51	Adjusted Level of Significance					0.0122	Adjusted Chi Square Value					6.697
52												
53	**Assuming Gamma Distribution**											
54	95% Approximate Gamma UCL (use when n>=50))					72.21	95% Adjusted Gamma UCL (use when n<50)					94.24
55												
56	**Lognormal GOF Test**											
57	Shapiro Wilk Test Statistic					0.789	**Shapiro Wilk Lognormal GOF Test**					
58	5% Shapiro Wilk Critical Value					0.788	Data appear Lognormal at 5% Significance Level					
59	Lilliefors Test Statistic					0.341	**Lilliefors Lognormal GOF Test**					
60	5% Lilliefors Critical Value					0.362	Data appear Lognormal at 5% Significance Level					
61	**Data appear Lognormal at 5% Significance Level**											
62												
63	**Lognormal Statistics**											
64	Minimum of Logged Data					2.14	Mean of logged Data					3.406
65	Maximum of Logged Data					4.025	SD of logged Data					0.786
66												
67	**Assuming Lognormal Distribution**											
68	95% H-UCL					137.4	90% Chebyshev (MVUE) UCL					75.65
69	95% Chebyshev (MVUE) UCL					92.4	97.5% Chebyshev (MVUE) UCL					115.7
70	99% Chebyshev (MVUE) UCL					161.3						
71												
72	**Nonparametric Distribution Free UCL Statistics**											
73	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
74												
75	**Nonparametric Distribution Free UCLs**											
76	95% CLT UCL					50.37	95% Jackknife UCL					53.39
77	95% Standard Bootstrap UCL					49.4	95% Bootstrap-t UCL					50.28
78	95% Hall's Bootstrap UCL					45.42	95% Percentile Bootstrap UCL					49.33
79	95% BCA Bootstrap UCL					47.17						
80	90% Chebyshev(Mean, Sd) UCL					61.45	95% Chebyshev(Mean, Sd) UCL					72.56
81	97.5% Chebyshev(Mean, Sd) UCL					87.99	99% Chebyshev(Mean, Sd) UCL					118.3
82												
83	**Suggested UCL to Use**											
84	95% Student's-t UCL					53.39						
85												
86	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
87	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
88	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
89	For additional insight the user may want to consult a statistician.											
90												
91	**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**											
92	**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**											
93												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	12/22/2015 10:37:06 AM
From File	Metals.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

V

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	12	Mean	43.5
Maximum	68	Median	47.5
SD	23.04	Std. Error of Mean	9.405
Coefficient of Variation	0.53	Skewness	-0.421

Note: Sample size is small (e.g., <10), If data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.169	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.45	95% Adjusted-CLT UCL (Chen-1995)	57.24
		95% Modified-t UCL (Johnson-1978)	62.18

Gamma GOF Test

A-D Test Statistic	0.4	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.701	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.334	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.141	k star (bias corrected MLE)	1.682
Theta hat (MLE)	13.85	Theta star (bias corrected MLE)	25.87
nu hat (MLE)	37.69	nu star (bias corrected)	20.18
MLE Mean (bias corrected)	43.5	MLE Sd (bias corrected)	33.54
		Approximate Chi Square Value (0.05)	10.98

Adjusted Level of Significance	0.0122	Adjusted Chi Square Value 8.642
Assuming Gamma Distribution		
95% Approximate Gamma UCL (use when n>=50))	79.92	95% Adjusted Gamma UCL (use when n<50) 101.6
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.872	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.242	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.362	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	2.485	Mean of logged Data 3.605
Maximum of Logged Data	4.22	SD of logged Data 0.696
Assuming Lognormal Distribution		
95% H-UCL	125.3	90% Chebyshev (MVUE) UCL 82.75
95% Chebyshev (MVUE) UCL	99.95	97.5% Chebyshev (MVUE) UCL 123.8
99% Chebyshev (MVUE) UCL	170.7	
Nonparametric Distribution Free UCL Statistics		
Data appear to follow a Discernible Distribution at 5% Significance Level		
Nonparametric Distribution Free UCLs		
95% CLT UCL	58.97	95% Jackknife UCL 62.45
95% Standard Bootstrap UCL	57.89	95% Bootstrap-t UCL 60.12
95% Hall's Bootstrap UCL	53.93	95% Percentile Bootstrap UCL 57.17
95% BCA Bootstrap UCL	56.33	
90% Chebyshev(Mean, Sd) UCL	71.71	95% Chebyshev(Mean, Sd) UCL 84.49
97.5% Chebyshev(Mean, Sd) UCL	102.2	99% Chebyshev(Mean, Sd) UCL 137.1
Suggested UCL to Use		
95% Student's-t UCL	62.45	

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	12/22/2015 10:37:43 AM
From File	Metals.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Zn

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	16	Mean	51.67
Maximum	92	Median	55
SD	32.18	Std. Error of Mean	13.14
Coefficient of Variation	0.623	Skewness	-0.0317

Note: Sample size is small (e.g., <10), If data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.891	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.14	95% Adjusted-CLT UCL (Chen-1995)	73.1
		95% Modified-t UCL (Johnson-1978)	78.11

Gamma GOF Test

A-D Test Statistic	0.472	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.269	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.466	k star (bias corrected MLE)	1.344
Theta hat (MLE)	20.95	Theta star (bias corrected MLE)	38.44
nu hat (MLE)	29.59	nu star (bias corrected)	16.13
MLE Mean (bias corrected)	51.67	MLE Sd (bias corrected)	44.57
		Approximate Chi Square Value (0.05)	8.053

Adjusted Level of Significance	0.0122	Adjusted Chi Square Value 6.108
Assuming Gamma Distribution		
95% Approximate Gamma UCL (use when n>=50))	103.5	95% Adjusted Gamma UCL (use when n<50) 136.4
Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.852	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.788	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.362	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		
Lognormal Statistics		
Minimum of Logged Data	2.773	Mean of logged Data 3.729
Maximum of Logged Data	4.522	SD of logged Data 0.772
Assuming Lognormal Distribution		
95% H-UCL	180.8	90% Chebyshev (MVUE) UCL 102.6
95% Chebyshev (MVUE) UCL	125.1	97.5% Chebyshev (MVUE) UCL 156.4
99% Chebyshev (MVUE) UCL	217.8	
Nonparametric Distribution Free UCL Statistics		
Data appear to follow a Discernible Distribution at 5% Significance Level		
Nonparametric Distribution Free UCLs		
95% CLT UCL	73.28	95% Jackknife UCL 78.14
95% Standard Bootstrap UCL	70.93	95% Bootstrap-t UCL 80.95
95% Hall's Bootstrap UCL	67.07	95% Percentile Bootstrap UCL 71.17
95% BCA Bootstrap UCL	69.83	
90% Chebyshev(Mean, Sd) UCL	91.08	95% Chebyshev(Mean, Sd) UCL 108.9
97.5% Chebyshev(Mean, Sd) UCL	133.7	99% Chebyshev(Mean, Sd) UCL 182.4
Suggested UCL to Use		
95% Student's-t UCL	78.14	
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.		
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)		
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.		
For additional insight the user may want to consult a statistician.		
Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be		
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.		

APPENDIX D

Boring Logs

DRILL/LITHOLOGIC LOG

HILLMANN CONSULTING

BORING/WELL NUMBER B7

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 15 Feet
SURFACE ELEVATION
DEPTH TO WATER 8 Feet
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5			2.4	B7-5		SM	Silty SAND; dark brown, very fine grained, loose, some concrete and brick debris, no odor.
10			<1	B7-10	5/7/10	CL	Silty CLAY; brown, low plasticity, 10% fine gravel, moist, no odor.
15			<1	B7-15	13/15/18	CL	Silty CLAY; dark brown, low plasticity, dense, moist, no odor. Set temporary casing to allow for groundwater accumulation. Groundwater accumulated at about 8 feet bgs. Collect groundwater sample, seal with bentonite to 5 feet. Install Soil Gas Probe SG1 at 5 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.
20							

DRILL/LITHOLOGIC LOG

HILLMANN CONSULTING

BORING/WELL NUMBER B8

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5			1.2	B8-5		SM	Silty SAND; dark brown, very fine grained, loose, 10% fine gravel, no odor.
10			<1	B8-10	8/13/18	ML	Sandy SILT; reddish gray, very fine to fine sand, low plasticity, dense, some clay, dry, no odor.
15			<1	B8-15	10/18/26	CL	Silty CLAY; brown, low plasticity, dense, some gray staining, moist, no odor. Sampler wet, no water accumulation.
20			<1	B8-20	10/24/35	CL	Silty CLAY; brown, low plasticity, very moist, no odor. Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 5 feet. Install Soil Gas Probe SG2 at 5 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER B9

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5			1.1	B9-5		SM	Silty SAND; brown, very fine grained, loose, 20% fine gravel, dry, no odor.
10			<1	B9-10	10/14/18	CL	Silty CLAY; brown, low plasticity, hard, no odor.
15			<1	B9-15	28/24/20	CL	Sandy CLAY; brown, low plasticity, dense, 25% fine to coarse gravel, dry, no odor.
20			<1	B9-20	50/50	SM	Silty SAND; brown, very fine to fine grained, 25% fine gravel, some clay, very hard, no odor. Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 10 feet. Install Soil Gas Probe SG3 at 10 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

DRILL/LITHOLOGIC LOG

HILLMANN CONSULTING

BORING/WELL NUMBER B10

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER 12 Feet
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5			<1	B10-5	18/20/29	SM	Silty SAND; brown, very fine grained, very hard, some fine gravel, dry, no odor.
10			<1	B10-10	50/50	SM	Silty SAND; brown, very fine grained, very hard, 20% fine gravel, dry, no odor.
15			<1	B10-15	17/22/32	SM	Silty SAND; brown, very fine grained, hard, some clay, dry, no odor.
20			<1	B10-20	50/50	ML	SILT; brown, low plasticity, 20% fine gravel, some sand, very hard, no odor. Set temporary casing to allow for groundwater accumulation. Groundwater accumulated at about 12 feet bgs. Collect groundwater sample, seal with bentonite to 5 feet. Install Soil Gas Probe SG4 at 5 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

HILLMANN CONSULTING

DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER B11

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5							
10							Silty SAND Fill.
15			<1	B11-15	18/20/25	CL	Silty CLAY; light brown, low plasticity, hard, no odor.
20			<1	B11-20	15/22/25	ML	Clayey, Sandy, SILT; brown, low plasticity, very hard, no odor.
							Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 10 feet. Install Soil Gas Probe SG5 at 10 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER B12

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5							
6			2.4	B12-6		CL	Silty CLAY; dark gray, medium plasticity, very slight petroleum odor.
10			1.2	B12-10	15/21/30	CL	Gravelly CLAY; gray/brown, low plasticity, very fine to coarse gravel, no odor.
15			0.4	B12-15	12/14/18	CL	Gravelly CLAY; dark gray, low plasticity, very fine to coarse gravel, no odor.
							Very dense. Refusal at 17 feet – boulder.
20							Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 15 feet. Install Soil Gas Probe SG6 at 15 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

DRILL/LITHOLOGIC LOG

HILLMANN CONSULTING

BORING/WELL NUMBER B13

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 30 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5							
10							
15			<1	B13-15	10/15/26	CL	Gravelly, Silty CLAY; dark brown, low plasticity, 20% fine gravel, no odor.
20			<1	B13-20	15/28/21	SM	Silty SAND; greenish-gray, very fine to fine grained, 25% fine gravel, some clay, no odor.
25			<1	B13-25	17/25/45	CL	Silty CLAY; brown, low plasticity, very hard, moist, no odor.
30			<1	B13-30	18/36/50	CL	Silty CLAY; dark gray, low plasticity, semi-consolidated, dry, no odor. Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 10 feet. Install Soil Gas Probe SG7 at 10 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

HILLMANN CONSULTING

DRILL/LITHOLOGIC LOG

BORING/WELL NUMBER B14

PROJECT Commercial Property
OWNER
LOCATION 29508 Roadside Drive, Agoura Hills, CA
PROJECT NUMBER
DATE DRILLED June 11, 2015
TOTAL DEPTH OF HOLE 20 Feet
SURFACE ELEVATION
DEPTH TO WATER
SCREEN: DIA. **LENGTH** **SLOT SIZE**
CASING: DIA. **LENGTH** **TYPE**
DRILLING COMPANY Aztech Drilling
DRILL METHOD HSA
DRILLER Gilbert
LOG BY Dan Louks

DEPTH (FEET)	WELL CONST		PID (PPM)	SAMPLES		SOIL CLASS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)
	PIPE	FILL		NUMBER	BLOW	(USCS)	
5							
10							Silty SAND Fill.
15			<1	B14-15	11/17/21	ML	Clayey, Sandy, SILT; brown, low plasticity, very hard, no odor.
20			<1	B14-20	12/20/35	CL	Silty CLAY; brown, low plasticity, some very fine sand, hard, no odor.
							Set temporary casing to allow for groundwater accumulation. No groundwater. Seal with bentonite to 10 feet. Install Soil Gas Probe SG8 at 10 feet bgs. Seal with bentonite. Sample soil gas on 6/15/15.

APPENDIX E

Johnson & Ettinger Model Results
Residential Scenario

USEPA GW-SCREEN
Version 3.0, 04/2003

DTSC Modification
December 2014

Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **1,2,4-Trimethylbenzene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.22E+03	6.2E-05	7.6E-02	NA	1.0E-02	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
95636	8.10E+00	1,2,4-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

USEPA GW-SCREEN
Version 3.0, 04/2003

DTSC Modification
December 2014

Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **1,3,5-Trimethylbenzene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.10E+03	6.0E-05	6.5E-02	NA	1.8E-03	NA	NA

MESSAGE: Risk and/or HQ (or risk-based groundwater concentration) is based on route-to-route extrapolation.
MESSAGE: Attenuation factor < 6E-05 is unreasonably low.

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
108678	5.10E+00	1,3,5-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

USEPA GW-SCREEN
Version 3.0, 04/2003

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DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **Benzene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.57E+03	8.9E-05	1.4E-01	1.4E-06	4.5E-02	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
71432	9.80E+00	**Benzene**

MESSAGE: See VLOOKUP table comments on chemical properties and/or toxicity criteria for this chemical.

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

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Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **Ethylbenzene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.28E+03	6.8E-05	8.7E-02	7.7E-08	8.3E-05	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
100414	6.20E+00	Ethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

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Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **m-Xylene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
8.26E+03	6.8E-05	5.6E-01	NA	5.4E-03	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
108383	4.40E+01	m-Xylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

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Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **o-Xylene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
2.42E+03	7.1E-05	1.7E-01	NA	1.7E-03	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
95476	1.80E+01	o-Xylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

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Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **p-Xylene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
7.94E+03	6.8E-05	5.4E-01	NA	5.2E-03	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
106423	4.40E+01	p-Xylene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

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Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Residential**
Chemical: **Toluene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.04E+04	4.0E-04	4.2E+00	NA	1.3E-02	NA	NA

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
108883	5.70E+01	Toluene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	S	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	1.0E-06	1	70	26	26	350	24 (NEW)	0.5 (NEW)
	Used to calculate risk-based groundwater concentration.							

END

APPENDIX F

Johnson & Ettinger Model Results
Commercial Scenario

USEPA GW-SCREEN
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Department of Toxic Substances Control
Vapor Intrusion Screening Model - Groundwater

DATA ENTRY SHEET

Scenario: **Commercial**
Chemical: **1,2,4-Trimethylbenzene**

Reset to Defaults

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

YES [ ]

OR

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

YES [X]

Results Summary					Risk-Based Groundwater Concentration	
Soil Gas Conc. (C_{source}) ($\mu g/m^3$)	Attenuation Factor (alpha) (unitless)	Indoor Air Conc. ($C_{building}$) ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard	Cancer Risk = 10^{-6} ($\mu g/L$)	Noncancer HQ = 1 ($\mu g/L$)
1.22E+03	3.1E-05	3.8E-02	NA	1.2E-03	NA	NA

MESSAGE: Attenuation factor < 6E-05 is unreasonably low.

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W ($\mu g/L$)	Chemical
95636	8.10E+00	1,2,4-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	244	SL	17	5

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil)	ENTER Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	ENTER Vadose zone soil total porosity, n^v (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SL			SL	1.62	0.387	0.103

MORE ↓

Lookup Receptor Parameters

	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	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 Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Commercial	1.0E-06	1	70	25	25	250	8 (NEW)	1 (NEW)
	Used to calculate risk-based groundwater concentration.							

END