



# **The Grand Traverse Overall Supply Superfund Site Leelanau County Greilickville, Michigan**

**Public Meeting  
March 18, 2008**



# Public Meeting Agenda

- **Review History/Actions To Date**
- **Short Term Removal Plan**
  - OSC Michelle Jaster
- **Long Term Remedial Plan**
  - RPM Linda Martin





# History/Actions to Date

- **Commercial launderer using chlorinated solvents between 1953 and 1987**
- **Releases from operations resulted in the Site being added to the National Priorities List (NPL) in 1983**
- **The main contaminants of concern are called volatile organic compounds and include dry cleaning chemicals such as tetrachloroethylene (PCE) and trichloroethylene (TCE).**
- **Investigations by Federal and State agencies documented soil and ground-water contamination primarily associated with wastewater lagoons**



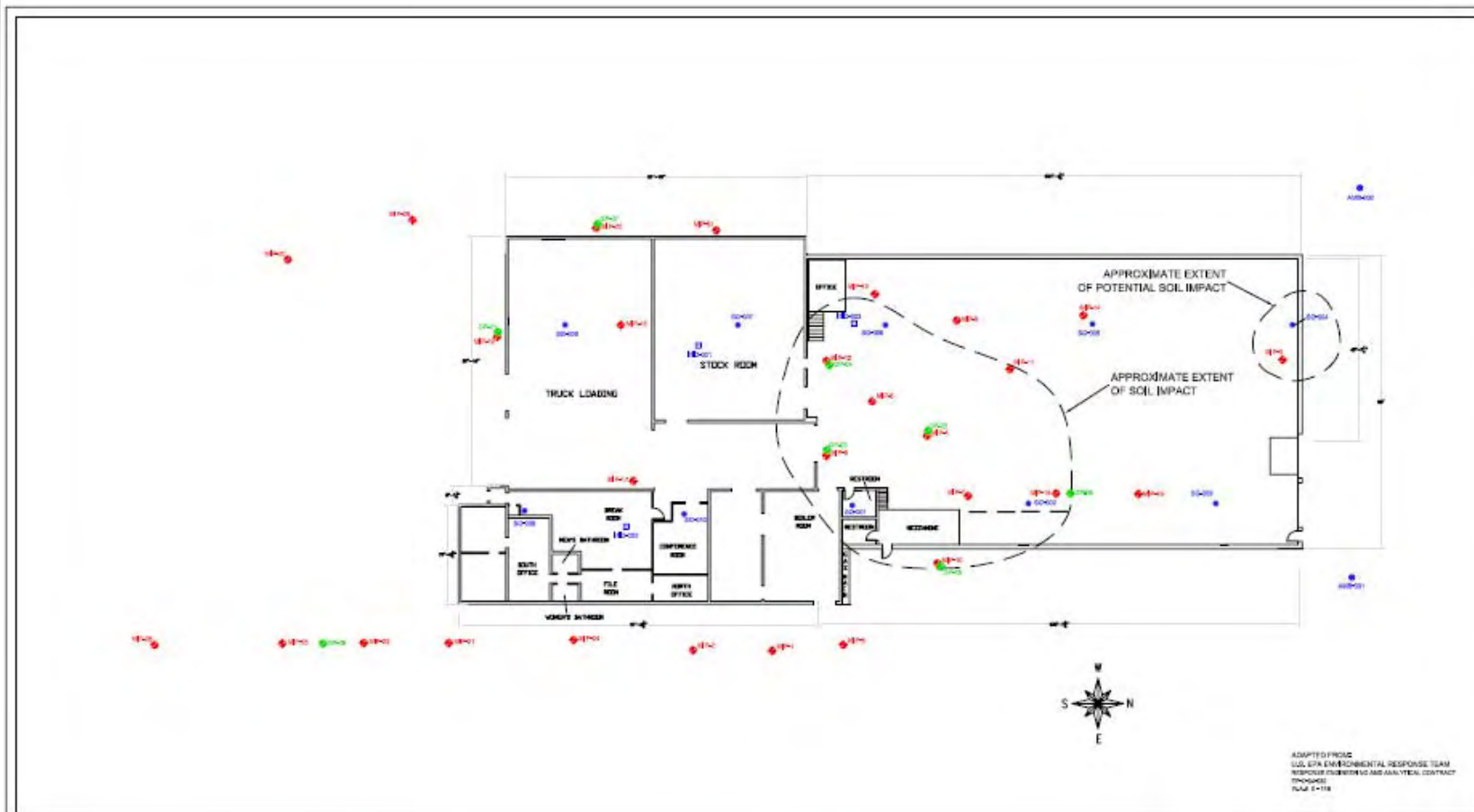
# History/Actions to Date

- Lagoons were capped in 1979.
- Investigation associated with BEA in 1996 identified new source area beneath GTOS building
- MDEQ and EPA investigations have further defined the extent of soil and ground water contamination from new source area
- Remaining contamination includes
  - Source area soil and ground water
  - Ground water plume
  - Soil vapor



# History/Actions to Date

## Soils Impacted Below GTOS Building



ADAPTED FROM  
 LUL EPA ENVIRONMENTAL RESPONSE TEAM  
 RESPONSE CHARACTERIZATION ANALYTICAL CONTRACT  
 TPO-0401  
 PAGE 2-18

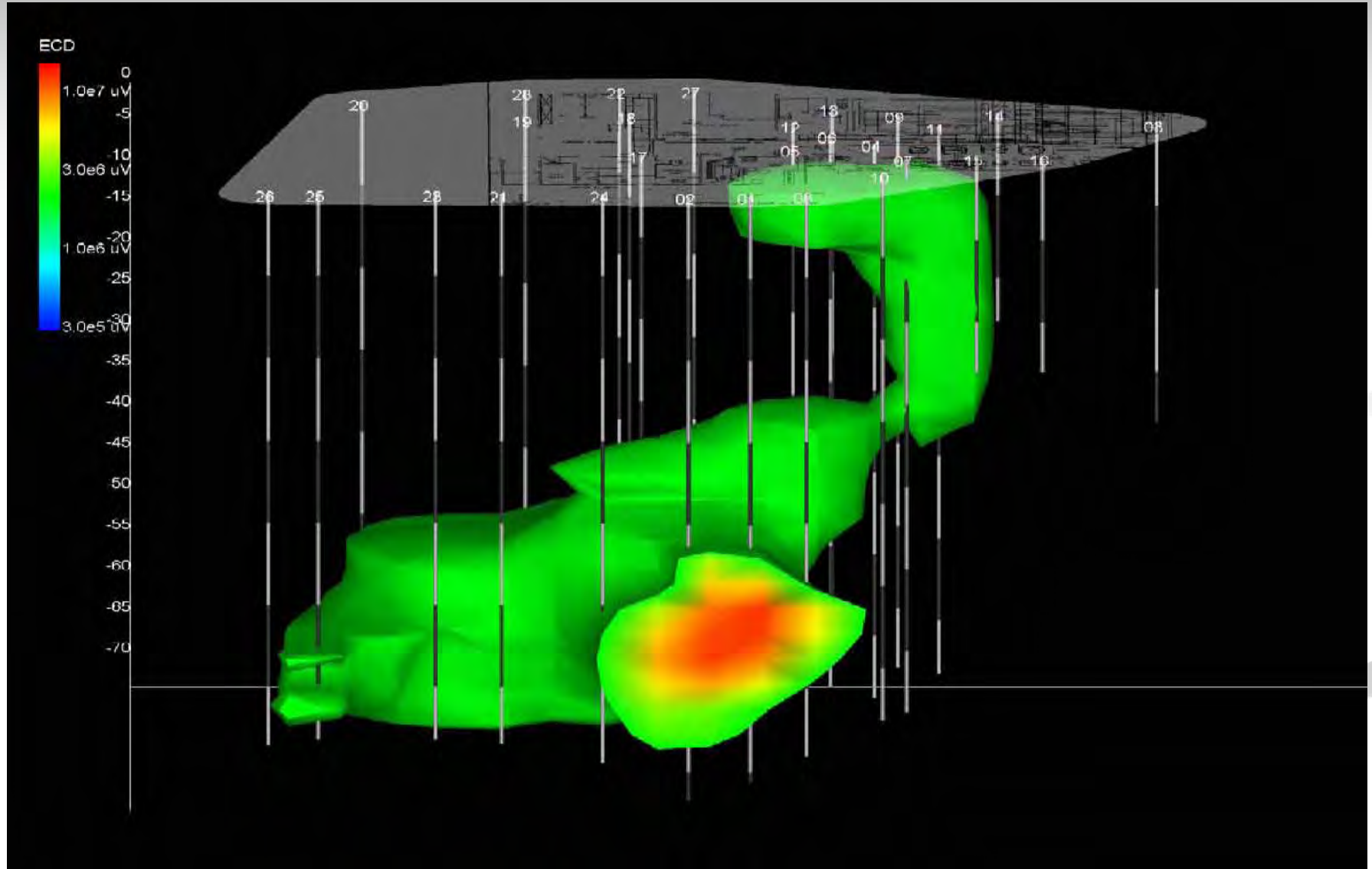
- LEGEND**
- MP CONTINUATION BORING
  - MP LOCATION
  - USEPA DIRT SUB-SLAB SAMPLE LOCATION
  - USEPA DIRT INDOOR SAMPLE LOCATION
  - USEPA DIRT AMBIENT LOCATION



	Suite 100 2501 Jolly Rd Okemos, Michigan 48864	<b>FIGURE 4-1</b> EXTENT OF SOIL CONTAMINATION GRAND TRAVERSE OVERALL SUPPLY SITE GRTGLCKVJLE.M
	<small>File Path and Name: \\H:\Projects\GTOS\Reports\Figures\MP Cont Storage Impact.dwg   Designed by: CHAS/USEPA   Drawn by: JAC/USEPA   Checked by: DMC   Approved by: DMC</small>	



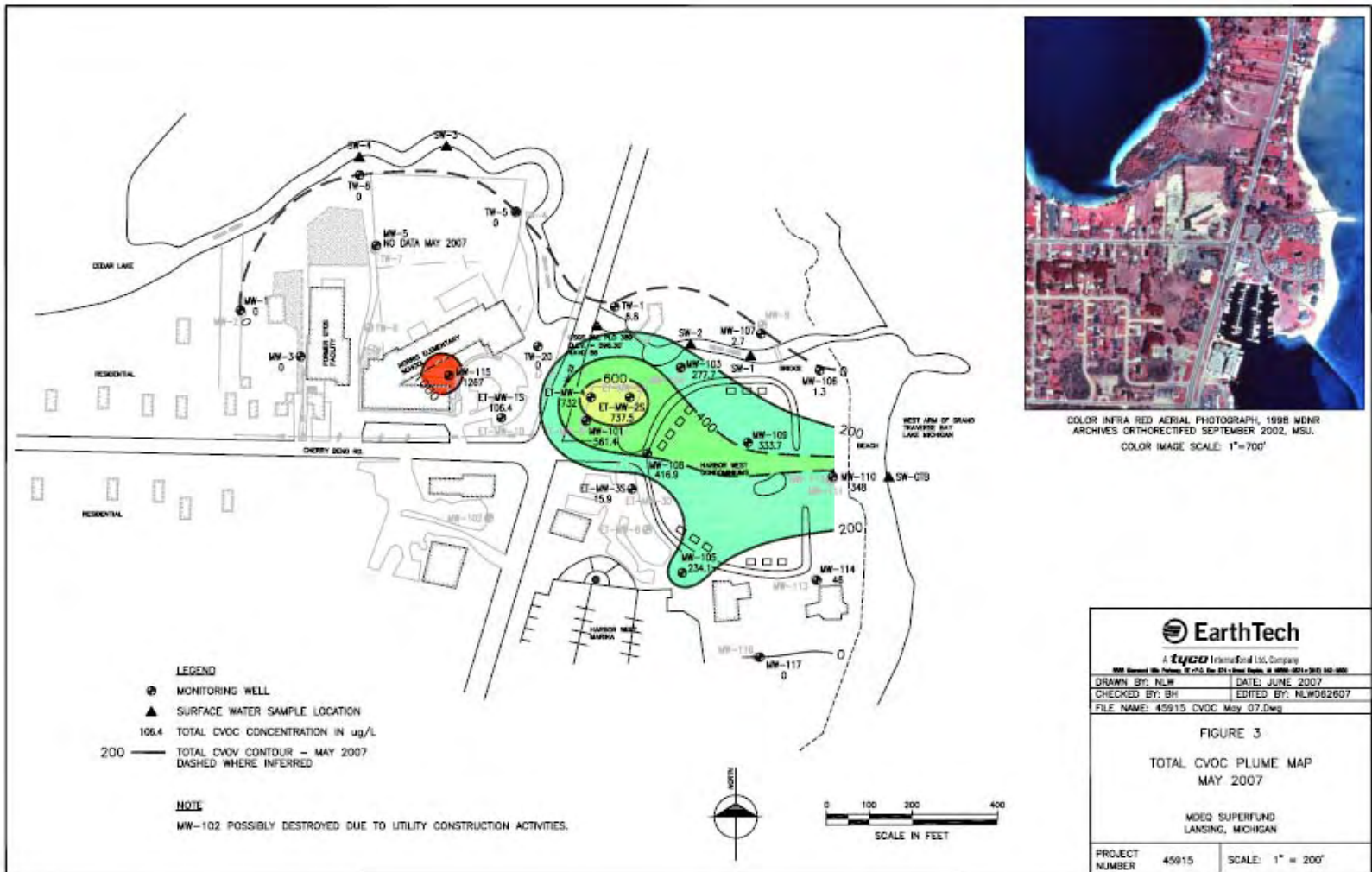
# Contamination Below GTOS Building





# History/Actions to Date

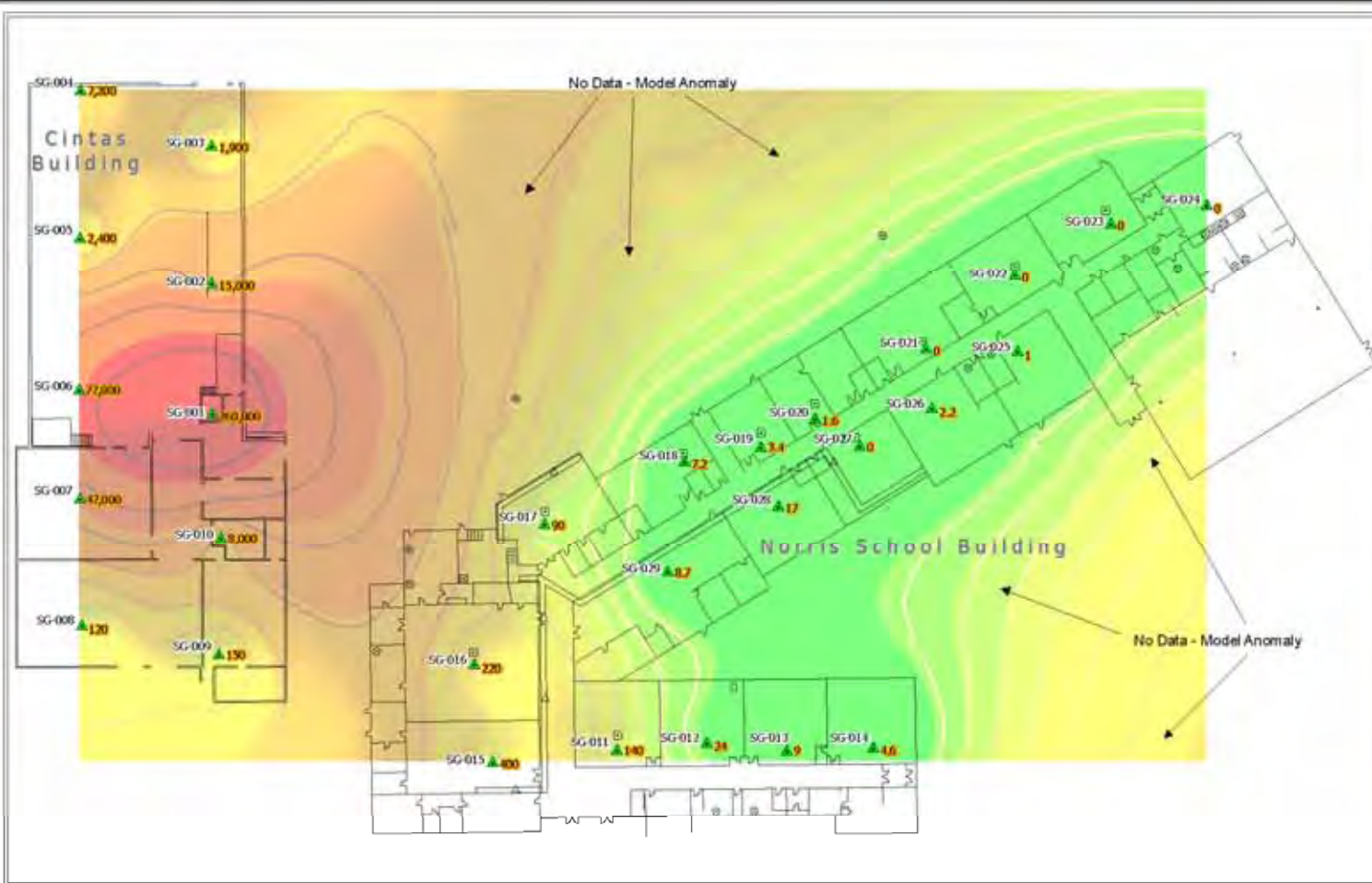
## Groundwater Impacts





# History/Actions to Date

## Soil Vapor Impacts



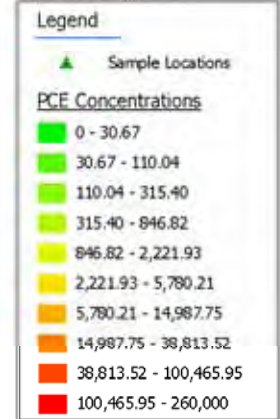
**Geostatistical Summary:**

A Simple kriging Prediction Map was generated using field collected (EMPA) Cassette data values for a soil gas intrusion study. Sample locations were not randomly generated.

**Model Process:**  
 Input Method: Simple kriging  
 Output: Prediction Map

**Number of Points:** 29  
**Mean Value:** 0  
**Declustering:**  
 Method: Isard

**Transformation:** Normal Score (Gaussian Normal Method)  
**Interpolation and Covariance:**  
 Model: 0.96729736964295744340744662  
**Error modeling:**  
 Measurement error: 0 (00%)  
 Searching Neighborhood:  
 Neighbors to include: 5 or at least 4 for each angular sector  
 Searching Ellipse:  
 Angle: 0  
 Major Semiaxis: 75.744  
 Minor Semiaxis: 75.744  
 Angular Sector: 0  
 Four site Distribution: was not examined.



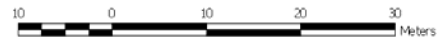
Map created using un-referenced AutoCAD drawing and USGS DOQs. AutoCAD drawing georeferenced to USGS DOQs at +/- 1.5 meters spatial accuracy.

Map Creation Date: 24Jun2005

Coordinate system: UTM  
 Zone: 16N  
 Datum: NAD83  
 Units: Meters



**Model Analysis:**  
 The model assumes a steady, continuous state and does not reflect variability in physical conditions, interferences or obstructions. The model does not account for saturation, volatility or any other chemical or physical parameters.



U.S. EPA Environmental Response Team  
 Response Engineering and Analytical Contract  
 EP-C-04-032  
 W.A.# 0-116

**Figure 1**  
**PCE Concentrations**  
 GTOS Soil Gas Intrusion Study  
 June 2005  
 Greilickville, MI

**D R A F T**



# 2005 U.S. EPA REMOVAL ACTION

## Soil Vapor Extraction – Norris Elementary

- System installed – 12/05
- Continuously collects soil gas below school
- Protective measure





# General Types of EPA Cleanups

**U.S. EPA will conduct additional short- and long-term cleanup activities at the GTOS site beginning later this year.**

- **Short-term cleanup work is done by EPA's "removal" program**
- **Long-term cleanups are conducted under the EPA's "remedial" program**



# General Types of EPA Cleanups

- **The GTOS site contains both a removal and a remedial component.**
- **The removal program has already been working to contain the worst pollution threats and is planning additional cleanup late this year.**



# GTOS Building Demolition

(December 2007)

- Entire building demolished and transported for disposal in 30 working hours
- All major work completed when adjacent Norris Elementary was not in session





# GTOS Building Demolition

(December 2007)

- **20,000 sq ft building with multi-story warehouse**
- **All universal wastes removed from building prior to demolition**
  - **Mercury**
  - **Pit/trench liquids and sludges**
  - **Fluorescent lights**





# GTOS Building Demolition

(December 2007)

- Over 940 tons of demolition debris disposed of at local landfill
- Over 140,000 gross tons of building steel and metal recycled





# GTOS Building Demolition

(December 2007)





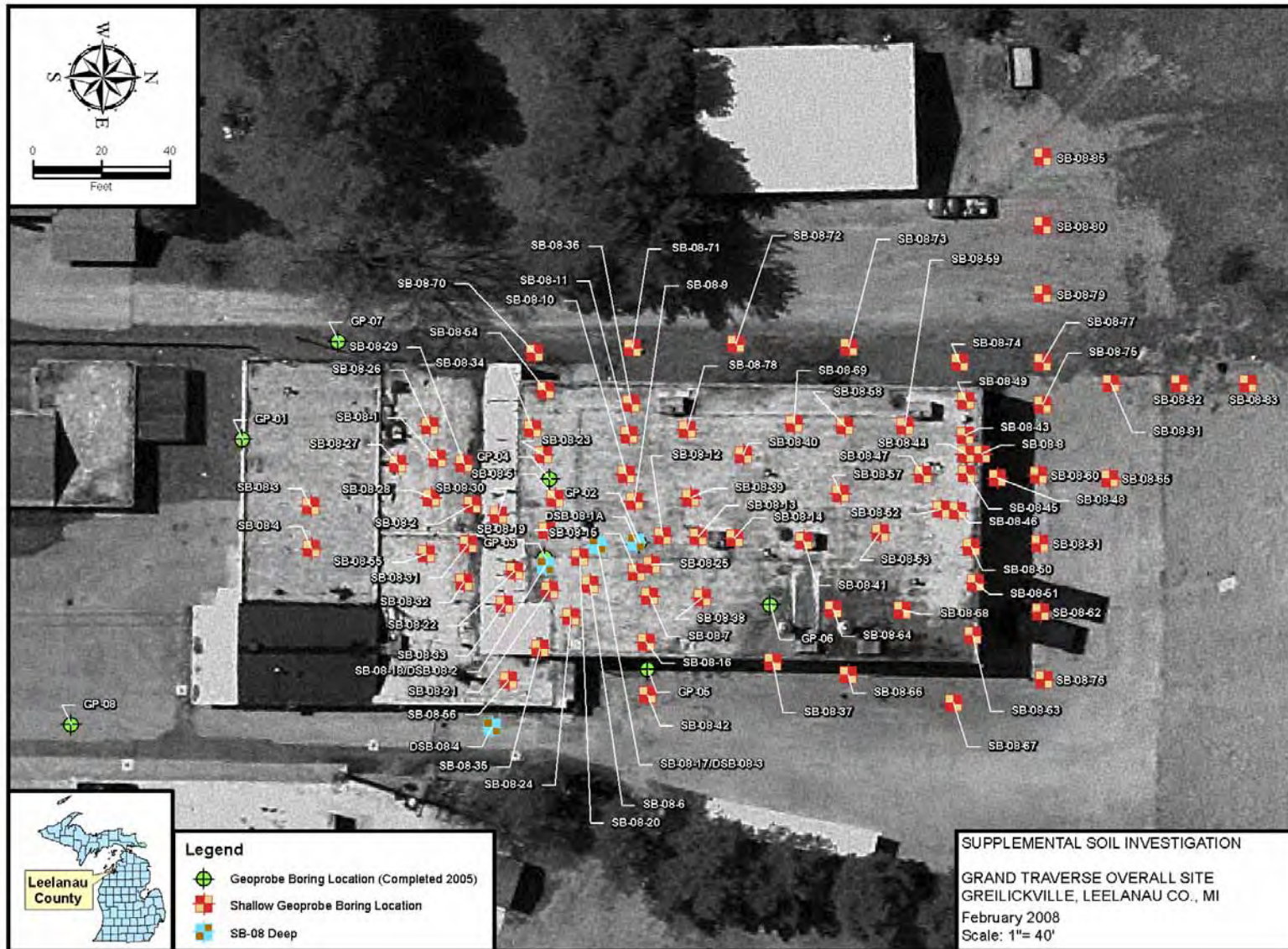
# GTOS Sampling Event

(Jan/Feb 2008)

- **Almost 400 soil and ground water samples collected at various depths**
- **Contaminated soils identified between the ground surface and ground water**



# GTOS Sampling Event





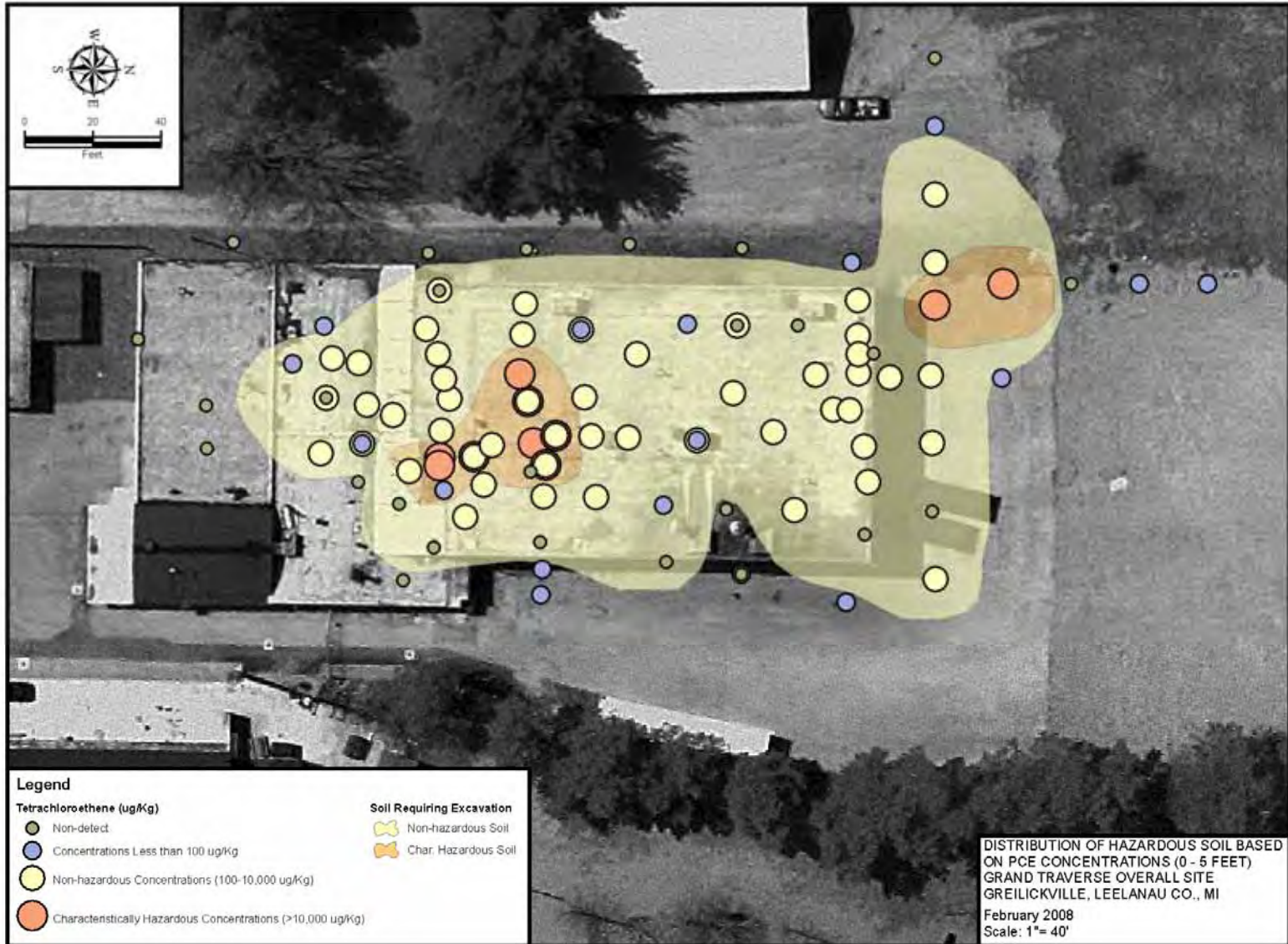
# GTOS Sampling Event

(Jan/Feb 2008)

- Soils divided into hazardous and nonhazardous
  - ~1000 tons haz
  - ~10000 tons nonhaz
- Deep soils will not be treated as part of removal actions



# GTOS PCE Sampling Results (0-5 ft bgs)



# GTOS PCE Sampling Results (5-10 ft bgs)



# GTOS PCE Sampling Results (10-15 ft bgs)





# Short Term Removal Plan





# Planned Removal Actions

- **Remaining removal actions:**
  - **Soil excavation**
  - **Backfill excavated areas with clean fill**
  - **Transition site to EPA's Remedial Program for additional work**
    - **Possible asphalt cover**





# Planned Removal Actions

- **Soil Excavation**
  - **Prep work starts 3/24**
  - **Remove concrete**
  - **Haz soil start 3/29**
    - **All haz soil will be removed during Norris Elementary spring break**
  - **Nonhaz soil as soon as haz soil completed**
  - **Work through most of April 2008**



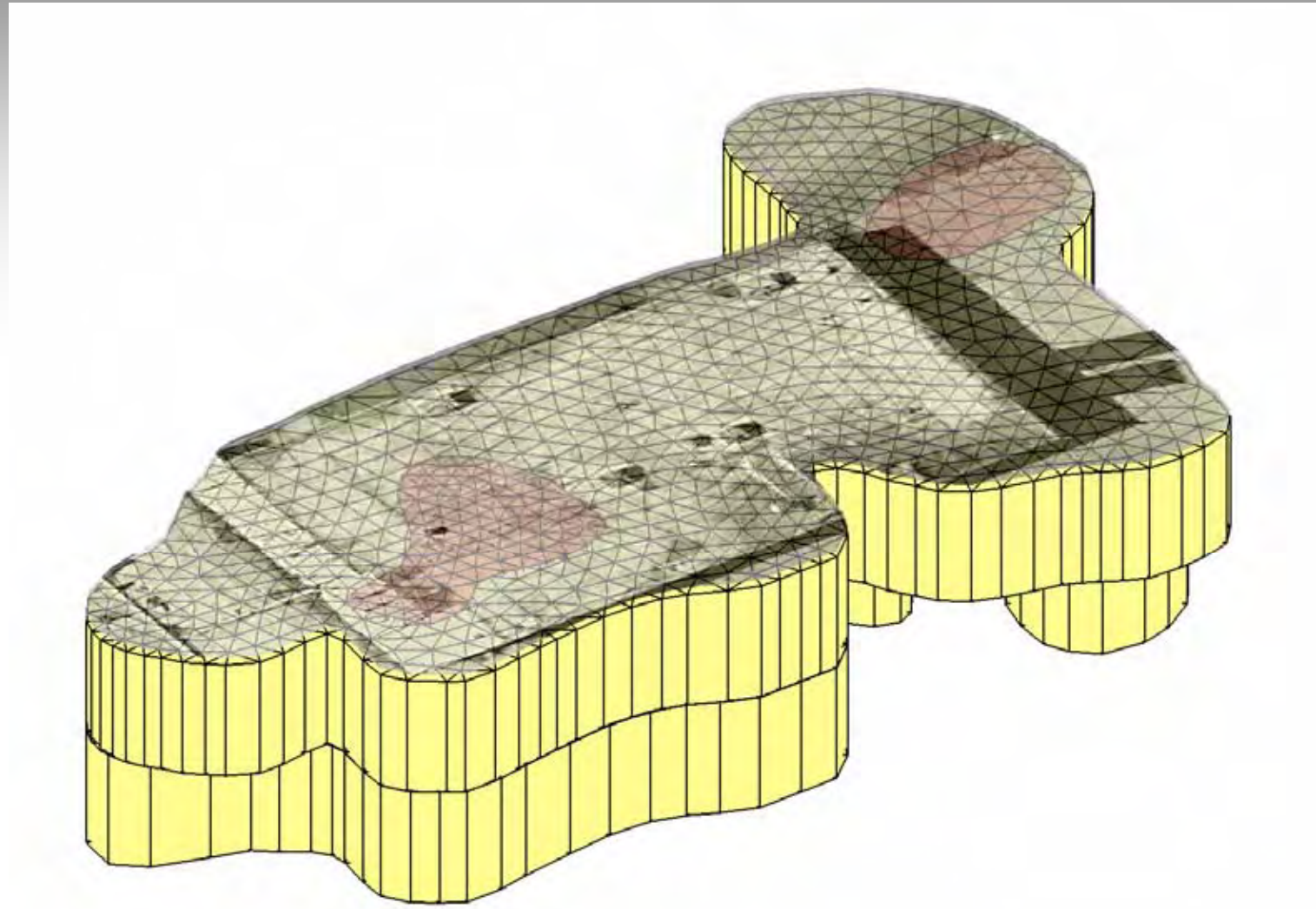


# Planned Removal Actions

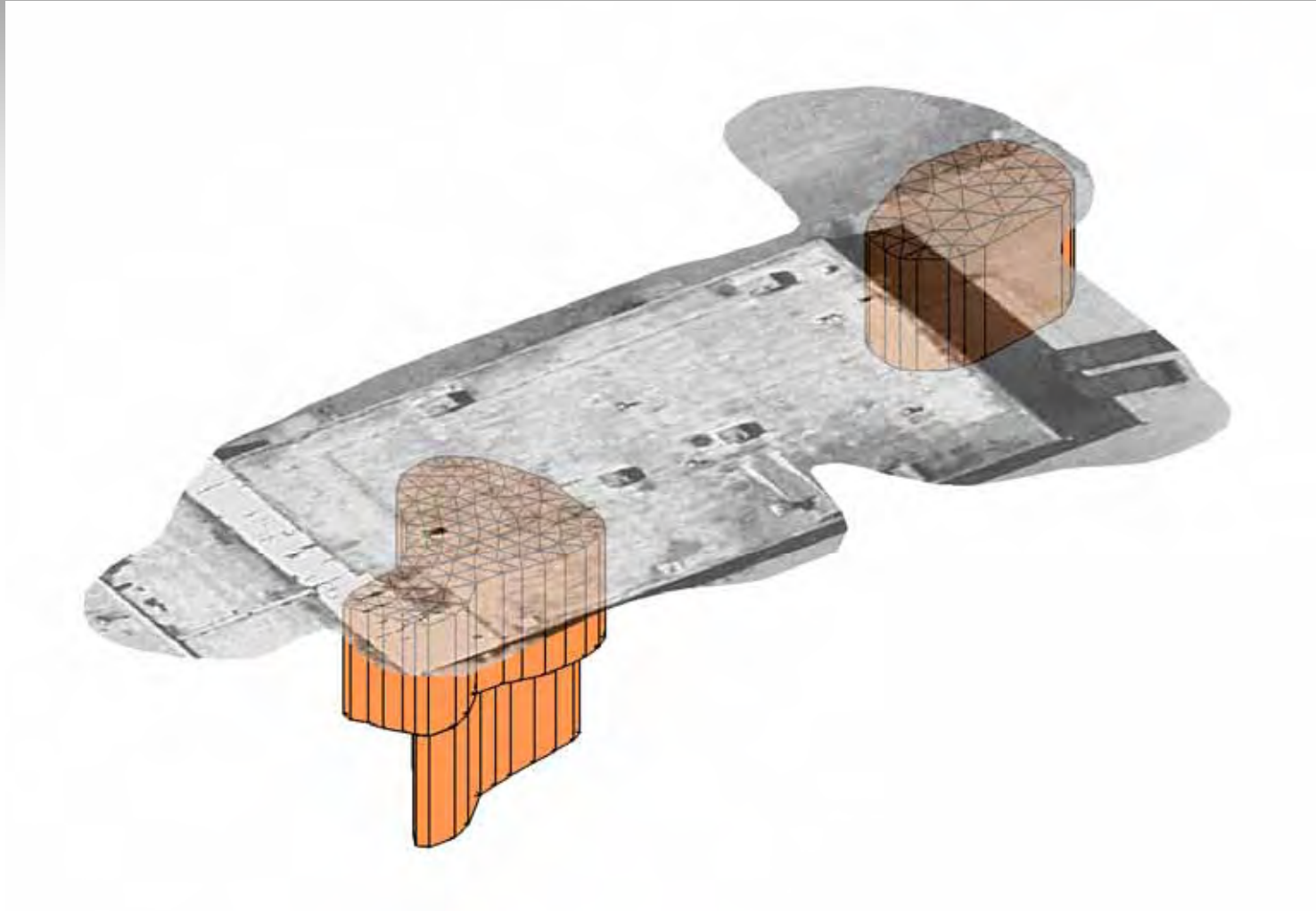
- **Engineering Controls**
  - **Air Monitoring Plan**
  - **Traffic Plan**
  - **Use of SVE System**
  - **Areas fully defined**
    - **All haz soil removed during spring break**
  - **Can stop if necessary**



# GTOS Haz and NonHaz Soil (PCE)



# GTOS Hazardous Soil (PCE)





# Scheduling Time Frame

- **Experience**
- **Known extent of contamination**
- **Air Monitoring Program in consult with State and Federal Health Professionals**
- **Weather**
- **Costs/Funding**
- **Commitment**



**QUESTIONS ??**



# Long Term Remedial Plan



# GTOS Record of Decision

- **On March 3, EPA completed the cleanup plan, called a “Record of Decision,” for the GTOS site.**
- **It’s similar to what was discussed at the public meeting in November.**



# Cleanup Plan Components

- **The major components of the cleanup plan include:**
  - **Limited action on removing any remaining soil contamination that exceeds the preliminary cleanup goals following the emergency cleanup authorized on Sept. 4.**



# Cleanup Plan Components (cont)

- **Institutional controls restricting ground water and land use. These controls may include:**
  - **negotiation of restrictive covenants for contaminated property and ground water**
  - **working with local municipalities to draft and implement zoning ordinances**
  - **working with the public health department or agencies to draft and implement appropriate health regulations or similar controls**



# Cleanup Plan Components (cont)

- **Ground water extraction, treatment and discharge with a contingency for on-site treatment if necessary.**



# Cleanup Plan Components (cont)

- **Continued operation of the soil-vapor extraction system that is operating at the Norris Elementary School.**
- **The Agency will also develop and implement a nonintrusive vapor-monitoring program to assure there are no other vapor issues associated with the soil and ground water contamination.**



# Next Steps

- **One area of concern that was raised in a majority of the comments involved the discharge of treated ground water from the ground-water extraction system.**
- **EPA experts are designing the ground water pump-and-treat system, and are still evaluating the two discharge options presented at the public meeting.**
- **We will return at a later date to discuss the discharge strategy in more detail.**



# Contact Information

## **Don de Blasio**

EPA Community Involvement Coordinator

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For questions on the long-term remedial  
cleanup phase contact:

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For questions on the short-term or  
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**QUESTIONS ??**

# GTOS Hazardous Soil (PCE)





# Additional Cleanup Work

- **The Agency will continually evaluate soil and ground-water vapors that may contaminate indoor air, and other areas that could be affected by the ground-water plume, using nonintrusive sampling procedures.**
- **Estimated cost is about \$35,000 per event.**