



Screening Levels for Vapor Intrusion Contaminants of Concern

Reilly Tar and Chemical Co. Superfund Site

St. Louis Park, Minnesota

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U.S. Environmental Protection Agency Region 5 is conducting a vapor intrusion investigation at the Reilly site that includes collecting samples. These sample results, along with other factors and information, are a critical part of assessing health risks from potential vapor intrusion in the area. In the chart below are screening levels EPA will use to help analyze the sample data.

EPA determines probability of a non-cancer detrimental health effect to occur by calculating a hazard index (HI). The HI is a ratio of a single substance exposure level during a specified time to a reference dose of the same substance derived from a similar exposure period. It is recommended the HI of an exposure to a chemical of concern be below or equal to 1. That is the level at which no adverse human health effects are expected to occur. For cancer risk, EPA recommends a screening level that would equate to a 1 in 1 million (1×10^{-6}) or greater risk of developing cancer from lifetime exposure to a contaminant. A 1 in 1 million chance means that for every 1 million people exposed, one extra cancer may occur beyond what would be expected from all other causes.

The chart below defines Reilly Tar site-specific screening levels for indoor air and sub-slab soil gas to protect residents from non-cancer risks equating to a hazard index of 1, and a lifetime cancer risk of 1 in 1 million.

Chemical of Concern	Residential Interior Air $\mu\text{g}/\text{m}^3$	Residential Sub-slab Soil Gas $\mu\text{g}/\text{m}^3$
benzo(b)fluoranthene	2.2E-02	2.2E-01
benzo(j)fluoranthene	2.2E-02	2.2E-01
naphthalene	7.2E-02	7.2E-01
tetrachloroethene	4.1E-01	4.1E+00
trichloroethene	2.1E-03	2.1E-02
cis-1,2-dichloroethene	6.3E+01	6.3E+02
trans-1,2-dichloroethene	6.3E+01	6.3E+02
vinyl chloride	5.5E-01	5.5E+00
benzene	3.1E-01	3.1E+00
ethylbenzene	9.7E-01	9.7E+00
toluene	5.2E+03	5.2E+04
xylenes	1.0E+02	1.0E+03

Sample results from residences near the Reilly site will be compared with screening levels and communicated to property owners and residents. If results are above screening levels, further testing or mitigation may be necessary, and this will be addressed on a case-by-case basis. If results are below screening levels, no further action may be necessary.

For more information visit www.epa.gov/oswer/vaporintrusion/ or www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm or <http://www.epa.gov/region5/sites/reillytarmn/index.html>. You can also contact EPA Remedial Project Manager Michelle Kerr at 800-621-8431, Ext. 68961, weekdays 8:30 a.m. – 4:30 p.m. or kerr.michelle@epa.gov.