# Agenda
# Public Information Session
# November 28, 2018

| | |
|---|---|
| 5:30 to 6:45 | OPEN HOUSE |
| 7:00 to 7:45 | PRESENTATIONS |
| 7:50 to 9:00 | QUESTIONS |
| 9:00 to 10:00 | OPEN HOUSE RESUMES |

# Agenda
# Public Information Session
# November 28, 2018

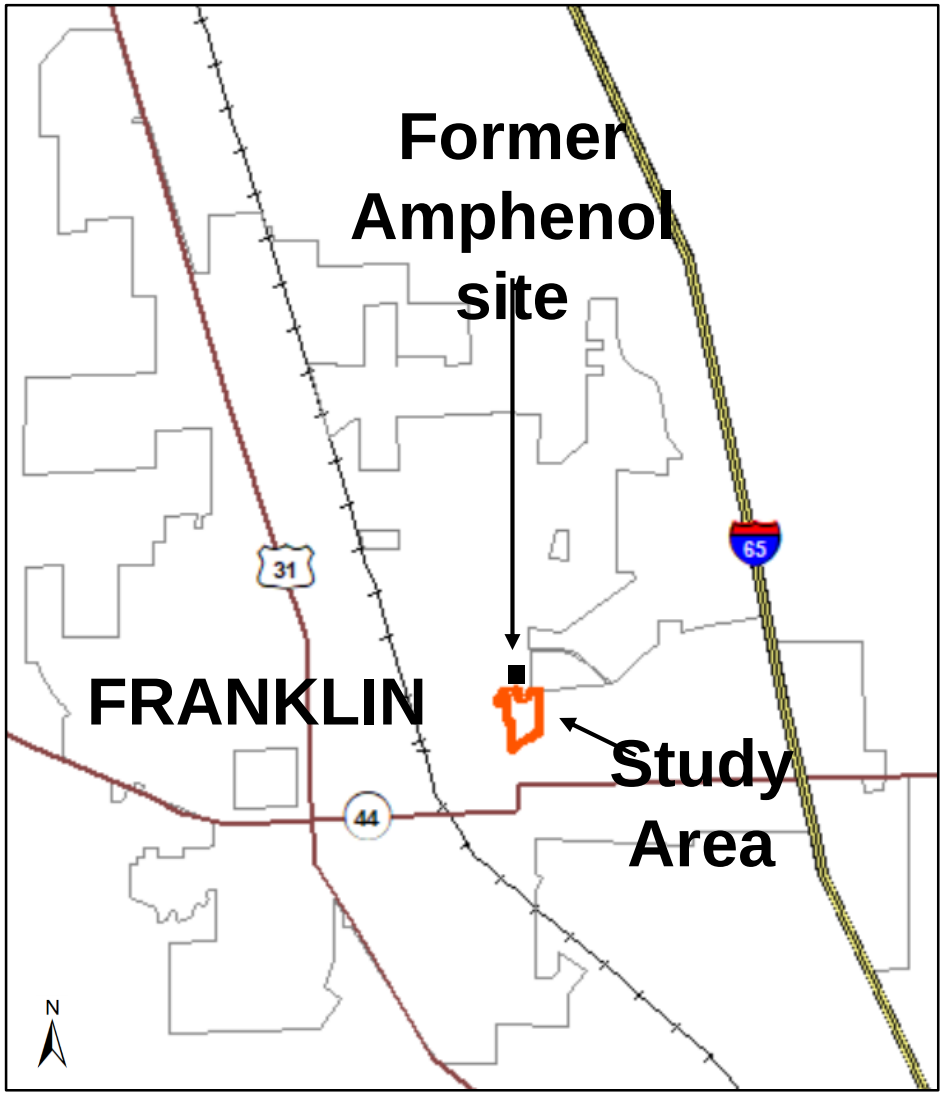
| | |
|---|---|
| Welcome | Mayor Barnett<br>Rafael Gonzalez, EPA Public Affairs Specialist<br>Jose Cisneros, EPA Branch Chief |
| Amphenol Site Overview | Carolyn Bury, EPA Project Manager |
| ATSDR Role | Motria Caudill, ATSDR Toxicologist |
| Questions | |

U.S. Environmental Protection Agency

# Overview of Corrective Action Work
# Vapor Intrusion Investigation
# Former Amphenol Site

Public Information Session
Franklin, IN
November 28, 2018

# Former Amphenol site in Franklin, IN




# PRESENTATION OVERVIEW

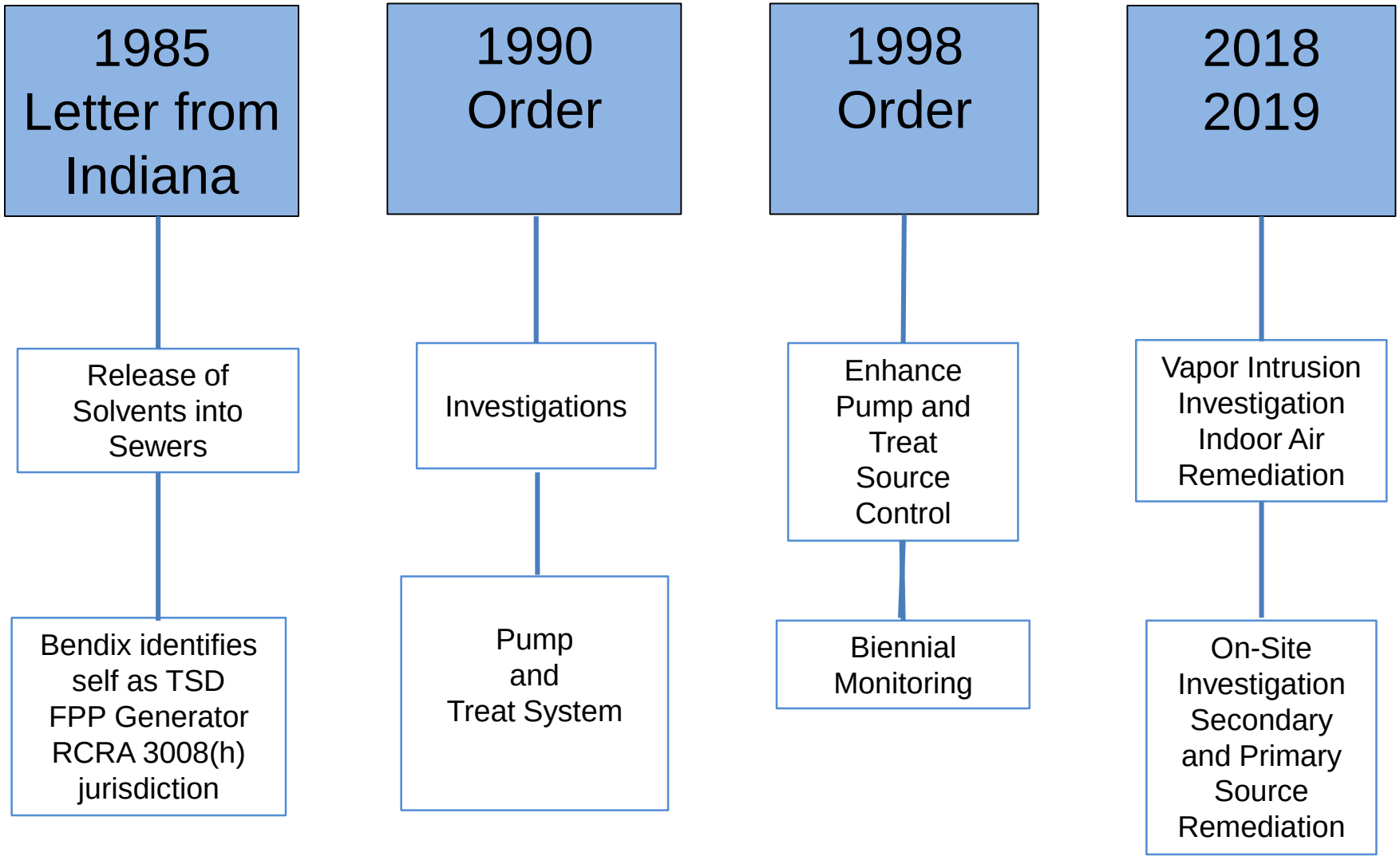
Site operational history

Regulatory context

Current Investigation

Future Corrective Action work

# Vapor Intrusion Investigation and Beyond



# Corrective Action Sites

A long history of industrial operations, much of which occurred prior to modern environmental practices, left a legacy of contamination at sites across the country.

# Prior to 1983 - Solvents dumped and VOCs were released

Pump and Treat Remedy Building

# 1994 - Remedy Selection: Groundwater Pump and Treat System installed
# 1995 – 2010 – System enhanced which operates today

Inside the pump and treat system shed

# What are VOCs?

- Volatile organic compounds emit gases from solid or liquid.

- Industrial degreasing solvents (TCE and PCE)

- VOCs are widely used as ingredients in household products:

  Paints, varnishes, wax, vinyl, hobby glue all contain organic solvents


WATCO
DANISH
OIL
FINISH
PARKS
Tung Oil
DEFT
CLEAR WOOD FINISH
REMOVES
PAINT
VARNISH
FLAT
Contact Cement

# What are Health Concerns with VOC Exposure?

Vapor intrusion of VOCs above safe levels into buildings is a health concern of the US EPA and other agencies.

**Short-term intensive exposure:**

- Eye, nose and throat irritation
- Headaches, loss of coordination and nausea

**Long-term exposure at unsafe levels:**

- May cause damage to liver, kidney and central nervous system
- Some VOCs are suspected or known to cause cancer in humans

# 2018 Vapor Intrusion Investigation in Neighborhood

1996 Risk Evaluation concluded no indoor air risk (based on modeling, no indoor air testing)

New guidance and science on VOC exposure

EPA investigation launched – does residual contamination in the neighborhood cause vapor intrusion?

“Starting from Scratch”
Re-evaluating the former Amphenol Site

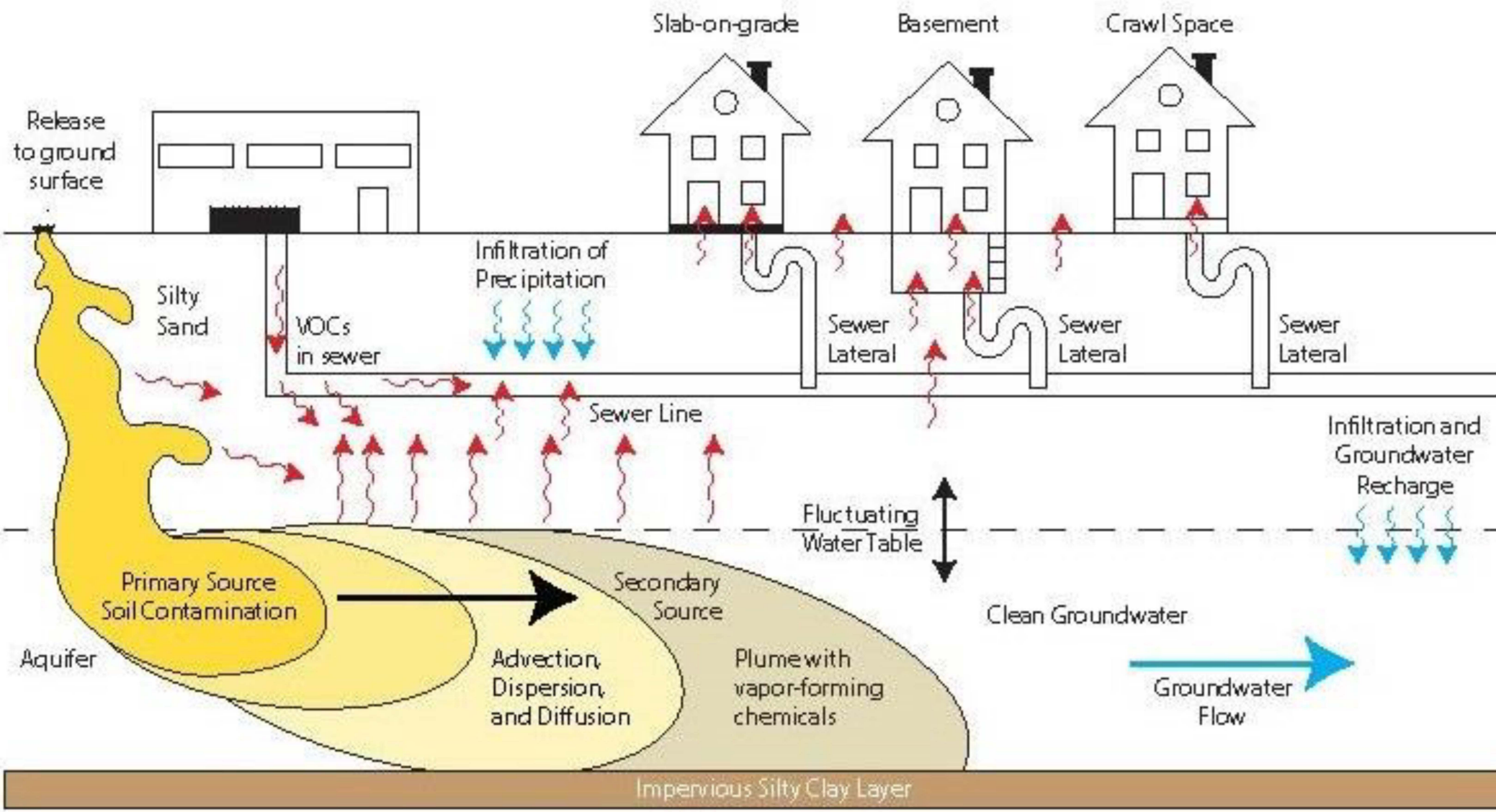
# Vapor Intrusion Investigation

Follow VOCs from source via migration pathways to indoor air

# Vapor Intrusion Study Area

- Historic data
- Groundwater flow direction
- Sewershed flow direction

# Possible Vapor Exposure Pathways



# Investigations in the Study Area

- Outdoor Air
- Groundwater
- Soil gas
- Sewer bedding gas
- Sewer VOC gas
- Indoor Air

(expand Study Area based on results)

# “Above or below a Screening Level”

What is a *Screening Level*?

What is *elevated*?

Whenever a measurement is made of contamination in the environment, a point of reference is needed to interpret the result.

# Screening Level

- Screening levels are much lower than the concentration at which health affects are expected.
- Conservative, low value, used for reference, not clean-up
- Calculated with many degrees of protection to produce the number.
- EPA calculates screening levels using a toxicity data about the chemicial

  Plus assumptions about how people are exposed to the contaminant (different industrial vs residential)
- When above screening level, we look more closely at a Site and potential health risks from exposure.
- At Amphenol, for indoor air, we used IDEM Risk Based Closure Levels to make remedial decisions.

# Outdoor Air Sampling

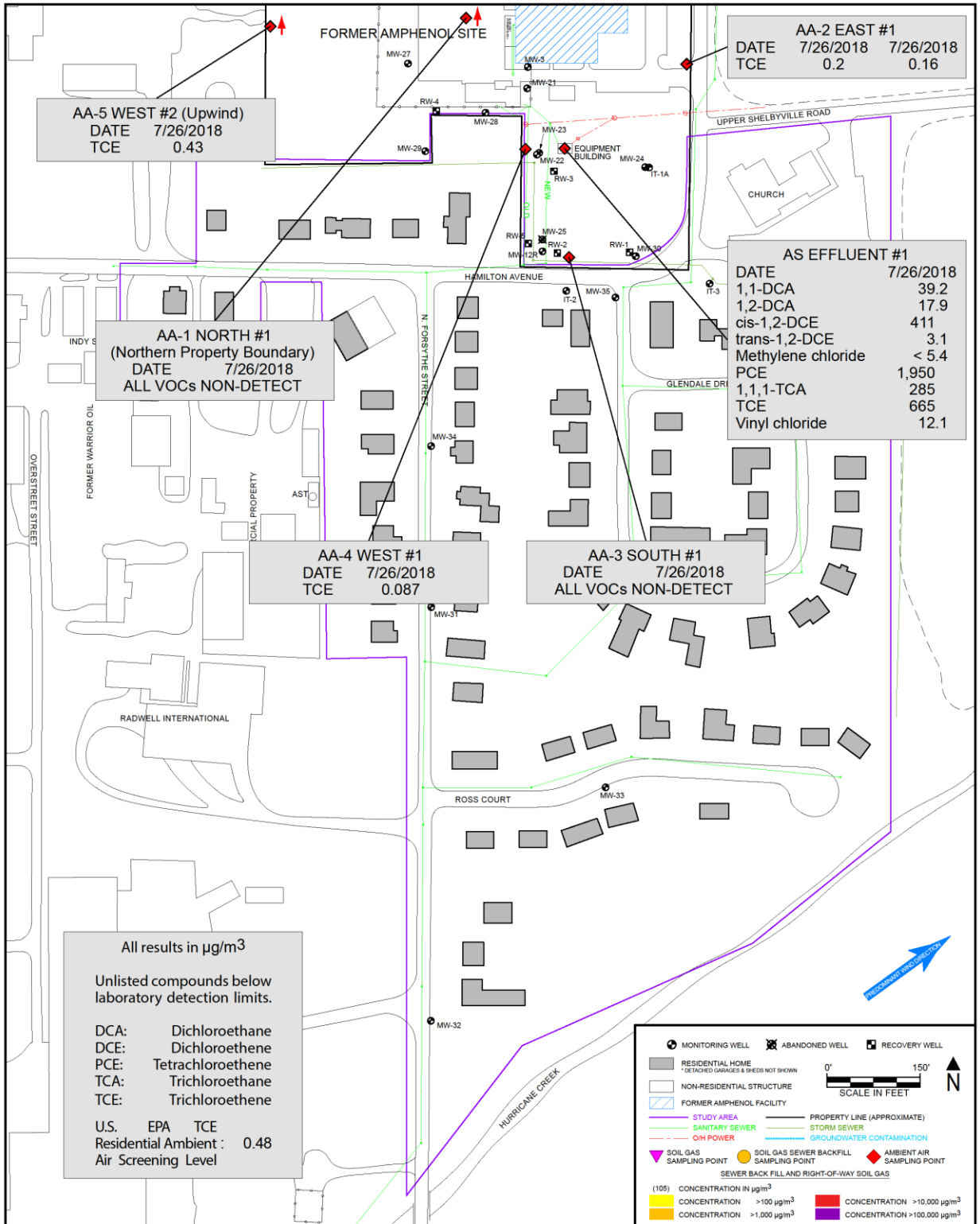
Groundwater treatment system building and emissions pipe.

# Outdoor Air Sampling

Sample location AA-3 South #1. The red arrow indicates the location of the sample intake.

# AIR SAMPLING LOCATIONS

FORMER AMPHENOL RFI/CMS; 980 HURRICANE ROAD, FRANKLIN, INDIANA



# Results

- Fence line non-detect or below indoor air screening levels
- Emissions vent estimated at 8 pounds/year (low)
- Permits typically issued at 2,000 pounds to 10 tons/year - perspective
- Amphenol installed carbon filter system
- No VOC emissions currently

# Sewer VOC Vapor Testing

# Sewer VOC Vapor Testing

**Elevated VOCs along Forsythe St and Hamilton Street**

Sanitary sewers

**Above Indoor Air Screening Level**

**Indoor air testing**

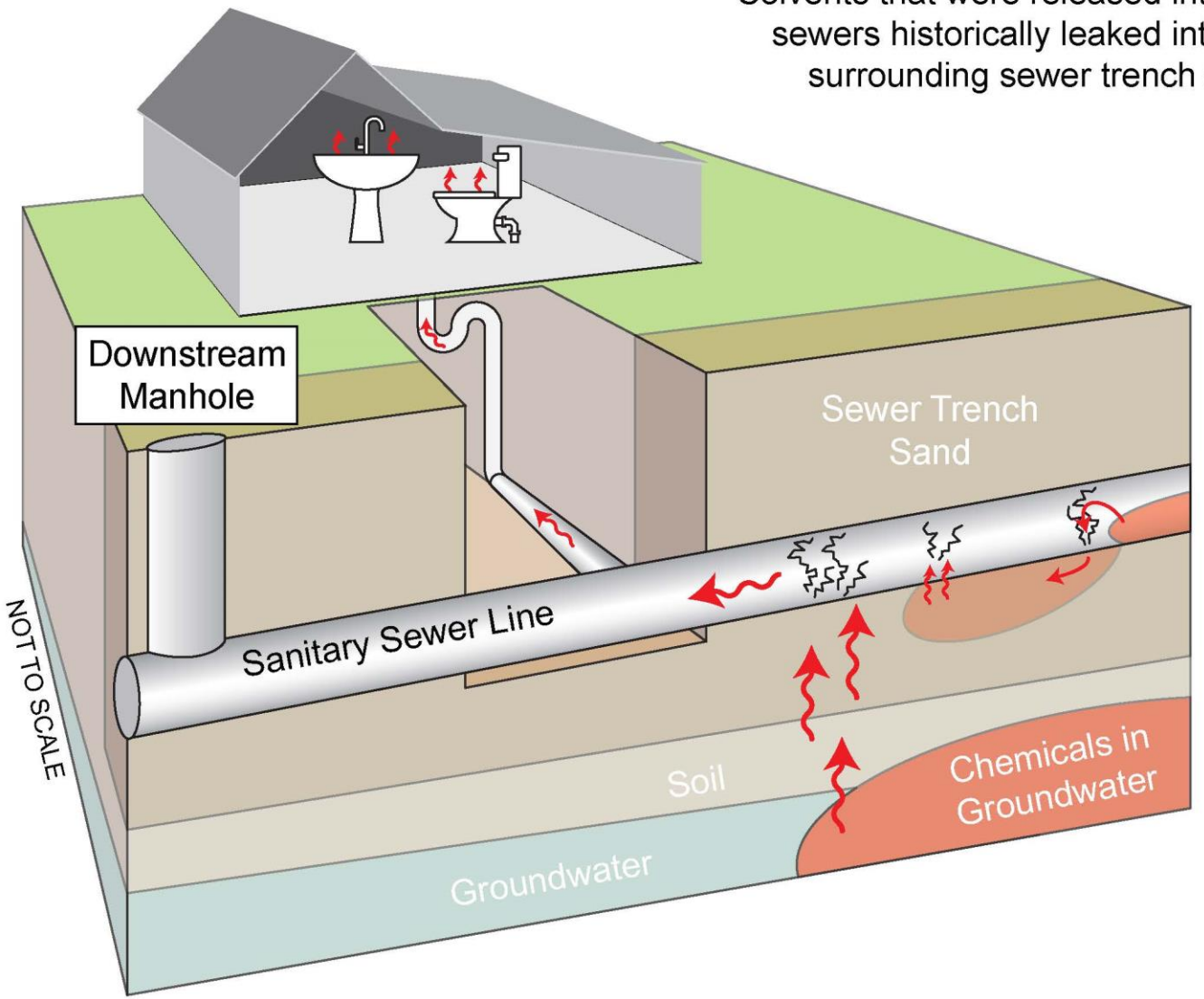
**Indoor air with a focusing on sewer migration pathway**

**30 manholes in study area**

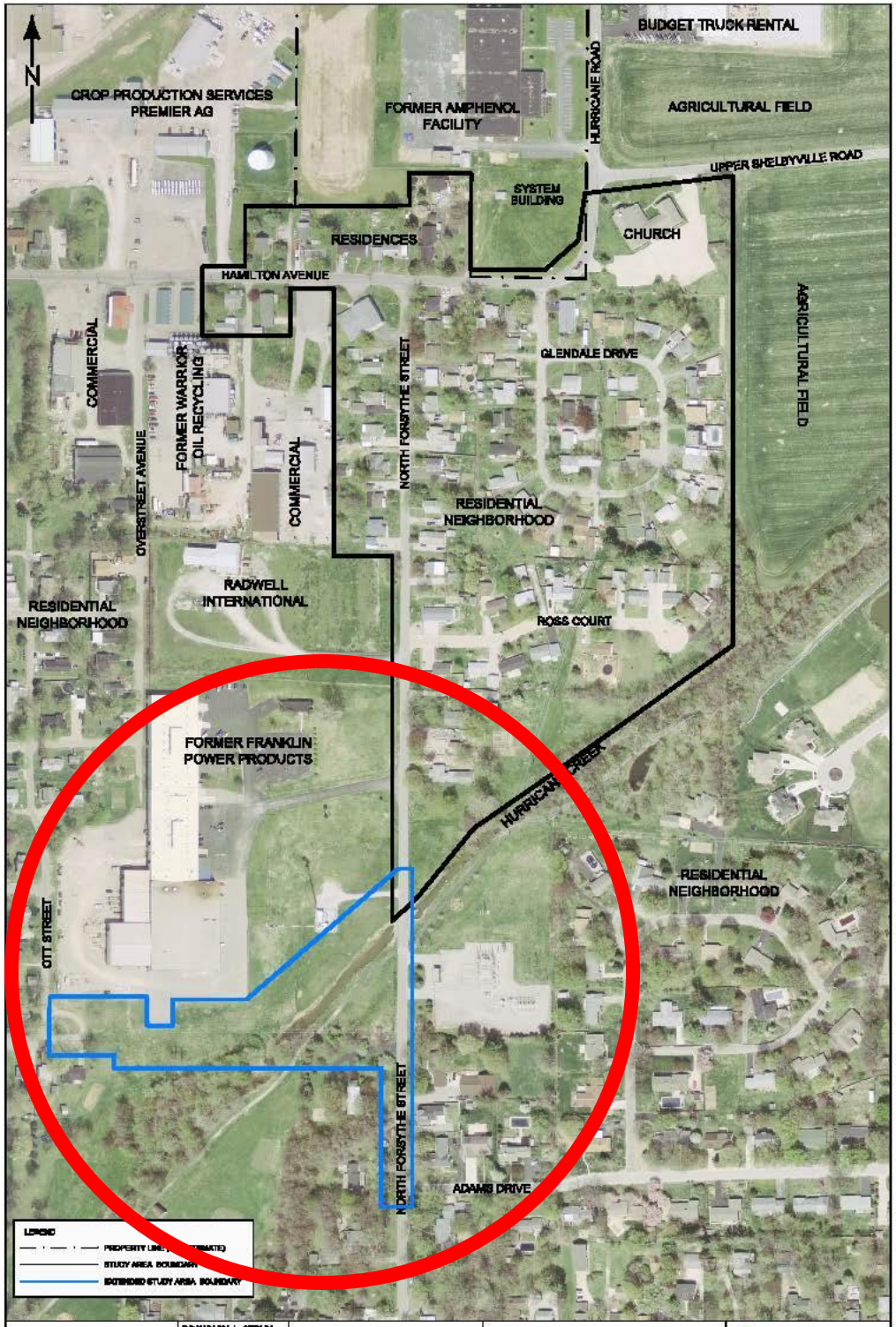
**+ 5 manholes in extended area plus re-sampling**

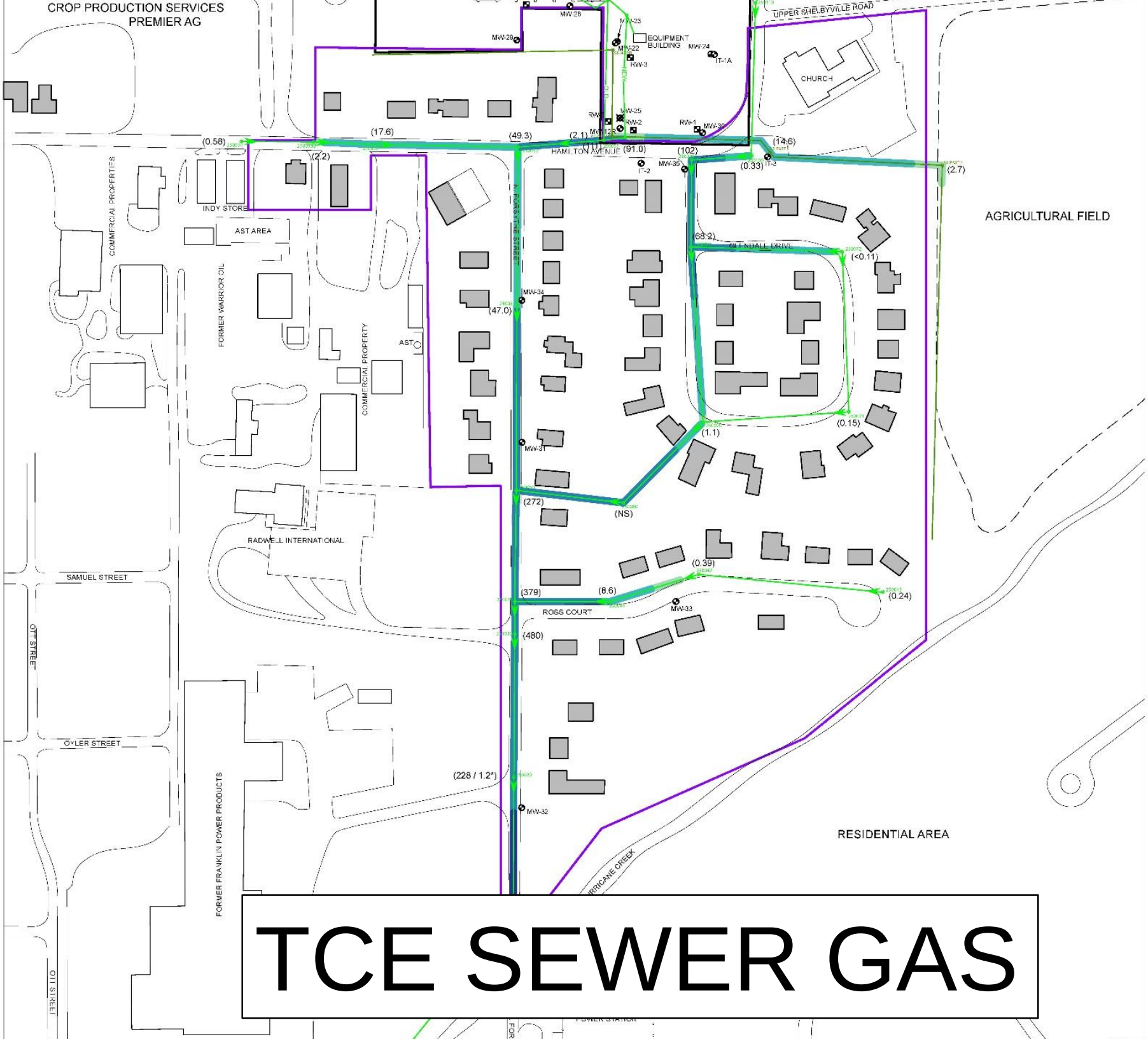
# Migration of soil vapors via sewer to indoor air

Solvents that were released into the sewers historically leaked into the surrounding sewer trench soils.




EPA United States Environmental Protection Agency


N
CROP PRODUCTION SERVICES
PREMIER AG
FORMER AMPHENOL
FACILITY
HURRICANE ROAD
BUDGET TRUCK RENTAL
AGRICULTURAL FIELD
UPPER SHELBYVILLE ROAD
SYSTEM
BUILDING
CHURCH
RESIDENCES
HAMILTON AVENUE
COMMERCIAL
FORMER WARRIOR
OIL RECYCLING
OVERSTREET AVENUE
COMMERCIAL
NORTH FORSYTHE STREET
GLENDALE DRIVE
AGRICULTURAL FIELD
RESIDENTIAL
NEIGHBORHOOD
RADWELL
INTERNATIONAL
RESIDENTIAL
NEIGHBORHOOD
ROSS COURT
FORMER FRANKLIN
POWER PRODUCTS
HURRICANE CREEK
RESIDENTIAL
NEIGHBORHOOD
OTT STREET
NORTH FORSYTHE STREET
ADAMS DRIVE
LEGEND
PROPERTY LINE
STUDY AREA BOUNDARY
EXTENDED STUDY AREA BOUNDARY
0'
200'
SCALE IN FEET
DRAWN BY: L. STRUM
DATE: 8/27/09
REVISED: 11/27/2015
HWPA.R11284-01
DWG. NO. 11284R1
FIGURE 1
STUDY
AREA MAP
FORMER AMPHENOL RFI/CMS
360 HURRICANE ROAD
FRANKLIN, INDIANA
iWM
CONSULTING GROUP




# TCE SEWER GAS

# SOIL GAS + SEWER BEDDING TESTING

## Street ROW Soil

Above VI screening level

↓

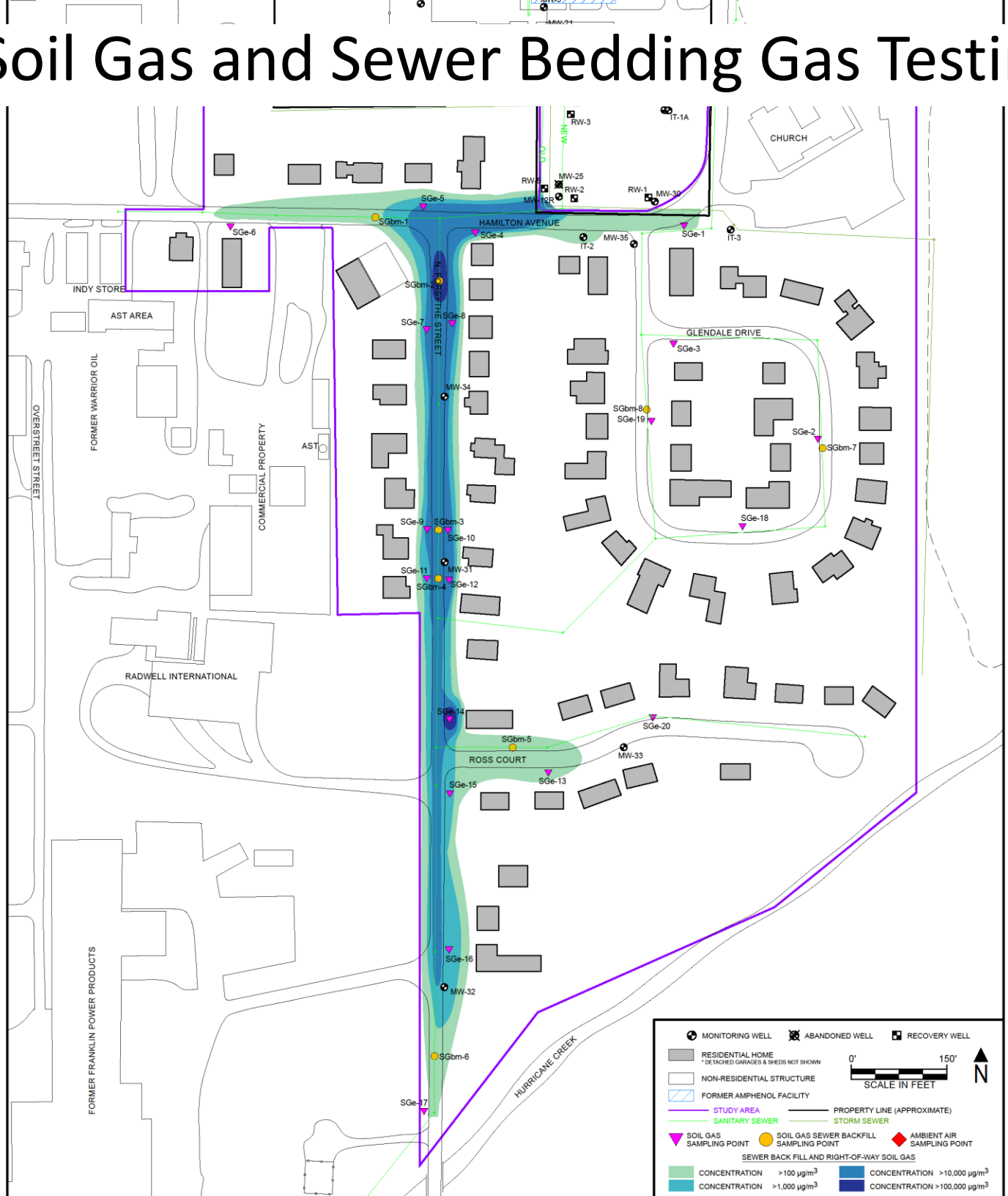
Indoor air testing

## Sewer Bedding Soil

↓

Secondary source area

# VOC Soil Gas and Sewer Bedding Gas Testing

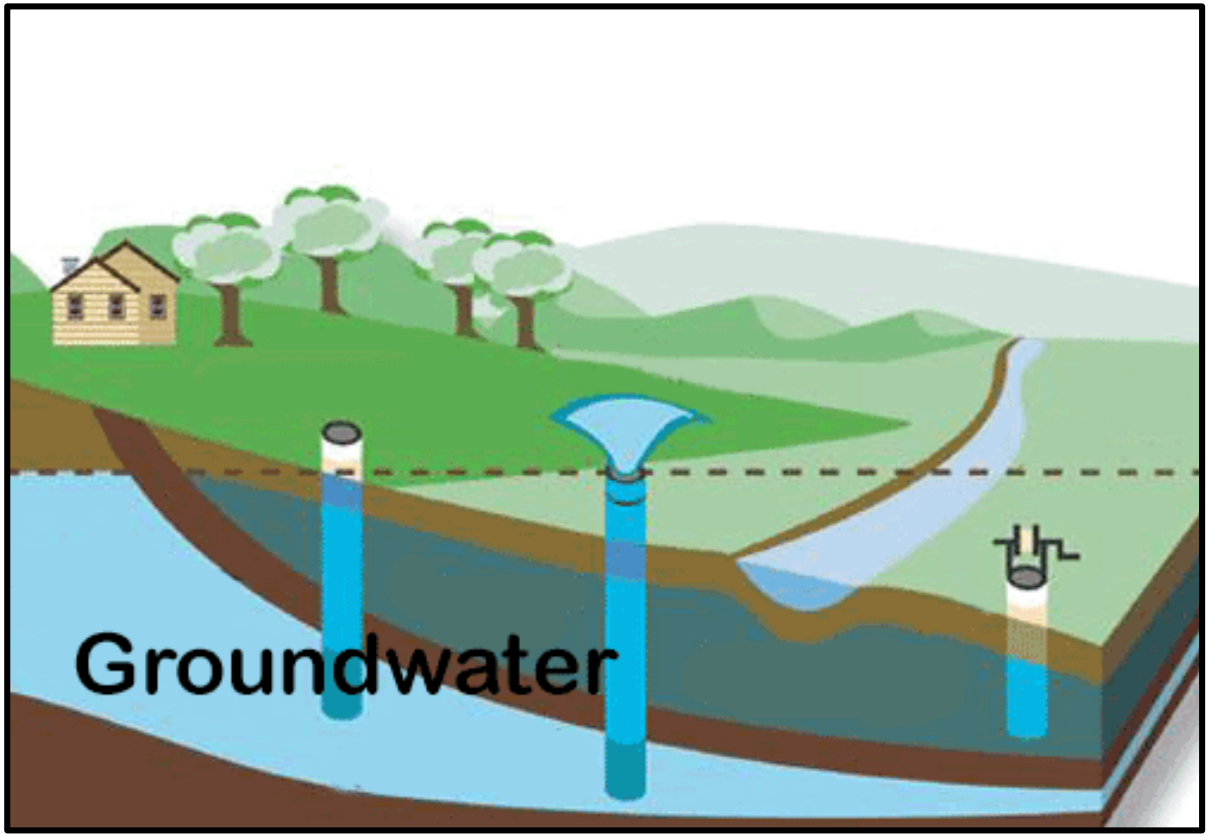


# Groundwater VOC Testing

**Contamination Plume Delineation**

**Above Screening Level**

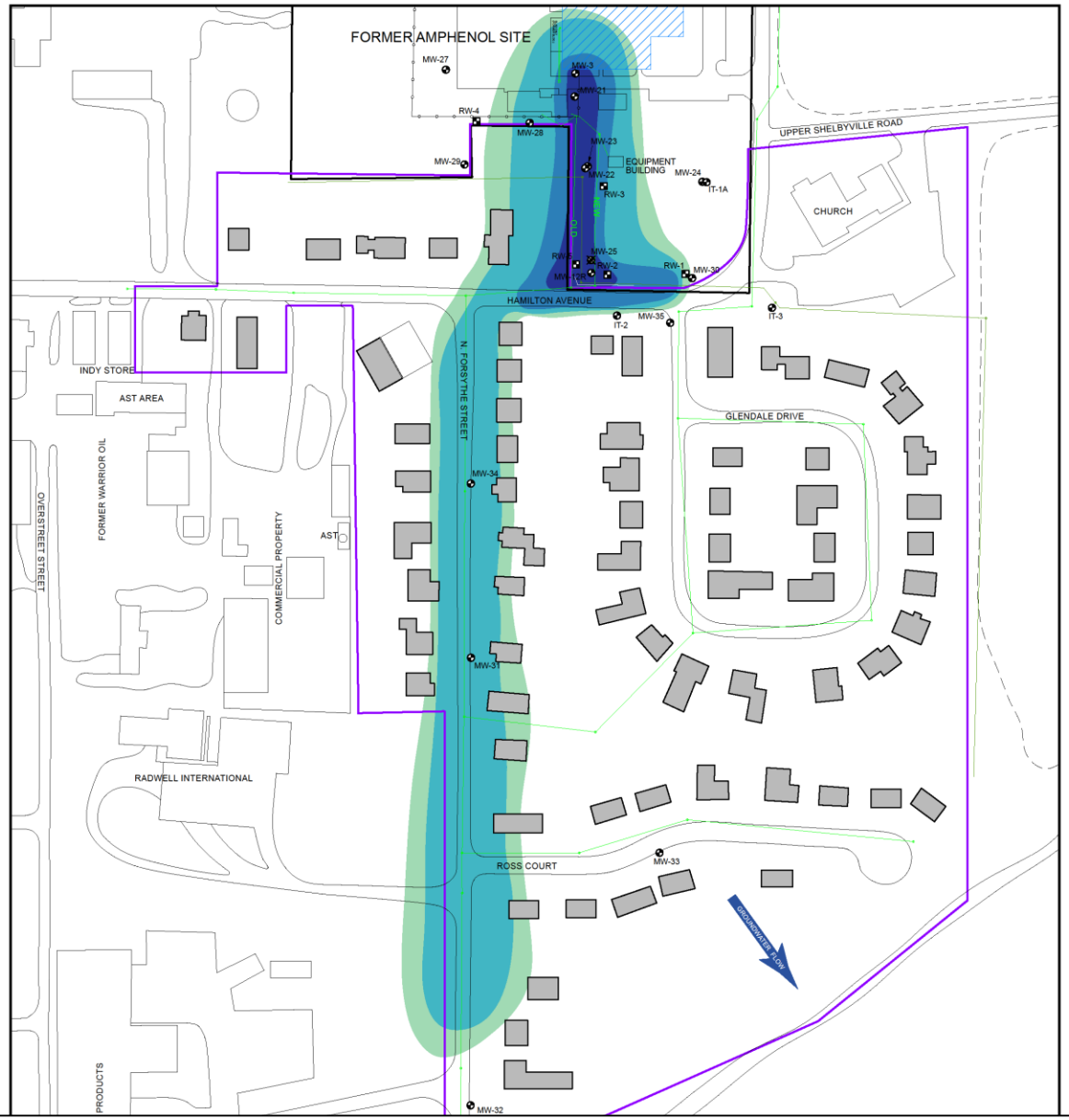
**Indoor air testing**



EPA United States Environmental Protection Agency

# GROUNDWATER PCE

FORMER AMPHENOL RFI/CMS; 980 HURRICANE ROAD, FRANKLIN, INDIANA

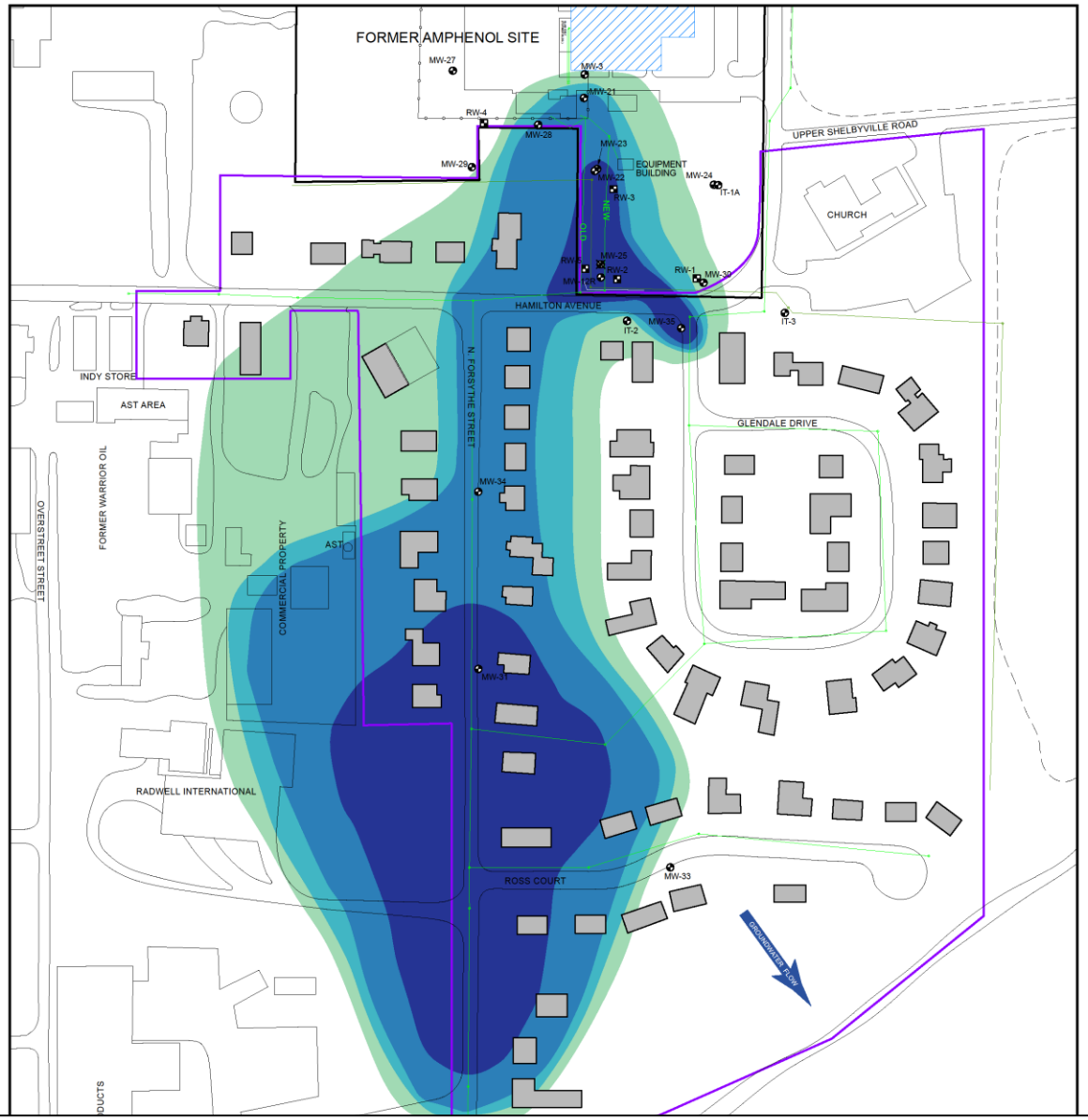



# Groundwater Sampling Results PCE

EPA United States Environmental Protection Agency

# GROUNDWATER TCE

FORMER AMPHENOL RFI/CMS; 980 HURRICANE ROAD, FRANKLIN, INDIANA




# Groundwater Sampling Results

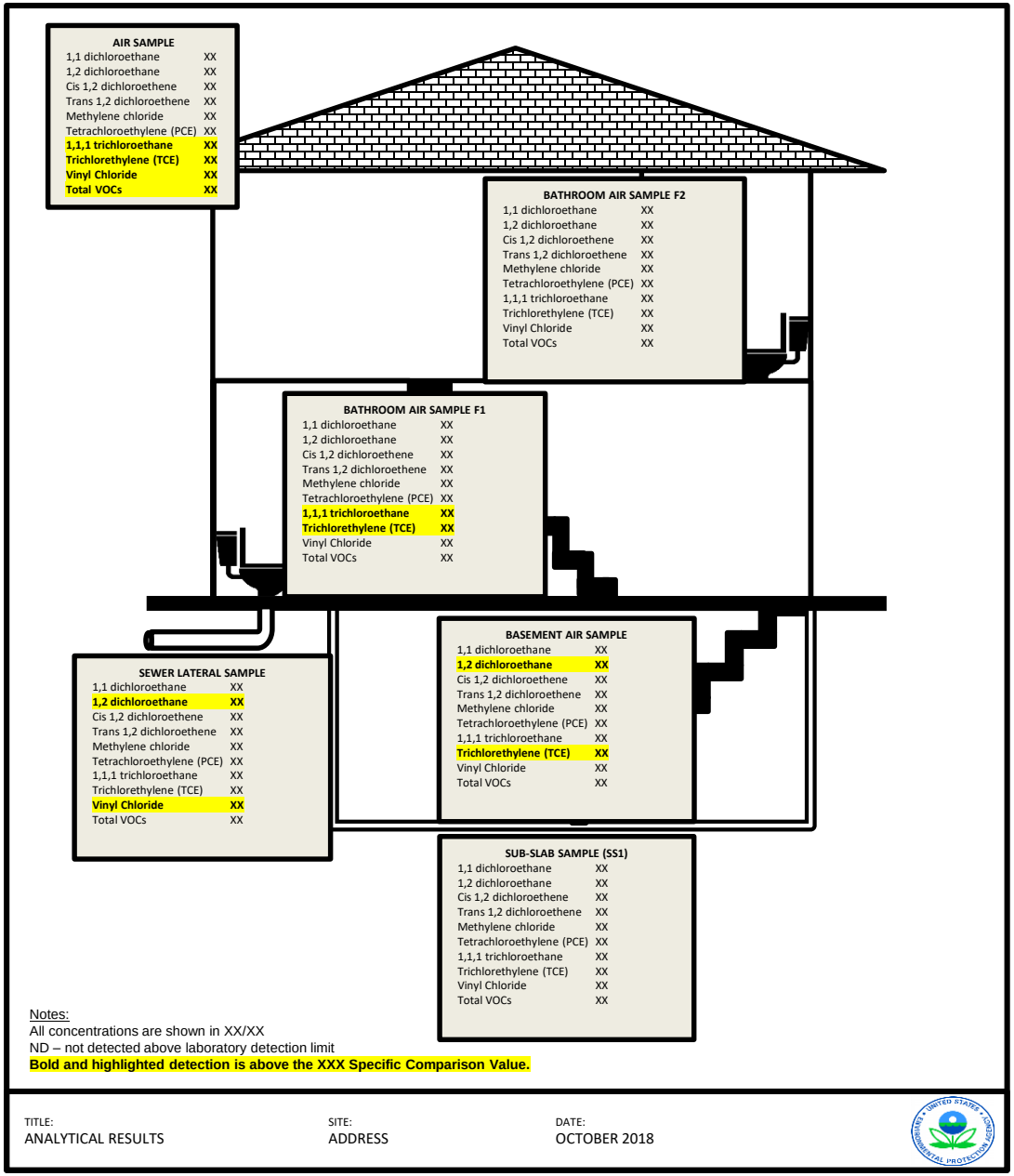
# TCE

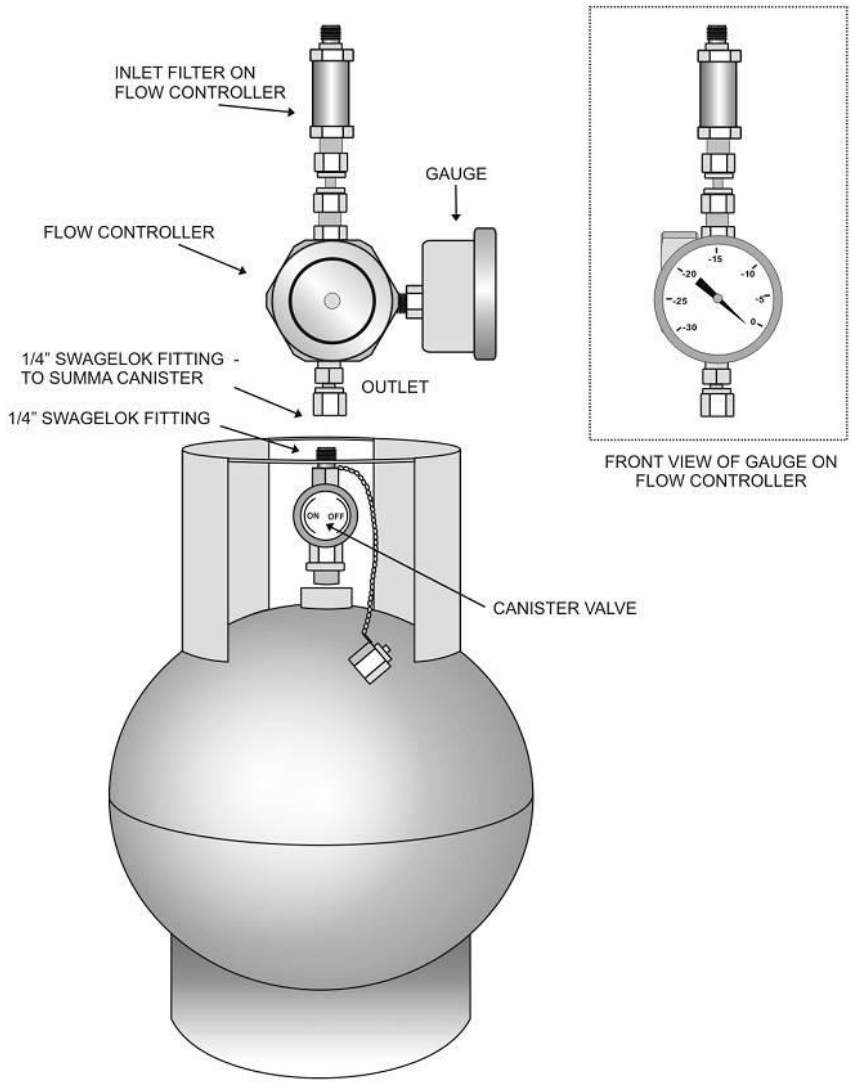
# 37 “Priority Homes” Indoor Air Testing

Lines of Evidence:

| | |
|---|---|
| *Elevated:* | *VOC Sanitary Sewer gas* |
| | *ROW Soil gas* |
| | *VOCs in Groundwater* |
| *Also:* | *Near Site* |
| | *Near other home with sub-slab VOC gas above Screening Levels* |

# Air Sampling in and around Homes

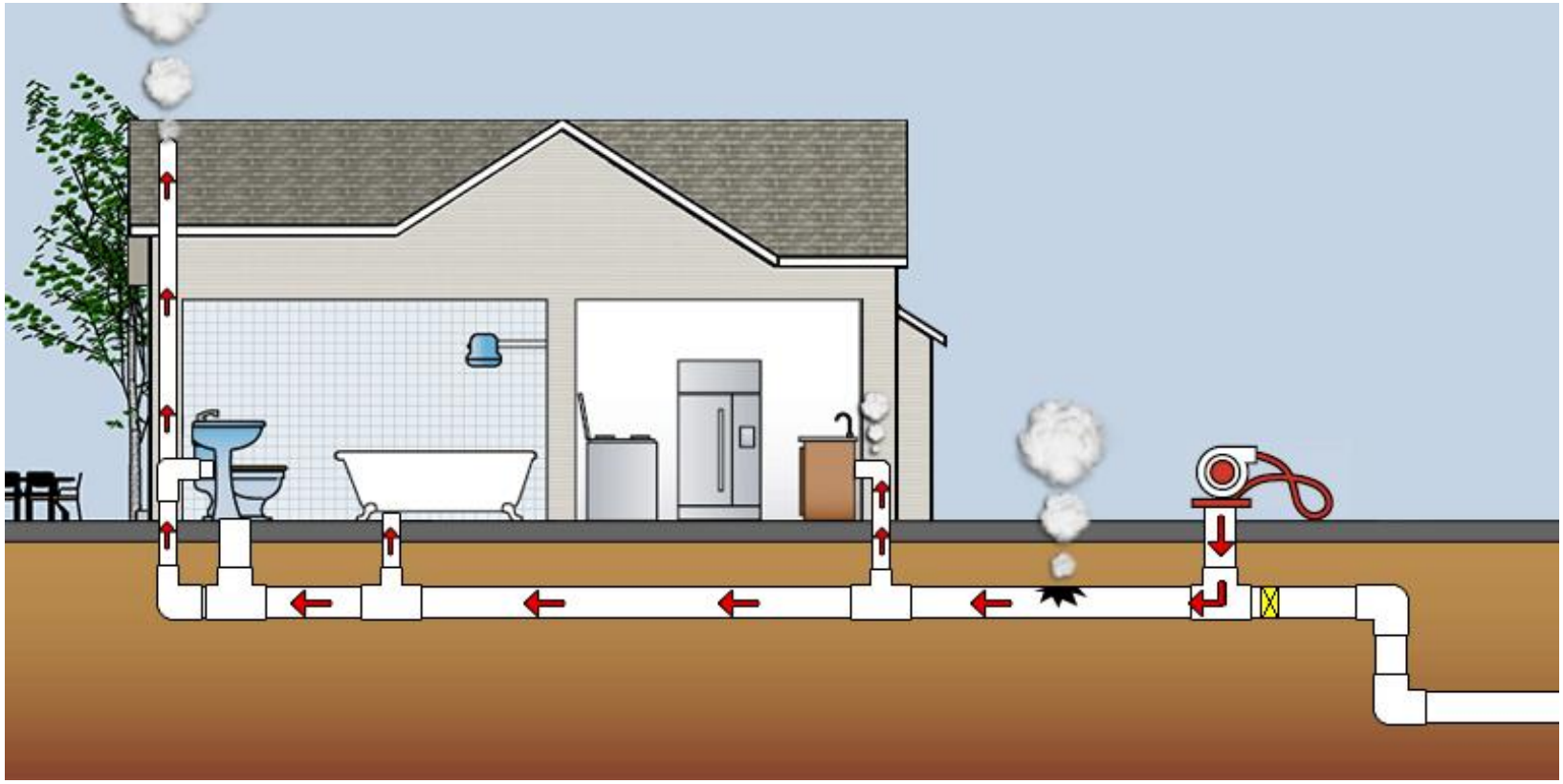





# Summa cannisters set for 24 hours at each sampling point

# Sub-Slab Sampling Point
# Vapor port in foundation
# Hole is drilled, port installed

# Sewer Pressure Test



Forces non-toxic citrus scent into the waste and drain pipes with a slight pressure.

Ineffective vapor seals in plumbing systems in buildings (dry P-Traps, breached toilet wax rings, cracked plumbing drain pipes, loose fittings and gaskets, for example) are common

# Vapor Intrusion Pathway
# Risk Management

Response Actions:

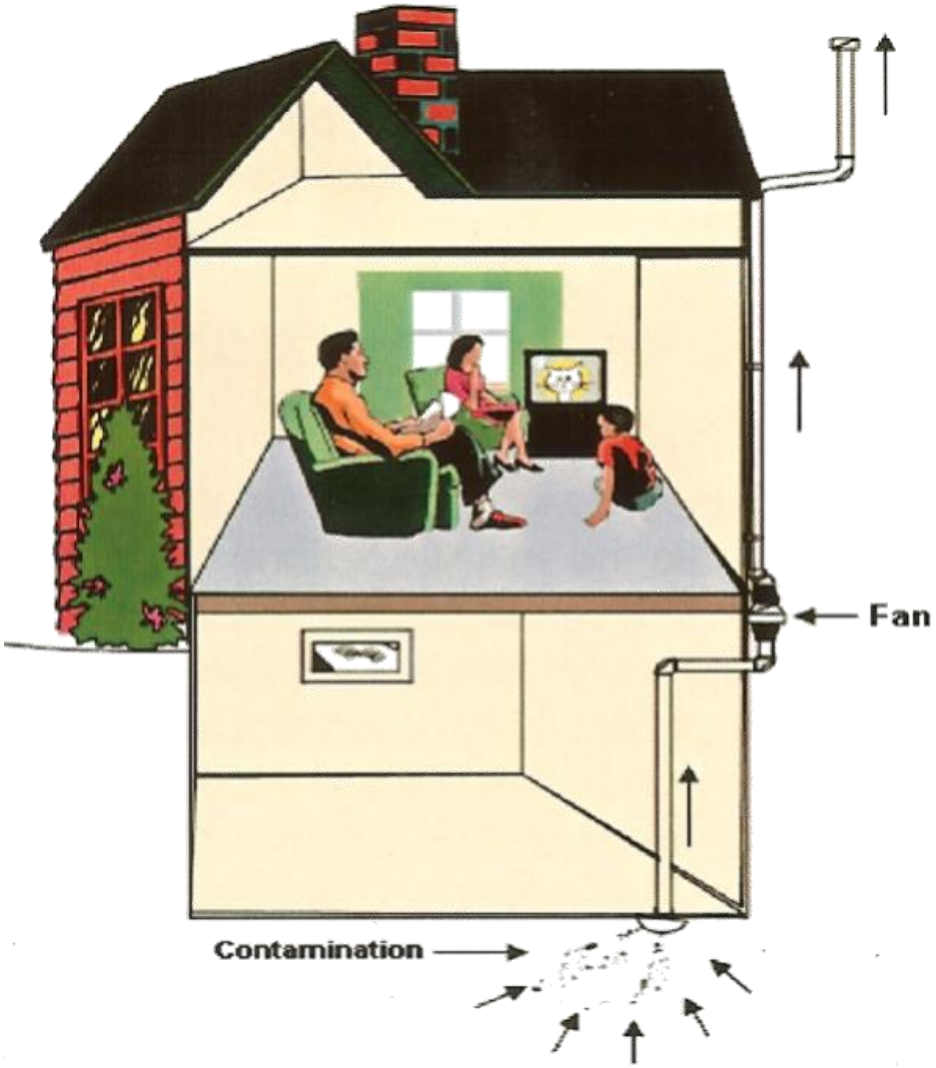
Immediate Measures to prevent exposure

- ❖Install vapor mitigation system
  - elevated sub-slab or elevated indoor air VOC measurements
- ❖Sewer system sealing and repairs made

Risk Communication:

- ❖ Results discussed with homeowner and tenant

# Residential
# Vapor Intrusion Mitigation System




- Sub-Slab Depressurization System
- Similar to radon gas mitigation system
- Negative pressure applied under building
- Prevents vapors from entering structure

# Risk Management for the Vapor Intrusion Pathway

## Response Actions: Address Sources

Remediation of VOC vapor sources:

- Contaminated sewer bedding
- Groundwater source control
- Groundwater remedy enhancement

# Indoor Air in Homes

- Access Please grant access
- Privacy Act You don't have to share results
- All sampled homes will be re-sampled in the winter.
- Homes with elevated VOCs in the sewer laterals but not indoor air will have pressure tests.
- Homes with elevated sub-slab VOCs, with or without elevated indoor air levels, will have mitigation systems installed.

# Strategy – Former Amphenol Site
# Next Steps

1. Ensure safety of residents through indoor air testing, re-sample in winter
2. Remediate contaminated soil beneath sewers
3. Investigate and remediate off-site sources
   + On-site sources
4. Evaluate old and new remedies
5. Remedy selection
6. Monitor and re-evaluate the vapor intrusion pathway

# Thank you!

*Questions after presentations*

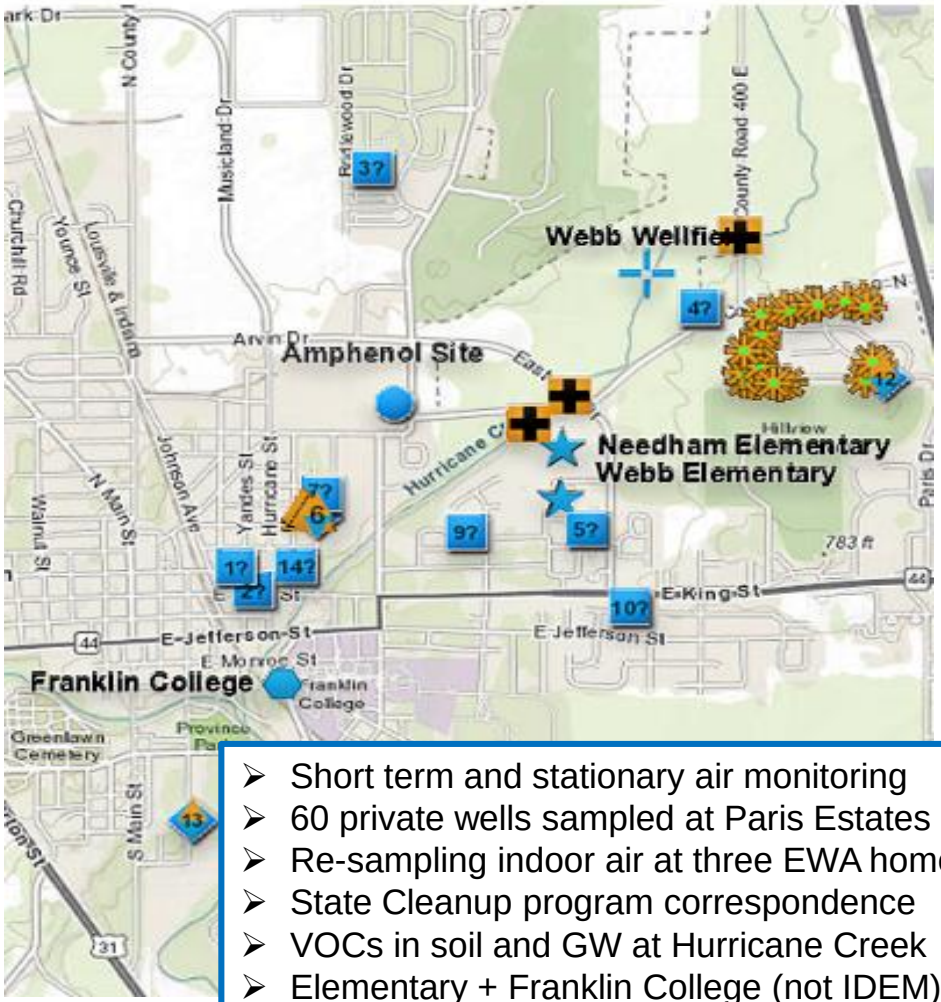
*or at information stations*

*Next presenter, Motria Caudill, ATSDR*

IDEM

EST. 1986

| Franklin Ambient Air Monitoring Data | | | |
|---|---|---|---|
| Samples collected from Franklin Active Adult Center 160 E. Adams St, Franklin, IN 46131 | | Analytical Results (ug/m3) | |
| | | Tetrachloroethene (PCE) | Trichloroethylene (TCE) |
| Date: | Oct. 5, 2018 | 0.068 | 0.016 |
| | IDEM Remediation Closure Guide Residential Indoor Air Screening Levels | 42 | 2.1 |




- Short term and stationary air monitoring
- 60 private wells sampled at Paris Estates
- Re-sampling indoor air at three EWA homes
- State Cleanup program correspondence
- VOCs in soil and GW at Hurricane Creek
- Elementary + Franklin College (not IDEM)
- City of Franklin data
- EWA data

https://www.in.gov/idem/cleanups/2417.htm

https://www.in.gov/idem/cleanups/pages/franklin/map.h