

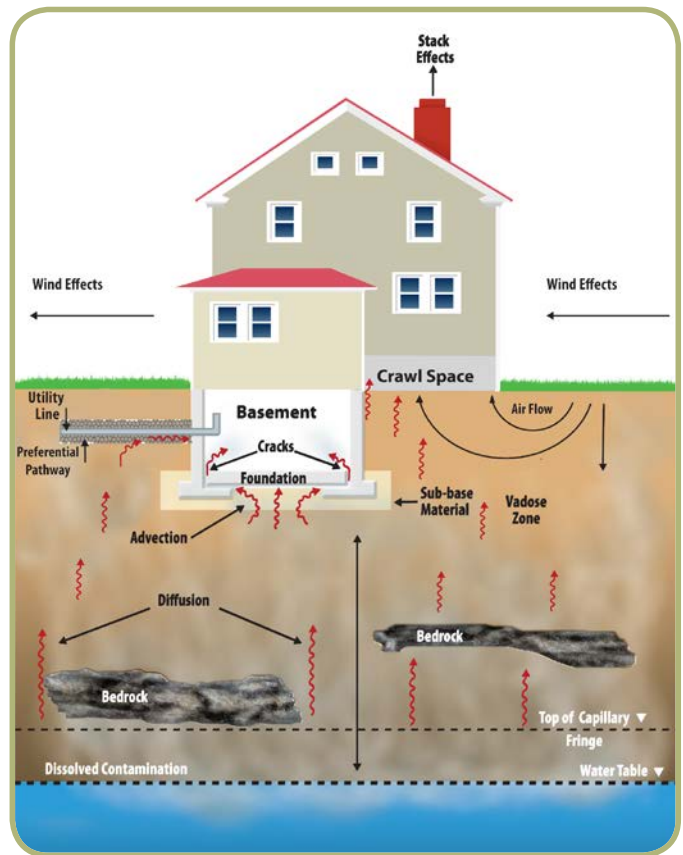
Overview of Vapor Intrusion

What is vapor intrusion?

Vapor intrusion is a way that volatile chemicals in soil and groundwater can enter and build-up inside buildings. Volatile chemicals are a class of chemicals that are volatile (evaporate easily) and form a vapor in the air.

- Common sources of volatile chemicals include gas stations, dry cleaners, and industrial operations.
- When a chemical is spilled or leaks into the ground, it can contaminate the soil and the groundwater.
- The chemical can move with the groundwater and travel under a building (migration route).
- If that chemical is volatile, it can become a gas and seep into nearby buildings and contaminate indoor air.

This fact sheet explains how vapor intrusion occurs and what factors can cause vapors (sometimes called gases) to move into indoor air.



Why is vapor intrusion important to me?

When chemicals move indoors, you can be exposed to them by breathing indoor air. This exposure can cause health effects, depending on the type and amount of chemical and the length of exposure.

You can learn more about the possible health effects of individual volatile chemicals in ATSDR's Toxic Substances Portal: <https://wwwn.cdc.gov/TSP/index.aspx>.

How does vapor intrusion occur?

Vapor intrusion does not occur every time there is contaminated soil or groundwater. It occurs only when volatile chemicals move from a source (like a chemical spill) along an underground migration route and into a building.

The type and amount of chemicals coming from a source will determine whether vapor intrusion occurs at levels of possible health concern.

What factors affect vapor intrusion?

The following factors affect vapor intrusion:

- The type of soil beneath your building
- The type and condition of your building (foundation, leaks, air exchange)
- The weather conditions in your area

The amount of vapors entering a building can be different over time—changing hourly, daily, weekly, and seasonally.

The amount of vapor intrusion can also be different on different floors and in different rooms of the same building or in buildings right next to each other.

If scientists suspect vapor intrusion in buildings in a specific location, they may decide to conduct an investigation. See ATSDR's fact sheet "[Investigating Vapor Intrusion](#)" for information on what to expect if a vapor intrusion investigation is planned for buildings in your area.

Where can I learn more about vapor intrusion?

U.S. Environmental Protection Agency

- Vapor intrusion website, visit: <https://www.epa.gov/vaporintrusion>

Interstate Technology & Regulatory Council

- Vapor intrusion website, visit: <https://itrcweb.org/teams/projects/vapor-intrusion>

Agency for Toxic Substances and Disease Registry

- Investigating vapor intrusion, visit: <https://www.atsdr.cdc.gov/vapor-investigation.html>