

Environmental Advisory: Addressing Vapor Intrusion

A New Standard for Environmental Due Diligence

3/3/2008

A new standard issued by ASTM International should assist parties involved in a real estate transaction, whether a purchase, financing, corporate transaction that includes real estate, or even a lease. The standard is titled "Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions" and supplements a Phase I Environmental Site Assessment to address prior inconsistencies in addressing the concern of vapor intrusion. The standard was developed through a consensus process that involved state and federal regulatory agencies as well as the private sector.

Vapor intrusion (VI) is now a hot topic among environmental regulators. Intrusion of vapors into buildings can occur when a volatile hazardous substance (e.g., gasoline or dry cleaning solvent) is present in soil or groundwater, and vapors migrate into buildings, either through the foundation or following the path of utilities and other points of entry into the building. VI can occur even where a release is off-site, because contaminants migrate in groundwater, and vapors can migrate even further. Some states—including New York—are reopening previously "closed" sites where VI was not considered and the regulators are concerned that it may pose a risk.

Consideration of VI issues should be part of the environmental due diligence process. While not specifically required in a standard Phase I Environmental Site Assessment, consultants often noted the potential for VI since it presents a business risk. Until now, there has not been any standard practice for ruling out VI as a concern, leading many consultants to be overly conservative, recommending follow-up testing or other precautions because of liability concerns. ASTM's standard now provides a practical, tiered approach for assessing VI risk.

Tier 1

The first tier of the approach asks: "Is there a release of volatile hazardous materials in the area of the property?" Answering this question involves collecting the same types of information collected for a Phase I assessment. With this information, the consultant determines whether a potential VI issue exists within the "area of concern," typically 1/3 mile surrounding the target property for volatile hazardous substances and 1/10 mile for petroleum (a shorter distance because petroleum is more likely to biodegrade over time and distance). The consultant must look further away—from 1/2 to 1 mile—if a release has occurred upgradient of the target property.

Where releases of volatile contaminants are identified within the area of concern, the consultant must then determine whether the contamination (plume) is within the "critical distance" of an existing or planned structure on the property. Obtaining information on the physical extent of contamination may require reviewing regulatory agency files. If the lineal distance from the edge of the plume to the current or planned structure is 100 feet or more, or 30 feet or more for dissolved petroleum, then VI is unlikely to be a concern, and unless the consultant believes otherwise, the consideration of VI issues should be complete. If the plume is within the applicable critical distance of the building, however, a potential Vapor Intrusion Condition (pVIC) is presumed to exist.

If the Tier 1 assessment shows that a pVIC exists, adherence to the ASTM standard would have the consultant's client decide either to conduct further investigation to determine whether VI is a concern or proceed directly to mitigation (Tier 4).

Tier 2

The second tier of the approach is a more refined screening to assess whether actual contaminant concentrations present a potential risk to building indoor air. In Tier 2, the consultant compares contaminant concentrations to risk-based screening numbers, which may be established by the particular state or site-specific numbers determined by the consultant. This Risk-Based Concentration (RBC) test determines whether a pVIC does exist. If insufficient data exists, the consultant would collect data through subsurface testing. It will likely be more cost-effective to proceed to Tier 2, hoping to rule out a VI Condition, rather than to spend money on mitigation after Tier 1. If a Phase II subsurface investigation is already being performed and the RBC test requires gathering little additional information, investigation is likely the better choice. Testing may also be the better option if there is an existing building that would be expensive to retrofit with mitigation measures. If, however, testing is not feasible due to timing or the nature of the deal, and particularly where new construction is contemplated or there is a concern for future migration, it may be more sensible to simply build the cost of a vapor barrier or other mitigation measures into the budget and dispense with further assessment to determine whether a VI Condition actually exists.

Tier 3

If the results of Tier 1 and 2 do not rule out the potential for VI, the ASTM standard would have the client proceed to a Tier 3 testing assessment or proceed directly to mitigation. At Tier 3, the type and extent of investigation will be governed by the particular state, and may be costly and present challenges. States vary widely in their approaches, so consultants must identify all applicable regulatory and technical guidance documents and be experienced in the methodology used. The Tier 3 assessment will determine whether a VI Condition actually exists inside the building.

Tier 4

If a VI Condition exists, Tier 4 of the ASTM approach discusses mitigation. Mitigation is necessary where VI has been identified and determined to present a risk, or can be preemptive as a precaution against potential current (as demonstrated in Tier 1 or 2) or future risk. Mitigation may include installing vapor mitigation systems, institutional controls, or remediation or removal of contaminated soil and groundwater causing the VI condition. The consultant should determine the most appropriate mitigation solution in compliance with regulatory requirements.

Note that the consultant must be an "Environmental Professional," a term defined in ASTM's Standard for Phase I Environmental Site Assessments to mean professionals meeting specified education, training, and experience requirements. Beyond the initial steps of gathering information for a VI assessment, however, the Environmental Professional should also have specific expertise in the VI area, including with sampling protocols and techniques for the different media, health risk assessment, modeling and pathway analysis, remediation and mitigation alternatives, and all applicable federal, state, and local rules, regulations, and guidance.

In summary, consideration of vapor intrusion issues is appropriate wherever there has been a release of a volatile contaminant on or near a property with an occupied building, whether in residential or commercial use. ASTM's new standard should provide some comfort to prospective purchasers, lenders, owners, and other parties assessing risks and liabilities associated with real estate by establishing a specific, reliable protocol for considering these issues.

Susan Phillips was co-chair of the Drafting Committee for the ASTM Vapor Intrusion Standard and a member of the Legal Committee. For 20 years, she has addressed environmental concerns in the acquisition, ground-leasing, and financing of more than 3,000 properties in over 40 states. If you have any questions regarding this topic or any related issue, feel free to contact Susan (617.348.1713, SPhillips@mintz.com) or any of Mintz Levin's Environmental Practice attorneys.

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