



GLOBAL

ENVIRONMENTAL ENGINEERING INC.

FACT SHEET

BIG OR SMALL, WE ALL CAN
MAKE A WORLD OF DIFFERENCE.

VAPOR INTRUSION

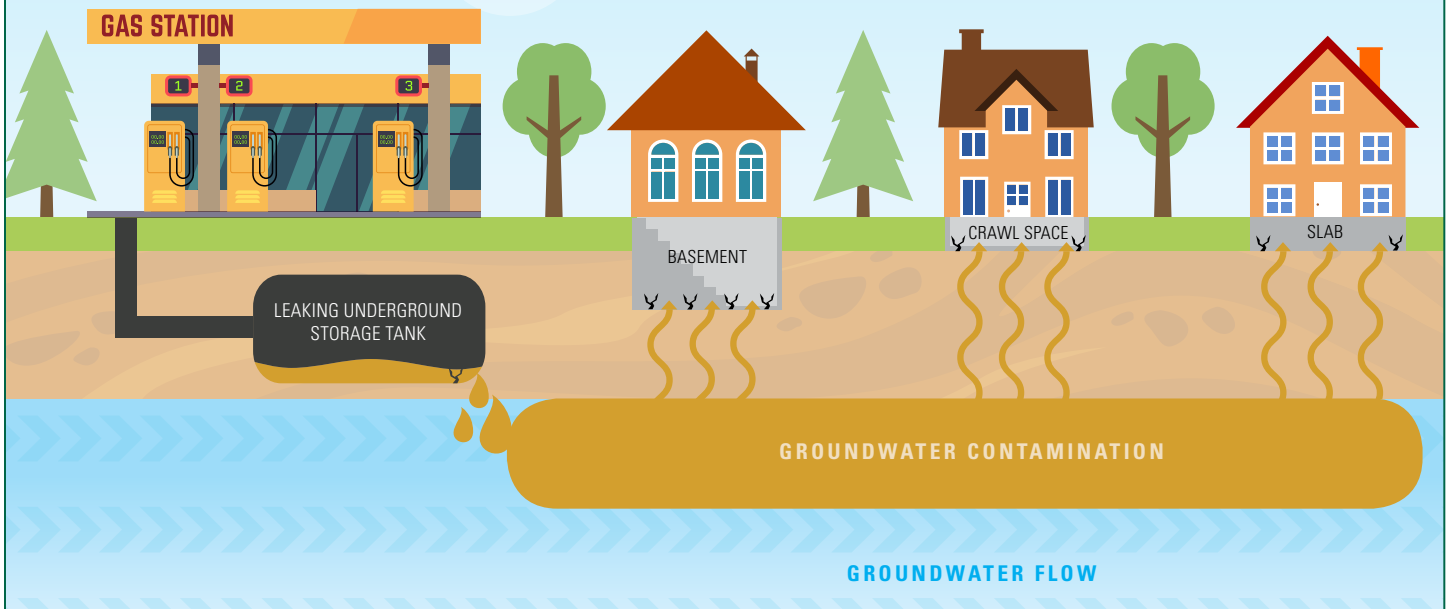
WHAT YOU NEED TO KNOW

For over ten years, Global Environmental Engineering Inc. (Global) has been working closely with regulatory agencies and experts to assess and mitigate Vapor Intrusion (VI) concerns. VI occurs when volatile compounds transition to the vapor phase, allowing them to readily migrate and accumulate in indoor air. Most often, these volatile compounds are associated with groundwater or soil contamination from

dry cleaning activities, landfills, manufacturing facilities, and petroleum product releases.

The VI pathway is becoming increasingly relevant at contaminated sites around the country as the most recent toxicological data suggests that many petroleum hydrocarbons and chlorinated solvents are detrimental to human health at lower levels than previously thought. This means that for contaminated sites, regulations and assessments required for closure will continue to become increasingly stringent. VI assessments are multifaceted, requiring analysis of soil and groundwater data, soil gas sampling, sub slab sampling, and/or indoor air sampling.

Vapor Intrusion occurs when volatile chemicals transition to the vapor phase allowing them to readily migrate and accumulate in indoor air. It can occur in any type of home or commercial building with a basement, slab-on-grade foundation or pier and crawl space foundation and can cause serious health concerns. The risks are most commonly found at sites with contamination resulting from dry cleaning activities, landfills, manufacturing facilities, and petroleum product storage.



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Eliminating the VI pathway is complex when compared to contact with soil or groundwater contamination. Often, contact with soil and ingestion of groundwater can be easily restricted; however, indoor air cannot be restricted. In order to eliminate exposure via VI, contaminated vapors need to be prevented from entering the building and vented appropriately to the atmosphere.

◀ *A vapor pin is a re-usable sub-slab soil-gas sampling device that eliminates many of the problems associated with traditional sub-slab soil gas sampling methods.*

**FOR MORE
INFORMATION**

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RECENT WORK

NO EXISTING STRUCTURE

At known sites of contamination without existing structures, Global is capable of designing systems that facilitate the safe redevelopment of a property during the construction phase through the installation of sub-slab liners and ventilation systems. At a site in Southeast Michigan, a facility was planned to be built over a historical landfill and, as a result, there was methane concern to address prior to building occupation. Global designed and installed a 60,000 square foot methane liner with a passive ventilation system to mitigate the vapor issue. The methane liner was installed prior to the pouring of the concrete slab.

By imparting a vacuum beneath the slab of the building through ventilation, the path of least resistance for soil gas becomes the ventilation to the atmosphere, rather than into indoor air. Sub-slab liners or liners above the slab serve as a final protection barrier to ensure the occupants of the building are not exposed to contaminated vapors.

EXISTING STRUCTURE

At sites with existing structures, Global is capable of designing sub-slab depressurizations systems coupled with vapor and chemical resistant liners that are applied to the surface of existing flooring. Global was contracted to address contamination at a commercial site with a leaking underground storage tank (LUST) which created a potential vapor intrusion issue. The client chose to presumptively mitigate and install an active vapor intrusion mitigation system. The system consisted of a sub-slab depressurization system and Retro-Coat™ vapor barrier liner.

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