

# OSWER's Final Vapor Intrusion Guidance

An Overview for the Environmental Law Institute  
(*Vapor Intrusion: The State of the Science and the Law*)  
by

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September 6, 2012

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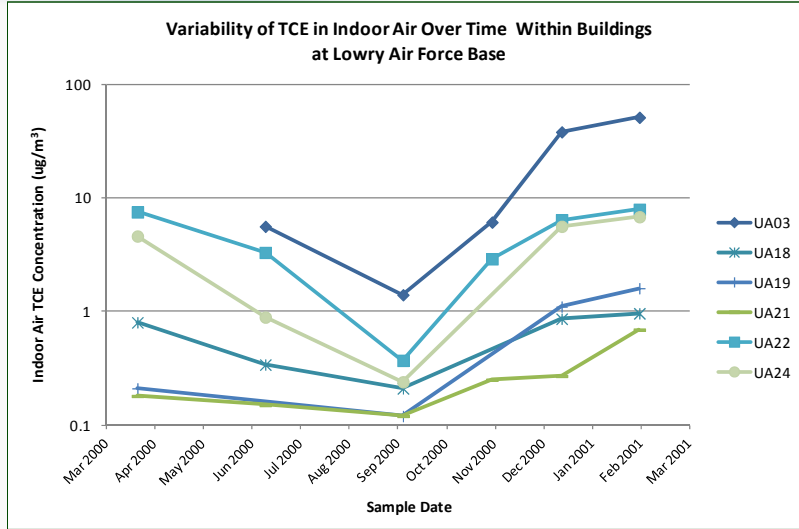


## Presentation Objectives

- Describe some physical factors and data issues that complicate assessment and decision-making
- Provide broad overview of EPA's Final Vapor Intrusion Guide (FVIG)

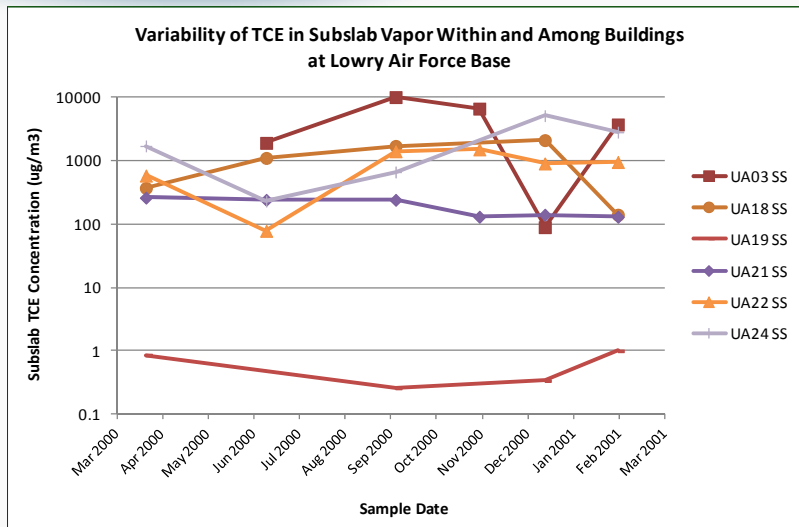
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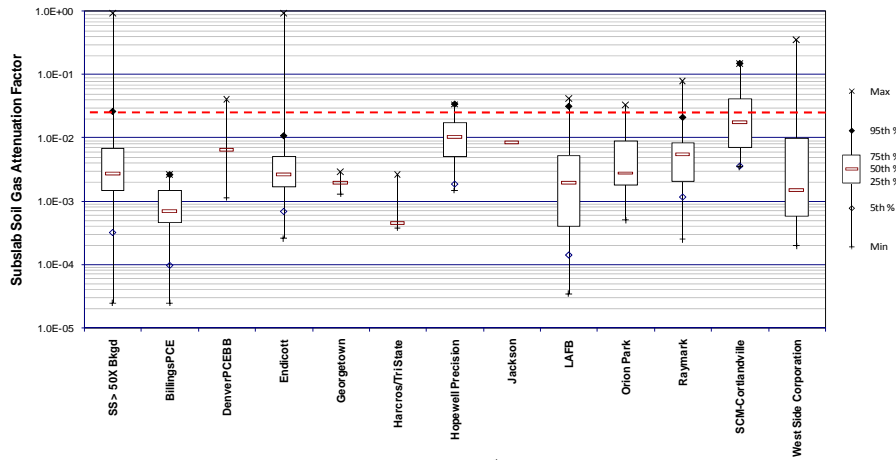


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## Inter- and Intra-Site Variability



Overall median = 0.003; overall 95<sup>th</sup> percentile = 0.03.  
Median varies by more than one order of magnitude across the 12 sites.  
Range from the 5<sup>th</sup> to 95<sup>th</sup> percentile values exceeds two orders of magnitude.

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## Some Causes of Variability

- Non-uniform distribution of subsurface vapor source(s)
- Non-uniform migration of subsurface vapors in response to heterogeneous soils
- Variable meteorological conditions
- Variability in building conditions, operation and occupant habits

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## Implications of Variability

- Reinforces the historic practice of assessing on a building-by-building basis.
- A single indoor air or subsurface sample has limited information value by itself.
- Additional samples and other lines of evidence (e.g., geological), considered together, increase confidence in decision-making.

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## Implications of Variability

- Sampling over extended periods (e.g., multiple short-term samples or fewer longer-term samples) may be needed to attain high scientific confidence in data interpretation.
- “Early action” (pre-emptive building mitigation for vapor intrusion) may be relatively appealing.

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## OSWER's Final Guidance for Vapor Intrusion Assessment and Mitigation

- Generally reflects current practice (e.g., toxicity values, collection and weighing of multiple lines of evidence)
- Expanded scope addresses
  - Mitigation methods (e.g., monitoring, termination)
  - Petroleum hydrocarbons
  - Institutional controls

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## OSWER's Final Guidance for Vapor Intrusion Assessment and Mitigation

- Represents *recommendations* to EPA and delegated state agencies implementing *federal* statutes (CERCLA, RCRA) and regulations
- Does not address site identification pursuant to these statutes (e.g., any revision to Superfund listing process would entail a rule-making)

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## On-line Vapor Intrusion Resources

- <http://www.epa.gov/oswer/vaporintrusion/>
- <http://www.epa.gov/oswer/vaporintrusion/guidance.html>
- [http://www.epa.gov/superfund/sites/npl/Vapor Intrusion FAQs Feb2012.pdf](http://www.epa.gov/superfund/sites/npl/Vapor_Intrusion_FAQs_Feb2012.pdf)
- <http://www.epa.gov/oust/cat/pvi/pvicvi.pdf>

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