

NJDEP VAPOR INTRUSION GUIDANCE



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New Jersey Department of Environmental Protection
Site Remediation and Waste Management



NJDEP Vapor Intrusion Current Policy

NJDEP Vapor Intrusion Website

www.nj.gov/dep/srp/guidance/vaporintrusion/

Currently contains links to eight documents, including:

- NJDEP Vapor Intrusion Guidance document (October 2005)
- NJDEP Certified Laboratories - EPA Method TO-15 & TO-17
- NJDEP Regulatory Reporting Format and Electronic Deliverables Requirements
- Method TO-15 Units Conversion Table (Excel format or zip file)



NJDEP Vapor Intrusion Committee

- ◆ Diane Groth, Chair
- ◆ John Boyer
- ◆ Tracy Grabiak
- ◆ William Hose
- ◆ Stephen Myers
- ◆ Paul Sanders
- ◆ Heather Swartz



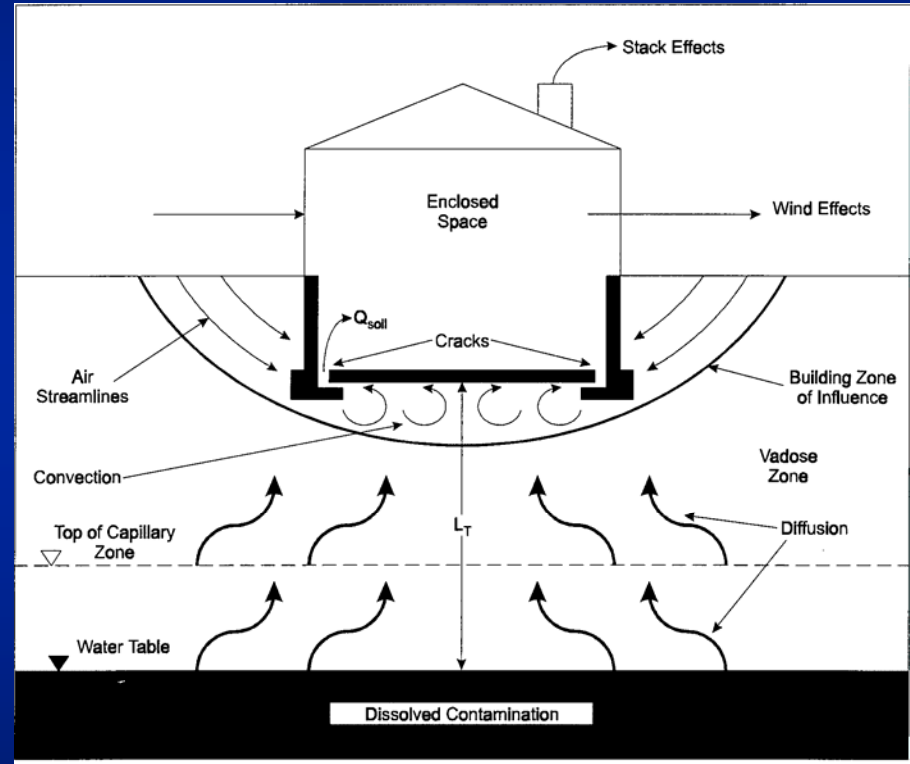
Conceptual Site Model: Issues To Be Considered

*Sources of Vapor
Intrusion*

*Vapor Migration
Mechanisms*

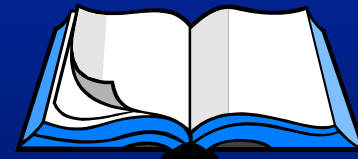
Receptors

*Factors Affecting
Vapor Migration*



NJDEP Vapor Intrusion Guidance Document (2005)

- Conceptual Site Model
- Development of Screening Levels
- Investigative Procedures
- Petroleum Hydrocarbons & Biodegradation
- Background Indoor Air Contamination
- Data Interpretation
- Community Outreach
- Remedial Action



Program Outline

- *Introduction/Indoor Air and Soil Gas Screening Levels*
- *Ground Water Screening Levels and Site Specific Evaluation*

Decision Framework

- *Break*
- *Ground Water Investigation*
 - *Soil Gas Investigation*
 - *Questions/Lunch*
 - *Indoor Air Investigation*

Quality Assurance/Quality Control Requirements

- *Data and Background Evaluation*
 - *Break*
 - *Community Outreach*
 - *Remedial Actions*

Questions



Vapor Intrusion Screening Levels

Indoor Air Screening Levels

- *Generic Screening Levels*
 - *Rapid Action Levels*
- *Health Department Notification Levels*
 - *Site-Specific Options*

Soil Gas Screening Levels

- *Generic Screening Levels*
 - *Site-Specific Option*



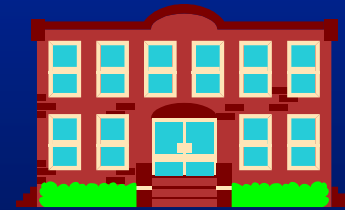
Indoor Air Screening Levels (IASL): Residential

- Residential health-based indoor air screening values obtained from the USEPA Region III Risk Based Concentration (RBC) Table
- Typical residential exposure scenario:
 - Exposure Frequency - 350 days per year
 - Exposure Duration - 30 years
 - Includes age adjusted factor for carcinogens



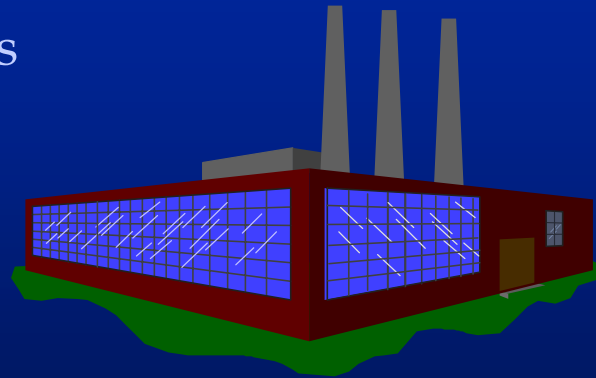
Residential IASL (continued)

- Higher of the health-based indoor air screening value or analytical reporting limit using Method TO-15
- Residential IASL applicable to residential properties, day care centers and schools



Indoor Air Screening Levels: Nonresidential

- Based on the Region III toxicity factors and the adult worker as the sensitive receptor
- Typical nonresidential exposure scenario:
 - Exposure frequency - 250 days per year
 - Exposure duration - 25 years



Nonresidential IASL

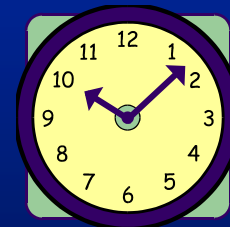
- Higher of the health-based indoor air screening value or analytical reporting limit using Method TO-15
- Appropriate for the commercial/industrial facility not currently handling/using the subsurface contaminants of concern
- Facilities using the same chemicals consider the applicability of OSHA and the nonresidential screening levels



Additional Indoor Air Screening Levels

Rapid Action Levels (RAL):

- trigger levels (Table 2) for the initiation of prompt action
- 100X cancer health-based residential IASL
- 2X noncancer health-based residential IASL
- Exception: Trichloroethylene (TCE) RAL based on the HDNL



Additional Indoor Air Screening Levels (continued)

Health Department Notification Levels (HDNL):

- trigger levels (Table 2) for the notification of the local health department and/or NJ Department of Health & Senior Services (NJDHSS)
- purpose is to determine need for emergency action at occupied buildings
- one-half ATSDR acute Minimum Risk Level (MRL) or 1,000X cancer health-based residential IASL
- facilities with sensitive receptors below HDNL may be referred to NJDHSS on case by case basis



Indoor Air Screening Levels: Site-Specific Options

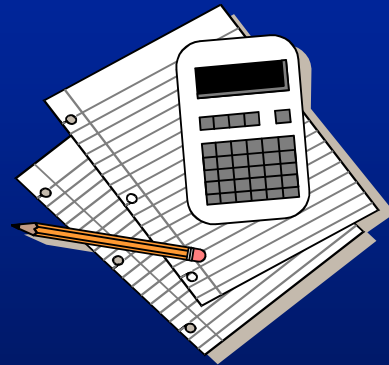
Site-Specific IASL may be developed based on:

- chemical toxicity factor changes in IRIS/USEPA Region III Table
- changes in risk assessment methodologies/exposure parameters not yet reflected in guidance



Soil Gas Screening Levels (SGSL)

- Calculated using the health-based indoor air screening values and an attenuation factor of 0.02 (or 50X health-based IASL)
- Higher of the health-based soil gas screening value or analytical reporting limit using Method TO-15



Soil Gas Screening Levels: Site-Specific Option

Develop alternate attenuation factors to determine site-specific SGSL



Screening Level Updates

- Value updates on the web site every 6 months
- Refer to the web site for latest information

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