

# Vapor Concerns May Perniciously Intrude Into Your Financings

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**This article provides a brief overview of the two vapor intrusion guidance documents released recently by the Environmental Protection Agency and then discusses some material issues that will slow and possibly even derail some financings.**

Phase I and Phase II environmental site assessments long have been a mainstay in real estate financings in assessing the potential for soil and groundwater contamination on properties. Concerns for impacts from asbestos, lead-based paint and PCBs have likewise lead to testing of building materials. The potential for vapor intrusion (“VI”) has been slowly moving to the forefront of environmental due diligence concerns as EPA and the states have imposed more stringent assessment and treatment requirements for potential VI issues at remediation sites. VI has now hit the fast lane with EPA’s release in April 2013 of its long-awaited VI guidance documents, 11 years after the initial 2002 draft (“2002 VI Guidance”). These guidances are sure to have a dramatic impact on financings and other transactions. This article provides a brief overview of the two VI guidance documents and then discusses some material issues that will slow and possibly even derail some financings.

## Background

EPA issued its two proposed vapor intrusion guidance documents for public comment

on April 16, 2013. The first, entitled “Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air” (“VI Guidance”), will be applicable to Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), Resource Conservation and Recovery Act (“RCRA”) and brownfield grant sites. The second, the “Guidance for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites” (“Petroleum VI guidance”), only applies to releases from petroleum underground storage tanks. EPA is currently considering comments it received on the two guidance documents. As of September 13, 2013 EPA’s website indicates that it “is working to complete its work expeditiously and issue final subsurface vapor intrusion guidances so that it can be applied in forthcoming decisions.” Since EPA was ready to simply finalize the drafts without any public comment (with the opportunity to comment only coming after some external pressure from the regulated community), we would not expect material changes.

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## VI Guidance

The threshold question identified in the VI Guidance is whether three conditions are present at a minimum for there to be a VI risk:

- (1) a source of vapor-forming chemicals in the subsurface;
- (2) existing or future buildings; and
- (3) a pathway between the source and the building.

If the three conditions are met for a VI risk, the first step is to prepare a conceptual site model (“CSM”). The CSM includes:

- (1) nature, location and spatial extent of vapor-forming chemicals in subsurface;
- (2) location, use, occupancy and basic construction of existing and future buildings;
- (3) current understanding of hydrologic and geologic setting; and
- (4) known or suspected preferential pathways for vapors.

The next step is an initial screening to evaluate existing sampling data for reliability and quality. The identified levels are compared against levels from EPA’s separate Vapor Intrusion Screening Level (“VISL”) Calculator. The VISLs are extremely conservative “screening level” concentrations for cancer risk levels of one in a million. The initial screening is followed by a very detailed VI investigation including the following:

- (1) confirmation of CSM information;
- (2) accumulation of “multiple lines of evidence,” including sampling of various forms of subsurface media;
- (3) provision for multiple rounds of sam-

pling, including soil gas from various depths;

- (4) completion of groundwater sampling from wells screened for sampling from the upper portion of the aquifer;
- (5) provision for sub-slab sampling, but advocating for indoor air sampling;
- (6) allowance for modeling but only “when suitably constructed, documented and verified” and not as the only “line of evidence” to screen out a site; and
- (7) assessment of an initial investigation area extending into a 100-foot buffer vertically and horizontally from the plume edge (e.g., limits of exceedance of drinking water standard in groundwater plume) with some exceptions to the buffer, including landfill methane, concentrated volatile chemicals and natural gas transmission lines.

Once the data is collected the information must be evaluated in a risk assessment to consider the specific lines of evidence and whether the VI pathway is complete. Based upon the results of the risk assessment, remediation and mitigation measures may be necessary. While in many state remediation sites preemptive-type mitigation measures such as installing a radon-type system or vapor barriers currently satisfy the remediation requirement, the VI Guidance considers these “interim measures” with source remediation still required. Following remediation, indoor air sampling will be necessary to confirm the adequacy of abatement/remediation measures. An operation and maintenance plan may also be necessary to assure proper system operation.

## Petroleum VI Guidance

The 2002 VI Guidance did not include nonpetroleum releases, so the issuance of the Petroleum VI Guidance specifically applicable to petroleum releases will be a material change to how such releases are assessed and remediated. The Petroleum VI Guidance, though, is limited to regulated petroleum underground storage tanks, leaving vapor-causing contaminants released from aboveground storage tanks, pipelines, terminals and refineries to be covered under the VI Guidance. In addition to the traditional chemicals found in petroleum products (such as benzene, toluene, ethylbenzene and xylene), the Petroleum VI guidance requires the consideration of vapor risks associated with gasoline additives (such as MTBE) and the products for biodegradation of petroleum in soil and groundwater (such as methane).

In determining whether or not vapor or indoor air sampling is required at a site, the Petroleum VI Guidance first requires that the “full extent and location of the contamination” be determined, followed by the development of a conceptual site model (similar to the VI Guidance). Next the “lateral inclusion zone”—“the area surrounding a contaminant mass through which petroleum vapors may travel, intrude into buildings and potentially pose a threat to human health and the environment”—is determined. Further vapor intrusion investigation is not required at any building outside the “lateral inclusion zone.”

For buildings within the “lateral inclusion zone,” the depth and concentration of the contamination is then compared to the Petroleum VI Guidance’s “vertical separation distance.” For sites with lower levels of contamination (less than 10 mg/kg of benzene and 250 mg/kg total petroleum hydrocarbons in soil and less than 5 mg/kg of

benzene and 250 mg/kg total petroleum hydrocarbons in groundwater), if there is at least six feet of clean soil between the bottom of the building’s foundation and the contamination, no further vapor intrusion investigation is required. If the contaminant levels exceed these thresholds (which is likely the case when a light non-aqueous phase liquid, or LNAPL, is present), the separation distance must be at least 15 feet. Certain site-specific factors may require further investigation even if a building is outside the lateral inclusion zone or the vertical separation distance is met. These factors include conditions that would impede natural biodegradation in the soil or groundwater (such as very dry soil or very large buildings or large areas with extensive impermeable surfaces) or preferential pathways for vapor migration (such as utility lines).

Since groundwater levels and groundwater plumes can change over time, a single sampling event is not sufficient for determining that further vapor intrusion investigation is not required. The Petroleum VI Guidance states that “periodic monitoring and sampling over more than one annual cycle is generally needed” but does not state how much sampling is actually needed.

One item of particular importance in the Petroleum VI Guidance is that modeling has fallen out of favor. Historically, the regulated community relied on computer models (most notably Johnson & Ettinger) to determine whether a certain contaminant concentration in soil or groundwater posed a vapor intrusion concern. The Petroleum VI Guidance shows a distinct dislike for such models, saying that they should be used only when based on site-specific information and should not be the sole basis for screening out sites from further investigation.

## Impacts on Financings

While the VI Guidance and Petroleum VI Guidance are just that, “guidance,” they will be the standard used on active Superfund, RCRA corrective action and federal brown-field grant sites, and LUST sites, respectively. Most financing though will likely not involve active Superfund, RCRA corrective action or brownfield grant sites, but rather will involve LUST, state level corrective action or voluntary remediation program sites. However, consideration of vapor issues will also have to be given at sites having previously received a no further action letter or its equivalent (“NFA”) under a federal or state program. The following are some of the more material issues related to VI that will be faced in financings:

### **Scope of Due Diligence**

The VI Guidance emphasizes the need to obtain detailed information on on-site and off-site sources of potential VI, including conducting file reviews that will increase the costs and time necessary for completing a Phase I, environmental site assessment. The revised Phase I ASTM standard ( E 1527) currently under review by EPA though is expected to require more extensive file reviews anyway. Additionally, the guidance provides that multiple rounds of sampling are necessary. So how much data is needed on a site with the potential for a VI risk and will it be enough to satisfy a lender? And if the site is to be purchased, just how much time will the seller allow the buyer to assess the issue? Generally a buyer is lucky to be granted the opportunity to complete one round of samples, with multiple rounds over a few seasons being a nonstarter to most sellers. The Petroleum VI likewise requires much more sampling than most state programs have required in the past and this will

also have to be taken into account in due diligence. All parties to the financing will have to be reasonable in their expectations and very patient with the process as their counsel and consultants work through the issues.

### **Potential for Litigation**

The effects of groundwater contamination migrating off site and affecting off-site drinking water wells or redevelopment involving deep excavation have historically been a concern for third-party claims. The potential for vapor intrusion has also been assessed as part of this risk, but the VI Guidance and Petroleum VI Guidance bring this issue into sharper focus. The VI Guidance, using a screening distance of 100 feet beyond the edge of the plume, and the Petroleum VI Guidance, focusing on the lateral exclusion zone, may bring multiple third parties into the mix. The owner, who may or may not be the borrower, must consider the potential for litigation the moment the consultant knocks on the neighbor’s door asking for permission to test. The purchaser/borrower and lender need assurance that there is no problem while the owner runs the risk of “poking the bear” and finding a problem that the purchaser and lender will leave in the rear view mirror. Environmental insurance is unlikely to fill the void because the insurers will want the very same information to assess the risk as a part of underwriting the coverage.

### **Closeout of Sites**

Assuming the responsible party is able to obtain all the necessary sampling information, the level of remediation will remain a significant hurdle. EPA’s treatment of preemptive mitigation measures as “interim solutions” runs counter to state voluntary and brownfield programs where such measures have been historically used in combination

with restrictive covenants to assure maintenance of the systems, so the impact on state programs is unclear. If the risk exposure pathway is addressed through a mitigation measure, then the regulators should be satisfied, but as toxicity concerns for certain substances continue to be ratcheted down, states may move closer to EPA's position. This in turn will increase the time and expense that will have to be considered in the financing documents, assuming the lender is comfortable with a loan covenant from the borrower to complete the remedy. The conservative estimate of the cost for a remedy having to achieve a reduction in the contaminants to very low levels may crater the financing.

### ***Reopening of Sites***

Possibly the greatest concern with VI is that sites with NFAs face reopening. Ordinarily lenders look at the NFA as the satisfactory closeout of the issues, but with the potential for VI, such NFAs will require a closer look. The VI Guidance specifically provides that EPA will be reevaluating VI in Superfund five-year reviews where contaminants remain on site "even if vapor intrusion was not addressed as part of the original remedial action." We would expect this to also occur in LUST sites and state remediation program sites. The authority reserved by the regulators will be important in this regard. A simple "no further action is warranted at this time" (emphasis added) certainly leaves easy access to the agency to reopen a site. Other

language that may not be as clear may lead to litigation between the regulated party and the agency. Lenders will focus on whether a potential VI risk is present, whether and how it was addressed and the circumstances under which a site may be reopened. As the lending requirements are fairly strict across the board, borrowers need to consider the most conservative analysis of the issues and expect that as the avenue their lender will want to pursue.

### **Conclusion**

While the VI Guidance and Petroleum VI Guidance are not final, the impact of the drafts and final guidance almost certainly will be material. The concern for VI will slow financings where subsurface contaminants could lead to indoor air concerns. How much diligence is needed to understand the extent of potential on-site and off-site impacts from recently found contamination or sites that have received NFAs in the past is uncertain. This uncertainty is compounded by the fear that potential plaintiffs may look for recovery from the owners and operators of contaminated sites, which in turn may impact the ability of a borrower to repay a loan or the value of the collateral. Assessing the potential for VI on sites will require a careful legal and technical assessment of the issues and remedies to minimize the risk in financings. And for financings that go bad, lenders considering foreclosure will need to take the time necessary to fully understand the potential for VI before taking title to properties.