

Vapor Intrusion: An Emerging Topic In Environmental Law

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Vapor Intrusion: Background Information

- ◆ General Definition: “The Migration of Volatile Chemicals Into Buildings”
- ◆ Sources Include: Contaminated Soil and Groundwater
- ◆ Potential Impacts to: Residential, Commercial and *Some* Industrial Properties
- ◆ Assessments/Investigations Becoming Common Place
- ◆ Response Actions Can be Conducted at Any Stage in the Process



Property-Specific Sources

- ◆ LUSTs/Spills
- ◆ Commercial Operations (e.g., Drycleaners)
- ◆ Industrial Facilities, Including Former Dumps
- * New Construction vs Existing Building



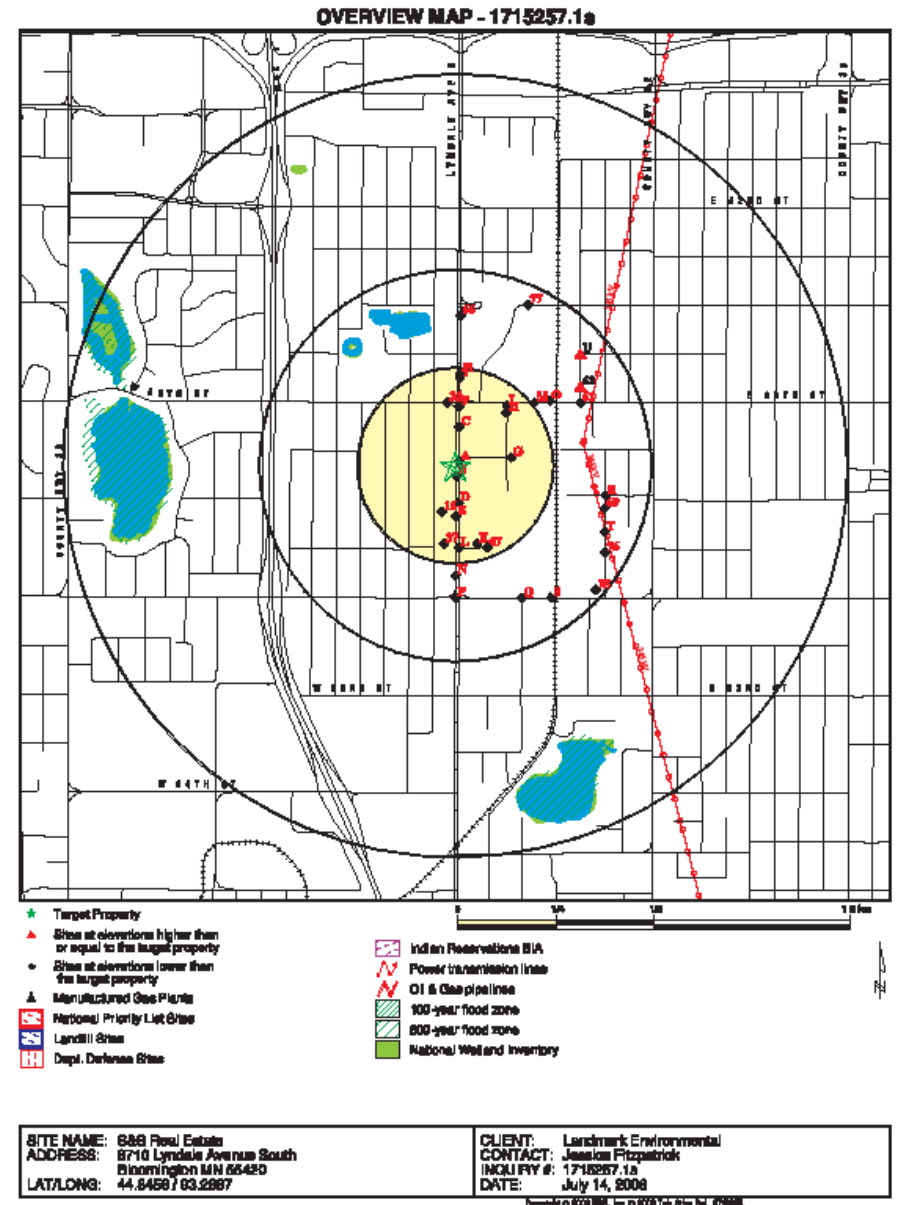
**Outdoor
Chemical
Storage and
Stained Soil**

**UST Beneath
Pad**

Area-Wide Multiple Sources

- ◆ Groundwater Plumes
- ◆ Transportation Corridors
- ◆ Multi-parcel Redevelopment Projects

*New Construction vs Existing Building



MPCA Guidance Documents



- ◆ “Risk-based Guidance for Vapor Intrusion Pathway” for Superfund, RCRA and VIC, August 2008
- ◆ “Vapor Intrusion Assessments Performed During Site Investigations” Petroleum Guidance Document 4-01a, August 2008

ASTM and EPA Guidelines

- ◆ **“Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions”** ASTM E-2600-08
- ◆ **“Brownfields Technology Primer: Vapor Intrusion Considerations for Redevelopment”** EPA 542-R-08-001, March 2008



Vapor Intrusion Guidelines

- ◆ Are Based on Tiered Approach
- ◆ Rely on Empirical Data
- ◆ Utilize State Developed Criteria: Intrusion Screening Values (ISVs) and Groundwater ISVs



Subsurface Screening Values

◆ If Concentrations are Less Than 10X ISVs: No Further Work ... if Supported by the Site Conceptual Model

◆ If Concentrations are Between 10X ISVs and 100X ISVs: Additional Assessment Work Required

◆ If Concentrations are Greater Than 100X ISVs: Investigation Work Required

* MPCA's Preference for Sub-surface Sampling Before Conducting Indoor Air Sampling

*Potential Indoor Interferences



Response Actions Alternatives

- ◆ Source Area Removal
- ◆ Sealing Points of Entry
- ◆ HVAC Modifications
- ◆ Sub-slab Depressurization
- ◆ Venting System – Active vs Passive (new construction)
- ◆ Vapor Barrier (new construction)



Additional Things to Consider



- ◆ Long-term Maintenance Monitoring Requirements,
- ◆ Institutional Control May be Required
- ◆ Liability Protections May Not be Available