Public Meeting

Soil Vapor Investigation and Abatement Program

GE Fort Edward Plant Site

February 24, 2005

Purpose of Tonight's Meeting

Summarize clean up efforts to date

Describe soil vapor intrusion process

Present work plan for investigation and abatement

Discuss measures to abate potential for soil vapor intrusion into homes and businesses

Answer questions from the public

Site Remedial History

Clean up efforts to date

Effect of clean up work

Ongoing efforts

Cleanup efforts to date

First actions taken in 1970s

Remedial Investigations in 1980s

Initial groundwater remedial actions

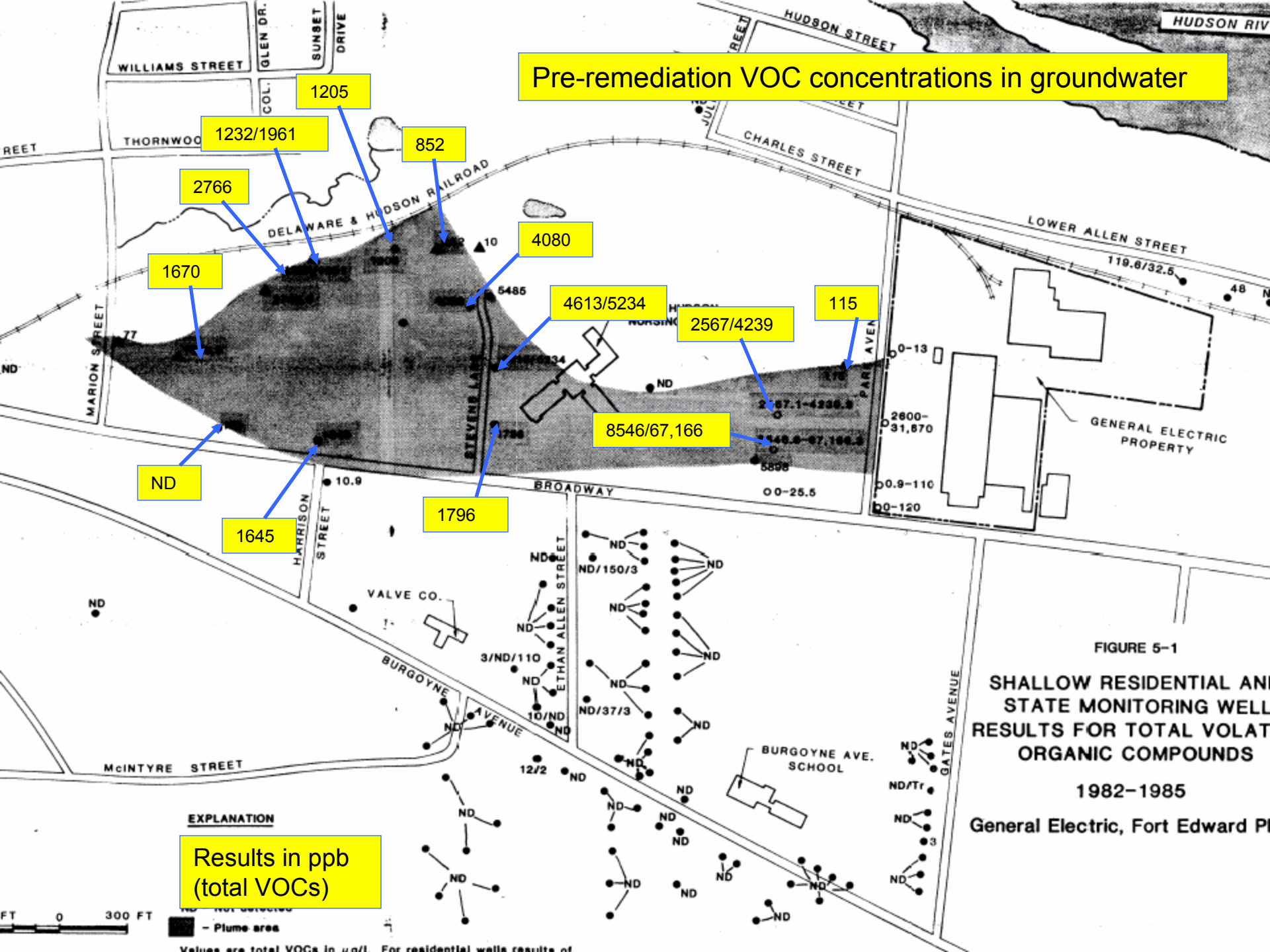
Additional investigations in 1990s

Enhancements to groundwater remedial actions

1984-89 Remedial Investigation and Feasibility Studies

Groundwater containing VOCs in private wells near the site was discovered in 1983

Public water supply connections provided to residences with impacted wells, and to others in the area


Pre-remediation VOC concentrations in groundwater
1205
1232/1961
852
2766
4080
1670
4613/5234
115
2567/4239
8546/67,166
ND
1645
1796
WILLIAMS STREET
GLEN DR.
SUNSET DRIVE
HUDSON STREET
CHARLES STREET
LOWER ALLEN STREET
DELAWARE & HUDSON RAILROAD
MARION STREET
STEVENS LANE
BROADWAY
HARRISON STREET
ETHAN ALLEN STREET
BURGOYNE AVENUE
McINTYRE STREET
GATES AVENUE
VALVE CO.
BURGOYNE AVE. SCHOOL
GENERAL ELECTRIC PROPERTY
HUDSON RIV
EXPLANATION
Results in ppb (total VOCs)
– Plume area
300 FT
FIGURE 5-1
SHALLOW RESIDENTIAL AN
STATE MONITORING WELL
RESULTS FOR TOTAL VOLAT
ORGANIC COMPOUNDS
1982–1985
General Electric, Fort Edward Pl

1984-89 Remedial Investigation and Feasibility Studies

Public water supply connections provided to impacted residences and others in the area

Soil and groundwater sampling performed at the plant site

Evaluation of air impacts from the overburden groundwater plume

1984-89 Remedial Investigation and Feasibility Studies

Additional groundwater sampling done in the vicinity of the plant site

Initial groundwater recovery and treatment system implemented to prevent offsite migration of contaminated groundwater in 1983-84

Expansion of Groundwater Controls

1989 – Installation of recovery well south of the plant site, approximately 100 yards south of Park Avenue

1990 – Installation of four additional recovery wells near southern boundary of plant site, along with two bedrock recovery wells

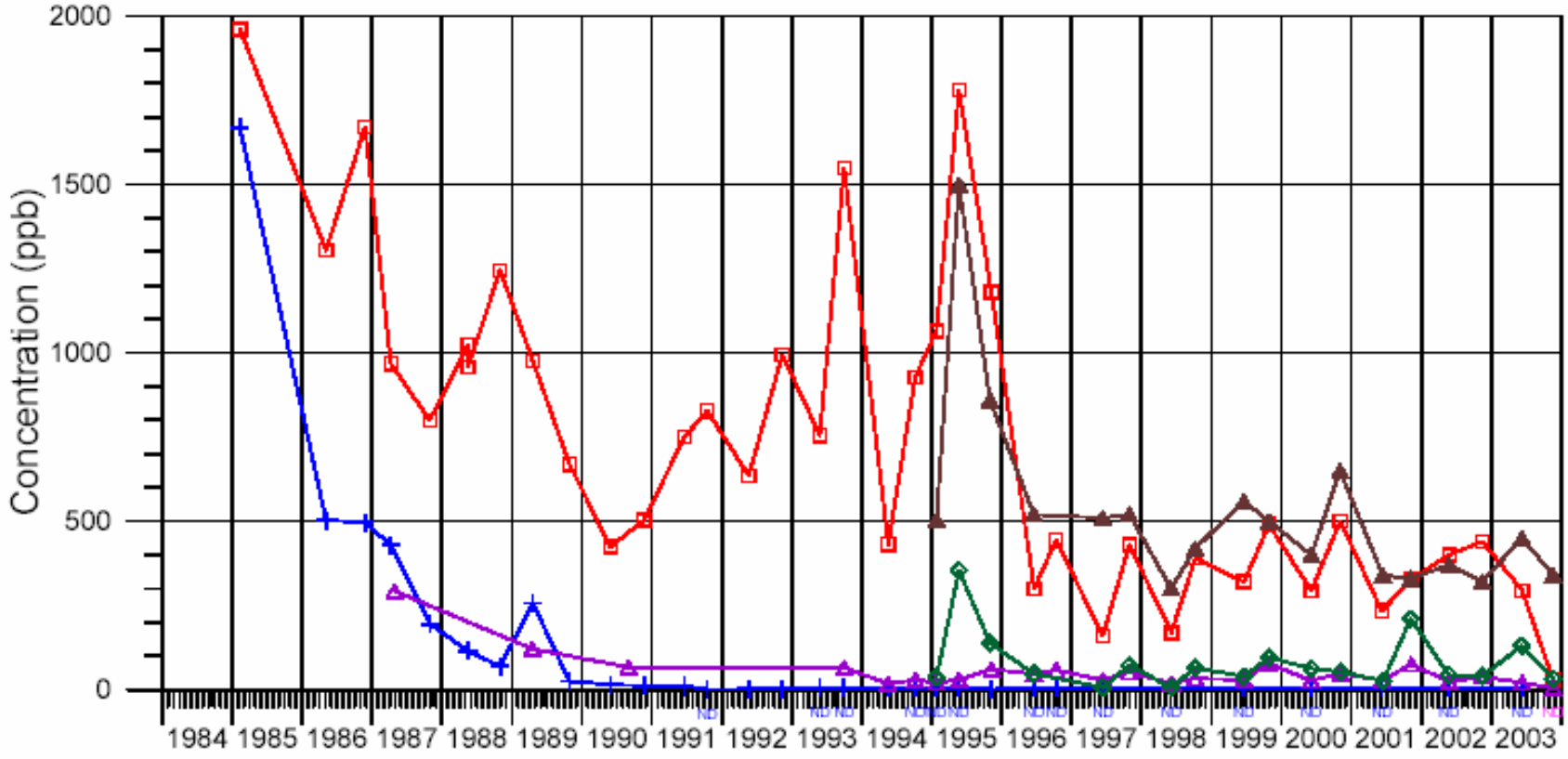
Effect of Groundwater Remedial Systems

The groundwater remedial systems have been effective in preventing further offsite migration of contaminated groundwater to the south of the plant site, and in reducing the concentrations of volatile organic chemicals in groundwater south of the plant site

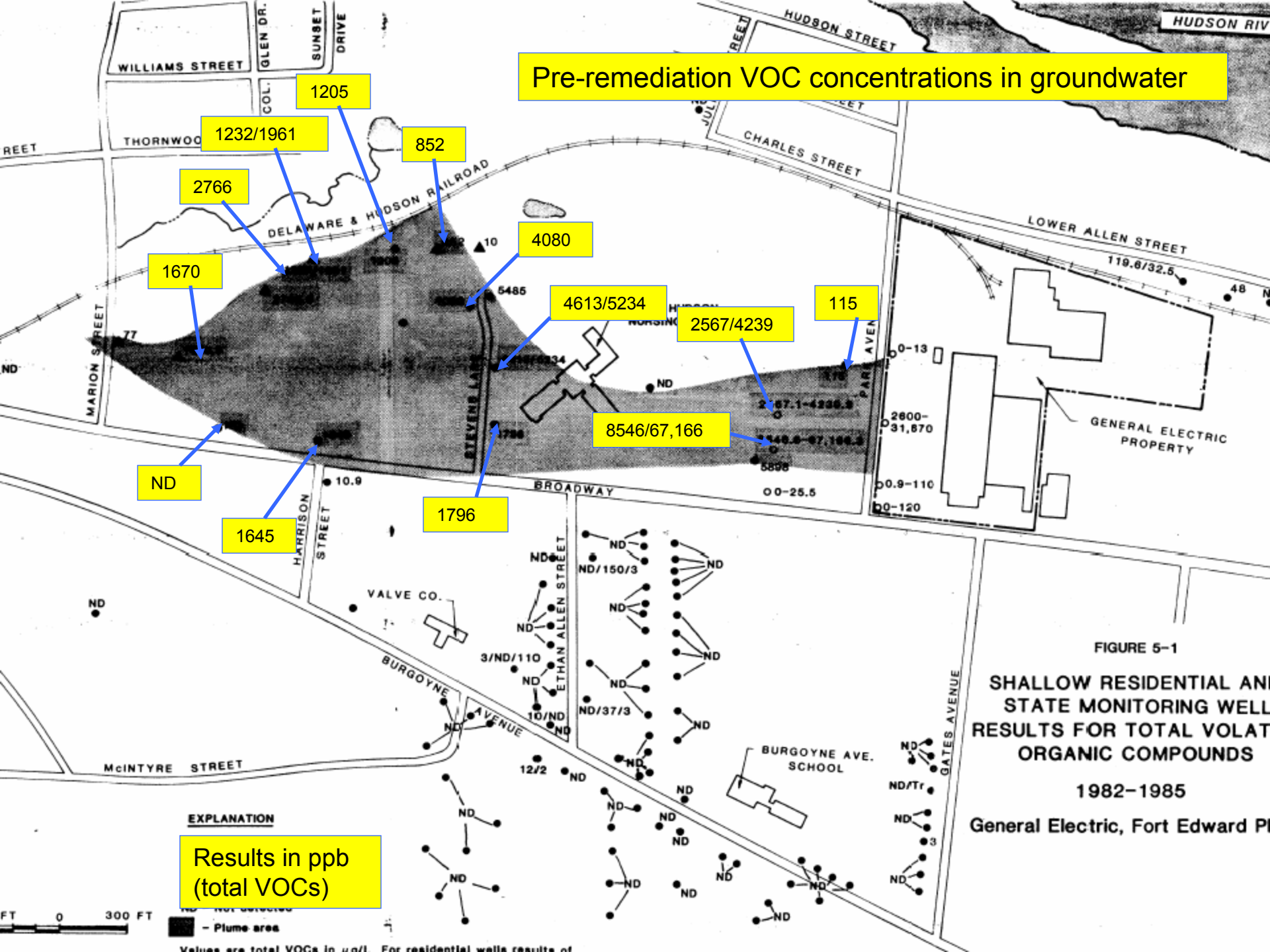
FIGURE 3-7

TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN OFF-SITE WELLS AND SPRINGS

General Electric Company
Fort Edward, New York



O'BRIEN & GERE ENGINEERS, INC.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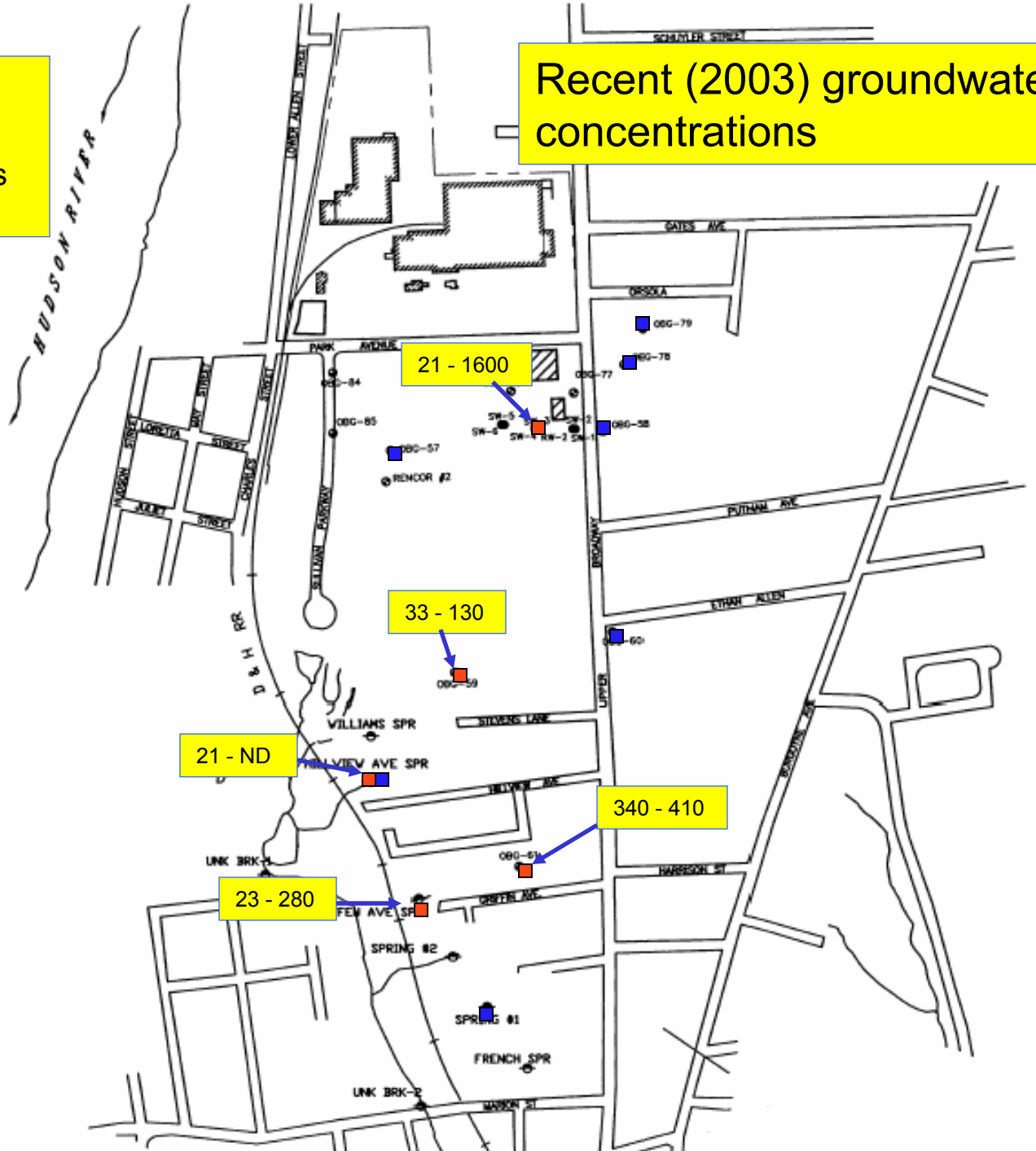
Recent (2003) groundwater VOC concentrations

Results in ppb

Blue boxes are ND



Additional Investigations at the Plant Site - 1995

These investigations focused on:

The extent of PCB oil in the southern portion of the site

Groundwater contamination found near the Foil Mill

The “transition zone” in the southeastern portion of the plant site

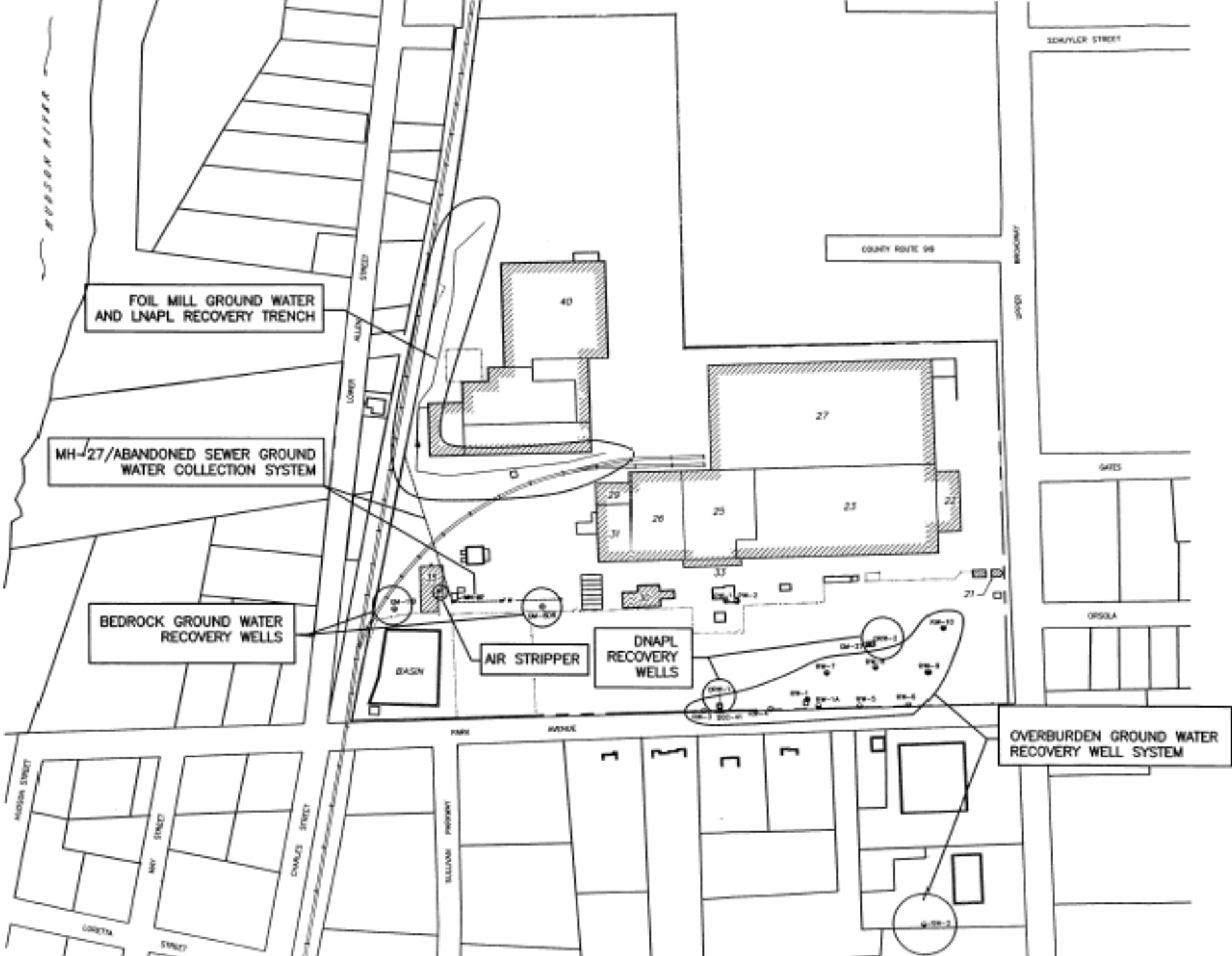
Enhancements to Groundwater Remedy

A groundwater and oil collection trench was constructed in the vicinity of the Foil Mill (2002)

An abandoned sewer was converted into a groundwater recovery system (2002)

Four recovery wells were installed in the “transition zone” in the southeastern portion of the site (2003)

Two horizontal wells were installed in the southern portion of the site to collect PCB oil (2004)


FOIL MILL GROUND WATER AND LNAPL RECOVERY TRENCH
MH-27/ABANDONED SEWER GROUND WATER COLLECTION SYSTEM
BEDROCK GROUND WATER RECOVERY WELLS
AIR STRIPPER
DNAPL RECOVERY WELLS
OVERBURDEN GROUND WATER RECOVERY WELL SYSTEM
BASIN
HUDSON RIVER
LOWER ALLEN STREET
COUNTY ROUTE 99
BROADWAY
SIDMUYLCR STREET
GATES
ORSOLA
PARK AVENUE
HUDSON STREET
MAY STREET
CHAPLIS STREET
SULLIVAN PROPERTY
LORETTA STREET
40
27
29
26
25
23
22
31
33
21

Public Water Supply Connection Program

GE began the program in June 1994

The program consists of annual sampling of private water supply wells, along with connection of residential water systems to the public water supply upon request

26 private wells are included in the sampling program

75+ connections have been done

Long Term O&M

GE has continued to operate the onsite and offsite groundwater recovery systems

GE has also continued to monitor groundwater both at the plant site and in the area around the plant

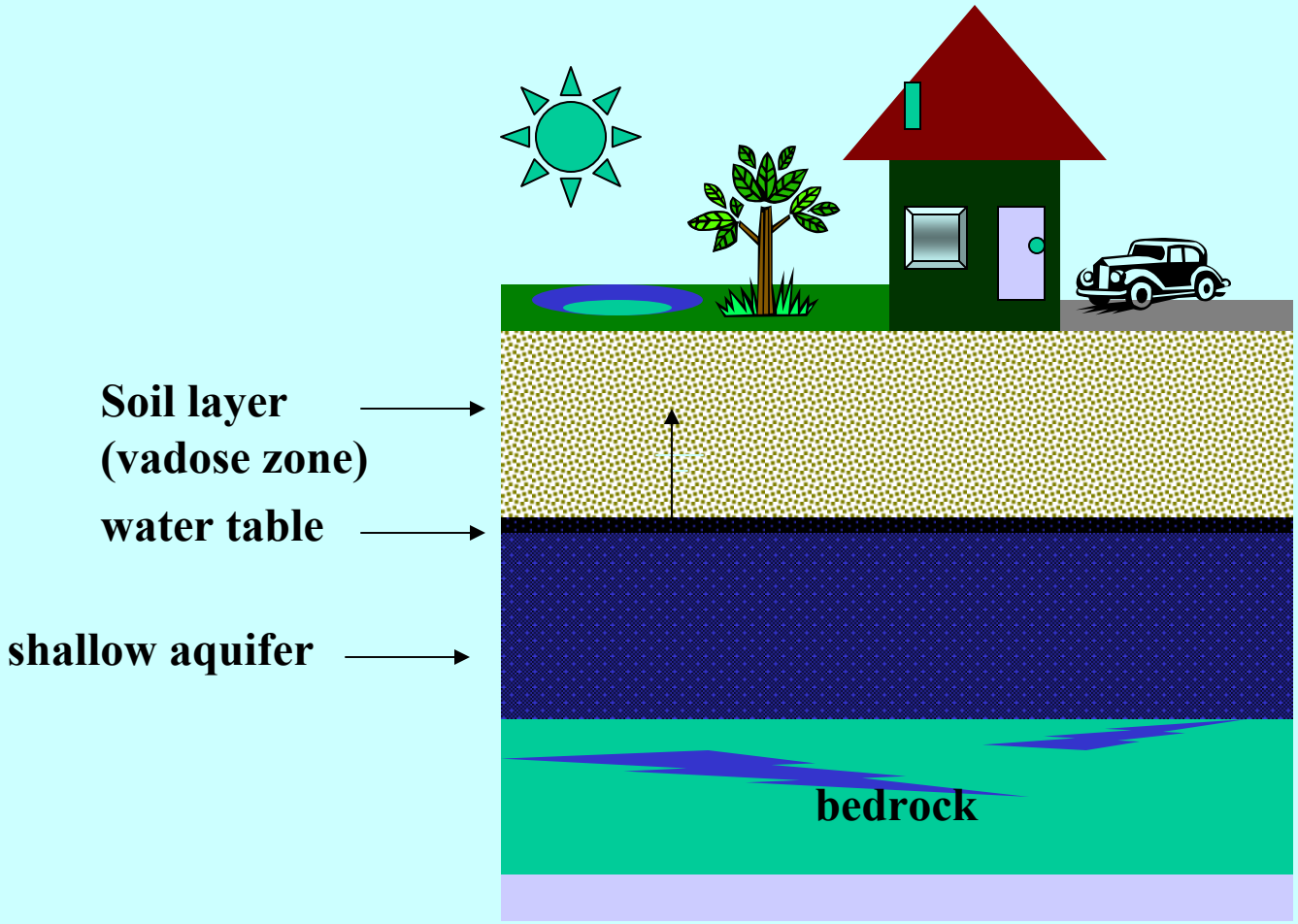
GE continues to implement the Public Water Supply Connection Program and offer hook-ups

Soil Vapor Intrusion

What is Soil Vapor?

Soil vapor, also known as soil gas, is the air found in the pore spaces between soil particles.

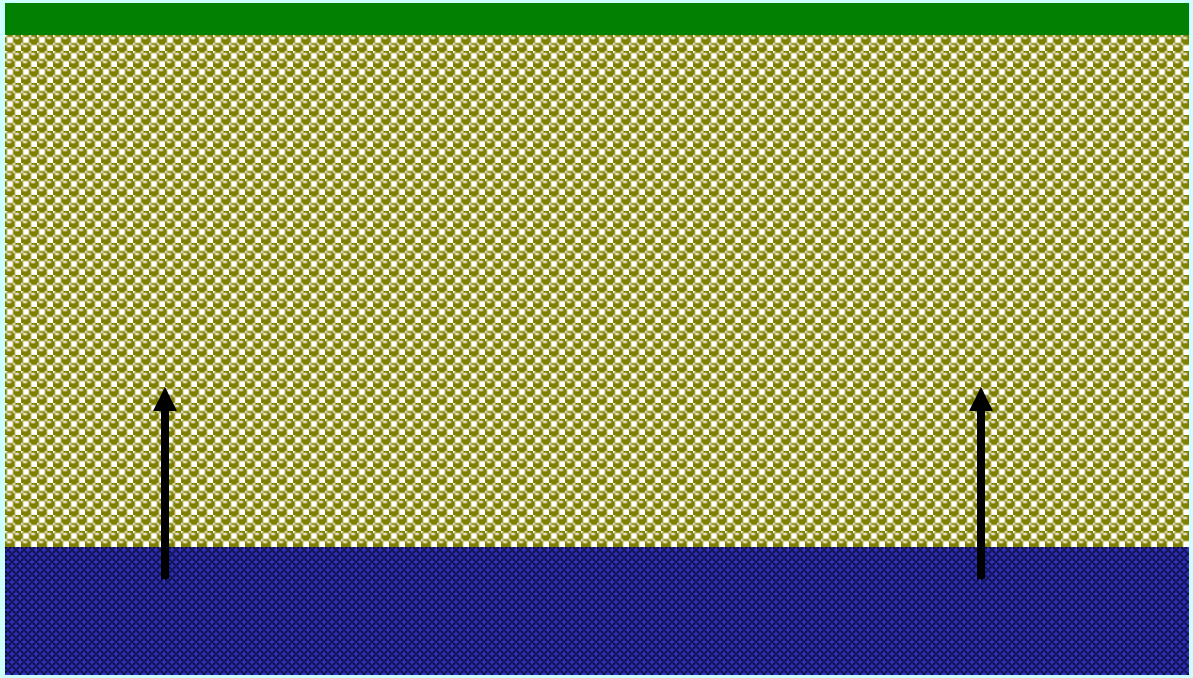
Vertical Profile



Ground Surface

Soil

Pore spaces between soil particles provide pathway for soil vapors to migrate

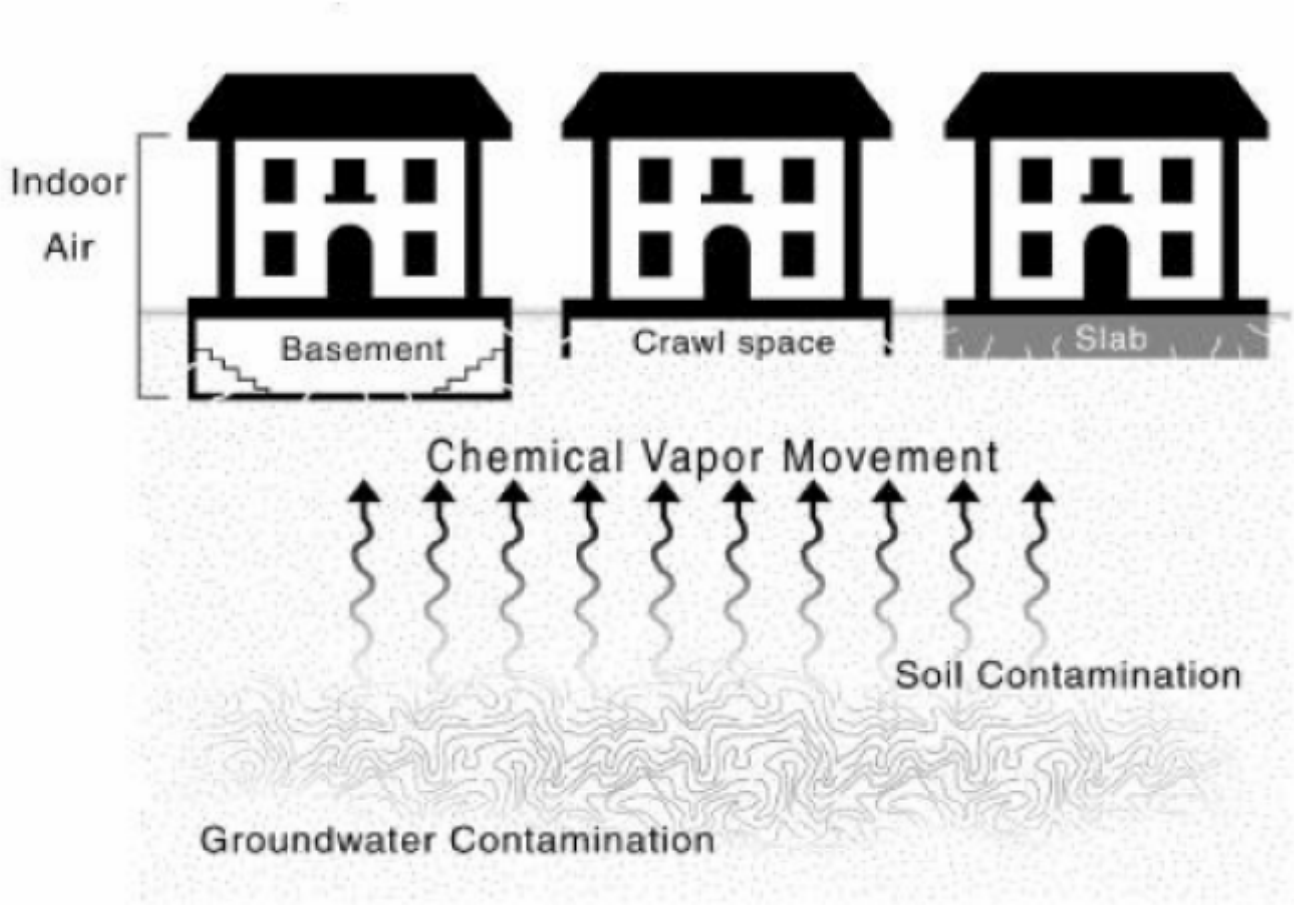


Shallow Groundwater

Volatile organic compounds can evaporate from groundwater and enter the soil vapors in the overlying soil.

Soil Vapor Intrusion

The process by which volatile organic compounds, such as TCE, move from subsurface soil into the indoor air of overlying buildings.



[Source: United States Environmental Protection Agency, Region 3]

Factors that Influence Soil Vapor Intrusion

- cracks in basement floor or slab
- openings in foundation for sump pumps and pipes
- heating, ventilation, and air-conditioning
- seasonal variations

How can I be exposed?

If soil vapors are entering a building through intrusion, an occupant of the building could potentially be exposed to that chemical through “inhalation.”

What types of samples will be collected and what do the results represent?

- Soil Vapor
- Groundwater

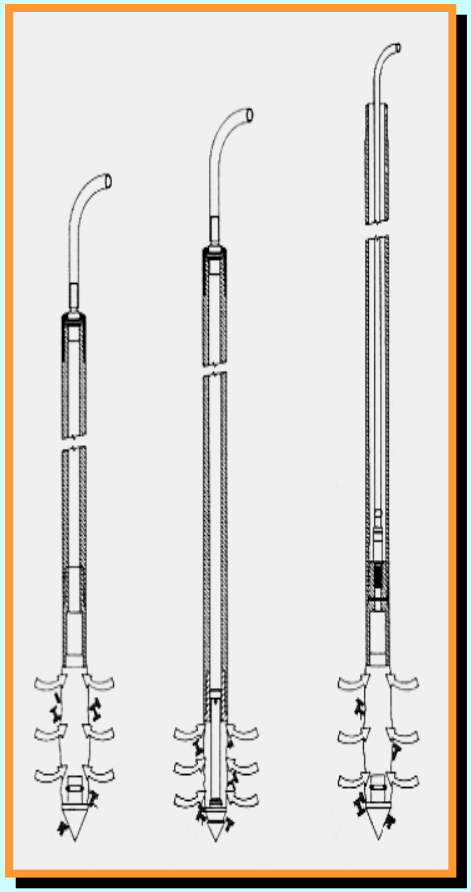
Soil Vapor Samples

Sample results will indicate whether or not there are site-related VOCs present in soil vapors.

“detected

verses

not detected”



Groundwater Samples

Groundwater sample results will be used to provide more information to understand shallow groundwater contamination associated with the site.

Results provide direction for soil vapor investigation.

GE is also offering to collect other types of samples listed below upon request from a resident or business owner.

- Sub-slab Soil Vapor
- Indoor Air
- Outdoor (Ambient) Air

"Offered not Required"

The sub-slab soil vapor, indoor air, and outdoor air samples will be collected as a separate component of this investigation. The results will be used to help understand the potential for soil vapor intrusion and the potential for exposure, but will not be used as the basis for delineating the soil vapor plume.

Preventing Potential Exposure

The determination of which buildings will be offered a sub-slab depressurization system will be based on soil vapor results

Indoor air sample results will be used to understand the potential for current exposures

Sub-slab Soil Vapor Samples

Samples would be collected to determine if site-related compounds are present immediately beneath a basement foundation or slab and, if so, at what concentrations

“represents potential”


ROUGHNECK

Indoor Air Samples

Samples would be collected upon request to determine if site-related compounds are present in indoor air and, if so, at what concentrations

Samples would be collected concurrently with sub-slab and outdoor samples.

Results are compared to understand relationship and source(s)


CERTIFICATION


MARCO
vinyl acrylic latex
Semi-Gloss

Outdoor Air Samples

Samples are collected to characterize background air conditions.

Outdoor sources, such as automobiles, oil storage tanks, commercial/industrial facilities, and so forth, may affect indoor air quality.

Study Area


AREA OF INVESTIGATION
P1
P2
P3
P4
P5
P6
P7
P8
SS-SG
SS-BG
MAIN NOSOAN

Work Plan Objectives

Delineate soil vapor plume

Provide systems to prevent potential exposure to residents and businesses within the delineated area, if any

Collect some indoor air samples, only upon request, to understand the potential for current exposures

Sampling Locations

Soil gas and groundwater sampling location shown are approximate, and will be based on permission for access to sample

Indoor/Sub-slab Sampling

Indoor/sub-slab sampling will be by request (to DOH, DEC, or GE) only; residents will not be required to have their home sampled

Requests for sampling will be accepted until March 18, based upon need to sample during the heating season


AREA OF INVESTIGATION
P1
P2
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Additional Sampling

Based upon the results of sampling and analysis, additional locations may be chosen to define the extent of the groundwater or soil gas plume

An iterative approach would be followed for additional sampling

Preventing Potential Exposure

Preventing Potential Exposure

The determination of which buildings will be offered a sub-slab depressurization system will be based on soil vapor results

Indoor air sample results will only be used to understand the potential for current exposures

Preventing Potential Exposure

The objective of the program is to offer abatement as warranted to structures located over the zone where detectable concentrations of site related VOCs are identified within the study area

The installation of a sub-slab depressurization system minimizes the potential for future exposures associated with vapor intrusion

Preventing Potential Exposure

NYSDOH and NYSDEC recommend that residents and property owners accept an offer for sub-slab depressurization system

Preventing Potential Exposure

GE will be responsible for all installation and operation costs of the sub-slab depressurization systems

Sub-slab Depressurization System

For More Information Please Contact:

NYS Department of Environmental Conservation
Kevin Farrar
(518) 402-9778

NYS Department of Health
Deanna Ripstein
(518) 402-7850

GE Community Affairs
Joan Gerhardt
(518) 792-1958

1. GROUND WATER ELEVATION CONTO

2. FOR CLARITY, ONLY THE 248 & 2
RECOVERY WELL RW-2 ARE SHOW

FIGURE 3-7

TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN OFF-SITE WELLS AND SPRINGS

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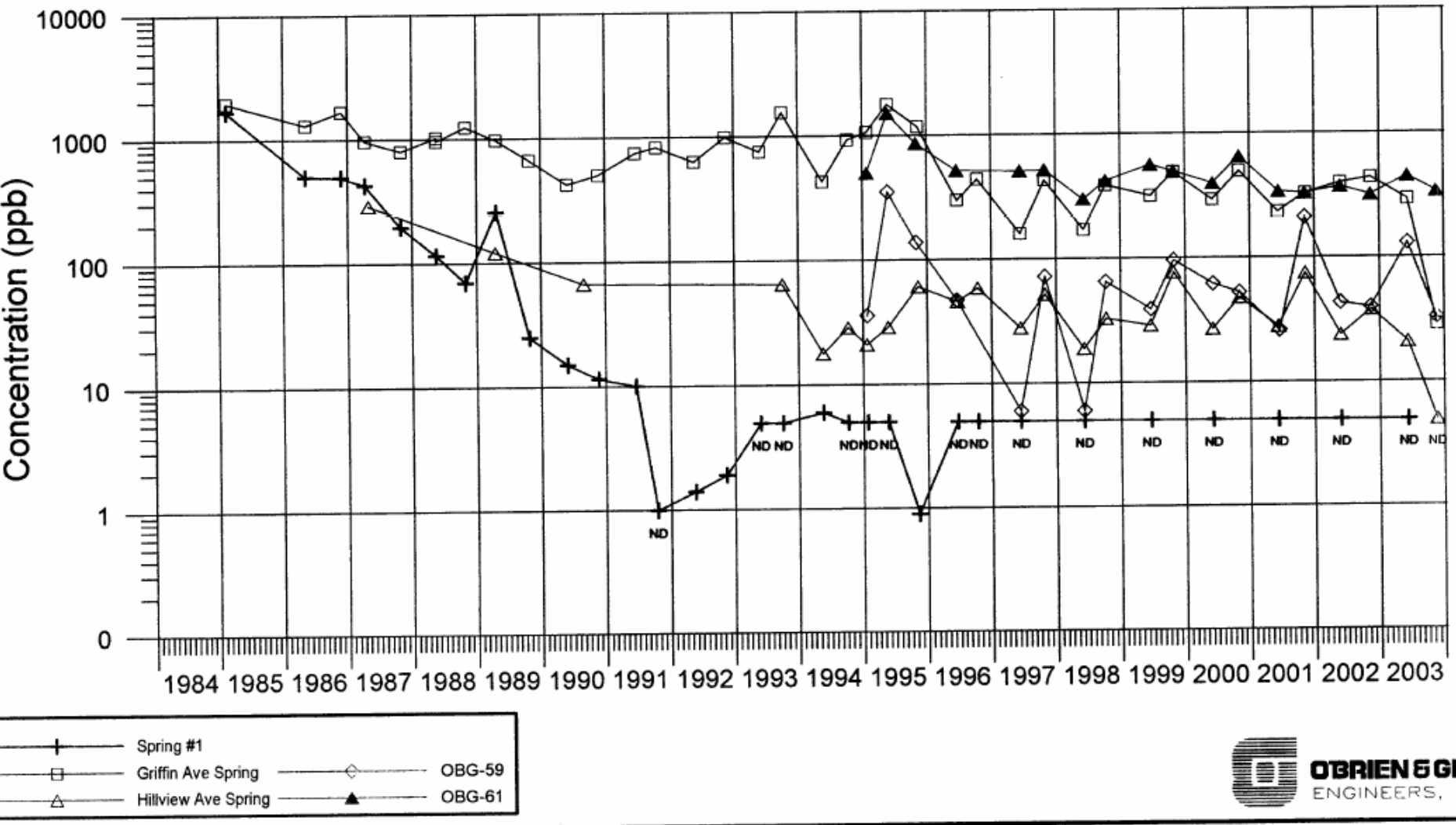

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