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Environmental Law Alert - Vapor Shroud Has Fallen: EPA Releases Final Vapor Intrusion Guidance

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Following more than 12 years of intense scientific study, the shroud covering the Environmental Protection Agency's (EPA) final vapor intrusion guidance has fallen revealing a significantly revised, and in many aspects improved, national framework to address the vapor intrusion pathway. Vapor intrusion (VI) generally describes the migration of hazardous vapors from any subsurface vapor source, such as contaminated soil or groundwater, through the soil and into an overlying building or structure. This contamination "pathway" presents significant challenges and affects how VI is managed at contaminated sites, Brownfield redevelopment projects, and during transactional due diligence.

Key Aspects of EPA's Final VI Guidance

On June 11, EPA released its [final VI policy in two companion technical guides](#). The first guide represents significant changes to EPA's 2002 Draft VI Guide and is entitled: *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (referred to as the VI Technical Guide). The VI Technical Guide presents a recommended framework for addressing potential VI concerns at: (i) any site (and any building or structure on a site) subject to CERCLA or RCRA corrective action; and (ii) Brownfield sites. The EPA's 2002 Draft VI Guide was not recommended for addressing petroleum vapor intrusion. The second guide filled this gap and provides information on how risks from petroleum hydrocarbons vapors at regulated underground storage tank (UST) sites under Subtitle I of the Solid Waste Disposal Act should be addressed. This new guide is entitled: *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites* (referred to herein as the PVI Guidance).

The VI Technical Guide presents new policies and recommendations flowing from the current state-of-the-science, which has and continues to evolve at a rapid pace. EPA has embraced this evolution and provided a flexible science-based approach for assessing VI and opens the door for innovative methods. The general policies and recommendations flowing from the VI Technical Guide affect every phase of assessing and managing the VI pathway. Some of the key changes include:

- Increased emphasis on developing (and constantly fine-tuning) a Conceptual Site Model (CSM). A defensible and technically-sound CSM begins with the sampling & analysis plan before the first boring is advanced. A CSM provides the platform to develop and interpret the multiple lines of evidence necessary for making decisions about whether the VI pathway is complete and poses an

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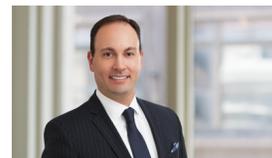
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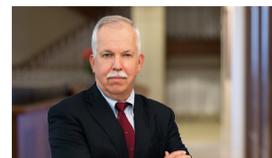
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unacceptable risk.

- Expanded the geographical boundary of a site investigation to include a vapor intrusion lateral inclusion zone which starts with a 100-foot buffer zone measured from appropriate media-specific vapor intrusion screening levels but must also include potential preferential pathways such as utilities and sewers. These types of preferential pathways present significant challenges and can greatly expand a vapor investigation.
- Updated the Vapor Intrusion Screening Level calculator to reflect current toxicity values and chemical properties and new criteria for determining whether a chemical is volatile. This particular change added more than 100 new chemicals to those classified as volatile.
- Clarified and asserted its authority to regulate indoor air in nonresidential buildings. Permissible exposure limits (PELs) are enforceable occupational exposure standards developed by OSHA. EPA determined that these PELs were never intended to protect sensitive workers and may not incorporate the most recent toxicological data. EPA does not recommend using OSHA's PELs to assess human health risks posed to workers by the VI pathway or supporting no-further-action determinations for VI arising in non-residential buildings. OSHA concurs and states that "many of its PELs are outdated and inadequate for ensuring protection of work health."
- Provided new approaches to assess (and eliminate) petroleum hydrocarbon VI at regulated UST sites. However, there is some confusion about which of the new VI guides applies when assessing petroleum hydrocarbons at sites with unregulated USTs and larger petroleum facilities like refineries.

The VI pathway is complex and the science continues to evolve at a rapid pace, but EPA's new VI guidance opens the door to innovative and site-specific solutions. To successfully navigate to closure with cost effective and practical approaches requires an experienced team of multi-disciplinary experts. EPA agrees and is receptive to new methods and solutions.

Interplay with State Guidance

It is also important to note that 35 states have developed VI guidance (and some states, like Illinois, promulgated rules). Many state regulators are also re-assessing their guidance and considering whether amendments or refinements are necessary. There are many states that have not developed VI guidance and some of those states will likely adopt EPA's final VI guidance. For facilities located in Indiana, please note that the Indiana Department of Environmental Management (IDEM) is currently evaluating how EPA's final VI guidance affects its current VI policies and recommendations set forth in the Remediation Closure Guide, related guidance, and draft-technical memos.

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