

This page contains the risk values assigned to various risk factors and used to assess risk. They may be adjusted as appropriate.

The formula used to derive a number for ranking risk is

$$Risk = A \times B \times C \times D \times E \times F \times G \times H \times I \times J \times K \times L \times M \times N \times O \times P \times Q / R$$



The values assigned to any of these factors may be changed to reflect the unique needs and circumstances at each facility

Risk Factor		Value	
A	PID Readings	0-1.77 ppm	1
		1.77-3 ppm	1
		>3 ppm	3
B	Crack Opening	Sealed	1
		0-4.83 sq feet	3
		4.84-8.9 sq feet	5
		>9 sq feet	7
C	Floor Penetrations	Sealed	1
		0-100 sq feet	3
		100-500 sq feet	5
		>500 sq feet	7
D	Pressure Differential	Positive	1
		Neutral	3
		Negative	5
E	Temperature Variance	0 - 5.5 °F	1
		5.5 - 8.2 °F	2
		>8.2 °F	4
F	Carbon Dioxide Concentrations	0-100	1
		100-400	1
		400-600	2
		>600	2
G	Relative Humidity	25-50%	2
		50-75%	1
		75-100%	1
H	Air Velocity	0- 22 ft/min	4
		22-50 ft/min	1
		>50 ft/min	1
I	Proximity of Max Soil Conc	0-50 ft	8
		50-100 ft	5
		100-150 ft	3
		>150	2
J	Proximity to Max Soil Vapor	0-50 ft	10
		50-100 ft	7
		100-150 ft	5
		>150	2
K	Inside/Outside Vapor Plume	Outside	1
		Inside	9
L	Temperature Controlled	Yes	2
		No	7
M	% Volume Air Turnover	0 - 2.41	6
		2.42 - 5.43	3
		5.44 - 7.66	3
		7.67 - 14.33	1
		>14.33	1
N	Human Activity	Active 3 Shifts	8
		Active 2 Shifts	8
		Active 1 Shift	5
		Occasional	3
		Infrequent	2
O	Population Density When Active	0 - 5	3
		5 - 25	5
		25 or more	8
P	Proximity to chemicals, VOCs used	0-50 ft	1
		51-100 ft	1
		101-150 ft	1
		>150	1
Q	Subslab Soil Type	Silty or Sandy Gravel	4
		Silty Sand	3
		Sandy Silt	2
		Silty or Sandy Clay	1
R	Normalizing factor		100000

RISK MATRIX RESULTS SUMMARY

Rank	Sample Location	Value
1	SP2	365786
2	SP1	365786
3	ASS-08-0278	261276
4	ASS-08-0296	195087
5	ASS-08-0622	43548
6	W1	47778
7	W2	37327
8	ASS-08-0282	30484
9	WIN-08-0016	19909
10	WIN-08-0003	19909
11	ASS-08-0322	19054
12	ASS-08-0336	16006
13	ASS-08-0290	15243
14	ASS-08-0612	13999
15	CAFETERIA	11946
16	ASS-08-0355	11910
17	WIN-08-0004	9956
18	ASS-08-0621	7001
19	ASS-08-0294	6776
20	WIN-08-0109	5228
21	ASS-08-0319	5003
22	SHIPPING	4901
23	ASS-08-0300	4765
24	W3	3735
25	WIN-08-0006	3735
26	SP3	2712
27	WIN-08-0019	2491
28	ASS-08-0613	2335
29	C3	1899
30	WIN-08-0112	749
31	CAF-08-0128	749
32	CAF-08-0126	666
33	W4	666
34	CAS-08-0203	635
35	AST-08-0273	511
36	AST-08-0265	511
37	WIN-08-0103	469
38	CAS-08-0215	409
39	CAS-08-0171	365
40	CAS-08-0179	341
41	CAF-08-0127	334
42	C2	307
43	COR-08-0387	307
44	COR-08-0402	293
45	CAS-08-0428	273
46	CAS-08-0197	240
47	CAS-08-0499	228
48	COR-08-0407	148
49	WIN-08-0049	135
50	C1	132

RISK MATRIX RESULTS SUMMARY

Rank	Sample Location	Value
51	AST-08-0253	104
52	CAS-08-0516	93
53	AST-08-0248	90
54	WIN-08-055	85
55	SHI-08-0521	84
56	SHI-08-0543	75
57	CAS-08-0452	51
58	INS-08-0581	51
59	CAS-08-0195	51
60	INSULATION	37
61	CAS-08-0164	36
62	WIN-08-0081	30
63	CAS-08-0206	25
64	INS-08-0611	18
65	WIN-08-0062	12
66	CAS-08-0416	9
67	ADM-08-0668	9
68	SHI-08-0555	9
69	FRONT OFFICES	8
70	WIN-08-0040	8
71	WIN-08-0117	7
72	INS-08-0592	6
73	ADM-08-0657	6
74	WIN-08-0082	6
75	CAS-08-0411	6
76	WIN-08-0045	5
77	WIN-08-0119	5
78	WIN-08-0118	4
79	SHI-08-0565	4
80	ADM-08-0669	4
81	ADM-08-0631	3
82	ADM-08-0680	3
83	INS-08-0580	3
84	ADM-08-0306	3
85	WIN-08-0097	3

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Area Area ID Source Classes

Risk Factors Score Rank

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	SP1	1, 2, 3, 5, 8, 10, 11, 12, 14, 17	1	1	1	1	1.2E+05	PID Readings >3 ppm Crack Opening >9 sq feet Floor Penetrations 0-100 sq feet Pressure Differential Negative Temperature Variance >8.2 ofF Carbon Dioxide Concentrations 400-600 Relative Humidity 50-75% Air Velocity 0-22 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Inside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 5 - 25 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	365786	1

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Area Area ID Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	SP2	1, 2, 3, 7, 8, 12, 13, 14, 16, 17, 18, 20	1	1	1	1	1.2E+05	PID Readings >3 ppm Crack Opening 4.84-8.9 sq feet Floor Penetrations >500 sq feet Pressure Differential Negative Temperature Variance >8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 75-100% Air Velocity 0-22 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Inside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 0 - 5 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	3.66E+05	1

Vapor Intrusion Area Risk Evaluation



Significance (Risk)

Resources

Control

Frequency of Impact

Degree of Impact

Source Classes

Area ID

Area

Rank

Score

Risk Factors

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	SP3	1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17	1	1	1	1	9.0E+02	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	2.71E+03	17
								> 3 ppm 4.84-8.9 sq feet >500 sq feet Negative >8.2 of 400-600 75-100% 0- 22 ft/min > 150 >150 Outside No 2.42 - 5.43 Active 3 Shifts 25 or more 0-50 ft Silty or Sandy Clay		

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
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Area Area ID Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0336	8	1	1	1	1	5.3E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	> 3 ppm 0-4.83 sq feet >500 sq feet Negative 5.5 - 8.2 of 100-400 50-75% >50 ft/min 0-50 ft 50-100 ft Inside No 2.42 - 5.43 Active 3 Shifts 5 - 25 0-50 ft Sandy Silt	1.60E+04	8

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
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Frequency of Impact
Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	ASS-08-0282	8	1	1	1	1	1.0E+04	PID Readings > 3 ppm Crack Opening > 9 sq feet Floor Penetrations Sealed Pressure Differential Negative Temperature Variance > 8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 50-75% Air Velocity 22-50 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Inside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 5 - 25 Proximity to chemicals, VOCs used 51-100 ft Subslab Soil Type Sandy Silt	3.05E+04	6

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	ASS-08-0294	8	1	1	1	1	2.3E+03	PID Readings >3 ppm Crack Opening >9 sq feet Floor Penetrations Sealed Pressure Differential Negative Temperature Variance >8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 50-75% Air Velocity 0-22 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Outside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 5 - 25 Proximity to chemicals, VOCs used 51-100 ft Subslab Soil Type Silty or Sandy Clay	6.78E+03	13

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
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Frequency of Impact
Degree of Impact

Area ID Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0300	8	1	1	1	1	1.6E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	> 3 ppm 4.84-8.9 sq feet Sealed Negative >8.2 of 100-400 50-75% >50 ft/min 50-100 ft 50-100 ft Inside No 2.42 - 5.43 Active 3 Shifts 5 - 25 0-50 ft Sandy Silt	4.77E+03	16

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
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Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	ASS-08-0319	8	1	1	1	1	1.7E+03	PID Readings >3 ppm Crack Opening 0-4.83 sq feet Floor Penetrations >500 sq feet Pressure Differential Negative Temperature Variance 0 - 5.5 of Carbon Dioxide Concentrations 100-400 Relative Humidity 50-75% Air Velocity >50 ft/min Proximity of Max Soil Conc 50-100 ft Proximity to Max Soil Vapor 50-100 ft Inside/Outside Vapor Plume Inside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 5 - 25 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	5.00E+03	14

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
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Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	ASS-08-0278	8	1	1	1	1	8.7E+04	PID Readings > 3 ppm Crack Opening 4.84-8.9 sq feet Floor Penetrations 0-100 sq feet Pressure Differential Negative Temperature Variance >8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 50-75% Air Velocity 0- 22 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Inside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 5 - 25 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	2.61E+05	3

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
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Frequency of Impact
Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0290	8	1	1	1	1	5.1E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	>3 ppm >9 sq feet Sealed Negative >8.2 of 100-400 50-75% >50 ft/min 0-50 ft 0-50 ft Inside No 2.42 - 5.43 Active 3 Shifts 5 - 25 0-50 ft Sandy Silt	1.52E+04	9

Vapor Intrusion Area Risk Evaluation



Significance (Risk)

Resources

Control

Frequency of Impact

Degree of Impact

Source Classes

Area ID

Area

Risk Factors

Score

Rank

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0322	8	1	1	1	1	6.4E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	>3 ppm 4.84-8.9 sq feet >500 sq feet Negative 0 - 5.5 of 100-400 75-100% >50 ft/min 0-50 ft 0-50 ft Inside No 2.42 - 5.43 Active 3 Shifts 5 - 25 0-50 ft Sandy Silt	1.91E+04	7

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0355	8	1	1	1	1	4.0E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	>3 ppm 4.84-8.9 sq feet >500 sq feet Negative 5.5 - 8.2 of 100-400 50-75% >50 ft/min 50-100 ft 100-150 ft Inside No 2.42 - 5.43 Active 3 Shifts 5 - 25 0-50 ft Sandy Silt	1.19E+04	11

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Area Area ID Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0612	8	1	1	1	1	4.7E+03	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	1.77-3 ppm 4.84-8.9 sq feet 0-100 sq feet Negative 5.5 - 8.2 of >600 50-75% 0- 22 ft/min 0-50 ft 0-50 ft Inside Yes 0 - 2.41 Active 1 Shift 0 - 5 0-50 ft Silty Sand	1.40E+04	10

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
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Degree of Impact

Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0613	8	1	1	1	1	7.8E+02	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	1.77-3 ppm 4.84-8.9 sq feet 0-100 sq feet Negative 5.5 - 8.2 of 0-100 50-75% 0- 22 ft/min 0-50 ft 0-50 ft Inside Yes 2.42 - 5.43 Active 1 Shift 0 - 5 0-50 ft Sandy Silt	2.34E+03	18

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
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Frequency of Impact
Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	ASS-08-0621	8	1	1	1	1	2.3E+03	PID Readings > 3 ppm Crack Opening 4.84-8.9 sq feet Floor Penetrations 0-100 sq feet Pressure Differential Negative Temperature Variance 5.5 - 8.2 of Carbon Dioxide Concentrations >600 Relative Humidity 50-75% Air Velocity 22-50 ft/min Proximity of Max Soil Conc 0-50 ft Proximity to Max Soil Vapor 0-50 ft Inside/Outside Vapor Plume Inside Temperature Controlled Yes % Volume Air Turnover 0 - 2.41 Human Activity Active 1 Shift Population Density When Active 0 - 5 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	7.00E+03	12

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
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Degree of Impact

Area
Area ID
Source Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank	
South Plant	ASS-08-0622	8	1	1	1	1	1.5E+04	PID Readings Crack Opening Floor Penetrations Pressure Differential Temperature Variance Carbon Dioxide Concentrations Relative Humidity Air Velocity Proximity of Max Soil Conc Proximity to Max Soil Vapor Inside/Outside Vapor Plume Temperature Controlled % Volume Air Turnover Human Activity Population Density When Active Proximity to chemicals, VOCs used Subslab Soil Type	1.77-3 ppm 4.84-8.9 sq feet 0-100 sq feet Negative 5.5 - 8.2 of 400-600 50-75% 0- 22 ft/min 0-50 ft 0-50 ft Inside No 0 - 2.41 Infrequent 5 - 25 0-50 ft Silty or Sandy Gravel	4.35E+04	5

Vapor Intrusion Area Risk Evaluation



Significance (Risk)
Resources
Control
Frequency of Impact
Degree of Impact

Source
Classes

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	AST-08-0248	8	1	1	1	1	2.9E+01	PID Readings > 3 ppm Crack Opening 0-4.83 sq feet Floor Penetrations Sealed Pressure Differential Negative Temperature Variance 5.5 - 8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 75-100% Air Velocity 0- 22 ft/min Proximity of Max Soil Conc > 150 Proximity to Max Soil Vapor > 150 Inside/Outside Vapor Plume Outside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 0 - 5 Proximity to chemicals, VOCs used 101-150 ft Subslab Soil Type Sandy Silt	9.00E+01	25

Vapor Intrusion Area Risk Evaluation



Significance (Risk)

Resources

Control

Frequency of Impact

Degree of Impact

Source Classes

Area ID

Area

Rank

Score

Risk Factors

Area	Area ID	Source Classes	Degree of Impact	Frequency of Impact	Control	Resources	Significance (Risk)	Risk Factors	Score	Rank
South Plant	AST-08-0253	8	1	1	1	1	3.4E+01	PID Readings > 3 ppm Crack Opening > 9 sq feet Floor Penetrations Sealed Pressure Differential Negative Temperature Variance > 8.2 of Carbon Dioxide Concentrations 400-600 Relative Humidity 50-75% Air Velocity 22-50 ft/min Proximity of Max Soil Conc > 150 Proximity to Max Soil Vapor > 150 Inside/Outside Vapor Plume Outside Temperature Controlled No % Volume Air Turnover 2.42 - 5.43 Human Activity Active 3 Shifts Population Density When Active 0 - 5 Proximity to chemicals, VOCs used 0-50 ft Subslab Soil Type Sandy Silt	1.04E+02	24