ATTACHMENT T-1

BASELINE HUMAN HEALTH RISK ASSESSMENT
J&E VAPOR MODEL SPREADSHEETS AND LEADSPREAD

SG-ADV
Version 2.0; 02/03

ENTER Chemical CAS No. (numbers only, no dashes)	Soil Gas Concentration Data: ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
95636			2.8E-03	1,2,4-Trimethylbenzene
108678			8.9E-04	1,3,5-Trimethylbenzene
106990			8.3E-03	1,3-Butadiene
123911			1.6E-03	1,4-Dioxane
591786			1.7E-02	2-Hexanone
67641			2.2E+00	Acetone
71432			1.5E-02	Benzene
75150			2.8E-03	Carbon disulfide
67663			7.8E-04	Chloroform
74873			3.2E-03	Chloromethane
64175			7.2E-02	Ethanol (as methanol)
100414			2.4E-03	Ethylbenzene
142825			1.8E-02	Heptane
110543			5.2E-03	Hexane
67630			1.5E-02	Isopropanol
108383			9.5E-03	m-Xylene
78933			1.7E-01	Methyl ethyl ketone
75092			7.4E-04	Methylene chloride
95476			4.0E-03	o-Xylene
100425			6.6E-04	Styrene
127184			1.1E-03	Tetrachloroethylene
108883			1.3E-02	Toluene
79016			6.9E-04	Trichloroethylene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Totals must add up to value of Ls (cell F24): Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
15	228.75	19	228.75			SIC		
	7.5 ft bgs							

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum C SCS soil type (Lookup Soil Parameters)
	1.38	0.481	0.216		1.59	0.3944	0.1305	

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)		ENTER Average vapor flow rate into bldg OR Leave blank to calculate Q_{soil} (L/m)
10	40	1000	1000	244	0.1	0.5		5

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Molecular weight, MW (g/mol)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	
6.1E-02	7.9E-06	6.1E-03	25	9,369	442.3	649.2	120.2	0.0E+00	6.0E-03	1,2,4-Trimethylbenzene
6.0E-02	8.7E-06	5.9E-03	25	9,321	437.9	637.3	120.2	0.0E+00	6.0E-03	1,3,5-Trimethylbenzene
2.5E-01	1.1E-05	7.3E-02	25	5,370	268.6	425.0	54.1	2.8E-04	0.0E+00	1,3-Butadiene
2.3E-01	1.0E-05	4.8E-06	25	9,000	374.7	700.0	88.1	7.7E-06	3.0E+00	1,4-Dioxane
7.5E-02	0.0E+00	9.3E-05	25	0	401.0	0.0	100.2	0.0E+00	3.0E+00	2-Hexanone
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.2	508.1	58.1	0.0E+00	3.2E+00	Acetone
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.2	562.2	78.1	2.9E-05	3.0E-02	Benzene
1.0E-01	1.0E-05	3.0E-02	25	6,391	319.0	552.0	76.1	0.0E+00	7.0E-01	Carbon disulfide
1.0E-01	1.0E-05	3.7E-03	25	6,988	334.3	536.4	119.4	5.4E-06	4.9E-02	Chloroform
1.3E-01	6.5E-06	8.8E-03	25	5,115	249.0	416.3	50.5	0.0E+00	9.0E-02	Chloromethane
1.5E-01	1.6E-05	4.5E-06	25	10,936	338.3	547.8	46.1	0.0E+00	1.8E+00	Ethanol (as methanol)
7.5E-02	7.8E-06	7.9E-03	25	8,501	409.3	617.2	106.2	0.0E+00	1.0E+00	Ethylbenzene
9.3E-02	7.6E-06	1.7E+00	25	6,895	371.7	508.0	100.2	0.0E+00	7.0E+00	Heptane
2.0E-01	7.8E-06	1.7E+00	25	6,895	341.7	508.0	86.2	0.0E+00	2.0E-01	Hexane
8.0E-02	9.3E-06	8.8E-06	25	10,346	390.9	563.1	60.1	0.0E+00	7.0E-01	Isopropanol
7.0E-02	7.8E-06	7.3E-03	25	0	412.3	0.0	106.2	0.0E+00	1.0E-01	m-Xylene
8.1E-02	9.8E-06	5.6E-05	25	7,481	352.5	536.8	72.1	0.0E+00	5.0E+00	Methyl ethyl ketone
1.0E-01	1.2E-05	2.2E-03	25	6,706	313.0	510.0	84.9	1.0E-06	4.0E-01	Methylene chloride
8.7E-02	1.0E-05	5.2E-03	25	8,661	417.6	630.3	106.2	0.0E+00	1.0E-01	o-Xylene
7.1E-02	8.0E-06	2.7E-03	25	8,737	418.3	636.0	104.2	0.0E+00	9.0E-01	Styrene
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.4	620.2	165.8	6.0E-06	3.5E-02	Tetrachloroethylene
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.8	591.8	92.1	0.0E+00	3.0E-01	Toluene
7.9E-02	9.1E-06	1.0E-02	25	7,505	360.4	544.2	131.4	2.0E-06	3.5E-02	Trichloroethylene

END

TABLE T1-1
SOIL VAPOR TO INDOOR IR PATHWAY
OFFSITE RESIDENT EXPOSURE SCENARIO

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	
9.5E+08	213.75	0.265	0.264	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.4E+01	3.4E+04	1,2,4-Trimethylbenzene
										4.5E+00		1,3,5-Trimethylbenzene
										1.9E+01		1,3-Butadiene
										5.9E+00		1,4-Dioxane
										7.1E+01		2-Hexanone
										5.3E+03		Acetone
										4.9E+01		Benzene
										8.9E+00		Carbon disulfide
										3.9E+00		Chloroform
										6.7E+00		Chloromethane
										1.4E+02		Ethanol (as methanol)
										1.1E+01		Ethylbenzene
										7.5E+01		Heptane
										1.9E+01		Hexane
										3.8E+01		Isopropanol
										4.2E+01		m-Xylene
										5.1E+02		Methyl ethyl ketone
										2.6E+00		Methylene chloride
										1.8E+01		o-Xylene
										2.9E+00		Styrene
										7.6E+00		Tetrachloroethylene
										5.0E+01		Toluene
										3.8E+00		Trichloroethylene

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
1.1E+06	3.8E-04	15	11,579	4.1E-03	1.7E-01	1.8E-04	3.1E-03	0.0E+00	0.0E+00	3.1E-03	213.75	1,2,4-Trimethylbenzene
1.1E+06	3.8E-04	15	11,561	3.9E-03	1.6E-01	1.8E-04	3.1E-03	0.0E+00	0.0E+00	3.1E-03	213.75	1,3,5-Trimethylbenzene
1.1E+06	3.8E-04	15	5,071	6.2E-02	2.6E+00	1.8E-04	1.3E-02	0.0E+00	0.0E+00	1.3E-02	213.75	1,3-Butadiene
1.1E+06	3.8E-04	15	9,631	3.4E-06	1.4E-04	1.8E-04	1.4E-02	0.0E+00	0.0E+00	1.4E-02	213.75	1,4-Dioxane
1.1E+06	3.8E-04	15	0	9.3E-05	3.9E-03	1.8E-04	3.9E-03	0.0E+00	0.0E+00	3.9E-03	213.75	2-Hexanone
1.1E+06	3.8E-04	15	7,447	3.0E-05	1.2E-03	1.8E-04	6.7E-03	0.0E+00	0.0E+00	6.7E-03	213.75	Acetone
1.1E+06	3.8E-04	15	8,030	4.2E-03	1.7E-01	1.8E-04	4.6E-03	0.0E+00	0.0E+00	4.6E-03	213.75	Benzene
1.1E+06	3.8E-04	15	6,612	2.4E-02	1.0E+00	1.8E-04	5.4E-03	0.0E+00	0.0E+00	5.4E-03	213.75	Carbon disulfide
1.1E+06	3.8E-04	15	7,461	2.8E-03	1.2E-01	1.8E-04	5.4E-03	0.0E+00	0.0E+00	5.4E-03	213.75	Chloroform
1.1E+06	3.8E-04	15	4,640	7.5E-03	3.1E-01	1.8E-04	6.5E-03	0.0E+00	0.0E+00	6.5E-03	213.75	Chloromethane
1.1E+06	3.8E-04	15	11,703	3.0E-06	1.3E-04	1.8E-04	1.1E-02	0.0E+00	0.0E+00	1.1E-02	213.75	Ethanol (as methanol)
1.1E+06	3.8E-04	15	10,052	5.5E-03	2.3E-01	1.8E-04	3.9E-03	0.0E+00	0.0E+00	3.9E-03	213.75	Ethylbenzene
1.1E+06	3.8E-04	15	8,324	1.2E+00	5.2E+01	1.8E-04	4.8E-03	0.0E+00	0.0E+00	4.8E-03	213.75	Heptane

TABLE T1-1
SOIL VAPOR TO INDOOR IR PATHWAY
OFFSITE RESIDENT EXPOSURE SCENARIO

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	
1.1E+06	3.8E-04	15	7,617	1.3E+00	5.3E+01	1.8E-04	1.0E-02	0.0E+00	0.0E+00	1.0E-02	213.75	Hexane
1.1E+06	3.8E-04	15	12,390	5.7E-06	2.4E-04	1.8E-04	5.2E-03	0.0E+00	0.0E+00	5.2E-03	213.75	Isopropanol
1.1E+06	3.8E-04	15	0	7.3E-03	3.1E-01	1.8E-04	3.6E-03	0.0E+00	0.0E+00	3.6E-03	213.75	m-Xylene
1.1E+06	3.8E-04	15	8,307	4.2E-05	1.7E-03	1.8E-04	4.3E-03	0.0E+00	0.0E+00	4.3E-03	213.75	Methyl ethyl ketone
1.1E+06	3.8E-04	15	6,938	1.7E-03	7.2E-02	1.8E-04	5.2E-03	0.0E+00	0.0E+00	5.2E-03	213.75	Methylene chloride
1.1E+06	3.8E-04	15	10,302	3.6E-03	1.5E-01	1.8E-04	4.5E-03	0.0E+00	0.0E+00	4.5E-03	213.75	o-Xylene
1.1E+06	3.8E-04	15	10,350	1.9E-03	8.0E-02	1.8E-04	3.7E-03	0.0E+00	0.0E+00	3.7E-03	213.75	Styrene
1.1E+06	3.8E-04	15	9,462	1.3E-02	5.5E-01	1.8E-04	3.7E-03	0.0E+00	0.0E+00	3.7E-03	213.75	Tetrachloroethylene
1.1E+06	3.8E-04	15	9,056	4.8E-03	2.0E-01	1.8E-04	4.5E-03	0.0E+00	0.0E+00	4.5E-03	213.75	Toluene
1.1E+06	3.8E-04	15	8,445	7.7E-03	3.2E-01	1.8E-04	4.1E-03	0.0E+00	0.0E+00	4.1E-03	213.75	Trichloroethylene

Convection path length, L_p (cm)	Source vapor conc., C_{source} (μg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (μg/m^3)	Unit risk factor, URF (μg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)	Infinite source bldg. conc., $C_{building}$ (mg/m^3)	
15	1.4E+01	0.10	8.3E+01	3.1E-03	4.0E+02	4.0E+287	3.9E-04	5.4E-03	NA	6.0E-03	5.4E-06	1,2,4-Trimethylbenzene
15	4.5E+00	0.10	8.3E+01	3.1E-03	4.0E+02	3.1E+289	3.9E-04	1.7E-03	NA	6.0E-03	1.7E-06	1,3,5-Trimethylbenzene
15	1.9E+01	0.10	8.3E+01	1.3E-02	4.0E+02	1.0E+70	1.1E-03	2.0E-02	2.8E-04	NA	2.0E-05	1,3-Butadiene
15	5.9E+00	0.10	8.3E+01	1.4E-02	4.0E+02	6.2E+65	1.1E-03	6.5E-03	7.7E-06	3.0E+00	6.5E-06	1,4-Dioxane
15	7.1E+01	0.10	8.3E+01	3.9E-03	4.0E+02	2.5E+233	4.6E-04	3.3E-02	NA	3.0E+00	3.3E-05	2-Hexanone
15	5.3E+03	0.10	8.3E+01	6.7E-03	4.0E+02	3.5E+135	7.0E-04	3.7E+00	NA	3.2E+00	3.7E-03	Acetone
15	4.9E+01	0.10	8.3E+01	4.6E-03	4.0E+02	1.2E+198	5.3E-04	2.6E-02	2.9E-05	3.0E-02	2.6E-05	Benzene
15	8.9E+00	0.10	8.3E+01	5.4E-03	4.0E+02	4.3E+167	6.0E-04	5.3E-03	NA	7.0E-01	5.3E-06	Carbon disulfide
15	3.9E+00	0.10	8.3E+01	5.4E-03	4.0E+02	3.8E+167	6.0E-04	2.3E-03	5.4E-06	4.9E-02	2.3E-06	Chloroform
15	6.7E+00	0.10	8.3E+01	6.5E-03	4.0E+02	2.3E+138	6.9E-04	4.6E-03	NA	9.0E-02	4.6E-06	Chloromethane
15	1.4E+02	0.10	8.3E+01	1.1E-02	4.0E+02	6.1E+80	9.8E-04	1.4E-01	NA	1.8E+00	1.4E-04	Ethanol (as methanol)
15	1.1E+01	0.10	8.3E+01	3.9E-03	4.0E+02	2.6E+232	4.6E-04	4.9E-03	NA	1.0E+00	4.9E-06	Ethylbenzene
15	7.5E+01	0.10	8.3E+01	4.8E-03	4.0E+02	1.9E+188	5.5E-04	4.1E-02	NA	7.0E+00	4.1E-05	Heptane
15	1.9E+01	0.10	8.3E+01	1.0E-02	4.0E+02	1.5E+87	9.4E-04	1.8E-02	NA	2.0E-01	1.8E-05	Hexane
15	3.8E+01	0.10	8.3E+01	5.2E-03	4.0E+02	7.4E+174	5.8E-04	2.2E-02	NA	7.0E-01	2.2E-05	Isopropanol
15	4.2E+01	0.10	8.3E+01	3.6E-03	4.0E+02	1.1E+249	4.4E-04	1.8E-02	NA	1.0E-01	1.8E-05	m-Xylene
15	5.1E+02	0.10	8.3E+01	4.3E-03	4.0E+02	2.8E+208	5.0E-04	2.6E-01	NA	5.0E+00	2.6E-04	Methyl ethyl ketone
15	2.6E+00	0.10	8.3E+01	5.2E-03	4.0E+02	3.0E+172	5.8E-04	1.5E-03	1.0E-06	4.0E-01	1.5E-06	Methylene chloride
15	1.8E+01	0.10	8.3E+01	4.5E-03	4.0E+02	2.1E+200	5.2E-04	9.2E-03	NA	1.0E-01	9.2E-06	o-Xylene
15	2.9E+00	0.10	8.3E+01	3.7E-03	4.0E+02	2.5E+245	4.4E-04	1.3E-03	NA	9.0E-01	1.3E-06	Styrene
15	7.6E+00	0.10	8.3E+01	3.7E-03	4.0E+02	1.3E+242	4.5E-04	3.4E-03	6.0E-06	3.5E-02	3.4E-06	Tetrachloroethylene
15	5.0E+01	0.10	8.3E+01	4.5E-03	4.0E+02	2.3E+200	5.2E-04	2.6E-02	NA	3.0E-01	2.6E-05	Toluene
15	3.8E+00	0.10	8.3E+01	4.1E-03	4.0E+02	4.5E+220	4.8E-04	1.8E-03	2.0E-06	3.5E-02	1.8E-06	Trichloroethylene

DATA ENTRY SHEET

TABLE T1-2
SOIL TO INDOOR AIR PATHWAY
COMMERCIAL WORKER EXPOSURE SCENARIO

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial soil conc., C_R (µg/kg)		Chemical
87616	2.6		1,2,3-Trichlorobenzene
95501	4.3		1,2-Dichlorobenzene
540590	1.3		1,2-Dichloroethene
71363	120		1-Butanol
83329	5.1		Acenaphthene
67641	78		Acetone
120127	12		Anthracene
71432	5.1		Benzene
75150	8.5		Carbon disulfide
100414	2.1		Ethylbenzene
86737	7		Fluorene
78933	14		Methylethylketone (2-butanone)
91203	6.6		Naphthalene
129000	16		Pyrene
75650	22		Tert-Butyl Alcohol
127184	2		Tetrachloroethylene
109999	3.1		Tetrahydrofuran
108883	1.7		Toluene
106423	8.3		p-Xylene

ENTER Average soil temperature, T_S (^oC)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Depth below grade to bottom of contamination, (enter value of 0 if value is unknown) L_b (cm)	ENTER Totals must add up to value of L_t (cell G28) Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)		ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
19	15	15.24	0	15.24	0	0	SIC	OR	

DATA ENTRY SHEET

TABLE T1-2
SOIL TO INDOOR AIR PATHWAY
COMMERCIAL WORKER EXPOSURE SCENARIO

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum A soil organic carbon fraction, f_{oc}^A (unitless)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum B soil organic carbon fraction, f_{oc}^B (unitless)
SIC	1.38	0.481	0.216	0.002		1.5	0.43		0.002

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP (g/cm-s^2)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	1000	1000	244	0.1	1	5

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($atm\text{-}m^3/mol$)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF ($\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Physical state at soil temperature, (S,L,G)	
3.0E-02	8.2E-06	1.4E-03	25	10,471	486.15	725.00	1.8E+03	3.0E+02	0.0E+00	2.0E-01	L	1,2,3-Trichlorobenzene
6.9E-02	7.9E-06	1.9E-03	25	9,700	453.57	705.00	6.2E+02	1.6E+02	0.0E+00	2.0E-01	L	1,2-Dichlorobenzene
7.4E-02	1.1E-05	4.1E-03	25	7,192	333.65	544.00	3.6E+01	3.5E+03	0.0E+00	3.5E-02	L	1,2-Dichloroethene
8.0E-02	9.3E-06	8.8E-06	25	10,346	390.88	563.05	6.9E+00	7.4E+04	0.0E+00	9.1E-03	L	1-Butanol
4.2E-02	7.7E-06	1.5E-04	25	12,155	550.54	803.15	7.1E+03	3.6E+00	0.0E+00	2.1E-01	S	Acenaphthene
1.2E-01	1.1E-05	3.9E-05	25	6,955	329.20	508.10	5.8E-01	1.0E+06	0.0E+00	3.5E-01	L	Acetone
3.2E-02	7.7E-06	6.5E-05	25	0	550.54	0.00	2.3E+04	4.3E-02	0.0E+00	1.1E+00	S	Anthracene
8.8E-02	9.8E-06	5.5E-03	25	7,342	353.24	562.16	5.9E+01	1.8E+03	2.9E-05	3.0E-02	L	Benzene
1.0E-01	1.0E-05	3.0E-02	25	6,391	319.00	552.00	4.6E+01	1.2E+03	0.0E+00	7.0E-01	L	Carbon disulfide
7.5E-02	7.8E-06	7.9E-03	25	8,501	409.34	617.20	3.6E+02	1.7E+02	0.0E+00	1.0E+00	L	Ethylbenzene
3.6E-02	7.9E-06	6.3E-05	25	12,666	570.44	870.00	1.4E+04	2.0E+00	0.0E+00	1.4E-01	S	Fluorene
8.1E-02	9.8E-06	5.6E-05	25	7,481	352.50	536.78	2.3E+00	2.2E+05	0.0E+00	5.0E+00	L	Methylethylketone (2-butanone)
5.9E-02	7.5E-06	4.8E-04	25	10,373	491.14	748.40	2.0E+03	3.1E+01	0.0E+00	3.0E-03	S	Naphthalene
2.7E-02	7.2E-06	1.1E-05	25	14,370	667.95	936.00	1.1E+05	1.4E+00	0.0E+00	1.1E-01	S	Pyrene
8.5E-02	9.1E-06	7.3E-05	25	0	355.56	0.00	4.2E+00	2.4E+05	0.0E+00	1.1E+00	L	Tert-Butyl Alcohol
7.2E-02	8.2E-06	1.8E-02	25	8,288	394.40	620.20	1.6E+02	2.0E+02	5.9E-06	6.0E-01	L	Tetrachloroethylene
9.8E-02	1.1E-05	7.0E-05	25	0	338.15	0.00	9.5E-01	1.0E+06	1.9E-06	3.0E-01	L	Tetrahydrofuran
8.7E-02	8.6E-06	6.6E-03	25	7,930	383.78	591.79	1.8E+02	5.3E+02	0.0E+00	4.0E-01	L	Toluene
7.7E-02	8.4E-06	7.6E-03	25	8,525	411.52	616.20	3.9E+02	1.9E+02	0.0E+00	1.0E-01	L	p-Xylene

Exposure duration, τ (sec)	Source-building separation, L_T (cm)	Stratum A soil air-filled porosity, θ_a^A (cm^3/cm^3)	Stratum B soil air-filled porosity, θ_a^B (cm^3/cm^3)	Stratum C soil air-filled porosity, θ_a^C (cm^3/cm^3)	Stratum A effective total fluid saturation, S_{te} (cm^3/cm^3)	Stratum A soil intrinsic permeability, k_i (cm^2)	Stratum A soil relative air permeability, k_{rg} (cm^2)	Stratum A soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	2.6E+00	6.8E+04	1,2,3-Trichlorobenzene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	4.3E+00	6.8E+04	1,2-Dichlorobenzene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.3E+00	6.8E+04	1,2-Dichloroethene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.2E+02	6.8E+04	1-Butanol
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	5.1E+00	6.8E+04	Acenaphthene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	7.8E+01	6.8E+04	Acetone
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.2E+01	6.8E+04	Anthracene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	5.1E+00	6.8E+04	Benzene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	8.5E+00	6.8E+04	Carbon disulfide
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	2.1E+00	6.8E+04	Ethylbenzene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	7.0E+00	6.8E+04	Fluorene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.4E+01	6.8E+04	Methylethylketone (2-butanone)
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	6.6E+00	6.8E+04	Naphthalene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.6E+01	6.8E+04	Pyrene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	2.2E+01	6.8E+04	Tert-Butyl Alcohol
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	2.0E+00	6.8E+04	Tetrachloroethylene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	3.1E+00	6.8E+04	Tetrahydrofuran
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	1.7E+00	6.8E+04	Toluene
7.9E+08	0.24	0.265	ERROR	ERROR	0.284	1.5E-09	0.844	1.3E-09	4,000	8.3E+00	6.8E+04	p-Xylene

INTERMEDIATE CALCULATIONS SHEET

TABLE T1-2
SOIL TO INDOOR AIR PATHWAY
COMMERCIAL WORKER EXPOSURE SCENARIO

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Stratum B effective diffusion coefficient, D^{eff}_B (cm^2/s)	Stratum C effective diffusion coefficient, D^{eff}_C (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	
1.1E+06	5.0E-03	15	13,127	9.0E-04	3.8E-02	1.8E-04	1.6E-03	0.0E+00	0.0E+00	1.6E-03	0.24	15	1,2,3-Trichlorobenzene
1.1E+06	5.0E-03	15	11,596	1.3E-03	5.3E-02	1.8E-04	3.6E-03	0.0E+00	0.0E+00	3.6E-03	0.24	15	1,2-Dichlorobenzene
1.1E+06	5.0E-03	15	7,643	3.1E-03	1.3E-01	1.8E-04	3.8E-03	0.0E+00	0.0E+00	3.8E-03	0.24	15	1,2-Dichloroethene
1.1E+06	5.0E-03	15	12,390	5.7E-06	2.4E-04	1.8E-04	5.2E-03	0.0E+00	0.0E+00	5.2E-03	0.24	15	1-Butanol
1.1E+06	5.0E-03	15	16,013	8.9E-05	3.7E-03	1.8E-04	2.2E-03	0.0E+00	0.0E+00	2.2E-03	0.24	15	Acenaphthene
1.1E+06	5.0E-03	15	7,447	3.0E-05	1.2E-03	1.8E-04	6.7E-03	0.0E+00	0.0E+00	6.7E-03	0.24	15	Acetone
1.1E+06	5.0E-03	15	0	6.5E-05	2.7E-03	1.8E-04	1.8E-03	0.0E+00	0.0E+00	1.8E-03	0.24	15	Anthracene
1.1E+06	5.0E-03	15	8,030	4.2E-03	1.7E-01	1.8E-04	4.6E-03	0.0E+00	0.0E+00	4.6E-03	0.24	15	Benzene
1.1E+06	5.0E-03	15	6,612	2.4E-02	1.0E+00	1.8E-04	5.4E-03	0.0E+00	0.0E+00	5.4E-03	0.24	15	Carbon disulfide
1.1E+06	5.0E-03	15	10,052	5.5E-03	2.3E-01	1.8E-04	3.9E-03	0.0E+00	0.0E+00	3.9E-03	0.24	15	Ethylbenzene
1.1E+06	5.0E-03	15	16,143	3.6E-05	1.5E-03	1.8E-04	2.0E-03	0.0E+00	0.0E+00	2.0E-03	0.24	15	Fluorene
1.1E+06	5.0E-03	15	8,307	4.2E-05	1.7E-03	1.8E-04	4.3E-03	0.0E+00	0.0E+00	4.3E-03	0.24	15	Methylethylketone (2-butanone)
1.1E+06	5.0E-03	15	12,820	3.1E-04	1.3E-02	1.8E-04	3.1E-03	0.0E+00	0.0E+00	3.1E-03	0.24	15	Naphthalene
1.1E+06	5.0E-03	15	20,582	5.4E-06	2.2E-04	1.8E-04	2.3E-03	0.0E+00	0.0E+00	2.3E-03	0.24	15	Pyrene
1.1E+06	5.0E-03	15	0	7.3E-05	3.1E-03	1.8E-04	4.5E-03	0.0E+00	0.0E+00	4.5E-03	0.24	15	Tert-Butyl Alcohol
1.1E+06	5.0E-03	15	9,462	1.3E-02	5.5E-01	1.8E-04	3.7E-03	0.0E+00	0.0E+00	3.7E-03	0.24	15	Tetrachloroethylene
1.1E+06	5.0E-03	15	0	7.0E-05	2.9E-03	1.8E-04	5.2E-03	0.0E+00	0.0E+00	5.2E-03	0.24	15	Tetrahydrofuran
1.1E+06	5.0E-03	15	9,056	4.8E-03	2.0E-01	1.8E-04	4.5E-03	0.0E+00	0.0E+00	4.5E-03	0.24	15	Toluene
1.1E+06	5.0E-03	15	10,143	5.4E-03	2.2E-01	1.8E-04	4.0E-03	0.0E+00	0.0E+00	4.0E-03	0.24	15	p-Xylene

Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	**Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)**	Finite source β term (unitless)	Finite source ψ term $(sec)^{-1}$	Time for source depletion, τ_D (sec)	Exposure duration > time for source depletion (YES/NO)	
3.6E+00	2.6E+01	1.33	8.3E+01	1.6E-03	5.3E+03	5.0E+43	1.2E-03	**3.2E-02**	NA	NA	NA	NA	1,2,3-Trichlorobenzene
1.2E+00	1.6E+02	1.33	8.3E+01	3.6E-03	5.3E+03	1.1E+19	1.2E-03	**2.0E-01**	NA	NA	NA	NA	1,2-Dichlorobenzene
7.1E-02	6.7E+02	1.33	8.3E+01	3.8E-03	5.3E+03	7.4E+17	1.2E-03	**8.2E-01**	NA	NA	NA	NA	1,2-Dichloroethene
1.4E-02	1.7E+02	1.33	8.3E+01	5.2E-03	5.3E+03	1.6E+13	1.2E-03	**2.1E-01**	NA	NA	NA	NA	1-Butanol
1.4E+01	1.3E+00	1.33	8.3E+01	2.2E-03	5.3E+03	3.1E+30	1.2E-03	**1.6E-03**	NA	NA	NA	NA	Acenaphthene
1.2E-03	6.2E+02	1.33	8.3E+01	6.7E-03	5.3E+03	1.7E+10	1.2E-03	**7.6E-01**	NA	NA	NA	NA	Acetone
4.7E+01	6.9E-01	1.33	8.3E+01	1.8E-03	5.3E+03	7.6E+38	1.2E-03	**8.4E-04**	NA	NA	NA	NA	Anthracene
1.2E-01	2.9E+03	1.33	8.3E+01	4.6E-03	5.3E+03	8.9E+14	1.2E-03	**3.5E+00**	NA	NA	NA	NA	Benzene
9.1E-02	1.9E+04	1.33	8.3E+01	5.4E-03	5.3E+03	4.5E+12	1.2E-03	**2.4E+01**	NA	NA	NA	NA	Carbon disulfide
7.3E-01	5.2E+02	1.33	8.3E+01	3.9E-03	5.3E+03	3.5E+17	1.2E-03	**6.4E-01**	NA	NA	NA	NA	Ethylbenzene
2.8E+01	3.8E-01	1.33	8.3E+01	2.0E-03	5.3E+03	6.2E+33	1.2E-03	**4.6E-04**	NA	NA	NA	NA	Fluorene
4.6E-03	1.5E+02	1.33	8.3E+01	4.3E-03	5.3E+03	5.4E+15	1.2E-03	**1.9E-01**	NA	NA	NA	NA	Methylethylketone (2-butanone)
4.0E+00	2.0E+01	1.33	8.3E+01	3.1E-03	5.3E+03	1.6E+22	1.2E-03	**2.5E-02**	NA	NA	NA	NA	Naphthalene
2.1E+02	1.7E-02	1.33	8.3E+01	2.3E-03	5.3E+03	1.7E+30	1.2E-03	**2.1E-05**	NA	NA	NA	NA	Pyrene
8.4E-03	4.1E+02	1.33	8.3E+01	4.5E-03	5.3E+03	1.5E+15	1.2E-03	**5.0E-01**	NA	NA	NA	NA	Tert-Butyl Alcohol
3.1E-01	1.9E+03	1.33	8.3E+01	3.7E-03	5.3E+03	1.9E+18	1.2E-03	**2.4E+00**	NA	NA	NA	NA	Tetrachloroethylene
1.9E-03	5.7E+01	1.33	8.3E+01	5.2E-03	5.3E+03	1.5E+13	1.2E-03	**7.0E-02**	NA	NA	NA	NA	Tetrahydrofuran
3.6E-01	6.1E+02	1.33	8.3E+01	4.5E-03	5.3E+03	1.3E+15	1.2E-03	**7.5E-01**	NA	NA	NA	NA	Toluene
7.8E-01	1.9E+03	1.33	8.3E+01	4.0E-03	5.3E+03	1.3E+17	1.2E-03	**2.3E+00**	NA	NA	NA	NA	p-Xylene

Finite source indoor attenuation coefficient, <α> (unitless)	Mass limit bldg. conc., $C_{building}$ (μg/m^3)	Finite source bldg. conc., $C_{building}$ (μg/m^3)	Final finite source bldg. conc., $C_{building}$ (μg/m^3)	Unit risk factor, URF (μg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)	
NA	NA	NA	NA	NA	2.0E-01	1,2,3-Trichlorobenzene
NA	NA	NA	NA	NA	2.0E-01	1,2-Dichlorobenzene
NA	NA	NA	NA	NA	3.5E-02	1,2-Dichloroethene
NA	NA	NA	NA	NA	9.1E-03	1-Butanol
NA	NA	NA	NA	NA	2.1E-01	Acenaphthene
NA	NA	NA	NA	NA	3.5E-01	Acetone
NA	NA	NA	NA	NA	1.1E+00	Anthracene
NA	NA	NA	NA	2.9E-05	3.0E-02	Benzene
NA	NA	NA	NA	NA	7.0E-01	Carbon disulfide
NA	NA	NA	NA	NA	1.0E+00	Ethylbenzene
NA	NA	NA	NA	NA	1.4E-01	Fluorene
NA	NA	NA	NA	NA	5.0E+00	Methylethylketone (2-butanone)
NA	NA	NA	NA	NA	3.0E-03	Naphthalene
NA	NA	NA	NA	NA	1.1E-01	Pyrene
NA	NA	NA	NA	NA	1.1E+00	Tert-Butyl Alcohol
NA	NA	NA	NA	5.9E-06	6.0E-01	Tetrachloroethylene
NA	NA	NA	NA	1.9E-06	3.0E-01	Tetrahydrofuran
NA	NA	NA	NA	NA	4.0E-01	Toluene
NA	NA	NA	NA	NA	1.0E-01	p-Xylene

END

TABLE T1-3

PREDICTED BLOOD LEAD LEVELS

COMMERCIAL/INDUSTRIAL WORKER EXPOSURE SCENARIO

USER'S GUIDE **to version 7**

INPUT	
MEDIUM	LEVEL
Lead in Air (ug/m^3)	0.028
Lead in Soil/Dust (ug/g)	495
Lead in Water (ug/l)	10
% Home-grown Produce	0%
Respirable Dust (ug/m^3)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (ug/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(ug/g)	(ug/g)
BLOOD Pb, ADULT	1.3	2.4	2.8	3.4	3.9	2710	4096
BLOOD Pb, CHILD	4.7	8.7	10	12	14	297	478
BLOOD Pb, PICA CHILD	8.2	15	18	22	25	149	240
BLOOD Pb, OCCUPATIONAL	1.1	2.1	2.5	3.0	3.4	3889	5867

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	7	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (ug/dl)		10	
Skin area, residential	cm^2	5700	2800
Skin area occupational	cm^2	3300	
Soil adherence	ug/cm^2	70	200
Dermal uptake constant	(ug/dl)/(ug/day)	0.00011	
Soil ingestion	kg/day	50	100
Soil ingestion, pica	kg/day		200
Ingestion constant	(ug/dl)/(ug/day)	0.04	0.16
Bioavailability	unitless	0.44	
Breathing rate	m^3/day	20	10
Inhalation constant	(ug/dl)/(ug/day)	0.082	0.192
Water ingestion	l/day	1.4	0.4
Food ingestion	kg/day	1.9	1.1
Lead in market basket	ug/kg	3.1	
Lead in produce	ug/kg	222.8	

PATHWAYS						
ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	4.2E-5	0.02	2%	1.7E-5	0.01	1%
Soil Ingestion	8.8E-4	0.44	34%	6.3E-4	0.31	27%
Inhalation1		0.05	4%		0.03	3%
Inhalation	2.5E-6	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.56	43%		0.56	49%
Food Ingestion1		0.23	18%		0.23	20%
Food Ingestion	0.0E+0	0.00	0%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	5.9E-5	0.03	1%		0.03	0%
Soil Ingestion	7.0E-3	3.48	73%	1.4E-2	6.97	85%
Inhalation1	1.5E-6	0.00	0%		0.00	0%
Inhalation		0.05	1%		0.05	1%
Water Ingestion		0.64	13%		0.64	8%
Food Ingestion, child		0.54	11%		0.54	7%
Food Ingestion	0.0E+0	0.00	0%		0.00	0%

TABLE T1-4

PREDICTED BLOOD LEAD LEVELS

TRESPASSER WORKER EXPOSURE SCENARIO

USER'S GUIDE **to version 7**

INPUT	
MEDIUM	LEVEL
Lead in Air (ug/m^3)	0.028
Lead in Soil/Dust (ug/g)	495
Lead in Water (ug/l)	10
% Home-grown Produce	0%
Respirable Dust (ug/m^3)	1.5

OUTPUT							
	Percentile Estimate of Blood Pb (ug/dl)					PRG-99	PRG-95
	50th	90th	95th	98th	99th	(ug/g)	(ug/g)
BLOOD Pb, ADULT	0.8	1.5	1.7	2.1	2.4	585367	879339
BLOOD Pb, CHILD	2.1	3.9	4.6	5.6	6.4	36387	74462
BLOOD Pb, PICA CHILD	2.2	3.9	4.7	5.7	6.4	18320	37490
BLOOD Pb, OCCUPATIONAL	1.1	2.1	2.5	3.0	3.4	3889	5867

EXPOSURE PARAMETERS			
	units	adults	children
Days per week	days/wk	**0.033**	
Days per week, occupational		5	
Geometric Standard Deviation		1.6	
Blood lead level of concern (ug/dl)		10	
Skin area, residential	cm^2	5700	**4600**
Skin area occupational	cm^2	3300	
Soil adherence	ug/cm^2	70	**200**
Dermal uptake constant	(ug/dl)/(ug/day)	0.00011	
Soil ingestion	mg/day	50	**100**
Soil ingestion, pica	mg/day		200
Ingestion constant	(ug/dl)/(ug/day)	0.04	**0.16**
Bioavailability	unitless	0.44	
Breathing rate	m^3/day	20	**12.5**
Inhalation constant	(ug/dl)/(ug/day)	0.082	**0.192**
Water ingestion	l/day	1.4	**0.7**
Food ingestion	kg/day	1.9	**1.9**
Lead in market basket	ug/kg	3.1	
Lead in produce	ug/kg	222.8	

PATHWAYS						
ADULTS	Residential			Occupational		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	2.0E-7	0.00	0%	1.7E-5	0.01	1%
Soil Ingestion	4.1E-6	0.00	0%	6.3E-4	0.31	27%
Inhalation1		0.00	0%		0.03	3%
Inhalation	1.2E-8	0.00	0%	1.8E-6	0.00	0%
Water Ingestion		0.56	70%		0.56	49%
Food Ingestion1		0.23	29%		0.23	20%
Food Ingestion	0.0E+0	0.00	0%			0%

CHILDREN	typical			with pica		
	Pathway contribution			Pathway contribution		
Pathway	PEF	ug/dl	percent	PEF	ug/dl	percent
Soil Contact	4.6E-7	0.00	0%		0.00	0%
Soil Ingestion	3.3E-5	0.02	1%	6.6E-5	0.03	2%
Inhalation1	7.1E-9	0.00	0%		0.00	0%
Inhalation		0.07	3%		0.07	3%
Water Ingestion		1.12	52%		1.12	52%
Food Ingestion, child		0.93	44%		0.93	43%
Food Ingestion	0.0E+0	0.00	0%		0.00	0%