

Table 5-2
Values Used for Daily Intake/Absorbed Dose Calculations - Soil
On-Site Worker

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soil
Receptor Population:	On-Site Worker
Receptor Age:	Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	CT Value	CT Rationale/Reference	Equation/Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times IR \times RAF \times CF \times EF \times ED}{BW \times AT \times 365 \text{ days/yr}}$ INTAKE DOSE
	IR	Ingestion Rate	mg/day	100	EPA, 1994	50	EPA, 1994	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	1	EPA, 1991a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	0.000001	EPA, 1991a	
	EF	Exposure Frequency	days/year	150	EPA, 1994	150	EPA, 1994	
	ED	Exposure Duration	years	25	EPA, 2001b	6.6	EPA, 1997a	
	BW	Body Weight	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	25	EPA, 2001b	6.6	EPA, 1997a		
Dermal	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times SA \times AF \times ABS \times CF \times EF \times EV \times ED}{BW \times AT \times 365 \text{ days/yr}}$ ABSORBED DOSE
	SA	Skin Surface Area	cm ²	3300	EPA, 2001a	3300	EPA, 2001a	
	AF	Adherence Factor	mg/cm ² -event	0.2	EPA, 2001a	0.02	EPA, 2001a	
	ABS	Dermal Absorption Fraction	unitless	chem-specific	EPA, 2001a	chem-specific	EPA, 2001a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 2001a	0.000001	EPA, 2001a	
	EF	Exposure Frequency	days/year	150	EPA, 1994	150	EPA, 1994	
	EV	Event Frequency	event/day	1	EPA, 2001a	1	EPA, 2001a	
	ED	Exposure Duration	years	25	EPA, 2001b	6.6	EPA, 2001b	
	BW	Body Weight	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
	AT-N	Averaging Time, non-cancer	years	25	EPA, 2000	6.6	EPA, 2000	

Definitions: mg - milligram
 kg - kilogram
 cm² - centimeter squared
 RME - Reasonable Maximum Exposure
 CT - Central Tendency

Table 5-3
Values Used for Daily Intake/Absorbed Dose Calculations - Soil
Construction Worker

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Surface/Subsurface Soil
Receptor Population:	Construction Worker
Receptor Age:	Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Equation/ Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg			$\frac{CS \times IR \times RAF \times CF \times EF \times ED}{BW \times AT \times 365 \text{ days/yr}}$ INTAKE DOSE
	IR	Ingestion Rate	mg/day	330	EPA, 2001b	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	
	EF	Exposure Frequency	days/year	173	BPJ	
	ED	Exposure Duration	years	1	EPA, 2001b	
	BW	Body Weight	kg	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	1	EPA, 2001b		
Dermal	CS	Chemical Concentration in soil	mg/kg			$\frac{CS \times SA \times AF \times ABS \times CF \times EF \times EV \times ED}{BW \times AT \times 365 \text{ days/yr}}$ ABSORBED DOSE
	SA	Skin Surface Area	cm ²	3300	EPA, 2001a	
	AF	Adherence Factor	mg/cm ² -event	0.2	EPA, 2001a	
	ABS	Dermal Absorption Fraction	unitless	chem-specific	EPA, 2001a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 2001a	
	EF	Exposure Frequency	days/year	173	BPJ	
	EV	Event Frequency	event/day	1	EPA, 2001b	
	ED	Exposure Duration	years	1	EPA, 2001b	
	BW	Body Weight	kg	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	1	EPA, 2001b		

Definitions: mg - milligram
 kg - kilogram
 cm² - centimeter squared
 RME - Reasonable Maximum Exposure
 CT - Central Tendency
 NA - Not Applicable
 BPJ - Best Professional Judgement - assumes exposure 5 days/week for 8 months.

Table 5-4
Values Used for Daily Intake/Absorbed Dose Calculations - Soils
Residential Scenario

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soil
Receptor Population:	Resident
Receptor Age:	child/adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	CT Value	CT Rationale/Reference	Equation/Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times IF_{adj} \times RAF \times CF \times EF}{AT \times 365 \text{ days/yr}}$ $IF_{adj} = \frac{(IR_{child} \times ED_{child}) + (IR_{adult} \times ED_{adult})}{BW_{child} + BW_{adult}}$ INTAKE DOSE
	IFadj	Ingestion Rate, age weighted	mg-yr/kg-day	114	EPA, 1991a	18.3	EPA, 1991a	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	1	EPA, 1991a	
	IR-A	Ingestion Rate, Adult	mg/day	100	EPA, 1991a	50	EPA, 1991a	
	IR-C	Ingestion Rate, Child	mg/day	200	EPA, 1991a	100	EPA, 1991a	
	ED-A	Exposure Duration, Adult	years	24	EPA, 1991a	7	EPA, 1991a	
	ED-C	Exposure Duration, Child	years	6	EPA, 1991a	2	EPA, 1991a	
	BW-A	Body Weight, Adult	kg	70	EPA, 1991a	70	EPA, 1991a	
	BW-C	Body Weight, Child	kg	15	EPA, 1991a	15	EPA, 1991a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	0.000001	EPA, 1991a	
	EF	Exposure Frequency	days/year	150	EPA, 1991a	150	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
	AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	9	EPA, 1994	
Dermal	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times SFS_{adj} \times ABS \times CF \times EF \times EV}{AT \times 365 \text{ days/yr}}$ $SFS_{adj} = \frac{(SA_{child} \times AF_{child} \times ED_{child}) + (SA_{adult} \times AF_{adult} \times ED_{adult})}{BW_{child} + BW_{adult}}$ ABSORBED DOSE
	SFSadj	Age-weighted dermal factor	mg-yr/kg-event	360	EPA, 2001a	20.6	EPA, 2001a	
	SA-C	Skin Surface Area, child	cm ²	2800	EPA, 2001a	2800	EPA, 2001a	
	SA-A	Skin Surface Area, adult	cm ²	5700	EPA, 2001a	5700	EPA, 2001a	
	AF-C	Adherence Factor, child	mg/cm ² -event	0.2	EPA, 2001a	0.04	EPA, 2001a	
	AF-A	Adherence Factor, adult	mg/cm ² -event	0.07	EPA, 2001a	0.01	EPA, 2001a	
	ABS	Dermal Absorption Fraction	unitless	chem-specific	EPA, 2001a	chem-specific	EPA, 2001a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 2001a	0.000001	EPA, 2001a	
	EF	Exposure Frequency	days/year	150	EPA, 1994	150	EPA, 1994	
	EV	Event Frequency	event/day	1	EPA, 2001a	1	EPA, 2001a	
	ED-C	Exposure Duration, child	years	6	EPA, 1991a	2	EPA, 1994	
	ED-A	Exposure Duration, adult	years	24	EPA, 1991a	7	EPA, 1994	
	BW-C	Body Weight, child	kg	15	EPA, 1991a	15	EPA, 1991a	
	BW-A	Body Weight, adult	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
	AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	9	EPA, 1991a	

Definitions: mg - milligram
 kg - kilogram
 cm² - centimeter squared
 yr - year
 RME - Reasonable Maximum Exposure
 CT - Central Tendency

**Table 5-5
Values Used for Daily Intake/Absorbed Dose Calculations - Produce
Resident**

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	fruits/vegetables
Receptor Population:	Resident
Receptor Age:	Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	CT Value	Equation/Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg	chemical-specific	95% UCL		$\frac{Pr_{produce} \times IR \times EF \times CF \times ED}{AT \times BW \times 365 \text{ day/year}}$ $Pr_{ag} = Cs \times Br_{ag}$ $Pr_{bg} = Cs \times Br_{rootveg} \times VG_{rootveg}$ $Pr_{produce} = (Pr_{bg} * 14\%) + (Pr_{ag} * 86\%)$ INTAKE DOSE
	Pr _{ag}	Concentration in aboveground produce - root uptake	mg/kg	chemical-specific	EPA, 1998f	NA	
	Br _{ag}	Plant-soil bioconcentration factor	unitless	chemical-specific	EPA, 1998f	NA	
	Pr _{rootveg}	Concentration in root vegetables	mg/kg	chemical-specific	EPA, 1998f	NA	
	Br _{rootveg}	Plant-soil bioconcentration factor	unitless	chemical-specific	EPA, 1998f	NA	
	V _{grootveg}	Correction factor	unitless	chemical-specific	EPA, 1998f	NA	
	Pr _{produce}	Total Produce Concentration	mg/kg	86% from aboveground	EPA, 1998f	NA	
				14% from belowground	EPA, 1998f	NA	
	IR	Ingestion Rate	g/day	71	EPA, 1998f	NA	
	EF	Exposure Frequency	days/year	350	EPA, 1998f	NA	
	ED	Exposure Duration	years	30	EPA, 1991a	NA	
	BW	Body Weight	kg	70	EPA, 1991a	NA	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	NA	
	AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	NA	

Definitions: mg - milligram
 kg - kilogram
 cm² - centimeter squared
 yr - year
 RME - Reasonable Maximum Exposure
 CT - Central Tendency
 BPJ - Best Professional Judgement

Table 5-6
Values Used for Daily Intake/Absorbed Dose Calculations - Sediment

Scenario Timeframe:	Future
Medium:	Sediments
Exposure Medium:	Sediments
Receptor Population:	Shellfisherman
Receptor Age:	Adults

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Equation/ Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times IR \times RAF \times CF \times EF \times ED}{BW \times AT \times 365 \text{ days/yr}}$ INTAKE DOSE
	IR	Ingestion Rate	mg/day	100	EPA, 1991a	50	EPA, 1991a	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	1	EPA, 1991a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	0.000001	EPA, 1991a	
	EF	Exposure Frequency	days/year	104	MY, 1996	52	MY, 1996	
	ED	Exposure Duration	years	30	BPJ	9	BPJ	
	BW	Body Weight	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	30	BPJ	9	BPJ		
Dermal	CS	Chemical Concentration in soil	mg/kg					$\frac{CS \times SA \times AF \times ABS \times CF \times EF \times ED \times EV}{BW \times AT \times 365 \text{ days/yr}}$ ABSORBED DOSE
	SA	Skin Surface Area	cm ²	5700	EPA, 2001a	5700	EPA, 2001a	
	AF	Adherence Factor	mg/cm ² -event	0.2	EPA, 2001a	0.2	EPA, 2001a	
	ABS	Dermal Absorption Factor	unitless	chem-specific	EPA, 2001a	chem-specific	EPA, 2001a	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	0.000001	EPA, 1991a	
	EF	Exposure Frequency	days/year	104	MY, 1996	52	MY, 1996	
	ED	Exposure Duration	years	30	BPJ	9	BPJ	
	EV	Event Frequency	event/day	1	EPA, 2001a	1	EPA, 2001a	
	BW	Body Weight	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
	AT-N	Averaging Time, non-cancer	years	30	BPJ	9	BPJ	

Table 5-6
Values Used for Daily Intake/Absorbed Dose Calculations - Sediment

Scenario Timeframe:	Future
Medium:	Sediments
Exposure Medium:	Sediments
Receptor Population:	Resident
Receptor Age:	Child/Adults

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale	Equation/ Model Name
Ingestion	CS	Chemical Concentration in soil	mg/kg			NA	NA	$\frac{CS \times IR \times RAF \times CF \times EF \times ED}{BW \times AT \times 365 \text{ days/yr}}$ INTAKE DOSE
	Iradj	Ingestion Rate, age weighted ⁽¹⁾	mg-yr/kg-day	114	EPA, 1991a	NA	NA	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	NA	NA	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	NA	NA	
	EF	Exposure Frequency	days/year	26	BPJ	NA	NA	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	NA	NA	
	AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	NA	NA	
Dermal	CS	Chemical Concentration in soil	mg/kg			NA	NA	$\frac{CS \times SA \times AF \times ABS \times CF \times EF \times ED}{BW \times AT \times 365 \text{ days/year}}$ ABSORBED DOSE
	SFSadj	Age-weighted dermal factor ⁽¹⁾	mg-yr/kg-event	360	EPA, 2001a	NA	NA	
	ABS	Dermal Absorption Factor	unitless	chem-specific	EPA, 2001a	NA	NA	
	CF	Conversion Factor	kg/mg	0.000001	EPA, 1991a	NA	NA	
	EF	Exposure Frequency	days/year	26	BPJ	NA	NA	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	NA	NA	
	AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	NA	NA	

(1) - See Table 5-4 for age specific factors

Definitions: BPJ - Best Professional Judgement - corresponds to 2 times per week for the 13 summer weeks - per USEPA, 2003.

mg - milligrams

kg - kilograms

cm² - centimeters squared

NA - Not Applicable, A CT exposure scenario was not developed for the area resident.

RME - Reasonable Maximum Exposure

CT - Central Tendency

Table 5-7
Values Used for Daily Intake/Absorbed Dose Calculations - Shellfish Tissue Resident

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Shellfish
Receptor Population:	Resident
Receptor Age:	Adults/Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	CT Value	CT Rationale/Reference	Equation/Model Name
Ingestion	CS	Chemical Concentration in tissue	mg/kg					$\frac{CS \times IF_{age} \times RAF \times CF_2 \times EF}{AT \times 365 \text{ days/yr}}$ $IF_{adj} = \frac{(IR_{child} \times Ed_{child} \times CF)}{BW_{child}} + \frac{(IR_{adult} \times Ed_{adult} \times CF)}{BW_{adult}}$ INTAKE DOSE
	IR - A	Ingestion Rate - adult	kg/day	0.034	BOH, 2001	0.016	EPA, 1999	
	IR - C	Ingestion Rate - child	kg/day	0.008	EPA, 2001c	0.008	EPA, 2001c	
	IFadj	Ingestion Rate - age weighted	mg-yr/kg-day	14,860	(see calc)	2,670	(see calc)	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	1	EPA, 1991a	
	CF	Conversion Factor	mg/kg	1.00E+06		1.00E+06		
	CF2	Conversion Factor	kg/mg	1.00E-06		1.00E-06		
	EF	Exposure Frequency	days/year	365	EPA, 2001c	365	EPA, 2001c	
	ED - Tot	Exposure Duration	years	30	EPA, 1991a	9	EPA, 1991a	
	ED - A	Exposure Duration - adult	years	24	EPA, 1991a	7	EPA, 1991a	
	ED - C	Exposure Duration -child	years	6	EPA, 1991a	2	EPA, 1991a	
	BW - A	Body Weight - adult	kg	70	EPA, 1991a	70	EPA, 1991a	
	BW - C	Body Weight - child	kg	15	EPA, 1991a	15	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	9	EPA, 1991a		

Definitions: BPJ = Best Professional Judgement
 mg - milligram
 kg - kilogram
 RME - Reasonable Maximum Exposure
 CT - Central Tendency

Table 5-8
Values Used for Daily Intake/Absorbed Dose Calculations - Groundwater
Residential Scenario

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Receptor Population:	Resident
Receptor Age:	Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Equation/ Model Name
Ingestion	CW	Chemical Concentration in water	mg/l					$\frac{CW \times IR \times RAF \times EF \times ED}{BW \times AT \times 365 \text{ days/yr}}$ INTAKE DOSE
	IR	Ingestion Rate	l/day	2	EPA, 1991a	1.4	EPA, 1994	
	RAF	Relative Absorption Factor	unitless	1	EPA, 1991a	1	EPA, 1991a	
	EF	Exposure Frequency	days/year	350	EPA, 1991a	350	EPA, 1991a	
	ED	Exposure Duration	years	30	EPA, 1991a	9	EPA, 1994	
	BW	Body Weight	kg	70	EPA, 1991a	70	EPA, 1991a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	9	EPA, 1994		
Inhalation								Applicable for VOCs only intake inhalation = intake ingestion (see text)
Dermal	CW	Chemical Concentration in water	mg/l					$\frac{CW \times DA_{\text{event}} \times EV \times ED \times EF \times SA}{CW_{\text{default}} \times BW \times AT \times 365 \text{ days/yr}}$ ABSORBED DOSE
	DAevent	Dermal Absorbed Dose	mg/cm ² -event	chemical-specific*	EPA, 2001a	chemical-specific	EPA, 2001a	
	EV	Event Frequency	events/day	1	EPA, 2001a	1	EPA, 2001a	
	ED	Exposure Duration	years	30	EPA, 2001a	9	EPA, 2001a	
	EF	Exposure Frequency	days/year	350	EPA, 2001a	350	EPA, 2001a	
	SA	Skin Surface Area	cm ²	18,000	EPA, 2001a	18,000	EPA, 2001a	
	CWdefault	Default conc. in water used in DAevent calculation	mg/l	1	EPA, 2001a	1	EPA, 2001a	
	BW	Body Weight	kg	70	EPA, 2001a	70	EPA, 2001a	
	AT-C	Averaging Time, cancer	years	70	EPA, 1991a	70	EPA, 1991a	
AT-N	Averaging Time, non-cancer	years	30	EPA, 1991a	9	EPA, 1994		

Definitions: mg - milligrams

l - litre

cm² - centimeters squared

kg - kilogram

RME - Reasonable Maximum Exposure

CT - Central Tendency

* DA_{event} - obtained from Appendix B-3 and assume a t_{event} of 0.58 hrs/event (USEPA, 2001a).

Table 5-9
Dose-Response Toxicity Data for the site COPCs

Chemical of Potential Concern	Oral RfD (mg/kg-day)		Oral Cancer Slope Factor 1/(mg/kg-d)		Unit Risk Factor (ug/m3)-1		Inhalation Slope Factor 1/(mg/kg-d)		Chronic Reference Concentration (mg/m3)		Chronic Inhalation RfD (mg/kg-day)		Subchronic Reference Dose (mg/kg-day)		Subchronic Reference Concentration (mg/m3)	
		ref		ref		ref		ref		ref		ref		ref		ref
ALUMINUM	1.00E+00	N									1.00E-03	N	2.00E+00	M		
ANTIMONY	4.00E-04	I													4.00E-04	U
ARSENIC	3.00E-04	I	1.50E+00	I	4.30E-03	I							5.00E-03	I		
BARIIUM	7.00E-02	I							5.00E-04	H	1.40E-04	H				
BERYLLIUM	2.00E-03	I			2.40E-03	I			2.00E-05	I	5.70E-06	I				
BORON	2.00E-01	I													9.00E-02	H
CADMIUM - food	1.00E-03	I			1.80E-03	I										
CADMIUM - water	5.00E-04	I														
CADMIUM -dermal	2.50E-05	E														
CHROMIUM	1.50E+00	I														
COPPER - water	4.00E-02	N														
COPPER													3.00E-02	M		
IRON	3.00E-01	U														
MANGANESE	1.40E-01	I							5.00E-05	I			1.40E-01	U		
MERCURY CHLORIDE	3.00E-04	I							3.00E-04	I			2.00E-03	I		
MOLYBDENUM	5.00E-03	I											5.00E-03	H		
NICKEL	2.00E-02	I														
SELENIUM	5.00E-03	I														
SILVER	5.00E-03	I							1.00E-05	U					1.00E-04	U
SODIUM																
THALLIUM																
VANADIUM	1.00E-03	N														
DIELDRIN	5.00E-05	I	1.60E+01	I	4.60E-03	I							1.00E-04	M		
ENDRIN ALDEHYDE													2.00E-03	M		
GAMMA BHC	3.00E-04	I	1.30E+00	H												
ALPHA BHC			6.30E+00	I	1.80E-03	I										
BETA BHC			1.80E+00	I	5.30E-04	I										
DELTA BHC																
HEPTACHLOR EPOXIDE	1.30E-05	I	9.10E+00	I	2.60E-03	I										
2-METHYLNAPHTHALENE	9.00E-03	N											9.00E-03	U		
BENZO(A)ANTHRACENE			7.30E-01	E	8.80E-04	U										
BENZO(A)PYRENE			7.30E+00	I	8.80E-04	U										
BENZO(B)FLUORANTHENE			7.30E-01	E	8.80E-04	U										
BENZO(K)FLUORANTHENE			7.30E-02	E	8.80E-04	U										
BENZO(G,H,I)PERYLENE																
BIS(2-ETHYLHEXYL) PHTHALATE	2.00E-02	I	1.40E-02	I			1.40E-02	N							1.00E-02	U
CARBAZOLE																
CHRYSENE			7.30E-03	E	8.80E-04	U										
DIBENZO(A,H)ANTHRACENE			7.30E+00	E	8.80E-04	U										
INDENO(1,2,3-CD)PYRENE			7.30E-01	E			8.80E-04	U								
NAPHTHALENE	2.00E-02	I							3.00E-03	I						
PHENANTHRENE																
1,1,1-TRICHLOROETHANE	2.80E-01	N														
BENZENE	4.00E-03	I	5.50E-02	I	7.80E-06	I			1.00E-01	I	3.00E-02	I				
CHLOROFORM	1.00E-02	I			2.30E-05	I			5.00E-02	U	8.60E-04	N			5.00E-02	U
ETHYLBENZENE	1.00E-01	I							1.00E+00	I			1.00E+00	I		
M-P-XYLENE	2.00E-01	I							1.00E-01	I			2.00E-01	M		
O-XYLENE	2.00E-01	I							1.00E-01	I			2.00E-01	M		
TRICHLOROETHENE	3.00E-04	N	4.00E-01	N			0.4	N	4.00E-02	N			3.00E-03	I		

**Table 5-9
Dose-Response Toxicity Data for the site COPCs**

Chemical of Potential Concern	Oral RfD (mg/kg-day)		Oral Cancer Slope Factor 1/(mg/kg-d)		Unit Risk Factor (ug/m3)-1		Inhalation Slope Factor 1/(mg/kg-d)		Chronic Reference Concentration (mg/m3)		Chronic Inhalation RfD (mg/kg-day)		Subchronic Reference Dose (mg/kg-day)		Subchronic Reference Concentration (mg/m3)	
		ref		ref		ref		ref		ref		ref		ref		ref
VINYL CHLORIDE	3.00E-03	I	1.50E+00	I	4.40E-06	N	3.10E-02	I	1.00E-01	I			3.00E-03	I		
PCB-1242	2.00E-05	U	2.00E+00	E			2.00E+00	E					3.00E-05	M		
PCB-1248	2.00E-05	U	2.00E+00	E			2.00E+00	E					3.00E-05	M		
PCB-1254	2.00E-05	I	2.00E+00	E			2.00E+00	E					3.00E-05	M		
PCB-1260	2.00E-05	U	2.00E+00	E			2.00E+00	E					3.00E-05	M		
4,4'-DDE	3.00E-04	U	3.40E-01	I												
4-CHLORO-3-METHYLPHENOL																
ACENAPHTHYLENE																
BROMODICHLOROMETHANE	2.00E-02	I	6.20E-02	I												
BROMOMETHANE	1.40E-03	I							5.00E-03	I			1.40E-03	I		
CHLOROMETHANE									9.00E-02	I	2.60E-02	I				
ENDOSULFAN I	6.00E-03	I														
ENDOSULFAN II																
ENDOSULFAN SULFATE																
ENDRIN KETONE																
HEPTACHLOR	5.00E-04	I	4.50E+00	I	1.30E-03	I										
NITRATE	1.60E+00	I														
DI-N-BUTYL PHTHALATE	1.00E-01	I														
TOLUENE	2.00E-01	I							4.00E-01	I						
1,1,2-TRICHLOROETHANE	4.00E-03	I	5.70E-02	I	1.60E-05	I										
1,1-DICHLOROETHENE	5.00E-02	I														
1,2-DICHLOROETHANE	3.00E-02	N	9.10E-02	I	2.60E-05	I			5.00E-03	N	1.40E-03	N				
4-METHYLPHENOL	5.00E-03	H														
1,1-DICHLOROETHANE	1.00E-01	H							5.00E-01	H	1.40E-01	H				

ref - I - IRIS; N - NCEA; H - HEAST as referenced in USEPA Region 9 PRG Tables (USEPA,current); M - Minimal Risk Levels (ATSDR, current), E - EPA Region I Risk Update #2 and

USEPA Guidance on PCBs (EPA/600/P-96/001F); U - USEPA in letter dated June 2, 2003 (USEPA, 2003); CA - California Office of Health Hazard Assessment (2003)

mg/kg-day = milligram/kilogram - day

IRIS - Integrated Risk Information System

NCEA - National Center for Environmental Assessment

HEAST - Health Effects Summary Table

The Reference Concentration (RC) can be converted to an RfD_{inhalation} as follows: RC (mg/m3) * 20 m3/day * 1/70 kg = RfD_{inh} (mg/kg-day)

The Unit Risk Factor (URF) can be converted to an Inhalation Slope Factor as follows: URF 1/(ug/m3) * 1/20 m3/day * 70 * 10E-3 ug/1 mg = CSF (mg/kg-day)-1

Table 5-12
Comparison of Shellfish Tissue COPC Concentrations
Site vs. Reference Locations

Chemical of Potential Concern	Average Concentration Site Location (mg/kg)	Average Concentration Reference Location (mg/kg)	Relative Percent Difference
Clams			
ALUMINUM	332	374	11
ARSENIC	2.8	3.19	12
COPPER	6.8	5.39	-25
IRON	1077	1310	18
LEAD	0.87	1.21	28
MANGANESE	25	47	47
MERCURY	0.04	0.05	18
SODIUM	4929	4270	-15
VANADIUM	1.560	2.00	22
PCB 1254	0.0021	0.00396	48
PCB 1260	0.0022	0.00370	41
ALPHA-HEXACHLOROCYCLOHEXANE	0.0001		
BETA-HEXACHLOROCYCLOHEXANE	0.0002	0.00036	56
DIELDRIN	0.0001		
ENDOSULFAN I	0.0002		
ENDOSULFAN II	0.0002		
ENDOSULFAN SULFATE	0.000043	0.00006	22
ENDRIN ALDEHYDE	0.0001		
ENDRIN KETONE	0.0002	0.00043	51
GAMMA-CHLORDANE	0.0001		
4-CHLORO-3-METHYLPHENOL	0.2558	0.12000	-113
ACENAPHTHYLENE	0.0003	0.00047	28
BENZO(A)ANTHRACENE	0.0022	0.00363	40
BENZO(A)PYRENE	0.0020	0.00387	49
BENZO(B)FLUORANTHENE	0.0036	0.00650	44
BENZO(K)FLUORANTHENE	0.0013		
BENZO[G,H,I]PERYLENE	0.0032	0.00470	32
DIBENZO(A,H)ANTHRACENE	0.0002	0.00048	53
INDENO(1,2,3-CD)PYRENE	0.0016	0.00303	49
PHENANTHRENE	0.0018	0.00190	3
Mussels			
ALUMINUM	90	75.6	-19
ARSENIC	1.12	1.37	18
CADMIUM	0.24	0.28	12
IRON	132	133	1
LEAD	0.26	0.31	16
MERCURY	0.05	0.05	-6
SODIUM	4842	4608	-5
ALPHA-HEXACHLOROCYCLOHEXANE	0.00004	0.00003	-17
BETA-HEXACHLOROCYCLOHEXANE	0.00004		
ENDOSULFAN II	0.00017		
ENDOSULFAN SULFATE	0.00008	0.00008	-2
ENDRIN KETONE	0.00041	0.00032	-28
2-METHYLNAPHTHALENE	0.63000		
ACENAPHTHYLENE	0.00031	0.00049	36
BENZO(A)ANTHRACENE	0.00161	0.00225	28
BENZO(A)PYRENE	0.00107	0.00155	31
BENZO(B)FLUORANTHENE	0.00279	0.00448	38
BENZO(K)FLUORANTHENE	0.00097	0.00140	31
CHRYSENE	0.00240	0.00330	27
BENZO[G,H,I]PERYLENE	0.00103		
CARBAZOLE	0.01700		
DIBENZO(A,H)ANTHRACENE	0.00014	0.00024	40
INDENO(1,2,3-CD)PYRENE	0.00090	0.00134	33
PHENANTHRENE	0.00146		