

Managing Soil Vapor Intrusion Risks in Real Estate Transactions

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In 1989, after years of investigation and study, the U.S. EPA (“EPA”) finally selected a remedy for the Middlefield-Ellis-Whisman (“MEW”) area in Mountain View, California, one of the largest Superfund sites in the country. Five years later, the EPA concluded that the remedy at MEW was not adequate to prevent the migration of contaminated vapors into buildings overlying the site, and required responsible parties to take additional remedial measures. Over the last decade, as the risks of vapor intrusion have gained national attention, state and federal regulators have reopened previously closed sites, and vapor intrusion has become the driving force in clean-ups, a significant liability for property owners, and a major factor in real estate transactions.

1. Buyers Should Conduct Environmental Due Diligence to Address Potential Vapor Intrusion

Soil and groundwater contaminated with volatile chemicals generate contaminated vapors (known as “soil vapors”), which can migrate upwards into buildings through the foundation or other preferential pathways, such as piping and utility corridors, foundation construction joints, elevator shafts, and floor drains. In some cases, vapor intrusion may present health risks to building occupants and significant liabilities to property owners, including the costs to investigate and mitigate the vapors and claims for personal injury and property damage.

The staple of environmental due diligence for over twenty years – an Environmental Site Assessment (“ESA”) (also known as a “Phase One Report”) – was not designed to address soil vapor intrusion. Recent guidance developed by the ASTM International (“ASTM”) to close this gap in environmental due diligence has significant limitations, has yet to gain widespread recognition or use, and is inconsistent in significant respects with California guidance on the investigation of vapor plumes. Prudent buyers should augment standard environmental due diligence

measures to better identify vapor intrusion risks, and consult new regulatory guidance to anticipate and minimize potential liabilities.

2. *Phase One Reports Are Insufficient to Identify Soil Vapor Intrusion Risks or Liabilities*

The industry standard for a Phase One Report is the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM E1527-05 (“ASTM E1527”). Arguably, ASTM E1527 has always included vapor intrusion (releases “into structures” are covered); however, since ASTM was first developed in 1993, the primary purpose of a Phase One Report has been to identify the potential for on-site soil or groundwater contamination. Moreover, ASTM E1527 expressly excludes indoor air quality from its scope.

As concerns have mounted about the liabilities associated with soil vapor intrusion, confusion has grown about whether an investigation of potential vapor intrusion risks should be included in a Phase One Report – and, if so, what the nature of that investigation should be. In general, buyers should be aware that a Phase One Report may not cover vapor intrusion unless express arrangements are made with the environmental professional to do so. If arrangements are made to cover vapor intrusion, there should also be a discussion of what standard the environmental professional will use to assess that risk.

3. *ASTM’s New Standard for Assessing Soil Vapor Encroachment Should Be Considered in Conjunction with California Guidance*

In 2008, ASTM developed a standard to assess vapor intrusion into structures on property involved in real estate transactions. For various reasons, this standard never gained wide acceptance, and in 2010, ASTM replaced this standard with the *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, ASTM E2600-10 (“ASTM E2600”). ASTM E2600 has significant limitations, particularly for California real estate transactions.

- The cornerstone of an ASTM E2600 investigation is the evaluation of potential sources of vapor intrusion within a critical distance of the target property; the critical distance for petroleum sources is 30 feet and the distance for other volatile chemicals is 100 feet. California guidance adopts a 100 foot buffer zone only under certain circumstances, and makes no distinction between petroleum and other chemicals.
- An ASTM E2600 report identifies the potential that contaminated vapors are in the sub-surface of the contaminated property, but does not address the risk of vapor intrusion into a building. That risk may be small or large depending on a number of factors, including the concentration of chemicals in the vapors, the moisture and permeability of the soil, and the design of overlying buildings.
- ASTM E2600 does not provide any methodology or recommend any sampling to identify the risk of actual vapor intrusion. Instead, ASTM E2600 advises users to consult state and federal guidance to evaluate this risk.

The EPA expects to update its 2002 guidance on vapor intrusion investigations later this year. In California, however, most sites come within the oversight of California regulatory authorities, either a Regional Water Quality Control Board (“Regional Board”) or the California Department of Toxic Substances Control (“DTSC”).

There is no Regional Board guidance, however, in October 2011, DTSC updated its guidance on the investigation of soil vapor intrusion under DTSC oversight. *Vapor Intrusion Guidance*, DTSC, October 2011 (“*Guidance*”). The *Guidance* is an important resource for potential buyers.

- The *Guidance* explains DTSC’s perspective on the limitations of adopting a 100 foot screening zone to assess potential vapor intrusion risks. For example, where there are preferential pathways, including developments with new utility corridors, screening is required beyond 100 feet. In some cases, buyers may want to consider expanding the scope of inquiry beyond 100 feet consistent with the *Guidance*.
- The *Guidance* provides buyers with a roadmap for regulatory oversight, and thus a tool for quantifying potential liabilities associated with the risk of vapor intrusion. For example, buyers should be aware that DTSC favors full site characterization before implementing site mitigation measures. Under DTSC oversight, site characterization (which can involve soil, soil gas, groundwater and indoor air sampling), can take months or years to complete.

4. *Tips for Environmental Due Diligence and Managing Liabilities Post-Acquisition*

Buyers should supplement an ASTM 1527E report with an evaluation of the risk of potential vapor intrusion, modifying ASTM E 2600 as appropriate in conjunction with federal and state guidance. In consultation with environmental counsel and an environmental consultant, buyers may want to consider the following:

- **Identify Potential Sources.** Identify potential sources within a 100 foot buffer zone of the property, such as dry-cleaning facilities, gasoline stations, auto repair facilities, and other users of volatile chemicals in the area. Evaluate potential preferential pathways and other factors that may warrant extending the zone of inquiry beyond 100 feet.
- **Consider Sub-Slab Sampling.** A review of available records of all the contaminated sites in the area will be time-consuming and likely will yield inconclusive data. Where there are existing buildings, in many cases, the most reliable and cost-effective way to screen for soil vapor intrusion risk is to collect vapor samples underneath the building slab.
- **Exercise Restraint in Conducting Air Sampling.** Indoor air sampling is not always appropriate or feasible as part of due diligence, due to the risk of false positives, the invasive character of testing when buildings are occupied, and the inconclusive nature of a single round of indoor air sampling. In some cases, however, indoor air sampling should be considered.
- **Identify Potential Short Term Measures.** Some immediate and cost-effective measures can be taken to minimize vapor intrusion, such as sealing any cracks or openings in the foundation and adjusting air pressure and circulation within the building. Buyers may want to require sellers to take these measures before the closing, or take these measures themselves after closing.
- **Consider Pre-Emptive Mitigation.** In many cases, the cost to install a mitigation system will be less costly than the cost of site characterization. Mitigation measures can be taken before agency involvement, however, in that case, buyers should be aware that they may be required to supplement, replace or modify the system.

- **Make Appropriate Disclosures.** Property owners should make disclosures, as appropriate, to tenants and other third parties, including consideration of Proposition 65 warnings and other mandatory statutory disclosure requirements.
- **Evaluate Reporting Obligations.** Property owners should evaluate and make applicable reporting requirements to regulatory agencies. In addition to statutory reporting requirements, buyers should be aware that where new construction is contemplated, certain permits (e.g., grading permits) may require submission of environmental data and mitigation measures to prevent vapor intrusion.
- **Identify Preferred Agency for Oversight.** Property owners should identify the regulatory agency best suited to oversee site investigation and mitigation of a particular site. Taking steps to ensure the preferred regulatory agency accepts oversight may significantly reduce costs and avoid delay.
- **Modify Building Design.** Where new construction is planned, buyers should consider incorporating plans to minimize vapor intrusion, such as the design and placement of elevators or installation of a vapor barrier. In addition, agencies may require engineering controls (e.g., a sub-slab depressurization system) if the building is considered to be at risk for vapor intrusion. The *Guidance* provides specific direction on when DTSC will require engineering controls for new buildings.

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