

APPENDIX C.7

Checklist for Determining if the Volatilization to Indoor Air Pathway Screening Levels Apply

Proposed May 12, 2020

1 **APPENDIX C.7**

2
3 **BACKGROUND**

4
5 **Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels** (Table 1) are
6 calculated based on unrestricted residential use of a property. The building input parameters
7 assume a residential structure that has a basement with poured concrete floor, block or poured
8 concrete walls, and has less than 6 floors (i.e. not a high-rise apartment).

9
10 Submittals relying on the residential VIAP screening levels (Table 1) must contain
11 documentation that supports the screening levels are appropriate for conditions at the site. The
12 following building construction characteristics are not consistent with the residential VIAP
13 screening levels and therefore the screening levels do not apply when:

- 14 • There is not a poured concrete floor, block or poured concrete wall in a basement
- 15 • There is a slab-on-grade foundation
- 16 • There is a crawl space foundation, with dirt floor or poured concrete slab
- 17 • There are 6 or more floors (including basements)
- 18 • There are other building characteristics not consistent with the basic assumptions

19
20 The shallow groundwater VIAP screening levels must be used for a residential structure with a
21 basement when the depth to first encountered groundwater is 10 feet below ground surface or
22 less.

23
24 Soil VIAP screening levels were developed using inputs for the United States Department of
25 Agriculture (USDA) soil type of sand and are considered appropriate for all other USDA soil
26 types.

27
28 The soil vapor VIAP screening levels may be used to evaluate representative sub-slab soil vapor
29 and exterior soil gas data. However, the screening levels are not applicable when the vapor
30 source is shallower than the depth of sample collection and do not account for preferential
31 vapor migration pathways through the vadose zone.

32
33 **Nonresidential VIAP Screening Levels** (Table 2) are calculated based on restricted
34 nonresidential use of a property. The building input parameters assume a nonresidential
35 structure that has a poured concrete slab-on-grade and has less than 50,000 ft² of continuously
36 open space.

37
38 Submittals relying on the nonresidential VIAP screening levels (Table 2) must contain
39 documentation that supports the screening levels are appropriate for conditions at the site. The
40 following building construction characteristics are not consistent with the nonresidential VIAP
41 screening levels and therefore the values do not apply when:

- 42 • The structure has > 50,000 ft² of continuously open space with no areas < 50,000 ft²
- 43 • There is a basement

- 44 • There is a below grade pit, crawlspace (with dirt floor or poured concrete slab), or
- 45 elevator shafts that extend below grade such that conditions do not meet the
- 46 assumptions of a slab-on-grade
- 47 • There is a combination of foundation types
- 48 • The structure is a former residential structure that is now a nonresidential use
- 49 • There are other building characteristics not consistent with the basic assumptions

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51 The shallow groundwater VIAP screening levels must be used for a nonresidential structure that
52 has less than 50,000 ft² of continuously open space with a slab-on-grade when the depth to first
53 encountered groundwater is 5 feet below ground surface or less.

54

55 Soil VIAP screening levels were developed using inputs for the USDA soil type of sand and are
56 considered acceptable for all other USDA soil types.

57

58 The soil vapor VIAP screening levels may be used to evaluate representative sub-slab soil vapor
59 and exterior soil gas data. However, the screening levels are not applicable when the vapor
60 source is shallower than the depth of sample collection and do not account for preferential
61 vapor migration pathways through the vadose zone.

VOLATILIZATION TO INDOOR AIR PATHWAY SCREENING LEVELS ASSESSMENT

The following checklist will assist in documenting if site conditions allow the use of the Volatilization to Indoor Air Pathway (VIAP) Screening Levels or if the development of site-specific criteria or site-specific target levels (SSTLs) is necessary:

VIAP SCREENING LEVEL ASSESSMENT			
<p>Residential VIAP Screening Levels (Table 1) are calculated based on unrestricted residential use of a property. The building input parameters assume a residential structure with a basement.</p>			
CSM SUPPORTS	PAGE NUMBER	ADDITIONAL INFO NEEDED	RESIDENTIAL VIAP SCREENING LEVEL ASSESSMENT
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there is a poured concrete floor, block or poured concrete wall in a basement? <i>If no, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there a slab-on-grade foundation? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there a crawl space foundation, with dirt floor or poured concrete slab? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is the structure a high-rise apartment with 6 or more floors (including a basement)? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there any other building construction inconsistent with the residential structure assumptions? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is the depth to first encountered groundwater, considering seasonal variation, ≤ 10 feet? <i>If yes, shallow groundwater VIAP screening levels must be used or site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is the depth to first encountered groundwater, considering seasonal variation, > 10 feet? <i>If yes, groundwater not in contact VIAP screening levels may be used or site-specific criteria or SSTLs must be developed.</i>
<p>Nonresidential VIAP Screening Levels (Table 2) are calculated based on restricted nonresidential use of a property. The building input parameters assume a nonresidential structure that has a poured concrete slab-on-grade and has less than 50,000 ft² of continuously open space.</p>			
CSM SUPPORTS	PAGE NUMBER	ADDITIONAL INFO NEEDED	NONRESIDENTIAL VIAP SCREENING LEVEL ASSESSMENT
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is the structure > 50,000 ft ² of continuously open space with no areas < 50,000 ft ² ? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there a basement? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there a below grade pit, crawlspace (with dirt floor or poured concrete slab), or elevator shaft that extend below grade such that conditions do not meet the assumptions of a slab-on-grade? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there a combination of foundation types? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is the structure a former residential structure that is now a nonresidential use? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is there any other building construction inconsistent with the nonresidential structure assumptions? <i>If yes, site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is depth to first encountered groundwater, considering seasonal variation, ≤ 5 feet? <i>If yes, shallow groundwater VIAP screening levels must be used or site-specific criteria or SSTLs must be developed.</i>
Yes <input type="checkbox"/> No <input type="checkbox"/>		<input type="checkbox"/>	Is depth to first encountered groundwater, considering seasonal variation, > 5 feet? <i>If yes, groundwater not in contact VIAP screening levels may be used or site-specific criteria or SSTLs must be developed.</i>