Table N.1 Exposure Pount Concentrations - SVOCs in Soil (ug/kg)

Sample ID	depth (feet)	Depth group	Naphthalene	2-Methyl-naphthalene	Ace-naphthylene	Ace-naphthene	Dibenzo-furan	Fluorene	Phen-anthrene	Anthra-cene	Fluor-anthene	Pyrene	Benzo[a]-anthracene	Chrysene	bis(2-Ethylhexyl)-phthalate
Zone 1	0-1	1	95 *	95 *	95 *	95 *	95 *	95 *	220	68 J	410	320	180 J	200	47 J
Average Zone 2 and Dup	0-1	1	105 *	105 *	105 *	105 *	105 *	105 *	125 J	105 *	300	245	130 J	155 J	127.5 J
Zone 3	0-1	1	73 J	95 *	95 *	95 *	95 *	95 *	86 J	95 *	180 J	150 J	77 J	97 J	62 J
Avg Zone 4 and Dup	0-1	1	68 J	105 *	105 *	105 *	105 *	105 *	150 J	77 J	320	300	140 J	165 J	78.5 J
Zone 5	0-1	1	110 J	100 *	100 *	100 *	100 *	100 *	270	77 J	470	390	190 J	210	100 *
Zone 6	0-1	1	42 J	100 *	100 *	100 *	100 *	100 *	93 J	100 *	200 J	200 J	85 J	110 J	100 *
Zone 7	0-1	1	40 J	100 *	100 *	100 *	100 *	100 *	100 J	100 *	230	210	100 J	130 J	210
Zone 8	0-1	1	57 J	105 *	105 *	105 *	105 *	105 *	120 J	105 *	250	230	120 J	130 J	53 J
Zone 9	0-1	1	64 J	105 *	105 *	105 *	105 *	105 *	190 J	60 J	330	310	150 J	170 J	120 J
Zone 11	0-1	1	310	95 *	95 *	95 *	95 *	95 *	110 J	95 *	210	210	94 J	100 J	95 *
Avg Zone 12 and Dup	0-1	1	910	112.5 *	112.5 *	112.5 *	112.5 *	112.5 *	250 J	68.5 J	380	340	140 J	160 J	94.5 J
Zone 10	0-1	1	280	70 J	100 *	350	230	200 J	2100	300	2400	2000	800	810	100 *
Z10-64R	0-1	1	300	100 *	100 *	100 *	100 *	100 *	190 J	49 J	310	270	130 J	160 J	100 *
Z10-65R	0-1	1	105 *		105 *	105 *	105 *	105 *	130 J	105 *	260	230	110 J	140 J	94 J
Z10-66R	0-1	1	66 J	100 *	59 J	100 *	100 *	100 *	230	66 J	460	400	200 J	260	53 J
Z10-67R	0-1	1	67 J	100 *	100 *	100 *	100 *	100 *	150 J	41 J	290	260	120 J	150 J	100 *
Z10-68R	0-1	1	465 *	465 *	465 *	465 *	465 *	465 *	190 J	465 *	330 J	290 J	465 *	465 *	465 *
Z10-69R	0-1	1	150 J	105 *	105 *	105 *	105 *	105 *	120 J	105 *	260	230	110 J	140 J	105 *
Z10-70R	0-1	1	66 J	105 *	47 J	51 J	105 *	63 J	770	250	1100	950	420	430	45 J
Z10-71R	0-1	1	100 J	100 *	100 *	100 *	100 *	100 *	330	89 J	460	430	190 J	220	100 *
Z10-72R	0-1	1	220	105 *	61 J	105 *	105 *	105 *	310	72 J	530	490	200 J	240	105 *
Z10-73R	0-1	1	150 J	95 *	95 *	95 *	95 *	95 *	230	65 J	440	410	180 J	210	95 *
Z10-73RX	0-1	1	290	95 *	42 J	68 J	95 *	54 J	640	190 J	1100	790	410	460	95 *
A-104	10'-10.5	4	870	76 J	140 *	140 *	140 *	140 *	130 J	140 *	230 J	170 J	94 J	120 J	78 J
PS-1	1-2'	1	145 *	145 *	145 *	145 *	145 *	145 *	190 J	145 *	170 J	180 J	69 J	70 J	240 J
PS-2	1.5-4'	2	1500 D	780 JD	520 JD	1400 JD	1200 JD	1700 D	13000 D	3300 D	10000 D	10000 D	4800 D	4900 D	700 *
PS-3	1.8-4.0'	2	140 J	84 J	130 J	140 J	95 J	150 J	1600	320	1400	1700	670	830	140 *
Average PS-4 and Dup	1.5-4.0'	2	371 J	363 J	392.5 *	392.5 *	392.5 *	392.5 *	660 JD	363 J	2900 D	3450 D	3250 D	5300 D	392.5 *
PS-5	2.8-3.5'	2	145 *	145 *	100 J	145 *	145 *	145 *	400	110 J	870	1200	540	540	220 J
PS-6	2.3-2.8'	1	1450 *	1450 *	1700 JD	1450 *	1450 *	1450 *	6900 D	1900 JD	15000 D	15000 D	6900 D	7900 D	1450 *
PS-7	1.5-5.0'	2	77 J	86 J	200 J	130 *	130 *	130 *	470	150 J	520	800	360	480	57 J
PS-8	1.5-5.0'	2	18000 D	700 *	700 *	700 *	700 *	700 *	1300 JD	1300 JD	1600 D	1300 JD	640 JD	630 JD	700 *
PS-9	1.6-4.0'	2	470	155 *	155 *	155 *	155 *	155 *	89 J	155 *	130 J	150 J	68 J	81 J	66 J
PS-10	5.5-6.4'	4	135 *	135 *	72 J	135 *	135 *	135 *	430	120 J	630	670	330	390	135 *
PS-11	1.8-4.0'	2	9500 D	700 *	700 *	700 *	700 *	700 *	420 JD	700 *	660 JD	730 JD	320 JD	350 JD	500 JD
Average PS-12 and dup	4.0-6.2'	2	435	162.5	145 *	312.5	192.5	252.5	1240	391	1380	1240	585	665	260
PS-13	2.3-3.0'	1	220 J	170 J	650	80 J	130 J	96 J	1400	590	3100	3600	1800	2300	90 J
PS-14	6'-7'	4	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *	100 *
PS-15	5'-9'	4	270 J	135 *	135 *	135 *	135 *	135 *	135 *	135 *	135 *	135 *	135 *	135 *	135 *
Tot Lot	0-2'	1	145 *	145 *	145 *	145 *	145 *	145 *	145 *	145 *	130 J	160 J	79 J	87 J	145 *
Garden	0-2'	1	310	240 J	720	270 J	280 J	340	4600	1400	6600	8300	4000	4700	150 *
A-2	0'-3'	1	200 J	100 J	69 J	200 J	NA	200 J	1400	300	1600	1000	490	620	NA
A-101	5'-7'	4	140 *	140 *	140 *	140 *	NA	140 *	140 *	140 *	140 *	140 *	140 *	140 *	NA
A-104	3'-4'	2	350 J	290 J	230 J	430 J	NA	600	4800	1500	6100	5000	2600	2700	NA
A-104	2'-3'	1	110 J	135 *	135 *	135 *	NA	57 J	580	180 J	950	780	410	470	NA
A-6	2.3'-3.0'	1	79 J	61 J	84 J	76 J	NA	73 J	760	230 J	1200	890	460	570	NA
A-105	2.0'-3.0'	1	260 J	120 J	130 J	320 J	NA	370 J	3500	1100	4700	3800	1900	2100	NA
A-105	3.0'-4.0'	4	350 J	650 *	650 *	650 *	NA	650 *	1500	450 J	2000	1900	890 J	970 J	NA
A-10	1'-3'	1	140 *	140 *	140 *	140 *	NA	140 *	130 J	140 *	250 J	200 J	110 J	130 J	NA

Sample ID	depth (feet)	Depth group	Naphthalene	2-Methyl-naphthalene	Ace-naphthylene	Ace-naphthene	Dibenzo-furan	Fluorene	Phen-anthrene	Anthra-cene	Fluor-anthene	Pyrene	Benzo[a]-anthracene	Chrysene	bis(2-Ethylhexyl)-phthalate
A-102	2'-3'	1	130 *	130 *	130 *	130 *	NA	130 *	54 J	130 *	99 J	81 J	49 J	73 J	NA
Average A-102 and Dup	3'-4'	4	330 J	225 J	170 J	197.5 J	NA	140 J	1450 J	400 J	1900 J	2300 J	705 J	850 J	NA
A-103	2'-4'	2	630	130 *	130 *	130 *	NA	130 *	300	92 J	440	330	190 J	230 J	NA
A-103	4'-5'	4	170 J	130 *	130 *	130 *	NA	130 *	220 J	69 J	300	210 J	110 J	150 J	NA
A-106	2'-3'	1	135 *	135 *	135 *	135 *	NA	135 *	135 *	135 *	135 *	135 *	135 *	135 *	NA
A-106	4'-6'	4	73 J	140 *	140 *	140 *	NA	140 *	140 *	140 *	53 J	140 *	140 *	140 *	NA
A-108	3'-4'	4	390 J	120 J	96 J	260 *	NA	260 *	430 J	170 J	720	550	310 J	380 J	NA
A-27	1'-3'	1	650 *	650 *	650 *	650 *	NA	650 *	1400	440 J	1600	1300 J	650 J	670 J	NA
A-30	1.5'-3.0'	1	135 *	135 *	135 *	135 *	NA	135 *	52 J	135 *	90 J	70 J	135 *	62 J	NA
A-107	3'-4'	4	135 *	135 *	135 *	135 *	NA	135 *	135 *	135 *	135 *	135 *	135 *	135 *	NA
A-107	8'-10'	4	150 *	150 *	150 *	150 *	NA	150 *	150 *	150 *	150 *	150 *	150 *	150 *	NA
Avg A-109 and dup	3'-4.5'	4	995 J	595 J	485 J	885 J	NA	930 J	2450 J	865 J	4100	3200	1800 J	2150 J	NA
A-109	1.5'-3.0'	1	51 J	140 *	79 J	140 *	NA	140 *	340	130 J	720	550	340	420	NA
A-110	3.0'-4.5'	4	150 *	150 *	150 *	150 *	NA	150 *	87 J	150 *	210 J	160 J	100 J	130 J	NA
A-111	1.5'-3.0'	1	130 *	130 *	130 *	130 *	NA	130 *	130 *	130 *	130 *	130 *	130 *	130 *	NA
A-111	3.0'-4.5'	4	140 *	140 *	140 *	140 *	NA	140 *	140 *	140 *	140 *	140 *	140 *	140 *	NA
A-32	1'-3'	1	280	130 *	130 *	130 *	NA	130 *	73 J	130 *	120 J	91 J	49 J	52 J	NA
A-49	1'-3'	1	1300 *	1300 *	1300 *	1300 *	NA	1300 *	530 J	1300 *	1300 J	1100 J	700 J	800 J	NA
A-114	3'-5.5'	4	135 *	135 *	91 J	135 *	NA	135 *	510	150 J	940	790	430	490	NA
A-115	0.5'-3.0'	1	700 *	700 *	700 *	700 *	NA	700 *	610 J	700 *	770 J	620 J	450 J	680 J	NA
Avg A115 and dup	3.0-5.5	4	147.5 *	147.5 *	147.5 *	147.5 *	NA	147.5 *	147.5 *	147.5 *	147.5 *	147.5 *	147.5 *	147.5 *	NA
A-115	6.0'-8.6' (or 8.0?)	4	155 *	155 *	155 *	155 *	NA	155 *	155 *	155 *	155 *	155 *	155 *	155 *	NA
A-112	0'-2'	1	700 *	700 *	700 *	700 *	NA	700 *	510 J	700 *	1200 J	940 J	530 J	540 J	NA
Average A-110 Woods Hole and STL	1.5'-3.0'	1	155 *	155 *	155 *	155 *	NA	155 *	124	155 *	150	138	119.5	128.5	NA
Average A-113 Woods Hole and STL	3'-4.5'	4	162.5 *	162.5 *	162.5 *	162.5 *	NA	162.5 *	162.5 *	162.5 *	162.5 *	162.5 *	162.5 *	162.5 *	NA
November - December 2003															
B-51 S3 (EPH)	2'	1	2.7 *	2.7 *	2.7 *	2.7 *	NA	2.7 *	2.7 *	2.7 *	2.7 *	2.7 *	2.7 *	2.7 *	NA
C96-S4P (EPH)	5.0'-6.5'	4	285 *	285 *	285 *	285 *	NA	285 *	285 *	285 *	285 *	285 *	285 *	285 *	NA
C96-S4P (VPH)	5.0'-6.5'		25 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C95-S3P (EPH)	4.0'-4.5'	4	91	255 *	255 *	255 *	NA	255 *	255 *	255 *	255 *	255 *	255 *	255 *	NA
C95-S3P (VPH)	4.0'-4.5'		2900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C2-S1P	0.5'-4.5'	2	345 *	345 *	345 *	345 *	NA	345 *	6000	1800	12000	10000	6900	7100	NA
C2-S2P	4.5'-7.0'	4	165 *	165 *	165 *	165 *	NA	165 *	165 *	165 *	600	520	370	390	NA
C15-S1P	0.5'-2.0'	1	1700 *	1700 *	1700 *	1700 *	NA	1700 *	1700 *	1700 *	1700 *	1700 *	1700 *	1700 *	NA
C15-S2P	2.0'-4.5'	2	205 *	205 *	205 *	205 *	NA	205 *	205 *	205 *	205 *	205 *	205 *	205 *	NA
C15-S3P	4.5'-8.5'	4	200 *	200 *	200 *	200 *	NA	200 *	200 *	200 *	200 *	200 *	200 *	200 *	NA
C9-S1P	0'-5.5'	2	205 *	205 *	205 *	205 *	NA	205 *	1100	205 *	1300	1000	580	720	NA
C21-S1P	0.85'-6.0'	2	200 *	200 *	200 *	200 *	NA	200 *	630	200 *	1000	860	470	530	NA
C54-S1P	1.0'-5.5'	2	185 *	185 *	185 *	185 *	NA	185 *	185 *	185 *	185 *	185 *	185 *	185 *	NA
C93-S1P	0.5'-6.0'	2	190 *	190 *	190 *	190 *	NA	190 *	190 *	190 *	190 *	190 *	190 *	190 *	NA
Average C102-S1P and Dup	0.5'-7.5'	2	177.5 *	177.5 *	177.5 *	177.5 *	NA	177.5 *	177.5 *	177.5 *	177.5 *	177.5 *	177.5 *	177.5 *	NA
C162-S1P	0.5'-8.0'	2	1800	175 *	175 *	175 *	NA	175 *	600	175 *	450	380	175 *	175 *	NA
C110-S1P	0.5'-4.5'	2	175 *	175 *	175 *	175 *	NA	175 *	380	175 *	790	730	410	520	NA

Sample ID	depth (feet)	Depth group	Naphthalene	2-Methyl-naphthalene	Ace-naphthylene	Ace-naphthene	Dibenzo-furan	Fluorene	Phen-anthrene	Anthra-cene	Fluor-anthene	Pyrene	Benzo[a]-anthracene	Chrysene	bis(2-Ethylhexyl)-phthalate
C110-S3P	4.5'-7.5'	4	185 *	185 *	185 *	185 *	NA	185 *	185 *	185 *	185 *	185 *	185 *	185 *	NA
C135-S1P	0.5'-4.0'	2	190 *	190 *	190 *	190 *	NA	190 *	190 *	190 *	190 *	190 *	190 *	190 *	NA
C82-S1P	3.0'-6.0'	4	180 *	180 *	180 *	180 *	NA	180 *	390	180 *	760	710	390	480	NA
C199-S1P	1.0'-6.0'	2	170 *	170 *	170 *	170 *	NA	170 *	170 *	170 *	170 *	170 *	170 *	170 *	NA
C199-S4P	6.0'-10.0'	4	195 *	195 *	195 *	195 *	NA	195 *	195 *	195 *	195 *	195 *	195 *	195 *	NA
C123-S1P	3.5'-4.5'	4	180 *	180 *	180 *	180 *	NA	180 *	1000	180 *	1400	1100	580	660	NA
C123-S1P (EPH)	3.5'-4.5'	4	260 *	260 *	260 *	260 *	NA	260 *	94	260 *	1700	1700	700	730	NA
C122-S1P	1.0'-7.5'	2	180 *	180 *	180 *	180 *	NA	180 *	180 *	180 *	180 *	180 *	180 *	180 *	NA
C122-S2P	7.5'-9.5'	4	190 *	190 *	190 *	190 *	NA	190 *	190 *	190 *	190 *	190 *	190 *	190 *	NA
C116-S1P	1.5'-6.0'	2	210 *	210 *	210 *	210 *	NA	210 *	210 *	210 *	210 *	210 *	210 *	210 *	NA
C116-S2P	6.0'-9.5'	4	195 *	195 *	195 *	195 *	NA	195 *	195 *	195 *	195 *	195 *	195 *	195 *	NA
Average C114-S1P and Dup	1.0'-3.0'	2	195 *	195 *	195 *	195 *	NA	195 *	195 *	195 *	195 *	195 *	195 *	195 *	NA
C39-S1P	0.5'-8.5'	2	9000 *	9000 *	9000 *	76000	NA	64000	470000	97000	330000	450000	170000	180000	NA
ALL SAMPLES															
<3 ft only		1 Average	288.3	250.5	268.7	257.2	177.6	255.1	703.7	318.8	1150.8	1096.1	564.1	644.6	165.0
Includes <3 ft and >3 ft		2 Average	1732.5	592.2	584.8	3209.1	412.2	2763.8	19411.2	4216.9	14355.5	18868.2	7471.6	7979.0	337.3
All samples that include <3 (may or may not include deeper soil) (groups 1 and 2)		3 Average	1010.4	421.4	426.8	1733.2	294.9	1509.4	10057.5	2267.8	7753.1	9982.2	4017.8	4311.8	251.1
>3 ft only		4 Average	314.0	197.0	189.3	212.6	127.5	212.2	392.2	207.0	610.4	563.0	324.0	360.0	112.0
All samples that include >3 (may or may not include shallow soil) (groups 2 and 4)			1023.3	394.6	387.1	1710.9	269.9	1488.0	9901.7	2211.9	7483.0	9715.6	3897.8	4169.5	224.6
Grand Average			657.3	322.6	325.9	996.5	224.2	881.9	5380.7	1279.5	4357.8	5469.5	2254.2	2430.4	197.6
EXCLUDING C-39															
<3 ft only		1 Average	288.3	250.5	268.7	257.2	177.6	255.1	703.7	318.8	1150.8	1096.1	564.1	644.6	165.0
Includes <3 ft and >3 ft		2 Average	1441.8	255.9	248.2	297.5	412.2	314.3	1387.7	505.5	1729.7	1622.9	970.4	1098.1	337.3
All samples that include <3 (may or may not include deeper soil) (groups 1 and 2)		3	865.0	253.2	258.5	277.3	294.9	284.7	1045.7	412.2	1440.2	1359.5	767.3	871.4	251.1
>3 ft only		4 Average	314.0	197.0	189.3	212.6	127.5	212.2	392.2	207.0	610.4	563.0	324.0	360.0	112.0
All samples that include >3 (may or may not include shallow soil) (groups 2 and 4)		5	877.9	226.5	218.8	255.0	269.9	263.2	889.9	356.3	1170.1	1093.0	647.2	729.1	224.6
Grand Average			576.3	235.8	240.1	253.9	224.2	257.0	780.5	331.8	1133.6	1068.2	593.4	672.3	197.6

NOTES:
* Denotes value is half of the detection limit
J = Estimated Value, below quantitation limit
D = Serrogate Diluted Out
NA = Not Applicable or Not Analyzed for

		Table N.1 Continued									
Sample ID	**depth (feet)**	**Benzo[b]-fluoranthene**	**Benzo[k]-fluoranthene**	**Benzo[a]-pyrene**	**Indeno[1,2,3-cd]-pyrene**	**Dibenz-[a,h]anthra-cene**	**Benzo[g,h,i]-perylene**	**Carbazole**	**n-C9 to n-C18 Aliphatic Hydrocarbons**	**n-C19 to n-C36 Aliphatic Hydrocarbons**	**n-C11 to n-C22 Aromatic Hydrocarbons**
Zone 1	0-1	170 J	260	230	94 J	95 *	100 J	95 *	NA	NA	NA
Average Zone 2 and Dup	0-1	135 J	225	165 J	60.5 J	105 *	59 J	105 *	NA	NA	NA
Zone 3	0-1	93 J	140 J	110 J	95 *	95 *	95 *	95 *	NA	NA	NA
Avg Zone 4 and Dup	0-1	160 J	255	170	80.5 J	105 *	80 *	105 *	NA	NA	NA
Zone 5	0-1	200 J	300	240	65 J	100 *	61 J	100 *	NA	NA	NA
Zone 6	0-1	110 J	170 J	110 J	100 *	100 *	100 *	100 *	NA	NA	NA
Zone 7	0-1	140 J	180 J	140 J	45 J	100 *	46 J	100 *	NA	NA	NA
Zone 8	0-1	120 J	190 J	150 J	105 *	105 *	105 *	105 *	NA	NA	NA
Zone 9	0-1	180 J	290	210 J	53 J	105 *	50 J	105 *	NA	NA	NA
Zone 11	0-1	110 J	160 J	120 J	95 *	95 *	95 *	95 *	NA	NA	NA
Avg Zone 12 and Dup	0-1	190 J	180 J	170 J	84.5 J	112.5 *	85 J	145 J	NA	NA	NA
Zone 10	0-1	780	1100	880	210	44 J	190 J	210	NA	NA	NA
Z10-64R	0-1	170 J	160 J	170 J	72 J	100 *	87 J	130 J	NA	NA	NA
Z10-65R	0-1	140 J	130 J	150 J	65 J	105 *	63 J	81 J	NA	NA	NA
Z10-66R	0-1	270	230	260	120 J	100 *	120 J	150 J	NA	NA	NA
Z10-67R	0-1	170 J	150 J	160 J	66 J	100 *	67 J	110 J	NA	NA	NA
Z10-68R	0-1	465 *	465 *	465 *	465 *	465 *	465 *	465 *	NA	NA	NA
Z10-69R	0-1	160 J	130 J	140 J	57 J	105 *	61 J	90 J	NA	NA	NA
Z10-70R	0-1	420	410	460	140 J	105 *	140 J	180 J	NA	NA	NA
Z10-71R	0-1	230	240	250	93 J	100 *	100 J	210	NA	NA	NA
Z10-72R	0-1	260	230	250	93 J	105 *	89 J	240	NA	NA	NA
Z10-73R	0-1	250	220	230	74 J	95 *	70 J	170 J	NA	NA	NA
Z10-73RX	0-1	490	410	480	240	41 J	250	440	NA	NA	NA
A-104	10'-10.5	70 J	100 J	84 J	140 *	140 *	140 *	140	NA	NA	NA
PS-1	1-2'	145 *	145 *	145 *	145 *	145 *	145 *	145 *	NA	NA	NA
PS-2	1.5-4'	3000 D	3100 D	3600 D	1900 D	700 *	2000 D	1200 JD	NA	NA	NA
PS-3	1.8-4.0'	510	550	650	320	140 *	320	120 J	NA	NA	NA
Average PS-4 and Dup	1.5-4.0'	7000 D	4050 D	4000 D	4350 D	1380 D	4400 D	355.5 J	NA	NA	NA
PS-5	2.8-3.5'	440	420	490	280 J	145 *	270 J	145 *	NA	NA	NA
PS-6	2.3-2.8'	5800 D	6700 D	6700 D	3000 D	1450 *	2600 JD	1450 *	NA	NA	NA
PS-7	1.5-5.0'	350	390	390	210 J	130 *	230 J	130	NA	NA	NA
PS-8	1.5-5.0'	720 JD	590 JD	510 JD	330 JD	700 *	340 JD	700 *	NA	NA	NA
PS-9	1.6-4.0'	76 J	76 J	81 J	155 *	155 *	155 *	155 *	NA	NA	NA
PS-10	5.5-6.4'	300	320	300	190 J	135 *	220 J	56 J	NA	NA	NA
PS-11	1.8-4.0'	700 *	700 *	310 JD	700 *	700 *	700 *	700 *	NA	NA	NA
Average PS-12 and dup	4.0-6.2'	500	495	515	320	145 *	295	242.5	NA	NA	NA
PS-13	2.3-3.0'	2600	1600	1800	830	210 J	710	220 J	NA	NA	NA
PS-14	6'-7'	100 *	100 *	100 *	100 *	100 *	100 *	100 *	NA	NA	NA
PS-15	5'-9'	135 *	135 *	135 *	135 *	135 *	135 *	135 *	NA	NA	NA
Tot Lot	0-2'	85 J	92 J	93 J	67 J	145 *	66 J	145 *	NA	NA	NA
Garden	0-2'	4400	3800	3900	1100	370	1000	330	NA	NA	NA
A-2	0'-3'	620	530	490	160 J	66 J	130 J	NA	NA	NA	NA
A-101	5'-7'	140 *	140 *	140 *	140 *	140 *	140 *	NA	NA	NA	NA
A-104	3'-4'	2400	2200	2300	550 J	275 *	410 J	NA	NA	NA	NA
A-104	2'-3'	420	410	420	150 J	135 *	130 J	NA	NA	NA	NA
A-6	2.3'-3.0'	510	470	450	160 J	170 *	130 J	NA	NA	NA	NA
A-105	2.0'-3.0'	2000	1800	1900	520 J	265 *	410 J	NA	NA	NA	NA
A-105	3.0'-4.0'	980 J	1100 J	890 J	650 *	650 *	650 *	NA	NA	NA	NA
A-10	1'-3'	110 J	100 J	120 J	64 J	140 *	61 J	NA	NA	NA	NA

Sample ID	depth (feet)	Benzo[b]-fluoranthene	Benzo[k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenz-[a,h]anthra-cene	Benzo[g,h,i]-perylene	Carbazole	n-C9 to n-C18 Aliphatic Hydrocarbons	n-C19 to n-C36 Aliphatic Hydrocarbons	n-C11 to n-C22 Aromatic Hydrocarbons
A-102	2'-3'	65 J	62 J	68 J	130 *	130 *	130 *	NA	NA	NA	NA
Average A-102 and Dup	3'-4'	860 J	690 J	612.5 J	255 *	255 *	255 *	NA	NA	NA	NA
A-103	2'-4'	190 J	190 J	200 J	130 J	130 *	130 J	NA	NA	NA	NA
A-103	4'-5'	110 J	110 J	110 J	68 J	130 *	67 J	NA	NA	NA	NA
A-106	2'-3'	135 *	135 *	135 *	135 *	135 *	135 *	NA	NA	NA	NA
A-106	4'-6'	140 *	140 *	140 *	140 *	140 *	140 *	NA	NA	NA	NA
A-108	3'-4'	370 J	360 J	310 J	120 J	260 *	260 *	NA	NA	NA	NA
A-27	1'-3'	750 J	640 J	590 J	650 *	650 *	650 *	NA	NA	NA	NA
A-30	1.5'-3.0'	135 *	135 *	135 *	135 *	135 *	135 *	NA	NA	NA	NA
A-107	3'-4'	135 *	135 *	135 *	135 *	135 *	135 *	NA	NA	NA	NA
A-107	8'-10'	150 *	150 *	150 *	150 *	150 *	150 *	NA	NA	NA	NA
Avg A-109 and dup	3'-4.5'	1900 J	1850 J	1550 J	570 J	1050 *	885 J	NA	NA	NA	NA
A-109	1.5'-3.0'	370	330	330	200 J	140 *	170 J	NA	NA	NA	NA
A-110	3.0'-4.5'	90 J	100 J	98 J	150 *	150 *	150 *	NA	NA	NA	NA
A-111	1.5'-3.0'	130 *	130 *	130 *	130 *	130 *	130 *	NA	NA	NA	NA
A-111	3.0'-4.5'	140 *	140 *	140 *	140 *	140 *	140 *	NA	NA	NA	NA
A-32	1'-3'	130 *	130 *	47 J	130 *	130 *	130 *	NA	NA	NA	NA
A-49	1'-3'	760 J	770 J	750 J	1300 *	1300 *	1300 *	NA	NA	NA	NA
A-114	3'-5.5'	410	430	450	190 J	135 *	160 J	NA	NA	NA	NA
A-115	0.5'-3.0'	560 J	420 J	420 J	700 *	700 *	700 *	NA	NA	NA	NA
Avg A115 and dup	3.0-5.5	147.5 *	147.5 *	147.5 *	147.5 *	147.5 *	147.5 *	NA	NA	NA	NA
A-115	6.0'-8.6' (or 8.0?)	155 *	155 *	155 *	155 *	155 *	155 *	NA	NA	NA	NA
A-112	0'-2'	460 J	490 J	490 J	700 *	700 *	700 *	NA	NA	NA	NA
Average A-110 Woods Hole and STL	1.5'-3.0'	123.5	119.5	121.5	155 *	155 *	155 *	NA	NA	NA	NA
Average A-113 Woods Hole and STL	3'-4.5'	162.5 *	162.5 *	162.5 *	162.5 *	162.5 *	162.5 *		NA	NA	NA
November - December 2003											
B-51 S3 (EPH)	2'	2.7 *	2.7 *	2.7 *	2.7 *	2.7 *	2.7 *	NA	NA	NA	NA
C96-S4P (EPH)	5.0'-6.5'	285 *	285 *	285 *	285 *	285 *	285 *	NA	17000 *	17000 *	17000 *
C96-S4P (VPH)	5.0'-6.5'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C95-S3P (EPH)	4.0'-4.5'	255 *	255 *	255 *	255 *	255 *	255 *	NA	15500 *	270000	240000
C95-S3P (VPH)	4.0'-4.5'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C2-S1P	0.5'-4.5'	7100	6600	7700	1800	800	1600	NA	NA	NA	NA
C2-S2P	4.5'-7.0'	410	340	410	165 *	165 *	165 *	NA	NA	NA	NA
C15-S1P	0.5'-2.0'	1700 *	1700 *	1700 *	1700 *	1700 *	1700 *	NA	NA	NA	NA
C15-S2P	2.0'-4.5'	205 *	205 *	205 *	205 *	205 *	205 *	NA	NA	NA	NA
C15-S3P	4.5'-8.5'	200 *	200 *	200 *	200 *	200 *	200 *	NA	NA	NA	NA
C9-S1P	0'-5.5'	600	530	600	205 *	205 *	205 *	NA	NA	NA	NA
C21-S1P	0.85'-6.0'	430	430	520	200 *	200 *	500	NA	NA	NA	NA
C54-S1P	1.0'-5.5'	185 *	185 *	185 *	185 *	185 *	185 *	NA	NA	NA	NA
C93-S1P	0.5'-6.0'	190 *	190 *	190 *	190 *	190 *	190 *	NA	NA	NA	NA
Average C102-S1P and Dup	0.5'-7.5'	177.5 *	177.5 *	177.5 *	177.5 *	177.5 *	177.5 *	NA	NA	NA	NA
C162-S1P	0.5'-8.0'	175 *	175 *	175 *	175 *	175 *	175 *	NA	NA	NA	NA
C110-S1P	0.5'-4.5'	480	370	400	175 *	175 *	175 *	NA	NA	NA	NA

Sample ID	depth (feet)	Benzo[b]-fluoranthene	Benzo[k]-fluoranthene	Benzo[a]-pyrene	Indeno[1,2,3-cd]-pyrene	Dibenz-[a,h]anthra-cene	Benzo[g,h,i]-perylene	Carbazole	n-C9 to n-C18 Aliphatic Hydrocarbons	n-C19 to n-C36 Aliphatic Hydrocarbons	n-C11 to n-C22 Aromatic Hydrocarbons
C110-S3P	4.5'-7.5'	185 *	185 *	185 *	185 *	185 *	185 *	NA	NA	NA	NA
C135-S1P	0.5'-4.0'	190 *	190 *	190 *	190 *	190 *	190 *	NA	NA	NA	NA
C82-S1P	3.0'-6.0'	430	180 *	420	180 *	180 *	180 *	NA	NA	NA	NA
C199-S1P	1.0'-6.0'	170 *	170 *	170 *	170 *	170 *	170 *	NA	NA	NA	NA
C199-S4P	6.0'-10.0'	195 *	195 *	195 *	195 *	195 *	195 *	NA	NA	NA	NA
C123-S1P	3.5'-4.5'	690	560	740	180 *	180 *	180 *	NA	NA	NA	NA
C123-S1P (EPH)	3.5'-4.5'	900	530	700	730	260 *	870	NA	33000	1700000	460000
C122-S1P	1.0'-7.5'	180 *	180 *	180 *	180 *	180 *	180 *	NA	NA	NA	NA
C122-S2P	7.5'-9.5'	190 *	190 *	190 *	190 *	190 *	190 *	NA	NA	NA	NA
C116-S1P	1.5'-6.0'	210 *	210 *	210 *	210 *	210 *	210 *	NA	NA	NA	NA
C116-S2P	6.0'-9.5'	195 *	195 *	195 *	195 *	195 *	195 *	NA	NA	NA	NA
Average C114-S1P and Dup	1.0'-3.0'	195 *	195 *	195 *	195 *	195 *	195 *	NA	NA	NA	NA
C39-S1P	0.5'-8.5'	95000	110000	150000	68000	28000	77000	NA	NA	NA	NA
ALL SAMPLES											
<3 ft only		596.2	585.6	579.3	322.5	254.0	304.3	211.3	0.0	0.0	0.0
Includes <3 ft and >3 ft		4668.2	5098.8	6697.8	3134.7	1379.1	3484.9	416.4	0.0	0.0	0.0
All samples that include <3 (may or may not include deeper soil) (groups 1 and 2)		2632.2	2842.2	3638.6	1728.6	816.6	1894.6	313.9	0.0	0.0	0.0
>3 ft only		347.7	319.3	319.5	216.6	220.0	236.4	107.8	21833.3	662333.3	239000.0
All samples that include >3 (may or may not include shallow soil) (groups 2 and 4)		2507.9	2709.1	3508.7	1675.7	799.6	1860.7	262.1	21833.3	662333.3	239000.0
Grand Average		1561.1	1657.7	2062.5	1008.2	530.8	1095.1	246.2	21833.3	662333.3	239000.0
EXCLUDING C-39											
<3 ft only		596.2	585.6	579.3	322.5	254.0	304.3	211.3	0.0	0.0	0.0
Includes <3 ft and >3 ft		1054.9	902.7	965.7	540.1	314.3	544.3	416.4	0.0	0.0	0.0
All samples that include <3 (may or may not include deeper soil) (groups 1 and 2)		825.6	744.2	772.5	431.3	284.2	424.3	313.9	0.0	0.0	0.0
>3 ft only		347.7	319.3	319.5	216.6	220.0	236.4	107.8	21833.3	662333.3	239000.0
All samples that include >3 (may or may not include shallow soil) (groups 2 and 4)		701.3	611.0	642.6	378.4	267.2	390.4	262.1	21833.3	662333.3	239000.0
Grand Average		635.9	585.0	597.8	344.9	258.8	343.5	246.2	21833.3	662333.3	239000.0

Table N.2 Exposure Point Concentrations - VOCs in Soil (ug/kg)

Location	depth	depth group	Chloro-methane	Bromo-methane	Trichloro-fluoro-methane	Acetone	Carbon disulfide	Methylene chloride	Methyl tert-butyl ether (MTBE)	2-Butanone (MEK)	cis-1,2-Dichloro-ethene	Chloroform	Benzene
PS-1	1-2'	1	2 *	2 *	2 *	26	2 *	3 JB	2 *	2 *	2 *	2 *	2 *
PS-2	1.5-4'	2	2 *	2 *	1 J	40 B	2 *	2 JB	2 *	4	2 *	2 *	2 J
PS-3	1.8-4.0'	2	2 *	2 *	2 *	67	1 J	3 JB	2 *	6	2 *	4	2 J
Avg PS-4 and Dup	1.5-4.0'	2	1.5 J	2 *	2 *	29 B	1.5 J	2 JB	1.5 J	3.5 J	2 *	1.5 JB	3.5 J
PS-5	2.8-3.5'	2	2 *	1 J	2 *	150 B	2 *	2 JB	2 *	10	2 *	1 JB	2 *
PS-6	2.3-2.8'	1	2 *	2 *	2 *	230 EB	1 J	2 JB	2 *	12	2 *	1 JB	4
PS-7	1.5-5.0'	2	2 J	1.5 *	1.5 *	58 B	1.5 *	1 JB	1.5 *	9	1.5 *	1.5 *	1.5 *
PS-8	1.5-5.0'	2	1.5 *	1.5 *	1.5 *	50	1 J	3 B	1.5 *	6	1.5 *	1.5 *	1 J
PS-9	1.6-4.0'	2	2 *	2 *	2 *	50	2 *	3 JB	2 *	4	2 *	2 J	2 *
PS-10	5.5-6.4'	4	3 J	2 *	1 J	47	3 J	3 JB	2 *	7	2 J	1 J	2 *
PS-11	1.8-4.0'	2	1.5 *	1.5 *	1.5 *	110	3	3 B	1.5 *	17	1.5 *	1.5 *	1 J
Average PS-12 and Dup	4.0-6.2'	2	2 *	1.5 J	2 *	355	1.5 J	2.5 JB	2 *	25	2 *	2 J	2 *
PS-13	2.3-3.0'	1	1.5 *	1.5 *	1.5 *	17	1.5 *	3 B	1.5 *	1 J	5	1.5 *	1.5 *
PS-14	6'-7'	4	2 *	2 *	2 *	94	2 *	1 JB	2 *	10	2 J	2 *	2 *
PS-15	5'-9'	4	2 *	2 *	2 *	16 B	2 *	2 JB	2 *	1 J	2 *	2 JB	2 *
TotLot	0-2'	1	2 *	2 *	2 *	83 B	2 *	2 JB	2 *	6	2 *	1 JB	2 *
Garden	0-2'	1	2.5 *	2.5 *	2.5 *	52 B	2.5 *	2 JB	2.5 *	5	2.5 *	2.5 *	2.5 *
Average A-102 and Dup	4'-5'	4	39 *	39 *	39 *	625	39 *	39 *	39 *	39 *	39 *	39 *	39 *
C96-S4P	5.0'-6.5'		NA	NA	NA	NA	NA	NA	0.055 *	NA	NA	NA	0.055 *
C95-S3P	4.0'-4.5'		NA	NA	NA	NA	NA	NA	0.05 *	NA	NA	NA	0.05 *
<3 ft only		**1**	**2.00**	**2.00**	**2.00**	**81.60**	**1.80**	**2.40**	**2.00**	**5.20**	**2.70**	**1.60**	**2.40**
Includes >3 ft and >3 ft		**2**	**1.83**	**1.67**	**1.72**	**101.00**	**1.72**	**2.39**	**1.78**	**9.39**	**1.83**	**1.89**	**1.89**
All samples that include <3 (may or may not include deeper soil - groups 1 and 2)		**3**	**1.92**	**1.83**	**1.86**	**91.30**	**1.76**	**2.39**	**1.89**	**7.29**	**2.27**	**1.74**	**2.14**
>3 ft only		**4**	**11.50**	**11.25**	**11.00**	**195.50**	**11.50**	**11.25**	**7.52**	**14.25**	**11.25**	**11.00**	**7.52**
All samples that include >3 (may or may not include shallow soil - groups 2 and 4)		**5**	**6.67**	**6.46**	**6.36**	**148.25**	**6.61**	**6.82**	**4.65**	**11.82**	**6.54**	**6.44**	**4.70**
Grand Average			**4.03**	**3.89**	**3.86**	**116.61**	**3.92**	**4.36**	**3.56**	**9.31**	**4.17**	**3.83**	**3.71**

Notes:
* Denotes value is half of the detection limit
J = Estimated Value, below quantitation limit
B = Found in associated blank as well as sample
E = Estimated value, above calibration range
NA = Not Applicable or Not Analyzed for

Table N.2 Continued

Location	Trichloro-ethene	Methyl isobutyl ketone	Toluene	2-Hexanone	Tetra-chloro-ethene	Ethyl-benzene	p/m-Xylene	O-xylene	1,3,5-Trimethyl-benzene	1,2,4-Trimethyl-benzene	sec-Butyl-benzene	p-Isopropyl-toluene	Naphthalene
PS-1	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *
PS-2	2 *	2 *	2 J	2 *	2 *	2 *	1 J	2 *	2 *	2 *	2 *	2 *	64 B
PS-3	2 J	2 *	1 J	2 *	13	2 *	2 *	2 *	2 *	2 *	2 *	2 *	1 J
Avg PS-4 and Dup	2 *	2 *	1 J	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	8.5 JB
PS-5	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 JB
PS-6	2 *	2 *	1 J	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	5 B
PS-7	1.5 *	1.5 *	1.5 *	1 J	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	2 JB
PS-8	1.5 *	1 J	1 J	1.5 *	2 J	3	1 J	1 J	1 J	2 J	1.5 *	3	47,000
PS-9	2 *	2 *	2 *	2 *	10	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 J
PS-10	1 J	2 *	2 *	2 *	5	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *
PS-11	1.5 *	1.5 *	2 J	1.5 *	1.5 *	1.5 *	1 J	1.5 *	1.5 *	1.5 *	1.5 *	1 J	6,900
Average PS-12 and Dup	2 *	2 *	2 J	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	97 J
PS-13	8	1.5 *	1.5 *	1.5 *	87	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *	1.5 *
PS-14	2 J	2 *	2 *	2 *	2 J	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *
PS-15	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	1 JB
TotLot	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 JB
Garden	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	6 B
Average A-102 and Dup	39 *	39 *	39 *	39 *	39 *	39 *	39 *	39.25 J	195	290	130	165	108
C96-S4P	NA	NA	0.055 *	NA	NA	0.055 *	0.055 *	0.055 *	NA	NA	NA	NA	0.25 *
C95-S3P	NA	NA	0.05 *	NA	NA	0.05 *	0.05 *	0.05 *	NA	NA	NA	NA	2.9
<3 ft only	**3.30**	**2.00**	**1.80**	**2.00**	**19.10**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**2.00**	**3.30**
Includes >3 ft and >3 ft	**1.83**	**1.78**	**1.61**	**1.78**	**4.00**	**2.00**	**1.61**	**1.78**	**1.78**	**1.89**	**1.83**	**1.94**	**6008.50**
All samples that include include deeper soil - gro	**2.57**	**1.89**	**1.71**	**1.89**	**11.55**	**2.00**	**1.81**	**1.89**	**1.89**	**1.94**	**1.92**	**1.97**	**3005.90**
>3 ft only	**11.00**	**11.25**	**7.52**	**11.25**	**12.00**	**7.52**	**7.52**	**7.56**	**50.25**	**74.00**	**34.00**	**42.75**	**19.36**
All samples that include include shallow soil - gro	**6.42**	**6.51**	**4.56**	**6.51**	**8.00**	**4.76**	**4.56**	**4.67**	**26.01**	**37.94**	**17.92**	**22.35**	**3013.93**
Grand Average	**4.28**	**3.94**	**3.43**	**3.94**	**9.97**	**3.66**	**3.48**	**3.57**	**12.61**	**17.94**	**9.03**	**11.03**	**2710.46**

Table N.3 Exposure Point Concentrations - Metals in Soil (mg/kg)

Location	depth	Depth group	Copper	Nickel	Silver	Zinc	Lead	Arsenic
Zone 1	0-6"	1	24	9.6	1.3	65	79	8.1
Average Zone 2 and Dup	0-6"	1	18.5	11.1	1.11	67.5	69.5	7.85
Zone 3	0-6"	1	14	11	1.8	59	61	7.7
Zone 4	0-6"	1	18	8.9	1.1	56	75	8.9
Zone 5	0-6"	1	21	8.8	1.2	57	68	8.5
Zone 6	0-6"	1	18	8.6	1.2	260	63	10
Zone 7	0-6"	1	18	9.6	1.3	60	65	11
Average Zone 8 and Dup	0-6"	1	25.5	8.6	1.45	57	55	12.5
Zone 9	0-6"	1	24	11	1.6	85	220	8.8
Zone 10	0-6"	1	20	11	1.9	490	70	7.8
Zone 11	0-6"	1	15	14	1.4	56	50	9.3
Zone 12	0-6"	1	18	11	1	68	72	7.4
PS-1	1-2'	1	1.4	3.4	0.5 *	9.8	6.7	1.2
PS-6	2.3-2.8'	1	44	17	1.8	250	1,300	9.1
PS-13	2.3-3.0'	1	85	15	1.7	110	230	6.3
TotLot	0-2'	1	5.1	5.5	0.5 *	27	16	3.1
Garden	0-2'	1	55	8.9	0.5 *	83	210	14
A-109	1.5'-3.0'	1	32	14	NA	NA	42	NA
A-110	1.5'-3.0	1	6.8	4.1	NA	NA	33	NA
A-111	1.5'-3.0'	1	8.2	7.5	NA	NA	6.9	NA
A-115	0.5'-3.0'	1	NA	NA	NA	NA	NA	NA
PS-2	1.5-4'	2	30	17	1.2	120	100	4.8
PS-3	1.8-4.0'	2	15	9	0.5 *	41	39	3.3
Average PS-4 and Dup	1.5-4.0'	2	5230	167.5	6.4	450	820	6.2
PS-5	2.8-3.5'	2	17	10	0.5 *	64	110	5.4
PS-7	1.5-5.0'	2	43	6.4	0.5 *	97	140	4.4
PS-8	1.5-5.0'	2	13	11	0.5 *	36	13	3.2
PS-9	1.6-4.0'	2	10	9.6	0.5 *	31	18	2.6
PS-11	1.8-4.0'	2	16	11	0.5 *	69	48	7.8
PS-10	5.5-6.4'	4	13	8.3	0.5 *	29	24	2.9
Average PS-12 and Dup	4.0-6.2'	4	20.5	8.3	0.5 *	50	51.5	8.1
PS-14	6'-7'	4	9.4	7.7	0.5 *	25	13	5.8
PS-15	5'-9'	4	8.2	6.4	0.5 *	15	9.6	1.3
Average A-109 and Dup	3.0'-4.5'	4	49.5	9.15	NA	NA	97	NA
A-110	3.0'-4.5'	4	14	8	NA	NA	82	NA
A-111	3.0'-4.5'	4	8.2	7.7	NA	NA	5.5	NA
Average A-114 Woods Hole and STL	3' - 5.5'	4	190	15	NA	150	240	NA
November - December 2003								
C2-S1	0.5'-4.5'	2	210	14	2.65 *	200	710	11
C15-S1P	0.5'-2.0'	1	10.5 *	14	2.6 *	26 *	11	3.1
C9-S1P	0'-5.5'	2	30	6 *	3 *	30 *	160	11
C39-S1P	0'-8.5'	2	41	28	2.7 *	130	190	5
C37-S1P	0'-5.0'	2	10 *	5 *	2.55 *	54	62	4.4
C21-S1P	0'-6.0'	2	81	25	3.05 *	200	400	12
C93-S1P	0.5'-6.0'	2	12 *	6 *	3.05 *	30.5 *	6 *	1.9
Average C102-S1P and Dup	0.5'-7.5'	2	16.75 *	5.5 *	2.775 *	27.75 *	5.5 *	2.35
C162-S1P	0'-8.0'	2	11.5 *	5.5 *	2.8 *	28 *	22	2.2
C110-S1P	0'-4.5'	2	37	13	2.7 *	64	99	8.1
C110-S3P	4.5'-7.5'	4	12 *	6 *	2.95 *	29.5 *	6 *	3.3
C135-S1P	0.5'-4.0'	2	10.5 *	21	2.65 *	26.5 *	14	8
C82-S1P	3.0'-6.0'	4	25	5.5 *	2.7 *	27	59	6
C199-S1P	1.0'-6.0'	2	10.5 *	5.5 *	2.65 *	26.5 *	5.5 *	20
C199-S4P	6.0'-10.0'	4	12 *	6 *	2.95 *	29.5 *	6 *	2.7
C123-S1P	3.5'-4.5'	4	24	5.5 *	2.75 *	27.5 *	33	5.5
C122-S1P	1.0'-7.5'	2	11 *	5.5 *	2.7 *	27 *	26	4.7
C122-S2P	7.5'-9.5'	4	12 *	6 *	2.95 *	29.5 *	6 *	5
C116-S1P	1.5'-6.0'	2	99	18	3.1 *	91	86	14
C116-S2P	6.0'-9.5'	4	12 *	6 *	3 *	30 *	6 *	1.5
Average C114-S1P and Dup	1.0'-3.0'	1	12.5 *	6.25 *	3.125 *	31.25 *	64	3.5
ALL SAMPLES								
<3 ft only		**1**	**22.48**	**9.95**	**1.43**	**100.92**	**130.32**	**7.80**
Includes <3 ft and >3 ft		**2**	**283.54**	**19.02**	**2.24**	**87.77**	**146.38**	**6.78**
All samples that include <3 (may or may not include deeper soil - groups 1 and 2)		**3**	**153.01**	**14.49**	**1.83**	**94.35**	**138.35**	**7.29**
>3 ft only		**4**	**29.27**	**7.54**	**1.93**	**40.18**	**45.61**	**4.21**
All samples that include >3 (may or may not include shallow soil - groups 2 and 4)		**5**	**156.40**	**13.28**	**2.08**	**63.98**	**96.00**	**5.49**
Grand Average			**118.25**	**12.48**	**1.83**	**80.84**	**113.45**	**6.52**

NOTE : * Value indicates half the detection limit

Table N.4 Exposure Point Concentrations - SVOCs in Groundwater (ug/L)

Water level (ft) (TOC)	**Location**	Phenol	Dimethylphthalate	Diethylphthalate	Di-n-butylphthalate	Butylbenzyl-phthalate	bis(2-Ethylhexyl)phthalate
Sampled 07/08/98							
1.51	PS-1	0.91 J	2.65 *	0.75 J	1.7 JB	2.65 *	1.5 JB
3.95	PS-2	2.8 J	2.55 *	1.3 J	3 JB	2.55 *	1.8 JB
3.51	PS-3	0.89 J	2.6 *	0.56 J	1.2 JB	2.6 *	1.1 JB
4.93	PS-4	2.55 *	2.55 *	0.9 J	2.2 JB	2.55 *	1.9 JB
5.56	Avg PS-5 and Dup	2.525 *	1.565 J	3.275 J	2.225 JB	2.525 *	0.655 JB
2.48	PS-6	2.6 *	2.6 *	2.6 *	0.78 JB	2.6 *	2.2 JB
2.39	PS-7	1.4 J	2.55 *	0.74 J	1.9 JB	2.55 *	1.1 JB
3.80	PS-8	3.9 J	2.75 *	0.95 JB	2.2 JB	2.75 *	4.8 JB
5.86	PS-9	ND	ND	ND	1.7 JB	2.6 *	3.4 JB
8.00	PS-10	4.1 J	2.6 *	0.92 JB	2.3 JB	1 J	13 B
7.29	PS-11	1.8 J	2.55 *	0.59 JB	0.89 JB	2.55 *	1.8 JB
NA	PS-12	ND	ND	ND	ND	ND	ND
4.00	PS-13	2.8 *	2.8 *	2.8 *	2.8 *	2.8 *	1.6 JB
5.94	PS-14	3.4 J	2.65 *	0.9 JB	2.4 JB	2.65 *	4.5 JB
5.72	PS-15	2.7 J	2.55 *	1 JB	2 JB	2.55 *	3.7 JB
	Max	**4.10**	**2.80**	**3.28**	**3.00**	**2.80**	**13.00**

NOTE:
* indicates value is half the detection limit
J = Estimated value, below quantitation limit
B = Found in associated blank as well as sample
ND = No data available

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Table N.5 Exposure Point Concentrations - VOCs in Groundwater (ug/L)

Water level (ft) (TOC)	**Location**	Methyl tert-butyl ether (MTBE)	cis-1,2-Dichloroethene	Chloroform	Trichloro-ethene	Tetrachloro-ethene	Naphthalene
Sampled 07/08/98							
1.51	PS-1	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
3.95	PS-2	9	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
3.51	PS-3	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
4.93	PS-4	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
5.56	Avg PS-5 and Dup	2.5 *	2.5 *	1 J	2.5 *	2.5 *	2.5 *
2.48	PS-6	2.5 *	2.5 *	5	2.5 *	2.5 *	2.5 *
2.39	PS-7	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
3.80	PS-8	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
5.86	PS-9	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
8.00	PS-10	2.5 *	1 J	2.5 *	2.5 *	7	2.5 *
7.29	PS-11	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *	2.5 *
ND	PS-12	ND	ND	ND	ND	ND	ND
4.00	PS-13	2.5 *	31	2.5 *	26	470	2.5 *
5.94	PS-14	27	2.5 *	2.5 *	2.5 *	2.5 *	1 J
5.72	PS-15	2.5 *	2.5 *	3 J	2.5 *	2.5 *	2.5 *
Sampled 05/27/99							
	Avg PS-13 (obtained by EHE & GeoInsight)	2 *	19	2 *	15.67	246.67	2 *
	PS-110	9.8					
	Max	**27.00**	**31.00**	**5.00**	**26.00**	**470.00**	**2.50**

Note:
* indicates value is half the detection limit
J = Estimated value, below quantitation limit
ND = No Data available

Table N.6 Exposure Point Concentrations - Inorganics in Groundwater (mg/L)

Water level (ft) (TOC)	Location	Sulfate	Arsenic	Chromium	Copper	Selenium	Zinc
Sampled 07/08/98							
1.51	PS-1	29	0.001 *	0.005 *	0.005 *	0.001 *	0.032
3.95	PS-2	20	0.001 *	0.005 *	0.005 *	0.001 *	0.062
3.51	PS-3	34	0.001 *	0.005 *	0.005 *	0.002	0.014
4.93	PS-4	55	0.001 *	0.1	0.013	0.001 *	0.005 *
5.56	Avg PS-5 and Dup	25.5	0.001 *	0.0365 *	0.005 *	0.001 *	0.005 *
2.48	PS-6	27	0.001 *	0.005 *	0.005 *	0.001 *	0.024
2.39	PS-7	42	0.013	0.005 *	0.005 *	0.001 *	0.011
3.80	PS-8	13	0.004	0.022	0.005 *	0.001 *	0.02
5.86	PS-9	130	0.009	0.005 *	0.005 *	0.001 *	0.013
8.00	PS-10	71	0.026	0.005 *	0.005 *	0.001 *	0.005 *
7.29	PS-11	98	0.11	0.005 *	0.005 *	0.001 *	0.023
ND	PS-12	ND	ND	ND	ND	ND	ND
4.00	PS-13	52	0.001 *	0.005 *	0.005 *	0.001 *	0.005 *
5.94	PS-14	24	0.001 *	0.005 *	0.005 *	0.001 *	0.023
5.72	PS-15	25	0.001 *	0.005 *	0.005 *	0.001 *	0.01
Max		**130**	**0.11**	**0.1**	**0.013**	**0.002**	**0.062**

NOTES:

* indicates value is half the detection limit

ND = No Data available

Receptor: Adult

DRAFT Table N.7 Exposure Parameters for Soil Contact for Current & Future Use (1) Central Tendency Parameters

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables								
										Averaging Period (11)	
	EPC (2)	AAF (3)	BW (4)	ING. RATE (5)	DERMAL AF (6)	SA (7)	EF (8)	ED (9)	EP (10)	non-cancer	cancer
Dermal Contact	Arithmetic mean concentration in soil	Chemical specific	69 kg	NA	0.07 mg/cm2	6199 cm2	88 events/ 365 days (1yr)	1 day/event	30 yrs	30 yrs	70 yrs
Incidental Ingestion of Soil	Arithmetic mean concentration in soil	Chemical specific	69 kg	50 mg	NA	NA	88 events/ 365 days (1yr)	1 day/event	30 yrs	30 yrs	70 yrs

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.
2. Arithmetic mean concentrations of COCs in soil samples collected from the Site were used to represent exposure point concentrations (EPCs) for dermal contact, incidental ingestion, fugitive dust exposure to soil.

3 Chemical specific values will be shown in separate table once the COC are identified; for the time being use 1.

4 Body weight is based on the 50th percentile body weight for males and females 18 -64 years of age from Appendix B, Table B-1 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.

5 Ingestion rate is based on DEP's Technical Update, "Calculation of Enhanced Soil Ingestion Rate", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

6 Dermal adherence factor is from Table 1 in DEP's Technical Update, "Weighted Skin-Soil Adherence Factors", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995). This adherence factor is for "Adult Recreational" based on the following exposed areas: face, hands, forearms, lower legs & feet.

7 Surface area for exposed skin is for face, hands, forearms, lower legs and feet. Values are taken from Appendix B, Table B-2, of the Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

8 Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that adults, like children, would be exposed to contaminants in soil, for 4 days per week May through September or 88 events.

9 The exposure duration describes how long each individual exposure event might last. For dermal contact and incidental ingestion of soil, exposure duration is by definition 1 day/event. During this event, the worker is assumed to receive the daily intake of contaminants.

10 The exposure period describes the length of time over which the receptor comes into contact with contaminants. It is assumed that exposure occurs over a 30 year period (chronic exposure) for recreational use for adults. This is appropriate for the central tendency estimate of dose. (30yrs should be used for the RME exposure.)

11 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 30 yrs for chronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

NA = Not Applicable.

Receptor: Young Child (aged 1-6 years)

DRAFT Table N.8(a) Exposure Parameters for Soil Contact for Current & Future Use (1) Central Tendency Parameters

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables								
										Averaging Period (11)	
	EPC (2)	AAF (3)	BW (4)	ING. RATE (5)	DERMAL AF (6)	SA (7)	EF (8)	ED (9)	EP (10)	non-cancer	cancer
Dermal Contact	Arithmetic mean concentration in soil	Chemical specific	16 kg	NA	0.35 mg/cm2	2362 cm2	88 events/ 365 days (1yr)	1 day/event	6 yrs	6 yrs	70 yrs
Incidental Ingestion of Soil	Arithmetic mean concentration in soil	Chemical specific	16 kg	100 mg	NA	NA	88 events/ 365 days (1yr)	1 day/event	6 yrs	6 yrs	70 yrs

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.
2. Arithmetic mean concentrations of COCs in soil samples collected from the Site were used to represent exposure point concentrations (EPCs) for dermal contact, incidental ingestion, fugitive dust exposure to soil.

3 Chemical specific values will be shown in separate table once the COC are identified; for the time being use 1.

4 Body weight is based on the 50th percentile body weight for males and females 1 to 6 years of age from Appendix B, Table B-1 of the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.

5 Ingestion rate is based on DEP's Technical Update, "Calculation of Enhanced Soil Ingestion Rate", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

6 Dermal adherence factor is from Table 1 in DEP's Technical Update, "Weighted Skin-Soil Adherence Factors", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995). This adherence factor is a weighted average for "child resident & child recreational" based on the following exposed areas: face, hands, forearms, lower legs & feet.

7 Surface area for exposed skin is for face, hands, forearms, lower legs and feet. Values are taken from Appendix B, Table B-2, of the Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

8 Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that children would be exposed to contaminants in soil, for 4 days per week May through September or 88 events.

9 The exposure duration describes how long each individual exposure event might last. For dermal contact and incidental ingestion of soil, exposure duration is by definition 1 day/event. During this event, the worker is assumed to receive the daily intALe of contaminants.

10 The exposure period describes the length of time over which the receptor comes into contact with contaminants. It is assumed that exposure occurs over a one year period as might be expected for site re-development work.

11 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 365 days for subchronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

NA = Not Applicable.

Receptor: Off-Site Young Child (1-2 yrs) During Remediation
DRAFT Table N.8 (b) Exposure Parameters for Inhalation of Particulate Matter

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables							
									Averaging Period (10)	
	EPC (2)	AAF (3)	BW (4)	INHL. RATE (5)	AIR VOL (6)	EF (7)	ED (8)	EP (9)	non-cancer	cancer
Inhalation of fugitive dust	Arithmetic mean concentration in soil	1	11 kg	4.7 l/min	6.8 m3/day	130 events/ yr	2 hrs/event	1 yr	1 yr	70 yrs

RAF = Relative Adherance factor. For Construction Worker, use sub-chronic, soil, ingest

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.

2. It is assumed that the concentration of particulate matter is 60/ug/m3 (Appendix B, the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site

Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 1995.).
It is further assumed that the fraction of OHM in airborne particluate matter is the same as that in the soil. Thus the equation to calculate is as follows:
EPC(air) ug/m3 = CONC(soil) mg/kg * 60ug/m3*CF
where CF = conversion factor of 10e-9kg/ug

3 For the inhalation route, this value is assumed to be 1 for all compounds.

4 Body weight is based on the average of boys and girls aged 1< 2yrs, from MADEP "Guidance for Disposal Site Risk Characterization", Table B-1.

5 Inhalation rate is calculated from the total air volume value presented inn USEPA, "Exposure Factors Handbook", (1999, EPA/600/C-99/001) Table 5-23.
(IR=6.8/24/60/1000=4.7)

6 Inhalation rate is based on USEPA, "Exposure Factors Handbook", (1999, EPA/600/C-99/001) Table 5-23.

7 Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that children would be exposed to fugitive dust 5 days/wk for 26 wks (6mo).
or 130 events.

8 The exposure duration describes how long each individual exposure event might last. For inhalation of soil particles, exposure duration is by definition 1 day/event. During this event, a child is assumed to be outside and exposed to fugitive dust for 2 hrs/day.

9 The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over a one year period as might be expected for construction or utility work.

10 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 365 days for subchronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

NA = Not Applicable.

11 Conversion Factor

12 PM 10 = Concentration in air of particulates less than or equal to 10 microns in diameter

Receptor: Construction Worker
DRAFT Table N.9(a) Exposure Parameters for Soil Contact

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables								
										Averaging Period (11)	
	EPC (2)	AAF (3)	BW (4)	ING. RATE (5)	DERMAL AF (6)	SA (7)	EF (8)	ED (9)	EP (10)	non-cancer	cancer
Dermal Contact	Arithmetic mean concentration in soi	Chemical specific	79 kg	NA	0.29 mg/cm2	2732 cm2	130 events/ 365 days (1yr)	1 day/event	1 yr	1 yr	70 yrs
	EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure										
Incidental Ingestion of Soil	Frequency; ED =	Chemical specific	79 kg	100 mg	NA	NA	130 events/ 365 days (1yr)	1 day/event	1 yr	1 yr	70 yrs

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.
2. Arithmetic mean concentrations of COCs in soil samples collected from the Site were used to represent exposure point concentrations (EPCs) for dermal contact, incidental ingestion, fugitive dust exposure to soil. For the inhalation route, this value is assumed to be 1 for all compounds.
3 Chemical specific values will be shown in separate table once the COC are identified; for the time being use 1.

4 Body weight is based on the average of men, aged 18 - 64, taken from Table 7-2 of Exposure Factor Handbook, USEPA, 1999. (Awaiting DEP confirmation of this number.) Inhalation rate is appropriate for heavy exertion and is from DEP's Technical Update, "Characterization of Risks Due to Inhalation of Particulates by Construction Workers", (April 2002),
5 Ingestion rate is based on DEP's Technical Update, "Calculation of Enhanced Soil Ingestion Rate", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

6 Dermal adherence factor is from Table 1 in DEP's Technical Update, "Weighted Skin-Soil Adherence Factors", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995). This adherence factor is a weighted average for heavy construction workers based on the following exposed areas: face, hands, forearms, & feet.

7 Surface area for exposed skin is for face, hands, forearms, and feet of males 18-65yrs. Values are taken from Appendix B, Table B-2, of the Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

8 Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that workers would be exposed to contaminants in soil, for 5 days per week for 25 weeks or one-half of one year period of site redevelopment work (or 130 events).
The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over a one year period as might be expected for construction or utility work.
9 The exposure duration describes how long each individual exposure event might last. For dermal contact and incidental ingestion of soil, exposure duration is by definition 1 day/event. During this event, the worker is assumed to receive the daily intake of contaminants.

10 The exposure period describes the length of time over which the receptor comes into contact with contaminants. It is assumed that exposure occurs over a one year period as might be expected for site re-development work.

11 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 365 days for subchronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

NA = Not Applicable.

Receptor: Construction Worker

DRAFT Table N.9(b) Exposure Parameters for Inhalation of Particulate Matter

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables							
									Averaging Period (10)	
	EPC (2)	AAF (3)	BW (4)	INHL. RATE (5)	AIR VOL (6)	EF (7)	ED (8)	EP (9)	non-cancer	cancer
Inhalation of fugitive dust	Arithmetic mean concentration in soil	1	79 kg	60 l/min	20 m3/day	130 events/ 365 yr	8 hrs/event	1 yr	1 yr	70 yrs

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; AAF = Absorption Adjustment Factor; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Fa
SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.

2. It is assumed that the concentration of particulate matter is 60/ug/m3 (Appendix B, the Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Site Cleanup and Office of Research and Standards, Guidance for Disposal Site Risk Characterization - In Support of the Massachusetts Contingency Plan, Interim Final Policy, WSC/ORS-95-141, July 199
It is further assumed that the fraction of OHM in airborne particluate matter is the same as that in the soil. Thus the equation to calculate is as follows:
EPC(air) ug/m3 = CONC(soil) mg/kg * 60ug/m3*CF
where CF = conversion factor of 10e-9kg/ug

3 For the inhalation route, this value is assumed to be 1 for all compounds.

4 Body weight is based on the average of men, aged 18 - 64, taken from Table 7-2 of Exposure Factor Handbook, USEPA, 1999. (Awaiting DEP confirmation of this number.)

5 Inhalation rate is appropriate for heavy exertion and is from DEP's Technical Update, "Characterization of Risks Due to Inhalation of Particulates by Construction Workers", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

6 Air volume is the total volume of air inhaled in 24 hr. and is recommended in DEP's Technical Update, "Characterization of Risks Due to Inhalation of Particulates by Construction Workers", (April 20(Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

7 Frequency of exposure describes how often the exposure event occurs over a given period of time. It was assumed that construction workers would be exposed to fugitive dust 5 days/wk for 26 wks (6mo). or 130 events.

8 The exposure duration describes how long each individual exposure event might last. For inhalation of soil particles, exposure duration is by definition 1 day/event. During this event, the worker is assumed to receive the daily intake of contaminants.

9 The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over a one year period as might be expected for construction or utility work.

10 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 365 days for subchronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating

NA = Not Applicable.

Receptor: Construction Worker

DRAFT Table N.9 (c) Exposure Parameters for Dermal Contact with Groundwater (1)

Exposure Pathway	Values for Chemical Specfic Variables		Values for Receptor-specific Exposure Variables							
									Averaging Period (11)	
	EPC (2)	Kp (3)	BW (4)	DERMAL AF (6)	SA (7)	EF (8)	ED (9)	EP (10)	non-cancer	cancer
Dermal Contact	Maximum concentration in groundwater	Chemical specific	79 kg	0.29 mg/cm2	1310 cm2	30 events/ year	1 hr/event	1 yr	1 yr	70 yrs

1. Code for Exposure Parameters: EPC = Exposure Point Concentration; Kp =skin permeability; BW = Body Weight; ING.RATE = Ingestion Rate; DERMAL AF = Dermal Adherence Factor; SA = Surface Area; EF = Exposure Frequency; ED = Exposure Duration; EP = Exposure Period; AP = Averaging Period.

2. Due to limit amount of groundwater data maximum concentrations are being used.

Skin permeability constant (cm/hr)

3

Body weight is based on the average of men, aged 18 - 64, taken from Table 7-2 of Exposure Factor Handbook, USEPA, 1999. (Awaiting DEP confirmation of this number.)

4 Inhalation rate is appropriate for heavy exertion and is from DEP's Technical Update, "Characterization of Risks Due to Inhalation of Particulates by Construction Workers", (April 2002),

5 Ingestion rate is based on DEP's Technical Update, "Calculation of Enhanced Soil Ingestion Rate", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

6 Dermal adherence factor is from Table 1 in DEP's Technical Update, "Weighted Skin-Soil Adherence Factors", (April 2002), Update to Appendix B, Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995). This adherence factor is a weighted average for heavy construction workers based on the following exposed areas: face, hands, forearms, ł

7 Surface area for exposed skin is for parts of body assumed to have contact with groundwater: feet of males 18-65yrs. Values are taken from Appendix B, Table B-2, of the Guidance for Disposal Site Risk Characterization- In Support of the Massachusetts Contingency Plan (1995).

8 Frequency of exposure describes how often the exposure event occurs over a given period of time.

The exposure period describes the length of time over which the receptor comes into contact with contaminants. We have assumed that exposure occurs over a one year period as might be expected for construction or utility work.

9 The exposure duration describes how long each individual exposure event might last. For dermal contact with groundwater, exposure duration is by definition 1 hour/event. During this event, the worker is assumed to receive the daily intake of contaminants.

10 The exposure period describes the length of time over which the receptor comes into contact with contaminants. It is assumed that exposure occurs over a one year period as might be expected for site re-development work.

11 For noncancer risks, the averaging period is set equal to the exposure period (in this case, 365 days for subchronic exposure). The averaging period is equal to a lifetime (i.e., 70 years) when estimating cancer risks.

NA = Not Applicable.

Table N.10 Toxicity Values for SemiVolatile Organic Compounds

Contaminant of Concern	Subchronic Oral RfD (mg/kg/day)	Reference	Chronic Oral RfD (mg/kg-day)	Reference	SubChronic Inhalation RfC (mg/m3)	Reference	Chronic Inhalation RfC (mg/m3)	Reference	Oral Cancer Slope Factor (per mg/kg-day)	Reference	Oral Cancer Unit Risk (per mg/L)	Reference	Inhalation Cancer Slope Factor (per mg/k/d)	Reference	Inhalation Unit Risk	Relative Potency Value (BaP) MADEP	Kp Value (cm/hr)	Reference
Naphthalene	2.00E-01	2	2.00E-02	1	3.00E-03	2	3.00E-03	1	NC		NC		NC		NC	NA	6.9E-02 *	9
2-Methylnaphthalene	2.00E-01	2	2.00E-02	2	3.00E-03	2	3.00E-03	2	NC		NC		NC		NC	NA	ND	
Acenaphthylene	4.00E-02	7	4.00E-02	7	ND		ND		NC		NC		NC		NC	NA	ND	
Acenaphthene	6.00E-01	2	6.00E-02	2	Not Volatile	2	Not Volatile	2	NC		NC		NC		NC	NA	ND	
Dibenzofuran	2.00E-03	8	2.00E-03	4	ND		ND		NC		NC		NC		NC	NA	ND	
Fluorene	4.00E-01	5	4.00E-02	1	ND		ND		NC		NC		NC		NC	NA	ND	
Phenanthrene	4.00E-02	2	4.00E-02	2	Not Volatile	2	Not Volatile	2	NC		NC		NC		NC	NA	2.3E-01 *	9
Anthracene	3.00E+00	5	3.00E-01	1	ND		ND		NC		NC		NC		NC	NA	ND	
Fluroanthene	4.00E-01	5	4.00E-02	1	ND		ND		NC		NC		NC		NC	NA	2.2E-03 *	9
Pyrene	3.00E-01	5	3.00E-02	7	ND		ND		NC		NC		NC		NC	NA	ND	
Benzo(a)anthracene	4.00E-02	7	4.00E-02	7	ND		ND		0.73	6	ND		ND	6	ND	0.1	8.1E-01 *	9
Chrysene	4.00E-02	7	4.00E-02	7	ND		ND		0.073	6	ND		ND	6	ND	0.01	8.1E-01 *	9
bis(2-ethylhexyl)phthalate	2.00E-02	8	2.00E-02	1	ND		ND		1.40E-02	1	4.00E-04	1	1.40E-02	4	ND	NA	ND	
Benzo(b)fluoranthene	4.00E-02	7	4.00E-02	7	ND		ND		0.73	6	ND		ND	6	ND	0.1	1.2E+00 *	9
Benzo(k)fluoranthene	4.00E-02	7	4.00E-02	7	ND		ND		0.073	6	ND		ND	6	ND	0.01	ND	
Benzo(a)pyrene	4.00E-02	7	4.00E-02	7	ND		ND		7.3	1	2.10E-01	1	3.10E+00	4	ND	1	1.2E+00 *	9
Indeno(1,2,3-c,d)pyrene	4.00E-02	7	4.00E-02	6	ND		ND		0.73	6	ND		ND	6	ND	0.1	1.9E+00 *	9
Dibenz(a,h)anthracene	4.00E-02	7	4.00E-02	7	ND		ND		7.3	6	ND		ND	6	ND	1	2.7E+00 *	9
Benzo(g,h,i)perylene	4.00E-02	7	4.00E-02	7	ND		ND		NC		NC		NC	6	NC	NA	ND	
Carbazole	ND		ND		ND		ND		2.00E-02	5	5.70E-04	5	ND		ND	NA	ND	
C9-C18 Aliphatics	1.00E+00	2	1.00E-01	2	2.00E+00	2	2.00E-01	2	NC		NC		NC		NC	NA	ND	
C19-C36 Aliphatics	6.00E+00	2	2.00E+00	2	Not Volatile	2	Not Volatile	2	NC		NC		NC		NC	NA	ND	
C11-C22 Aromatics	3.00E-01	2	3.00E-02	2	2.00E-01	2	2.00E-02	2	NC		NC		NC		NC	NA	ND	
phenol	6.00E-01	5	3.00E-01	1	2.60E-01	8	2.60E-01	7	NC		NC		NC		NC	NA	8.2E-03	9
diethyl phthalate	8.00E+00	5	8.00E-01	1	ND		ND		NC		NC		NC		NC	NA	4.8E-03 *	9
dimethyl phthalate	1.00E+01	8	1.00E+01	4	ND		ND		NC		NC		NC		NC	NA	1.6E-03	10
butyl benzyl phthalate	2.00E+00	5	2.00E-01	1	ND		ND		NC		NC		NC		NC	NA	ND	

References:

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7 = MADEP Background Documentation for Development of Numerical Standards
8 = Chronic toxicity values used for subchronic
9 = MADEP Guidance for Disposal Site Risk Characterization, July 1995
10 = EPA Interim Report, Dermal Exposure Assessment: Principles and Applications, Jan 1992

Note:

ND = No Data
NA = Not Applicable
NC = Not Carcinogen or no data for carcinogenicity
* denotes estimated Kp value

Table N.10 Continued

Contaminant of Concern	RAF, sub-chronic soil ingest	RAF, sub-chronic soil dermal	RAF, chronic soil ingest	RAF, chronic soil dermal	RAF, cancer soil ingest	RAF, cancer soil dermal	RAF, sub-chronic water ingest	RAF, chronic water ingest	RAF, cancer water ingest	RAF, sub-chronic water dermal	RAF, chronic water dermal	RAF, cancer water dermal	Source for RAF values	Inhalation Cancer Slope Factor (per mg/k/d)
Naphthalene	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	2	NC
2-Methylnaphthalene	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	2	NC
Acenaphthylene	0.91	0.18	0.91	0.18	NC	NC	1	0.91	NC	1	1	1	7	NC
Acenapthene	1	0.2	1	0.2	NC	NC	1	1	NC	1	1	1	7	NC
Dibenzofuran	1	1	1	1	1	1	1	1	1	1	1	1		NC
Fluorene	1	0.2	1	0.2	NC	NC	1	1	NC	1	1	1	7	NC
Phenanthrene	0.91	0.18	0.91	0.18	NC	NC	0.91	0.91	NC	1	1	1	7	NC
Anthracene	1	0.29	1	0.29	NC	NC	1	1	NC	1	1	1	7	NC
Fluroanthene	1	0.2	1	0.2	NC	NC	1	1	NC	1	1	1	7	NC
Pyrene	1	0.2	1	0.2	NC	NC	1	1	NC	1	1	1	7	NC
Benzo(a)anthracene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	0.31
Chrysene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	0.031
bis(2-ethylhexyl)phthalate	1	0.02	1	0.02	1	0.02	1	1	1	1	1	1	7	1.40E-02
Benzo(b)fluoranthene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	0.31
Benzo(k)fluoranthene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	0.031
Benzo(a)pyrene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	3.10E+00
Indeno(1,2,3-c,d)pyrene	0.91	0.18	0.91	0.18	1	0.2	1	0.91	1	1	1	1	7	0.31
Dibenz(a,h)anthracene	0.91	0.08	0.91	0.08	1	0.09	1	0.91	1	1	1	1	7	3.1
Benzo(g,h,I)perylene	0.91	0.18	0.91	0.18	NC	NC	1	0.91	NC	1	1	1	7	NC
Carbazole	1	1	1	1	1	1	1	1	1	1	1	1		ND
C9-C18 Aliphatics	0.91	0.2	0.91	0.2	NC	NC	1	1	NC	1	1	1	2	NC
C19-C36 Aliphatics	0.91	0.1	0.91	0.1	NC	NC	1	1	NC	1	1	1	2	NC
C11-C22 Aromatics	0.91	0.18	0.91	0.18	NC	NC	0.91	0.91	NC	1	1	1	2	NC
phenol	ND	ND	ND	ND	ND	ND	1	1	NC	1	1	1	7	NC
diethyl phthalate	ND	ND	ND	ND	ND	ND	1	1	NC	1	1	1	7	NC
dimethyl phthalate	ND	ND	ND	ND	ND	ND	1	1	NC	1	1	1	7	NC
butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	1	1	1	1	1	1		NC

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8 = Chronic toxicity values used for subchronic
9 = MADEP Guidance for Disposal Site Risk Characterization, July 1995
10 = EPA Interim Report, Dermal Exposure Assessment: Principles and Applications, Jan 1992

Note:
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NA = Not Applicable
NC = Not Carcinogen or no data for carcinogenicity
* denotes estimated Kp value

Table N.11 Toxicity Values for Volatile Organic Compounds.

Contaminant of Concern	Subchronic Oral RfD (mg/kg/day)	Reference	Chronic Oral RfD (mg/kg-day)	Reference	Subchronic Inhalation RfC (mg/m3)	Reference	Chronic Inhalation RfC (mg/m3)	Reference	Chronic RfDi (mg/kg/d)	Reference	Oral Cancer Slope Factor (per mg/kg-day)	Reference	Oral Cancer Unit Risk (per mg/L)	Reference	Inhalation Cancer Slope Factor (mg/kg/d)	Reference	Inhalation Unit Risk (per mg/m3)	Reference	Kp Value (cm/hr)	Reference
Bromomethane	1.40E-02	7	1.40E-03	1	5.00E-03	8	5.00E-03	1	ND		NC		NC		NC		NC		3.5E-03 *	11
Acetone	1.00E+00	5	0.9	1	8.00E-01	8	8.00E-01	7	ND		NC		NC		NC		NC		ND	
Carbon disulfide	1.00E-01	5	1.00E-01	1	7.00E-01	5	7.00E-01	1	ND		NC		NC		NC		NC		5.0E-01	11
Methyl tert-butyl ether (MTBE)	1.00E+00	3	1.00E-01	3	3.00E+00	3	3	1	ND		NC		NC		NC		NC		ND	
2-Butanone (MEK)	2.00E+00	5	0.6	1	1.00E+00	5	5	1	ND		NC		NC		NC		NC		1.1E-03	12
cis-1,2-Dichloroethene	1.00E-01	5	1.00E-02	4	ND		ND		ND		NC		NC		NC		NC		1.0E-02 *	11
Chloroform	1.00E-02	5	1.00E-02	1	6.60E-01	8	6.60E-01	7	1.40E-02	4	ND		ND		8.10E-02	4	2.30E-02	1	1.3E-01	11
Benzene	5.00E-02	3	4.00E-03	1	3.20E-02	3	3.00E-02	1	ND		5.50E-02	1,3	1.60E-03	1	ND		7.80E-03	1,3	1.1E-01	11
Trichloroethene	3.00E-04	8	3.00E-04	4	1.80E-01	8	1.80E-01	7	1.00E-02	4	4.00E-01	4	ND		4.00E-01	4	1.10E-04	10	2.3E-01	11
Methyl isobutyl ketone (MIBK)	8.00E-01	5	8.00E-02	5	3	8	3	1	ND		NC		NC		NC		NC		ND	
Tetrachloroethene	1.00E-01	5	1.00E-02	1	4.60E+00	8	4.60E+00	7	1.40E-01	4	5.40E-01	4	ND		2.00E-02	4	5.52E-05	9	3.7E-01	11
Toluene	2	3	2.00E-01	1	4.00E-01	3	4.00E-01	1	ND		NC		NC		NC		NC		1.0E+00	11
Ethylbenzene	1.00E+00	3	1.00E-01	1	1.00E+00	3	1	1	ND		NC		NC		NC		NC		1.0E+00	11
Xylenes	4.00E+00	3	0.2	1	3.00E-01	3	0.1	1	ND		NC		NC		NC		NC		8.0E-02 *	11
Trichlorofluoromethane	7.00E-01	5	3.00E-01	1	ND		ND		2.00E-01	4	NC		NC		NC		NC		1.7E-02 *	11
Chloromethane	ND		ND		ND		ND		2.60E-02	4	1.30E-02	5	3.70E-04	5	6.30E-03	5	1.80E-03	5	4.2E-03 *	11
2-hexanone	ND		ND		ND		ND		ND		NC		NC		NC		NC		ND	
1,3,5-trimethylbenzene	5.00E-02	8	5.00E-02	4	ND		ND		1.70E-03	4	NC		NC		NC		NC		ND	
1,2,4-trimethylbenzene	5.00E-02	8	5.00E-02	4	ND		ND		1.70E-03	4	NC		NC		NC		NC		ND	
p-isopropyltoluene	ND		ND		ND		ND				NC		NC		NC		NC		ND	

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4 = EPA Region III
5 = HEAST
7 = MADEP Background Documentation for Development of Numerical Standards
8 = Chronic toxicity values used for subchronic
9 = MADEP Documentation for Inhal. Unit Risk for PCE
10 = J&E Model User's Guide June 2003
11 = MADEP Guidance for Disposal Site Risk Characterization, July 1995
12 = EPA Interim Report, Dermal Exposure Assessment: Principles and Applications, Jan 1992

Note:
ND = No Data
NA = Not Applicable
NC = Not Carcinogen or no data for carcinogenicity
* denotes estimated Kp value

Table N.11 Continued

Contaminant of Concern	RAF, sub-chronic soil ingest	RAF, sub-chronic soil dermal	RAF, chronic soil ingest	RAF, chronic soil dermal	RAF, cancer soil ingest	RAF, cancer soil dermal	RAF, sub-chronic water ingest	RAF, chronic water ingest	RAF, cancer water ingest	RAF, sub-chronic water dermal	RAF, chronic water dermal	RAF, cancer water dermal	Source for RAF values
Bromomethane	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
Acetone	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
Carbon disulfide	1	1	1	1	1	1	1	ND	ND	1	1	1	
Methyl tert-butyl ether	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	2
2-Butanone (MEK)	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
cis-1,2-Dichloroethene	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
Chloroform	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	7
Benzene	1	0.08	1	0.08	1	0.08	1	1	1	1	1	1	2
Trichloroethene	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	7
Methyl isobutyl ketone	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
Tetrachloroethene	1	0.1	1	0.1	1	0.1	1	1	1	1	1	1	7
Toluene	1	0.12	1	0.12	NC	NC	1	1	NC	1	1	1	2
Ethylbenzene	1	0.2	1	0.2	NC	NC	1	1	NC	1	1	1	2
Xylenes	1	0.12	1	0.12	NC	NC	1	1	NC	1	1	1	2
Trichlorofluoromethane		ND	ND	ND	ND	ND	ND	ND	ND	1	1	1	
Chloromethane	1	1	1	1	1	1	ND	ND	ND	1	1	1	
2-hexanone	1	1	1	1	1	1	ND	ND	ND	1	1	1	
1,3,5-trimethylbenzene	1	1	1	1	1	1	ND	ND	ND	1	1	1	
1,2,4-trimethylbenzene	1	1	1	1	1	1	ND	ND	ND	1	1	1	
p-isopropyltoluene	1	1	1	1	1	1	ND	ND	ND	1	1	1	

Table N.12 Toxicity Values for Inorganics.

Contaminant of Concern	Subchronic Oral RfD (mg/kg/day)	Reference	Chronic Oral RfD (mg/kg-day)	Reference	Subchronic Inhalation RfC (mg/m3)	Reference	Chronic Inhalation RfC (mg/m3)	Reference	Oral Cancer Slope Factor (per mg/kg-day)	Reference	Oral Cancer Unit Risk (per mg/L)	Reference	Inhalation Cancer Slope Factor (per mg/kg/d)	Reference	Inhalation Unit Risk (per mg/m3)	Reference
Copper	4.00E-02	8	4.00E-02	4	ND		ND		NC		NC		NC		NC	
Nickel	2.00E-02	5	2.00E-02	1	ND		ND		ND		ND		8.40E-01	5	ND	
Silver	5.00E-03	5	5.00E-03	1	ND		ND		NC		NC		NC		NC	
Zinc	3.00E-01	5	3.00E-01	1	ND		ND		NC		NC		NC		NC	
Lead	7.50E-04	3	7.50E-04	3	ND		ND		NC		NC		NC		NC	
Arsenic	3.00E-04	5	3.00E-04	1	ND		ND		1.5	1	5.00E-02	1	1.51E+01	4	ND	
Beryllium	5.00E-03	5	2.00E-03	1	2.00E-05	8	2.00E-05	1	ND		ND		8.4	4	2.4	1
Cadmium	1.00E-03	8	1.00E-03	1	5.70E-05	8	5.70E-05	4	ND		ND		6.3	4	1.8	1
Chromium	2.00E-02	5	3.00E-03	1	1.00E-04	8	1.00E-04	1	ND		ND		4.10E+01	4	1.20E+01	1
Mercury	3.00E-04	7	3.00E-04	7	3.00E-04	5	3.00E-04	1	NC		NC		NC		NC	
Antimony	4.00E-04	5	4.00E-04	1	ND		ND		NC		NC		NC		NC	
Selenium	5.00E-05	5	5.00E-03	1	ND		ND		NC		NC		NC		NC	

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8 = Chronic toxicity values used for subchronic

Note:
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NA = Not Applicable
NC = Not Carcinogen or no data for carcinogenicity

Table N.12 Continued

Contaminant of Concern	RAF, sub-chronic soil ingest	RAF, sub-chronic soil dermal	RAF, chronic soil ingest	RAF, chronic soil dermal	RAF, cancer soil ingest	RAF, cancer soil dermal	RAF, sub-chronic water ingest	RAF, chronic water ingest	RAF, cancer water ingest	RAF, sub-chronic water dermal	RAF, chronic water dermal	RAF, cancer water dermal	Source for RAF values
Copper	1	1	1	1	1	1	1	1	1	1	1	1	
Nickel	1	0.35	1	0.35	NC	NC	1	1	NC	1	1	1	7
Silver	1	0.25	1	0.25	NC	NC	1	1	NC	1	1	1	7
Zinc	1	0.02	1	0.02	NC	NC	1	1	NC	1	1	1	7
Lead	0.5	0.006	0.5	0.006	NC	NC	1	0.5	NC	1	1	1	7
Arsenic	1	0.03	1	0.03	1	0.03	1	1	1	1	1	1	7
Beryllium	1	0.03	1	0.03	1	0.03	1	1	1	1	1	1	7
Cadmium	1	0.14	1	0.14	NC	NC	1	1	NC	1	1	1	7
Chromium	1	0.09	1	0.09	NC	NC	1	1	NC	1	1	1	7
Mercury	1	0.05	1	0.05	NC	NC	1	1	NC	1	1	1	7
Antimony	1	0.1	1	0.1	NC	NC	1	1	NC	1	1	1	7
Selenium	1	0.002	1	0.002	NC	NC	1	1	NC	1	1	1	7

DRAFT Table N.13 Carcinogenic Shallow Risk Calculations - Adult Resident - Current

CANCER SOIL NOc39 SHALLOW ADULT	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Oral (per mg/kg-day)	ECLR Dermal	ECLR Ingestion
Metals	Copper	159.0698864	0.000103359	1.19103E-05	1	1	NC	NC	NC
	Nickel	14.26136364	9.26659E-06	1.06781E-06	1	1	ND	ND	ND
	Silver	1.819638158	NC	NC	NC	NC	NC	NC	NC
	Zinc	93.29309211	NC	NC	NC	NC	NC	NC	NC
	Lead	137.2613636	NC	NC	NC	NC	NC	NC	NC
	Arsenic	7.332434211	1.42932E-07	5.49012E-07	0.03	1	1.5	2.14398E-07	8.2352E-07
VOCs	Bromomethane	0.001833333	1.19124E-09	1.3727E-10	1	1	NC	NC	NC
	Acetone	0.0913	5.93239E-08	6.83604E-09	1	1	NC	NC	NC
	Carbon disulfide	0.001761111	1.14432E-09	1.31862E-10	1	1	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.001888889	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.007294444	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.002266667	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.001744444	1.13349E-10	1.30614E-10	0.1	1	NC	NC	NC
	Benzene	0.002144444	1.11472E-10	1.60564E-10	0.08	1	0.055	6.13093E-12	8.831E-12
	Trichloroethene	0.002566667	1.66774E-10	1.92178E-10	0.1	1	0.4	6.67096E-11	7.6871E-11
	Methyl isobutyl ketone (MIBK)	0.001888889	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.01155	7.50483E-10	8.648E-10	0.1	1	0.54	4.05261E-10	4.6699E-10
	Toluene	0.001705556	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.002	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.001805556	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.001888889	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.001861111	1.20929E-09	1.3935E-10	1	1	NC	NC	NC
	Chloromethane	0.00192	1.24756E-09	1.43759E-10	1	1	0.013	1.62182E-11	1.8689E-12
	2-Hexanone	0.00189	1.22806E-09	1.41513E-10	1	1	NC	NC	NC
	1,3,5-Trimethylbenzene	0.001888889	1.22734E-09	1.4143E-10	1	1	NC	NC	NC
	1,2,4-Trimethylbenzene	0.001944444	1.26344E-09	1.45589E-10	1	1	NC	NC	NC
	p-Isopropyltoluene	0.001972222	1.28149E-09	1.47669E-10	1	1	NC	NC	NC
SVOCs	Naphthalene	0.865048043	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	0.253195556	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	0.25846087	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	0.27733913	NC	NC	NC	NC	NC	NC	NC
	Dibenzofuran	0.294905754	1.91621E-07	2.20809E-08	1	1	NC	NC	NC
	Fluorene	0.284684783	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	1.045674565	NC	NC	NC	NC	NC	NC	NC
	Anthracene	0.412174348	NC	NC	NC	NC	NC	NC	NC
	Fluoranthene	1.440248913	NC	NC	NC	NC	NC	NC	NC
	Pyrene	1.359522826	NC	NC	NC	NC	NC	NC	NC
	Benzo[a]anthracene	0.767266522	9.97092E-08	5.74487E-08	0.2	1	0.73	7.27877E-08	4.1938E-08
	Chrysene	0.871376522	1.13239E-07	6.52439E-08	0.2	1	0.073	8.26643E-09	4.7628E-09
	bis(2-Ethylhexyl)phthalate	0.25112996	3.26353E-09	1.88032E-08	0.02	1	0.014	4.56894E-11	2.6325E-10
	Benzo[b]fluoranthene	0.82555913	1.07285E-07	6.18133E-08	0.2	1	0.73	7.83177E-08	4.5124E-08
	Benzo[k]fluoranthene	0.744154783	9.67058E-08	5.57182E-08	0.2	1	0.073	7.05952E-09	4.0674E-09
	Benzo[a]pyrene	0.772513478	1.00391E-07	5.78416E-08	0.2	1	7.3	7.32855E-07	4.2224E-07
	Indeno[1,2,3-cd]pyrene	0.431313043	5.60508E-08	3.22943E-08	0.2	1	0.73	4.09171E-08	2.3575E-08
	Dibenz[a,h]anthracene	0.284173913	1.66183E-08	2.12774E-08	0.09	1	7.3	1.21313E-07	1.5532E-07
	Benzo[g,h,i]perylene	0.424298913	NC	NC	NC	NC	NC	NC	NC
	Carbazole	0.313865079	2.0394E-07	2.35005E-08	1	1	0.02	4.0788E-09	4.7001E-10
							Totals	0.000001	0.000002

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

NC = No Cancer Data
ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2

SA = 6199 cm^2
EF = 0.2411 events/day
ED = 1 day/event

EP = 10950 days
AP = 255865 days
CF = 0.000001 kg/mg

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)

DRAFT Table N.14 Carcinogenic Shallow Risk Calculations - Child Resident - Current

CANCER SOIL NOc39 SHALLOW CHILD	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	ADD Inhalation GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/m^3)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Cancer Inhalation (per mg/kg-d)	Slope Factor Cancer Oral (per mg/kg-day)	Unit Risk Cancer Oral (per mg/L)	Unit Risk Cancer Inhalation (per mg/m^3)	ECLR Dermal	ECLR Ingestion
Metals	Copper	159.0698864	0.000168993	2.0439E-05	4.97976E-09	1.24494E-09	2.01387E-09	1	1	NC	NC	NC	NC	NC	NC
	Nickel	14.26136364	1.5151E-05	1.8324E-06	4.46459E-10	1.11615E-10	1.80553E-10	1	1	0.84	ND	ND	ND	ND	ND
	Silver	1.819638158	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Zinc	93.29309211	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Lead	137.2613636	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Arsenic	7.332434211	2.33695E-07	9.4214E-07	2.29545E-10	5.73863E-11	9.28308E-11	0.03	1	15.1	1.5	0.05	ND	3.50543E-07	1.41321E-06
VOCs	Bromomethane	0.001833333	1.9477E-09	2.3556E-10	5.73933E-14	1.43483E-14	2.32105E-14	1	1	NC	NC	NC	NC	NC	NC
	Acetone	0.0913	9.69954E-08	1.1731E-08	2.85819E-12	7.14547E-13	1.15589E-12	1	1	NC	NC	NC	NC	NC	NC
	Carbon disulfide	0.001761111	1.87097E-09	2.2628E-10	5.51324E-14	1.37831E-14	2.22962E-14	1	1	NC	NC	NC	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.001888889	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.007294444	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.002266667	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.001744444	1.85326E-10	2.2414E-10	5.46106E-14	1.36527E-14	2.20852E-14	0.1	1	0.081	NC	NC	0.023	NC	NC
	Benzene	0.002144444	1.82257E-10	2.7554E-10	6.71328E-14	1.67832E-14	2.71493E-14	0.08	1	NC	0.055	0.0016	0.0078	1.00242E-11	1.51546E-11
	Trichloroethene	0.002566667	2.72678E-10	3.2979E-10	8.03507E-14	2.00877E-14	3.24948E-14	0.1	1	0.4	0.4	NC	0.00011	1.09071E-10	1.31916E-10
	Methyl isobutyl ketone (MIBK)	0.001888889	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.01155	1.22705E-09	1.4841E-09	3.61578E-13	9.03945E-14	1.46226E-13	0.1	1	0.02	0.54	NC	0.0000552	6.62607E-10	8.01388E-10
	Toluene	0.001705556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.002	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.001805556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.001888889	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.001861111	1.97721E-09	2.3913E-10	5.82629E-14	1.45657E-14	2.35622E-14	1	1	NC	NC	NC	NC	NC	NC
	Chloromethane	0.00192	2.03977E-09	2.467E-10	6.01065E-14	1.50266E-14	2.43078E-14	1	1	0.0063	0.013	0.00037	0.0018	2.6517E-11	3.20709E-12
	2-hexanone	0.00189	2.0079E-09	2.4284E-10	5.91673E-14	1.47918E-14	2.3928E-14	1	1	NC	NC	NC	NC	NC	NC
	1,3,5-trimethylbenzene	0.001888889	2.00672E-09	2.427E-10	5.91325E-14	1.47831E-14	2.39139E-14	1	1	NC	NC	NC	NC	NC	NC
	1,2,4-trimethylbenzene	0.001944444	2.06574E-09	2.4984E-10	6.08717E-14	1.52179E-14	2.46172E-14	1	1	NC	NC	NC	NC	NC	NC
	p-isopropyltoluene	0.001972222	2.09525E-09	2.5341E-10	6.17413E-14	1.54353E-14	2.49689E-14	1	1	NC	NC	NC	NC	NC	NC
SVOCs	Naphthalene	0.865048043	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	0.253195556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	0.25846087	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	0.27733913	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Dibenzofuran	0.294905754	3.13302E-07	3.7892E-08	9.23216E-12	2.30804E-12	3.73359E-12	1	1	NC	NC	NC	NC	NC	NC
	Fluorene	0.284684783	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	1.045674565	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Anthracene	0.412174348	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluroanthene	1.440248913	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Pyrene	1.359522826	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Benzo(a)anthracene	0.767266522	1.63026E-07	9.8586E-08	2.40196E-11	6.00491E-12	9.71382E-12	0.2	1	ND	0.73	NC	NC	1.19009E-07	7.19674E-08
	Chrysene	0.871376522	1.85147E-07	1.1196E-07	2.72788E-11	6.81971E-12	1.10319E-11	0.2	1	ND	0.073	NC	NC	1.35157E-08	8.17327E-09
	bis(2-ethylhexyl)phthalate	0.25112996	5.33591E-09	3.2268E-08	7.86174E-12	1.96543E-12	3.17938E-12	0.02	1	0.014	0.014	0.0004	NC	7.47028E-11	4.51745E-10
	Benzo(b)fluoranthene	0.82555913	1.75412E-07	1.0608E-07	2.58445E-11	6.46113E-12	1.04518E-11	0.2	1	ND	0.73	NC	NC	1.28051E-07	7.74351E-08
	Benzo(k)fluoranthene	0.744154783	1.58115E-07	9.5616E-08	2.32961E-11	5.82403E-12	9.42122E-12	0.2	1	ND	0.073	NC	NC	1.15424E-08	6.97996E-09
	Benzo(a)pyrene	0.772513478	1.64141E-07	9.926E-08	2.41839E-11	6.04597E-12	9.78025E-12	0.2	1	3.1	7.3	0.21	NC	1.19823E-06	7.24596E-07
	Indeno(1,2,3-c,d)pyrene	0.431313043	9.16438E-08	5.5419E-08	1.35025E-11	3.37561E-12	5.46055E-12	0.2	1	ND	0.73	NC	NC	6.68999E-08	4.0456E-08
	Dibenz(a,h)anthracene	0.284173913	2.71711E-08	3.6513E-08	8.8962E-12	2.22405E-12	3.59773E-12	0.09	1	ND	7.3	NC	NC	1.98349E-07	2.66547E-07
	Benzo(g,h,I)perylene	0.424298913	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Carbazole	0.313865079	3.33444E-07	4.0328E-08	9.82569E-12	2.45642E-12	3.97363E-12	1	1	NC	0.02	0.00057	NC	6.66889E-09	8.06566E-10
													Totals	2.09369E-06	2.61157E-06

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 2190 days
AP = 25550 days
CF = 0.000001

NC = No Cancer Data/Not a Carcinogen
ND = No Data

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)

DRAFT Table N.15 Non-Cancer Shallow Risk Calculations - Adult Resident - Current

NON-CANCER SOIL NOc39 SHALLOW ADULT	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	RAF, chronic soil dermal	RAF, chronic soil ingest	Chronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion
Metals	Copper	159.0698864	0.00024131	2.78068E-05	1	1	4.00E-02	6.03E-03	0.000695169
	Nickel	14.26136364	7.57211E-06	2.49301E-06	0.35	1	2.00E-02	3.79E-04	0.00012465
	Silver	1.819638158	6.90101E-07	3.18088E-07	0.25	1	5.00E-03	1.38E-04	6.36176E-05
	Zinc	93.29309211	2.83053E-06	1.63084E-05	0.02	1	3.00E-01	9.44E-06	5.43614E-05
	Lead	137.2613636	1.24936E-06	1.19972E-05	0.006	0.5	7.50E-04	1.67E-03	0.015996303
	Arsenic	7.332434211	3.33701E-07	1.28177E-06	0.03	1	3.00E-04	1.11E-03	0.004272573
VOCs	Bromomethane	0.001833333	2.78118E-10	3.20482E-10	0.1	1	1.40E-03	1.99E-07	2.28916E-07
	Acetone	0.0913	1.38503E-08	1.596E-08	0.1	1	9.00E-01	1.54E-08	1.77334E-08
	Carbon disulfide	0.001761111	2.67162E-09	3.07857E-10	1	1	1.00E-01	2.67E-08	3.07857E-09
	Methyl tert-butyl ether (MTBE)	0.001888889	2.86546E-10	3.30194E-10	0.1	1	1.00E-01	2.87E-09	3.30194E-09
	2-Butanone (MEK)	0.007294444	1.10657E-09	1.27513E-09	0.1	1	6.00E-01	1.84E-09	2.12522E-09
	cis-1,2-Dichloroethene	0.002266667	3.43855E-10	3.96233E-10	0.1	1	1.00E-02	3.44E-08	3.96233E-08
	Chloroform	0.001744444	2.64634E-10	3.04944E-10	0.1	1	1.00E-02	2.65E-08	3.04944E-08
	Benzene	0.002144444	2.60251E-10	3.74867E-10	0.08	1	4.00E-03	6.51E-08	9.37168E-08
	Trichloroethene	0.002566667	3.89365E-10	4.48675E-10	0.1	1	3.00E-04	1.30E-06	1.49558E-06
	Methyl isobutyl ketone (MIBK)	0.001888889	2.86546E-10	3.30194E-10	0.1	1	8.00E-02	3.58E-09	4.12742E-09
	Tetrachloroethene	0.01155	1.75214E-09	2.01904E-09	0.1	1	1.00E-02	1.75E-07	2.01904E-07
	Toluene	0.001705556	3.10481E-10	2.98146E-10	0.12	1	2.00E-01	1.55E-09	1.49073E-09
	Ethylbenzene	0.002	6.06803E-10	3.49617E-10	0.2	1	1.00E-01	6.07E-09	3.49617E-09
	p/m-Xylene	0.001805556	3.28685E-10	3.15626E-10	0.12	1	2.00E-01	1.64E-09	1.57813E-09
	O-xylene	0.001888889	3.43855E-10	3.30194E-10	0.12	1	2.00E-01	1.72E-09	1.65097E-09
	Trichlorofluoromethane	0.001861111	2.82332E-09	3.25338E-10	1	1	3.00E-01	9.41E-09	1.08446E-09
	Chloromethane	0.00192	2.91265E-09	3.35632E-10	1	1	ND	ND	ND
	2-Hexanone	0.00189	2.86714E-09	3.30388E-10	1	1	ND	ND	ND
	1,3,5-Trimethylbenzene	0.001888889	2.86546E-09	3.30194E-10	1	1	5.00E-02	5.73E-08	6.60388E-09
	1,2,4-Trimethylbenzene	0.001944444	2.94974E-09	3.39905E-10	1	1	5.00E-02	5.90E-08	6.79811E-09
	p-Isopropyltoluene	0.001972222	2.99188E-09	3.44761E-10	1	1	ND	ND	ND
SVOCs	Naphthalene	0.865048043	1.31228E-07	1.51218E-07	0.1	1	2.00E-02	6.56E-06	7.56089E-06
	2-Methylnaphthalene	0.253195556	3.841E-08	4.42607E-08	0.1	1	2.00E-02	1.92E-06	2.21304E-06
	Acenaphthylene	0.25846087	3.92087E-08	4.11149E-08	0.1	0.91	4.00E-02	9.80E-07	1.02787E-06
	Acenaphthene	0.27733913	4.20726E-08	4.84812E-08	0.1	1	6.00E-02	7.01E-07	8.08021E-07
	Dibenzofuran	0.294905754	4.47374E-08	5.1552E-08	0.1	1	2.00E-03	2.24E-05	2.5776E-05
	Fluorene	0.284684783	4.31869E-08	4.97653E-08	0.1	1	4.00E-02	1.08E-06	1.24413E-06
	Phenanthrene	1.045674565	1.5863E-07	1.66341E-07	0.1	0.91	4.00E-02	3.97E-06	4.15854E-06
	Anthracene	0.412174348	6.25272E-08	7.20516E-08	0.1	1	3.00E-01	2.08E-07	2.40172E-07
	Fluoranthene	1.440248913	2.18487E-07	2.51768E-07	0.1	1	4.00E-02	5.46E-06	6.29419E-06
	Pyrene	1.359522826	2.06241E-07	2.37656E-07	0.1	1	3.00E-02	6.87E-06	7.92187E-06
	Benzo[a]anthracene	0.767266522	1.16395E-07	1.22053E-07	0.1	0.91	4.00E-02	2.91E-06	3.05134E-06
	Chrysene	0.871376522	1.32188E-07	1.38615E-07	0.1	0.91	4.00E-02	3.30E-06	3.46537E-06
	bis(2-Ethylhexyl)phthalate	0.25112996	3.80966E-08	4.38997E-08	0.1	1	2.00E-02	1.90E-06	2.19498E-06
	Benzo[b]fluoranthene	0.82555913	1.25238E-07	1.31326E-07	0.1	0.91	4.00E-02	3.13E-06	3.28316E-06
	Benzo[k]fluoranthene	0.744154783	1.12889E-07	1.18377E-07	0.1	0.91	4.00E-02	2.82E-06	2.95942E-06
	Benzo[a]pyrene	0.772513478	1.17191E-07	1.22888E-07	0.1	0.91	4.00E-02	2.93E-06	3.0722E-06
	Indeno[1,2,3-cd]pyrene	0.431313043	6.54305E-08	6.86114E-08	0.1	0.91	4.00E-02	1.64E-06	1.71529E-06
	Dibenz[a,h]anthracene	0.284173913	4.31094E-08	4.52052E-08	0.1	0.91	4.00E-02	1.08E-06	1.13013E-06
	Benzo[g,h,i]perylene	0.424298913	6.43665E-08	6.74957E-08	0.1	0.91	4.00E-02	1.61E-06	1.68739E-06
	Carbazole	0.313865079	4.76136E-08	5.48663E-08	0.1	1	ND	ND	ND
							Totals	9.41E-03	2.13E-02

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2
SA = 6199 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 10950 days
AP = 10950 days
CF = 0.000001

Hazard Index: HI = (ADD)/(Rfd)

ND = No Data

DRAFT Table N.16 Non-Cancer Shallow Risk Calculations - Child Resident - Current

NON-CANCER SOIL NOc39 SHALLOW CHILD	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	ADD Inhalation - GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/day)	RAF Chronic Dermal	RAF Chronic Ingestion	RAF Subchronic Ingestion	Chronic Oral RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m3)	Subchronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion
Metals	Copper	159.0698864	0.001971583	0.000238452	3.48583E-07	8.71457E-08	1.40971E-07	1	1	1	0.04	ND	4.00E-02	0.049289574	0.00596131
	Nickel	14.26136364	6.18666E-05	2.13784E-05	3.12521E-08	7.81303E-09	1.26387E-08	0.35	1	1	0.02	ND	2.00E-02	0.00309333	0.001068919
	Silver	1.819638158	5.63835E-06	2.72771E-06	3.98752E-09	9.96881E-10	1.6126E-09	0.25	1	1	0.005	ND	5.00E-03	0.00112767	0.000545543
	Zinc	93.29309211	2.31263E-05	0.00013985	2.04441E-07	5.11102E-08	8.26783E-08	0.02	1	1	0.3	ND	3.00E-01	7.70877E-05	0.000466167
	Lead	137.2613636	1.02077E-05	0.00010288	1.50396E-07	3.7599E-08	6.08219E-08	0.006	0.5	0.5	0.00075	ND	7.50E-04	0.013610227	0.137173682
	Arsenic	7.332434211	2.72644E-06	1.09916E-05	1.60682E-08	4.01704E-09	6.49816E-09	0.03	1	1	0.0003	ND	3.00E-04	0.009088145	0.036638751
VOCs	Bromomethane	0.001833333	2.27231E-09	2.74824E-09	4.01753E-12	1.00438E-12	1.62474E-12	0.1	1	1	0.0014	5.00E-03	1.40E-02	1.62308E-06	1.96303E-06
	Acetone	0.0913	1.13161E-07	1.36863E-07	2.00073E-10	5.00183E-11	8.0912E-11	0.1	1	1	0.9	8.00E-01	1.00E+00	1.25735E-07	1.52069E-07
	Carbon disulfide	0.001761111	2.1828E-08	2.63998E-09	3.85927E-12	9.64817E-13	1.56073E-12	1	1	1	0.1	7.00E-01	1.00E-01	2.1828E-07	2.63998E-08
	Methyl tert-butyl ether (MTBE)	0.001888889	2.34117E-09	2.83152E-09	4.13928E-12	1.03482E-12	1.67397E-12	0.1	1	1	0.1	3.00E+00	1.00E+00	2.34117E-08	2.83152E-08
	2-Butanone (MEK)	0.007294444	9.04106E-09	1.09347E-08	1.59849E-11	3.99623E-12	6.46449E-12	0.1	1	1	0.6	1.00E+00	2.00E+00	1.50684E-08	1.82245E-08
	cis-1,2-Dichloroethene	0.002266667	2.80941E-09	3.39783E-09	4.96713E-12	1.24178E-12	2.00877E-12	0.1	1	1	0.01	ND	1.00E-01	2.80941E-07	3.39783E-07
	Chloroform	0.001744444	2.16214E-09	2.615E-09	3.82274E-12	9.55686E-13	1.54596E-12	0.1	1	1	0.01	6.60E-01	1.00E-02	2.16214E-07	2.615E-07
	Benzene	0.002144444	2.12634E-09	3.21461E-09	4.6993E-12	1.17482E-12	1.90045E-12	0.08	1	1	0.004	3.20E-02	5.00E-02	5.31584E-07	8.03653E-07
	Trichloroethene	0.002566667	3.18124E-09	3.84754E-09	5.62455E-12	1.40614E-12	2.27463E-12	0.1	1	1	0.0003	1.80E-01	3.00E-04	1.06041E-05	1.28251E-05
	Methyl isobutyl ketone (MIBK)	0.001888889	2.34117E-09	2.83152E-09	4.13928E-12	1.03482E-12	1.67397E-12	0.1	1	1	0.08	3.00E+00	8.00E-01	2.92647E-08	3.5394E-08
	Tetrachloroethene	0.01155	1.43156E-08	1.73139E-08	2.53105E-11	6.32762E-12	1.02359E-11	0.1	1	1	0.01	4.60E+00	1.00E-01	1.43156E-06	1.73139E-06
	Toluene	0.001705556	2.53673E-09	2.5567E-09	3.73752E-12	9.34381E-13	1.5115E-12	0.12	1	1	0.2	4.00E-01	2.00E+00	1.26836E-08	1.27835E-08
	Ethylbenzene	0.002	4.95778E-09	2.99808E-09	4.38276E-12	1.09569E-12	1.77244E-12	0.2	1	1	0.1	1.00E+00	1.00E+00	4.95778E-08	2.99808E-08
	p/m-Xylene	0.001805556	2.68546E-09	2.7066E-09	3.95666E-12	9.89166E-13	1.60012E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	1.34273E-08	1.3533E-08
	O-xylene	0.001888889	2.80941E-09	2.83152E-09	4.13928E-12	1.03482E-12	1.67397E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	1.4047E-08	1.41576E-08
	Trichlorofluoromethane	0.001861111	2.30674E-08	2.78988E-09	4.07841E-12	1.0196E-12	1.64936E-12	1	1	1	0.3	ND	7.00E-01	7.68915E-08	9.29961E-09
	Chloromethane	0.00192	2.37973E-08	2.87816E-09	4.20745E-12	1.05186E-12	1.70154E-12	1	1	1	ND	ND	ND	ND	ND
	2-hexanone	0.00189	2.34255E-08	2.83319E-09	4.14171E-12	1.03543E-12	1.67496E-12	1	1	1	ND	ND	ND	ND	ND
	1,3,5-trimethylbenzene	0.001888889	2.34117E-08	2.83152E-09	4.13928E-12	1.03482E-12	1.67397E-12	1	1	1	0.05	ND	5.00E-02	4.68235E-07	5.66305E-08
	1,2,4-trimethylbenzene	0.001944444	2.41003E-08	2.9148E-09	4.26102E-12	1.06526E-12	1.72321E-12	1	1	1	0.05	ND	5.00E-02	4.82006E-07	5.82961E-08
	p-isopropyltoluene	0.001972222	2.44446E-08	2.95644E-09	4.32189E-12	1.08047E-12	1.74782E-12	1	1	1	ND	ND	2.00E-01	ND	ND
SVOCs	Naphthalene	0.865048043	1.07218E-06	1.29674E-06	1.89565E-09	4.73913E-10	7.66624E-10	0.1	1	1	0.02	3.00E-03	2.00E-01	5.3609E-05	6.48372E-05
	2-Methylnaphthalene	0.253195556	3.13822E-07	3.79551E-07	5.54848E-10	1.38712E-10	2.24387E-10	0.1	1	1	0.02	3.00E-03	4.00E-02	1.56911E-05	1.89775E-05
	Acenaphthylene	0.25846087	3.20348E-07	3.52574E-07	5.15412E-10	1.28853E-10	2.08439E-10	0.1	0.91	0.91	0.04	ND	6.00E-01	8.0087E-06	8.81434E-06
	Acenaphthene	0.27733913	3.43746E-07	4.15743E-07	6.07756E-10	1.51939E-10	2.45784E-10	0.1	1	1	0.06	Not Volatile	2.00E-03	5.72911E-06	6.92905E-06
	Dibenzofuran	0.294905754	3.65519E-07	4.42076E-07	6.46251E-10	1.61563E-10	2.61352E-10	0.1	1	1	0.002	ND	4.00E-01	0.00018276	0.000221038
	Fluorene	0.284684783	3.52851E-07	4.26754E-07	6.23853E-10	1.55963E-10	2.52294E-10	0.1	1	1	0.04	ND	4.00E-02	8.82127E-06	1.06689E-05
	Phenanthrene	1.045674565	1.29606E-06	1.42643E-06	2.08524E-09	5.2131E-10	8.43296E-10	0.1	0.91	0.91	0.04	Not Volatile	3.00E+00	3.24014E-05	3.56608E-05
	Anthracene	0.412174348	5.10867E-07	6.17867E-07	9.03232E-10	2.25808E-10	3.65277E-10	0.1	1	1	0.3	ND	4.00E-01	1.70289E-06	2.05956E-06
	Fluroanthene	1.440248913	1.78511E-06	2.15899E-06	3.15614E-09	7.89034E-10	1.27638E-09	0.1	1	1	0.04	ND	3.00E-01	4.46277E-05	5.39748E-05
	Pyrene	1.359522826	1.68505E-06	2.03798E-06	2.97923E-09	7.44809E-10	1.20484E-09	0.1	1	1	0.03	ND	4.00E-02	5.61684E-05	6.79327E-05
	Benzo(a)anthracene	0.767266522	9.50984E-07	1.04665E-06	1.53005E-09	3.82513E-10	6.1877E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	2.37746E-05	2.61662E-05
	Chrysene	0.871376522	1.08002E-06	1.18867E-06	1.73766E-09	4.34416E-10	7.02731E-10	0.1	0.91	0.91	0.04	ND	2.00E-02	2.70006E-05	2.97167E-05
	bis(2-ethylhexyl)phthalate	0.25112996	3.11262E-07	3.76454E-07	5.50322E-10	1.3758E-10	2.22557E-10	0.1	1	1	0.02	ND	4.00E-02	1.55631E-05	1.88227E-05
	Benzo(b)fluoranthene	0.82555913	1.02323E-06	1.12617E-06	1.6463E-09	4.11574E-10	6.65781E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	2.55809E-05	2.81542E-05
	Benzo(k)fluoranthene	0.744154783	9.22339E-07	1.01512E-06	1.48396E-09	3.70991E-10	6.00132E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	2.30585E-05	2.53781E-05
	Benzo(a)pyrene	0.772513478	9.57488E-07	1.05381E-06	1.54051E-09	3.85128E-10	6.23002E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	2.39372E-05	2.63452E-05
	Indeno(1,2,3-c,d)pyrene	0.431313043	5.34589E-07	5.88366E-07	8.60106E-10	2.15027E-10	3.47837E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.33647E-05	1.47092E-05
	Dibenz(a,h)anthracene	0.284173913	3.52218E-07	3.8765E-07	5.66688E-10	1.41672E-10	2.29175E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	8.80544E-06	9.69124E-06
	Benzo(g,h,I)perylene	0.424298913	5.25895E-07	5.78798E-07	8.46119E-10	2.1153E-10	3.4218E-10	0.1	0.91	0.91	0.04	ND	ND	1.31474E-05	1.447E-05
	Carbazole	0.313865079	3.89018E-07	4.70497E-07	6.87798E-10	1.7195E-10	2.78154E-10	0.1	1	1	ND	ND	1.00E+00	ND	ND
													Totals	0.076886002	0.182557098

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 2190 days
AP = 2190 days
CF = 0.000001

Hazard Index: HI = (ADD)/(Rfd)
Hazard Index (Inhalation only): HI = (ADE)/(RfC)

DRAFT Table N.17 Non-Cancer Risk Calculations - Adult Resident - Future

NON-CANCER SOIL NOc39 ALL ADULT	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	RAF, chronic soil dermal	RAF, chronic soil ingest	Chronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion
Metals	Copper	121.7419643	0.000184683	2.12815E-05	1	1	4.00E-02	4.62E-03	0.000532038
	Nickel	12.42678571	6.59803E-06	2.17231E-06	0.35	1	2.00E-02	3.30E-04	0.000108615
	Silver	1.850204082	7.01693E-07	3.23431E-07	0.25	1	5.00E-03	1.40E-04	6.46863E-05
	Zinc	81.456	2.47139E-06	1.42392E-05	0.02	1	3.00E-01	8.24E-06	4.7464E-05
	Lead	114.1017857	1.03856E-06	9.97298E-06	0.006	0.5	7.50E-04	1.38E-03	0.013297308
	Arsenic	6.685714286	3.04268E-07	1.16872E-06	0.03	1	3.00E-04	1.01E-03	0.003895732
VOCs	Bromomethane	0.003888889	5.89947E-10	6.79811E-10	0.1	1	1.40E-03	4.21E-07	4.85579E-07
	Acetone	0.116611111	1.769E-08	2.03846E-08	0.1	1	9.00E-01	1.97E-08	2.26496E-08
	Carbon disulfide	0.003916667	5.94161E-09	6.84667E-10	1	1	1.00E-01	5.94E-08	6.84667E-09
	Methyl tert-butyl ether (MTBE)	0.00355525	5.39334E-10	6.21488E-10	0.1	1	1.00E-01	5.39E-09	6.21488E-09
	2-Butanone (MEK)	0.009305556	1.41166E-09	1.62669E-09	0.1	1	6.00E-01	2.35E-09	2.71115E-09
	cis-1,2-Dichloroethene	0.004166667	6.32086E-10	7.28369E-10	0.1	1	1.00E-02	6.32E-08	7.28369E-08
	Chloroform	0.003833333	5.8152E-10	6.70099E-10	0.1	1	1.00E-02	5.82E-08	6.70099E-08
	Benzene	0.00370525	4.49671E-10	6.47709E-10	0.08	1	4.00E-03	1.12E-07	1.61927E-07
	Trichloroethene	0.004277778	6.48942E-10	7.47792E-10	0.1	1	3.00E-04	2.16E-06	2.49264E-06
	Methyl isobutyl ketone (MIBK)	0.003944444	5.98375E-10	6.89522E-10	0.1	1	8.00E-02	7.48E-09	8.61903E-09
	Tetrachloroethene	0.00997	1.51246E-09	1.74284E-09	0.1	1	1.00E-02	1.51E-07	1.74284E-07
	Toluene	0.00343025	6.24446E-10	5.99637E-10	0.12	1	2.00E-01	3.12E-09	2.99818E-09
	Ethylbenzene	0.00365525	1.10901E-09	6.38969E-10	0.2	1	1.00E-01	1.11E-08	6.38969E-09
	p/m-Xylene	0.00348025	6.33548E-10	6.08377E-10	0.12	1	2.00E-01	3.17E-09	3.04189E-09
	O-xylene	0.00356775	6.49476E-10	6.23673E-10	0.12	1	2.00E-01	3.25E-09	3.11837E-09
	Trichlorofluoromethane	0.003861111	5.85733E-09	6.74955E-10	1	1	3.00E-01	1.95E-08	2.24985E-09
	Chloromethane	0.00403	6.11354E-09	7.04478E-10	1	1	ND	ND	ND
	2-Hexanone	0.00394	5.97701E-09	6.88746E-10	1	1	ND	ND	ND
	1,3,5-Trimethylbenzene	0.012611111	1.91311E-08	2.20453E-09	1	1	5.00E-02	3.83E-07	4.40906E-08
	1,2,4-Trimethylbenzene	0.017944444	2.72219E-08	3.13684E-09	1	1	5.00E-02	5.44E-07	6.27368E-08
	p-Isopropyltoluene	0.011027778	1.67292E-08	1.92775E-09	1	1	ND	ND	ND
SVOCs	Naphthalene	0.576264078	8.74197E-08	1.00736E-07	0.1	1	2.00E-02	4.37E-06	5.03679E-06
	2-Methylnaphthalene	0.235802	3.57713E-08	4.12202E-08	0.1	1	2.00E-02	1.79E-06	2.06101E-06
	Acenaphthylene	0.240051485	3.6416E-08	3.81864E-08	0.1	0.91	4.00E-02	9.10E-07	9.54659E-07
	Acenaphthene	0.253912871	3.85188E-08	4.43861E-08	0.1	1	6.00E-02	6.42E-07	7.39769E-07
	Dibenzofuran	0.224207317	3.40124E-08	3.91933E-08	0.1	1	2.00E-03	1.70E-05	1.95967E-05
	Fluorene	0.256987129	3.89851E-08	4.49235E-08	0.1	1	4.00E-02	9.75E-07	1.12309E-06
	Phenanthrene	0.780467327	1.18397E-07	1.24153E-07	0.1	0.91	4.00E-02	2.96E-06	3.10384E-06
	Anthracene	0.331808911	5.03357E-08	5.8003E-08	0.1	1	3.00E-01	1.68E-07	1.93343E-07
	Fluoranthene	1.133586139	1.71966E-07	1.9816E-07	0.1	1	4.00E-02	4.30E-06	4.95401E-06
	Pyrene	1.068170297	1.62042E-07	1.86725E-07	0.1	1	3.00E-02	5.40E-06	6.22418E-06
	Benzo[a]anthracene	0.593353465	9.00122E-08	9.43881E-08	0.1	0.91	4.00E-02	2.25E-06	2.3597E-06
	Chrysene	0.672333663	1.01994E-07	1.06952E-07	0.1	0.91	4.00E-02	2.55E-06	2.6738E-06
	bis(2-Ethylhexyl)phthalate	0.197634146	2.99812E-08	3.45481E-08	0.1	1	2.00E-02	1.50E-06	1.72741E-06
	Benzo[b]fluoranthene	0.635917822	9.64692E-08	1.01159E-07	0.1	0.91	4.00E-02	2.41E-06	2.52898E-06
	Benzo[k]fluoranthene	0.58499703	8.87445E-08	9.30588E-08	0.1	0.91	4.00E-02	2.22E-06	2.32647E-06
	Benzo[a]pyrene	0.597774257	9.06828E-08	9.50914E-08	0.1	0.91	4.00E-02	2.27E-06	2.37728E-06
	Indeno[1,2,3-cd]pyrene	0.344917822	5.23243E-08	5.48681E-08	0.1	0.91	4.00E-02	1.31E-06	1.3717E-06
	Dibenz[a,h]anthracene	0.258848515	3.92675E-08	4.11765E-08	0.1	0.91	4.00E-02	9.82E-07	1.02941E-06
	Benzo[g,h,i]perylene	0.343536634	5.21148E-08	5.46483E-08	0.1	0.91	4.00E-02	1.30E-06	1.36621E-06
	Carbazole	0.246219512	3.73517E-08	4.30413E-08	0.1	1	ND	ND	ND
	n-C9 to n-C18 Aliphatic Hydrocarbons	21.83333333	3.31213E-06	3.47315E-06	0.1	0.91	1.00E-01	3.31E-05	3.47315E-05
	n-C19 to n-C36 Aliphatic Hydrocarbons	662.3333333	0.000100476	0.000105361	0.1	0.91	2.00E+00	5.02E-05	5.26806E-05
	n-C11 to n-C22 Aromatic Hydrocarbons	239	3.62565E-05	3.80191E-05	0.1	0.91	3.00E-02	1.21E-03	0.001267303
							Totals	8.85E-03	1.94E-02

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2
SA = 6199 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 10950 days
AP = 10950 days
CF = 0.000001

Hazard Index: HI = (ADD)/(Rfd)

ND = No Data

DRAFT Table N.18 Non-Cancer Risk Calculations - Child Resident - Future

NON-CANCER SOIL NOc39 ALL CHILD	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	ADD Inhalation - GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/day)	RAF Chronic Dermal	RAF Chronic Ingestion	RAF Subchronic Ingestion	Chronic Oral RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m3)	Subchronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion	HI Inhalation	HI GI Tract
Metals	Copper	121.7419643	0.001508924	0.000182496	2.66783E-07	6.66958E-08	1.0789E-07	1	1	1	0.04	ND	4.00E-02	0.037723102	0.004562407	ND	6.66958E-06
	Nickel	12.42678571	5.39081E-05	1.86283E-05	2.72318E-08	6.80796E-09	1.10129E-08	0.35	1	1	0.02	ND	2.00E-02	0.002695404	0.000931414	ND	1.36159E-06
	Silver	1.850204082	5.73306E-06	2.77353E-06	4.0545E-09	1.01363E-09	1.63969E-09	0.25	1	1	0.005	ND	5.00E-03	0.001146613	0.000554707	ND	8.10901E-07
	Zinc	81.456	2.0192E-05	0.000122106	1.78501E-07	4.46253E-08	7.2188E-08	0.02	1	1	0.3	ND	3.00E-01	6.73068E-05	0.00040702	ND	5.95004E-07
	Lead	114.1017857	8.48537E-06	8.55217E-05	1.2502E-07	3.12551E-08	5.05597E-08	0.006	0.5	0.5	0.00075	ND	7.50E-04	0.011313827	0.114028898	ND	0.000166694
	Arsenic	6.685714286	2.48597E-06	1.00222E-05	1.4651E-08	3.66274E-09	5.92502E-09	0.03	1	1	0.0003	ND	3.00E-04	0.008286572	0.033407217	ND	4.88365E-05
VOCs	Bromomethane	0.003888889	4.82006E-09	5.82961E-09	8.52204E-12	2.13051E-12	3.44641E-12	0.1	1	1	0.0014	5.00E-03	1.40E-02	3.4429E-06	4.16401E-06	6.89283E-10	6.08717E-10
	Acetone	0.116611111	1.44533E-07	1.74805E-07	2.5554E-10	6.38849E-11	1.03343E-10	0.1	1	1	0.9	8.00E-01	1.00E+00	1.60592E-07	1.94228E-07	1.29179E-10	2.5554E-10
	Carbon disulfide	0.003916667	4.85449E-08	5.87125E-09	8.58291E-12	2.14573E-12	3.47103E-12	1	1	1	0.1	7.00E-01	1.00E-01	4.85449E-07	5.87125E-08	4.95862E-12	8.58291E-11
	Methyl tert-butyl ether (MTBE)	0.00355525	4.40654E-09	5.32947E-09	7.79091E-12	1.94773E-12	3.15074E-12	0.1	1	1	0.1	3.00E+00	1.00E+00	4.40654E-08	5.32947E-08	1.05025E-12	7.79091E-12
	2-Butanone (MEK)	0.009305556	1.15337E-08	1.39494E-08	2.0392E-11	5.09801E-12	8.24678E-12	0.1	1	1	0.6	1.00E+00	2.00E+00	1.92229E-08	2.3249E-08	8.24678E-12	1.0196E-11
	cis-1,2-Dichloroethene	0.004166667	5.16435E-09	6.24601E-09	9.13076E-12	2.28269E-12	3.69259E-12	0.1	1	1	0.01	ND	1.00E-01	5.16435E-07	6.24601E-07	ND	9.13076E-11
	Chloroform	0.003833333	4.7512E-09	5.74633E-09	8.4003E-12	2.10007E-12	3.39718E-12	0.1	1	1	0.01	6.60E-01	1.00E-02	4.7512E-07	5.74633E-07	5.14724E-12	8.4003E-10
	Benzene	0.00370525	3.67396E-09	5.55432E-09	8.11962E-12	2.0299E-12	3.28367E-12	0.08	1	1	0.004	3.20E-02	5.00E-02	9.1849E-07	1.38858E-06	1.02615E-10	1.62392E-10
	Trichloroethene	0.004277778	5.30207E-09	6.41257E-09	9.37425E-12	2.34356E-12	3.79106E-12	0.1	1	1	0.0003	1.80E-01	3.00E-04	1.76736E-05	2.13752E-05	2.10614E-11	3.12475E-08
	Methyl isobutyl ketone (MIBK)	0.003944444	4.88892E-09	5.91289E-09	8.64379E-12	2.16095E-12	3.49565E-12	0.1	1	1	0.08	3.00E+00	8.00E-01	6.11115E-08	7.39111E-08	1.16522E-12	1.08047E-11
	Tetrachloroethene	0.00997	1.23573E-08	1.49454E-08	2.18481E-11	5.46202E-12	8.83562E-12	0.1	1	1	0.01	4.60E+00	1.00E-01	1.23573E-06	1.49454E-06	1.92079E-12	2.18481E-10
	Toluene	0.00343025	5.10193E-09	5.14209E-09	7.51699E-12	1.87925E-12	3.03996E-12	0.12	1	1	0.2	4.00E-01	2.00E+00	2.55096E-08	2.57104E-08	7.5999E-12	3.75849E-12
	Ethylbenzene	0.00365525	9.06096E-09	5.47937E-09	8.01005E-12	2.00251E-12	3.23936E-12	0.2	1	1	0.1	1.00E+00	1.00E+00	9.06096E-08	5.47937E-08	3.23936E-12	8.01005E-12
	p/m-Xylene	0.00348025	5.17629E-09	5.21704E-09	7.62656E-12	1.90664E-12	3.08427E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	2.58815E-08	2.60852E-08	1.02809E-11	1.90664E-12
	O-xylene	0.00356775	5.30643E-09	5.34821E-09	7.8183E-12	1.95458E-12	3.16181E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	2.65322E-08	2.6741E-08	1.05394E-11	1.95458E-12
	Trichlorofluoromethane	0.003861111	4.78563E-08	5.78797E-09	8.46117E-12	2.11529E-12	3.4218E-12	1	1	1	0.3	ND	7.00E-01	1.59521E-07	1.92932E-08	ND	1.20874E-11
	Chloromethane	0.00403	4.99496E-08	6.04114E-09	8.83127E-12	2.20782E-12	3.57147E-12	1	1	1	ND	ND	ND	ND	ND	ND	ND
	2-hexanone	0.00394	4.88341E-08	5.90622E-09	8.63405E-12	2.15851E-12	3.49171E-12	1	1	1	ND	ND	ND	ND	ND	ND	ND
	1,3,5-trimethylbenzene	0.012611111	1.56308E-07	1.89046E-08	2.76358E-11	6.90894E-12	1.11762E-11	1	1	1	0.05	ND	5.00E-02	3.12615E-06	3.78092E-07	ND	5.52715E-10
	1,2,4-trimethylbenzene	0.017944444	2.22411E-07	2.68995E-08	3.93231E-11	9.83078E-12	1.59027E-11	1	1	1	0.05	ND	5.00E-02	4.44823E-06	5.37989E-07	ND	7.86463E-10
	p-isopropyltoluene	0.011027778	1.36683E-07	1.65311E-08	2.41661E-11	6.04152E-12	9.77305E-12	1	1	1	ND	ND	2.00E-01	ND	ND	ND	1.2083E-10
SVOCs	Naphthalene	0.576264078	7.14247E-07	8.63844E-07	1.26281E-09	3.15704E-10	5.10697E-10	0.1	1	1	0.02	3.00E-03	2.00E-01	3.57124E-05	4.31922E-05	1.70232E-07	6.31407E-09
	2-Methylnaphthalene	0.235802	2.92263E-07	3.53477E-07	5.16732E-10	1.29183E-10	2.08973E-10	0.1	1	1	0.02	3.00E-03	4.00E-02	1.46132E-05	1.76739E-05	6.96575E-08	1.29183E-08
	Acenaphthylene	0.240051485	2.9753E-07	3.27461E-07	4.78701E-10	1.19675E-10	1.93592E-10	0.1	0.91	0.91	0.04	ND	6.00E-01	7.43826E-06	8.18652E-06	ND	7.97834E-10
	Acenaphthene	0.253912871	3.14711E-07	3.80626E-07	5.5642E-10	1.39105E-10	2.25023E-10	0.1	1	1	0.06	Not Volatile	2.00E-03	5.24518E-06	6.34377E-06	Not Volatile	2.7821E-07
	Dibenzofuran	0.224207317	2.77893E-07	3.36096E-07	4.91324E-10	1.22831E-10	1.98697E-10	0.1	1	1	0.002	ND	4.00E-01	0.000138946	0.000168048	ND	1.22831E-09
	Fluorene	0.256987129	3.18521E-07	3.85234E-07	5.63157E-10	1.40789E-10	2.27747E-10	0.1	1	1	0.04	ND	4.00E-02	7.96303E-06	9.63086E-06	ND	1.40789E-08
	Phenanthrene	0.780467327	9.67346E-07	1.06466E-06	1.55638E-09	3.89094E-10	6.29416E-10	0.1	0.91	0.91	0.04	Not Volatile	3.00E+00	2.41836E-05	2.66164E-05	Not Volatile	5.18792E-10
	Anthracene	0.331808911	4.11259E-07	4.97395E-07	7.2712E-10	1.8178E-10	2.94056E-10	0.1	1	1	0.3	ND	4.00E-01	1.37086E-06	1.65798E-06	ND	1.8178E-09
	Fluroanthene	1.133586139	1.40502E-06	1.69929E-06	2.48412E-09	6.2103E-10	1.00461E-09	0.1	1	1	0.04	ND	3.00E-01	3.51254E-05	4.24823E-05	ND	8.2804E-09
	Pyrene	1.068170297	1.32394E-06	1.60123E-06	2.34077E-09	5.85192E-10	9.46635E-10	0.1	1	1	0.03	ND	4.00E-02	4.41313E-05	5.33744E-05	ND	5.85192E-08
	Benzo(a)anthracene	0.593353465	7.35429E-07	8.0941E-07	1.18324E-09	2.9581E-10	4.78516E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.83857E-05	2.02353E-05	ND	2.9581E-08
	Chrysene	0.672333663	8.3332E-07	9.17149E-07	1.34074E-09	3.35185E-10	5.42211E-10	0.1	0.91	0.91	0.04	ND	2.00E-02	2.0833E-05	2.29287E-05	ND	6.7037E-08
	bis(2-ethylhexyl)phthalate	0.197634146	2.44957E-07	2.96262E-07	4.33092E-10	1.08273E-10	1.75147E-10	0.1	1	1	0.02	ND	4.00E-02	1.22478E-05	1.48131E-05	ND	1.08273E-08
	Benzo(b)fluoranthene	0.635917822	7.88185E-07	8.67473E-07	1.26812E-09	3.1703E-10	5.12843E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.97046E-05	2.16868E-05	ND	3.1703E-08
	Benzo(k)fluoranthene	0.58499703	7.25071E-07	7.98011E-07	1.16658E-09	2.91644E-10	4.71777E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.81268E-05	1.99503E-05	ND	2.91644E-08
	Benzo(a)pyrene	0.597774257	7.40908E-07	8.15441E-07	1.19206E-09	2.98014E-10	4.82082E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.85227E-05	2.0386E-05	ND	2.98014E-08
	Indeno(1,2,3-c,d)pyrene	0.344917822	4.27507E-07	4.70512E-07	6.87821E-10	1.71955E-10	2.78163E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	1.06877E-05	1.17628E-05	ND	1.71955E-08
	Dibenz(a,h)anthracene	0.258848515	3.20828E-07	3.53103E-07	5.16185E-10	1.29046E-10	2.08751E-10	0.1	0.91	0.91	0.04	ND	4.00E-02	8.02071E-06	8.82756E-06	ND	1.29046E-08
	Benzo(g,h,I)perylene	0.343536634	4.25795E-07	4.68628E-07	6.85066E-10	1.71267E-10	2.77049E-10	0.1	0.91	0.91	0.04	ND	ND	1.06449E-05	1.17157E-05	ND	ND
	Carbazole	0.246219512	3.05175E-07	3.69093E-07	5.39561E-10	1.3489E-10	2.18205E-10	0.1	1	1	ND	ND	1.00E+00	ND	ND	ND	5.39561E-10
	C9-C18 Aliphatics	21.83333333	2.70612E-05	2.97835E-05	4.35391E-08	1.08848E-08	1.76077E-08	0.1	0.91	0.91	0.1	2.00E+00	6.00E+00	0.000270612	0.000297835	8.80387E-09	7.25652E-09
	C19-C36 Aliphatics	662.3333333	0.000820925	0.000903507	1.3208E-06	3.30199E-07	5.34146E-07	0.1	0.91	0.91	2	Not Volatile	3.00E-01	0.000410463	0.000451754	Not Volatile	4.40266E-06
	C11-C22 Aromatics	239	0.000296227	0.000326027	4.76604E-07	1.19151E-07	1.92744E-07	0.1	0.91	0.91	0.03	2.00E-01	6.00E-01	0.009874241	0.010867553	9.63721E-07	7.9434E-07
													Totals	0.072272979	0.166069411	1.21341E-06	0.000230818

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))

Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 2190 days
AP = 2190 days
CF = 0.000001 kg/mg

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))

Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))

Average daily exposure for the respiratory system: ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 11 kg
IR = 4.7 L/min
AV = 6.9 m^3/day
EF = 0.356 events/day
ED = 2 hrs/event
EP = 365 days
AP = 365 days
CF = 6E-11 (60 min/hr; 1E-9 kg/ug; 0.001 m3/L)
PM10 = 60 ug/m^3

Hazard Index: HI = (ADD)/(Rfd)

Hazard Index (Inhalation only): HI = (ADE)/(RfC)

DRAFT Table N.19 Non-Cancer Risk Calculations - Construction Worker - Future

NON-CANCER SOIL NOc39 ALL CW	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	ADD Inhalation - GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/day)	RAF, sub-chronic soil dermal	RAF Subchronic Ingestion	Chronic Oral RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m3)	Subchronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion	HI Inhalation	HI GI Tract
Metals	Copper	121.7419643	0.000437003	5.51516E-05	1.89687E-06	4.74217E-07	1.87316E-06	1	1	0.04	ND	4.00E-02	0.010925068	0.001378789	ND	4.74217E-05
	Nickel	12.42678571	1.56124E-05	5.62958E-06	1.93623E-07	4.84056E-08	1.91202E-07	0.35	1	0.02	ND	2.00E-02	0.000780622	0.000281479	ND	9.68113E-06
	Silver	1.850204082	1.66036E-06	8.3818E-07	2.88281E-08	7.20704E-09	2.84678E-08	0.25	1	0.005	ND	5.00E-03	0.000332073	0.000167636	ND	5.76563E-06
	Zinc	81.456	5.84786E-06	3.69012E-05	1.26917E-06	3.17293E-07	1.25331E-06	0.02	1	0.3	ND	3.00E-01	1.94929E-05	0.000123004	ND	4.23057E-06
	Lead	114.1017857	2.45747E-06	2.58452E-05	8.88914E-07	2.22228E-07	8.77802E-07	0.006	0.5	0.00075	ND	7.50E-04	0.003276621	0.034460266	ND	0.001185218
	Arsenic	6.685714286	7.19968E-07	3.02876E-06	1.04171E-07	2.60426E-08	1.02868E-07	0.03	1	0.0003	ND	3.00E-04	0.002399892	0.010095876	ND	0.000347235
VOCs	Bromomethane	0.003888889	1.39595E-09	1.76174E-09	6.0593E-11	1.51483E-11	5.98356E-11	0.1	1	0.0014	5.00E-03	1.40E-02	9.97106E-08	1.25839E-07	1.19671E-08	4.32807E-09
	Acetone	0.116611111	4.18585E-08	5.28272E-08	1.81693E-09	4.54231E-10	1.79421E-09	0.1	1	0.9	8.00E-01	1.00E+00	4.18585E-08	5.28272E-08	2.24277E-09	1.81693E-09
	Carbon disulfide	0.003916667	1.40592E-08	1.77433E-09	6.10258E-11	1.52565E-11	6.0263E-11	1	1	0.1	7.00E-01	1.00E-01	1.40592E-07	1.77433E-08	8.609E-11	6.10258E-10
	Methyl tert-butyl ether (MTBE)	0.00355525	1.27619E-09	1.6106E-09	5.53946E-11	1.38486E-11	5.47021E-11	0.1	1	0.1	3.00E+00	1.00E+00	1.27619E-09	1.6106E-09	1.8234E-11	5.53946E-11
	2-Butanone (MEK)	0.009305556	3.34031E-09	4.2156E-09	1.4499E-10	3.62476E-11	1.43178E-10	0.1	1	0.6	1.00E+00	2.00E+00	1.67015E-09	2.1078E-09	1.43178E-10	7.24952E-11
	cis-1,2-Dichloroethene	0.004166667	1.49566E-09	1.88758E-09	6.49211E-11	1.62303E-11	6.41096E-11	0.1	1	0.01	ND	1.00E-01	1.49566E-08	1.88758E-08	ND	6.49211E-10
	Chloroform	0.003833333	1.37601E-09	1.73658E-09	5.97274E-11	1.49319E-11	5.89808E-11	0.1	1	0.01	6.60E-01	1.00E-02	1.37601E-07	1.73658E-07	8.93649E-11	5.97274E-09
	Benzene	0.00370525	1.06402E-09	1.67855E-09	5.77317E-11	1.44329E-11	5.70101E-11	0.08	1	0.004	3.20E-02	5.00E-02	2.12805E-08	3.35711E-08	1.78157E-09	1.15463E-09
	Trichloroethene	0.004277778	1.53554E-09	1.93792E-09	6.66523E-11	1.66631E-11	6.58192E-11	0.1	1	0.0003	1.80E-01	3.00E-04	5.11848E-06	6.45973E-06	3.65662E-10	2.22174E-07
	Methyl isobutyl ketone (MIBK)	0.003944444	1.41589E-09	1.78691E-09	6.14586E-11	1.53647E-11	6.06904E-11	0.1	1	0.08	3.00E+00	8.00E-01	1.76986E-09	2.23364E-09	2.02301E-11	7.68233E-11
	Tetrachloroethene	0.00997	3.57881E-09	4.51661E-09	1.55343E-10	3.88358E-11	1.53401E-10	0.1	1	0.01	4.60E+00	1.00E-01	3.57881E-08	4.51661E-08	3.33481E-11	1.55343E-09
	Toluene	0.00343025	1.47758E-09	1.55397E-09	5.34469E-11	1.33617E-11	5.27789E-11	0.12	1	0.2	4.00E-01	2.00E+00	7.3879E-10	7.76986E-10	1.31947E-10	2.67235E-11
	Ethylbenzene	0.00365525	2.62416E-09	1.6559E-09	5.69527E-11	1.42382E-11	5.62408E-11	0.2	1	0.1	1.00E+00	1.00E+00	2.62416E-09	1.6559E-09	5.62408E-11	5.69527E-11
	p/m-Xylene	0.00348025	1.49912E-09	1.57662E-09	5.4226E-11	1.35565E-11	5.35482E-11	0.12	1	0.2	3.00E-01	4.00E+00	3.74779E-10	3.94156E-10	1.78494E-10	1.35565E-11
	O-xylene	0.00356775	1.53681E-09	1.61626E-09	5.55893E-11	1.38973E-11	5.48945E-11	0.12	1	0.2	3.00E-01	4.00E+00	3.84202E-10	4.04066E-10	1.82982E-10	1.38973E-11
	Trichlorofluoromethane	0.003861111	1.38598E-08	1.74916E-09	6.01602E-11	1.50401E-11	5.94082E-11	1	1	0.3	ND	7.00E-01	1.97997E-08	2.4988E-09	ND	8.59432E-11
	Chloromethane	0.00403	1.4466E-08	1.82567E-09	6.27917E-11	1.56979E-11	6.20068E-11	1	1	ND	ND	ND	ND	ND	ND	ND
	2-hexanone	0.00394	1.4143E-08	1.7849E-09	6.13894E-11	1.53473E-11	6.0622E-11	1	1	ND	ND	ND	ND	ND	ND	ND
	1,3,5-trimethylbenzene	0.012611111	4.52686E-08	5.71309E-09	1.96495E-10	4.91236E-11	1.94038E-10	1	1	0.05	ND	5.00E-02	9.05372E-07	1.14262E-07	ND	3.92989E-09
	1,2,4-trimethylbenzene	0.017944444	6.4413E-08	8.12919E-09	2.79594E-10	6.98984E-11	2.76099E-10	1	1	0.05	ND	5.00E-02	1.28826E-06	1.62584E-07	ND	5.59187E-09
	p-isopropyltoluene	0.011027778	3.95851E-08	4.9958E-09	1.71825E-10	4.29561E-11	1.69677E-10	1	1	ND	ND	2.00E-01	1.97926E-07	2.4979E-08	ND	8.59123E-10
SVOCs	Naphthalene	0.576264078	2.06855E-07	2.61059E-07	8.97881E-09	2.2447E-09	8.86657E-09	0.1	1	0.02	3.00E-03	2.00E-01	1.03427E-06	1.3053E-06	2.95552E-06	4.4894E-08
	2-Methylnaphthalene	0.235802	8.46431E-08	1.06823E-07	3.67405E-09	9.18512E-10	3.62812E-09	0.1	1	0.02	3.00E-03	4.00E-02	2.11608E-06	2.67058E-06	1.20937E-06	9.18512E-08
	Acenaphthylene	0.240051485	1.55103E-07	9.89608E-08	3.40363E-09	8.50909E-10	3.36109E-09	0.18	0.91	0.04	ND	6.00E-01	2.58505E-07	1.64935E-07	ND	5.67272E-09
	Acenaphthene	0.253912871	1.82288E-07	1.15028E-07	3.95623E-09	9.89058E-10	3.90678E-09	0.2	1	0.06	Not Volatile	2.00E-03	9.11441E-05	5.75138E-05	Not Volatile	1.97812E-06
	Dibenzofuran	0.224207317	8.0481E-07	1.0157E-07	3.49339E-09	8.73347E-10	3.44972E-09	1	1	0.002	ND	4.00E-01	2.01203E-06	2.53926E-07	ND	8.73347E-09
	Fluorene	0.256987129	1.84495E-07	1.1642E-07	4.00413E-09	1.00103E-09	3.95408E-09	0.2	1	0.04	ND	4.00E-02	4.61238E-06	2.91051E-06	ND	1.00103E-07
	Phenanthrene	0.780467327	5.04279E-07	3.21746E-07	1.10661E-08	2.76652E-09	1.09277E-08	0.18	0.91	0.04	Not Volatile	3.00E+00	1.68093E-07	1.07249E-07	Not Volatile	3.68869E-09
	Anthracene	0.331808911	3.45406E-07	1.50316E-07	5.16994E-09	1.29248E-09	5.10531E-09	0.29	1	0.3	ND	4.00E-01	8.63515E-07	3.7579E-07	ND	1.29248E-08
	Fluroanthene	1.133586139	8.1382E-07	5.13537E-07	1.76625E-08	4.41562E-09	1.74417E-08	0.2	1	0.04	ND	3.00E-01	2.71273E-06	1.71179E-06	ND	5.88749E-08
	Pyrene	1.068170297	7.66857E-07	4.83903E-07	1.66432E-08	4.16081E-09	1.64352E-08	0.2	1	0.03	ND	4.00E-02	1.91714E-05	1.20976E-05	ND	4.16081E-07
	Benzo(a)anthracene	0.593353465	3.8338E-07	2.44609E-07	8.41302E-09	2.10326E-09	8.30786E-09	0.18	0.91	0.04	ND	4.00E-02	9.58451E-06	6.11522E-06	ND	2.10326E-07
	Chrysene	0.672333663	4.34411E-07	2.77168E-07	9.53286E-09	2.38322E-09	9.4137E-09	0.18	0.91	0.04	ND	2.00E-02	2.17206E-05	1.38584E-05	ND	4.76643E-07
	bis(2-ethylhexyl)phthalate	0.197634146	1.41885E-08	8.95322E-08	3.07935E-09	7.69838E-10	3.04086E-09	0.02	1	0.02	ND	4.00E-02	3.54712E-07	2.23831E-06	ND	7.69838E-08
	Benzo(b)fluoranthene	0.635917822	4.10882E-07	2.62156E-07	9.01653E-09	2.25413E-09	8.90383E-09	0.18	0.91	0.04	ND	4.00E-02	1.02721E-05	6.5539E-06	ND	2.25413E-07
	Benzo(k)fluoranthene	0.58499703	3.77981E-07	2.41164E-07	8.29454E-09	2.07363E-09	8.19086E-09	0.18	0.91	0.04	ND	4.00E-02	9.44953E-06	6.0291E-06	ND	2.07363E-07
	Benzo(a)pyrene	0.597774257	3.86237E-07	2.46431E-07	8.4757E-09	2.11893E-09	8.36976E-09	0.18	0.91	0.04	ND	4.00E-02	9.65592E-06	6.16079E-06	ND	2.11893E-07
	Indeno(1,2,3-c,d)pyrene	0.344917822	2.2286E-07	1.42192E-07	4.89051E-09	1.22263E-09	4.82938E-09	0.18	0.91	0.04	ND	4.00E-02	5.5715E-06	3.55479E-06	ND	1.22263E-07
	Dibenz(a,h)anthracene	0.258848515	7.43326E-08	1.0671E-07	3.67015E-09	9.17538E-10	3.62428E-09	0.08	0.91	0.04	ND	4.00E-02	1.85832E-06	2.66775E-06	ND	9.17538E-08
	Benzo(g,h,I)perylene	0.343536634	2.21967E-07	1.41622E-07	4.87093E-09	1.21773E-09	4.81004E-09	0.18	0.91	0.04	ND	ND	ND	ND	ND	ND
	Carbazole	0.246219512	8.83825E-07	1.11542E-07	3.83636E-09	9.59091E-10	3.78841E-09	1	1	ND	ND	1.00E+00	8.83825E-07	1.11542E-07	ND	3.83636E-09
	C9-C18 Aliphatics	21.83333333	1.56745E-05	9.00075E-06	3.0957E-07	7.73924E-08	3.057E-07	0.2	0.91	0.1	2.00E+00	6.00E+00	2.61242E-06	1.50013E-06	1.5285E-07	5.1595E-08
	C19-C36 Aliphatics	662.3333333	0.00023775	0.000273046	9.39107E-06	2.34777E-06	9.27368E-06	0.1	0.91	2	Not Volatile	3.00E-01	0.0007925	0.000910153	Not Volatile	3.13036E-05
	C11-C22 Aromatics	239	0.000154424	9.85273E-05	3.38873E-06	8.47181E-07	3.34637E-06	0.18	0.91	0.03	2.00E-01	6.00E-01	0.000257373	0.000164212	1.67318E-05	5.64788E-06
												Totals	0.018987728	0.047716557	2.10669E-05	0.001641152

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 79 kg SA = 2732 cm^2 EP = 365 days
IR = 100 mg EF = 0.3561 events/day AP = 365 days
AF (dermal) = 0.29 mg/cm^2 ED = 1 day/event CF = 0.000001

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respiratory system: ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 79 kg EF = 0.356 events/day AP = 365 days
IR = 60 L/min ED = 8 hrs/event CF = 6E-11 (60 min/hr; 1E-9 kg/ug; 0.001 m3/L)
AV = 20 m^3/day EP = 365 days PM10 = 60 ug/m^3

Hazard Index: HI = (ADD)/(Rfd)
Hazard Index (Inhalation only): HI = (ADE)/(RfC)

DRAFT Table N.20 Noncarcinogenic Dermal Groundwater Risk Calculations - Construction Worker - Future

Compound	EPC (mg/L)	Kp Value (cm/hr)	RAF, sub-chronic water dermal	Subchronic Oral RfD (mg/kg-day)	ADD (mg/kg-day)	HI
Arsenic	0.11	0.001	1	0.0003	1.50647E-07	0.000502155
Chromium	0.1	0.001	1	0.02	1.36951E-07	6.84757E-06
Copper	0.013	0.001	1	0.04	1.78037E-08	4.45092E-07
Selenium	0.002	0.001	1	0.00005	2.73903E-09	5.47806E-05
Zinc	0.062	0.001	1	0.3	8.49099E-08	2.83033E-07
Naphthalene	0.00026	0.069	1	0.2	2.45691E-08	1.22845E-07
Acenaphthylene	0.00068	ND	1	0.04	no Kp	no Kp
Phenanthrene	0.0015	0.23	1	0.04	4.72483E-07	1.18121E-05
Anthracene	0.00063	ND	1	3	no Kp	no Kp
Fluoranthene	0.0056	1.2	1	0.04	9.20314E-06	0.000230078
Pyrene	0.0064	1.9	1	0.04	1.66533E-05	0.000416332
Benzo[a]anthracene	0.003	2.7	1	0.04	1.10931E-05	0.000277327
Chrysene	0.0035	ND	1	0.04	no Kp	no Kp
Benzo[b]fluoranthene	0.0032	ND	1	ND	no Kp	no Kp
Benzo[k]fluoranthene	0.0027	ND	1	1	no Kp	no Kp
Benzo[a]pyrene	0.002	ND	1	6	no Kp	no Kp
Indeno[1,2,3-cd]pyrene	0.0026	0.0082	1	0.3	2.9198E-08	9.73268E-08
Dibenz[a,h]anthracene	0.00038	0.0048	1	0.6	2.49799E-09	4.16332E-09
Benzo[g,h,i]perylene	0.0024	0.0016	1	8	5.25894E-09	6.57367E-10
Phenol	0.0041	0.0082	1	0.6	4.60431E-08	7.67385E-08
Dimethylphthalate	0.0028	0.0016	1	10	6.13543E-09	6.13543E-10
Diethylphthalate	0.003275	0.0048	1	8	2.15288E-08	2.6911E-09
Butylbenzylphthalate	0.0028	ND	1	2	no Kp	no Kp
bis(2-Ethylhexyl)phthalate	0.013	ND	1	0.02	no Kp	no Kp
Methyl tert-butyl ether (MTBE)	0.027	ND	1	1	no Kp	no Kp
cis-1,2-Dichloroethene	0.031	0.01	1	0.1	4.2455E-07	4.2455E-06
Chloroform	0.005	0.13	1	0.01	8.90184E-07	8.90184E-05
Trichloroethene	0.026	0.23	1	0.0003	8.1897E-06	0.02729899
Tetrachloroethene	0.47	0.37	1	0.1	0.000238159	0.002381586
Naphthalene	0.0025	0.069	1	0.2	2.36241E-07	1.18121E-06
				Totals	0.00028585	0.031275387

Dermal contact with Groundwater: ADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(Kp)*(RAF)*(CF))/((BW)*(AP))

SA = 1310 cm^2
EF = 0.08219 events/day
ED = 1 hr/event
EP = 365 days
CF = 0.001 L/cm^3
BW = 79 kg
AP = 365 days

Hazard Index: HI = (ADD)/(RfD)

DRAFT Table N.21 Carcinogenic Risk Calculations - Adult Resident - Future

CANCER SOIL NOc39 ALL ADULT	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Oral (per mg/kg-day)	ECLR Dermal	ECLR Ingestion
Metals	Copper	121.7419643	7.91042E-05	9.11537E-06	1	1	NC	NC	NC
	Nickel	12.42678571	8.07454E-06	9.30449E-07	1	1	ND	ND	ND
	Silver	1.850204082	NC	NC	NC	NC	NC	NC	NC
	Zinc	81.456	NC	NC	NC	NC	NC	NC	NC
	Lead	114.1017857	NC	NC	NC	NC	NC	NC	NC
	Arsenic	6.685714286	1.30325E-07	5.0059E-07	0.03	1	1.5	1.95488E-07	7.5088E-07
VOCs	Bromomethane	0.003888889	2.52688E-09	2.91179E-10	1	1	NC	NC	NC
	Acetone	0.116611111	7.57703E-08	8.7312E-09	1	1	NC	NC	NC
	Carbon disulfide	0.003916667	2.54493E-09	2.93258E-10	1	1	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	2.49078E-10	2.87019E-10	0.1	1	NC	NC	NC
	Benzene	0.00370525	1.92605E-10	2.77429E-10	0.08	1	0.055	1.05933E-11	1.5259E-11
	Trichloroethene	0.004277778	2.77957E-10	3.20296E-10	0.1	1	0.4	1.11183E-10	1.2812E-10
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	6.4782E-10	7.46499E-10	0.1	1	0.54	3.49823E-10	4.0311E-10
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	2.50883E-09	2.89099E-10	1	1	NC	NC	NC
	Chloromethane	0.00403	2.61857E-09	3.01744E-10	1	1	0.013	3.40414E-11	3.9227E-12
	2-Hexanone	0.00394	2.56009E-09	2.95006E-10	1	1	NC	NC	NC
	1,3,5-Trimethylbenzene	0.012611111	8.19431E-09	9.44251E-10	1	1	NC	NC	NC
	1,2,4-Trimethylbenzene	0.017944444	1.16597E-08	1.34358E-09	1	1	NC	NC	NC
	p-Isopropyltoluene	0.011027778	7.16551E-09	8.25699E-10	1	1	NC	NC	NC
SVOCs	Naphthalene	0.576264078	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	0.235802	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	0.240051485	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	0.253912871	NC	NC	NC	NC	NC	NC	NC
	Dibenzofuran	0.224207317	1.45683E-07	1.67874E-08	1	1	NC	NC	NC
	Fluorene	0.256987129	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	0.780467327	NC	NC	NC	NC	NC	NC	NC
	Anthracene	0.331808911	NC	NC	NC	NC	NC	NC	NC
	Fluoranthene	1.133586139	NC	NC	NC	NC	NC	NC	NC
	Pyrene	1.068170297	NC	NC	NC	NC	NC	NC	NC
	Benzo[a]anthracene	0.593353465	7.71086E-08	4.4427E-08	0.2	1	0.73	5.62892E-08	3.2432E-08
	Chrysene	0.672333663	8.73723E-08	5.03406E-08	0.2	1	0.073	6.37818E-09	3.6749E-09
	bis(2-Ethylhexyl)phthalate	0.197634146	2.56833E-09	1.47978E-08	0.02	1	0.014	3.59566E-11	2.0717E-10
	Benzo[b]fluoranthene	0.635917822	8.264E-08	4.7614E-08	0.2	1	0.73	6.03272E-08	3.4758E-08
	Benzo[k]fluoranthene	0.58499703	7.60226E-08	4.38014E-08	0.2	1	0.073	5.54965E-09	3.1975E-09
	Benzo[a]pyrene	0.597774257	7.76831E-08	4.4758E-08	0.2	1	7.3	5.67086E-07	3.2673E-07
	Indeno[1,2,3-cd]pyrene	0.344917822	4.48234E-08	2.58255E-08	0.2	1	0.73	3.27211E-08	1.8853E-08
	Dibenz[a,h]anthracene	0.258848515	1.51373E-08	1.93812E-08	0.09	1	7.3	1.10502E-07	1.4148E-07
	Benzo[g,h,i]perylene	0.343536634	NC	NC	NC	NC	NC	NC	NC
	Carbazole	0.246219512	1.59986E-07	1.84356E-08	1	1	0.02	3.19972E-09	3.6871E-10
	n-C9 to n-C18 Aliphatic Hydrocarbons	21.83333333	NC	NC	NC	NC	NC	NC	NC
	n-C19 to n-C36 Aliphatic Hydrocarbons	662.3333333	NC	NC	NC	NC	NC	NC	NC
	n-C11 to n-C22 Aromatic Hydrocarbons	239	NC	NC	NC	NC	NC	NC	NC
							Totals	0.000001	0.000001

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

NC = No Cancer Data
ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2

SA = 6199 cm^2
EF = 0.2411 events/days
ED = 1 day/event

EP = 10950 days
AP = 255865 days
CF = 0.000001 kg/mg

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)

DRAFT Table N.22 Carcinogenic Risk Calculations - Child Resident - Future

CANCER SOIL NOc39 ALL CHILD	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	ADD Inhalation GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/m^3)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Cancer Inhalation (per mg/kg-d)	Slope Factor Cancer Oral (per mg/kg-day)	Unit Risk Cancer Oral (per mg/L)	Unit Risk Cancer Inhalation (per mg/m^3)	ECLR Dermal	ECLR Ingestion	ECLR Inhalation	ECLR GI Tract
Metals	Copper	121.7419643	0.000129336	1.5643E-05	3.81119E-09	9.52797E-10	1.54129E-09	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Nickel	12.42678571	1.3202E-05	1.5967E-06	3.89026E-10	9.72566E-11	1.57327E-10	1	1	0.84	ND	ND	ND	ND	ND	8.16955E-11	ND
	Silver	1.850204082	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Zinc	81.456	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Lead	114.1017857	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Arsenic	6.685714286	2.13083E-07	8.5904E-07	2.09299E-10	5.23248E-11	8.46431E-11	0.03	1	15.1	1.5	0.05	ND	3.19625E-07	1.28856E-06	7.90105E-10	3.13949E-10
VOCs	Bromomethane	0.003888889	4.13148E-09	4.9968E-10	1.21743E-13	3.04359E-14	4.92345E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Acetone	0.116611111	1.23885E-07	1.4983E-08	3.65056E-12	9.12641E-13	1.47633E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Carbon disulfide	0.003916667	4.16099E-09	5.0325E-10	1.22613E-13	3.06533E-14	4.95862E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	4.07246E-10	4.9254E-10	1.20004E-13	3.00011E-14	4.85311E-14	0.1	1	0.081	NC	NC	0.023	NC	NC	1.11622E-15	NC
	Benzene	0.00370525	3.14911E-10	4.7608E-10	1.15995E-13	2.89986E-14	4.69096E-14	0.08	1	NC	0.055	0.0016	0.0078	1.73201E-11	2.61847E-11	3.65895E-16	6.3797E-15
	Trichloroethene	0.004277778	4.54463E-10	5.4965E-10	1.33918E-13	3.34795E-14	5.41579E-14	0.1	1	0.4	0.4	NC	0.00011	1.81785E-10	2.19859E-10	5.95737E-18	5.35671E-14
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	1.05919E-09	1.281E-09	3.12115E-13	7.80289E-14	1.26223E-13	0.1	1	0.02	0.54	NC	0.0000552	5.71965E-10	6.91761E-10	6.96752E-18	1.68542E-13
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	4.10197E-09	4.9611E-10	1.20874E-13	3.02185E-14	4.88828E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Chloromethane	0.00403	4.2814E-09	5.1781E-10	1.26161E-13	3.15403E-14	5.1021E-14	1	1	0.0063	0.013	0.00037	0.0018	5.56581E-11	6.73155E-12	9.18378E-17	1.64009E-15
	2-hexanone	0.00394	4.18578E-09	5.0625E-10	1.23344E-13	3.08359E-14	4.98816E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,3,5-trimethylbenzene	0.012611111	1.33978E-08	1.6204E-09	3.94797E-13	9.86992E-14	1.5966E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,2,4-trimethylbenzene	0.017944444	1.90638E-08	2.3057E-09	5.61759E-13	1.4044E-13	2.27182E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	p-isopropyltoluene	0.011027778	1.17157E-08	1.417E-09	3.4523E-13	8.63074E-14	1.39615E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
SVOCs	Naphthalene	0.576264078	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	0.235802	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	0.240051485	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	0.253912871	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Dibenzofuran	0.224207317	2.38194E-07	2.8808E-08	7.01891E-12	1.75473E-12	2.83853E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Fluorene	0.256987129	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	0.780467327	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Anthracene	0.331808911	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluroanthene	1.133586139	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Pyrene	1.068170297	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Benzo(a)anthracene	0.593353465	1.26073E-07	7.624E-08	1.85752E-11	4.6438E-12	7.51203E-12	0.2	1	ND	0.73	NC	NC	9.20336E-08	5.56549E-08	NC	1.35599E-11
	Chrysene	0.672333663	1.42855E-07	8.6388E-08	2.10477E-11	5.26193E-12	8.51194E-12	0.2	1	ND	0.073	NC	NC	1.04284E-08	6.3063E-09	NC	1.53648E-12
	bis(2-ethylhexyl)phthalate	0.197634146	4.19926E-09	2.5394E-08	6.18703E-12	1.54676E-12	2.50211E-12	0.02	1	0.014	0.014	0.0004	NC	5.87896E-11	3.55514E-10	2.16546E-14	8.66184E-14
	Benzo(b)fluoranthene	0.635917822	1.35117E-07	8.1709E-08	1.99077E-11	4.97693E-12	8.05091E-12	0.2	1	ND	0.73	NC	NC	9.86357E-08	5.96473E-08	NC	1.45326E-11
	Benzo(k)fluoranthene	0.58499703	1.24298E-07	7.5166E-08	1.83136E-11	4.5784E-12	7.40624E-12	0.2	1	ND	0.073	NC	NC	9.07375E-09	5.48711E-09	NC	1.33689E-12
	Benzo(a)pyrene	0.597774257	1.27013E-07	7.6808E-08	1.87136E-11	4.6784E-12	7.568E-12	0.2	1	3.1	7.3	0.21	NC	9.27193E-07	5.60695E-07	1.4503E-11	1.36609E-10
	Indeno(1,2,3-c,d)pyrene	0.344917822	7.32868E-08	4.4318E-08	1.07978E-11	2.69945E-12	4.36676E-12	0.2	1	ND	0.73	NC	NC	5.34994E-08	3.23523E-08	NC	7.8824E-12
	Dibenz(a,h)anthracene	0.258848515	2.47496E-08	3.3259E-08	8.10337E-12	2.02584E-12	3.2771E-12	0.09	1	ND	7.3	NC	NC	1.80672E-07	2.42793E-07	NC	5.91546E-11
	Benzo(g,h,I)perylene	0.343536634	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Carbazole	0.246219512	2.61579E-07	3.1637E-08	7.70802E-12	1.927E-12	3.11721E-12	1	1	NC	0.02	0.00057	NC	5.23158E-09	6.32731E-10	NC	1.5416E-13
	C9-C18 Aliphatics	21.83333333	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	C19-C36 Aliphatics	662.3333333	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	C11-C22 Aromatics	239	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
													Totals	1.69728E-06	2.25343E-06	8.86327E-10	5.49032E-10

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/days
ED = 1 day/event
EP = 2190 days
AP = 25550 days
CF = 0.000001

NC = No Cancer Data/Not a Carcinogen
ND = No Data

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respi ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 11 kg
IR = 4.7 L/min
AV= 6.8 m^3/day
EF = 0.356 events/days
ED = 2 hrs/event
EP = 365 days
AP = 25550 days
CF = 6E-11 (60 min/hr; 10E-9 kg/ug; 0.001 m3/L)
PM10 = 60 ug/m^3

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (GI Tract Only): ECLR = (ADD $_{INH\ GI}$)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (Inhalation only): ECLR = (ADE)*(Unit Risk $_{INH}$)
if no value for Unit Risk $_{INH}$, use ECLR = (ADD $_{INH\ RESP}$)*(Slope Factor $_{INH}$)

DRAFT Table N.23 Carcinogenic Risk Calculations - Construction Worker - Future

CANCER SOIL NOc39 ALL CW	Compound	EPC (mg/kg)	**LADD** Dermal (mg/kg)	**LADD** Ingestion (mg/kg)	**ADD** Inhalation GI Tract (mg/kg-day)	**ADD** Inhalation Respiratory (mg/kg-day)	**ADE** Inhalation Respiratory (mg/m^3)	**RAF** Cancer Dermal	**RAF** Cancer Ingestion	**Slope Factor** Cancer Inhalation (per mg/kg-d)	**Slope Factor** Cancer Oral (per mg/kg-day)	**Unit Risk** Cancer Oral (per mg/L)	**Unit Risk** Cancer Inhalation (per mg/m^3)	**ECLR** Dermal	**ECLR** Ingestion	**ECLR** Inhalation	**ECLR** GI Tract
Metals	Copper	121.7419643	6.2429E-06	7.87879E-07	2.70981E-08	6.77453E-09	2.67594E-08	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Nickel	12.42678571	6.37242E-07	8.04226E-08	2.76604E-09	6.91509E-10	2.73146E-09	1	1	0.84	ND	ND	NC	ND	ND	5.80868E-10	ND
	Silver	1.850204082	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Zinc	81.456	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Lead	114.1017857	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Arsenic	6.685714286	1.02853E-08	4.3268E-08	1.48815E-09	3.72038E-10	1.46955E-09	0.03	1	15.1	1.5	0.05	NC	1.5428E-08	6.49021E-08	5.61777E-09	2.23223E-09
VOCs	Bromomethane	0.003888889	1.99421E-10	2.51678E-11	8.65615E-13	2.16404E-13	8.54795E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Acetone	0.116611111	5.97979E-09	7.54674E-10	2.59561E-11	6.48902E-12	2.56316E-11	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Carbon disulfide	0.003916667	2.00846E-10	2.53476E-11	8.71798E-13	2.17949E-13	8.609E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	1.96572E-11	2.48082E-11	8.53249E-13	2.13312E-13	8.42583E-13	0.1	1	0.081	NC	NC	NC	NC	NC	1.93794E-14	NC
	Benzene	0.00370525	1.52003E-11	2.39793E-11	8.24739E-13	2.06185E-13	8.1443E-13	0.08	1	NC	0.055	0.0016	NC	8.3602E-13	1.31886E-12	6.35255E-15	4.53607E-14
	Trichloroethene	0.004277778	2.19363E-11	2.76846E-11	9.52176E-13	2.38044E-13	9.40274E-13	0.1	1	0.4	0.4	NC	NC	8.7745E-12	1.10738E-11	1.0343E-16	3.8087E-13
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	5.11259E-11	6.4523E-11	2.21919E-12	5.54797E-13	2.19145E-12	0.1	1	0.02	0.54	NC	NC	2.7608E-11	3.48424E-11	1.20968E-16	1.19836E-12
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	1.97997E-10	2.4988E-11	8.59432E-13	2.14858E-13	8.48689E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Chloromethane	0.00403	2.06657E-10	2.6081E-11	8.97024E-13	2.24256E-13	8.85811E-13	1	1	0.0063	0.013	0.00037	NC	2.6865E-12	3.39053E-13	1.59446E-15	1.16613E-14
	2-hexanone	0.00394	2.02042E-10	2.54986E-11	8.76991E-13	2.19248E-13	8.66029E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,3,5-trimethylbenzene	0.012611111	6.46694E-10	8.16155E-11	2.80706E-12	7.01766E-13	2.77198E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,2,4-trimethylbenzene	0.017944444	9.20186E-10	1.16131E-10	3.99419E-12	9.98548E-13	3.94427E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	p-isopropyltoluene	0.011027778	5.65502E-10	7.13686E-11	2.45464E-12	6.13659E-13	2.42395E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
SVOCs	Naphthalene	0.576264078	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	0.235802	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	0.240051485	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	0.253912871	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Dibenzofuran	0.224207317	1.14973E-08	1.45101E-09	4.99056E-11	1.24764E-11	4.92817E-11	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Fluorene	0.256987129	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	0.780467327	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Anthracene	0.331808911	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluroanthene	1.133586139	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Pyrene	1.068170297	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Benzo(a)anthracene	0.593353465	6.0854E-09	3.84001E-09	1.32073E-10	3.30181E-11	1.30422E-10	0.2	1	ND	0.73	NC	NC	4.4423E-09	2.80321E-09	NC	9.6413E-11
	Chrysene	0.672333663	6.89542E-09	4.35115E-09	1.49652E-10	3.74131E-11	1.47782E-10	0.2	1	ND	0.073	NC	NC	5.0337E-10	3.17634E-10	NC	1.09246E-11
	bis(2-ethylhexyl)phthalate	0.197634146	2.02693E-10	1.27903E-09	4.39907E-11	1.09977E-11	4.34408E-11	0.02	1	0.014	0.014	0.0004	NC	2.8377E-12	1.79064E-11	1.53968E-13	6.1587E-13
	Benzo(b)fluoranthene	0.635917822	6.52194E-09	4.11548E-09	1.41547E-10	3.53867E-11	1.39777E-10	0.2	1	ND	0.73	NC	NC	4.761E-09	3.0043E-09	NC	1.03329E-10
	Benzo(k)fluoranthene	0.58499703	5.9997E-09	3.78593E-09	1.30213E-10	3.25531E-11	1.28585E-10	0.2	1	ND	0.073	NC	NC	4.3798E-10	2.76373E-10	NC	9.50551E-12
	Benzo(a)pyrene	0.597774257	6.13074E-09	3.86862E-09	1.33057E-10	3.32641E-11	1.31393E-10	0.2	1	3.1	7.3	0.21	NC	4.4754E-08	2.8241E-08	1.03119E-10	9.71313E-10
	Indeno(1,2,3-c,d)pyrene	0.344917822	3.53746E-09	2.23221E-09	7.67741E-11	1.91935E-11	7.58144E-11	0.2	1	ND	0.73	NC	NC	2.5823E-09	1.62951E-09	NC	5.60451E-11
	Dibenz(a,h)anthracene	0.258848515	1.19463E-09	1.67519E-09	5.76162E-11	1.44041E-11	5.6896E-11	0.09	1	ND	7.3	NC	NC	8.7208E-09	1.22289E-08	NC	4.20598E-10
	Benzo(g,h,I)perylene	0.343536634	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Carbazole	0.246219512	1.26261E-08	1.59346E-09	5.48052E-11	1.37013E-11	5.41201E-11	1	1	NC	0.02	0.00057	NC	2.5252E-10	3.18693E-11	NC	1.0961E-12
	C9-C18 Aliphatics	21.83333333	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	C19-C36 Aliphatics	662.3333333	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	C11-C22 Aromatics	239	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
													Totals	8.1925E-08	1.135E-07	6.30194E-09	3.9037E-09

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

BW = 79 kg SA = 2732 cm^2 EP = 365 days
IR = 100 mg EF = 0.3562 events/days AP = 25550 days
AF (dermal) = 0.29 mg/cm^2 ED = 1 day/event CF = 0.000001

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respiratory system: ADE inhalation = ((ADD $_{INH\ RESP}$)*(BW))/AV

NC = No Cancer Data

BW = 79 kg EF = 0.356 events/days AP = 25550 days
IR = 60 L/min ED = 8 hrs/event CF = 6E-11 (60 min/hr; 10E-9 kg/ug; 0.001 m3/L)
AV= 20 m^3/day EP = 365 days PM10 = 60 ug/m^3

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (GI Tract Only): ECLR = (ADD $_{INH\ GI}$)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (Inhalation only): ECLR = (ADE)*(Unit Risk $_{INH}$)
if no value for Unit $Risk_{INH}$, use ECLR = (ADD $_{INH\ RESP}$)*(Slope Factor $_{INH}$)

DRAFT Table N.24 Carcinogenic Dermal Groundwater Risk Calculations - Construction Worker -Future

Compound	EPC (mg/L)	Kp Value (cm/hr)	RAF, cancer water dermal	Oral Cancer Slope Factor (per mg/kg-day)	LADD (mg/kg-day)	ELCR
Arsenic	0.11	0.001	1	1.5	2.15209E-09	3.22814E-09
Chromium	0.1	0.001	1	ND	1.95645E-09	ND
Copper	0.013	0.001	1	NC	2.54338E-10	NC
Selenium	0.002	0.001	1	NC	3.9129E-11	NC
Zinc	0.062	0.001	1	NC	1.213E-09	NC
Naphthalene	0.00026	0.069	1	NC	3.50987E-10	NC
Acenaphthylene	0.00068	ND	1	NC	no Kp	no Kp
Phenanthrene	0.0015	0.23	1	NC	6.74975E-09	NC
Anthracene	0.00063	ND	1	NC	no Kp	no Kp
Fluoranthene	0.0056	1.2	1	0.073	1.31473E-07	9.59756E-09
Pyrene	0.0064	1.9	1	7.3	2.37904E-07	1.7367E-06
Benzo[a]anthracene	0.003	2.7	1	0.73	1.58472E-07	1.15685E-07
Chrysene	0.0035	ND	1	7.3	no Kp	no Kp
Benzo[b]fluoranthene	0.0032	ND	1	0.02	no Kp	no Kp
Benzo[k]fluoranthene	0.0027	ND	1	NC	no Kp	no Kp
Benzo[a]pyrene	0.002	ND	1	NC	no Kp	no Kp
Indeno[1,2,3-cd]pyrene	0.0026	0.0082	1	NC	4.17115E-10	NC
Dibenz[a,h]anthracene	0.00038	0.0048	1	NC	3.56856E-11	NC
Benzo[g,h,i]perylene	0.0024	0.0016	1	NC	7.51277E-11	NC
Phenol	0.0041	0.0082	1	NC	6.57758E-10	NC
Dimethylphthalate	0.0028	0.0016	1	NC	8.76489E-11	NC
Diethylphthalate	0.003275	0.0048	1	NC	3.07554E-10	NC
Butylbenzylphthalate	0.0028	ND	1	NC	no Kp	no Kp
bis(2-Ethylhexyl)phthalate	0.013	ND	1	0.014	no Kp	no Kp
Methyl tert-butyl ether (MTBE)	0.027	ND	1	NC	no Kp	no Kp
cis-1,2-Dichloroethene	0.031	0.01	1	NC	6.06499E-09	NC
Chloroform	0.005	0.13	1	NC	1.27169E-08	NC
Trichloroethene	0.026	0.23	1	0.4	1.16996E-07	4.67983E-08
Tetrachloroethene	0.47	0.37	1	0.54	3.40227E-06	1.83722E-06
Naphthalene	0.0025	0.069	1	NC	3.37488E-09	NC
				Totals	4.08356E-06	3.74923E-06

Dermal contact with Groundwater: LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(Kp)*(RAF)*(CF))/((BW)*(AP))

SA = 1310 cm^2
EF = 0.08219 events/day
ED = 1 hr/event
EP = 365 days
CF = 0.001 L/cm^3
BW = 79 kg
AP = 25550 days

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)

DRAFT Table N.25 Non-Cancer Risk Calculations for C-39 Only - Adult Resident

NON-CANCER SOIL C39 ONLY ADULT	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	RAF, chronic soil dermal	RAF, chronic soil ingest	Chronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion
Metals	Copper	41	6.21612E-05	7.16299E-06	1	1	4.00E-02	1.55E-03	0.000179075
	Nickel	28	1.48581E-05	4.8918E-06	0.35	1	2.00E-02	7.43E-04	0.00024459
	Silver	2.7	1.02339E-06	4.71709E-07	0.25	1	5.00E-03	2.05E-04	9.43419E-05
	Zinc	130	3.94193E-06	2.27119E-05	0.02	1	3.00E-01	1.31E-05	7.57064E-05
	Lead	190	1.72839E-06	1.65972E-05	0.006	0.5	7.50E-04	2.30E-03	0.022129574
	Arsenic	5	2.27419E-07	8.73536E-07	0.03	1	3.00E-04	7.58E-04	0.002911786
VOCs	Bromomethane	0.003888889	5.89605E-10	6.79417E-10	0.1	1	1.40E-03	4.21E-07	4.85298E-07
	Acetone	0.116611111	1.76797E-08	2.03728E-08	0.1	1	9.00E-01	1.96E-08	2.26364E-08
	Carbon disulfide	0.003916667	5.93817E-09	6.8427E-10	1	1	1.00E-01	5.94E-08	6.8427E-09
	Methyl tert-butyl ether (MTBE)	0.00355525	5.39021E-10	6.21128E-10	0.1	1	1.00E-01	5.39E-09	6.21128E-09
	2-Butanone (MEK)	0.009305556	1.41084E-09	1.62575E-09	0.1	1	6.00E-01	2.35E-09	2.70958E-09
	cis-1,2-Dichloroethene	0.004166667	6.3172E-10	7.27947E-10	0.1	1	1.00E-02	6.32E-08	7.27947E-08
	Chloroform	0.003833333	5.81182E-10	6.69711E-10	0.1	1	1.00E-02	5.81E-08	6.69711E-08
	Benzene	0.00370525	4.49411E-10	6.47334E-10	0.08	1	4.00E-03	1.12E-07	1.61833E-07
	Trichloroethene	0.004277778	6.48566E-10	7.47358E-10	0.1	1	3.00E-04	2.16E-06	2.49119E-06
	Methyl isobutyl ketone (MIBK)	0.003944444	5.98028E-10	6.89123E-10	0.1	1	8.00E-02	7.48E-09	8.61403E-09
	Tetrachloroethene	0.00997	1.51158E-09	1.74183E-09	0.1	1	1.00E-02	1.51E-07	1.74183E-07
	Toluene	0.00343025	6.24084E-10	5.99289E-10	0.12	1	2.00E-01	3.12E-09	2.99645E-09
	Ethylbenzene	0.00365525	1.10837E-09	6.38598E-10	0.2	1	1.00E-01	1.11E-08	6.38598E-09
	p/m-Xylene	0.00348025	6.33181E-10	6.08025E-10	0.12	1	2.00E-01	3.17E-09	3.04012E-09
	O-xylene	0.00356775	6.491E-10	6.23311E-10	0.12	1	2.00E-01	3.25E-09	3.11656E-09
	Trichlorofluoromethane	0.003861111	5.85394E-09	6.74564E-10	1	1	3.00E-01	1.95E-08	2.24855E-09
	Chloromethane	0.00403	6.11E-09	7.0407E-10	1	1	ND	ND	ND
	2-Hexanone	0.00394	5.97354E-09	6.88346E-10	1	1	ND	ND	ND
	1,3,5-Trimethylbenzene	0.012611111	1.91201E-08	2.20325E-09	1	1	5.00E-02	3.82E-07	4.4065E-08
	1,2,4-Trimethylbenzene	0.017944444	2.72061E-08	3.13502E-09	1	1	5.00E-02	5.44E-07	6.27005E-08
	p-Isopropyltoluene	0.011027778	1.67195E-08	1.92663E-09	1	1	ND	ND	ND
SVOCs	Naphthalene	9	1.36452E-06	1.57236E-06	0.1	1	2.00E-02	6.82E-05	7.86182E-05
	2-Methylnaphthalene	9	1.36452E-06	1.57236E-06	0.1	1	2.00E-02	6.82E-05	7.86182E-05
	Acenaphthylene	9	1.36452E-06	1.43085E-06	0.1	0.91	4.00E-02	3.41E-05	3.57713E-05
	Acenaphthene	76	1.15226E-05	1.32777E-05	0.1	1	6.00E-02	1.92E-04	0.000221296
	Fluorene	64	9.70322E-06	1.11813E-05	0.1	1	4.00E-02	2.43E-04	0.000279531
	Phenanthrene	470	7.1258E-05	7.47223E-05	0.1	0.91	4.00E-02	1.78E-03	0.001868056
	Anthracene	97	1.47064E-05	1.69466E-05	0.1	1	3.00E-01	4.90E-05	5.64887E-05
	Fluoranthene	330	5.00322E-05	5.76534E-05	0.1	1	4.00E-02	1.25E-03	0.001441334
	Pyrene	450	6.82258E-05	7.86182E-05	0.1	1	3.00E-02	2.27E-03	0.002620608
	Benzo[a]anthracene	170	2.57742E-05	2.70272E-05	0.1	0.91	4.00E-02	6.44E-04	0.00067568
	Chrysene	180	2.72903E-05	2.8617E-05	0.1	0.91	4.00E-02	6.82E-04	0.000715426
	Benzo[b]fluoranthene	95	1.44032E-05	1.51034E-05	0.1	0.91	4.00E-02	3.60E-04	0.000377586
	Benzo[k]fluoranthene	110	1.66774E-05	1.74882E-05	0.1	0.91	4.00E-02	4.17E-04	0.000437205
	Benzo[a]pyrene	150	2.27419E-05	2.38475E-05	0.1	0.91	4.00E-02	5.69E-04	0.000596188
	Indeno[1,2,3-cd]pyrene	68	1.03097E-05	1.08109E-05	0.1	0.91	4.00E-02	2.58E-04	0.000270272
	Dibenz[a,h]anthracene	28	4.24516E-06	4.45154E-06	0.1	0.91	4.00E-02	1.06E-04	0.000111288
	Benzo[g,h,i]perylene	77	1.16742E-05	1.22417E-05	0.1	0.91	4.00E-02	2.92E-04	0.000306043
							Totals	1.49E-02	3.58E-02

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2
SA = 6199 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 10950 days
AP = 10950 days
CF = 0.000001

HI = (ADD)/(Rfd)

ND = No Data

DRAFT Table N.26 Non-Cancer Risk Calculations for C-39 Only - Child Resident

NON-CANCER SOIL C39 ONLY CHILD	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	ADD Inhalation - GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/day)	RAF Chronic Dermal	RAF Chronic Ingestion	RAF Subchronic Ingestion	Chronic Oral RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m3)	Subchronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion	HI Inhalation	HI GI Tract
Metals	Copper	41	0.000508172	6.14607E-05	1.84992E-07	4.6248E-08	7.48129E-08	1	1	1	0.04	ND	4.00E-02	0.012704306	0.001536518	ND	4.6248E-06
	Nickel	28	0.000121466	4.19732E-05	1.26336E-07	3.1584E-08	5.10918E-08	0.35	1	1	0.02	ND	2.00E-02	0.00673278	0.002098659	ND	6.3168E-06
	Silver	2.7	8.36625E-06	4.04741E-06	1.21824E-08	3.0456E-09	4.92671E-09	0.25	1	1	0.005	ND	5.00E-03	0.00167325	0.000809483	ND	2.43648E-06
	Zinc	130	3.22256E-05	0.000194875	5.8656E-07	1.4664E-07	2.37212E-07	0.02	1	1	0.3	ND	3.00E-01	0.000107419	0.000649585	ND	1.9552E-06
	Lead	190	1.41297E-05	0.000142409	4.2864E-07	1.0716E-07	1.73347E-07	0.006	0.5	0.5	0.00075	ND	7.50E-04	0.018839557	0.189878629	ND	0.00057152
	Arsenic	5	1.85917E-06	7.49521E-06	2.256E-08	5.64E-09	9.12353E-09	0.03	1	1	0.0003	ND	3.00E-04	0.006197223	0.02498403	ND	0.0000752
VOCs	Bromomethane	0.003888889	4.82006E-09	5.82961E-09	1.75467E-11	4.38667E-12	7.09608E-12	0.1	1	1	0.0014	5.00E-03	1.40E-02	3.4429E-06	4.16401E-06	1.41922E-09	1.25333E-09
	Acetone	0.116611111	1.44533E-07	1.74805E-07	5.26149E-10	1.31537E-10	2.12781E-10	0.1	1	1	0.9	8.00E-01	1.00E+00	1.60592E-07	1.94228E-07	2.65976E-10	5.26149E-10
	Carbon disulfide	0.003916667	4.85449E-08	5.87125E-09	1.7672E-11	4.418E-12	7.14676E-12	1	1	1	0.1	7.00E-01	1.00E-01	4.85449E-07	5.87125E-08	1.02097E-11	1.7672E-10
	Methyl tert-butyl ether (MTBE)	0.00355525	4.40654E-09	5.32947E-09	1.60413E-11	4.01032E-12	6.48729E-12	0.1	1	1	0.1	3.00E+00	1.00E+00	4.40654E-08	5.32947E-08	2.16243E-12	1.60413E-11
	2-Butanone (MEK)	0.009305556	1.15337E-08	1.39494E-08	4.19867E-11	1.04967E-11	1.69799E-11	0.1	1	1	0.6	1.00E+00	2.00E+00	1.92229E-08	2.3249E-08	1.69799E-11	2.09933E-11
	cis-1,2-Dichloroethene	0.004166667	5.16435E-09	6.24601E-09	1.88E-11	4.7E-12	7.60294E-12	0.1	1	1	0.01	ND	1.00E-01	5.16435E-07	6.24601E-07	ND	1.88E-10
	Chloroform	0.003833333	4.7512E-09	5.74633E-09	1.7296E-11	4.324E-12	6.99471E-12	0.1	1	1	0.01	6.60E-01	1.00E-02	4.7512E-07	5.74633E-07	1.0598E-11	1.7296E-09
	Benzene	0.00370525	3.67396E-09	5.55432E-09	1.67181E-11	4.17952E-12	6.76099E-12	0.08	1	1	0.004	3.20E-02	5.00E-02	9.1849E-07	1.38858E-06	2.11281E-10	3.34362E-10
	Trichloroethene	0.004277778	5.30207E-09	6.41257E-09	1.93013E-11	4.82533E-12	7.80569E-12	0.1	1	1	0.0003	1.80E-01	3.00E-04	1.76736E-05	2.13752E-05	4.33649E-11	6.43378E-08
	Methyl isobutyl ketone (MIBK)	0.003944444	4.88892E-09	5.91289E-09	1.77973E-11	4.44933E-12	7.19745E-12	0.1	1	1	0.08	3.00E+00	8.00E-01	6.11115E-08	7.39111E-08	2.39915E-12	2.22467E-11
	Tetrachloroethene	0.00997	1.23573E-08	1.49454E-08	4.49846E-11	1.12462E-11	1.81923E-11	0.1	1	1	0.01	4.60E+00	1.00E-01	1.23573E-06	1.49454E-06	3.95485E-12	4.49846E-10
	Toluene	0.00343025	5.10193E-09	5.14209E-09	1.54773E-11	3.86932E-12	6.2592E-12	0.12	1	1	0.2	4.00E-01	2.00E+00	2.55096E-08	2.57104E-08	1.5648E-11	7.73864E-12
	Ethylbenzene	0.00365525	9.06096E-09	5.47937E-09	1.64925E-11	4.12312E-12	6.66976E-12	0.2	1	1	0.1	1.00E+00	1.00E+00	9.06096E-08	5.47937E-08	6.66976E-12	1.64925E-11
	p/m-Xylene	0.00348025	5.17629E-09	5.21704E-09	1.57029E-11	3.92572E-12	6.35043E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	2.58815E-08	2.60852E-08	2.11681E-11	3.92572E-12
	O-xylene	0.00356775	5.30643E-09	5.34821E-09	1.60977E-11	4.02442E-12	6.51009E-12	0.12	1	1	0.2	3.00E-01	4.00E+00	2.65322E-08	2.6741E-08	2.17003E-11	4.02442E-12
	Trichlorofluoromethane	0.003861111	4.78563E-08	5.78797E-09	1.74213E-11	4.35533E-12	7.04539E-12	1	1	1	0.3	ND	7.00E-01	1.59521E-07	1.92932E-08	ND	2.48876E-11
	Chloromethane	0.00403	4.99496E-08	6.04114E-09	1.81834E-11	4.54584E-12	7.35356E-12	1	1	1	ND	ND	ND	ND	ND	ND	ND
	2-hexanone	0.00394	4.88341E-08	5.90622E-09	1.77773E-11	4.44432E-12	7.18934E-12	1	1	1	ND	ND	ND	ND	ND	ND	ND
	1,3,5-trimethylbenzene	0.012611111	1.56308E-07	1.89046E-08	5.69013E-11	1.42253E-11	2.30116E-11	1	1	1	0.05	ND	5.00E-02	3.12615E-06	3.78092E-07	ND	1.13803E-09
	1,2,4-trimethylbenzene	0.017944444	2.22411E-07	2.68995E-08	8.09653E-11	2.02413E-11	3.27433E-11	1	1	1	0.05	ND	5.00E-02	4.44823E-06	5.37989E-07	ND	1.61931E-09
	p-isopropyltoluene	0.011027778	1.36683E-07	1.65311E-08	4.97573E-11	1.24393E-11	2.01225E-11	1	1	1	ND	ND	2.00E-01	ND	ND	ND	2.48787E-10
SVOCs	Naphthalene	9	1.1155E-05	1.34914E-05	4.0608E-08	1.0152E-08	1.64224E-08	0.1	1	1	0.02	3.00E-03	2.00E-01	0.00055775	0.000674569	5.47412E-06	2.0304E-07
	2-Methylnaphthalene	9	1.1155E-05	1.34914E-05	4.0608E-08	1.0152E-08	1.64224E-08	0.1	1	1	0.02	3.00E-03	4.00E-02	0.00055775	0.000674569	5.47412E-06	1.0152E-06
	Acenaphthylene	9	1.1155E-05	1.22772E-05	3.69533E-08	9.23832E-09	1.49443E-08	0.1	0.91	0.91	0.04	ND	6.00E-01	0.000278875	0.000306929	ND	6.15888E-08
	Acenaphthene	76	9.41978E-05	0.000113927	3.42912E-07	8.5728E-08	1.38678E-07	0.1	1	1	0.06	Not Volatile	2.00E-03	0.001569963	0.001898786	Not Volatile	0.000171456
	Fluorene	64	7.93244E-05	9.59387E-05	2.88768E-07	7.2192E-08	1.16781E-07	0.1	1	1	0.04	ND	4.00E-02	0.001983111	0.002398467	ND	7.2192E-06
	Phenanthrene	470	0.000582539	0.00064114	1.92978E-06	4.82446E-07	7.80427E-07	0.1	0.91	0.91	0.04	Not Volatile	3.00E+00	0.014563473	0.016028505	Not Volatile	6.43261E-07
	Anthracene	97	0.000120226	0.000145407	4.37664E-07	1.09416E-07	1.76996E-07	0.1	1	1	0.3	ND	4.00E-01	0.000400754	0.00048469	ND	1.09416E-06
	Fluroanthene	330	0.000409017	0.000494684	1.48896E-06	3.7224E-07	6.02153E-07	0.1	1	1	0.04	ND	3.00E-01	0.010225417	0.012367095	ND	4.9632E-06
	Pyrene	450	0.00055775	0.000674569	2.0304E-06	5.076E-07	8.21118E-07	0.1	1	1	0.03	ND	4.00E-02	0.018591668	0.022485627	ND	0.00005076
	Benzo(a)anthracene	170	0.000210706	0.000231902	6.98006E-07	1.74502E-07	2.82282E-07	0.1	0.91	0.91	0.04	ND	4.00E-02	0.005267639	0.005797544	ND	1.74502E-05
	Chrysene	180	0.0002231	0.000245543	7.39066E-07	1.84766E-07	2.98887E-07	0.1	0.91	0.91	0.04	ND	2.00E-02	0.0055775	0.006138576	ND	3.69533E-05
	Benzo(b)fluoranthene	95	0.000117747	0.000129592	3.90062E-07	9.75156E-08	1.57746E-07	0.1	0.91	0.91	0.04	ND	4.00E-02	0.002943681	0.003239804	ND	9.75156E-06
	Benzo(k)fluoranthene	110	0.000136339	0.000150054	4.51651E-07	1.12913E-07	1.82653E-07	0.1	0.91	0.91	0.04	ND	4.00E-02	0.003408472	0.003751352	ND	1.12913E-05
	Benzo(a)pyrene	150	0.000185917	0.000204619	6.15888E-07	1.53972E-07	2.49072E-07	0.1	0.91	0.91	0.04	ND	4.00E-02	0.004647917	0.00511548	ND	1.53972E-05
	Indeno(1,2,3-c,d)pyrene	68	8.42822E-05	9.27607E-05	2.79203E-07	6.98006E-08	1.12913E-07	0.1	0.91	0.91	0.04	ND	4.00E-02	0.002107056	0.002319018	ND	6.98006E-06
	Dibenz(a,h)anthracene	28	3.47044E-05	3.81956E-05	1.14966E-07	2.87414E-08	4.64935E-08	0.1	0.91	0.91	0.04	ND	4.00E-02	0.000867611	0.00095489	ND	2.87414E-06
	Benzo(g,h,I)perylene	77	9.54372E-05	0.000105038	3.16156E-07	7.9039E-08	1.27857E-07	0.1	0.91	0.91	0.04	ND	ND	0.002385931	0.002625946	ND	ND
													Totals	0.121562535	0.307249843	1.09503E-05	0.001000239

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))

Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/day
ED = 1 day/event
EP = 2190 days
AP = 2190 days
CF = 0.000001

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))

Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))

Average daily exposure for the respiratory system: ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 11 kg
IR = 4.7 L/min
AV = 6.8 m^3/day
EF = 0.733 events/day
ED = 2 hrs/event
EP = 30 days
AP = 30 days
CF = 6E-11 (60 min/hr; 1E-9 kg/ug; 0.001 m3/L)
PM10 = 60 ug/m^3

Hazard Index: HI = (ADD)/(Rfd)

Hazard Index (Inhalation only): HI = (ADE)/(RfC)

DRAFT Table N.27 Non-Cancer Risk Calculations for C-39 Only - Construction Worker

NON-CANCER SOIL C39 ONLY CW	Compound	EPC (mg/kg)	ADD Dermal (mg/kg)	ADD Ingestion (mg/kg)	ADD Inhalation - GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/day)	RAF, sub-chronic soil dermal	RAF Subchronic Ingestion	Chronic Oral RfD (mg/kg-day)	Subchronic Inhalation RfC (mg/m3)	Subchronic Oral RfD (mg/kg-day)	HI Dermal	HI Ingestion	HI Inhalation	HI GI Tract
Metals	Copper	41	0.000303025	3.8243E-05	1.31532E-06	3.2883E-07	1.29888E-06	1	1	0.04	ND	4.00E-02	0.007575628	0.000956076	ND	3.2883E-05
	Nickel	28	7.24304E-05	2.61172E-05	8.98268E-07	2.24567E-07	8.8704E-07	0.35	1	0.02	ND	2.00E-02	0.00362152	0.001305859	ND	4.49134E-05
	Silver	2.7	4.98883E-06	2.51844E-06	8.66187E-08	2.16547E-08	8.5536E-08	0.25	1	0.005	ND	5.00E-03	0.000997766	0.000503689	ND	1.73237E-05
	Zinc	130	1.92162E-05	0.000121258	4.17053E-06	1.04263E-06	4.1184E-06	0.02	1	0.3	ND	3.00E-01	6.40541E-05	0.000404195	ND	1.39018E-05
	Lead	190	8.42558E-06	8.86119E-05	3.0477E-06	7.61924E-07	3.0096E-06	0.006	0.5	0.00075	ND	7.50E-04	0.011234102	0.118149185	ND	0.004063595
	Arsenic	5	1.10863E-06	4.66378E-06	1.60405E-07	4.01013E-08	1.584E-07	0.03	1	0.0003	ND	3.00E-04	0.003695428	0.015545945	ND	0.000534684
VOCs	Bromomethane	0.003888889	2.87422E-09	3.62739E-09	1.24759E-10	3.11899E-11	1.232E-10	0.1	1	0.0014	5.00E-03	1.40E-02	2.05302E-07	2.59099E-07	2.464E-08	8.91139E-09
	Acetone	0.116611111	8.61856E-08	1.0877E-07	3.741E-09	9.35251E-10	3.69424E-09	0.1	1	0.9	8.00E-01	1.00E+00	8.61856E-08	1.0877E-07	4.6178E-09	3.741E-09
	Carbon disulfide	0.003916667	2.89475E-08	3.6533E-09	1.25651E-10	3.14127E-11	1.2408E-10	1	1	0.1	7.00E-01	1.00E-01	2.89475E-07	3.6533E-08	1.77257E-10	1.25651E-09
	Methyl tert-butyl ether (MTBE)	0.00355525	2.62763E-09	3.31618E-09	1.14056E-10	2.8514E-11	1.1263E-10	0.1	1	0.1	3.00E+00	1.00E+00	2.62763E-09	3.31618E-09	3.75434E-11	1.14056E-10
	2-Butanone (MEK)	0.009305556	6.8776E-09	8.67982E-09	2.98532E-10	7.46329E-11	2.948E-10	0.1	1	0.6	1.00E+00	2.00E+00	3.4388E-09	4.33991E-09	2.948E-10	1.49266E-10
	cis-1,2-Dichloroethene	0.004166667	3.07952E-09	3.88649E-09	1.33671E-10	3.34177E-11	1.32E-10	0.1	1	0.01	ND	1.00E-01	3.07952E-08	3.88649E-08	ND	1.33671E-09
	Chloroform	0.003833333	2.83316E-09	3.57557E-09	1.22977E-10	3.07443E-11	1.2144E-10	0.1	1	0.01	6.60E-01	1.00E-02	2.83316E-07	3.57557E-07	1.84E-10	1.22977E-08
	Benzene	0.00370525	2.1908E-09	3.4561E-09	1.18868E-10	2.9717E-11	1.17382E-10	0.08	1	0.004	3.20E-02	5.00E-02	4.3816E-08	6.91219E-08	3.6682E-09	2.37736E-09
	Trichloroethene	0.004277778	3.16164E-09	3.99013E-09	1.37235E-10	3.43089E-11	1.3552E-10	0.1	1	0.0003	1.80E-01	3.00E-04	1.05388E-05	1.33004E-05	7.52889E-10	4.57451E-07
	Methyl isobutyl ketone (MIBK)	0.003944444	2.91528E-09	3.67921E-09	1.26542E-10	3.16354E-11	1.2496E-10	0.1	1	0.08	3.00E+00	8.00E-01	3.6441E-09	4.59901E-09	4.16533E-11	1.58177E-10
	Tetrachloroethene	0.00997	7.36868E-09	9.29958E-09	3.19848E-10	7.99619E-11	3.1585E-10	0.1	1	0.01	4.60E+00	1.00E-01	7.36868E-08	9.29958E-08	6.8663E-11	3.19848E-09
	Toluene	0.00343025	3.0423E-09	3.19959E-09	1.10046E-10	2.75115E-11	1.0867E-10	0.12	1	0.2	4.00E-01	2.00E+00	1.52115E-09	1.59979E-09	2.71676E-10	5.50229E-11
	Ethylbenzene	0.00365525	5.40309E-09	3.40946E-09	1.17264E-10	2.9316E-11	1.15798E-10	0.2	1	0.1	1.00E+00	1.00E+00	5.40309E-09	3.40946E-09	1.15798E-10	1.17264E-10
	p/m-Xylene	0.00348025	3.08664E-09	3.24623E-09	1.1165E-10	2.79125E-11	1.10254E-10	0.12	1	0.2	3.00E-01	4.00E+00	7.71661E-10	8.11557E-10	3.67514E-10	2.79125E-11
	O-xylene	0.00356775	3.16425E-09	3.32784E-09	1.14457E-10	2.86143E-11	1.13026E-10	0.12	1	0.2	3.00E-01	4.00E+00	7.91062E-10	8.31961E-10	3.76754E-10	2.86143E-11
	Trichlorofluoromethane	0.003861111	2.85369E-08	3.60148E-09	1.23868E-10	3.09671E-11	1.2232E-10	1	1	0.3	ND	7.00E-01	4.0767E-08	5.14497E-09	ND	1.76955E-10
	Chloromethane	0.00403	2.97852E-08	3.75901E-09	1.29286E-10	3.23216E-11	1.2767E-10	1	1	ND	ND	ND	ND	ND	ND	ND
	2-hexanone	0.00394	2.912E-08	3.67506E-09	1.26399E-10	3.15998E-11	1.24819E-10	1	1	ND	ND	ND	ND	ND	ND	ND
	1,3,5-trimethylbenzene	0.012611111	9.32069E-08	1.17631E-08	4.04577E-10	1.01144E-10	3.9952E-10	1	1	0.05	ND	5.00E-02	1.86414E-06	2.35262E-07	ND	8.09154E-09
	1,2,4-trimethylbenzene	0.017944444	1.32625E-07	1.67378E-08	5.75676E-10	1.43919E-10	5.6848E-10	1	1	0.05	ND	5.00E-02	2.6525E-06	3.34756E-07	ND	1.15135E-08
	p-isopropyltoluene	0.011027778	8.15047E-08	1.02862E-08	3.53782E-10	8.84456E-11	3.4936E-10	1	1	ND	ND	2.00E-01	4.07524E-07	5.14312E-08	ND	1.76891E-09
SVOCs	Naphthalene	9	6.65177E-06	8.39481E-06	2.88729E-07	7.21823E-08	2.8512E-07	0.1	1	0.02	3.00E-03	2.00E-01	3.32589E-05	4.19741E-05	0.00009504	1.44365E-06
	2-Methylnaphthalene	9	6.65177E-06	8.39481E-06	2.88729E-07	7.21823E-08	2.8512E-07	0.1	1	0.02	3.00E-03	4.00E-02	0.000166294	0.00020987	0.00009504	7.21823E-06
	Acenaphthylene	9	1.19732E-05	7.63928E-06	2.62743E-07	6.56859E-08	2.59459E-07	0.18	0.91	0.04	ND	6.00E-01	1.99553E-05	1.27321E-05	ND	4.37906E-07
	Acenaphthene	76	0.000112341	7.08895E-05	2.43816E-06	6.09539E-07	2.40768E-06	0.2	1	0.06	Not Volatile	2.00E-03	0.056170509	0.035444755	Not Volatile	0.001219078
	Fluorene	64	9.4603E-05	5.96964E-05	2.05318E-06	5.13296E-07	2.02752E-06	0.2	1	0.04	ND	4.00E-02	0.002365074	0.001492411	ND	5.13296E-05
	Phenanthrene	470	0.000625266	0.00039894	1.3721E-05	3.43026E-06	1.35495E-05	0.18	0.91	0.04	Not Volatile	3.00E+00	0.000208422	0.00013298	Not Volatile	4.57368E-06
	Anthracene	97	0.000207905	9.04774E-05	3.11186E-06	7.77965E-07	3.07296E-06	0.29	1	0.3	ND	4.00E-01	0.000519762	0.000226194	ND	7.77965E-06
	Fluroanthene	330	0.000487797	0.00030781	1.05867E-05	2.64668E-06	1.04544E-05	0.2	1	0.04	ND	3.00E-01	0.001625988	0.001026032	ND	3.52891E-05
	Pyrene	450	0.000665177	0.000419741	1.44365E-05	3.60911E-06	0.000014256	0.2	1	0.03	ND	4.00E-02	0.016629427	0.010493513	ND	0.000360911
	Benzo(a)anthracene	170	0.00022616	0.000144297	4.96293E-06	1.24073E-06	4.9009E-06	0.18	0.91	0.04	ND	4.00E-02	0.005654005	0.003607437	ND	0.000124073
	Chrysene	180	0.000239464	0.000152786	5.25487E-06	1.31372E-06	5.18918E-06	0.18	0.91	0.04	ND	2.00E-02	0.011973187	0.007639278	ND	0.000262743
	Benzo(b)fluoranthene	95	0.000126384	8.06368E-05	2.7734E-06	6.93351E-07	2.73874E-06	0.18	0.91	0.04	ND	4.00E-02	0.003159591	0.00201592	ND	6.93351E-05
	Benzo(k)fluoranthene	110	0.000146339	9.33689E-05	3.21131E-06	8.02827E-07	3.17117E-06	0.18	0.91	0.04	ND	4.00E-02	0.003658474	0.002334224	ND	8.02827E-05
	Benzo(a)pyrene	150	0.000199553	0.000127321	4.37906E-06	1.09476E-06	4.32432E-06	0.18	0.91	0.04	ND	4.00E-02	0.004988828	0.003183032	ND	0.000109476
	Indeno(1,2,3-c,d)pyrene	68	9.04641E-05	5.7719E-05	1.98517E-06	4.96293E-07	1.96036E-06	0.18	0.91	0.04	ND	4.00E-02	0.002261602	0.001442975	ND	4.96293E-05
	Dibenz(a,h)anthracene	28	1.65555E-05	2.37666E-05	8.17424E-07	2.04356E-07	8.07206E-07	0.08	0.91	0.04	ND	4.00E-02	0.000413888	0.000594166	ND	2.04356E-05
	Benzo(g,h,i)perylene	77	0.000102437	6.53583E-05	2.24792E-06	5.61979E-07	2.21982E-06	0.18	0.91	0.04	ND	ND	ND	ND	ND	ND
												Totals	0.137053299	0.20677735	0.000190116	0.007111851

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

ND = No Data

BW = 79 kg
IR = 100 mg
AF (dermal) = 0.29 mg/cm^2
SA = 2732 cm^2
EF = 0.733 events/day
ED = 1 day/event
EP = 30 days
AP = 30 days
CF = 0.000001

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respiratory system: ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 79 kg
IR = 60 L/min
AV = 20 m^3/day
EF = 0.733 events/day
ED = 8 hrs/event
EP = 30 days
AP = 30 days
CF = 6E-11
PM10 = 60 ug/m^3
(60 min/hr; 1E-9 kg/ug; 0.001 m3/L)

Hazard Index: HI = (ADD)/(Rfd)
Hazard Index (Inhalation only): HI = (ADE)/(RfC)

DRAFT Table N.28 Carcinogenic Risk Calculations for C-39 Only - Adult Resident

CANCER SOIL C39 ONLY ADULT	**Compound**	**EPC (mg/kg)**	**LADD** Dermal **(mg/kg)**	**LADD** Ingestion **(mg/kg)**	**RAF** Cancer Dermal	**RAF** Cancer Ingestion	**Slope Factor** Oral (per mg/kg-day)	**ECLR** Dermal	**ECLR** Ingestion
Metals	Copper	41	2.66405E-05	3.06985E-06	1	1	NC	NC	NC
	Nickel	28	1.81935E-05	2.09649E-06	1	1	ND	ND	ND
	Silver	2.7	NC	NC	NC	NC	NC	NC	NC
	Zinc	130	NC	NC	NC	NC	NC	NC	NC
	Lead	190	NC	NC	NC	NC	NC	NC	NC
	Arsenic	5	9.74654E-08	3.74373E-07	0.03	1	1.5	1.46198E-07	5.6156E-07
VOCs	Bromomethane	0.003888889	2.52688E-09	2.91179E-10	1	1	NC	NC	NC
	Acetone	0.116611111	7.57703E-08	8.7312E-09	1	1	NC	NC	NC
	Carbon disulfide	0.003916667	2.54493E-09	2.93258E-10	1	1	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	2.49078E-10	2.87019E-10	0.1	1	NC	NC	NC
	Benzene	0.00370525	1.92605E-10	2.77429E-10	0.08	1	0.055	1.05933E-11	1.5259E-11
	Trichloroethene	0.004277778	2.77957E-10	3.20296E-10	0.1	1	0.4	1.11183E-10	1.2812E-10
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	6.4782E-10	7.46499E-10	0.1	1	0.54	3.49823E-10	4.0311E-10
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	2.50883E-09	2.89099E-10	1	1	NC	NC	NC
	Chloromethane	0.00403	2.61857E-09	3.01744E-10	1	1	0.013	3.40414E-11	3.9227E-12
	2-Hexanone	0.00394	2.56009E-09	2.95006E-10	1	1	NC	NC	NC
	1,3,5-Trimethylbenzene	0.012611111	8.19431E-09	9.44251E-10	1	1	NC	NC	NC
	1,2,4-Trimethylbenzene	0.017944444	1.16597E-08	1.34358E-09	1	1	NC	NC	NC
	p-Isopropyltoluene	0.011027778	7.16551E-09	8.25699E-10	1	1	NC	NC	NC
SVOCs	Naphthalene	9	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	9	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	9	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	76	NC	NC	NC	NC	NC	NC	NC
	Fluorene	64	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	470	NC	NC	NC	NC	NC	NC	NC
	Anthracene	97	NC	NC	NC	NC	NC	NC	NC
	Fluoranthene	330	NC	NC	NC	NC	NC	NC	NC
	Pyrene	450	NC	NC	NC	NC	NC	NC	NC
	Benzo[a]anthracene	170	2.20922E-05	1.27287E-05	0.2	1	0.73	1.61273E-05	9.2919E-06
	Chrysene	180	2.33917E-05	1.34774E-05	0.2	1	0.073	1.70759E-06	9.8385E-07
	Benzo[b]fluoranthene	95	1.23456E-05	7.11308E-06	0.2	1	0.73	9.0123E-06	5.1925E-06
	Benzo[k]fluoranthene	110	1.42949E-05	8.2362E-06	0.2	1	0.073	1.04353E-06	6.0124E-07
	Benzo[a]pyrene	150	1.94931E-05	1.12312E-05	0.2	1	7.3	0.000142299	8.1988E-05
	Indeno[1,2,3-cd]pyrene	68	8.83686E-06	5.09147E-06	0.2	1	0.73	6.45091E-06	3.7168E-06
	Dibenz[a,h]anthracene	28	1.63742E-06	2.09649E-06	0.09	1	7.3	1.19532E-05	1.5304E-05
	Benzo[g,h,i]perylene	77	NC	NC	NC	NC	NC	NC	NC
							Totals	0.000189	0.000118

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

NC = No Cancer Data/Not a Carcinogen
ND = No Data

BW = 69 kg
IR = 50 mg
AF (dermal) = 0.07 mg/cm^2
SA = 6199 cm^2
EF = 0.2411 events/days
ED = 1 day/event
EP = 10950 days
AP = 25550 days
CF = 0.000001

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)

DRAFT Table N.29 Carcinogenic Risk Calculations for C-39 Only - Child Resident

CANCER SOIL C39 ONLY CHILD	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	ADD Inhalation GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/m^3)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Cancer Inhalation (per mg/kg-d)	Slope Factor Cancer Oral (per mg/kg-day)	Unit Risk Cancer Oral (per mg/L)	Unit Risk Cancer Inhalation (per mg/m^3)	ECLR Dermal	ECLR Ingestion	ECLR Inhalation	ECLR GI Tract
Metals	Copper	41	4.35576E-05	5.2681E-06	2.17212E-10	5.43029E-11	8.7843E-11	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Nickel	28	2.97467E-05	3.5977E-06	1.4834E-10	3.70849E-11	5.99903E-11	1	1	0.84	ND	ND	ND	ND	ND	3.11513E-11	ND
	Silver	2.7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Zinc	130	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Lead	190	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Arsenic	5	1.59357E-07	6.4245E-07	2.64892E-11	6.62231E-12	1.07126E-11	0.03	1	15.1	1.5	0.05	ND	2.39036E-07	9.6367E-07	9.99969E-11	3.97339E-11
VOCs	Bromomethane	0.003888889	4.13148E-09	4.9968E-10	2.06027E-14	5.15068E-15	8.33199E-15	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Acetone	0.116611111	1.23885E-07	1.4983E-08	6.17788E-13	1.54447E-13	2.49841E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Carbon disulfide	0.003916667	4.16099E-09	5.0325E-10	2.07499E-14	5.18748E-15	8.3915E-15	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	4.07246E-10	4.9254E-10	2.03084E-14	5.0771E-15	8.21296E-15	0.1	1	0.081	NC	NC	0.023	NC	NC	1.88898E-16	NC
	Benzene	0.00370525	3.14911E-10	4.7608E-10	1.96298E-14	4.90746E-15	7.93854E-15	0.08	1	NC	0.055	0.0016	0.0078	1.73201E-11	2.61847E-11	6.19206E-17	1.07964E-15
	Trichloroethene	0.004277778	4.54463E-10	5.4965E-10	2.2663E-14	5.66575E-15	9.16519E-15	0.1	1	0.4	0.4	NC	0.00011	1.81785E-10	2.19859E-10	1.00817E-18	9.06521E-15
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	1.05919E-09	1.281E-09	5.28195E-14	1.32049E-14	2.13608E-14	0.1	1	0.02	0.54	NC	0.0000552	5.71965E-10	6.91761E-10	1.17912E-18	2.85226E-14
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	4.10197E-09	4.9611E-10	2.04556E-14	5.11389E-15	8.27248E-15	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Chloromethane	0.00403	4.2814E-09	5.1781E-10	2.13503E-14	5.33758E-15	8.63432E-15	1	1	0.0063	0.013	0.00037	0.0018	5.56581E-11	6.73155E-12	1.55418E-17	2.77554E-16
	2-hexanone	0.00394	4.18578E-09	5.0625E-10	2.08735E-14	5.21838E-15	8.4415E-15	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,3,5-trimethylbenzene	0.012611111	1.33978E-08	1.6204E-09	6.68117E-14	1.67029E-14	2.70195E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,2,4-trimethylbenzene	0.017944444	1.90638E-08	2.3057E-09	9.50669E-14	2.37667E-14	3.84462E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	p-isopropyltoluene	0.011027778	1.17157E-08	1.417E-09	5.84235E-14	1.46059E-14	2.36271E-14	1	1	NC	NC	NC	NC	NC	NC	NC	NC
SVOCs	Naphthalene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	76	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluorene	64	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	470	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Anthracene	97	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluroanthene	330	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Pyrene	450	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Benzo(a)anthracene	170	3.6121E-05	2.1843E-05	9.00634E-10	2.25159E-10	3.64227E-10	0.2	1	ND	0.73	NC	NC	2.63683E-05	1.59455E-05	NC	6.57463E-10
	Chrysene	180	3.82457E-05	2.3128E-05	9.53613E-10	2.38403E-10	3.85652E-10	0.2	1	ND	0.073	NC	NC	2.79194E-06	1.68835E-06	NC	6.96137E-11
	Benzo(b)fluoranthene	95	2.01852E-05	1.2206E-05	5.03295E-10	1.25824E-10	2.03539E-10	0.2	1	ND	0.73	NC	NC	1.47352E-05	8.91073E-06	NC	3.67406E-10
	Benzo(k)fluoranthene	110	2.33724E-05	1.4134E-05	5.82763E-10	1.45691E-10	2.35676E-10	0.2	1	ND	0.073	NC	NC	1.70618E-06	1.03177E-06	NC	4.25417E-11
	Benzo(a)pyrene	150	3.18714E-05	1.9273E-05	7.94677E-10	1.98669E-10	3.21377E-10	0.2	1	3.1	7.3	0.21	NC	0.000232661	0.000140696	6.15875E-10	5.80114E-09
	Indeno(1,2,3-c,d)pyrene	68	1.44484E-05	8.7373E-06	3.60254E-10	9.00634E-11	1.45691E-10	0.2	1	ND	0.73	NC	NC	1.05473E-05	6.37821E-06	NC	2.62985E-10
	Dibenz(a,h)anthracene	28	2.6772E-06	3.5977E-06	1.4834E-10	3.70849E-11	5.99903E-11	0.09	1	ND	7.3	NC	NC	1.95436E-05	2.62632E-05	NC	1.08288E-09
	Benzo(g,h,I)perylene	77	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
													Totals	0.000308594	0.000201878	7.47023E-10	8.3238E-09

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

BW = 16 kg
IR = 100 mg
AF (dermal) = 0.35 mg/cm^2
SA = 2362 cm^2
EF = 0.2411 events/days
ED = 1 day/event
EP = 2190 days
AP = 25550 days
CF = 0.000001

NC = No Cancer Data/Not a Carcinogen
ND = No Data

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respiratory system: ADE inhalation = ((ADD INH RESP)*(BW))/AV

BW = 11 kg
IR = 4.7 L/min
AV= 6.8 m^3/day
EF = 0.733 events/days
ED = 2 hrs/event
EP = 30 days
AP = 25550 days
CF = 6E-11 (60 min/hr; 10E-9 kg/ug; 0.001 m3/L)
PM10 = 60 ug/m^3

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (GI Tract Only): ECLR = (ADD $_{INH\ GI}$)*(Slope Factor $_{ORAL}$)
Estimated Cancer Lifetime Risk (Inhalation only): ECLR = (ADE)*(Unit Risk $_{INH}$)
if no value for Unit Risk $_{INH}$, use ECLR = (ADD $_{INH\ RESP}$)*(Slope Factor $_{INH}$)

DRAFT Table N.30 Carcinogenic Risk Calculations for C-39 Only - Construction Worker

CANCER SOIL C39 ONLY CW	Compound	EPC (mg/kg)	LADD Dermal (mg/kg)	LADD Ingestion (mg/kg)	ADD Inhalation GI Tract (mg/kg-day)	ADD Inhalation Respiratory (mg/kg-day)	ADE Inhalation Respiratory (mg/m^3)	RAF Cancer Dermal	RAF Cancer Ingestion	Slope Factor Cancer Inhalation (per mg/kg-d)	Slope Factor Cancer Oral (per mg/kg-day)	Unit Risk Cancer Oral (per mg/L)	Unit Risk Cancer Inhalation (per mg/m^3)	ECLR Dermal	ECLR Ingestion	ECLR Inhalation	ECLR GI Tract
Metals	Copper	41	3.55802E-07	4.49037E-08	1.54441E-09	3.86102E-10	1.5251E-09	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Nickel	28	2.42987E-07	3.0666E-08	1.05472E-09	2.6368E-10	1.04153E-09	1	1	0.84	ND	ND	NC	NC	ND	2.21491E-10	ND
	Silver	2.7	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Zinc	130	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Lead	190	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Arsenic	5	1.30172E-09	5.47607E-09	1.88343E-10	4.70856E-11	1.85988E-10	0.03	1	15.1	1.5	0.05	NC	1.9526E-09	8.2141E-09	7.10993E-10	2.82514E-10
VOCs	Bromomethane	0.003888889	3.37482E-11	4.25916E-12	1.46489E-13	3.66222E-14	1.44658E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Acetone	0.116611111	1.01196E-09	1.27714E-10	4.39257E-12	1.09814E-12	4.33766E-12	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Carbon disulfide	0.003916667	3.39893E-11	4.28959E-12	1.47535E-13	3.68837E-14	1.45691E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Methyl tert-butyl ether (MTBE)	0.00355525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Butanone (MEK)	0.009305556	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	cis-1,2-Dichloroethene	0.004166667	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Chloroform	0.003833333	3.32661E-12	4.19832E-12	1.44396E-13	3.6099E-14	1.42591E-13	0.1	1	0.081	NC	NC	NC	NC	NC	3.27959E-15	NC
	Benzene	0.00370525	2.57237E-12	4.05804E-12	1.39571E-13	3.48928E-14	1.37827E-13	0.08	1	NC	0.055	0.0016	NC	1.4148E-13	2.23192E-13	1.07505E-15	7.67642E-15
	Trichloroethene	0.004277778	3.7123E-12	4.68508E-12	1.61138E-13	4.02844E-14	1.59123E-13	0.1	1	0.4	0.4	NC	NC	1.4849E-12	1.87403E-12	1.75036E-17	6.4455E-14
	Methyl isobutyl ketone (MIBK)	0.003944444	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Tetrachloroethene	0.00997	8.65207E-12	1.09193E-11	3.75555E-13	9.38888E-14	3.70861E-13	0.1	1	0.02	0.54	NC	NC	4.6721E-12	5.89641E-12	2.04715E-17	2.028E-13
	Toluene	0.00343025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Ethylbenzene	0.00365525	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	p/m-Xylene	0.00348025	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	O-xylene	0.00356775	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Trichlorofluoromethane	0.003861111	3.35071E-11	4.22874E-12	1.45442E-13	3.63606E-14	1.43624E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	Chloromethane	0.00403	3.49728E-11	4.41371E-12	1.51804E-13	3.7951E-14	1.49907E-13	1	1	0.0063	0.013	0.00037	NC	4.5465E-13	5.73782E-14	2.69832E-16	1.97345E-15
	2-hexanone	0.00394	3.41918E-11	4.31514E-12	1.48414E-13	3.71035E-14	1.46559E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,3,5-trimethylbenzene	0.012611111	1.09441E-10	1.38119E-11	4.75042E-13	1.1876E-13	4.69104E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	1,2,4-trimethylbenzene	0.017944444	1.55724E-10	1.9653E-11	6.7594E-13	1.68985E-13	6.67491E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
	p-isopropyltoluene	0.011027778	9.57003E-11	1.20778E-11	4.154E-13	1.0385E-13	4.10207E-13	1	1	NC	NC	NC	NC	NC	NC	NC	NC
SVOCs	Naphthalene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	2-Methylnaphthalene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthylene	9	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Acenaphthene	76	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluorene	64	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Phenanthrene	470	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Anthracene	97	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Fluroanthene	330	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Pyrene	450	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
	Benzo(a)anthracene	170	2.95056E-07	1.86186E-07	6.40365E-09	1.60091E-09	6.3236E-09	0.2	1	ND	0.73	NC	NC	2.1539E-07	1.35916E-07	NC	4.67466E-09
	Chrysene	180	3.12412E-07	1.97138E-07	6.78033E-09	1.69508E-09	6.69558E-09	0.2	1	ND	0.073	NC	NC	2.2806E-08	1.43911E-08	NC	4.94964E-10
	Benzo(b)fluoranthene	95	1.64884E-07	1.04045E-07	3.57851E-09	8.94627E-10	3.53378E-09	0.2	1	ND	0.73	NC	NC	1.2037E-07	7.5953E-08	NC	2.61231E-09
	Benzo(k)fluoranthene	110	1.90918E-07	1.20473E-07	4.14354E-09	1.03588E-09	4.09174E-09	0.2	1	ND	0.073	NC	NC	1.3937E-08	8.79456E-09	NC	3.02478E-10
	Benzo(a)pyrene	150	2.60343E-07	1.64282E-07	5.65028E-09	1.41257E-09	5.57965E-09	0.2	1	3.1	7.3	0.21	NC	1.9005E-06	1.19926E-06	4.37896E-09	4.1247E-08
	Indeno(1,2,3-c,d)pyrene	68	1.18022E-07	7.44745E-08	2.56146E-09	6.40365E-10	2.52944E-09	0.2	1	ND	0.73	NC	NC	8.6156E-08	5.43664E-08	NC	1.86986E-09
	Dibenz(a,h)anthracene	28	2.18688E-08	3.0666E-08	1.05472E-09	2.6368E-10	1.04153E-09	0.09	1	ND	7.3	NC	NC	1.5964E-07	2.23862E-07	NC	7.69944E-09
	Benzo(g,h,I)perylene	77	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
													Totals	2.5208E-06	1.72076E-06	5.31145E-09	5.91835E-08

Dermal Contact with soil or sediment: ADD/LADD = ((EPC)*(SA)*(EF)*(ED)*(EP)*(AF)*(RAF)*(CF))/((BW)*(AP))
Incidental Ingestion of soil or sediment: ADD/LADD = ((EPC)*(IR)*(EF)*(ED)*(EP)*(RAF)*(CF))/((BW)*(AP))

NC = No Cancer Data/Not a Carcinogen
ND = No Data

BW = 79 kg | SA = 2732 cm^2 | EP = 30 days
IR = 100 mg | EF = 0.733 events/days | AP = 25550 days
AF (dermal) = 0.29 mg/cm^2 | ED = 1 day/event | CF = 0.000001

Average daily dose for the GI system: ADD- Inhalation-GI = ((EPC) * 2 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily dose for the respiratory system: ADD inhalation = ((EPC) * 0.5 * (PM10)*(IR)*(RAF)*(EF)*(ED)*(EP)*(CF))/((BW)*(AP))
Average daily exposure for the respiratory system: ADE inhalation = ($(ADD_{INH\ RESP})$*(BW))/AV

BW = 79 kg | EF = 0.733 events/days | AP = 25550 days
IR = 60 L/min | ED = 8 hrs/event | CF = 6E-11 (60 min/hr; 10E-9 kg/ug; 0.001 m3/L)
AV= 20 m^3/day | EP = 30 days | PM10 = 60 ug/m^3

Estimated Cancer Lifetime Risk (Dermal and Ingestion): ECLR = (LADD)*($Slope\ Factor_{ORAL}$)
Estimated Cancer Lifetime Risk (GI Tract Only): ECLR = ($ADD_{INH\ GI}$)*($Slope\ Factor_{ORAL}$)
Estimated Cancer Lifetime Risk (Inhalation only): ECLR = (ADE)*($Unit\ Risk_{INH}$)
if no value for $Unit\ Risk_{INH}$, use ECLR = ($ADD_{INH\ RESP}$)*($Slope\ Factor_{INH}$)