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Table 4-1
Cancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral Cancer Slope Factor (mg/kg-day)$^{-1}$ Value	Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal (mg/kg-day)$^{-1}$	Oral CSF Source(s), Date[2]	Weight of Evidence for Carcinogenicity, listed under IRIS
Metals							
7429-90-5	Aluminum		--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
7440-36-0	Antimony		--	0.15	--	EPA RSL, 9/08	Not assessed under IRIS program.
7440-38-2	Arsenic		1.5E+00	1	1.5E+00	I, 9/08	A, Human Carcinogen
7440-39-3	Barium		--	0.07	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7440-42-8	Boron		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
7440-43-9	Cadmium	[a]	--	0.05	--	EPA RSL, 9/08	B1, Probable human carcinogen - based on limited evidence of carcinogenicity in humans
16065-83-1	Chromium, trivalent		--	0.013	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
18540-29-9	Chromium, hexavalent		--	0.025	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity (Oral route)
7440-48-4	Cobalt		--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
7440-50-8	Copper		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7439-89-6	Iron		--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
7439-92-1	Lead	[b]	NL	NL	NL	NL	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
7439-96-5	Manganese		--	0.04	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7439-97-6	Mercury (tissue)	[c]	--	1	--	EPA RSL, 9/08	C, Possible human carcinogen
7439-97-6	Mercury (sediment)	[d]	--	0.07	--	EPA RSL, 9/08	C, Possible human carcinogen
7439-98-7	Molybdenum		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
7440-02-0	Nickel		--	0.04	--	EPA RSL, 9/08	Information reviewed but value not estimated.
7782-49-2	Selenium		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7440-22-4	Silver		--	0.04	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7440-28-0	Thallium	[e]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7440-32-6	Titanium	[f]	NL	NL	NL	EPA RSL, 9/08	Not listed under IRIS program.
7440-66-6	Zinc		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
Butyltins							
78763-54-9	Butyltin ion	[g]	--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
14488-53-0	Dibutyltin ion	[g]	--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
36643-28-4	Tributyltin ion	[h]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
Polynuclear Aromatic Hydrocarbons							
90-12-0	1-Methylnaphthalene		2.9E-02	1	2.9E-02	P, 9/08	Not listed under IRIS program.
91-57-6	2-Methylnaphthalene		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
83-32-9	Acenaphthene		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
208-96-8	Acenaphthylene	[i]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
120-12-7	Anthracene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
56-55-3	Benzo(a)anthracene		7.3E-01	1	7.3E-01	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
50-32-8	Benzo(a)pyrene		7.3E+00	1	7.3E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
205-99-2	Benzo(b)fluoranthene		7.3E-01	1	7.3E-01	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
192-97-2	Benzo(e)pyrene	[j]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
191-24-2	Benzo(g,h,i)perylene	[j]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
207-08-9	Benzo(k)fluoranthene		7.3E-02	1	7.3E-02	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
218-01-9	Chrysene		7.3E-03	1	7.3E-03	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
53-70-3	Dibenzo(a,h)anthracene		7.3E+00	1	7.3E+00	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
132-65-0	Dibenzothiophene	[k]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
206-44-0	Fluoranthene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
86-73-7	Fluorene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
193-39-5	Indeno(1,2,3-cd)pyrene		7.3E-01	1	7.3E-01	Calculated	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
91-20-3	Naphthalene		--	1	--	EPA RSL, 9/08	C, Possible human carcinogen
198-55-0	Perylene	[j]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
85-01-8	Phenanthrene	[j]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
129-00-0	Pyrene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
Phthalates							
117-81-7	Bis(2-ethylhexyl) phthalate		1.4E-02	1	1.4E-02	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
85-68-7	Butylbenzyl phthalate		1.9E-03	1	1.9E-03	P, 9/08	C, Possible human carcinogen
84-66-2	Diethyl phthalate		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
84-74-2	Dibutyl phthalate		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
117-84-0	Di-n-octyl phthalate	[l]	--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
Semivolatile Organic Compounds							
106-46-7	1,4-Dichlorobenzene		5.4E-03	1	5.4E-03	C, 9/08	Not assessed under IRIS program.
65-85-0	Benzoic acid		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
100-51-6	Benzyl alcohol		--	1	--	EPA RSL, 9/08	Not listed under IRIS program.
111-91-1	Bis(2-chloroethoxy) methane		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
132-64-9	Dibenzofuran	[k]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
118-74-1	Hexachlorobenzene		1.6E+00	1	1.6E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
87-68-3	Hexachlorobutadiene		7.8E-02	1	7.8E-02	I, 9/08	C, Possible human carcinogen
78-59-1	Isophorone		9.5E-04	1	9.5E-04	I, 9/08	C, Possible human carcinogen
98-95-3	Nitrobenzene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
483-65-8	Retene	[j]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
Phenols							
120-83-2	2,4-Dichlorophenol		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
105-67-9	2,4-Dimethylphenol		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
95-48-7	2-Methylphenol		--	1	--	EPA RSL, 9/08	C, Possible human carcinogen
106-44-5	4-Methylphenol		--	1	--	EPA RSL, 9/08	C, Possible human carcinogen
100-02-7	4-Nitrophenol	[m]	--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
87-86-5	Pentachlorophenol		1.2E-01	1	1.2E-01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
108-95-2	Phenol		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
Polychlorinated Biphenyls							
	Total PCB Aroclors		2.0E+00	1	2.0E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
	Total PCB Congeners		NA	1	NA	I, 9/08	Not listed under IRIS program.
	Total PCB Congeners, adjusted		2.0E+00	1	2.0E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
Dioxins/Furans							
	Total Dioxin TEQ	[n]	1.3E+05	1	1.3E+05	C, 9/08	Not listed under IRIS program.
	Total PCB TEQ	[n]	1.3E+05	1	1.3E+05	C, 9/08	Not listed under IRIS program.
Pesticides							
309-00-2	Aldrin		1.7E+01	1	1.7E+01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
319-84-6	alpha-Hexachlorocyclohexane		6.3E+00	1	6.3E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
319-85-7	beta-Hexachlorocyclohexane		1.8E+00	1	1.8E+00	I, 9/08	C, Possible human carcinogen
319-86-8	delta-Hexachlorocyclohexane	[f]	NL	1	NL	PPRTV, 5/04, IRIS, 05/08	D, Not classifiable as to human carcinogenicity
60-57-1	Dieldrin		1.6E+01	1	1.6E+01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
72-20-8	Endrin		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
7421-93-4	Endrin aldehyde	[o]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
53494-70-5	Endrin ketone	[o]	--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
58-89-9	gamma-Hexachlorocyclohexane		1.1E+00	1	1.1E+00	C, 9/08	Not assessed under IRIS program.
76-44-8	Heptachlor		4.5E+00	1	4.5E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
1024-57-3	Heptachlor epoxide		9.1E+00	1	9.1E+00	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals

Table 4-1
Cancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral Cancer Slope Factor (mg/kg-day)$^{-1}$ Value	Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal (mg/kg-day)$^{-1}$	Oral CSF Source(s), Date[2]	Weight of Evidence for Carcinogenicity, listed under IRIS
72-43-5	Methoxychlor		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
12789-03-6	Total Chlordane		3.5E-01	1	3.5E-01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
Total DDD	Total DDD	[p]	2.4E-01	1	2.4E-01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
Total DDE	Total DDE	[p]	3.4E-01	1	3.4E-01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
Total DDT	Total DDT	[p]	3.4E-01	1	3.4E-01	I, 9/08	B2, Probable human carcinogen - based on sufficient evidence of carcinogenicity in animals
115-29-7	Total Endosulfan		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
Herbicides							
93-65-2	MCPP		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.
Volatile Organic Compounds							
108-90-7	Chlorobenzene		--	1	--	EPA RSL, 9/08	D, Not classifiable as to human carcinogenicity
127-18-4	Tetrachloroethene		5.4E-01	1	5.4E-01	C, 9/08	Not assessed under IRIS program.
79-01-6	Trichloroethene		8.9E-02	1	8.9E-02	EPA, 2001	Information reviewed but value not estimated.
Conventionals							
14797-73-0	Perchlorate		--	1	--	EPA RSL, 9/08	Not assessed under IRIS program.

Footnotes:

1 Exhibit 4-1. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, July 2004. EPA/540/R/99/005.

2 All oral CSF toxicity values were retrieved from the Environmental Protection Agency Regional Screening Levels Tables (EPA RSL) dated September 12, 2008, which use the EPA recommended hierarchy for toxicity value sources. Sources listed above are those listed in the EPA RSL tables, retrieved online October 20, 2008 at http://www.epa.gov/region09/waste/sfund/prg/index.html.

Acronyms:

CAS Chemical Abstracts Service
CSF cancer slope factor
EPA Environmental Protection Agency
-- Not evaluated as a carcinogen
NA Not applicable. Chemical will not be assessed individually for cancer risk. Cancer risk from exposure to PCB congeners is assessed as adjusted PCBs and PCB TEQ.
NL Not Listed
ATSDR MRL (A) Agency for Toxic Substances and Disease Registry Minimum Risk Level
IRIS (I) Integrated Risk Information System
HEAST (H) Health Effects Assessment Summary Table, July 1997
mg/kg-day milligram per kilogram per day
OEHHA (C) California EPA Office of Environmental Health Hazard Assessment
PPRTV (P) Provisional Peer Reviewed Toxicity Value
RSL Regional Screening Levels
TEQ Toxic equivalency quotient

Notes:

[a] EPA lists an oral absorption efficiency of 2.5% and 5% for water and diet dosing regimens, respectively. The higher value of 5% is listed.
[b] Lead not evaluated using cancer slope factor.
[c] Methylmercury toxicity value used for tissue evaluation
[d] Mercury, inorganic salts toxicity value used for sediment evaluation.
[e] Thallium sulfate toxicity value converted to thallium using IRIS conversion factors
[f] A toxicity value was not available from the recommended hierarchy and a surrogate chemical could not be identified. Analyte is discussed qualitatively in text
[g] Surrogate: Dibutyltin compounds
[h] Surrogate: Tributyltin compounds
[i] Surrogate: Acenaphthene
[j] Surrogate: Pyrene
[k] Surrogate: Fluorene
[l] Surrogate: Dibutyl phthalate
[m] Surrogate: 4-Methylphenol
[n] Use TEQ approach based on 2,3,7,8-TCDD toxicity
[o] Surrogate: Endrin
[p] Cancer slope factor is for the 4,4' isomer

Table 4-2
Noncancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral RfD mg/kg-day	Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal	Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Oral RfD Source(s), Date[2]
Metals								
7429-90-5	Aluminum		1.0E+00	1	1.0E+00	CNS	300	P, 9/08
7440-36-0	Antimony		4.0E-04	0.15	6.0E-05	blood	1000	I, 9/08
7440-38-2	Arsenic		3.0E-04	1	3.0E-04	skin	3	I, 9/08
7440-39-3	Barium		2.0E-01	0.07	1.4E-02	kidney	300	I, 9/08
7440-42-8	Boron		2.0E-01	1	2.0E-01	decreased fetal weight	66	I, 9/08
7440-43-9	Cadmium	[a]	1.0E-03	0.05	5.0E-05	kidney	10	I, 9/08
16065-83-1	Chromium, trivalent		1.5E+00	0.013	2.0E-02	no effects observed	1000	I, 9/08
18540-29-9	Chromium, hexavalent		3.0E-03	0.025	7.5E-05	none reported	900	I, 9/08
7440-48-4	Cobalt		3.0E-04	1	3.0E-04	blood	100	P, 9/08
7440-50-8	Copper		4.0E-02	1	4.0E-02	gastrointestinal	NA	H, 9/08
7439-89-6	Iron		7.0E-01	1	7.0E-01	--	--	P, 9/08
7439-92-1	Lead	[b]	NL	NL	NL	NL	NL	NL
7439-96-5	Manganese		1.4E-01	0.04	5.6E-03	CNS	1	I, 9/08
7439-97-6	Mercury (tissue)	[c]	1.0E-04	1	1.0E-04	CNS	10	I, 9/08
7439-97-6	Mercury (sediment)	[d]	3.0E-04	0.07	2.1E-05	immunological, kidney	1000	I, 9/08
7439-98-7	Molybdenum		5.0E-03	1	5.0E-03	increased uric acid levels	30	I, 9/08
7440-02-0	Nickel		2.0E-02	0.04	8.0E-04	whole body	300	I, 9/08
7782-49-2	Selenium		5.0E-03	1	5.0E-03	whole body	3	I, 9/08
7440-22-4	Silver		5.0E-03	0.04	2.0E-04	skin	3	I, 9/08
7440-28-0	Thallium	[e]	6.6E-05	1	6.6E-05	liver, blood	3000	I, 09/08
7440-32-6	Titanium	[f]	NL	NL	NL	NL	NL	EPA RSL, 09/08
7440-66-6	Zinc		3.0E-01	1	3.0E-01	blood	3	I, 9/08
Butyltins								
78763-54-9	Butyltin ion	[g]	3.0E-04	1	3.0E-04	immunological	1000	P, 9/08
14488-53-0	Dibutyltin ion	[g]	3.0E-04	1	3.0E-04	immunological	1000	P, 9/08
36643-28-4	Tributyltin ion	[h]	3.0E-04	1	3.0E-04	immunological	100	P, 9/08
Polynuclear Aromatic Hydrocarbons								
90-12-0	1-Methylnaphthalene		--	1	--	--	--	EPA RSL, 09/08
91-57-6	2-Methylnaphthalene		4.0E-03	1	4.0E-03	lungs	1000	I, 9/08

Table 4-2
Noncancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral RfD mg/kg-day	Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal	Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Oral RfD Source(s), Date[2]
83-32-9	Acenaphthene		6.0E-02	1	6.0E-02	liver	3000	I, 9/08
208-96-8	Acenaphthylene	[i]	6.0E-02	1	6.0E-02	liver	3000	I, 9/08
120-12-7	Anthracene		3.0E-01	1	3.0E-01	no obseved effect	3000	I, 9/08
56-55-3	Benzo(a)anthracene		--	1	--	--	--	EPA RSL, 09/08
50-32-8	Benzo(a)pyrene		--	1	--	--	--	EPA RSL, 09/08
205-99-2	Benzo(b)fluoranthene		--	1	--	--	--	EPA RSL, 09/08
192-97-2	Benzo(e)pyrene	[j]	3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
191-24-2	Benzo(g,h,i)perylene	[j]	3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
207-08-9	Benzo(k)fluoranthene		--	1	--	--	--	EPA RSL, 09/08
218-01-9	Chrysene		--	1	--	--	--	EPA RSL, 09/08
53-70-3	Dibenzo(a,h)anthracene		--	1	--	--	--	EPA RSL, 09/08
132-65-0	Dibenzothiophene	[k]	4.0E-02	1	4.0E-02	NL	NL	I, 9/08
206-44-0	Fluoranthene		4.0E-02	1	4.0E-02	kidney, liver, blood	3000	I, 9/08
86-73-7	Fluorene		4.0E-02	1	4.0E-02	blood	3000	I, 9/08
193-39-5	Indeno(1,2,3-cd)pyrene		--	1	--	--	--	EPA RSL, 09/08
91-20-3	Naphthalene		2.0E-02	1	2.0E-02	whole body	3000	I, 9/08
198-55-0	Perylene	[j]	3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
85-01-8	Phenanthrene	[j]	3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
129-00-0	Pyrene		3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
Phthalates								
117-81-7	Bis(2-ethylhexyl) phthalate		2.0E-02	1	2.0E-02	liver	1000	I, 9/08
85-68-7	Butylbenzyl phthalate		2.0E-01	1	2.0E-01	liver , brain	1000	I, 9/08
84-66-2	Diethyl phthalate		8.0E-01	1	8.0E-01	whole body	1000	I, 9/08
84-74-2	Dibutyl phthalate		1.0E-01	1	1.0E-01	whole body	1000	I, 9/08
117-84-0	Di-n-octyl phthalate	[l]	1.0E-01	1	1.0E-01	liver	1000	I, 9/08
Semivolatile Organic Compounds								
106-46-7	1,4-Dichlorobenzene		--	1	--	--	--	EPA RSL, 09/08
65-85-0	Benzoic acid		4.0E+00	1	4.0E+00	no effects observed	1	I, 9/08
100-51-6	Benzyl alcohol		5.0E-01	1	5.0E-01	forestomach	1.0E+03	P, 9/08
111-91-1	Bis(2-chloroethoxy) methane		3.0E-03	1	3.0E-03	liver	3000	P, 9/08

Table 4-2
Noncancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral RfD mg/kg-day	Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal	Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Oral RfD Source(s), Date[2]
132-64-9	Dibenzofuran	[k]	4.0E-02	1	4.0E-02	NL	NL	I, 9/08
118-74-1	Hexachlorobenzene		8.0E-04	1	8.0E-04	liver	100	I, 9/08
87-68-3	Hexachlorobutadiene		1.0E-03	1	1.0E-03	kidney	1000	P, 9/08
78-59-1	Isophorone		2.0E-01	1	2.0E-01	kidney	1000	I, 9/08
98-95-3	Nitrobenzene		5.0E-04	1	5.0E-04	blood, adrenal, kidney, liver	10000	I, 9/08
483-65-8	Retene	[j]	3.0E-02	1	3.0E-02	kidney	3000	I, 9/08
Phenols								
120-83-2	2,4-Dichlorophenol		3.0E-03	1	3.0E-03	decreased hypersensitivity response	1.0E+02	I, 9/08
105-67-9	2,4-Dimethylphenol		2.0E-02	1	2.0E-02	lethargy, prostration, ataxia, blood	3.0E+03	I, 9/08
95-48-7	2-Methylphenol		5.0E-02	1	5.0E-02	decreased body weight, brain	1.0E+03	I, 9/08
106-44-5	4-Methylphenol		5.0E-03	1	5.0E-03	whole body, CNS	1000	H, 9/08
100-02-7	4-Nitrophenol	[m]	5.0E-03	1	5.0E-03	--	--	H, 9/08
87-86-5	Pentachlorophenol		3.0E-02	1	3.0E-02	liver, kidney	100	I, 9/08
108-95-2	Phenol		3.0E-01	1	3.0E-01	whole body, fetus	300	I, 9/08
Polychlorinated Biphenyls								
Total Aroclors	Total PCB Aroclors	[n]	2.0E-05	1	2.0E-05	immune system	300	I, 9/08
Total PCB Congeners	Total PCB Congeners		NA	NA	NA	NA	NA	NA
Total PCBs, Adjusted	Total PCB Congeners, adjusted	[n]	2.0E-05	1	2.0E-05	immune system	300	I, 9/08
Dioxins/Furans								
Total Dioxin/Furan TEQ	Total Dioxin TEQ	[o]	1.0E-09	1	1.0E-09	reproduction	1000	A, 9/08
Total PCB TEQ	Total PCB TEQ	[o]	1.0E-09	1	1.0E-09	reproduction	1000	A, 9/08
Pesticides								
309-00-2	Aldrin		3.0E-05	1	3.0E-05	liver	1000	I, 9/08
319-84-6	alpha-Hexachlorocyclohexane		8.0E-03	1	8.0E-03	liver	100	ATSDR MRL, 10/05
319-85-7	beta-Hexachlorocyclohexane		6.0E-04	1	6.0E-04	liver	300	ATSDR MRL, 10/05
319-86-8	delta-Hexachlorocyclohexane	[f]	NL	NL	NL	NL	NL	PPRTV, 5/04
60-57-1	Dieldrin		5.0E-05	1	5.0E-05	liver	100	I, 9/08
72-20-8	Endrin		3.0E-04	1	3.0E-04	liver	100	I, 9/08
7421-93-4	Endrin aldehyde	[p]	3.0E-04	1	3.0E-04	liver	100	I, 9/08
53494-70-5	Endrin ketone	[p]	3.0E-04	1	3.0E-04	liver	100	I, 9/08
58-89-9	gamma-Hexachlorocyclohexane		3.0E-04	1	3.0E-04	liver, kidney	1000	I, 9/08

Table 4-2
Noncancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral RfD mg/kg-day	Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal	Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Oral RfD Source(s), Date[2]
76-44-8	Heptachlor		5.0E-04	1	5.0E-04	liver	300	I, 9/08
1024-57-3	Heptachlor epoxide		1.3E-05	1	1.3E-05	liver	1000	I, 9/08
72-43-5	Methoxychlor		5.0E-03	1	5.0E-03	reproduction, endocrine	1000	I, 9/08
12789-03-6	Total Chlordane		5.0E-04	1	5.0E-04	liver	300	I, 9/08
Total DDD	Total DDD	[q]	5.0E-04	1	5.0E-04	liver	100	I, 9/08
Total DDE	Total DDE	[q]	5.0E-04	1	5.0E-04	liver	100	I, 9/08
Total DDT	Total DDT		5.0E-04	1	5.0E-04	liver	100	I, 9/08
115-29-7	Total Endosulfan		6.0E-03	1	6.0E-03	whole body, CNS, blood vessels	100	I, 9/08
Herbicides								
93-65-2	MCPP		1.0E-03	1	1.0E-03	liver, weight gain	3000	I, 9/08
Volatile Organic Compounds								
108-90-7	Chlorobenzene		2.0E-02	1	2.0E-02	liver	1000	I, 9/08
127-18-4	Tetrachloroethene		1.0E-02	1	1.0E-02	liver, weight gain	1000	I, 9/08
79-01-6	Trichloroethene		--	1	--	liver, kidney, developing fetus	3000	EPA RSL, 09/08
Conventionals								
14797-73-0	Perchlorate		7.0E-04	1	7.0E-04	thyroid	10	I, 9/08

Footnotes:

1 Source: Exhibit 4-1. Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, July 2004. EPA/540/R/99/005.

2 All oral RfD toxicity values were retrieved from the Environmental Protection Agency Regional Screening Levels Tables (EPA RSL) dated September 12, 2008, which use the EPA recommended hierarchy for toxicity value sources. Sources listed above are those listed in the EPA RSL tables. Retrieved online October 20, 2008 at http://www.epa.gov/region09/waste/sfund/prg/index.html.

Acronyms:

-- Not available
ATSDR MRL (A) Agency for Toxic Substances and Disease Registry Minimum Risk Level
CAS Chemical Abstracts Service
CNS Central Nervous System
EPA Environmental Protection Agency
HEAST (H) Health Effects Assessment Summary Table, July 1997
I IRIS
IRIS (I) Integrated Risk Information System

Table 4-2
Noncancer Toxicity Data - Oral/Dermal

CAS Number	Chemical of Potential Concern	Notes	Oral RfD mg/kg-day	Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal	Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	Oral RfD Source(s), Date[2]

mg/kg-day milligram per kilogram per day
NA Not applicable. Chemical will not be assessed individually for noncancer hazard.
NL Not Listed
PPRTV (P) Provisional Peer Reviewed Toxicity Value
RfD Reference Dose
RSL Regional Screening Levels

Notes:

[a] EPA lists an oral absorption efficiency of 2.5% and 5% for water and diet dosing regimens, respectively. The higher value of 5% is listed.
[b] Lead not evaluated using Reference Dose.
[c] Methylmercury toxicity value used for tissue evaluation
[d] Mercury, inorganic salts toxicity value used for sediment evaluation.
[e] Thallium sulfate toxicity value converted to thallium using IRIS conversion factors
[f] A toxicity value was not available from the recommended hierarchy and a surrogate chemical could not be identified. Analyte is discussed qualitatively in text
[g] Surrogate: Dibutyltin compounds
[h] Surrogate: Tributyltin compounds
[i] Surrogate: Acenaphthene
[j] Surrogate: Pyrene
[k] Surrogate: Fluorene
[l] Surrogate: Dibutyl phthalate
[m] Surrogate: 4-Methylphenol
[n] RfDo for Aroclor 1254
[o] Use TEQ approach based on 2,3,7,8-TCDD toxicity
[p] Surrogate: Endrin
[q] RfDo for DDT

Table 4-3: Toxic Equivalency Factors

Chemical Class	Compound	TEF[a]
Dioxins	2,3,7,8-TCDD	1
	1,2,3,7,8-PeCDD	1
	1,2,3,4,7,8-HxCDD	0.1
	1,2,3,7,8,9-HxCDD	0.1
	1,2,3,6,7,8-HxCDD	0.1
	1,2,3,4,6,7,8-HpCDD	0.01
	OCDD	0.0003
Furans	2,3,7,8-TCDF	0.1
	1,2,3,7,8-PeCDF	0.03
	2,3,4,7,8-PeCDF	0.3
	1,2,3,4,7,8-HxCDF	0.1
	1,2,3,7,8,9-HxCDF	0.1
	1,2,3,6,7,8-HxCDF	0.1
	2,3,4,6,7,8-HxCDF	0.1
	1,2,3,4,6,7,8-HpCDF	0.01
	1,2,3,4,7,8,9-HpCDF	0.01
	OCDF	0.0003
Coplanar PCBs	3,3’,4,4’-TCB (77)	0.0001
	3,4,4',5-TCB (81)	0.0003
	2,3,3’,4,4’-PeCB (105)	0.00003
	2,3,4,4’,5-PeCB (114)	0.00003
	2,3’,4,4’,5-PeCB (118)	0.00003
	2’,3,4,4’,5-PeCB (123)	0.00003
	3,3’,4,4’,5-PeCB (126)	0.1
	2,3,3’,4,4’,5’-HxCB (156)	0.00003
	2,3,3’,4,4’,5-HxCB (157)	0.00003
	2,3’,4,4’,5,5’-HxCB (167)	0.00003
	3,3’,4,4’,5,5’-HxCB (169)	0.03
	2,3,3’,4,4’,5,5’-HpCB (189)	0.00003
	2,2’,3,3’,4,4’,5-HpCB (170)	--
	2,2’,3,4,4’,5,5’-HpCB (180)	--

Notes:
a World Health Organization 2005 toxicity equivalent factor (TEF).