



Perspective // Vision // Solution

#### History of Vapor Intrusion





## HRS – NPL Listing

- Subsurface intrusion
  - Water in basements/crawlspaces
  - Vapor intrusion
  - Scoring new sites for inclusion on the NPL
- NPL sites will not be reopened
  - Five Year Reviews

#### **State Activities** Michigan Massachusetts \$4.9M Review and 700 closed TCE sites prioritize @ 4,000 sites Minnesota **Closed Sites** 100% 4,300 VIC, Superfund, Site Assessment RCRA Programs 33.26% 1,430 VOCs 3.49% 150 Prioritized (Sensitive Receptors -Schools/Day Care Center) 37 Detailed File Review 0.86% 0.09% 4 Investigated 0.07% **3** Reopened

## **VOC Groundwater Plume**

#### The presence of a VOC groundwater plume above vapor intrusion standards requires further evaluation for vapor intrusion risk.

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#### **Groundwater Plume Delineation**







#### **Groundwater Plume Delineation**











#### Groundwater at the Water Table

"When groundwater is a subsurface source of vapors, collect groundwater samples from wells screened across the top of the water table to characterize the source strength for vapor intrusion."

Source: EPA's June 2015 OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air.



## Groundwater at the Water Table

All TCE in groundwater



TCE at or near the water table





- Not detected
  0.1 5.2 (VISL)
  5.3 50.0
- 50.1 100.0 TCE > 5.2 ug/L Plume
  - 100.1 200.0 100-Foot Plume Buffer



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#### **Sampling Hierarchy**

- 1) Groundwater
- 2) Soil Gas
- 3) Subslab
- 4) Indoors

## Indoor Air Background Concentrations

- EPA guidance provides generic background concentrations. e.g., 0.5 µg/ m3 TCE
- Site-specific Recommended due to low-level TCE vapor found in all houses
  - Source unknown
  - Hazard Ranking Scoring guidance allows use of 3x highest background measured





# Site-specific Background = 1.9 ug/m3



#### 3 x Site-specific Background = 5.7 ug/m3



Home

