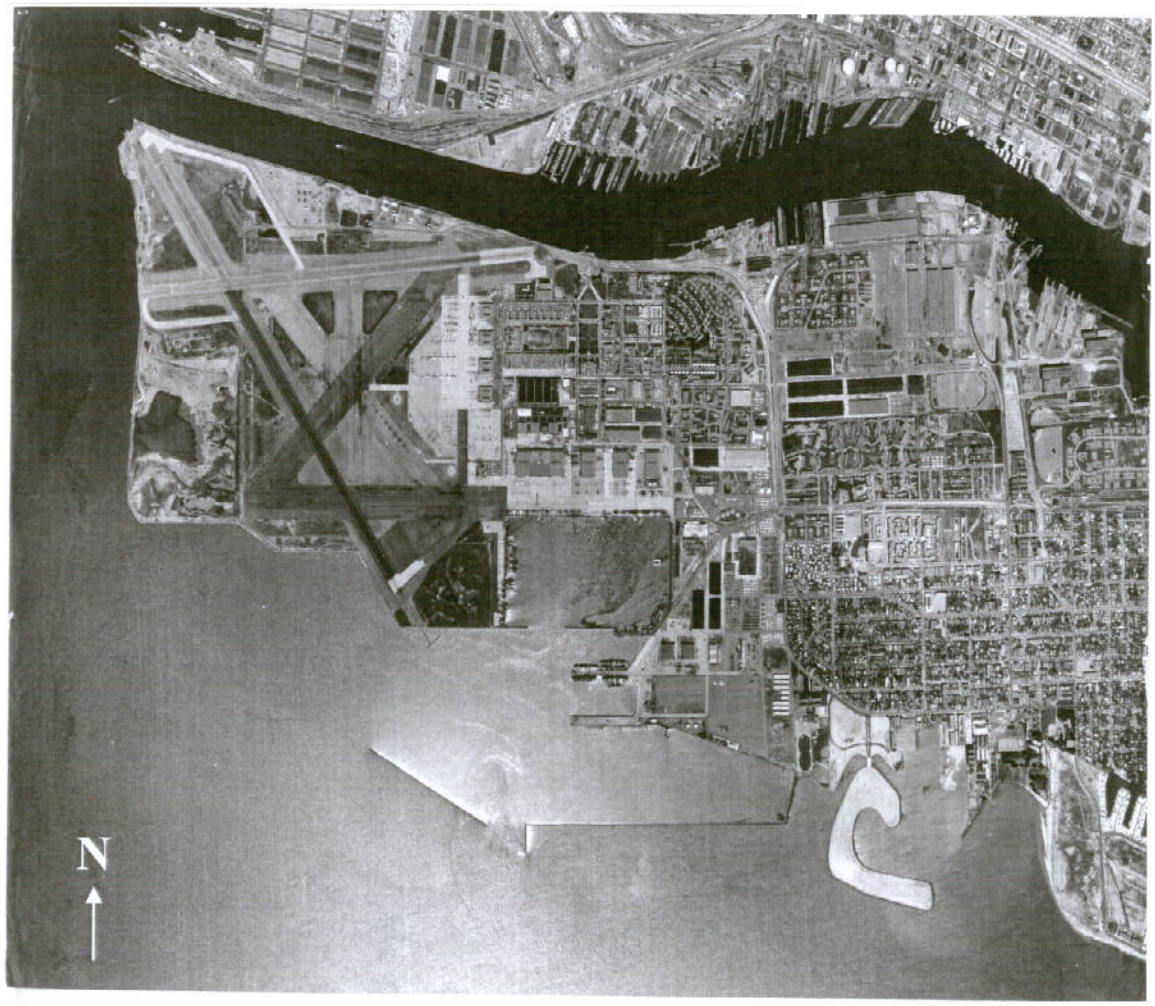
OBSERVATIONS
All of NAS Alameda is visible in this photograph, and the overall facility appears largely to be entirely constructed relative to its current condition. The West Beach Landfill and Wetlands are present, and appear to be entirely surrounded by a seawall. Only one pond is visible at the site in this photograph. This surface water feature appears to be in roughly the present location of the North Pond (i.e., the western central portion of the site), although it appears to be significantly larger in areal extent than the North Pond is presently. Disposal activities appear to be occurring at IR Site 2 in the 7-25-1963 photograph, but these activities appear to be limited to the far northern portion of the site. The specific nature of the disposal activities (i.e., methods of waste placement) and the specific types of wastes being disposed of are not readily apparent from the photograph. A structure appears to be present in the northwestern portion of the site, but does not appear to coincide with the precise location of the former radioactive waste storage shack.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
4-20-1966 (Photograph ID A-31)

OBSERVATIONS
Conditions across NAS Alameda appear largely unchanged from the 7-25-1963 photograph. Only one pond is still visible at the West Beach Landfill and Wetlands in the 4-20-1966 photograph (i.e., in roughly the present day location of the North Pond in the western central portion of the site), and this surface water feature still appears to be significantly larger in areal extent than the North Pond is presently. Disposal activities appear to be occurring at IR Site 2 in the 4-20-1966 photograph, and are limited to the northernmost and southernmost portions of the site. The specific nature of the disposal activities (i.e., methods of waste placement) and the specific types of wastes being disposed of are not readily apparent from the photograph.



Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
4-10-1968 (Photograph ID AV-844)

OBSERVATIONS
Conditions across NAS Alameda and at the West Beach Landfill and Wetlands appear largely unchanged from the 4-20-1966 photograph. Only one pond is still visible at the West Beach Landfill and Wetlands in the 4-10-1968 photograph (i.e., in roughly the present day location of the North Pond in the western central portion of the site), and this surface water feature still appears to be significantly larger in areal extent than the North Pond is presently. Disposal activities appear to be occurring at IR Site 2 in the 4-20-1966 photograph, and these activities still appear to be limited to the northernmost and southernmost portions of the site. The specific nature of the disposal activities (i.e., methods of waste placement) and the specific types of wastes being disposed of are not readily apparent from the photograph. The southern portion of the West Beach Landfill and Wetlands appears to be more vegetated than is apparent in the 4-20-1966 photograph.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
5-19-1969 (Photograph ID AV-902)

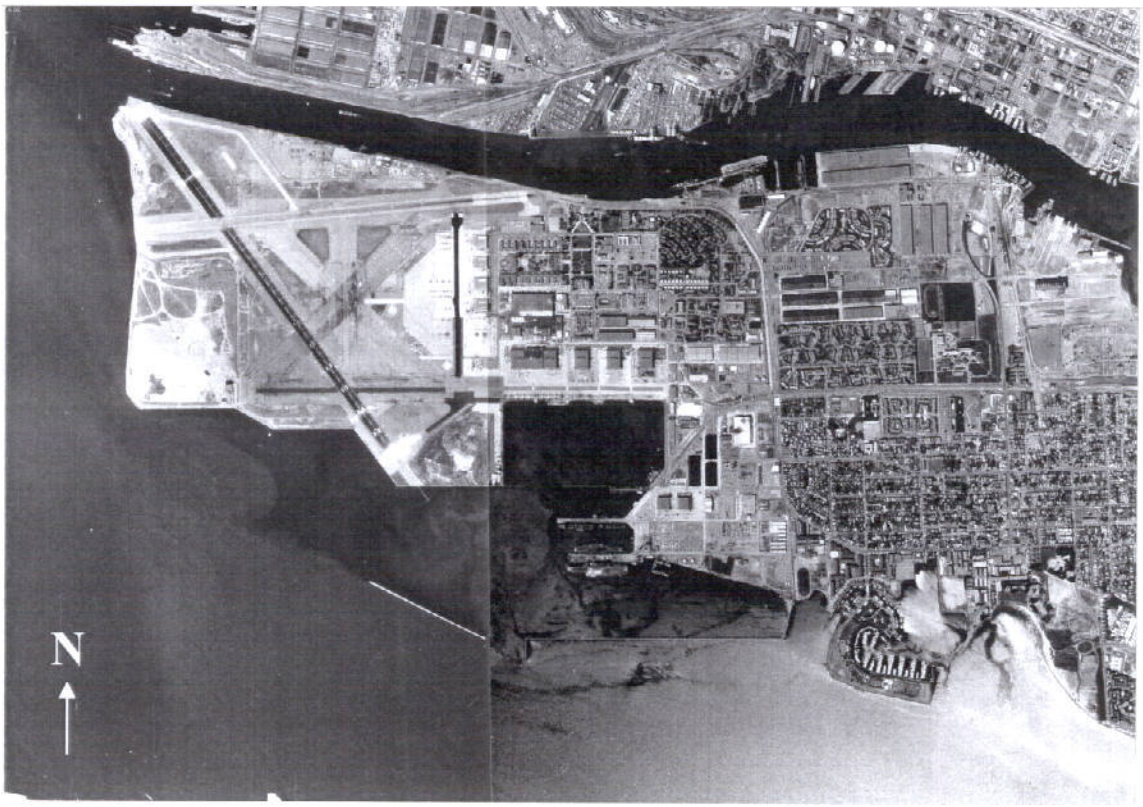
OBSERVATIONS
Conditions across NAS Alameda appear largely unchanged from the 4-10-1968 photograph. Only one pond is still visible at the West Beach Landfill and Wetlands in the 5-19-1969 photograph (i.e., in roughly the present day location of the North Pond in the western central portion of the site), and this surface water feature still appears to be significantly larger in areal extent than the North Pond is presently. Disposal activities appear to be occurring at IR Site 2 in the 5-19-1969 photograph over roughly the northern half of the site, as well as in the east central and southwestern portions of the site. A potential discrete disposal location is visible in the eastern central portion of the site as a dark, rectangular feature. A relatively significant network of roadways that appear unpaved exists over the northern portion of the site. The specific nature of the disposal activities (i.e., methods of waste placement) and the specific types of wastes being disposed of are not readily apparent from the photograph. The southern portion of the West Beach Landfill and Wetlands continues to appear more vegetated than the northern portion of the site. In the pond, several areas of darker coloration are noticeable, and at the southwestern tip of the site, a dark area appears present in the San Francisco Bay. It is not possible to determine from the photograph if these represent areas of waste (e.g., oil) disposal and transport, or if the darker coloration is related to water depth, wave action, and/or differences in light reflection. The 5-19-1969 photograph does not show the entire northwestern portion of IR Site 2. However, several structures appear present in the northwestern portion of the site, one of which appears to be situated at the location of the former radioactive waste storage shack.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
9-4-1975 (Photograph ID A-36)

OBSERVATIONS
Conditions across NAS Alameda appear largely unchanged from the 5-19-1969 photograph. No surface water bodies appear present at the West Beach Landfill and Wetlands, although it is possible that this observation is due to lighting conditions in the photograph. Disposal activities appear to be occurring at IR Site 2 in the 9-4-1975 photograph. Disposal activities appear to be occurring over roughly the northern half of the site, as well as in the east central and southeastern portions of the site. Two potential discrete disposal locations appear visible in the southeastern portion of the site as dark, rectangular features. The relatively significant network of apparently unpaved roadways still exists over the northern, east central, and southeastern portions of the site. The specific nature of the disposal activities (i.e., methods of waste placement) and the specific types of wastes being disposed of are not readily apparent from the photograph. As with the 5-19-1969 photograph, several structures appear present in the northwestern portion of the site, one of which appears to be situated at the location of the former radioactive waste storage shack.

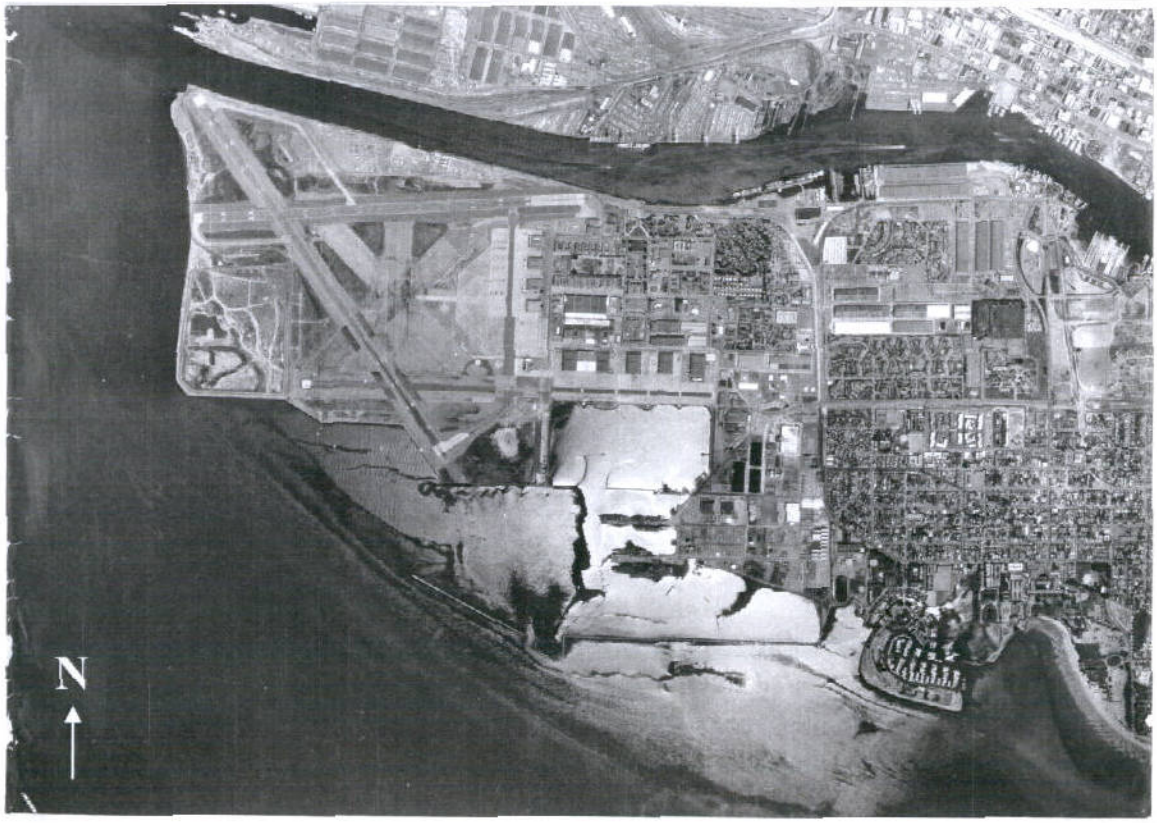


Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
5-13-1985 (Photograph ID A-38)

OBSERVATIONS
Conditions across NAS Alameda appear largely unchanged from the 9-4-1975 photograph. Both the North and South Ponds are visibly present at the site, and appear to be nearly identical in location, size, and configuration relative to current site conditions. Disposal activities do not appear to be actively occurring, but the northern, east central, and southwestern portions of the site appear to exhibit evidence of past disposal. This observation is consistent with historical information for the site, which suggests that waste disposal at IR Site 2 ceased in early 1978. The relatively significant network of apparently unpaved roadways still exists over the northern, east central, and southeastern portions of the site. Very little vegetation appears to be present across the site, including the wetland area. The former radioactive waste storage shack appears to still be present, and all but one of the other structures observed in the northwestern portion of the site in previous photographs appear to be gone.

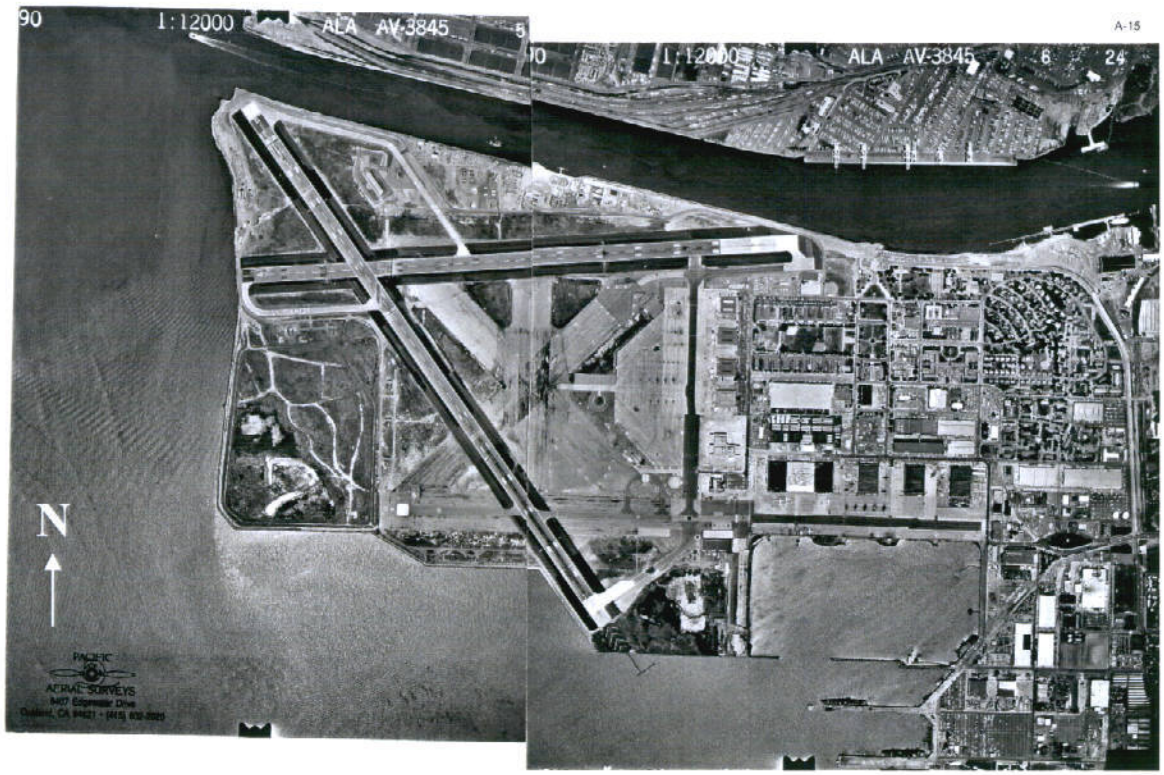


Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
6-12-1990 (Photograph ID A-15)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 5-13-1985 photograph. Both the North and South Ponds are present, and appear to be nearly identical in location, size, and configuration relative to current site conditions. Both ponds appear to be only partially inundated with relatively large stretches/areas that appear dry. As with the 5-13-1985 photograph, disposal activities do not appear to be actively occurring at the site. The relatively significant network of apparently unpaved roadways still exists over the northern, east central, and southeastern portions of the site. The southern portion of the site appears more vegetated than was observed in the 5-13-1985 photograph.



Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
4-8-1992 (Photograph ID A-40)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 6-12-1990 photograph. Both ponds at the site appear more fully inundated compared to the 6-12-1990 photograph. The former radioactive waste storage shack appears to be gone, although poor lighting conditions make this observation difficult to make conclusively. In addition, all but one of the other structures observed in the northwestern portion of the site in previous photographs appear to be gone.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
9-30-1993 (Photograph ID A-33)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 4-8-1992 photograph. As with the 6-12-1990 photograph, both ponds at the site appear only partially inundated with relatively large stretches/areas that appear dry. The southern portion of the site and the wetland area appear to be more highly vegetated than previous photographs. All structures observed in the northwestern portion of the site in previous photographs appear to be gone, including the former radioactive waste storage shack.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
12-23-1994 (Photograph ID 5097-01)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 9-30-1993 photograph. Both ponds at the site appear more fully inundated compared to the 9-30-1993 photograph.

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
1-1-1999 (Photograph from TerraServer)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 12-23-1994 photograph. From the scale of the photograph, it is difficult to determine the relative degree of inundation of the two ponds.

http://www.terraserver.com/imagery/image_ermapper.asp?ulx=556885.7135&uly=4184046.5574&lrx=560885.7135&lry=4180046.5574&image=44&provider_id=101&t=pan

Continue

Aerial Photograph Review
IR Site 2 – West Beach Landfill and Wetlands

Former NAS Alameda
Alameda, California

DATE
12-1-2003 (Photograph from TerraServer)

OBSERVATIONS
Conditions at the West Beach Landfill and Wetlands appear largely unchanged from the 1-1-1999 photograph. The North Pond appears to be relatively fully inundated, whereas the South Pond appears to be only partially inundated with relatively large stretches/areas that appear dry.

http://www.terraserver.com/imagery/image_gx.asp?cpx=-122.31529436417953&cpy=37.784353729654285&res=8&provider_id=305&t=pan