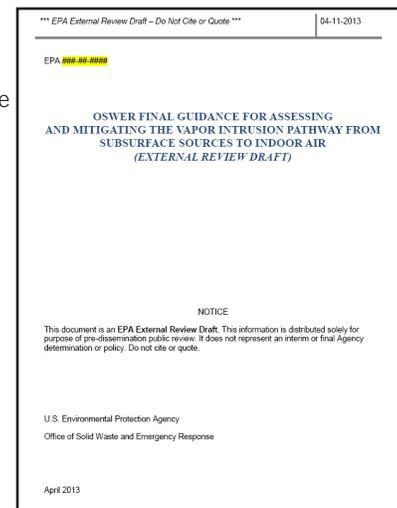


## Technical Brief for Environmental Professionals and Commercial Real Estate Lenders

### U.S. EPA Releases Federal Vapor Intrusion Guidance: Everything You Need to Know

Change is in the air on the vapor intrusion (VI) front. After much anticipation by industry professionals, on April 16, the U.S. Environmental Protection Agency released a draft document, the OSWER Final Guidance For Assessing And Mitigating The Vapor Intrusion Pathway From Subsurface Sources To Indoor Air — External Review Draft (PDF) for public comment. The guidance is particularly significant considering that it is the first time in more than a decade that the agency has revised its VI guidance on managing risk at properties with issues stemming from petroleum and chlorinated solvent contamination. When final, the nearly 200-page document will "help ensure VI exposure assessment and mitigation actions to protect human health are undertaken in a technically, scientifically and nationally consistent manner," said senior U.S. EPA official Richard Kapuscinski in a memo that accompanied the document's release. The release of EPA's guidance comes just months before ASTM is poised to release a revised version of E 1527 that adds definitions of migrate/migration to address the vapor pathway as a potential conduit for contamination, in keeping with CERCLA language.

As attention being placed on VI risk increases, environmental professionals and risk managers at financial institutions are taking notice. David Gillay sees the U.S. EPA's call for comment as "an excellent opportunity to provide input and potentially influence [its] final VI guidance for both hazardous substances and petroleum constituents. All environmental due diligence professionals should closely examine this policy and submit comments to the EPA," says the attorney (and former environmental engineer) and chair of Barnes & Thornburg's Brownfields & Environmental Transactional practice Group.



#### VI: Driven to the Forefront

Vapor intrusion is an environmental condition that occurs when volatile chemicals in polluted soil or groundwater vaporize and make their way into indoor air, much the way radon enters homes. VI can seriously harm human health, as well as creating risks in financing real estate by hurting property values and creating liability for property owners, and in the case of foreclosures, their lenders. Recent scientific developments indicate that VI is more prevalent than previously reported and that it can affect human health even in low concentrations. This has caught the attention of regulators, the public and increasingly, the media.

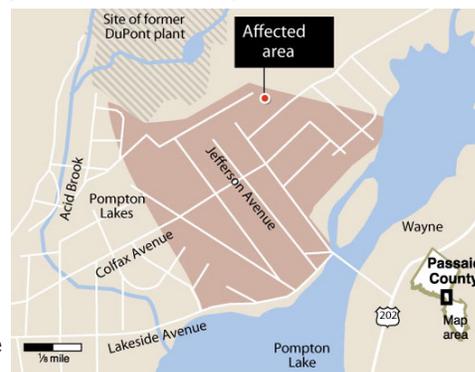
As public concern about the risks posed by vapor intrusion grows, and on the heels of the U.S. EPA's draft release of the VI guidance, environmental professionals, lenders, attorneys and other professionals involved in commercial property transactions are becoming increasingly focused on the issue and how VI risk should be managed. Other circumstances that have made VI even more difficult to ignore include:

- the increase of VI cases impacting both commercial and residential properties, most notably, the Pompton Lakes Du Pont case (see accompanying map);
- adoption of VI guidance by more state agencies; and
- reopening of formerly closed sites by regulators specifically to assess VI risk.

Even before the EPA issued its draft guidelines, regulatory bodies had started taking action. In some states, officials have gone so far as to reopen properties previously considered closed—many of which had NFA letters on file. In New York, for example, the state's department of environmental conservation recently concluded that out of 750 previously closed properties, 430 had been impacted with volatile organic chemicals and may warrant further assessment for VI risk.

This kind of action has been happening throughout the country. Nearly every state currently has VI guidance (draft or final) on the books, and those that do not will likely rely on the federal guidance when it is finalized. "Texas has indicated that they will not promulgate their own guidance until the EPA finalizes its VI guidance. Other states are following suit with Texas," says John Sallman, assistant director of environmental services, out of Terracon Consultants corporate office, in Kansas. And, he adds, "I think some states may also revise their guidance based on the EPA's guidance."

Another sector paying more attention to the impact of VI risk is commercial real estate investors. David Farer, chairman of the environmental department with Greenbaum Rowe Smith & Davis LLP, told [REIT.com](http://REIT.com) that as development restarts and proceeds post-recession "[VI] affects not only those who are responsible for the pollution, but anyone who has a building that is affected by contamination that might well be due to a neighbor. So, we are seeing a lot of our REIT clients paying more attention to the vapor issue."



## More Guidance Needed

Though VI is by no means a new risk to the industry, the forces mentioned above are increasingly driving to the forefront. Yet despite rising awareness of the risks that VI can present, there remains a great deal of confusion and inconsistency about how best to assess, manage and mitigate vapor-related risks. "There are over 30 states that have issued guidance, and the methodologies, assessment, screening levels, and approach to assess and manage the VI pathway varies dramatically," Gillay says. The EPA guidelines, once finalized, will provide environmental professionals, lenders and investors/owners with more definitive guidance on how the presence of a VI issue might affect the owner's liability and most importantly, how this risk can be measured and managed over the course of property ownership.

*"The current guidance in its draft form is really VI from A to Z, or could even be thought of as 'VI for Dummies'. It is very descriptive and detailed and provides the reader with a good background on various issues surrounding VI."*

~John Sallman, Terracon Consultants

## Understanding the Final VI Guidance

Perhaps the most significant impact of the guidance lies in the way the industry has opted to set standards for how much vapor exposure triggers a human health risk. In a number of ways, the EPA's review draft adopts a very conservative approach to assessing vapor intrusion, including some aspects that states have recently rejected when adopting their own VI guidance. "EPA's guidance document takes a very conservative approach to VI risk," observed Gillay, "and will likely result in many more sites being 'screened in' and requiring that the VI pathway be evaluated."

In two key areas, notes William Wagner, Attorney and Partner at Taft, Stettinius & Hollister LLP, the guidance expands the universe of properties that will result in more properties being identified as having VI problems. "The first is the agency's approach concerning additive risk, the process of performing a human health risk assessment based upon exposures to multiple chemicals. Agencies calculate screening levels for individual chemicals based on toxicity information specific to a particular end point of a target organ, e.g., a kidney. As chemicals degrade in the environment, they can break down into multiple contaminants. For example, a release of the dry cleaning chemical tetrachloroethene (or perchloroethylene, perc or PCE) can break down into trichloroethylene (TCE), cis-1,2 dichloroethene, and vinyl chloride." When this happens, it is theoretically possible that a person exposed to each of these individual chemicals at a concentration below the applicable screening levels could be exposed to unacceptable aggregate risk.

The EPA's Final VI Guidance proposes that a risk manager aggregate the individual risks attendant to each contaminant exposure, even when below screening levels, to see if a response is warranted. In Wagner's home state of Indiana, he says, "Regulators rejected that approach. When the Indiana Department of Environmental Management (IDEM) prepared its Remediation Closure Guide, it concluded that the setting of the screening levels for the individual contaminants was inherently conservative so that it was very unlikely that exposures to multiple chemicals present at or below screening levels would result in excessive risk or hazard to an exposed population."

Another element of the guidance that will likely result in more properties being considered at risk for vapor intrusion is the EPA's conservative approach to the recommended generic sub-slab soil gas attenuation factor. In an example of how this might play out relative to the implementation of existing state programs, Wagner offered the following: "The sub-slab soil gas attenuation factor in Indiana and Ohio is 0.1. So, for example, if sub-slab soil gas was found

### What Should EPs Communicate to Clients About the New VI Guidance?

1. EPA's VI final draft guidance is very conservative so it is highly likely that more sites will be screened in and require evaluation.
2. EPA's VI guidance makes it more difficult to find exit ramps.
3. EPs should develop a site-specific approach tailored to the unique characteristics of a target property/structure that is being assessed for potential vapor migration/intrusion risk.
4. EPA is recommending pre-emptive mitigation and has set forth specific guidance on the operation and maintenance for these systems.
5. EPA has released contemporaneous guidance on how to manage the long term obligations and stewardship requirements for sites where residual contamination is managed and left in place above residential screening levels. Environmental professionals should collaborate closely with environmental attorneys to determine the potential legal implications and liability risks.
6. EPA is encouraging more consistent and clear risk communication and community outreach. There will be much more attention and public involvement as decisions are made to determine whether the VI pathway is creating an unacceptable risk. Decisions need to be transparent, based on sound science and well documented.
7. Environmental professionals who represent stakeholders involved with redeveloping brownfield properties should determine how this new guidance affects the continuing obligations that are necessary to maintain important landowner liability protections under CERCLA.
8. Environmental professionals should also be aware of new changes to due diligence guidance, including revisions to the E 1527 standard that includes a new definition of "migration/migration."

SOURCE: David Gillay, attorney (and former environmental engineer) and chair of Barnes & Thomburg's Brownfields & Environmental Transactional practice Group.

at 9 ppbv, a consultant would be reluctant to conclude that an indoor air finding of more than 0.9 ppbv resulted from background sources rather than vapor intrusion. A finding of less than 0.9 ppbv would suggest findings from background contamination rather than VI. Under the Final VI Guidance, EPA's recommended generic sub-slab soil gas attenuation factor is 0.03. Using the same example, the consultant could conclude that an indoor air finding of more than 0.27 ppbv suggests VI risk rather than a finding of background contamination."

Wagner believes that the agency's choice of conservative factors to evaluate VI "will result in more properties being identified as having VI problems, with the attendant stigma associated with such findings. It will also take longer to prove to the responsible agency that VI risks are insignificant. This will happen simply because agencies have limited resources and a limited number of risk assessors. EPA's approach will likely result in delayed regulatory closings while the limited number of risk assessors examine sites posing relatively low risk situations (sites with multiple contaminants all below screening levels) and from the delay of possibly having to reopen closed sites."

## New Guidance, New Approach to Managing Risk

For environmental professionals, release of the guidance provides a new avenue for education—both for themselves and for their clients. "The new EPA guidance provides a great handbook that is easy to understand and easy to read. It will provide a basis from which all environmental professionals can speak and reference," Sallman says. "I actually don't think that the EPA guidance is going to drive VI to become a more standard part of property due diligence. The new ASTM E-1527-13 is going to drive vapor migration assessments to be a standard part of property due diligence more than the EPA guidance."

Yet the critical role of this guidance is that it will help environmental professionals, risk managers at financial institutions, investors, owners and operators to make better educated decisions about managing VI risk and avoiding liability. Education about VI risk is the necessary first step for lenders and owners protecting themselves from the risk associated with vapor migration and intrusion. "Once the VI pathway and associated liability is property explained," Sallman adds, "I have seen many clients elect to evaluate the pathway to eliminate or reduce future liability."

*"Environmental professionals should stay plugged into the state of the science related to VI as the science continues to evolve at a rapid pace. They should also weigh the pros and cons of EPA's recommendation for pre-emptive mitigation and the potential long-term requirements that may be triggered."*

*~David Gillay, attorney (and former environmental engineer) and chair of Barnes & Thornburg's Brownfields & Environmental Transactional Practice Group*

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With the long-awaited federal guidance now out for public comment, environmental due diligence professionals, lenders, as well as owners of properties like drycleaners, gas stations, and other types of properties impacted by petroleum or solvents, as well as any prospective purchasers of these types of properties have a valuable resource for understanding VI risk, assessing it and ultimately, managing it as appropriate for their own risk tolerance.

**NOTE TO READERS:** EDR Insight would like to sincerely thank David Gillay, John Sallman and Bill Wagner for their insightful reactions to the guidance, just days after its release.

### Questions or comments?

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