

Update on DNREC's Petroleum Cleanup at the former Ron's Discount Energy Mart Site; and Proposed Vapor Intrusion Investigation

Public Workshop at
Claymont Community Center
March 19, 2009

Alex Rittberg and
Christopher Brown, P.G.
Delaware Department of Natural Resources
and Environmental Control (DNREC)
Tank Management Branch



Purpose

Update on progress of cleanup actions

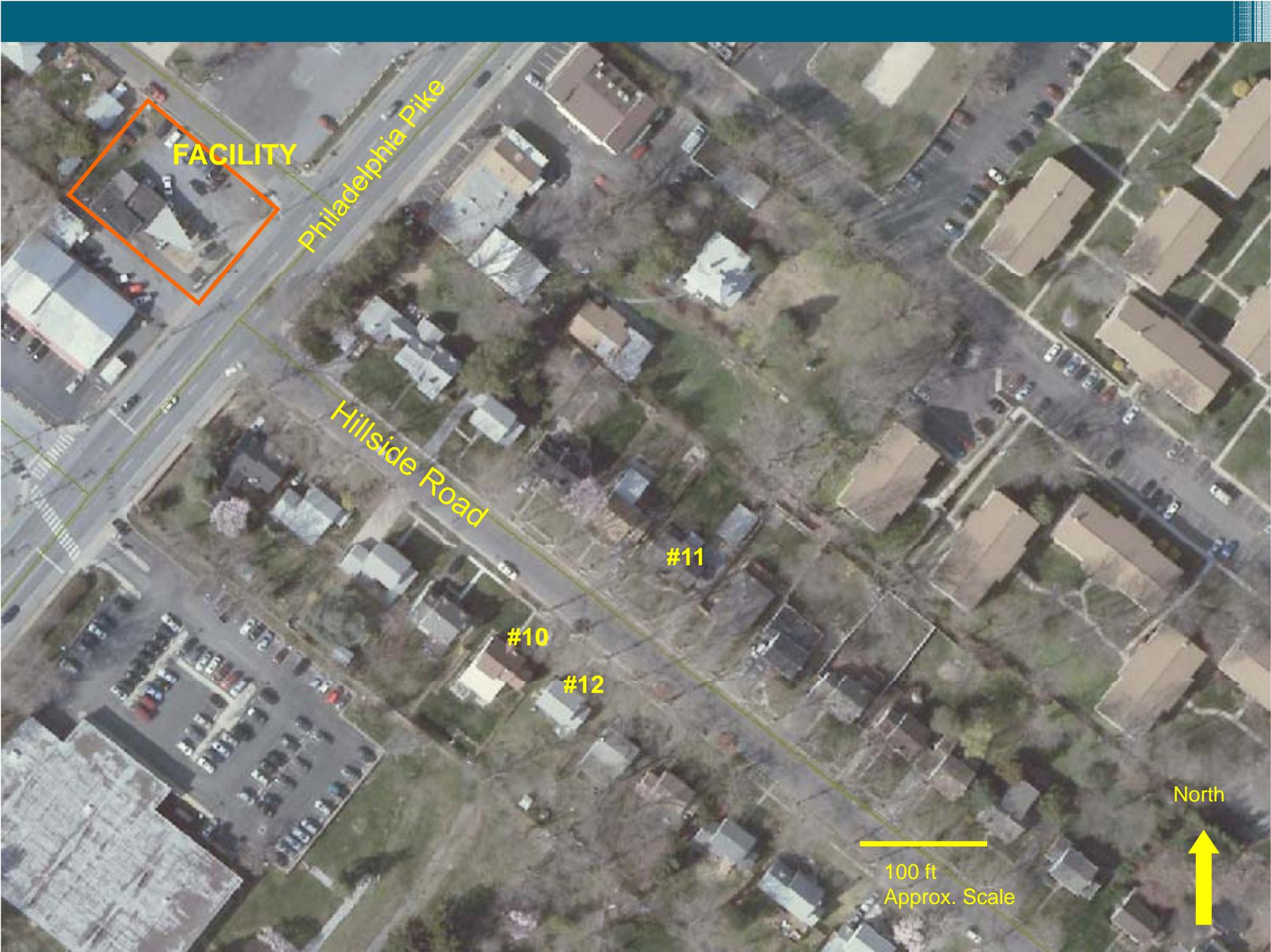
- Project history
- Project goals
- Proposed investigation & resulting recommendations



Project History and Progress

- Penny Hill Mobil, Inc.
- dba Ron's Discount Energy Mart
- Property owner: Palstein Enterprises, Inc.
- Currently leased by Infanzon Auto Repair
- State take-over of cleanup actions
- Open enforcement action





FACILITY

Philadelphia Pike

Hillside Road

#11

#10

#12

100 ft
Approx. Scale

North

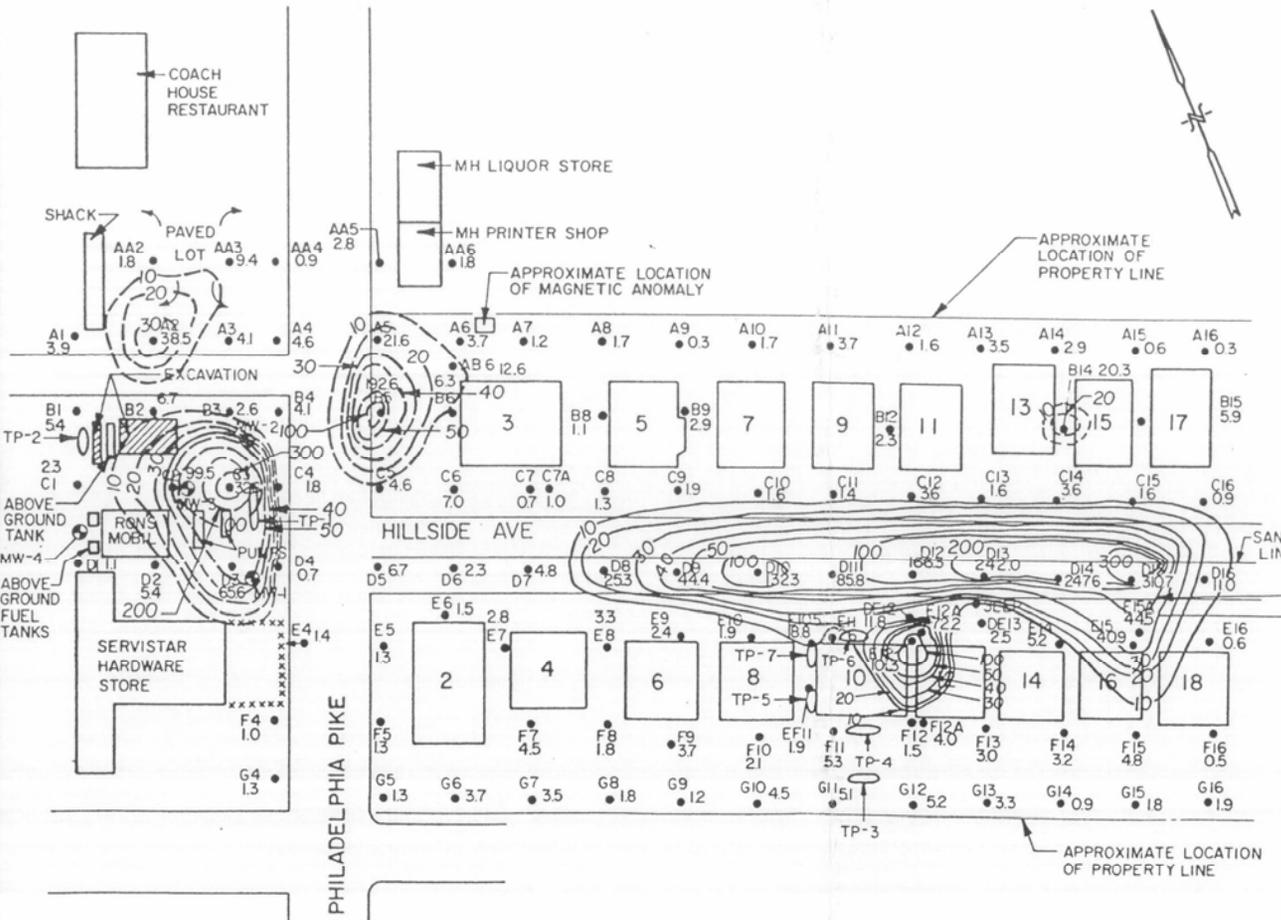
Project History

- **November 1988** - petroleum vapors in sanitary sewer and several residences along Hillside Rd.
- DNREC responds, determines that petroleum USTs at Ron's Discount Energy Mart are source
- Responsible Party (RP) directed to investigate the extent of contamination and perform cleanup
- **November 1988** - RP refuses responsibilities and DNREC takes over corrective actions

Project History

- **November 1988** - first of many Community Meetings; early 1989 Newsletter begun
- **December 1988** - initial investigation and installation of monitor wells
- **February 1989** - residents of 10 Hillside Road relocated; house-to-house survey performed; mitigation begun at residences
- **March 1989** - shallow soil gas survey throughout Hillside Road neighborhood

DRAWING NUMBER: E2256A
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DRAWN BY: [Signature]
 DATE: 8-2-89



- LEGEND:**
- A14 ● 2.9 SOIL GAS SAMPLING LOCATION. ADJACENT VALUE INDICATES CONCENTRATION OF VOLATILE ORGANIC COMPOUNDS IN PARTS PER MILLION (PPM)
 - 10- ISOPLETH OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS. UNITS ARE PPM, DASHED WHERE INFERRED
 - MW-1 ● MONITORING WELL
 - TEST PIT

1989 Shallow Soil Gas Survey (depth 4 ft. or less)

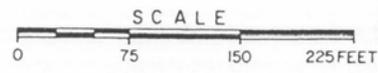


FIGURE 5

ISOPLETHS OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS
 HILLSIDE AVE - PHILADELPHIA PIKE AREA
 CLAYMONT, DELAWARE
 PREPARED FOR

THE STATE OF DELAWARE
 DIVISION OF AIR AND WASTE MANAGEMENT
 715 GRANTHAM LANE
 NEW CASTLE, DELAWARE



Mitigation at 10, 11, 12 Hillside Road – Controlling Groundwater and Vapors

- 10 – interceptor trench & piping; tied to sewer line; vapor venting; sealed basement; drain trap
- 11 – enclosed French drain & sump; repaired basement floor; vapor venting
- 12 – seep in driveway re-directed; tied to sewer trench backfill



Project History

- **August 1989** - mitigation complete at 10, 11, 12 Hillside Rd. and 10 reoccupied
- Groundwater monitoring continues
- **April 1993** - all underground storage tanks removed from Ron's Discount facility
- **1999** - began review of long-term remedial strategies
- **July 2000 - October 2001** - interim remedial action (enhanced fluid recovery) performed on about a monthly basis; continued review of remedial strategies

Vacuum Trucks Used in Remediation Events





Goals of Corrective Actions

- Address historic emergency conditions
- Investigate extent of contamination
- Assess and mitigate risks
- Stable or shrinking groundwater plume
- Re-assess risks based on current conditions
- No Further Action status

Most Recent Activities



- August 2005 - Oxygen Release Compound (ORC) remediation event
- July 2007 - repair of three (3) monitor wells at facility
- Continued groundwater monitoring

ORC Remediation August 2005





⊕ **Approx. Monitor Well Location**

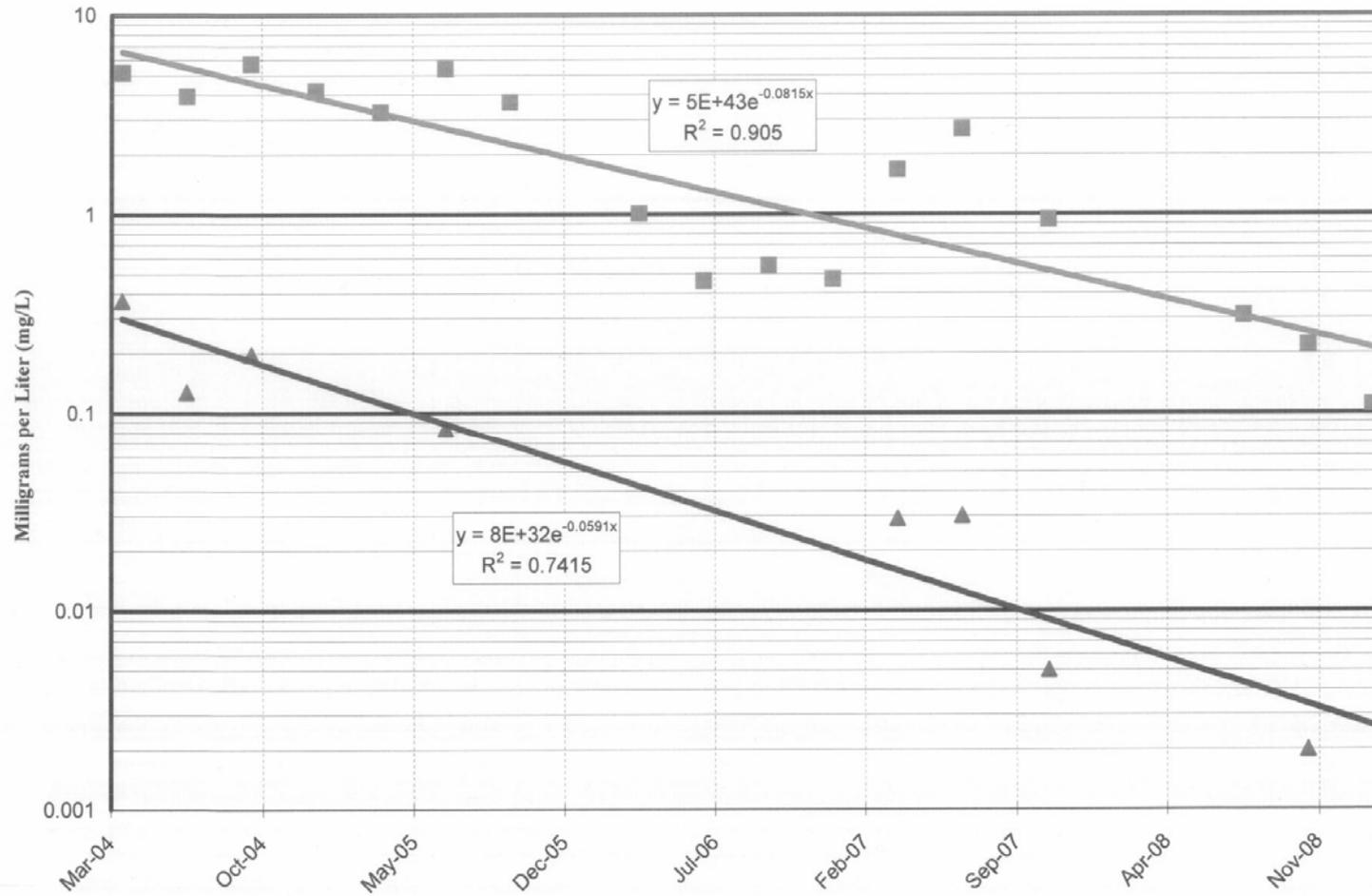
— **ORC Remediation Area**

—
100 ft
Approx. Scale

↑ North

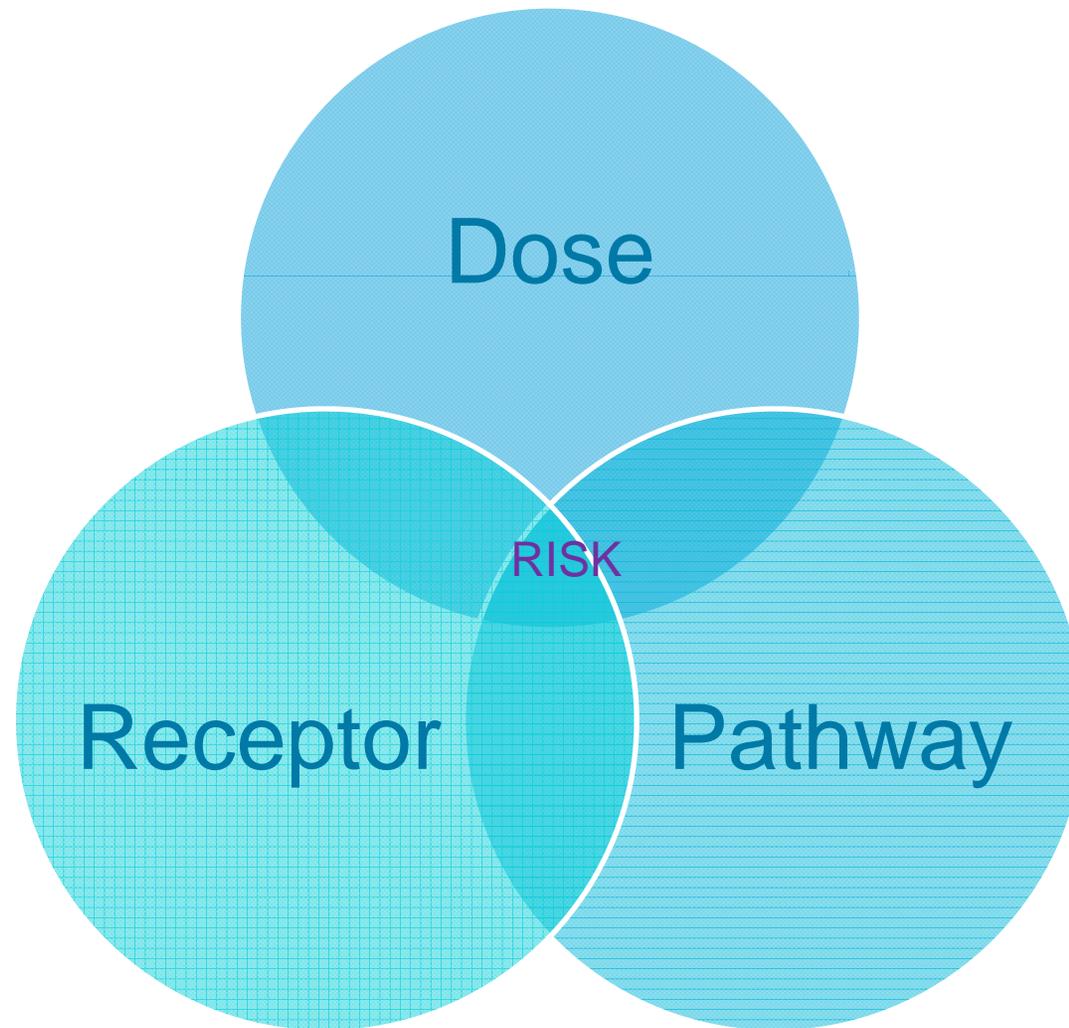
Milligrams per Liter

HR-2 Trend Analysis of Benzene and MTBE Over Time Ron's Discount Energy Mart

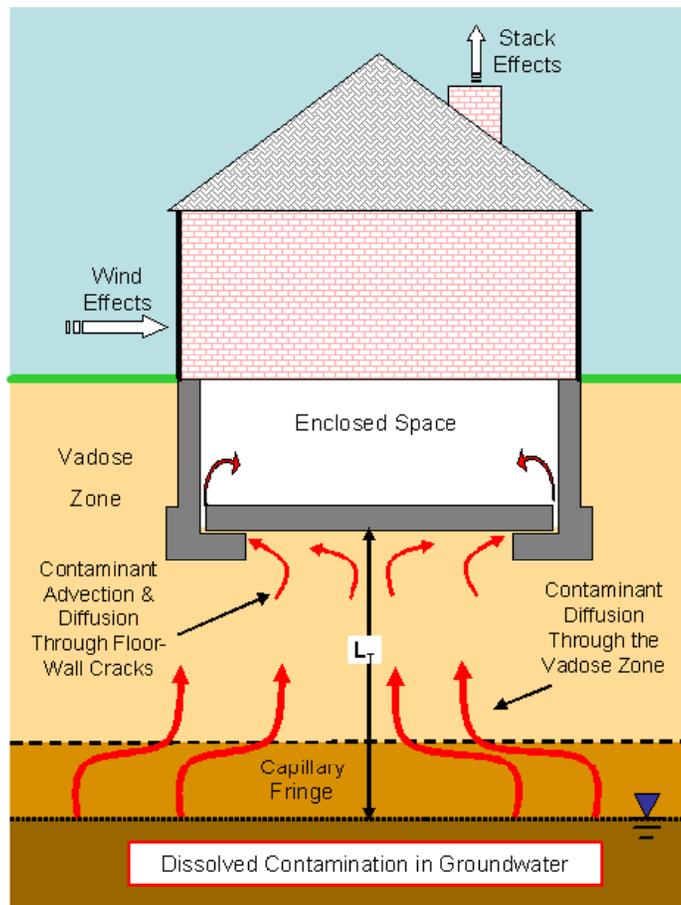


▲ Methyl Tertiary Butyl Ether ■ Benzene — Expon. (Methyl Tertiary Butyl Ether) — Expon. (Benzene)

Re-Assess Risk: Current Conditions



Vapor Intrusion Investigation and Risk Assessment



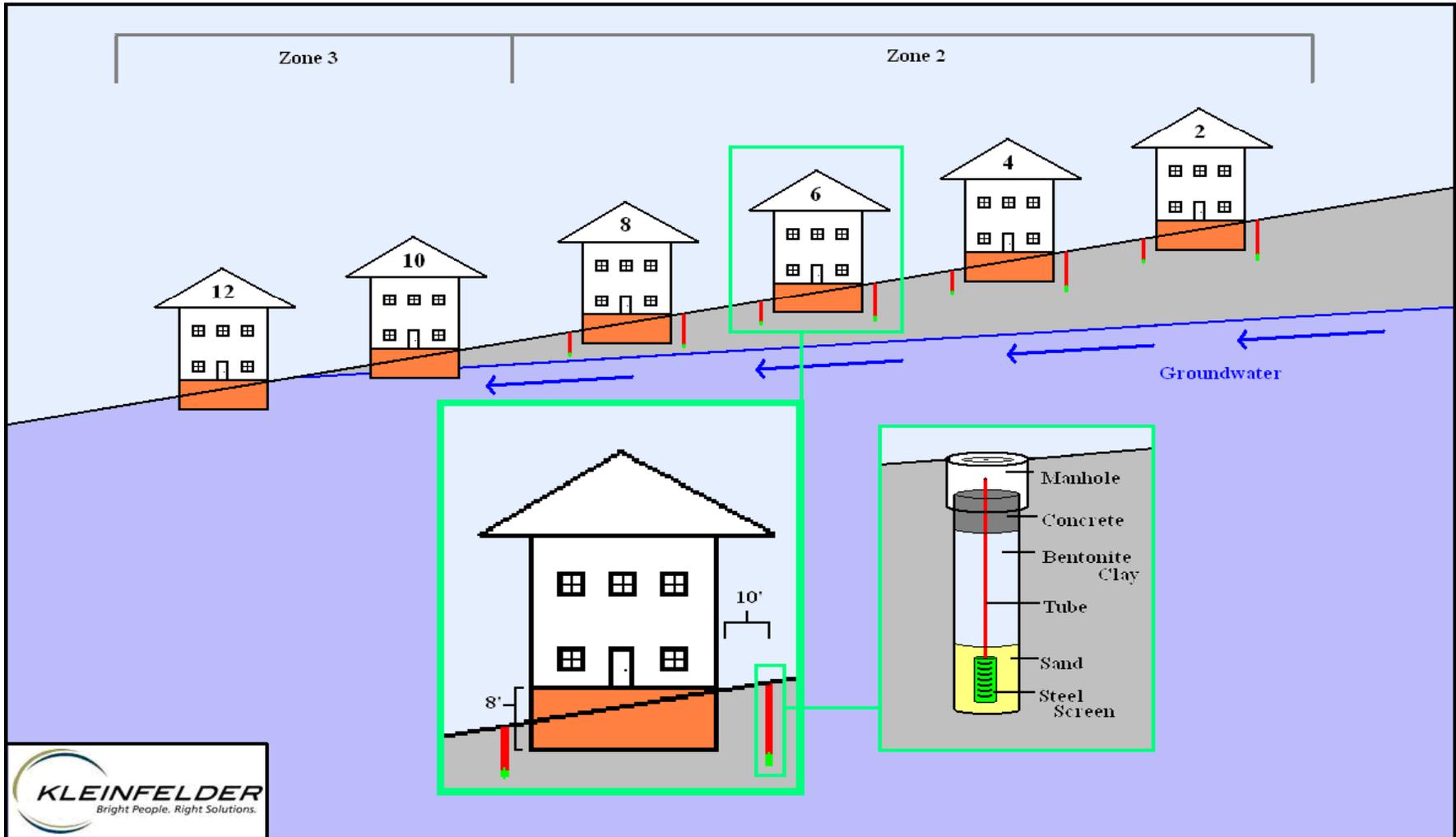
- Vapor from soil or groundwater contamination
- Vadose Zone - soil above the water table
- Indoor Air - residential or commercial

Technical Approach

Table 1 - Investigation Summary

Designation	Area	Conceptual Site Model	Risk Scenario	Proposed Scope of Work
Zone 1	On-Site Facility	Future Vapor Intrusion	Commercial	Soil Vapor Investigation
Zone 2	2-8 Hillside Road	Vapor Intrusion	Residential	Soil Vapor Investigation
Zone 3	9-12 Hillside Road	Groundwater Intrusion / Preferential Pathway	Residential	Indoor Air Sampling

Conceptual Model



Zone 1 – Facility Soil Vapor Investigation

- Four proposed soil vapor points for initial assessment of vapor conditions
- Points installed with direct push rig to 8 feet below grade
- Sample collection with summa canisters and analysis for VOCs
- Ambient air sample included for background conditions
- Risk analysis using an EPA and DNREC accepted model under commercial scenario



Zone 2 – Residential Soil Vapor Investigation

- Soil vapor investigation of 2-8 Hillside Road residences
- Fourteen proposed soil vapor points (two per residence) for initial assessment of vapor conditions
- Points installed with a direct push rig to basement depth ~7 - 8 feet below grade
- Sample collection with summa canisters and analysis for VOCs
- Ambient air sample included for background conditions
- Risk analysis an using EPA and DNREC approved model under residential scenario



Proposed SVMP Location Plan



Soil Vapor Sampling



Photo of Surface Completion



Zone 3 – Residential Indoor Air Sampling

- Indoor air sampling of 9-12 Hillside Road residences
- Sampling will consist of a three step process
- Step 1 - One week prior to sampling a pre-sampling survey will be completed



Zone 3 – Residential Indoor Air Sampling

- Step 2 - Collection of ambient, basement and first floor samples for 24 hour period
- Sample collection with summa canisters and analysis for VOCs
- Step 3 – Summa canister pickup



Schedule

Table 2 –Schedule	
Task	Time Period
Quarterly Sampling and Reporting	March 2009 – March 2010
Public Meeting	March 2009
Off-Site Access	April 2009
Zone 1 Facility Soil Vapor Investigation	May 2009
Zone 2 Residential Soil Vapor Investigation	May 2009
Zone 3 Residential Indoor Air Sampling	May 2009
Data Analysis and Reporting to DNREC	June – July 2009
Project Coordination	March – July 2009

What's Next?

Possible Recommendations



- (No) Further Action
- Follow-up monitoring
- Possible mitigation
- At facility - address several site-use scenarios



Keeping You Informed

- Permission for property access
- Project milestones
- Investigation completion
- Investigation report and recommendations
- Decision on project status
- Future newsletters, meeting
- www.awm.delaware.gov/Info/Pages/PetrolUpdate-Rons.aspx



For Additional Information

Project Manager:

Christopher Brown, P.G.
DNREC Tank Management
Branch
391 Lukens Drive
New Castle, DE 19720
302-395-2500
Christopher.Brown@state.de.us

Health Related Questions:

Dr. Gerald Llewellyn
Division of Public Health
417 Federal Street
Dover, DE 19901
302-744-4546
Gerald.Llewellyn@state.de.us

Groundwater Seeps



- Natural groundwater seeps
- Iron staining & bacteria sheen