

# **NEW YORK STATE SUPERFUND CONTRACT**

## **MULTISITE PSA TASK 4 REPORT**

New Cassel Industrial Area Site  
North Hempstead, Nassau County

Hopper/Main Street Site	Site No. 130043J
E-Z-EM Site	Site No. 130043N
Tops Appliance City Site	Site No. 130043O
Swalm Avenue Site	Site No. 130043P
Sylvester Street Site	Site No. 130043Q
New Cassel Data Review Sites	Site No. 130043

Work Assignment No. D002676-12B-1

**DATE:** March 1997

### **Report • Appendix A**



Prepared for:

### **New York State Department of Environmental Conservation**

50 Wolf Road, Albany, New York 12233  
John Cahill, *Acting Commissioner*

Division of Hazardous Waste Remediation  
Michael J. O'Toole, Jr., P.E., *Director*

**By:**

**Lawler, Matusky & Skelly Engineers LLP**



**NEW YORK STATE SUPERFUND CONTRACT**

**MULTISITE PSA TASK 4 REPORT**

**REPORT AND APPENDIX A**

New Cassel Industrial Area Site  
North Hempstead, Nassau County

**HOPPER/MAIN STREET SITE**

Site No. 130043 J

**E-Z-EM SITE**

Site No. 130043 N

**TOPS APPLIANCE CITY SITE**

Site No. 130043 O

**SWALM AVENUE SITE**

Site No. 130043 P

**SYLVESTER STREET SITE**

Site No. 130043 Q

**NEW CASSEL DATA REVIEW SITES**

Site No. 130043

Work Assignment No. D002676-12B.1

Prepared for:

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

50 Wolf Road  
Albany, New York 12233

March 1997

LMSE-97/0081&650/622/623//624/625/626

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**LAWLER, MATUSKY & SKELLY ENGINEERS LLP**

Environmental Science & Engineering Consultants  
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## CHAPTER 1

### EXECUTIVE SUMMARY

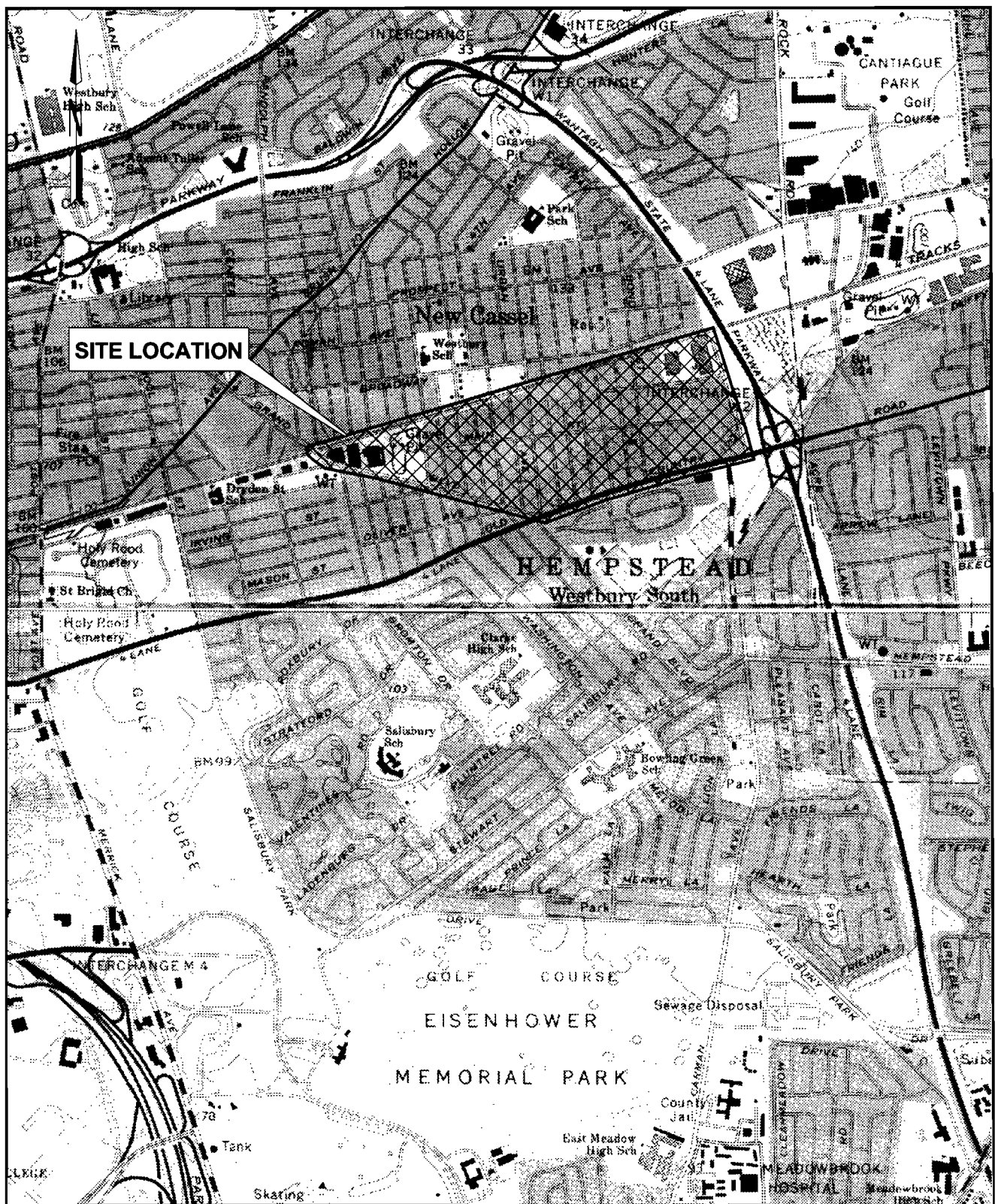
The New Cassel Industrial Area (NCIA) is located in the unincorporated Village of Westbury in the Town of North Hempstead, Nassau County, New York (Figure 1-1). Approximately 200 industrial or commercial businesses occupy this 170-acre site (Figure 1-2). Due to extensive halogenated volatile organic compound (VOC) contamination of groundwater beneath the site, the New York State Department of Environmental Conservation (NYSDEC) classified the entire industrial area as a hazardous waste site in 1988.

Lawler, Matusky & Skelly Engineers LLP (LMS) was contracted by NYSDEC in 1992 to conduct a site investigation of the NCIA. The objectives of the site investigation were to delineate the contaminant plumes under the site, locate the source of the contaminants, and redefine the site according to measured contamination.

The initial investigations conducted in 1993 and 1994 identified several areas exhibiting significant groundwater contamination within the NCIA (LMS 1994). Potentially responsible parties for the two central section plumes and one of the western section plumes were identified; those facilities were listed as Class 2 on the New York State Registry of Inactive Hazardous Waste Disposal Sites. The remaining four sites within the plume regions were designated as potential registry sites requiring additional investigation. The original all-encompassing New Cassel site was removed from the registry, thereby delisting all sites except those relisted.

LMS was assigned to conduct a multisite Preliminary Site Assessment (PSA) in 1995 on the remaining four sites that required additional investigation. The objectives of the multisite PSA were to further delineate the contaminant plumes at the four sites, locate the sources of the contaminants, and assess the threat of each source to the environment. Based on the multisite PSA investigation data five properties were recommended for inclusion on the Registry of Inactive Hazardous Waste Sites, 15 properties were determined to be not included on the registry, and 12 properties were determined to be potential registry sites.

To resolve the status of the 12 remaining properties that were included in potential registry sites and address data gaps for several properties in the industrial area, Task 4 multisite PSA investigation activities were conducted. The investigation included additional file reviews, facility inspections, soil and groundwater probes, and on-site mobile laboratory analysis. The data generated from the Task 4 multisite PSA investigation documented usage of hazardous waste, identified on-site sources, and further delineated the plumes. Based on the data, the following classification of facilities within the four sites are recommend:



0 2000 ft  
SCALE  
1 in. = 2000 ft

Map source:

USGS 7.5-minute quadrangle series,  
Freeport, NY, 1969, photorevised 1979,  
Hicksville, NY, 1967, photorevised 1979.



QUADRANGLE  
LOCATION

V650122USGS.d4

Figure 1-1

## Site Location

NEW CASSEL INDUSTRIAL AREA  
NYSDEC I.D. No. 130043 J, N-Q, and 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP  
Pearl River, New York



EZ-EM Site  
Site No. 130043 N

Swalm Avenue Site  
Site No. 130043 P

Tops Appliance City Site  
Site No. 130043 O

Sylvester Street Site  
Site No. 130043 Q

Hopper/Main Site  
Site No. 130043 J

# LEGEND



Potential registry site



New Cassel data review sites

0 ~500 ft

APPROXIMATE SCALE  
1 in. = 500 ft

Figure 1-2

## Site Plan

NEW CASSEL INDUSTRIAL AREA  
NYSDEC I.D. No. 130043 J, N-Q, and 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP  
Pearl River, New York

\\122-GPR.dwg

- **Class 2 Hazardous Waste Sites:**

299 Main Street  
118-138 Swalm Avenue  
Vacant Lot (Block 145,  
Lots 38, 39, 40) at  
Corner of Hopper &  
Main Streets

One Stop Auto & Truck Center  
Liqui-Mark Corporation  
Former Junkyard

- **Remain as Class 2 Hazardous Waste Sites:**

29 New York Avenue

Former Tishcon Facility

- **Class 4 Hazardous Waste Sites:**

750 Summa Avenue

E-Z-EM

- **Remain as Potential Registry Sites Pending the Identification of an Upgradient Source:**

95 Hopper Street  
542 Main Street  
49 Sylvester Street  
33 Sylvester Street  
36 Sylvester Street

Bilt-Rite Steel Buck  
Al's Tool & Die  
Micro-Ray Corporation  
Arkwin Industries  
Tishcon Corporation

- **Sites That Should not Appear on the Registry:**

550 Main Street  
717-765 Main Street  
776-790 Summa Avenue  
69 Sylvester Street  
750 Main Street  
1099 Old Country Road  
1226 Old Country Road  
110 Hopper Street  
111-117 Swalm Street

Royal Guard Fence  
E-Z-EM  
NYCE Liberty Tempest  
T. Sarro Salvage  
Tops Appliance City  
Tops Appliance City  
Westbury Toyota  
Express Steel  
Harco Trucking - Harmon Associates

The Task 4 PSA investigation resulted in three properties recommended for listing as Class 2 sites, confirmation of one property as a Class 2 site, one property recommended as a Class 4 site, the determination that nine properties should not appear on the registry, and the determination that five properties should remain as potential registry sites. A designation as a potential registry site was retained for these five properties after discussions with NYSDEC. The groundwater at these five properties exhibit significant contamination. However, it appears that the contamination is from an identified Class 2 site upgradient of the properties. Once the



source of the contamination is confirmed and the contaminant plume is mapped, these properties can be classified to using the new data.

LMS recommends that interim remedial measures (IRMs) be conducted on the identified source areas on the individual properties, i.e., the contaminated soils found under and around the source discharge points. The goal of the IRMs is to remove any continuing soil source of groundwater contamination. The extremely high concentrations of contaminants found in several of the plume areas (Arkwin/Tishcon plume, and the Block 328 plume) indicate the likely presence of dense non-aqueous phase liquid (DNAPL) in the aquifer itself. It appears that at some sites the contaminant discharge was at pure product concentrations and, being denser than water, may have sunk in the aquifer. These highly concentrated levels of contaminants now act as a continuing source of contamination to the aquifer. Further investigations should be conducted to delineate the nature and extent of the highly contaminated areas. These areas should then be addressed with IRMs designed to contain and remove these sources to the extent possible. The goal of these IRMs is to remove the most highly contaminated groundwater such that the existing wellhead treatment systems can continue to operate as intended.



## CHAPTER 2

### OBJECTIVES

The overall objectives of Task 4 of the multisite PSA at the NCIA were to:

- ***Further delineate the contaminant plumes at the remaining potential registry sites.*** In order to isolate and identify potential source facilities, additional delineation of the contaminant plumes was needed.
- ***Locate the source of the contaminants.*** At each of the potential registry sites, source area investigations were conducted to document disposal or use of target compounds at the individual facilities within the site. In addition, relative upgradient and downgradient contaminant plume concentrations were assessed to determine whether the contaminants likely originated from the facility.
- ***Assess the threat of each source to the environment.*** If a source of contamination was established on a particular facility and a demonstrated impact to groundwater was found, a significant threat to the environment was determined to exist as the underlying aquifer and groundwater are a sole-source drinking water supply.



## CHAPTER 3

### PREVIOUS STUDIES AND AGENCY FILE REVIEWS

#### 3.1 NYSDEC SITE INVESTIGATION

##### 3.1.1 Overview and Objectives

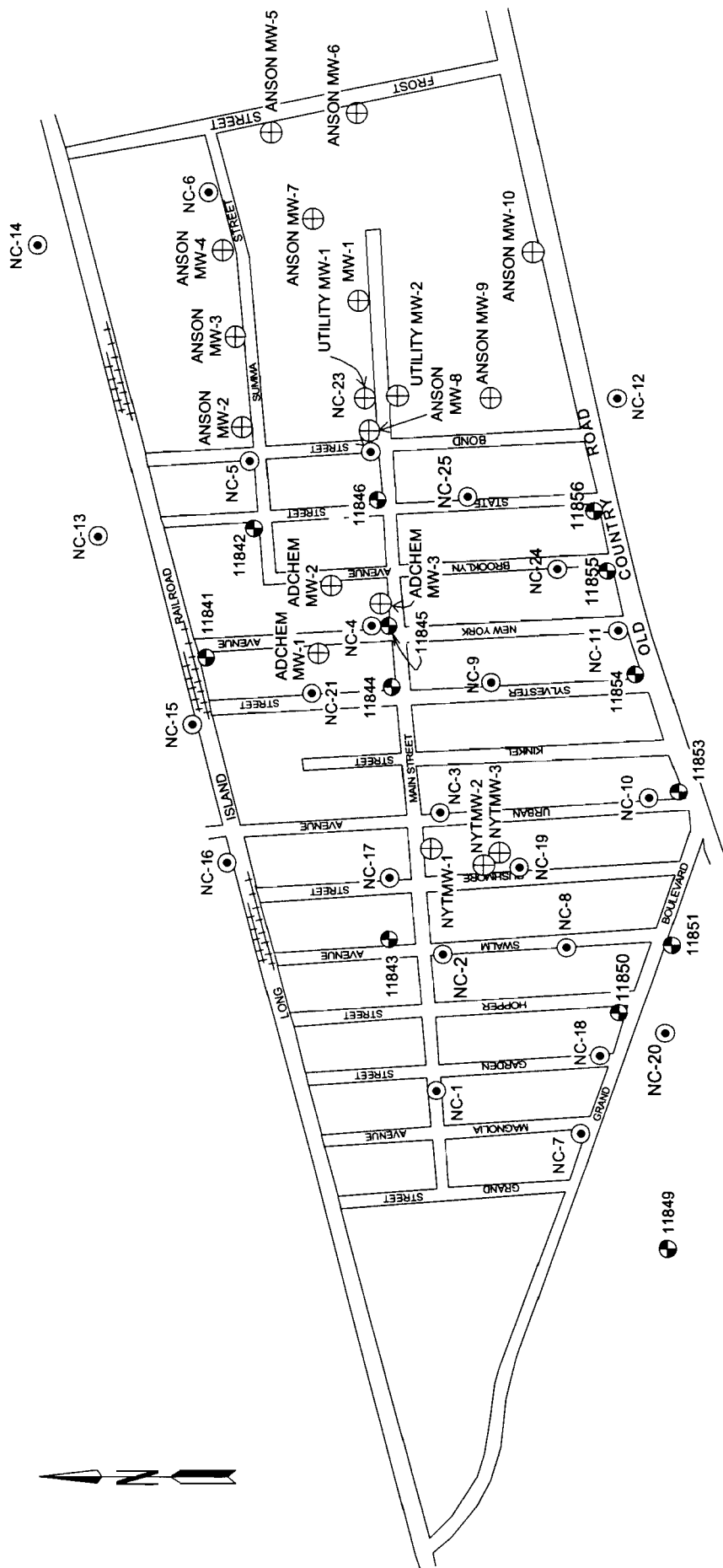
In 1985 the Nassau County Department of Health (NCDOH) identified the NCIA as a major source of groundwater contamination (NCDOH 1986). As a result of this investigation, in 1988 NYSDEC classified the entire industrial area as a hazardous waste site (Class 2).

In 1992 LMS was contracted by NYSDEC to conduct a site investigation for the NCIA (LMS 1995). The objectives of this investigation included delineating the contaminant plume under the site, locating the sources of the contaminants, and redefining the site according to the field-measured contamination.

The first stage of the site investigation involved a file review to collect necessary background information regarding the various properties in the NCIA. This stage also included the collection of groundwater from 56 existing wells at the NCIA (Figure 3-1). Based on the results of the monitoring well sampling, a total of 44 groundwater and soil probes (P-1, P-2; GP-1 to GP-42) were strategically placed throughout the area (Figure 3-2).

Analysis of the Stage I site investigation data indicated that widespread groundwater contamination existed at the NCIA. To delineate the contaminant plumes under the site, an additional 80 groundwater and soil probes were completed (Figure 3-3) and three additional monitoring wells were sampled.

Data generated from the sampling and analysis during Stage I and Stage II of the site investigation were used to generate contaminant plume maps, which identified seven, apparently distinct, groundwater contaminant plumes (Figure 3-4) (LMS 1995). Potentially responsible parties for the two central section plumes and one of the western section plumes were identified; those facilities were listed as Class 2 on the New York State Registry of Inactive Hazardous Waste Disposal Sites. The remaining sites within the four plume regions were designated as potential registry sites requiring additional investigation. The original all-encompassing New Cassel site was removed from the registry, thereby delisting all sites except those relisted. In 1996 LMS returned to the site to investigate the remaining four plume regions designated as potential registry sites. An additional 47 groundwater and soil probes were placed within the



**LEGEND**

- NC-1 ○ NCDOH and Dvirka & Bartilucci monitoring wells
- 11849 ● USGS monitoring wells
- N9938 ● NCDPW monitoring well
- ⊕ Privately owned monitoring wells



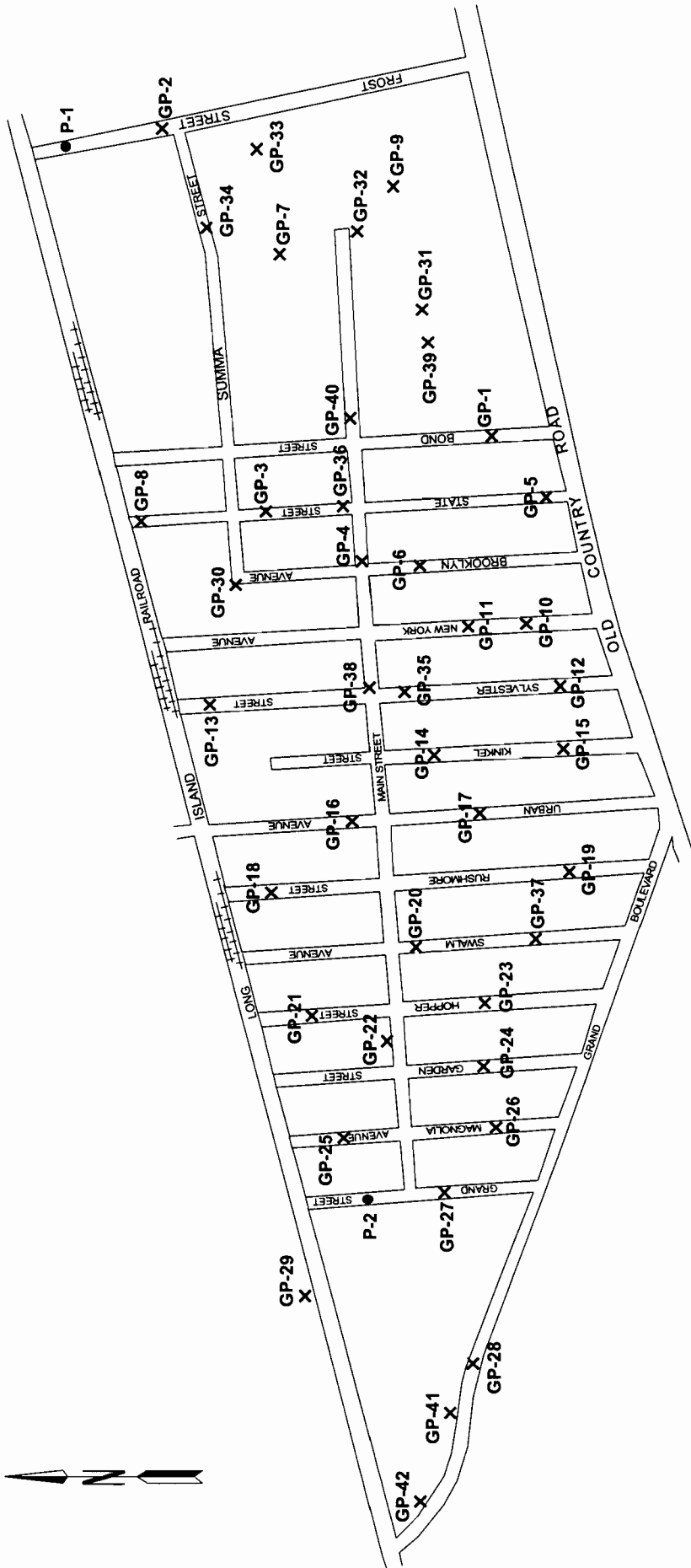
**Figure 3-1**

**Monitoring Wells Sampled  
24 August to 7 September 1993**

NEW CASSEL INDUSTRIAL AREA  
NYSDEC I.D. No. 130043 H-K

LAWLER, MATUSKY & SKELLY ENGINEERS LLP  
Pearl River, New York

024WELLS.dwg



**LEGEND**

P-# ● Original geoprobe location

GP-# X Geoprobe location



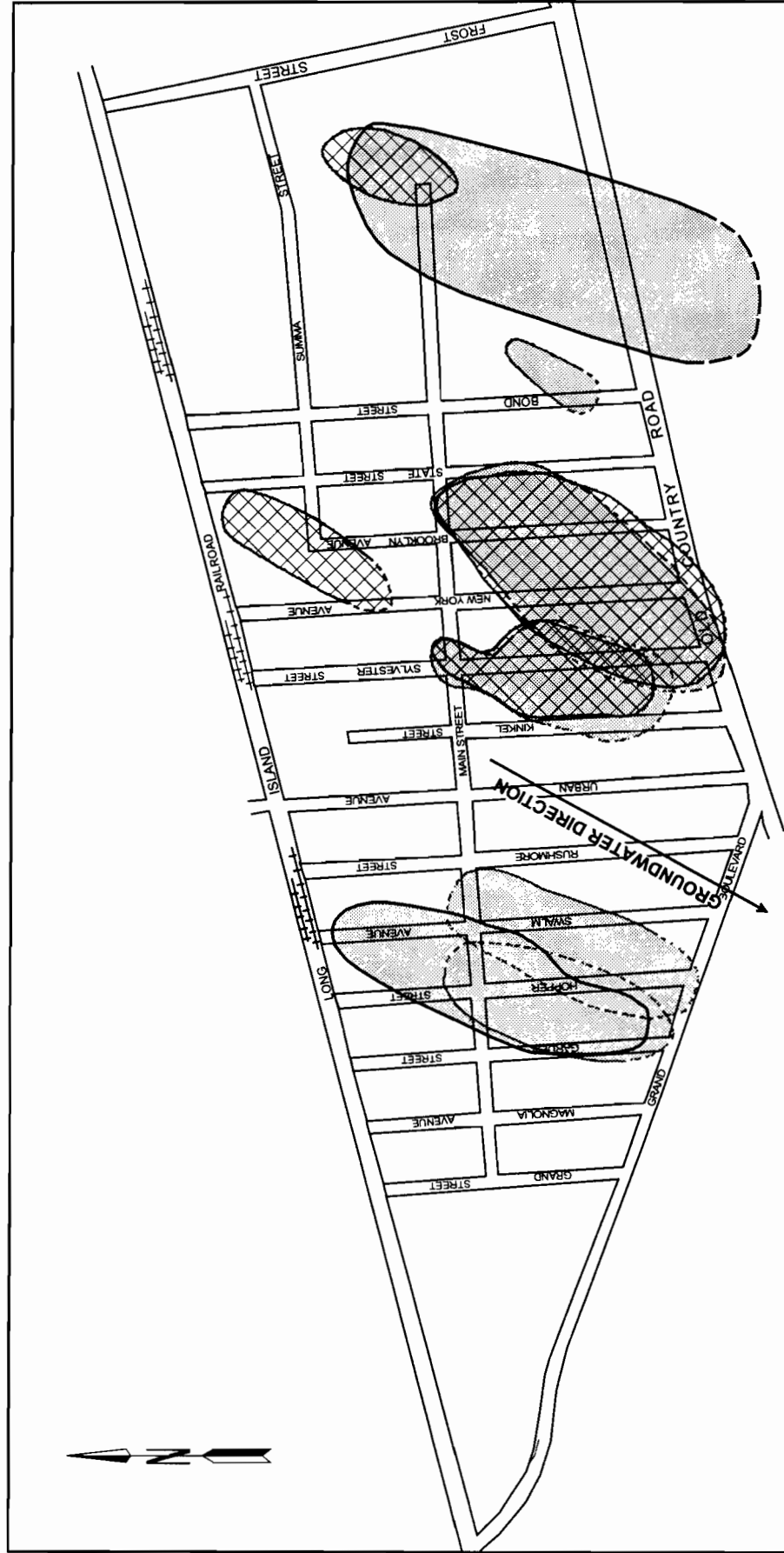
Note: P1, P2, and P4 locations were sampled 3-31-93  
(P4 is located off the map)

**Figure 3-2**  
**Stage I SI**  
**Geoprobe Locations Sampled**  
**October and November 1993**  
**P1, P2, and P4, and GP-1 to GP-42**

NEW CASSEL INDUSTRIAL AREA  
NYSDEC I.D. No. 130043J, N, O, and 130043  
LAWLER, MATUSKY & SKELLY ENGINEERS LLP  
Pearl River, New York







# LEGEND



-  Total PCE plume (PCE, TCE, DCEs, VC), >100 ppb
-  Total TCA plume (1,1,1-TCA, DCAs), >100 ppb

FIGURE 3-4

Contaminant Plumes Identified at  
the New Casse! Industrial Area  
(1993-1996)

NEW CASSE! INDUSTRIAL AREA  
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP  
Pearl River, New York

~500 ft  
0  
APPROXIMATE SCALE  
1 in. = 500 ft

1622plume.ds4

remaining potential registry sites (Figure 3-5). The results of this investigation identified five properties that should be included on the registry, 15 properties that should not be included on the registry, and 12 remaining potential registry sites.

The objective of Task 4 of this PSA investigation was to resolve the status of the 12 remaining properties that are potential registry sites. At the request of NYSDEC, a final data review task was also completed on four properties, along with additional data collection at 29 New York Avenue. The reviews were performed in an attempt to obtain all available information on the properties from the appropriate agencies in order to determine their appropriate registry status.

### **3.2 AGENCY FILE REVIEW**

#### **3.2.1 Site Usage Database**

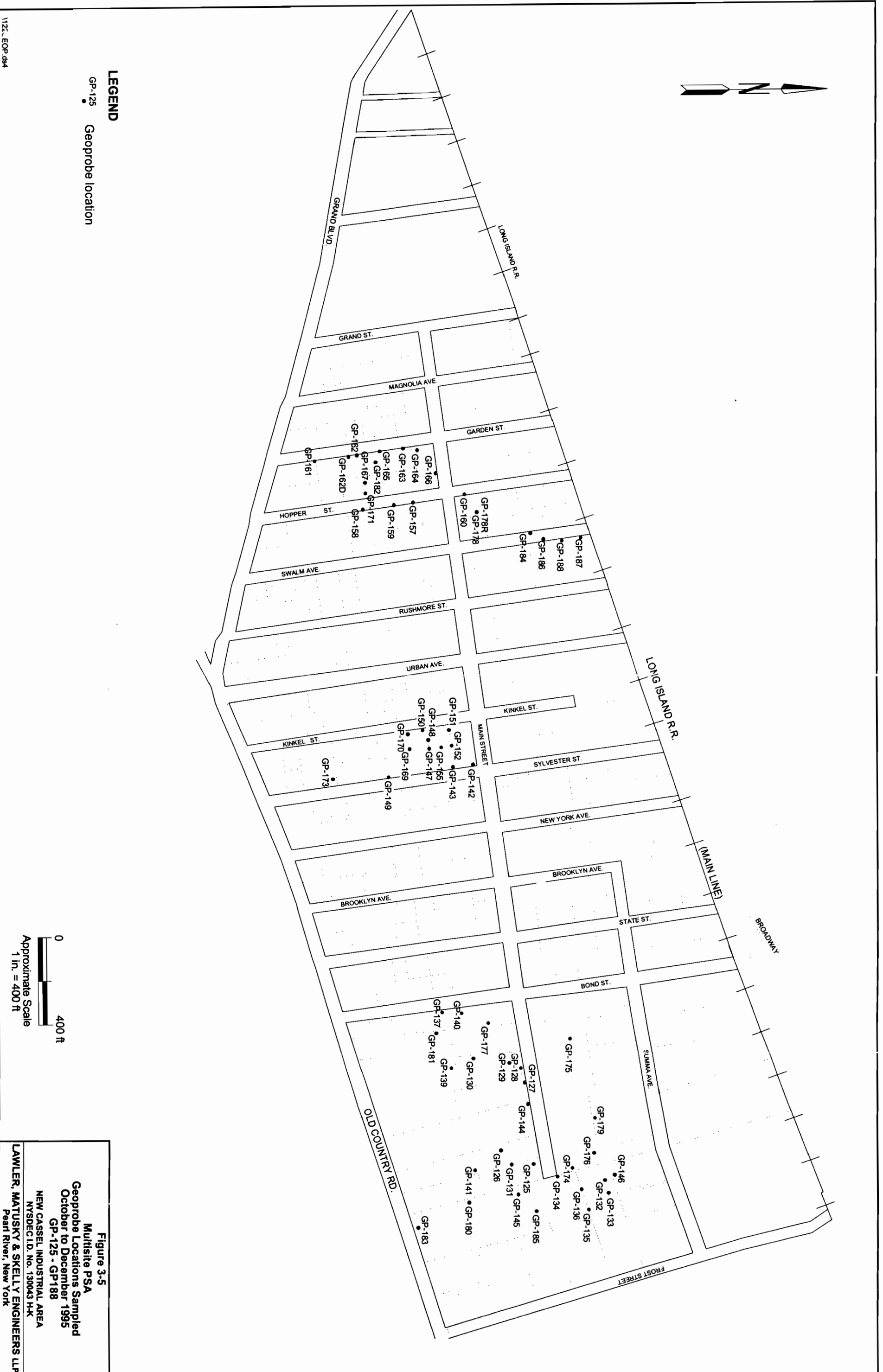
During the site investigation and PSA conducted at the NCIA by LMS, a site usage database was compiled from the existing agency files and records. The intent of this database was to compile in one location all the pertinent information found in various agency files regarding the industrial area. Records from the Town of North Hempstead Tax Assessor's Office, fire department, library, and public works department were reviewed and copied. All NCDOH files pertinent to the industrial area were also copied.

The resulting database, covering most of the known addresses in the area, was subdivided into east, central, and western sections. It contained tax block and lot numbers, current uses, prior uses, chemical usage (if available), and any past sampling results (LMS 1995).

The database has several limitations, primarily as a result of the data sources. Addresses and site usages not on file are not in the database. In addition, any errors in the agency files are incorporated into the database. During each stage of the investigation, the site usage database had been updated to reflect the most currently available data.

#### **3.2.2 Detailed Multisite PSA File Review**

As part of the PSA Task 4 investigation, a detailed file review for the five properties within the remaining PSA sites was conducted by LMS' subconsultant, YEC, Inc. Each site history was developed based on the previous file review database; an aerial photography review; detailed file searches at the county, local, and state levels; and interviews with former employees (if possible). The objectives of the detailed PSA file review were to:





- Verify and update the original database.
- Cross-reference any known addresses or past uses to locate untapped sources of information.
- Document the existence or nonexistence of agency files for particular addresses.
- Review chemical usage history with regard to the contaminants of concern.

Although this effort may have duplicated much of the information found during the original file review, it was believed that the various agencies would be more responsive to specific requests regarding addresses and current and past uses of the property. Additional information and the results of the detailed file reviews are discussed in detail in Chapter 6 and can also be found in Appendix A.

### **3.3 PRIVATE INVESTIGATIONS AND REPORTS**

Investigations involving groundwater and soil sampling have been conducted by private consultants for a number of properties in the NCIA. Prior to 1995 these investigations were conducted for a variety of reasons, including efforts aimed at delisting various properties from the New York State Registry of Inactive Hazardous Waste Disposal Sites. In general, sampling plans are site specific and oriented to the objectives defined by each client. Since the identification of potentially responsible parties for several plumes, several private remedial investigations/feasibility studies (RI/FSs) have also been completed in the NCIA. LMS has not fully reviewed all these data as many of these investigations are outside the areas of the remaining potential registry sites.

### **3.4 NYSDEC 1995 MONITORING WELL SAMPLING**

NYSDEC conducted a groundwater monitoring well sampling program at the NCIA in late September and early October 1995. During this sampling event several teams attempted to sample 54 wells located throughout the area. Forty-five of the 54 wells were sampled; the remaining nine wells were dry or silted in. All sampling was conducted under NYSDEC protocols, and the samples were shipped to a New York State Department of Health (NYSDOH)-certified laboratory under chain-of-custody protocols for analysis of VOCs (EPA 8010/8020). The sampling documentation and results were summarized in the previous PSA report (LMS 1996). These results also appear on the PSA summary figures for wells in the remaining potential registry sites.



## CHAPTER 4

### FIELD INVESTIGATIONS

#### 4.1 FACILITY INSPECTIONS

To aid in the placement of soil and groundwater probes at individual properties, a total of three full-facility inspections were conducted during the Task 4 PSA field activities. The inspections included one facility on the Hopper/Main Street site, two facilities on the Swalm Avenue site, and one facility on the Sylvester Street site. During the site investigation prior to the Task 4 PSA investigation, a total of 40 facilities were inspected. The facility inspections were short, general inspections intended to identify the following:

- Various work areas in the facility
- Manufacturing processes at each facility
- Any site history, including past occupants
- Any potential discharge points at the facility
- Chemical use and storage
- Relative cleanliness of the operation
- Locations of any abandoned septic tank/leachpool systems

Table 4-1 provides a list of the facilities that received a full inspection in 1996; additional details and results of the full-facility inspections and the supplemental inspections conducted at several additional properties are found in Section 5.1.

#### 4.2 GROUND-PENETRATING RADAR

A ground-penetrating radar (GPR) survey was conducted for the NCIA at 29 New York Avenue, where leachpools or other types of discharges were suspected. The purpose of the GPR survey was to locate the position of active or abandoned leachpools and the position of the discharge lines from the floor drains inside the building at 29 New York Avenue for soil sampling. A full description and results of the survey can be found in Appendix B.

GPR is a nondestructive, nonintrusive geophysical exploration technique that uses radar waves to detect and record subsurface features. LMS' subcontractor, Sub-Surface Informational





TABLE 4-1

**LIST OF PROPERTIES THAT RECEIVED FULL FACILITY INSPECTIONS**  
New Cassel Task 4 Multisite PSA 1996

SITE	ADDRESS	TAX BLOCK	LOT
<i>Hopper/Main Street Site</i>			
Royal Guard Fence	550 Main Street	Tax Block 72	Lot 1-4
<i>Swalm Avenue Site</i>			
Liqui-Mark Corporation	118-138 Swalm Avenue	Tax Block 164	Lots 19-29
<i>Sylvester Street Site</i>			
Former Tishcon Site	29 New York Avenue	Tax Block 77	Lots 25-28, 50-55

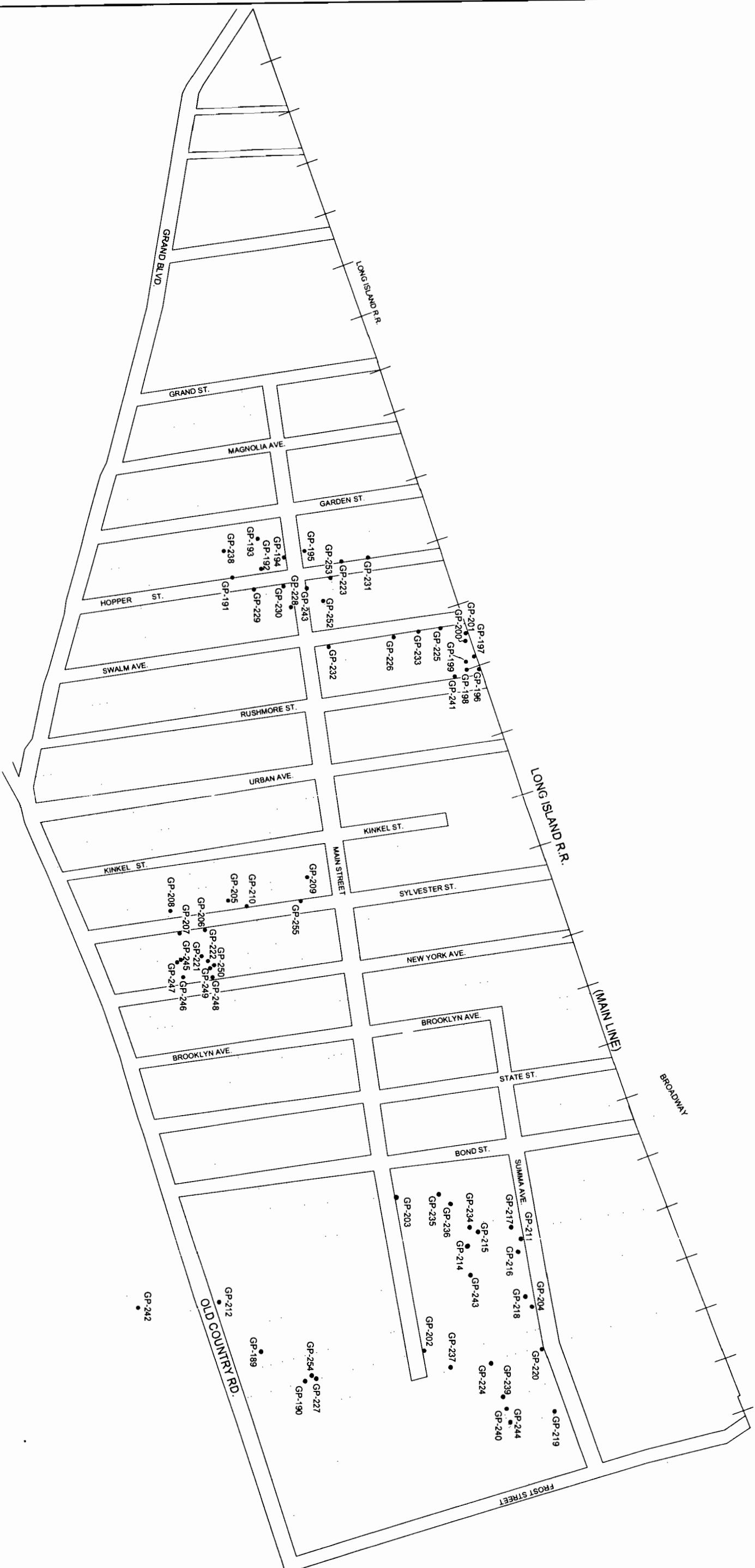
Surveys, Inc., of East Longmeadow, Massachusetts, performed the GPR surveys. Sub-Surface Informational Surveys, Inc., utilized the same GPR system and techniques used in the 1995 surveys.

### **4.3 GROUNDWATER PROBE INVESTIGATION**

#### **4.3.1 Groundwater Probes**

A groundwater probe investigation was conducted concurrently at the five Task 4 PSA areas in the industrial park. A truck-mounted Geoprobe unit operated by Zebra Environmental Corp. of Cedarhurst, New York, was used to collect most of the necessary groundwater samples. At five locations in the Sylvester Street area a Hydropunch sampling system was used. This sampling was done by Aquifer Drilling and Testing, Inc., of Woodside, New York, using a standard hollow-stem auger drilling rig equipped with the Hydropunch equipment. Sample locations for the groundwater probes were selected to ensure sampling over suspected source areas and to provide upgradient and downgradient water quality information on suspected properties. Groundwater samples were collected at 42 Geoprobe locations and five Hydropunch locations (GP-205 to GP-209) (Figure 4-1); typically, the goal was to collect three water samples from each probe location at depths of 93-95 ft, 73-75 ft, and 60-62 ft below ground surface.

After a check for underground utilities clearance at each Geoprobe location, the groundwater sampling point was driven to 95 ft or refusal. Once at the desired depth, the screened point sampler was disengaged from the sampler assembly and the probe rods pulled back to expose the screen. A 4-ft-length screen was used by Zebra in this investigation. This screen was more durable than the 2-ft-length screen used during the 1995 investigation, and its larger diameter provided more surface area on the screen, aiding in sampling. Water samples were collected using 5/16-in. polyethylene tubing equipped with a ball-check valve. After groundwater was purged for a short period, the tubing (full of groundwater) was withdrawn from the probe hole. The sample was then collected by removing the check valve and allowing the water to slowly decant into the mobile laboratory-supplied sample vials. At each sampling point, a minimum of two 40-ml vials were collected if sufficient sample volume was found. Additional vials were collected as needed for mobile laboratory quality assurance/quality control (QA/QC) and base laboratory confirmation samples. The probe rods were pulled back 2 ft to obtain the deepest sample. After the deepest sample was retrieved, the probe rods were pulled back to straddle the next required sampling zone, exposing the entire 4 ft of screen. Again, polyethylene tubing was used to purge the probe point. At the shallower depths a larger purge volume was used to ensure that a representative sample of the required sampling zone was collected. At each



**LEGEND**  
GP-189-255  
• Geoprobe location

0 400 ft  
Approximate Scale  
1 in. = 400 ft

**Figure 4-1**  
**Task 4 Multisite PSA**  
**Geoprobe Locations Sampled**  
**October to November 1996**  
**GP-189 - GP-255**  
**NEW CASSEL INDUSTRIAL AREA**  
**NYSDEC I.D. No. 130043 H-K**  
**LAWLER, MATUSKY & SKELLY ENGINEERS LLP**  
**Pearl River, New York**



location this process was repeated so that, where possible, three groundwater samples were collected at each of the groundwater probe locations.

The Hydropunch sampling technique was used in the Sylvester Street area after it was discovered during the previous sampling events that the Geoprobe was unable to penetrate a suspected hard clay layer at depth. During the Hydropunch sampling, the presence of the clay was confirmed at approximately 70 to 75 ft.

After a check for underground utilities clearance at each Hydropunch location, hollow-stem augers were advanced to 60 ft. The Hydropunch equipment was then driven to 62 ft and the sampler was opened to allow for sample collection. The groundwater sample was then collected by lowering a dedicated, disposable Teflon bailer down the rods. At each sampling point, a minimum of two 40-ml vials were collected for mobile laboratory analysis. Additional vials were collected as needed for QA/QC and confirmatory sampling. This process was repeated at the next two sampling depths (73 to 75 ft and 93 to 95 ft) where possible.

#### **4.3.2 Soil Probes**

In suspected source areas (as identified by the file reviews, facility inspections, and GPR survey) soil samples were collected using the Geoprobe unit supplied by Zebra Environmental. The required soil samples were obtained by using a 2-in. outside diameter (O.D.) macro-core sampler in 4-ft intervals. The sampler was then pushed or hammered to the desired depth using the Geoprobe hammer. As the sampler was driven into the ground the soil sample was retained in a dedicated acetate sampler fitted in the macro-core barrel. After the macro-core sampler was retrieved the liner and sample were slid from the core barrel and capped on both ends. The soil sample was then quickly transferred to the appropriate mobile laboratory sample containers to ensure minimal VOC loss. The soil sample was then scanned with a HNU photoionization detector (PID) and briefly described in the field logbook. Based on the PID results and visual observations a final decision was made as to whether the sample should be submitted to the mobile laboratory. If soil samples were collected at depths greater than those attainable using the macro-core, a large-bore sampler was used instead. The large-bore sampler has a smaller O.D. and is only 2 ft long, allowing it to be driven to deeper depths. Sample retrieval and preparation methods similar to those used for the macro-core sampler were utilized when using the large-bore sampler.

### 4.3.3 Mobile Laboratory

All soil, groundwater, surface water, and sediment samples collected during the Task 4 PSA field activities were analyzed by Commonwealth Analytical of Westfield, Massachusetts, which operated an on-site mobile gas chromatograph (GC) laboratory for the duration of the Task 4 PSA field activities.

Samples were delivered to the mobile laboratory under chain-of-custody protocols as they were collected, then analyzed for VOCs, as listed in EPA Methods 8010 and 8020. A total of a 199 samples, consisting of 137 groundwater samples and 62 soil and sediment samples, were collected over the 19-day period of the field work. An additional 32 dilutions were required. Thus, the total number of samples analyzed during the multisite PSA for this project was 231.

The target compounds for this investigation consisted of:

Vinyl chloride (VC)	Trichloroethene (TCE)
1,1-Dichloroethene (1,1-DCE)	Tetrachloroethene (PCE)
Methylene chloride	Benzene
trans-1,2-Dichloroethene (trans-1,2-DCE)	Toluene
1,1-Dichloroethane (1,1-DCA)	Chlorobenzene
cis-1,2-Dichloroethene (cis-1,2-DCE)	Ethylbenzene
1,1,1-Trichloroethane (1,1,1-TCA)	m&p-Xylene
Carbon tetrachloride	o-Xylene
1,2-Dichloroethane (1,2-DCA)	

All samples delivered to the mobile laboratory were analyzed for VOCs using a Hewlett-Packard Model 5890 II GC with an electrolytic conductivity detector (ELCD) and PID. An OI Analytical Model 4560 Purge & Trap sample concentrator was used to purge the VOCs from the sample matrix, concentrate them onto a sorbent trap, and desorb them onto the GC system. An OI Analytical MPM-16 multisampler was used to allow sample analysis to continue while the mobile laboratory was unmanned. The analytical system and parameters were similar to those used in EPA Methods 8010/8020. Data were processed on a Dell 486 DX/50 personal computer using HP Chemstation Software. Reports were generated with a customized Microsoft Excel reporting program. Copies of each day's preliminary sample results were delivered to LMS as they were made available.

During the mobile laboratory analysis Commonwealth Analytical maintained strict QA/QC procedures to ensure data quality. The list below is a description of the QC analysis and the acceptance limits for the volatile organics analysis conducted in the field:

- **Initial Calibration.** A three-point initial calibration was conducted on the analytical system prior to project initiation. The instrument was calibrated and the correlation coefficient (r) calculated for each analyte. For all analytes the (r) value should have been greater than 0.990 or recalibration was performed.
- **Calibration Check Standards.** At the beginning of each day, after every 10 samples, and at the end of each day a midpoint calibration check standard was analyzed to verify that the analytical sensitivity did not change from the initial calibration. Percent recovery (%R) values were calculated for each analyte and compared to the 75-125% criteria. If the %R value was outside the control limits the analyst noted this on the QC form. If significant variances were observed, the system was recalibrated.
- **QC Standards.** A QC standard was analyzed on a daily basis and used to verify the accuracy of the calibration standards. The QC standard was a standard from a source other than the calibration standards. %R values were calculated and compared to the 75-125% criteria.
- **Method Blanks.** A sample of analyte-free water was processed at the beginning of the day and after every 10 sample analyses to verify that the analytical system was contaminant free. Concentrations of detected analytes should have been less than half the method detection limit. Low contaminant levels necessitated corrective action, i.e., cleaning of the instrument.
- **Surrogate Standards.** Surrogate standards were added to all samples, standards, and blanks to measure the potential for matrix interferences. %R values were calculated (appear in comments section of the data pages) and were compared to the 80-120% criteria. Small deviations were marked as outside control limits, while large deviations necessitated reanalysis.
- **Duplicates.** Ten percent of all samples were analyzed in duplicate on a daily basis to determine the precision of the analyses. Relative percent difference (RPD) values were calculated and compared to the 30% acceptance limit. Values over this level required corrective action if significant; otherwise, they were highlighted as outside QC limits.
- **Matrix Spike Analyses.** Ten percent of the samples analyzed on each day were spiked with a midlevel standard. The %R values were calculated and should have been 75-125%.
- **Base Laboratory Confirmation.** Ten percent of the samples analyzed in the field were returned to the base laboratory for confirmatory analysis following either EPA Method 8010/8020 or 8240. The field data and base laboratory data were

compared and should not have differed by more than an order of magnitude for soils and five times for water samples. The confirmation results are included in of Commonwealth's report as well as a table comparing actual results and listing RPD.

#### **4.3.4 Base Laboratory Analysis**

At the request of the project manager, one soil/sediment sample, SGP-247 (8-10 ft), was submitted under chain-of-custody protocol to Inchcape Testing Services (Aquatec Laboratories), a NYSDOH-certified laboratory. This soil sample was analyzed for semivolatile organic compounds (SVOCs) as listed in EPA Method 8270. This sample was collected from a catch basin at 29 New York Avenue. The sample appeared heavily stained with oils, indicating the possible presence of SVOCs.

#### **4.3.5 Sample Splits**

Nine samples submitted to the mobile laboratory for analysis were submitted as splits, i.e., additional sample vials were filled simultaneously with samples collected at each location and submitted under chain-of-custody protocol to Inchcape Testing Services (Aquatec Laboratories), a NYSDOH-certified laboratory. This measure was instituted to provide external QA regarding the mobile laboratory's performance. All the split samples (Table 4-2) were collected from groundwater probes; soils were not split due to limited sample volumes. The same mobile laboratory equipment, methods, and protocols were used throughout the Task 4 PSA field activities. Results of the mobile and base laboratory analyses are compared in Section 5.6.



TABLE 4-2

**GROUNDWATER CONFIRMATORY SAMPLE  
LOCATIONS (NOVEMBER 1996)**

**New Cassel Industrial Area Task 4 Multisite PSA 1996**

POINT #	DEPTH (ft)
GP-208	93-95
GP-208	60-62
GP-219	73-75
GP-219	93-95
GP-242	73-75
GP-242	93-95
GP-243	60-62
GP-243	73-75
GP-244	93-95



## CHAPTER 5

### RESULTS

#### 5.1 FACILITY INSPECTIONS

##### 5.1.1 Hopper/Main Street Site

**5.1.1.1 Former Bilt Rite Buck.** Bilt Rite Buck corporation has abandoned their facility at 95 Hopper Street. Attempts to contact the currently responsible party prior to sampling the property failed, and the site was entered unaccompanied. Bilt Rite formerly fabricated metal door frames for various uses. Processes at the facility included metal cutting, welding, and painting. A large amount of paint-related products and petroleum-based solvents were used during the painting process. The two-story block building covers most of the lot fronting Hopper Street. Bilt Rite Buck also has frontage on Garden Street. This area is covered with a large two-story canopy used for covered shipping and storage. No obvious leachpools, floor drains, or abandoned drums were noted. The area is now used for illegal dumping of various trash, construction and demolition (C&D) debris, and yard waste. One illegally abandoned drum of what appeared to be waste oil was found on the site and reported to the NYSDEC Spills Bureau.

**5.1.1.2 Royal Guard Fence.** The Royal Guard Fence facility is located at 550 Main Street and has occupied this address since the 1950s. Royal Guard specializes in roadway fencing, fencing components, and roadway signs.

The northern half of the property is occupied by a two-story concrete building. The building houses the office, fabrication shop, paint shop, and vehicle repair bay. Chemical usage is limited to small amounts of non-chlorinated solvents, paints, and used motor oil. Overall, the operation was clean and the chemicals appeared to be handled properly. No floor drains were noted in the building.

The southern half of the property is an open storage yard used to store materials and trucks. No chemicals are currently used in the storage yard with the exception of lubricants and gasoline for the trucks. There are two recently installed underground gasoline tanks near the south east corner of the yard. There are reportedly three to four serviceable monitoring wells on the property that were installed as part of an underground gasoline tank removal, which reportedly occurred 12 years ago.

**5.1.1.3 Former Junkyard - Corner Main and Hopper Street.** The former junkyard on the corner of Main and Hopper Streets has been cleaned up and many of the junk cars removed from the property. Previously, this junk yard contained so many cars and other assorted junk items that inspecting the property was difficult. This property is a small unpaved lot; no permanent structures exist on the property. Some areas of surface staining with oils were noted. The lot is being cleaned up for redevelopment purposes and a single shallow monitoring well was planned to assess the groundwater quality at the site. Requests to complete probes on the property were denied by the current site owner.

#### **5.1.2 E-Z-EM Site**

The E-Z-EM site was inspected during the last phase of the multisite PSA. The results of that inspection were compared to the existing site conditions, and no new findings or changes to the properties in the subject site were noted.

#### **5.1.3 Tops Appliance City Site**

The properties in the vicinity of the Tops Appliance City were inspected during the previous phases of the site investigation and multisite PSA. The results of those inspections were compared to the existing site conditions, and no new findings or changes to the properties in the subject site were noted, with the exception that Korg USA no longer occupies 101 Frost Street.

#### **5.1.4 Swalm Avenue Site**

**5.1.4.1 Liqui-Mark Corporation.** 118-138 Swalm Avenue is currently occupied by Liqui-Mark Corporation. They have manufactured various types of children's pens and markers at this address since June 1994. They lease the interior of the building from Barton, Eaton & Allen Corporation. The interior of the building includes office space, production areas, storage, and shipping and receiving. Additional details on the facility inspection are found in Section 6.4.3.

#### **5.1.5 Sylvester Street Site**

The properties in the vicinity of the Sylvester Street site were inspected during the previous phases of the of the site investigation and multisite PSA. The results of those inspections were compared to the existing site conditions, and no new findings or changes to the properties in the subject site were noted, with the exception that J.M. Haley now occupies 71 Sylvester Street.

## **5.2 GROUND-PENETRATING RADAR**

The results of the GPR investigation conducted at 29 New York Avenue identified a number of anomalies in the survey areas. The survey conducted in the eastern half of the building indicated that a single drain line exists under the floor leading from the former bathroom south to the building exterior. A series of floor drains were found in the western half of the building. Some of these drains were sealed shut and others were open. The GPR survey showed that these drains are connected and apparently lead to the former pool area near the current sewer connection. A number of utility lines were noted during the survey running from New York Avenue to the building along the southern wall. Two anomalous readings characteristic of abandoned leachpools were also found along the southern wall of the building in the paved parking area. Along the northern alley the only anomalous readings found are believed to be associated with a leachpool located in the alley and an additional leachpool on the adjacent property. Additional details on the results of the GPR survey are included in Appendix B.

## **5.3 GROUNDWATER PROBE RESULTS**

### **5.3.1 NYSDEC Site Investigation (SI) Groundwater Probe Results**

The groundwater probe results from the NYSDEC site investigation include sample data collected in 1993 (Stage I SI) and 1994 (Stage II SI). A detailed presentation and discussion of these results is found in the site investigation report (LMS 1995). Results relevant to the multisite PSA are plotted on the plume maps in Chapter 6 and show individual point locations and measured PCE- and TCA-related contaminants. These data points are presented for comparison purposes since most of these data are now two years old. These data were not to determine the status of the remaining potential registry sites. These data can be used as supplemental data in conjunction with the more recent data.

### **5.3.2 NYSDEC Multisite PSA Groundwater Probe Results**

A detailed presentation and discussion of the NYSDEC multisite PSA groundwater probe results is found in the multisite PSA report (LMS 1996). Results relevant to the multisite PSA are also plotted on the plume maps in Chapter 6 showing individual point locations and measured PCE- and TCA-related contaminants. These data points, along with the most recent primary data points, were used to determine the status of the remaining potential registry sites.

### 5.3.3 NYSDEC Remedial Investigation at 68 Kinkel Street

The sampling results from the NYSDEC remedial investigation at 68 Kinkel Street site investigation include sample data for soils and groundwater. This investigation was conducted under NYSDEC supervision in 1996. A detailed discussion of the investigation and results can be found in the remedial investigation report (ABB 1996). Results relevant to the multisite PSA area plotted on the plume maps in Chapter 6 showing individual point locations and measured PCE- and TCA-related contaminants. This data set was also used as primary data to determine the status of the remaining potential registry sites.

### 5.3.4 Task 4 Multisite PSA Groundwater Probe Results

The results of the mobile laboratory VOC analyses performed on the groundwater probe samples collected by LMS during Task 4 of the multisite PSA are found on Tables 5-1, 5-2, and 5-3. The data are segregated into three depth ranges: samples from the water table to 65 ft below ground surface (Table 5-1), 65 to 85 ft below ground surface (Table 5-2), and 85 ft or greater (Table 5-3). The results are plotted on plume maps in Chapter 6 showing individual point locations and measured PCE- and TCA-related contaminants mapped for each depth range. The PCE-related contaminants are the sum of the individual measured concentrations of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and 1,1,1-DCE, and vinyl chloride. The TCA-related contaminants mapped in Chapter 6 are the sum of the individual measured concentrations of 1,1,1-TCA, 1,1-DCA, and 1,2-DCA.

**5.3.4.1 Hopper/Main Street Site.** Within the Hopper/Main Street PSA area a total of 13 groundwater probes were installed. The highest concentration of PCE-related contaminants were found at the greatest depth sampled (greater than 85 ft); however, very high concentrations were also found at 65 to 85 ft north of Main Street. The highest concentrations of PCE-related contaminants were found at point GP-167 (85 ft +) located south of 95 Hopper Street. At GP-167 PCE-related contaminants were found at 3820 ppb (820 ppb TCE, 3000 ppb PCE). North of Main Street in the Swalm Avenue site concentrations of PCE-related contaminants in excess of 1000 ppb were found at shallow depth (water table to 65 ft). Low concentrations (less than 20 ppb) of TCA-related contaminants were also found in the Garden/Hopper Street area.

**5.3.4.2 E-Z-EM Site.** Within the E-Z-EM PSA area a total of seven groundwater probes were taken during the Task 4 PSA field investigation. Low concentrations of TCA-related contaminants were found in all the points completed in this area with the exception of GP-204, which had results of "not detected" (ND) at all three depth ranges. No PCE-related contaminants above 100 ppb were detected in the points completed at the E-Z-EM site. The

Table 5-1 (Page 1 of 2)

**GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)**  
**WATER TABLE TO 65 FT RANGE**  
 New Cassel Industrial Area Task 4 Multisite PSA

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCF	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-189	10	ND	ND	ND	ND	30	ND	ND	ND	38	400	ND	ND	ND	ND	ND	ND
GP-190	500	ND	ND	ND	ND	ND	ND	ND	ND	BQL	14,000	ND	ND	ND	ND	ND	ND
GP-191	10	ND	ND	ND	ND	170	ND	ND	ND	160	BQL	ND	ND	ND	ND	ND	ND
GP-192	10	ND	ND	ND	ND	210	ND	ND	ND	110	67	ND	ND	ND	ND	ND	ND
GP-193	10	ND	ND	ND	ND	310	ND	ND	ND	11	ND	15	BQL	BQL	BQL	ND	ND
GP-194	50	ND	ND	ND	ND	1,700	ND	ND	ND	490	BQL	ND	66	ND	ND	ND	BQL
GP-195	10	ND	ND	ND	ND	250	ND	ND	ND	ND	ND	59	ND	65	65	13	15
GP-196	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.5	ND	ND	ND	ND	ND	ND
GP-197	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	ND	ND	ND	ND	ND	ND
GP-202	10	ND	ND	ND	ND	ND	15	ND	ND	27	200	ND	ND	ND	ND	ND	ND
GP-203	5	ND	ND	ND	ND	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-204	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-205	10	ND	ND	ND	ND	ND	45	ND	ND	ND	28	ND	ND	ND	ND	ND	ND
GP-206	10	51	ND	ND	ND	ND	140	ND	ND	42	20	ND	ND	ND	ND	ND	ND
GP-207	1	3.5	ND	ND	ND	ND	12	ND	ND	6.3	2.1	ND	ND	ND	ND	ND	ND
GP-208	5	11	ND	ND	ND	5.4	43	ND	ND	ND	13	ND	ND	ND	ND	ND	ND
GP-209	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-210	10	67	ND	ND	ND	24	460	ND	ND	49	55	ND	ND	ND	ND	ND	ND
GP-211	1	ND	ND	ND	ND	ND	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-212	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	180	ND	ND	ND	ND	ND	ND
GP-219	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-220	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-221	10	17	ND	ND	ND	ND	53	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-222	100	110	ND	ND	ND	ND	420	ND	ND	170	ND	ND	ND	ND	ND	ND	ND
GP-223	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

All data in µg/l.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

Table 5-1 (Page 2 of 2)

# **GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)**

## **WATER TABLE TO 65 FT RANGE**

New Cassel Industrial Area Task 4 Multisite PSA

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-224	5	ND	ND	ND	ND	14	89	ND	ND	54	25	ND	ND	ND	ND	ND	ND
GP-225	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	970	ND	ND	ND	ND	ND	ND
GP-226	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,600	ND	ND	ND	ND	ND	ND
GP-228	10	ND	ND	ND	ND	ND	11	ND	ND	23	77	ND	ND	ND	ND	ND	ND
GP-229	5	ND	ND	ND	ND	ND	ND	ND	ND	5.9	7.5	ND	ND	ND	ND	ND	ND
GP-230	10	ND	ND	ND	ND	260	ND	ND	ND	170	34	ND	ND	ND	ND	ND	ND
GP-231	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	37	ND	ND	ND	ND	ND	ND
GP-232	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,100	ND	ND	ND	ND	ND	ND
GP-233	100	ND	ND	ND	ND	ND	110	ND	ND	6.8	ND	ND	ND	ND	ND	ND	ND
GP-234	5	9.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-235	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	340	ND	ND	ND	ND	ND	ND
GP-237	100	ND	ND	ND	ND	1,000	ND	ND	ND	330	ND	ND	ND	ND	ND	ND	ND
GP-238	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.5	ND	ND	ND	ND	ND	ND
GP-241	1	ND	ND	ND	ND	8.7	ND	ND	ND	13	64	ND	ND	ND	ND	ND	ND
GP-242	5	ND	ND	ND	ND	91	ND	ND	ND	61	48	ND	ND	ND	ND	ND	ND
GP-243	5	ND	ND	ND	ND	ND	12	ND	ND	5.3	ND	ND	ND	ND	ND	ND	ND
GP-244	5	ND	ND	ND	ND	ND	3,900	ND	ND	1,800	ND	ND	ND	ND	ND	ND	ND
GP-248	500	510	ND	ND	ND	ND	2.9	ND	ND	17	1.5	ND	ND	ND	ND	ND	ND
GP-251	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	200	ND	ND	ND	ND	ND	ND
GP-252	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND
GP-253	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	21	ND	ND	ND	ND	ND	ND
GP-255	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

All data in µg/l.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.



TABLE 5-2 (Page 1 of 2)

# GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)

65 TO 85 FT RANGE

New Cassel Industrial Site Task 4 Multisite PSA

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-189	1000	ND	ND	ND	ND	1,900	ND	ND	ND	1,500	11,000	ND	ND	ND	ND	ND	ND
GP-190	1000	ND	ND	ND	ND	BQL	ND	ND	ND	2,400	37,000	ND	ND	ND	ND	ND	ND
GP-191	50	ND	ND	ND	ND	ND	ND	ND	ND	BQL	340	ND	ND	ND	ND	ND	ND
GP-192	100	ND	ND	ND	ND	ND	ND	ND	ND	520	3,800	ND	ND	ND	ND	ND	ND
GP-193	5	ND	ND	ND	ND	87	ND	ND	ND	6.1	54	ND	ND	ND	ND	ND	ND
GP-194	10	ND	ND	ND	ND	ND	ND	ND	ND	34	390	ND	ND	ND	ND	ND	ND
GP-195	1	ND	ND	ND	BQL	ND	ND	ND	ND	1.7	12	ND	ND	ND	ND	ND	ND
GP-196	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.0	ND	ND	ND	ND	ND	ND
GP-197	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND
GP-202	5	ND	6.4 b	ND	ND	8.3	21	ND	ND	27	28	ND	ND	ND	ND	ND	ND
GP-203	5	9.7	ND	ND	ND	ND	39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-204	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-206	100	170	ND	ND	130	ND	830	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-209	5	ND	ND	ND	ND	ND	5.6	ND	ND	ND	5.9	ND	ND	ND	ND	ND	ND
GP-210	10	41	ND	ND	15	12	150	ND	ND	37	61	ND	ND	ND	ND	ND	ND
GP-211	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	3,300	ND	ND	ND	ND	ND	ND
GP-212	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-219	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-220	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-221	100	ND	ND	ND	ND	ND	290	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-222	100	650	ND	ND	440	ND	2,300	ND	ND	120	ND	ND	ND	ND	ND	ND	ND
GP-223	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND
GP-224	5	6.8	ND	ND	ND	ND	58	ND	ND	12	15	ND	ND	ND	ND	ND	ND
GP-225	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-226	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-228	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	ND	ND	ND	ND	ND	ND
GP-229	5	ND	ND	ND	ND	ND	6.0	ND	ND	35	77	ND	ND	ND	ND	ND	ND

All Data in µg/l.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

TABLE 5-2 (Page 2 of 2)

# GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)

65 TO 85 FT RANGE

New Cassel Industrial Site Task 4 Multisite PSA

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-230	100	ND	ND	ND	ND	ND	ND	ND	ND	110	1,100	ND	ND	ND	ND	ND	ND
GP-231	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.9	ND	ND	ND	ND	ND	ND
GP-232	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	70	ND	ND	ND	ND	ND	ND
GP-233	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND
GP-234	5	ND	ND	ND	ND	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-235	5	ND	ND	ND	ND	ND	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-237	100	ND	ND	ND	ND	ND	ND	ND	ND	250	250	ND	ND	ND	ND	ND	ND
GP-238	100	ND	ND	ND	ND	560	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-241	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	ND	ND	ND	ND	ND	ND
GP-242	100	ND	ND	ND	ND	ND	ND	ND	ND	61	950	ND	ND	ND	ND	ND	ND
GP-243	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-244	5	ND	ND	ND	ND	ND	ND	ND	ND	9,200	ND	ND	ND	ND	ND	ND	ND
GP-248	500	880	ND	ND	ND	ND	2,500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-251	1	ND	ND	ND	ND	ND	7.3	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND
GP-252	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,300	ND	ND	ND	ND	ND	ND
GP-253	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-255	10	43	ND	ND	39	21	130	ND	ND	51	91	ND	ND	ND	ND	ND	ND

All Data in µg/l.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

TABLE 5-3 (Page 1 of 2)

# GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)

85 FT + RANGE

New Cassel Industrial Area Task 4 Multisite PSA

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-189	5000	ND	ND	ND	ND	BQL	ND	ND	ND	5,400	82,000	ND	ND	ND	ND	ND	ND
GP-190	500	ND	ND	ND	ND	ND	950	ND	ND	ND	6,800	ND	ND	ND	ND	ND	ND
GP-191	1	ND	ND	ND	ND	ND	ND	ND	ND	1.2	12	ND	ND	ND	ND	ND	ND
GP-192	5	ND	ND	ND	ND	ND	ND	ND	ND	29	110	ND	ND	ND	ND	ND	ND
GP-193	5	ND	ND	ND	ND	ND	ND	ND	ND	16	82	ND	ND	ND	ND	ND	ND
GP-194	1	ND	ND	ND	ND	ND	ND	ND	ND	BQL	4.3	ND	ND	ND	ND	ND	ND
GP-195	1	ND	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-196	1	ND	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	ND	ND
GP-197	1	ND	ND	ND	ND	ND	ND	ND	ND	5.4	1.7	ND	ND	ND	ND	ND	ND
GP-202	1	ND	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-203	1	ND	ND	ND	ND	ND	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-204	1	ND	ND	ND	ND	ND	390	ND	ND	110	210	ND	ND	ND	ND	ND	ND
GP-205	10	190	ND	ND	16	ND	610	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-206	100	120	ND	ND	100	ND	390	ND	ND	99	27	ND	ND	ND	ND	ND	ND
GP-207	10	140	ND	ND	91	18	55	ND	ND	6.0	ND	ND	ND	ND	ND	ND	ND
GP-208	5	21	ND	ND	5.3	ND	42	ND	ND	29	57	ND	ND	ND	ND	ND	ND
GP-209	5	6.7	ND	ND	12	5.0	280	ND	ND	96	120	ND	ND	ND	ND	ND	ND
GP-210	10	110	ND	ND	31	14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-211	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,600	ND	ND	ND	ND	ND	ND
GP-212	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-219	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-220	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-221	100	180	ND	ND	ND	ND	450	ND	ND	470	ND	ND	ND	ND	ND	ND	ND
GP-222	100	ND	ND	ND	ND	ND	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-223	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-224	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-225	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND
GP-226	1	ND	ND	ND	ND	ND	ND	ND	ND	2.4	1.4	ND	ND	ND	ND	ND	ND

All data in µg/l.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

TABLE 5-3 (Page 2 of 2)

# **GEOPROBE GROUNDWATER DATA SUMMARY (OCTOBER 1996)**

**85 FT + RANGE**

**New Cassel Industrial Area Task 4 Multisite PSA**

SAMPLE ID	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
GP-228	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-229	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-230	5	ND	ND	ND	ND	ND	ND	ND	ND	13	36	ND	ND	ND	ND	ND	ND
GP-231	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	66	ND	ND	ND	ND	ND	ND
GP-232	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-234	5	ND	ND	ND	ND	ND	66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-235	5	9.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-237	5	ND	ND	ND	ND	ND	ND	ND	ND	370	1,300	ND	ND	ND	ND	ND	ND
GP-238	100	ND	ND	ND	ND	ND	ND	ND	ND	5.5	ND	ND	ND	ND	ND	ND	ND
GP-241	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	ND	ND	ND	ND	ND	ND
GP-242	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND
GP-243	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-244	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-248	5	46	ND	ND	47	ND	130	ND	ND	80	32	ND	ND	ND	ND	ND	ND
GP-251	1	ND	ND	ND	5.9	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND
GP-252	1	1.3	ND	ND	ND	ND	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-253	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GP-255	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

All data in µg/l.

BOL - Below quantitation limit.

ND - Not detected at analytical detection limit.

\*Disk No.: DRIVE1 C:\ecdata\ExcelTables.xls 85 plus 1/14/97 4:11:55 PM\*

only sampling location during the Task 4 field activities that exhibited TCA-related contaminants in excess of 100 ppb was GP-234. At the shallow depth (water table to 65 ft) total TCA-related contaminants were found in GP-234 at 110 ppb (110 ppb TCA). At the intermediate depth (65-85 ft) and deep depth (+85 ft) total TCA-related contaminants were not detected in GP-234.

**5.3.4.3 Tops Appliance City.** Within the Tops Appliance City PSA area a total of eight groundwater probes were taken. Extremely high concentrations of PCE-related compounds were found in this area, with the highest concentrations found at the deepest depth (+85 ft). The highest concentrations of PCE-related contaminants were found in GP-189 at 87,400 ppb (82,000 ppb PCE, 5400 ppb TCE). High concentrations of PCE-related contaminants were also found in GP-190 (65-85 ft) at 39,400 ppb (37,000 ppb PCE, 2400 ppb TCE). A single groundwater probe location (GP-242) was installed off-site south of Old Country Road in the EAB bank parking lot. PCE-related compounds were found in all three depth intervals. At the shallow depth (water table to 65 ft) total PCE-related contaminants were found in GP-242 at 85.7 ppb (64 ppb PCE, 13 ppb TCE, and 8.7 ppb cis-1,2-DCE). At the intermediate depth (65-85 ft) total PCE-related contaminants were found in GP-242 at 330 ppb (330 ppb PCE). The highest concentrations were found at the deepest depth (+85 ft); total PCE-related contaminants were found at 2,400 ppb (2400 ppb PCE). A number of TCA-related contaminants were also found in the northernmost section of the Tops Appliance City site during the previous PSA field activities. TCA-related contaminants in excess of 100 ppb were not found in the groundwater probes completed during Task 4 and are confined to only several points across each depth range. TCA-related contaminants may be present; however, they are present at levels below the high detection limits required in this highly contaminated area.

**5.3.4.4 Swalm Avenue Site.** Within the Swalm Avenue PSA area a total of eight groundwater probes were installed. Only PCE-related contaminants were found at concentrations in excess of 100 ppb. The highest concentrations were found at the water table to 65 ft north of Main Street on 118-138 Swalm Avenue. PCE-related contaminants at the shallow depth in these points were GP-226 1600 ppb (1600 ppb PCE), GP-233 1100 ppb (1100 PCE), and GP-225 1000 ppb (1000 ppb PCE). Only trace levels of TCA-related contaminants were found in one of the points (GP-252) at the deepest depth (+85 ft). Total TCA-related compounds were 8 ppb (2.1 ppb 1,1,1-TCA and 5.9 ppb 1,1-DCA). The most upgradient point in this area (GP-196) does not indicate the presence of PCE- or TCA-related contaminants above 10 ppb.

**5.3.4.5 Sylvester Street Site.** Within the Sylvester Street PSA area a total of 11 groundwater probes were installed. The highest concentrations of PCE-related contaminants were found at point GP-248 (65 to 85 ft) at 29 New York Street. At GP-248 PCE-related contaminants were found at 10,080 ppb (880 ppb cis-1,2-DCE and 9200 ppb TCE). High concentrations of TCA-

related contaminants were also found at point GP-248. At the shallow depth (water table to 65 ft) total TCA-related contaminants were found at 3900 ppb (3900 ppb TCA). At the intermediate depth (65-85 ft) total TCA-related contaminants were found at 2500 ppb (2500 ppb TCA).

Due to the difficulty in Geoprobings in this area, several of the points (GP-205 to GP-209) were completed using the Hydropunch groundwater probe system. This system also encountered difficulty at the intermediate sampling depths. It was discovered that a fairly tight gray clay layer is found in the Sylvester Street area. This clay layer makes it very difficult to probe through and smears probe screens, preventing water from entering the sampler; this accounts for the missing samples at the intermediate depth (65 to 85 ft) in GP-205, GP-207, and GP-208.

## **5.4 SOIL PROBE RESULTS**

### **5.4.1 NYSDEC Site Investigation Soil Probe Results**

The soil probe results from the NYSDEC site investigation include sample data collected in 1993 (Stage I SI) and 1994 (Stage II SI). A detailed presentation and discussion of these results is found in the SI report (LMS 1995). The data from these soil probes are shown on the soil maps in Chapter 6; however, these data were not used to determine the status of the remaining potential registry sites.

### **5.4.2 Private Investigation Studies and Reports**

A number of privately sponsored investigations have been conducted throughout the industrial area. All of the previously available data were summarized during the previous phase of the multisite PSA (LMS 1996). These data, from various years and of unknown quality, are shown on the soil maps in Chapter 6; however, these data were not used to determine the status of the remaining potential registry sites.

### **5.4.3 Multisite PSA Soil Probe Results**

The multisite PSA soil probe data are presented and summarized in the 1996 multisite PSA report (LMS 1996). The data are also summarized by related contaminants and depth as shown in the soil maps in Chapter 6. These data were used as needed to determine the status of the remaining potential registry sites.

#### 5.4.4 Task 4 Multisite PSA Soil Probe Results

The results of the soil probes installed during Task 4 of the multisite PSA are summarized in Table 5-4. In general, the contaminant levels in the soils are much lower than the groundwater. It is believed that many of the VOCs have migrated away or were lost during sampling due to the sandy, porous nature of many of the soil samples.

**5.4.4.1 Hopper/Main Street Site.** A single soil probe was conducted in this PSA area; the results of this probe (SGP-238) showed xylene at low concentrations in the a 10- to 11-ft sample.

**5.4.4.2 E-Z-EM Site.** A total of eight soil probes with multiple sampling depths were collected at this PSA area. Soil probe sample concentrations were all ND; no target compounds were found in the soils at this PSA area.

**5.4.4.3 Tops Appliance City Site.** Two soil probes (SGP-227 and SGP-254) were completed in this PSA area. Low concentrations of toluene were detected in a sample from SGP-227 (4-5 ft). The remaining sample depths from the two probes did not indicate the presence of target compounds above the detection limit.

**5.4.4.4 Swalm Avenue Site.** A total of four soil probe locations were completed in the Swalm Avenue PSA area, all at 118-138 Swalm Avenue. Target compounds were detected in three of the four points completed. Concentrations range from ND in SGP-200 (11-12 ft and 14-15 ft) to 0.570 ppb PCE at SGP-198 (18-19 ft). TCE, toluene, and methylene chloride were also detected at low concentrations in several of the soil probe samples.

**5.4.4.5 Sylvester Street Site.** A total of seven soil probe locations were completed in the Sylvester Street site PSA area, all at or near 29 New York Avenue. Target compounds were detected in two of the seven probe locations. Concentrations ranged from ND in SGP-221, SGP-222, SGP-245, SGP-249, and SGP-246 to 245 mg/kg of TCA-related contaminants in SGP-247 (8-10 ft). In addition to the VOC analysis, SVOC analysis was conducted by a base laboratory on SGP-247. The results showed 4-methylphenol and bis(2-ethylhexyl)phthalate at concentrations below the quantitation limit (Table 5-5). Vitamin E was also noted in this sample at high concentrations. The analytical data provided by the laboratory for this sample are found in Appendix C.

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TABLE 5-4 (Page 1 of 2)

**GEOPROBE SOILS DATA SUMMARY (OCTOBER 1996)**  
**New Cassel Industrial Area Task 4 Multisite PSA**

SAMPLE ID	DEPTH	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
SGP-198	(10-11 ft)	1.1	ND	0.0017	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-198	(18-19 ft)	103.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.57	ND	ND	ND	ND	ND	ND
SGP-198B	(10-12 ft)	10.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-198B	(17-19 ft)	10.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-198C	(10-12 ft)	10.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-198C	(17-19 ft)	10.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-198C	(3-4 ft)	12.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-199	(10-11 ft)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-199	(14-15 ft)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-200	(1-2 ft)	1.1	ND	ND	ND	ND	ND	ND	ND	ND	0.023	0.030	ND	0.0011	ND	ND	ND	ND
SGP-200	(11-12 ft)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-200	(17-19 ft)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0025	ND	ND	ND	ND
SGP-201	(1-2 ft)	1.1	ND	0.0018 b	ND	ND	ND	ND	ND	ND	ND	0.0018	ND	ND	ND	ND	ND	ND
SGP-201	(17-19 ft)	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-213	(11-12 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-213	(17-19 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-214	(10-12 ft)	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-214	(17-19 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-215	(10-11 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-215	(17-19 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-216	(17-19 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-216	(8-10 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-217	(10-12 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-217	(17-19 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-218	(10-12 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-218	(17-19 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-221	(2-4 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-221	(5-6 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-221	(8-10 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-222	(2-3 ft)	5.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-222	(5-7 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

All data in mg/kg.

b - Found in associated blanks.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

\*Disk No.: DRIVE1 C:\ncdata\ExcelTables.xls Soils 1/14/97 3:03:05 PM\*

TABLE 5-4 (Page 2 of 2)

**GEOPROBE SOILS DATA SUMMARY (OCTOBER 1996)**  
**New Cassel Industrial Area Task 4 Multisite PSA**

SAMPLE ID	DEPTH	DILUTION	1,1-DCE	METHYLENE CHLORIDE	TRANS-1,2-DCE	1,1-DCA	CIS-1,2-DCE	1,1,1-TCA	CARBON TETRACHLORIDE	1,2-DCA	TCE	PCE	BENZENE	TOLUENE	CHLOROBENZENE	ETHYLBENZENE	M&P-XYLENE	O-XYLENE
SGP-222	(9-11 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-227	(17-19 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-227	(4-5 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.024	ND	ND	ND	ND
SGP-227	(9-10 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-235	(10-12 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-235	(18-20 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-236	(16-19 ft)	12.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-238	(10-11 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.016	0.012
SGP-238	(17-19 ft)	5.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-239	(17-18 ft)	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-240	(18-20 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND	ND	ND	ND
SGP-240	(8-10 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	0.028	ND	ND	ND	ND	ND	ND	ND
SGP-244	(8-10 ft)	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-245	(1-3 ft)	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-245	(15-16 ft)	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-245	(5-6 ft)	5.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-245	(9-10 ft)	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-246	(15-16 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-246	(2-3 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-246	(5-6 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-246	(9-10 ft)	5.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-247	(8-10 ft)	10000	ND	100	ND	65	ND	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-249	(10-11 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-249	(13-14 ft)	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-249	(15-17 ft)	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-249	(2-3 ft)	11.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-249	(5-6 ft)	12.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.39	ND
SGP-250	(13-16 ft)	100	ND	ND	ND	ND	ND	0.41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-254	(17-19 ft)	10.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SGP-254	(9-10 ft)	10.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

All data in mg/kg.

b - Found in associated blanks.

BQL - Below quantitation limit.

ND - Not detected at analytical detection limit.

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TABLE 5-5

**SUBSURFACE SOIL BASE LAB DATA SUMMARY (NOVEMBER 1996)**

New Cassel Industrial Area Task 4 Multisite PSA

29 New York Avenue Former Tishcon Facility

PARAMETER	SGP-247 (8-10 ft)
[DL: 20:1]	
<b>SEMIVOLATILE ORGANICS (mg/kg)</b>	
4-Methylphenol	110 j
bis(2-Ethylhexyl)phthalate	75 j
<b>Tentatively Identified Compounds (mg/kg)</b>	
Vitamin E	4,420 j n

- j - Estimated concentration; compound present  
below quantitation limit.
- n - Identification based on a mass spectral library search.

## **5.5 MONITORING WELL SAMPLING RESULTS**

### **5.5.1 NYSDEC Site Investigation Monitoring Well Sampling Results**

The monitoring well sampling results from the NYSDEC site investigation include sample data collected in 1993 (Stage I SI) and 1994 (Stage II SI). A detailed presentation and discussion of these results is found in the site investigation report (LMS 1995). Data from the sampling of these monitoring wells are shown on the plume maps in Chapter 6.

### **5.5.2 NYSDEC 1995 Monitoring Well Sampling Results**

The monitoring well sampling results from the groundwater samples collected by NYSDEC during the 1995 monitoring well sampling survey are presented and discussed in detail in the multisite PSA report (LMS 1996). Data from this sampling event are shown on the plume maps in Chapter 6, and the data were used as needed to determine the status of the remaining potential registry sites.

### **5.5.3 Private Investigation Studies and Reports**

A number of privately installed monitoring wells exist throughout the industrial area. All the previously available data were summarized during the previous phase of the multisite PSA (LMS 1996). These data, from various years and of unknown quality, are shown on the plume maps in Chapter 6; however, these data were not used to determine the status of the remaining potential registry sites.

### **5.5.4 Results of Multisite PSA Monitoring Well Groundwater Sampling**

The results of the VOC analyses performed on the groundwater samples collected by LMS during the 1995 monitoring well sampling survey are presented and discussed in detail in the multisite PSA report (LMS 1996). Data from this sampling event, shown on the plume maps in Chapter 6, were used as needed to determine the status of the remaining potential registry sites.

## **5.6 SAMPLE SPLITS**

A total of nine sample splits were collected during Task 4 of the multisite PSA and sent to Inchcape Testing Services (Aquatec) as a quality control (QC) measure. The results of the base laboratory analyses were in close agreement with those furnished by the mobile laboratory, as

shown in Table 5-6. The base laboratory detected toluene and styrene below the quantitation limit in several samples. Differences in the mobile and base laboratory results were also noted in the two GP-242 samples. In both cases, the differences seen in the TCE concentrations are likely to be the result of sample dilutions. In GP-242 (73-75 ft) the base laboratory used a 20:1 dilution and detected TCE at 38  $\mu\text{g/l}$ ; the mobile laboratory used a 100:1 dilution and reported ND at the analytical detection limit. At a 100:1 dilution, the detection limit for TCE would be 100  $\mu\text{g/l}$ , so that concentrations less than 100  $\mu\text{g/l}$  would be reported as ND. In general, the differences seen as a result of diluting the sample do not change the overall conclusions as dilutions were used only when one or more compounds were found at highly elevated concentrations. Overall, the sample splits indicate the mobile laboratory data are equal in quality to those of a NYSDOH-certified base laboratory.

# **GROUNDWATER CONFIRMATORY SAMPLE DATA SUMMARY (NOVEMBER 1996)** **New Cassel Industrial Area Task 4 Multisite PSA**

PARAMETER	GP-208 (60-62 ft)			GP-208 (93-95 ft)			GP-219 (73-75 ft)			GP-219 (93-95 ft)			GP-242 (73-75 ft)		
	BASE	MOBILE	LAB	BASE	MOBILE	LAB	BASE	MOBILE	LAB	BASE	MOBILE	LAB	BASE	MOBILE	LAB
[DL: 5:1] [DL: 2:1] [DL: 5:1] [DL: 20:1] [DL: 100:1]															
<b>VOLATILE ORGANICS (µg/l)</b>															
Freon-113	2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	6.7	11	22	22	21	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	4.5	ND	5.7	5.7	5.3	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	38	43	56	56	55	55	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	4.3	ND	5.2	5.2	6.0	6.0	ND	ND	ND	ND	ND	ND	38	ND	ND
Tetrachloroethylene	11	13	1.1	1.1	ND	ND	ND	ND	ND	ND	ND	ND	500	330	ND
cis-1,2-Dichloroethylene	6.3	5.4	0.58 j	0.58 j	ND	ND	ND	ND	ND	ND	ND	ND	12	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.24 j	ND	0.27 j	0.27 j	ND	ND	0.35 j	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	0.56	ND	0.73 j	0.73 j	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PARAMETER	GP-242 (93-95 ft)			GP-243 (60-62 ft)			GP-243 (73-75 ft)			GP-244 (93-95 ft)		
	BASE	MOBILE	LAB	BASE	MOBILE	LAB	BASE	MOBILE	LAB	BASE	MOBILE	LAB
[DL: 100:1] [DL: 1000:1] [DL: 2:1] [DL: 5:1] [DL: 50:1] [DL: 50:1] [DL: 5:1]												
<b>VOLATILE ORGANICS (µg/l)</b>												
Freon-113	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	220	ND	48	48	61	61	63	61	61	ND	ND	ND
Tetrachloroethylene	2,600	2400	36	36	48	48	1,400	950	950	ND	ND	ND
cis-1,2-Dichloroethylene	82	ND	82 e	82 e	91	91	ND	ND	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

e - Estimated concentration; exceeds GC/MS calibration range  
j - Estimated concentration; compound present below quantitation limit  
ND - Not detected at analytical detection limit.

## CHAPTER 6

### CONCLUSIONS

This chapter presents the conclusions of the Task 4 multisite PSA investigation. The data collected at each of the remaining potential registry sites, the impacted or plume areas, a discussion of each facility, and a determination of whether each facility has discharged a hazardous waste and caused a significant environmental impact are presented. The chapter is divided according to the remaining PSA site areas. For each site the groundwater plume and soil data compiled from all the data sources are presented. The plume maps show individual point locations and measured PCE- and TCA-related contaminants for each depth range. The PCE-related contaminants are the sum of the individual measured concentrations of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, and VC. The TCA-related contaminants are the sum of the individual measured concentrations of 1,1,1-TCA, 1,1-DCA, and 1,2-DCA. Each data set is distinguished by a different font on the figure. If a sample point on a map does not have a reported contaminant value next to it, either no sample was collected at that particular depth or a sample was collected but the contaminant being plotted was not analyzed in the sample.

According to Title 13, Article 27, of the State Environmental Conservation Law, the New York State Registry of Inactive Hazardous Waste Disposal Sites must include all known hazardous waste sites. To be included on the registry, it must be confirmed that hazardous wastes were disposed of on the site or are present on the site. Sites with confirmed hazardous wastes are then classified according to the effects of that contamination on the environment or human health. Classification 2 is for sites for which there is information sufficient to determine that they pose a significant threat to the public health or environment. Classification 2a is for sites with insufficient information to make a significant threat determination. Classification 3 is for sites that do not pose a significant threat. Sites without documentation of hazardous waste disposal are not included on the registry; however, they may be investigated further if it is suspected that hazardous wastes were disposed of at the site.

Past studies and this investigation at the NCIA site documented that the site poses a significant impact to the environment or is a public health concern; measured contaminant concentrations in an aquifer connected to a water supply aquifer are orders of magnitude higher than drinking water standards. The facility discussions correlate the relationship of hazardous waste usage or disposal at the facility with the measured contaminant plume. Documentation of hazardous waste disposal related to the contaminant plume at these sites considered the following factors:

- Suspected sites were identified by existing or past site use, file data, or location within a highly contaminated plume area.

- Through additional file or report research or information obtained during site inspections and/or site sampling, documentation of chemical usage and source data were obtained. "Chemical usage" documents the chemical and amounts used currently or (more importantly) in the past at the sites. Past usage is particularly important because prior to the late 1970s and 1980s the entire NCIA used septic systems for waste disposal. "Source data" refers to sampling data that indicate the presence of contaminant chemicals on-site, usually in old seepage pits.
- The monitoring well and Geoprobe data were analyzed for each site to determine upgradient and downgradient contaminant concentrations. In general, if the downgradient concentrations were three times the upgradient concentrations of the same contaminant, then it would appear that the site was responsible for a release of that contaminant.
- Hazardous waste disposal documentation considered chemical usage or source data, particularly if chemical usage correlated with the plume data, i.e., consisted of the same or related chemicals.

## 6.1 HOPPER/MAIN STREET SITE

### 6.1.1 Groundwater Plume

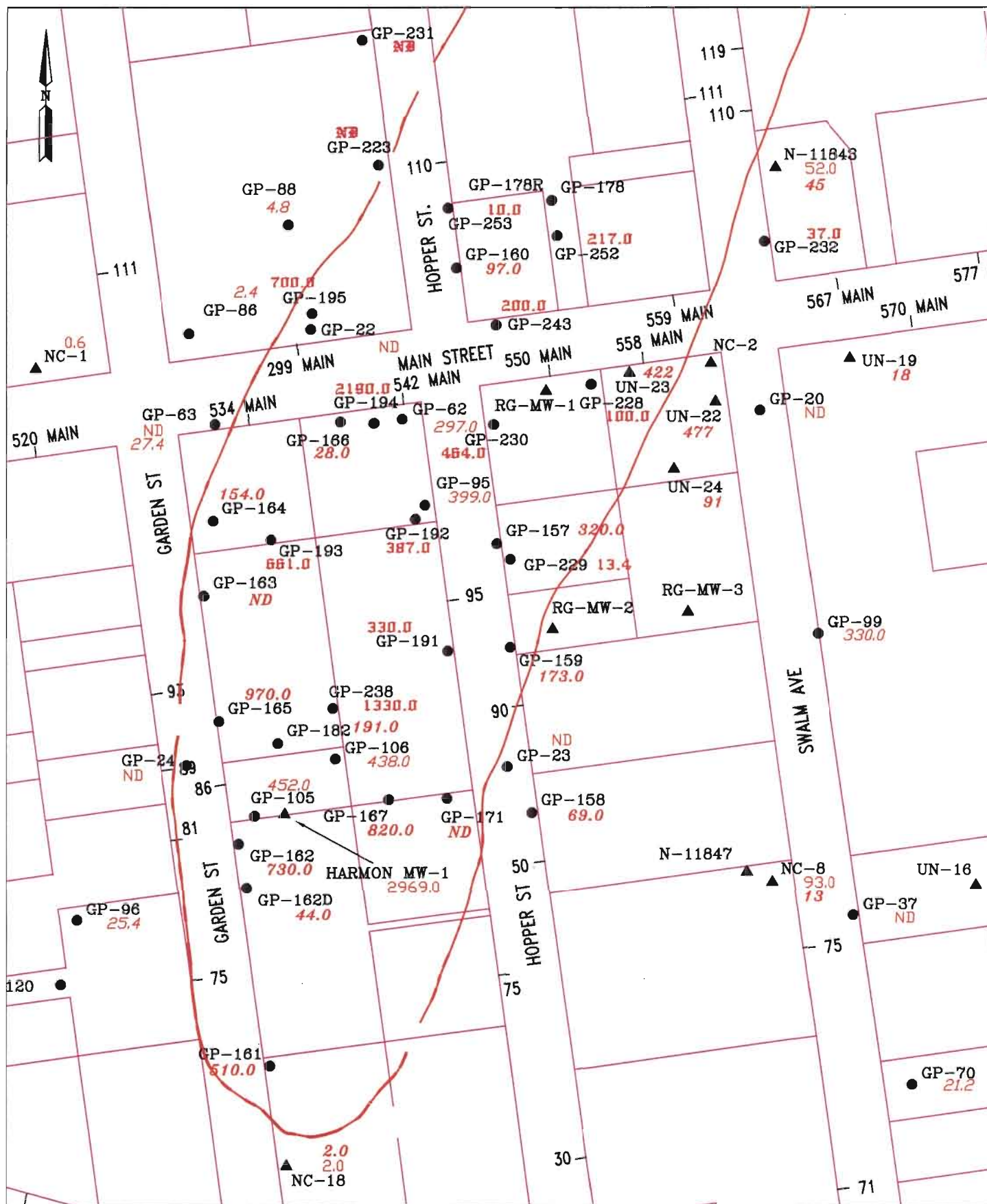
The PCE-related contaminant-impacted area of the Hopper/Main Street PSA site is laterally and vertically extensive (Figures 6-1, 6-2, and 6-3), appearing to extend from the water table to depths greater than 85 ft below grade. PCE is the primary PCE-related contaminant; high levels of TCE and DCE were found, as well as trace to moderate levels of VC. The plume appears to extend from the northern end of Swalm Avenue downgradient to just south of 75 Garden Street. The relative size of the impacted area appears to be constant with depths up to 85 ft below ground surface.

The TCA-related contaminant-impacted area of the Hopper/Main Street Site is negligible compared to that of the PCE-impacted area (Figures 6-4, 6-5, and 6-6). The primary contaminant is almost exclusively 1,1,1-TCA, which was found at very low concentrations in two locations (GP-228 and GP-229). None of the points samples exceeded 100 ppb TCA-related compounds with the exception of GP-167 at the deepest depth, which contained 240 ppb TCA-related compounds.

### 6.1.2 Soil Contamination

Soil sampling at the Hopper/Main Street site was performed at one point in 1996 (SGP-238, see Figure 6-7). A total of 15 points have been installed and sampled in this area since 1993. Samples were collected from two discrete depth intervals at each point. No PCE- or TCE-





NOTE: All data in ug/l.

Scale in Feet

140 0 140



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Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

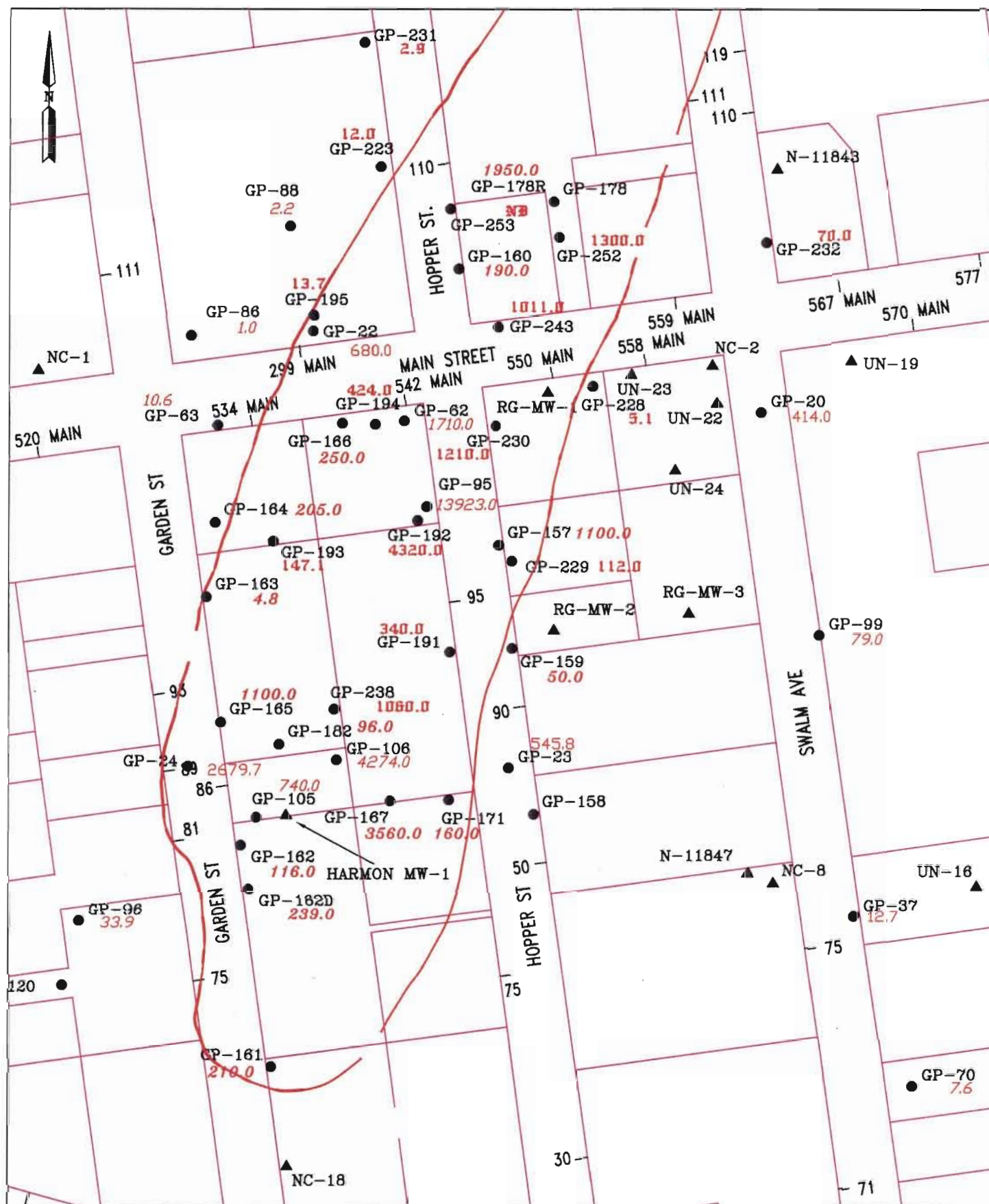
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

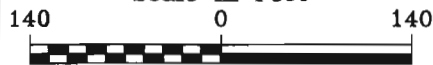
FIGURE 6.1

HOPPER/MAIN ST SITE  
542, 550, AND 299 MAIN ST,  
AND 95 HOPPER ST  
PCE IN GROUNDWATER  
WATER TABLE TO 65 FT





NOTE: All data in ug/l.  
Scale in Feet



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil Sample Location ▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.2

HOPPER/MAIN ST SITE  
542, 550, AND 299 MAIN ST,  
AND 95 HOPPER ST  
PCE IN GROUNDWATER  
65 TO 85 FT









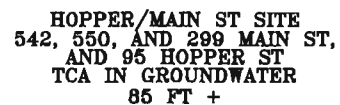




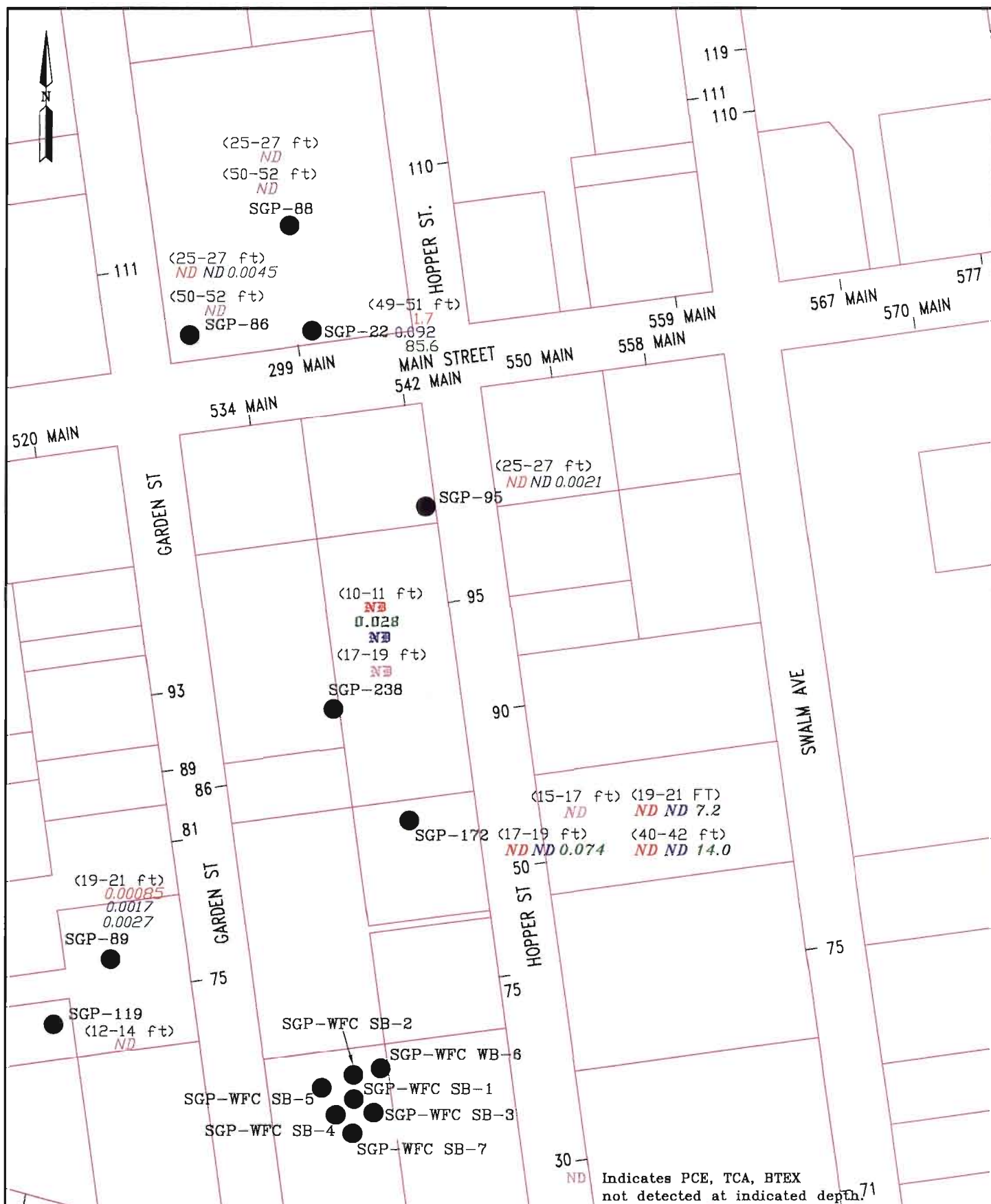












PCE	TCA	BTEX	
120	120	120	1993 Sample Data
120	120	120	1994 Sample Data
120	120	120	1995 Sample Data
120	120	120	1996 Sample Data

FIGURE 6.7  
HOPPER/MAIN ST SITE  
542, 550, AND 299 MAIN ST,  
AND 95 HOPPER ST  
SUBSURFACE SOILS DATA





related compounds were detected in the samples collected. Benzene, toluene, ethylbenzene, and xylene (BTEX) compounds were detected in the sample from 10-11 ft but were not detected from 17-19 ft. Total xylenes were detected at a concentration of 0.028 mg/kg at 10-11 ft.

### 6.1.3 Facility Discussion

#### *95 Hopper Street (Block 71, Lot 5 to 8)*

95 Hopper Street was previously occupied by Bilt Rite Steel Buck Corporation. Apparently Bilt Rite Steel Buck abandoned the property in late 1995 or early 1996; occupants prior to Bilt Rite were not found in the detailed file review. Bilt Rite had documented use of many chemicals at this site: naphtha, toluene, xylol chromate, lead, xylene, ethylbenzene, polyester resin, and metals. According to NCDOH records, an authorized waste hauler removed F003 waste (spent nonhalogenated solvent inclusive of but not limited to xylene, ethylbenzene, and methanol) from this address. Groundwater samples were taken immediately downgradient of this facility (GP-165, GP-167, GP-171, GP-182, and GP-238). Many of these groundwater samples contained high concentrations of PCE-related compounds, averaging greater than 200 ppb (Figure 6-1, Figure 6-2, and Figure 6-3). This property is within the PCE-related contaminant plume; elevated concentrations of TCA-related compounds were not found (Figure 6-4, Figure 6-5, Figure 6-6). The upgradient samples available during the last phase of the PSA investigation were limited. During Task 4 additional upgradient probe locations were completed; these probes indicate that Bilt Rite Steel Buck does not appear to be the source of the groundwater contamination found in the area. A comparison of the upgradient and downgradient sampling locations does not clearly show that the property exhibits contaminant concentrations three times greater in the downgradient position than in the upgradient position (Figure 6-1, Figure 6-2, and Figure 6-3). At the shallow depth the only upgradient/downgradient pair that shows contamination three times greater in the downgradient position is GP-192/GP-238. In GP-192 the total PCE-related compounds are 387 ppb (cis-DCE 210 ppb; TCE 110 ppb; and PCE 67 ppb) (Figure 6-1). In GP-238 the total PCE-related compounds totaled 1330 ppb (cis-DCE 1000; TCE 330) (Figure 6-1). It is possible the site is responsible for the cis-DCE, but it appears unlikely based on no documented usage of this type of compound and the presence of similarly elevated cis-DCE concentrations in other upgradient points (GP-194). The elevated concentrations of PCE-related compounds in the deeper depths would appear to also be attributable to a source upgradient of this property.

The downgradient samples in the three depth ranges do not clearly show concentrations of target compounds that are three times the concentration of the upgradient samples. In addition no on-site source or documented use of chlorinated solvents was found for this property. However,

the groundwater below the site exhibits a significant level of contamination. It is recommended that this property remain a potential registry site until such a time as the source of this contamination is verified as originating on an upgradient property.

***542 Main Street (Block 71, Lots 5 to 8)***

542 Main Street has been occupied by Al's Tool and Die, Inc., since approximately 1968. Past uses could not be determined by the detailed site review. There is no documentation of chemical use at this site. A source of contamination on this property was not positively identified during the previous phase of the PSA. Contamination detected within the groundwater samples collected on and around this property is generally greater upgradient of the site than downgradient. This indicates that the source of contamination of groundwater at 542 Main Street may not be on the site. During the site investigation GP-95 (65-85 ft) was found to contain a high concentration of PCE-related compounds (13,923 ppb) and it was believed this hot spot may have been associated with a leachpool in the area. The source of this contamination could not be confirmed during the subsequent PSA investigation. An additional probe (GP-192) was placed near the location of GP-95 and, in general, the concentration of PCE-related compounds in the area still shows a hot spot (Figure 6-1, Figure 6-2, and Figure 6-3). However the concentration in GP-192 (73-75 ft) is only slightly three times (4320 ppb) the concentration in the upgradient point (GP-230, PCE-related compounds 1210 ppb). Based on no documented usage or on-site source this property should not appear as a Class 2 site on the registry of inactive hazardous waste sites. However, this property does exhibit significant groundwater contamination and should remain a potential registry site until a clearly defined upgradient source for this contamination is found.

***550 Main Street (Block 72, Lots 1 to 5)***

550 Main Street has been occupied by Royal Guard Fence Company since the 1950s. During previous stages of the investigation, a source of contamination at the site has not been identified. Concentrations of PCE-related compounds within groundwater samples collected around this site indicate that this property has been impacted by PCE-related contamination (Figure 6-1, Figure 6-2, Figure 6-3, Figure 6-4, Figure 6-5, and Figure 6-6). The upgradient probe locations (GP-228 and GP-230) exhibit concentrations similar to the downgradient samples, indicating the source of contamination in the groundwater at this site is from an upgradient location (Figure 6-1, Figure 6-2, and Figure 6-3). Based on a lack of documented usage of suspected target compounds, a lack of an on-site source, and a likely upgradient source of groundwater contamination, this property should not be included on the registry.



### **299 Main Street (Block 144, Lots 37 to 44)**

299 Main Street, occupied by One Stop Auto and Truck Center, was developed some time between 1950 and 1962 and consists of a garage with a number of bays and office space. To the north of the building is a large fenced storage yard. The property was formerly used as a junkyard and a transportation company. Island Transport Corporation used large quantities of BTEX-related compounds and approximately 275 gal of TCE from July to December 1978 (LMS 1996) to wash trucks.

The probes completed during the site investigation indicated that in upgradient areas PCE-related contaminants were not detected above 100 ppb (GP-85). At a downgradient position, PCE-related contaminants were found at 680 ppb in the intermediate depth sample (GP-22). Soil samples collected at SGP-86 and SGP-88 did not show any target compounds. A soil sample collected at GP-22 contained both PCE- and TCA-related compounds in a 49-51 ft sample (Figure 6-7); however, since the soil sample was taken very close to the watertable it is not known whether the contamination is truly indicative of the levels of soil contamination. PCE-related contaminants were found at 1.73 mg/kg and TCA-related contaminants at 0.092 mg/kg. In addition, total BTEX-related contaminants were found at 85.63 mg/kg in this soil sample. These levels would tend to indicate an on-site source.

Although this site has a documented use of target compounds (TCE), an on-site source and an environmental impact was not fully documented during the previous phase of the PSA. To document an environmental impact three additional upgradient and two additional downgradient probes were completed (Figure 6-1, Figure 6-2, Figure 6-3, Figure 6-4, Figure 6-5, and Figure 6-6). The results of these probes clearly indicate that this property is contributing to the groundwater contamination in the Garden/Hopper Street area. The three upgradient probes (GP-231, 223, and 253) do not show any target compounds above 100 ppb. The downgradient points GP-193, GP-194, and GP-195 clearly show elevated PCE-related contaminant concentrations at the three depth ranges (Figure 6-1, Figure 6-2, and Figure 6-3). In GP-194 (water table to 65 ft) the PCE-related contaminants total 2190 ppb (1700 ppb cis-1,2-DCE and 490 ppb TCE) (Figure 6-1). It was also noted that the individual contaminants change and become more numerous just downgradient of this property. Upgradient of the site the only contaminant noted in the groundwater is PCE, while downgradient TCE, DCE, and VC are found along with the PCE (Figure 6-6a). In GP-195 the total PCE-related contaminants are 700 ppb at the shallow depth; of this 700 ppb total, 250 ppb is cis-1,2-DCE and 450 VC (Figure 6-6a). The source of these different contaminants is likely located on this property or possibly the property just to the east, while the PCE-related contaminants at depth are from an upgradient source. Based on a documented history of chemical usage, a documented on-site

source, and a demonstrated environmental impact to groundwater, this property should be included on the registry.

***Lot at the Northeast Corner of Hopper and Main Street (Block 145, Lots 38, 39, and 40)***

This vacant lot was used as a junkyard; there are no permanent structures on the lot. Past uses of this property are unknown; this is a small lot and it appears unlikely that it has been used as anything other than a junkyard. The groundwater below this property has been impacted by PCE-related contaminants at all three depth ranges (Figure 6-1, Figure 6-2, and Figure 6-3); TCA-related contaminants were not detected at this property (Figure 6-4, Figure 6-5, and Figure 6-6). The PCE found at the intermediate depth at the two upgradient probe locations (GP-178R and GP-252) (Figure 6-2) is likely from the 118-138 Swalm Street site. The downgradient points on this property show a trend similar to that of those points downgradient of 299 Main Street. At this property individual contaminants change and become more numerous just downgradient of this property. Upgradient of the property the only contaminant noted in the groundwater is PCE, while downgradient TCE and DCE are found along with the PCE (Figure 6-6a). In GP-230, a downgradient point, the total PCE-related contaminants are 464 ppb at the shallow depth; of the 464 ppb total, 260 ppb is cis-1,2-DEC and 170 ppb TCE. The source of these different contaminants is likely on this property or the property just to the west. In addition to the PCE from the upgradient source, additional contaminants are found, including cis-1,2-DCE and TCE at a shallow depth (Figure 6-6a). In GP-194 at the shallow depth, total PCE-related contaminants are 2190 ppb (1700 ppb cis-1,2-DCE and 490 ppb TCE). This property or the property to the west is the apparent source for this contamination.

Documented on-site usage of target compounds could not be verified but is likely based on past site uses (junkyard). Just downgradient of this property the contaminant concentrations in the groundwater increase and the number of individual contaminants also increases immediately downgradient. Based on the size of the property and the number of samples taken around this property, it is a likely source of the noted groundwater contamination. The presence of an on-site source could not be verified because access to the property was denied by the current owner. This property should appear on the registry of inactive hazardous waste sites to allow remedial investigations to locate any possible on-site source areas.

## 6.2 E-Z-EM SITE

### 6.2.1 Groundwater Plume

The PCE-related contaminant-impacted area for the E-Z-EM site is limited to the eastern section of the site (Figures 6-8, 6-9, and 6-10). High concentrations of PCE-related compounds were limited to shallow depths, with the highest concentrations occurring at the eastern end of the site (GP-202). The plume seems to be emerging from properties to the north and east (89 and/or 101 Frost Street). The size of the impacted area is relatively constant with depth.

The TCA-related contaminant-impacted area for the E-Z-EM site is also mostly limited to the eastern edge of the site (Figures 6-11, 6-12, and 6-13), although there may be a small source area in the southwest section of the site. None of the samples collected on-site exceeded 100 ppb TCA-related contaminants with the exception of GP-234, which contained 110 ppb of TCA-related contaminants at the shallow depth.

### 6.2.2 Soil Contamination

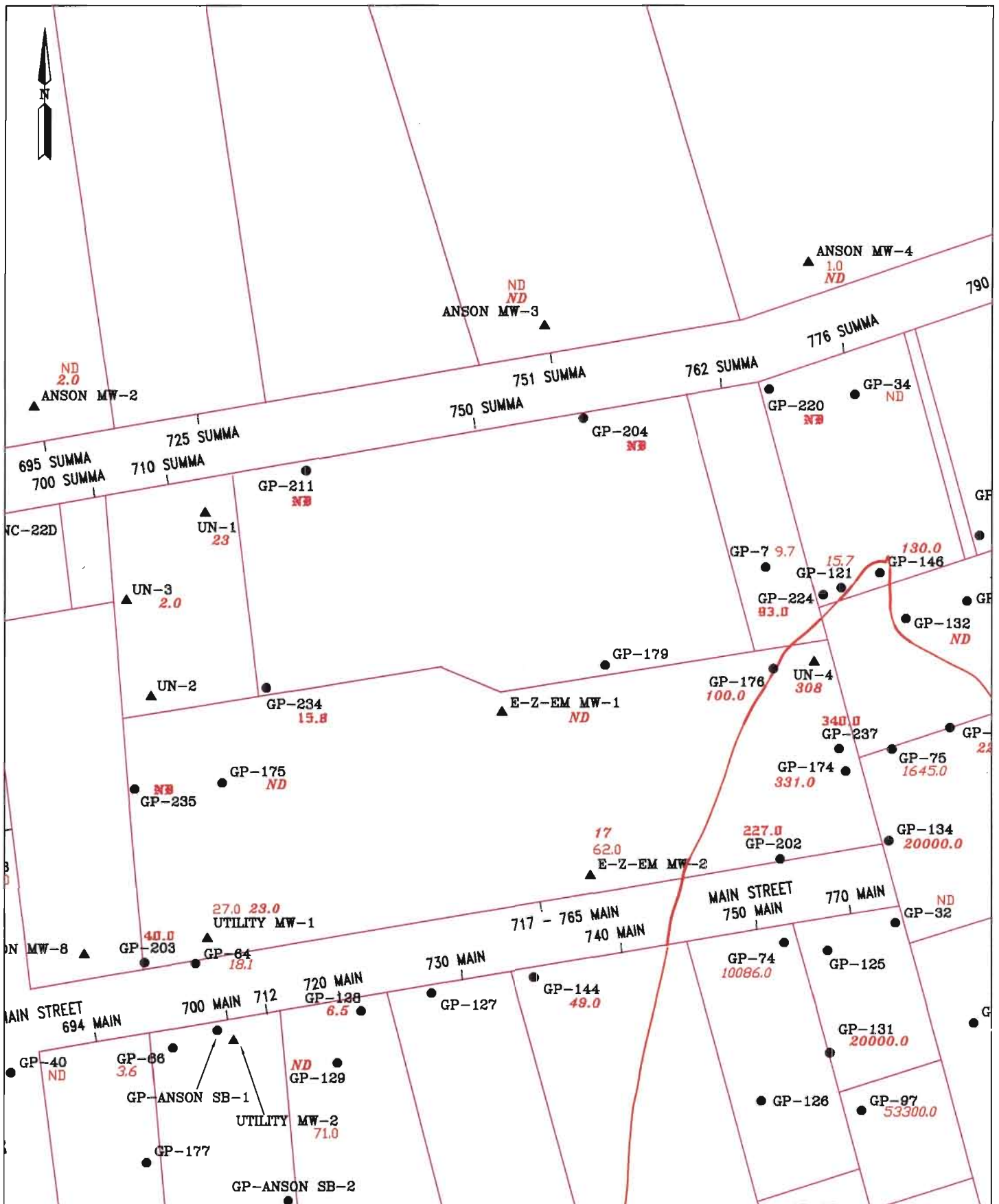
LMS collected soil samples from eight points in the E-Z-EM area in 1996 (see Figure 6-14). No contaminants of concern were detected in any of the samples collected at the E-Z-EM site.

### 6.2.3 Facility Discussion

#### *717-765 Main Street (Lot 148)*

717-765 Main Street, occupied by E-Z-EM since 1991, was constructed in 1959. Prior uses at this address include unspecified manufacturing and warehousing. The property was connected to the county sewer in 1987; a single cesspool was previously located along Main Street at the southeastern end of the property. Prior uses do not show a documented chemical use; however, there was a record of the use of a "harsh" chemical in the Fortunoff warehouse. E-Z-EM has a documented use of a variety of chemicals; however, none of the chemicals are definitively related to the target compounds found in the groundwater. Concentrations of PCE- and TCA-related compounds found within the groundwater samples taken on the site are low for this area and do not exceed 100 ppb except at GP-174 and GP-202, where concentration exceeded 100 ppb, and at GP-237, where greater than 340 ppb PCE-related contaminants were detected (Figure 6-8, Figure 6-9, Figure 6-10, Figure 6-11, Figure 6-12, and Figure 6-13). The elevated concentration of PCE at GP-174, GP-202, and GP-237 is believed to be from dispersion and migration of contamination from 101 Frost Street. No sources of contamination





NOTE: All data in ug/l.  
Scale in Feet



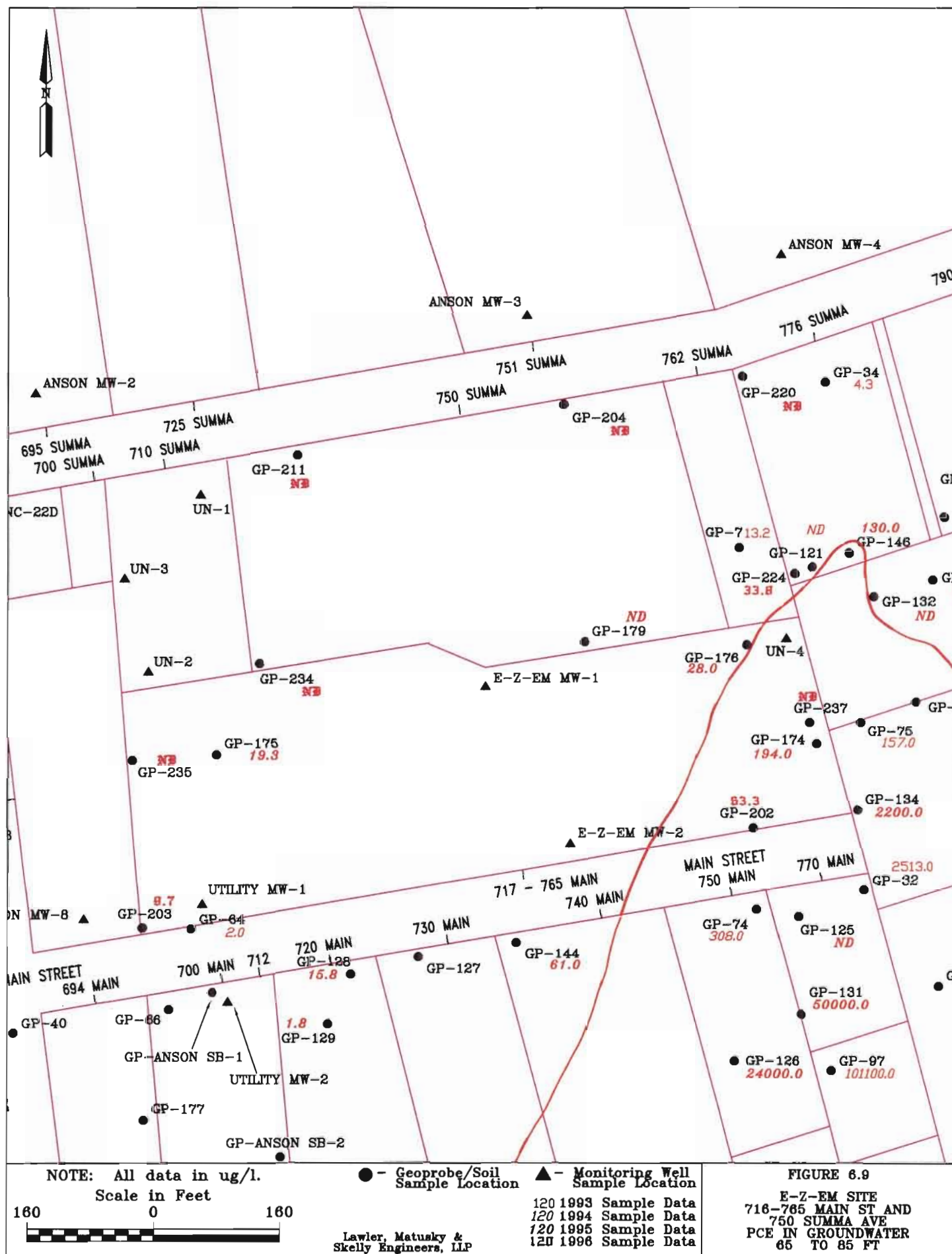
● - Geoprobe/Soil Sample Location  
▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

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FIGURE 6.8  
E-Z-EM SITE  
716-765 MAIN ST AND  
750 SUMMA AVE  
PCE IN GROUNDWATER  
WATER TABLE TO 65 FT



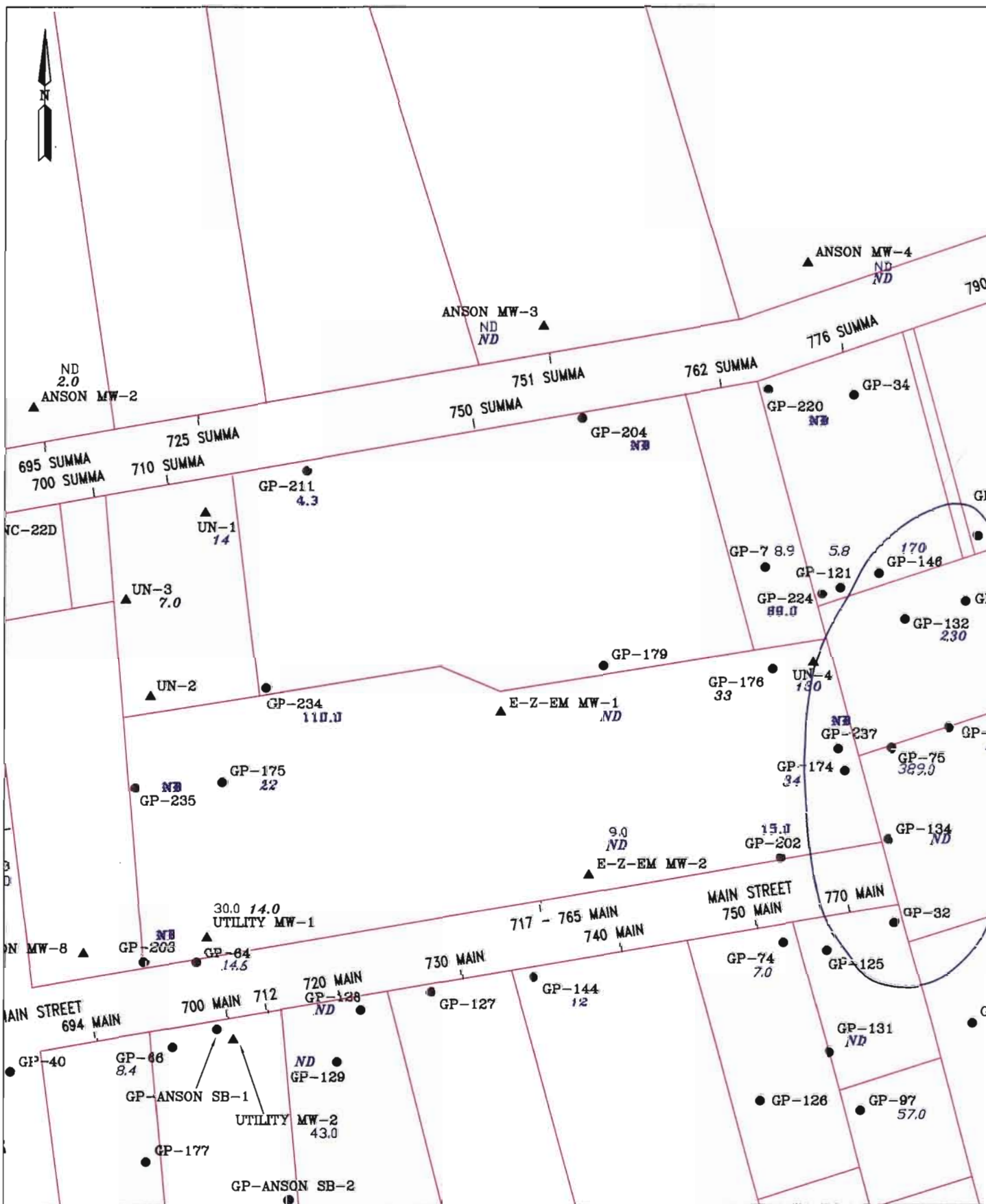












NOTE: All data in ug/l.  
Scale in Feet



● - Geoprobe/Soil Sample Location ▲ - Monitoring Well Sample Location

Lawler, Matusky &  
Skelly Engineers, LLP

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.11

E-Z-EM SITE  
716-765 MAIN ST AND  
750 SUMMA AVE  
TCA IN GROUNDWATER  
WATER TABLE TO 65 FT















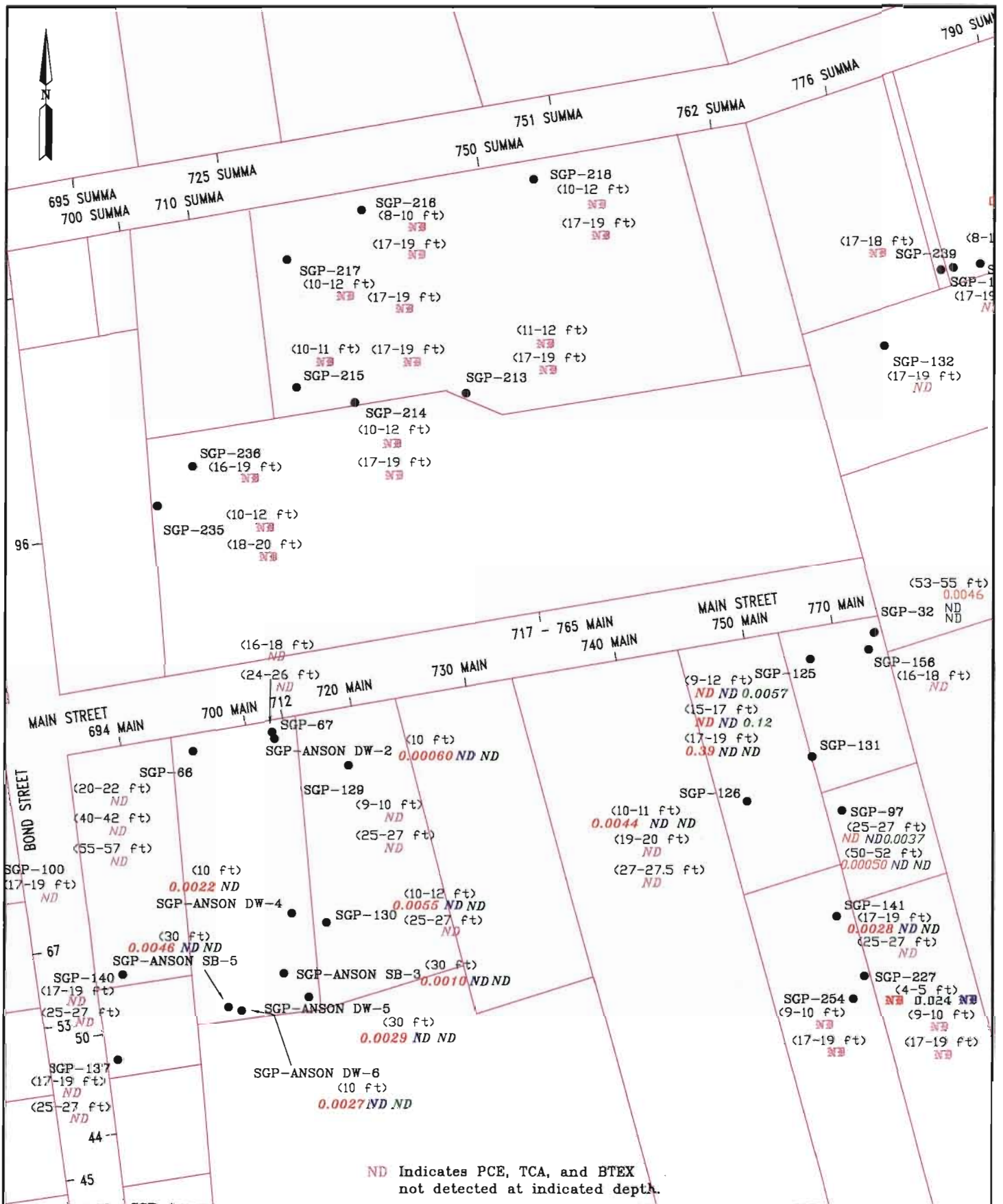


FIGURE 6.14  
E-Z-EM SITE  
717-765 MAIN ST AND  
750 SUMMA AVE  
SUBSURFACE SOILS DATA



were discovered at this site (Figure 6-14). As there is no documented hazardous waste discharge or spill at this site, no confirmed on-site source of contamination, and no apparent groundwater impacts from on-site activities this property should not appear on the registry.

#### ***750 Summa Avenue (Lot 173)***

The building at 750 Summa Avenue, presently occupied by E-Z-EM, was erected prior to 1970 and was formerly occupied by Advance Food Service. Alleyways, driveways, and parking areas are found on all sides of the building. No usage of PCE- or TCA-related compounds has been documented by E-Z-EM at this site. Advance Food Service did have documented use of 1,1,1-TCA. As recommended by NCDOH, a floor drain near a degreaser was filled in 1978. The sludge from the degreaser contained high concentrations of 1,1,1-TCA. The additional detailed file reviews located a scaled diagram of the former leachpool locations. This information and the previously conducted GPR survey were used to verify the pool locations and place six soil probes in these locations. PCE- and TCA-related compounds were not detected in any of the samples collected (Figure 6-14). PCE-related compound concentrations do not exceed 100 ppb on this site or immediately downgradient of this property (Figure 6-8, Figure 6-9, and Figure 6-10). One small area of elevated TCA-related contaminants (Figure 6-11, Figure 6-12, and Figure 6-13) found at GP-175 (91 ppb at the intermediate depth) and GP-234 (100 ppb TCA) is believed to be associated with the documented TCA spill in 1978 into the leachpool off the southwest corner of the building. No on-site source could be located (Figure 6-14), and the groundwater contaminant plume impacts a comparatively limited area. It is recommended that the contaminant levels at this property continue to be monitored and this site be placed on the registry as a Class 4 site. It is likely the degreaser and any residual solvents were removed just prior to E-Z-EM's occupancy of the building.

The eastern section of this site has groundwater contamination associated with the Class 2 Inactive Hazardous Waste Site at 770 Main Street, 101 Frost Street, and 89 Frost Street. The remainder of the site does not appear to significantly contribute contamination to groundwater. There was documented use and disposal of chlorinated solvents (111-TCA) at the western portion of 750 Summa Street. However, the source of this contamination was removed from service in 1985. Although we have no record of soils removal, the current data do not show high concentration of TCA-related compounds at GP-234 and 175. Therefore, the current impact appears to be insignificant. This fact combined with the results of the soil samples at this property indicates that no further remediation is necessary at this time, other than continued monitoring of the groundwater.



### **6.3 TOPS APPLIANCE CITY SITE**

The figures depicting the results for the Tops Appliance City site area are broken into two sets. The first set (Figures 6-15 through 6-21) cover 776-790 Summa Avenue. The second set (Figures 6-22 through 6-28) cover 1099 Old Country Road and the two data review sites (750 Main Street, 1226 Old Country Road) in this area.

#### **6.3.1 Groundwater Plume**

The PCE-related contaminant-impacted area on the Tops Appliance City site is vertically and laterally extensive (Figures 6-15, 6-16, 6-17, 6-22, 6-23, and 6-24) . This plume is discussed in Section 6.2.1. The plume originates at 89 and/or 101 Frost Street and extends beyond Old Country Road. The size of the PCE-related contaminant-impacted area remains relatively constant with depth. PCE is the primary PCE-related contaminant; high levels of TCE and DCE were also detected. PCE-related contaminant concentrations were as high as 14,000 ppb at GP-190 (water table to 65 ft) and 87,400 ppb at GP-189 (85 ft and greater). The available data strongly suggest that the PCE-related contaminants increase with depth. The maximum depth of this plume was not established, and higher concentrations may be encountered at depth. Based on the analytical results, possible source areas for PCE include the Class 2 sites found upgradient (750 Main Street, 89 Frost Street, 101 Frost Street).

The TCA-related contaminant-impacted area in the Tops Appliance City site from the water table to 85 ft is limited to the properties at the northern end of the site, while the impacted area at 85 ft and greater is limited to two small source areas in the same section of the site (Figures 6-18, 6-19, 6-20, 6-25, 6-26, and 6-27). Only one of the sampling points installed during the 1996 investigation revealed elevated levels of TCA-related compounds (GP-190) and is believed to be an isolated case. TCA-related contaminants may be masked in certain areas by the extremely high concentrations of PCE.

#### **6.3.2 Soil Contamination**

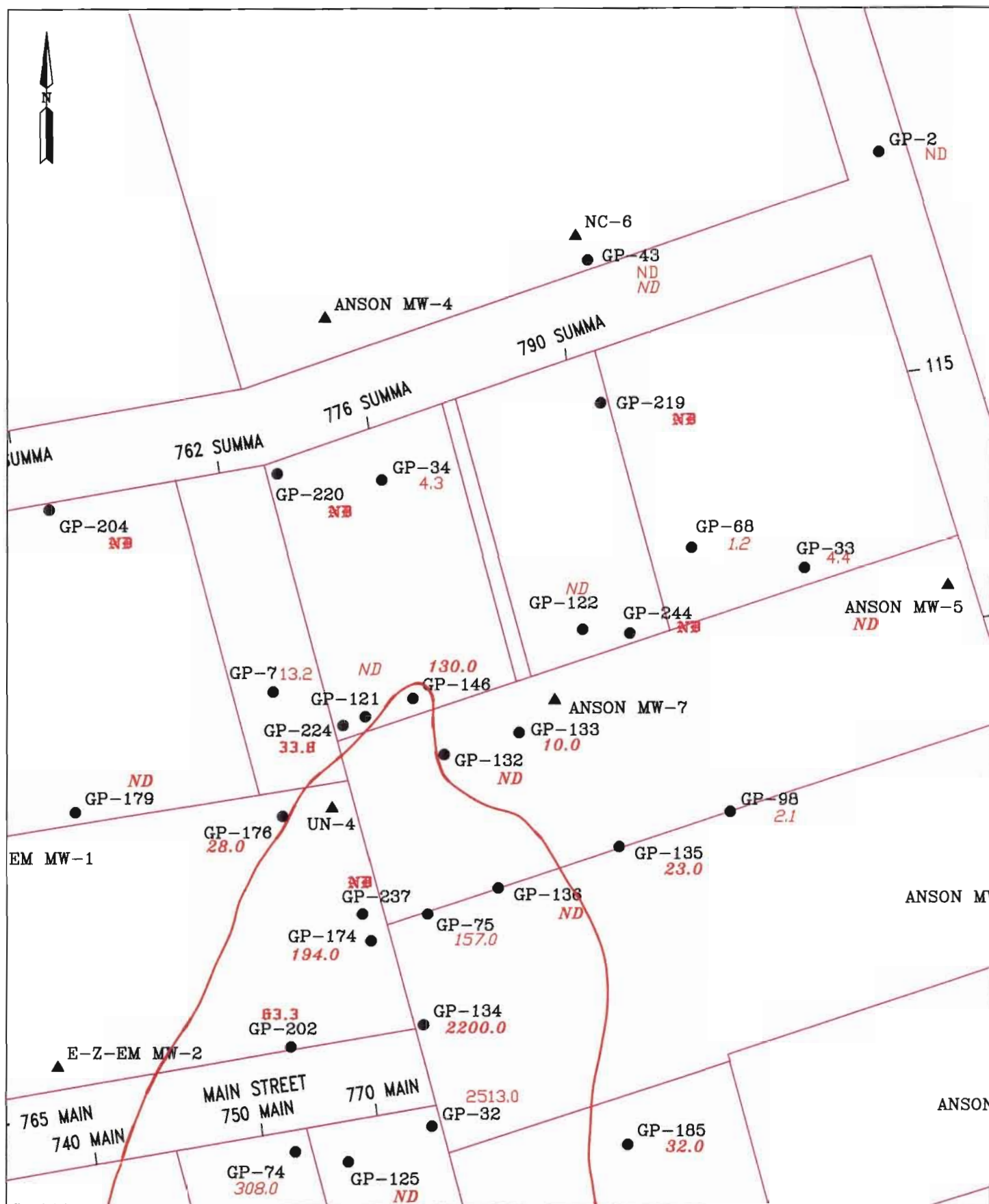
Soil sampling was performed at six locations throughout the Tops Appliance City site area during the 1996 investigation (Figures 6-21 and 6-28). PCE-related compounds were detected at trace levels in SGP-244 (8-10 ft), SGP-240 (8-10 ft), and SGP-141 (17-19 ft). BTEX compounds were detected in one sample. Toluene was the only parameter detected, at a concentration of 0.024 mg/kg in SGP-227 (4-5 ft). TCA-related compounds were not detected. The trace amount of PCE detected in SGP-141 indicates that the soils at 1099 Old Country Road











NOTE: All data in ug/l.  
Scale in Feet

130 0 130



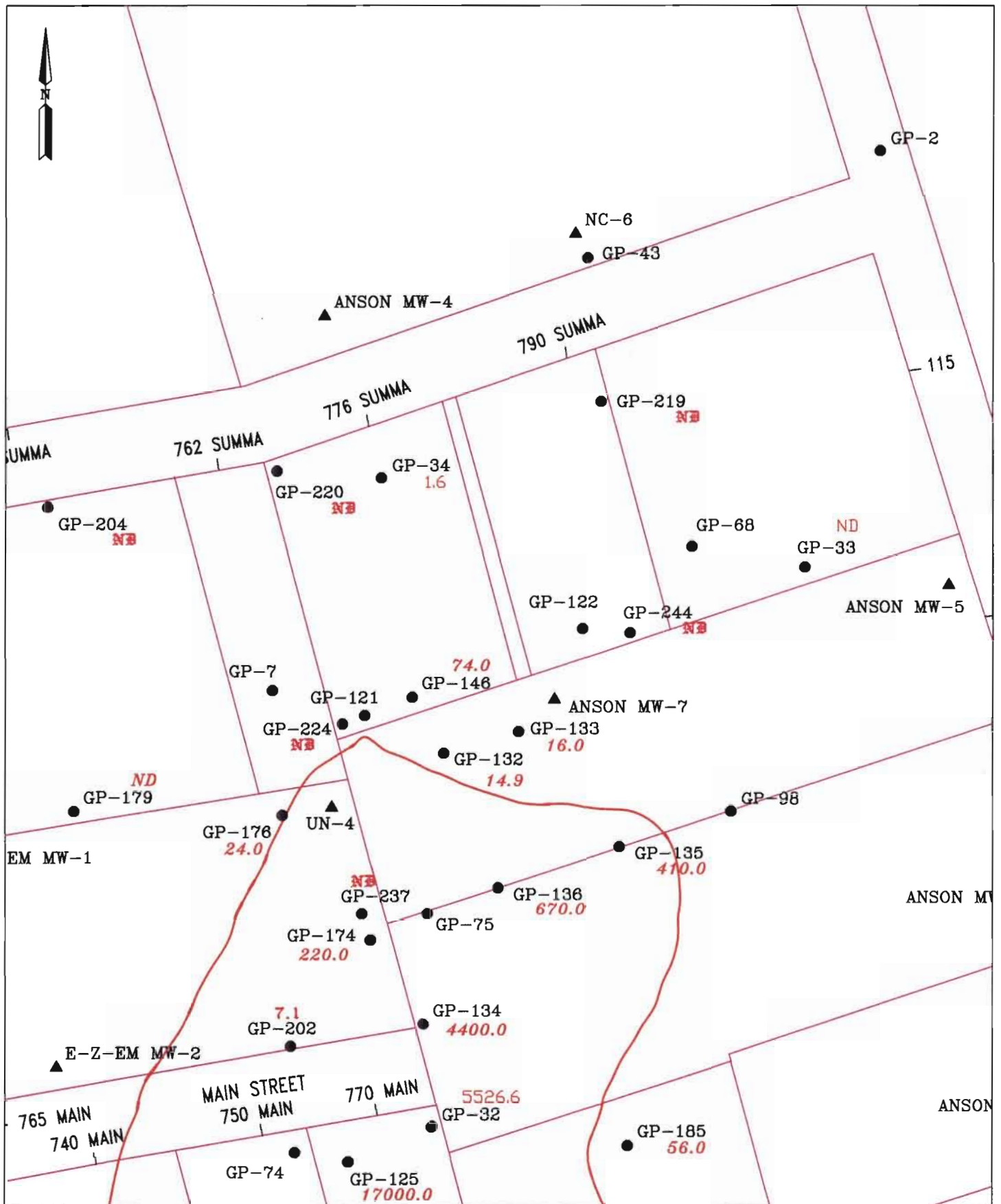
● - Geoprobe/Soil Sample Location ▲ - Monitoring Well Sample Location

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120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.16  
TOPS APPLIANCE CITY SITE  
776-790 SUMMA AVE  
PCE IN GROUNDWATER  
65 TO 85 FT





NOTE: All data in ug/l.  
Scale in Feet



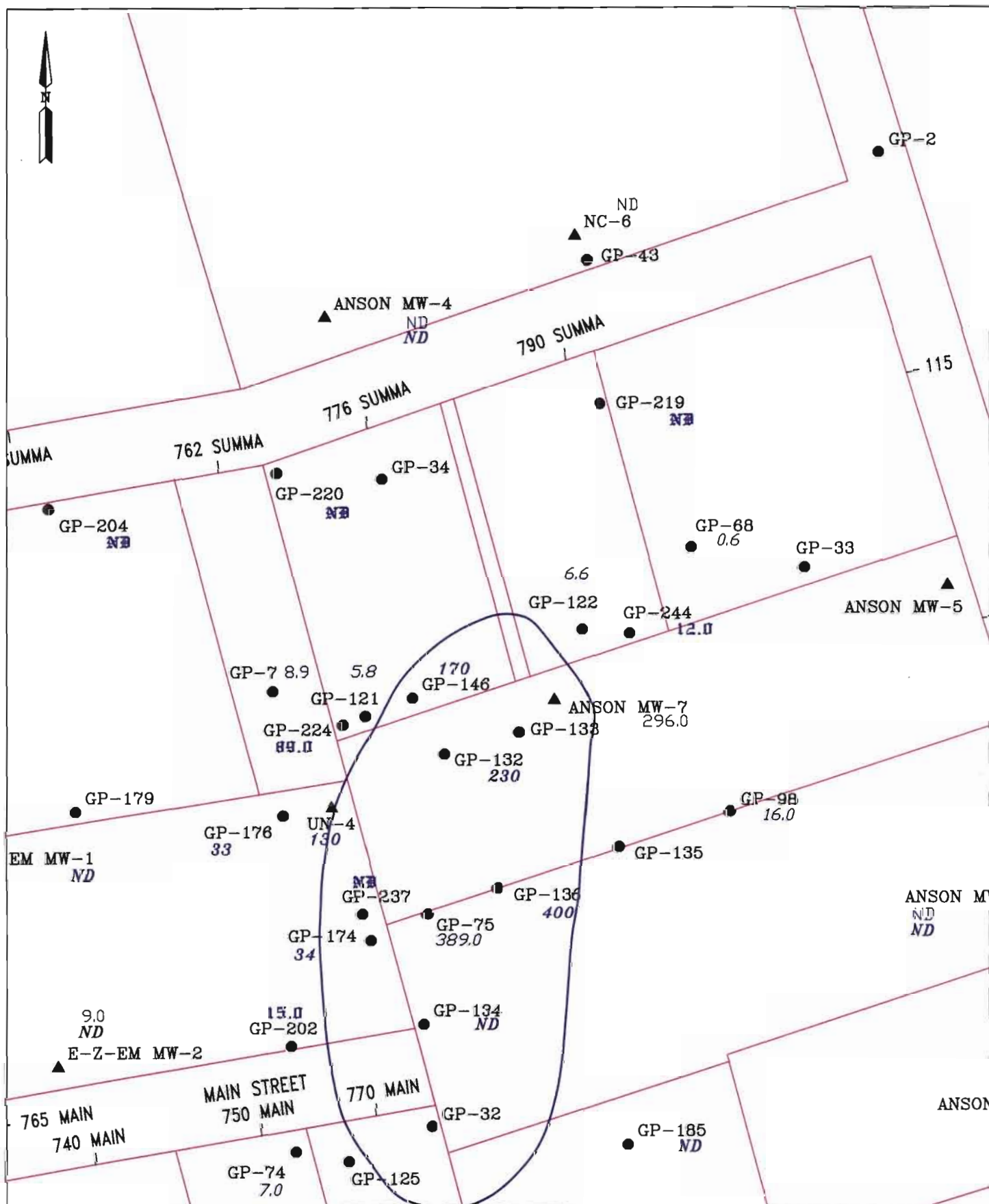
● - Geoprobe/Soil Sample Location    ▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

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FIGURE 6.17  
TOPS APPLIANCE CITY SITE  
776-790 SUMMA AVE  
PCE IN GROUNDWATER  
85 FT +





NOTE: All data in ug/l.  
Scale in Feet

130 0 130



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Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

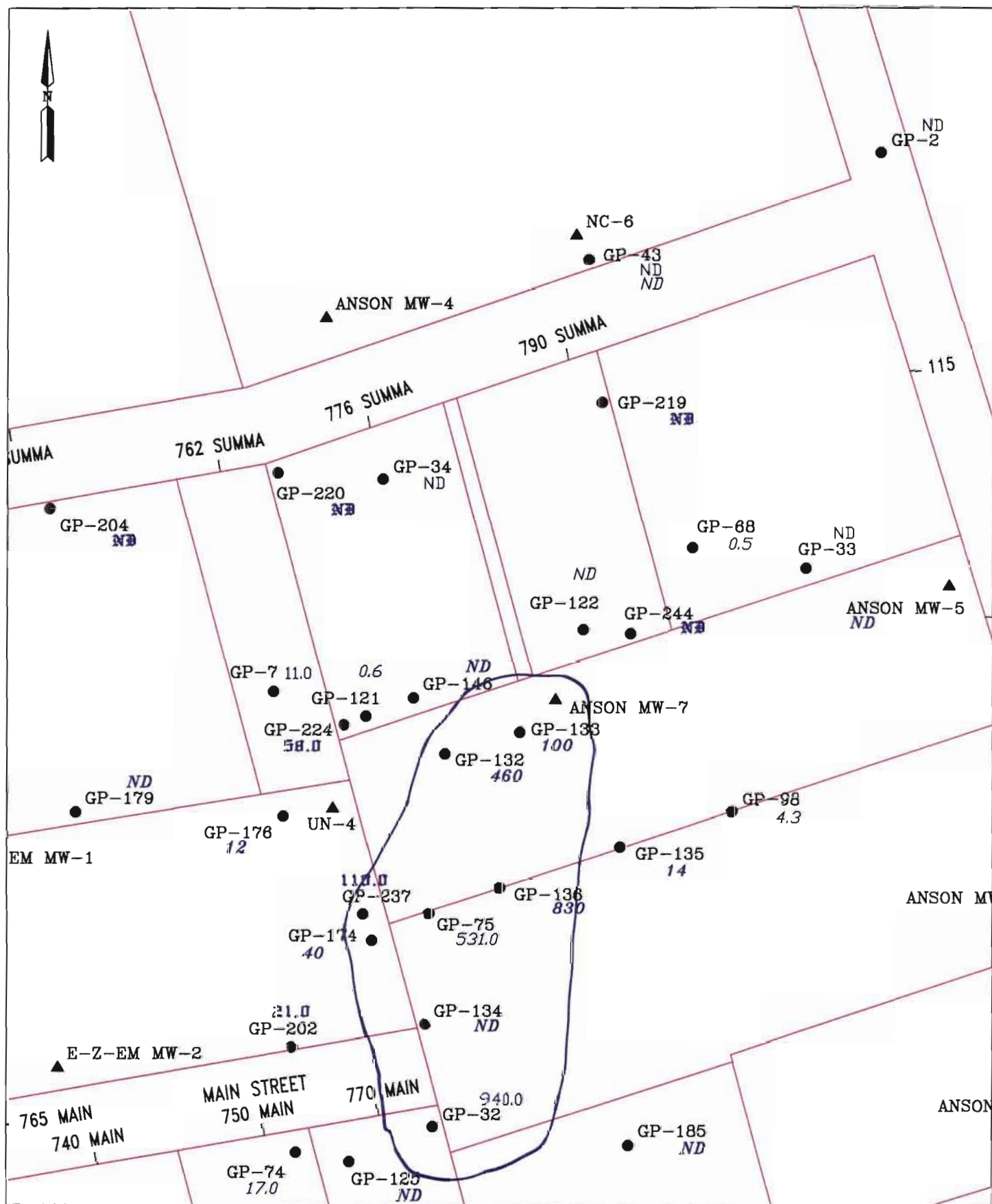
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

**FIGURE 6.18**  
**TOPS APPLIANCE CITY SITE**  
**776-790 SUMMA AVE**  
**TCA IN GROUNDWATER**  
**WATER TABLE TO 65 FT**







NOTE: All data in ug/l.  
Scale in Feet



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120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.19  
TOPS APPLIANCE CITY SITE  
776-790 SUMMA AVE  
TCA IN GROUNDWATER  
65 TO 85 FT





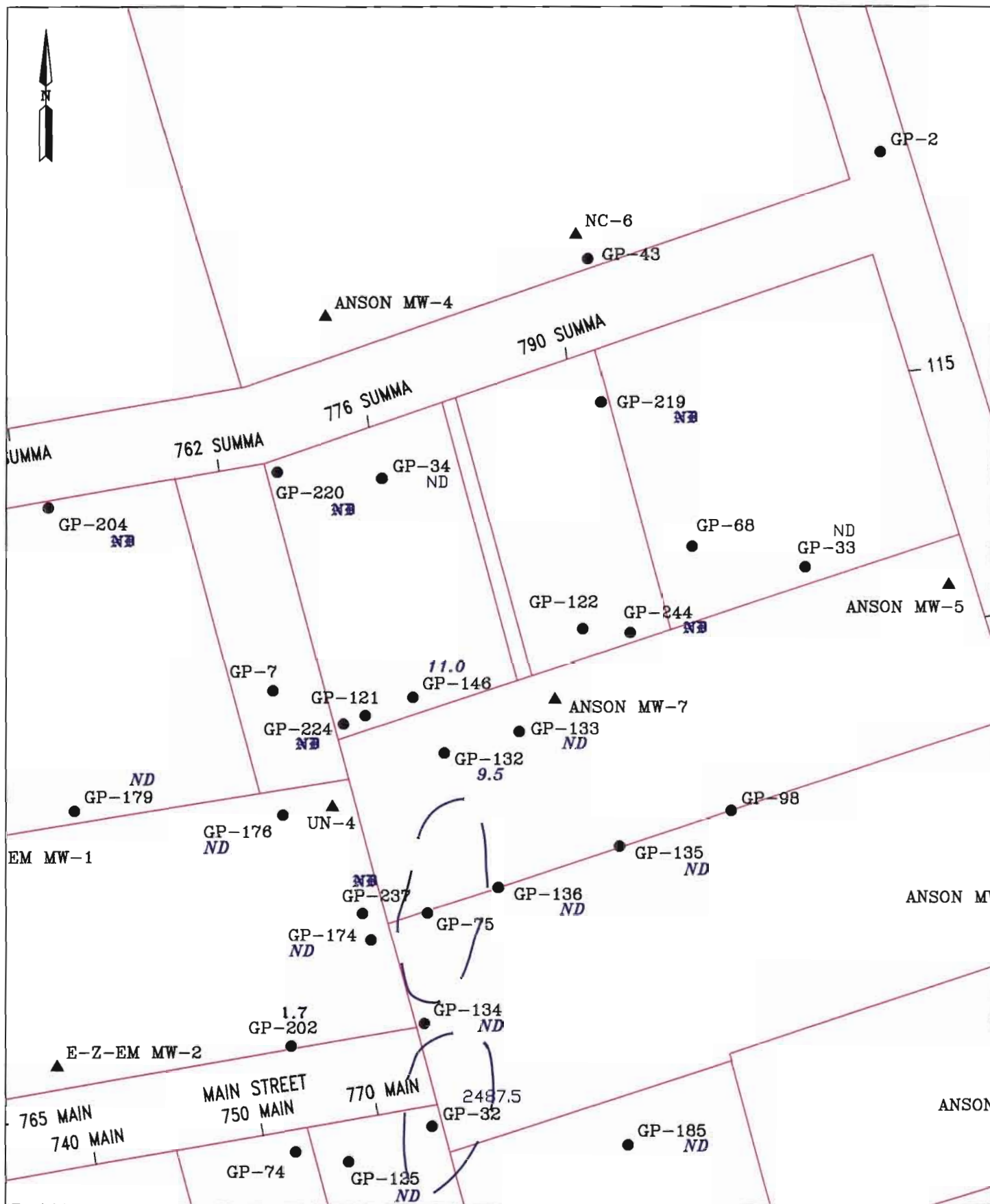
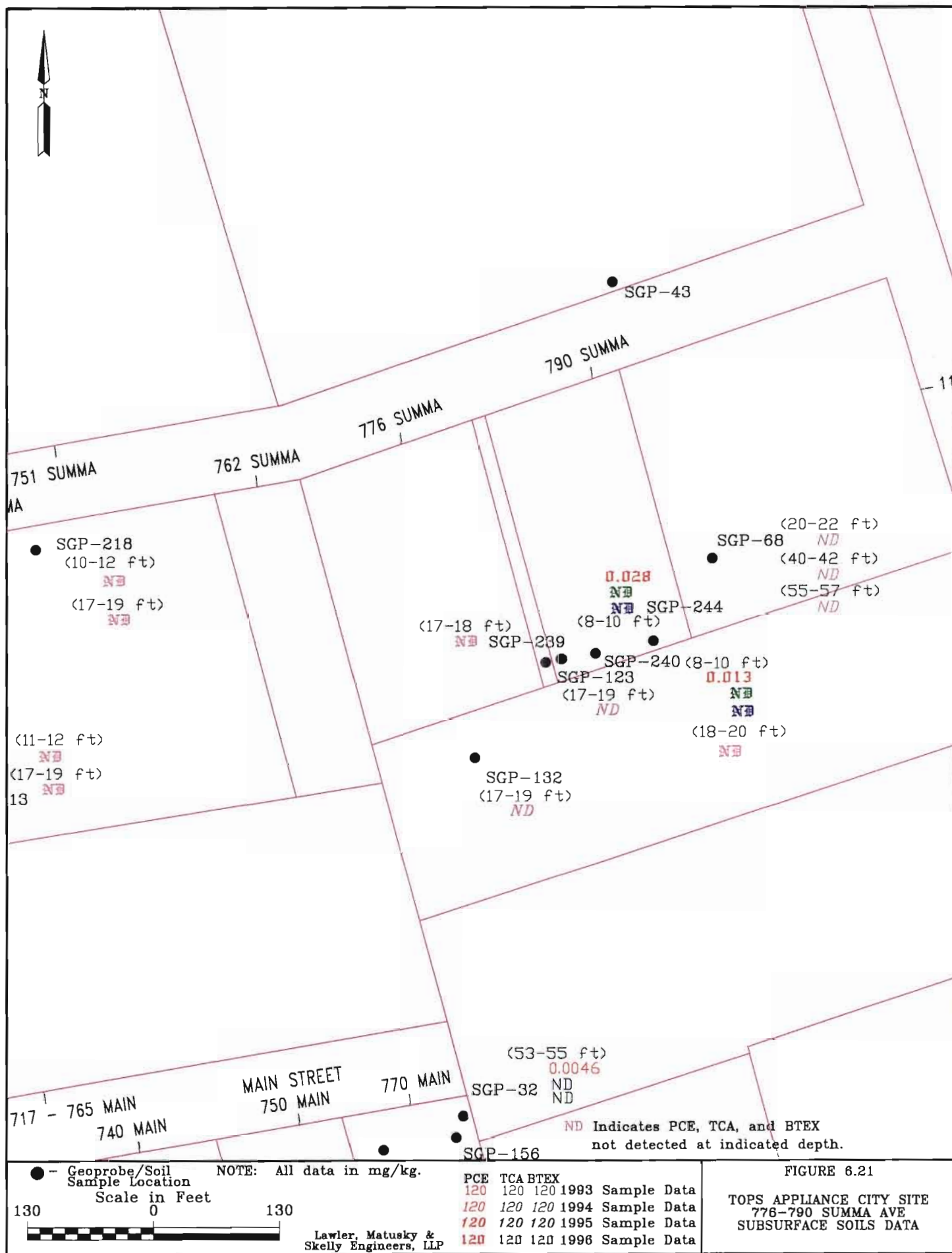


FIGURE 6.20  
TOPS APPLIANCE CITY SITE  
776-790 SUMMA AVE  
TCA IN GROUNDWATER  
85 FT +









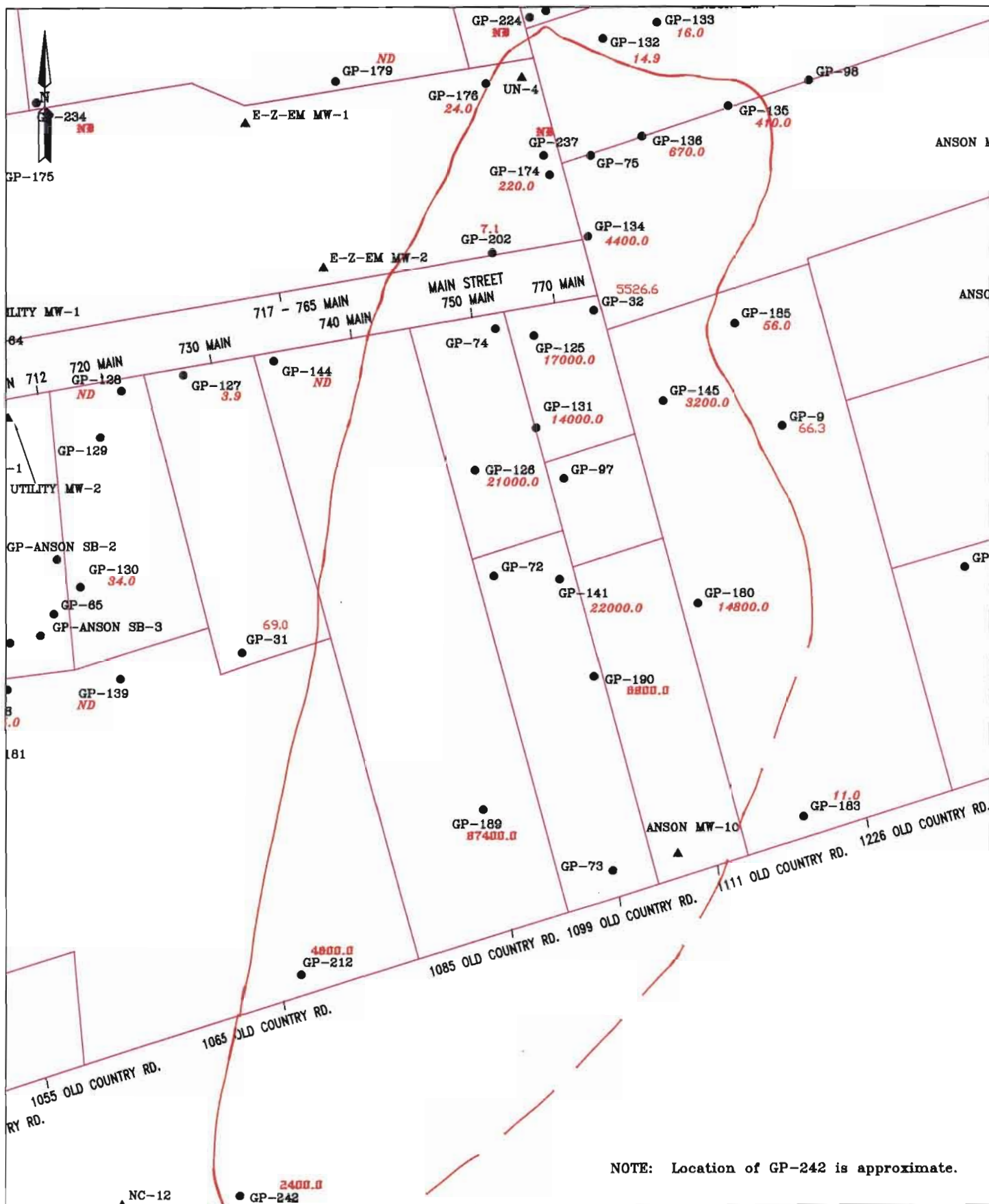












NOTE: Location of GP-242 is approximate.

NOTE: All data in ug/l.  
Scale in Feet



● - Geoprobe/Soil Sample Location

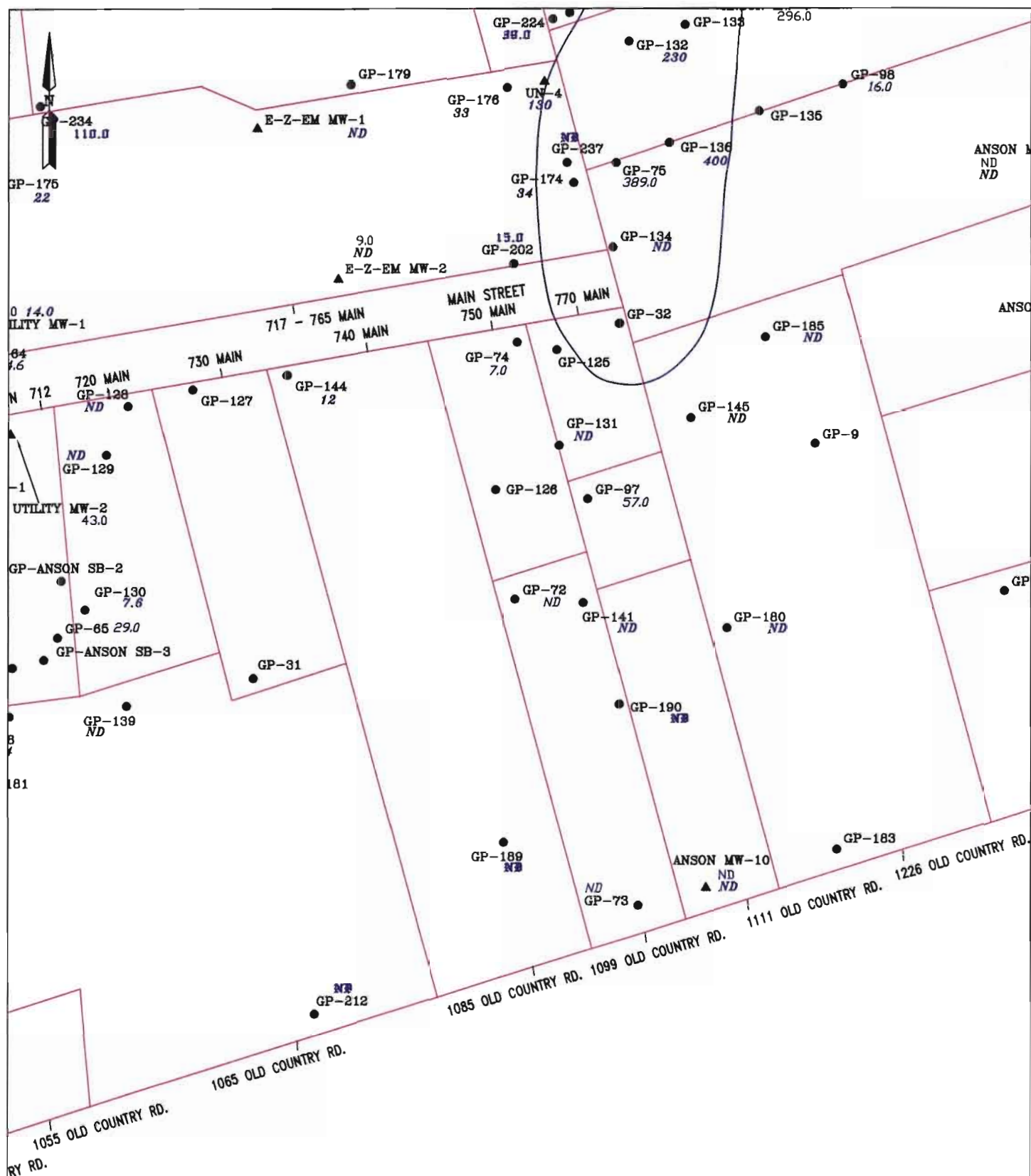
Lawler, Matusky & Skelly Engineers, LLP

▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.24  
TOPS APPLIANCE CITY SITE &  
NCA DATA REVIEW SITES  
1099 OLD COUNTRY RD.,  
750 MAIN ST.,  
1226 OLD COUNTRY RD  
PCE IN GROUNDWATER  
85 FT +





NOTE: Location of GP-242 is approximate.

NOTE: All data in ug/l.  
Scale in Feet

180 0 180



● - Geoprobe/Soil  
Sample Location

▲ - Monitoring Well  
Sample Location

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Skelly Engineers, LLP

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.25  
TOPS APPLIANCE CITY SITE &  
NCIA DATA REVIEW SITES  
1099 OLD COUNTRY RD,  
750 MAIN ST,  
1226 OLD COUNTRY RD  
TCA IN GROUNDWATER  
WATER TABLE TO 65 FT





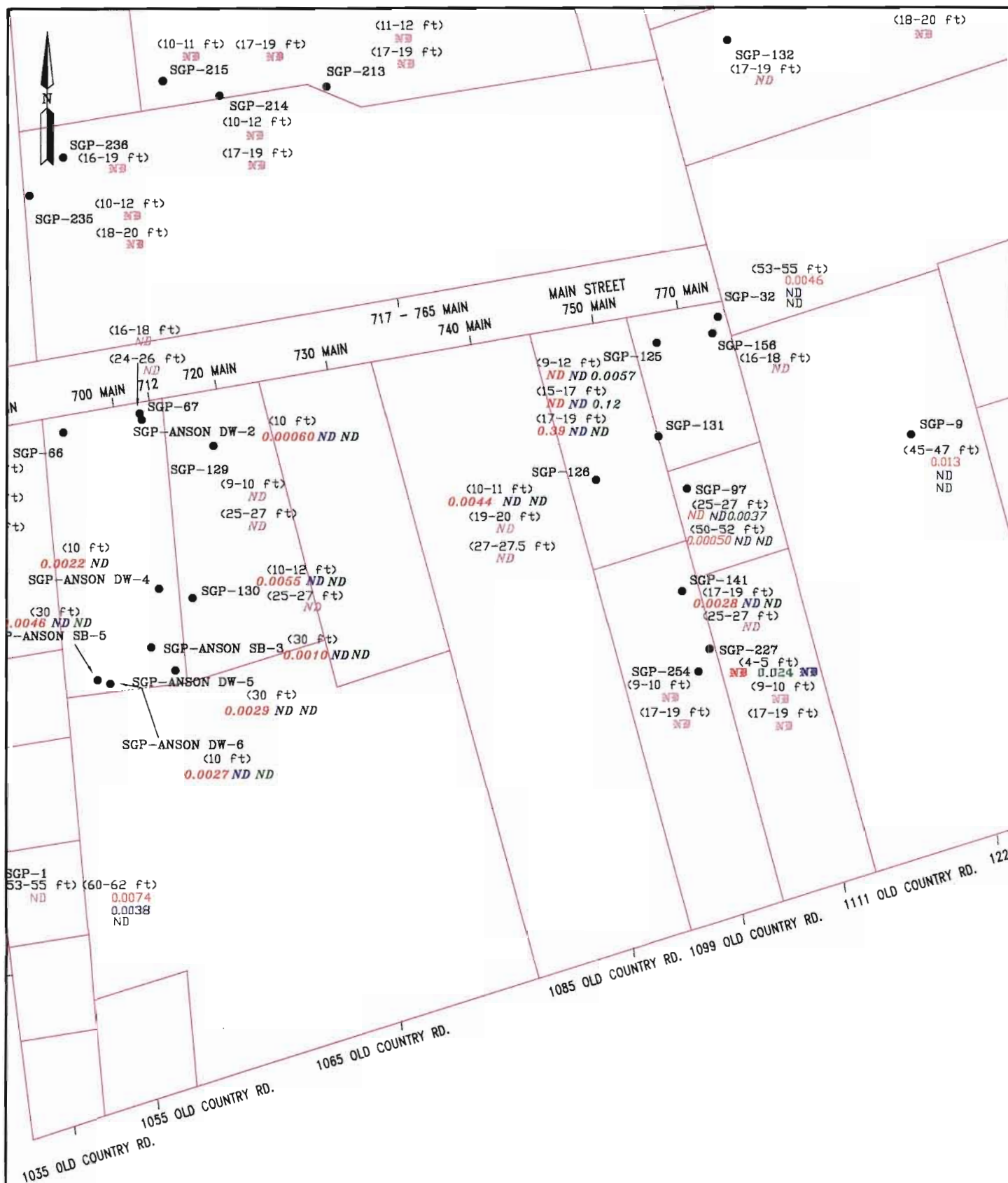




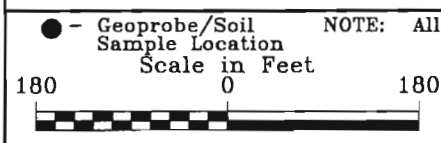








ND Indicates PCE, TCA, and BTEX not detected at indicated depth.



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NOTE: All data in mg/kg.

PCE	TCA	BTEX	Sample Data
120	120	120	1993 Sample Data
120	120	120	1994 Sample Data
120	120	120	1995 Sample Data
120	120	120	1996 Sample Data

FIGURE 6.28  
TOPS APPLIANCE CITY SITE  
AND NCIA DATA REVIEW SITES  
1099 OLD COUNTRY RD,  
750 MAIN ST, AND  
1228 OLD COUNTRY RD  
SUBSURFACE SOILS DATA



may contain elevated levels of PCE. However, the main source area is likely found on one of the upgradient Class 2 sites (750 Main Street, 101 Frost Street, and 89 Frost Street).

### **6.3.3 Facility Discussion**

#### ***776-790 Summa Avenue (Lots 141, 150, and 151)***

776-790 Summa Avenue, presently occupied by NYCE/Liberty/Tempest is a single-story building built in 1958 that covers the entire lot except for a narrow alley on the western property boundary and an enclosed storage area to the rear. Prior occupants of this property, Supreme Metal Fabricators, have reported usage of a variety of compounds; none of the compounds listed are known to be related to PCE or 1,1,1-TCA. Groundwater samples collected on this site have low concentrations of contamination (Figures 6-15 to 6-20). Only GP-146 has PCE and TCA concentrations that exceed 100 ppb (130 and 170 ppb, respectively), and these concentrations are possibly caused by dispersion and migration of contamination at 101 Frost Street. No sources of contamination were discovered at this site (Figure 6-21). Based on a lack of usage, no documented on-site sources, and relatively low groundwater contamination, this site should not be included on the registry.

#### ***1099 Old Country Road (Lot 180)***

1099 Old Country Road, presently a parking lot for Tops Appliance City, was formerly the site of a building that was removed as part of the mall expansion in the early 1990s. The property is now paved parking areas for Tops Appliance City; no use of PCE-related compounds was documented at this site. A Phase II investigation conducted by Anson Environmental and submitted to NYSDEC in October 1995 revealed the location of a building that once existed on this site and the approximate locations of dry wells and cesspools associated with the building. Historical research has indicated that this building was occupied by Nationwide Autobody prior to 1988. Nationwide Autobody was listed as a generator of F001 and F003 hazardous waste. F001 waste is defined as spent halogenated solvents used in degreasing and includes PCE, TCE, and 1,1,1-TCA.

The diagram in the Anson report showing the cesspools was not drawn to scale, so the exact location of the cesspools could not be determined. GPR surveys conducted in this area did not reveal anomalous regions possibly associated with cesspool locations. Soil sample SGP-141 appears to be in close proximity to one of the cesspools. PCE was detected in this sample (0.0028 mg/kg); however, this level of contamination is too low to be indicative of a source of PCE contamination in the soil. Additional soil samples (Figure 6-28) collected in suspect areas



on this property during the Task 4 field activities did not locate a source on this property. Extremely high concentrations of PCE-related compounds were detected in groundwater samples taken in the upgradient section of this property (Figures 6-22, 6-23, and 6-24). Both GP-72 and GP-141 appear to be in close proximity to preexisting cesspools; 91,327 ppb of PCE-related compounds were detected in GP-72 (65-85 ft) and 26,100 ppb of PCE-related compound was detected in GP-141 (65-85 ft). Extremely high concentrations of PCE-related compounds were also found downgradient of this property, with the highest concentrations found at the deepest depth (+85 ft). The highest concentrations of PCE-related contaminants were found in GP-189 at 87,400 ppb (82,000 ppb PCE and 5400 ppb TCE). High concentrations of PCE-related contaminants were also found in GP-190 (65-85 ft) at 39,400 ppb (37,000 ppb PCE and 2400 ppb TCE). At this time these high levels of contamination cannot be attributed to this property based on supplemental data collected during the previous phase of the PSA, which showed high concentrations at an off-site upgradient point (GP-97) (Figure 6-23).

A single groundwater probe location (GP-242) was completed off-site south of Old Country Road in the EAB bank parking lot. PCE-related compounds were found in all three depth intervals. At the shallow depth (water table to 65 ft) total PCE-related contaminants were found in GP-242 at 85.7 ppb (64 ppb PCE, 13 ppb TCE, and 8.7 ppb cis-1,2-DCE). At the intermediate depth (65-85 ft.) total PCE-related contaminants were found in GP-242 at 330 ppb (330 ppb PCE). The highest concentrations were found at the greatest depth (+85 ft); total PCE-related contaminants were found at 2400 ppb (2400 ppb PCE). The solubility limit of PCE in water is approximately 200 ppm (200,000 ppb); in general, when concentrations in groundwater approach 10% of the solubility limit the presence of DNAPL is suspected and should be investigated. With several of the samples approaching 50% of the solubility of PCE it is reasonable to assume DNAPL is present. Based on the size of the plume and the noted concentrations, it is likely that a significant mass of DNAPL is present. Although the lateral extent is fairly well defined its vertical extent is unknown, making reasonable estimates as to the approximate mass impossible without further data.

Based on the lack of an on-site source and similar upgradient and downgradient contaminant concentrations, it is recommended that this property not appear on the registry. Because a documented on-site use of target compounds was found, this property may be suspect if the upgradient source is not located by further investigation.

The leading edge of this plume is apparently reaching the Bowling Green well field. LMS recommends conducted an IRM on this plume to remove or contain the suspected DNAPL and most heavily contaminated groundwater prior to the summer season when this well field is

heavily used. Unless additional efforts are made to delineate and control this plume it is likely that high concentrations will eventually be seen in the well.

#### **6.4 SWALM AVENUE SITE**

The figures depicting the results for the Swalm Avenue Site area are broken into two sets. The first set (Figures 6-29 through 6-35) covers 118-138 Swalm Avenue. The second set (Figures 6-36 through 6-42) covers the Data Review sites found downgradient of 118-138 Swalm. These addresses include two data review sites, 111-117 Swalm Avenue and 110 Hopper Street.

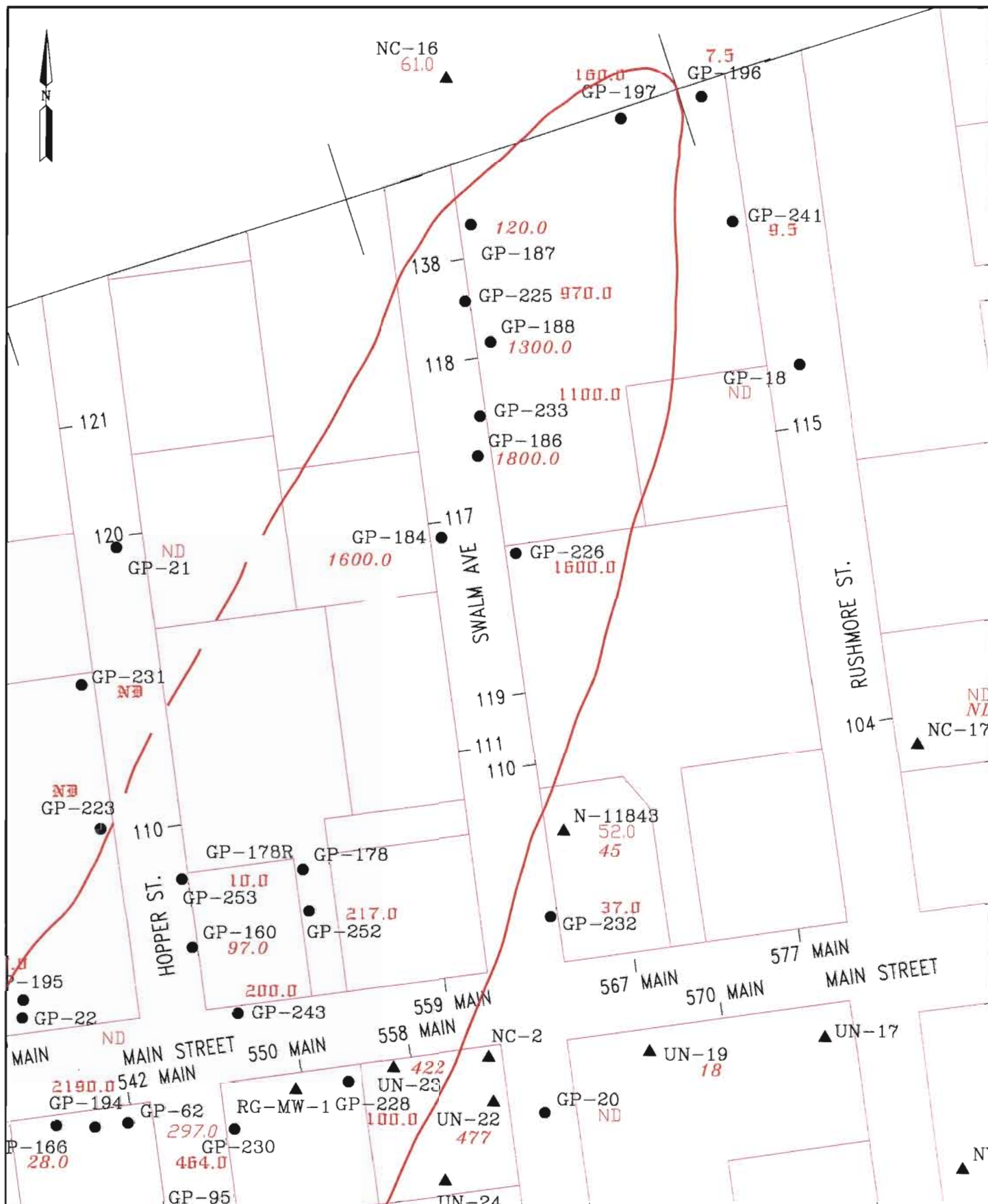
##### **6.4.1 Groundwater Plume**

At the Swalm Avenue site the PCE-related contaminant-impacted area is vertically and laterally extensive and is the source of the PCE-related plume in the Hopper/Main Street site (Figures 6-1, 6-2, and 6-3). PCE is the primary PCE-related compound detected; moderate levels of TCE were also detected. The plume seems to originate from the northern section of the site near the Long Island Railroad and extends downgradient just south of 75 Garden Street. The plume appears to be sinking as it moves downgradient. High concentrations are found at the shallow depth near the source (Figure 6-29), while downgradient the highest concentrations are at the greatest depth (Figure 6-3).

The TCA-related contaminant-impacted area in the Swalm Avenue site does not exceed 100 ppb at any of the depths sampled.

##### **6.4.2 Soil Contamination**

During the 1996 investigation, four soil sampling points were installed at the Swalm Avenue site (Figure 6-35). PCE was the primary PCE-related contaminant of concern and was detected in three of four samples; TCE was detected in two of four samples (Figure 6-35). BTEX compounds, more specifically toluene, were detected in two of four samples. The presence of PCE further supports the claim that this site is a source area for the PCE-related contaminant plume.



NOTE: All data in ug/l.  
Scale in Feet



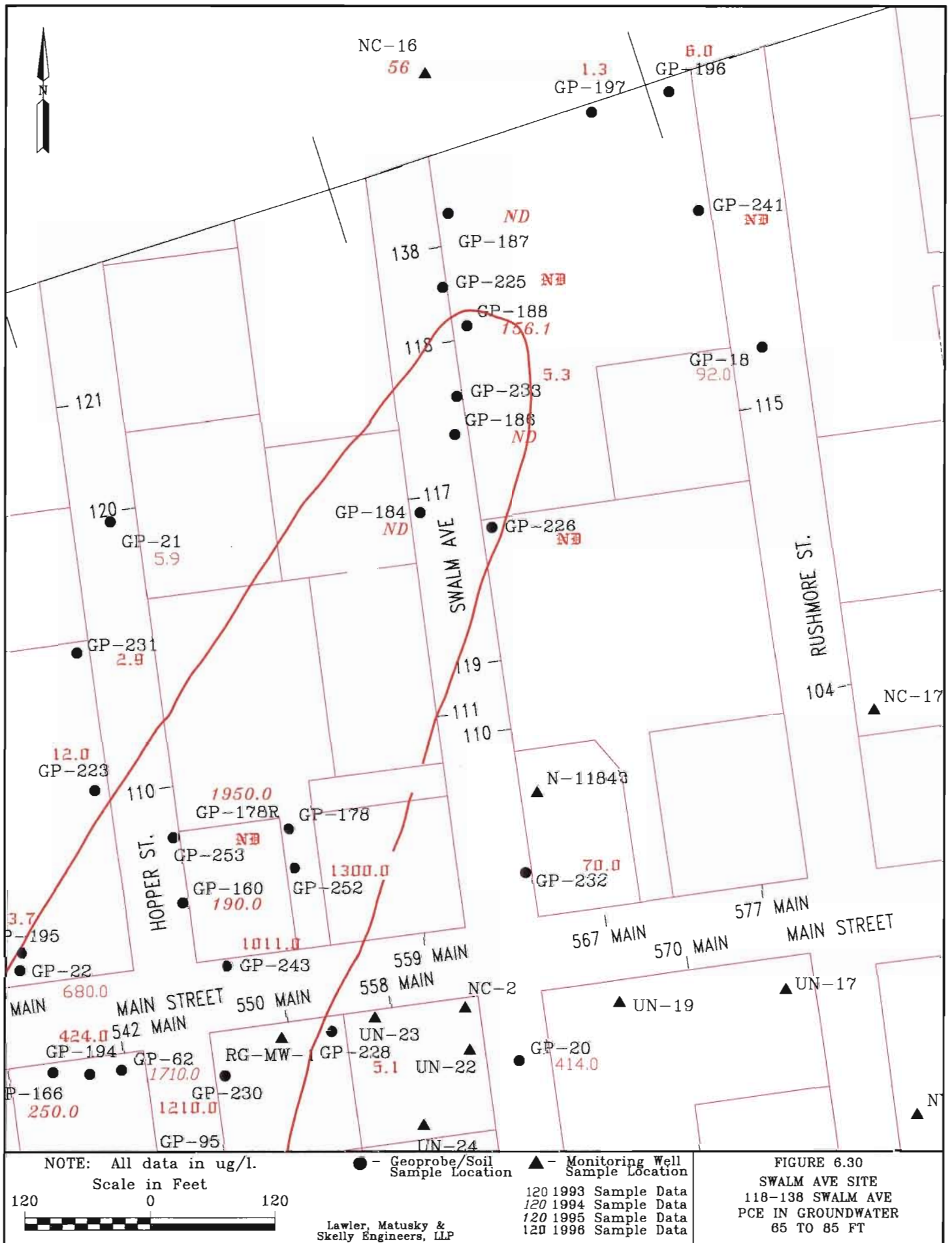
Lawler, Matusky &  
Skelly Engineers, LLP

▲ - Monitoring Well  
Sample Location  
120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

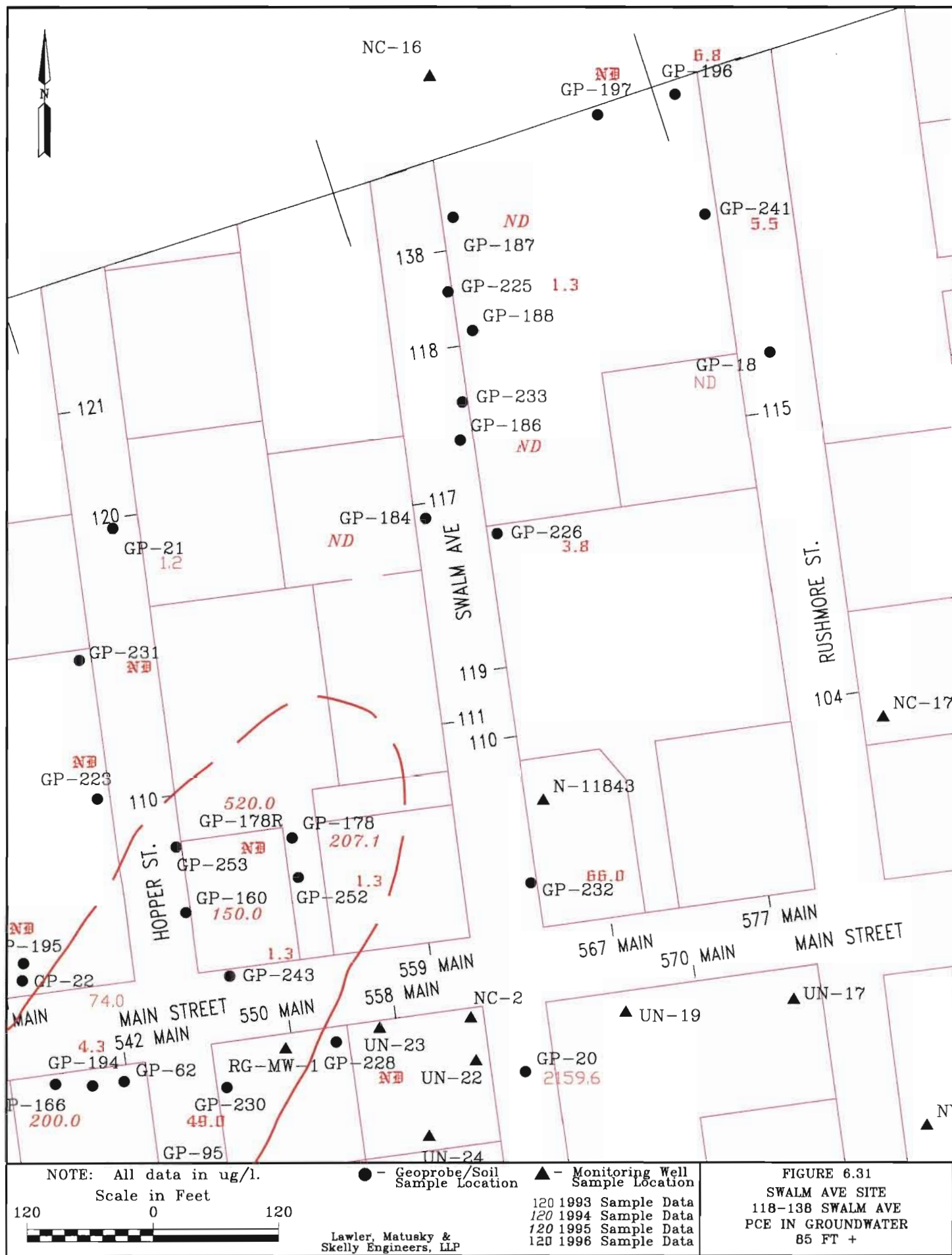
FIGURE 6.29  
SWALM AVE SITE  
118-138 SWALM AVE  
PCE IN GROUNDWATER  
WATER TABLE TO 65 FT



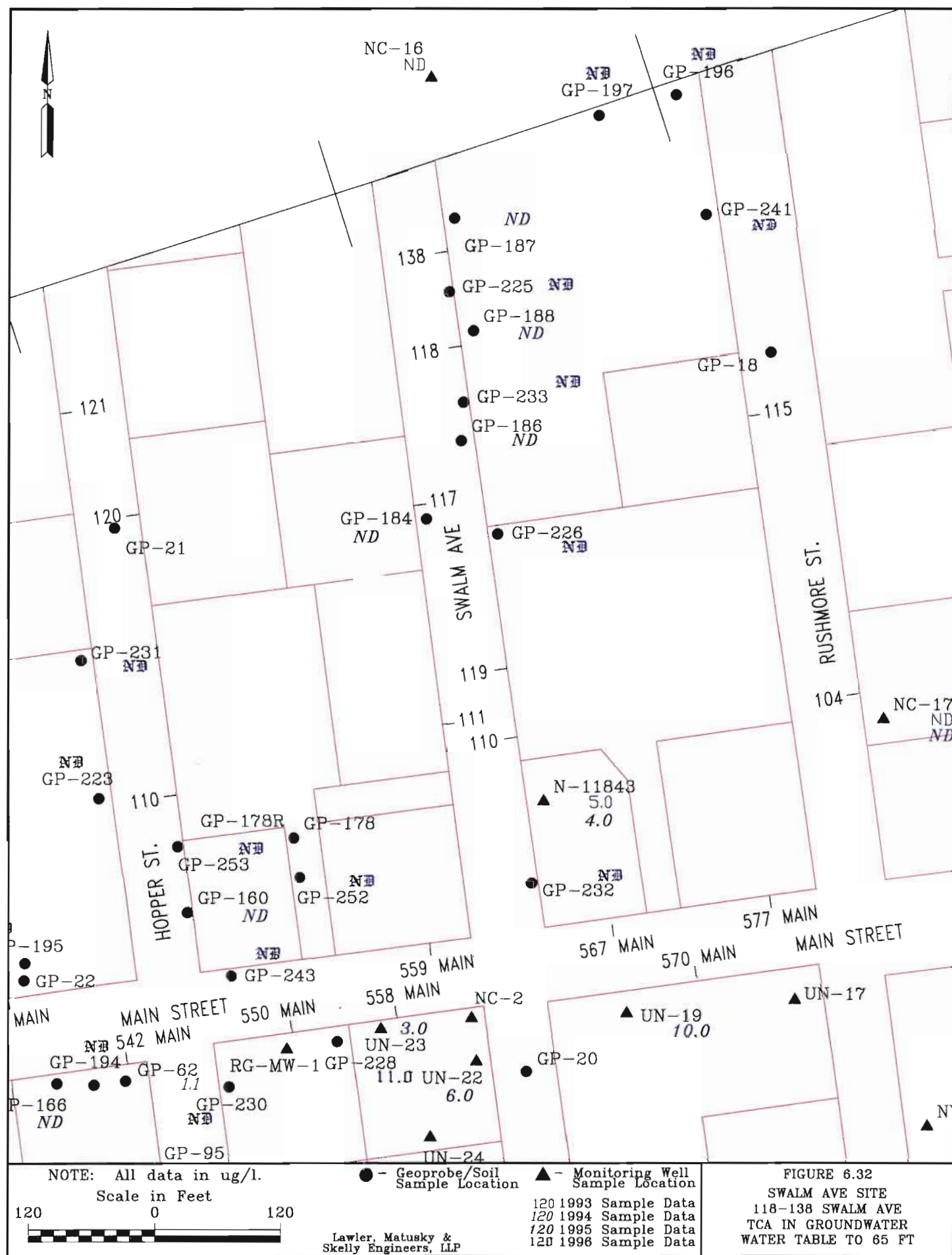












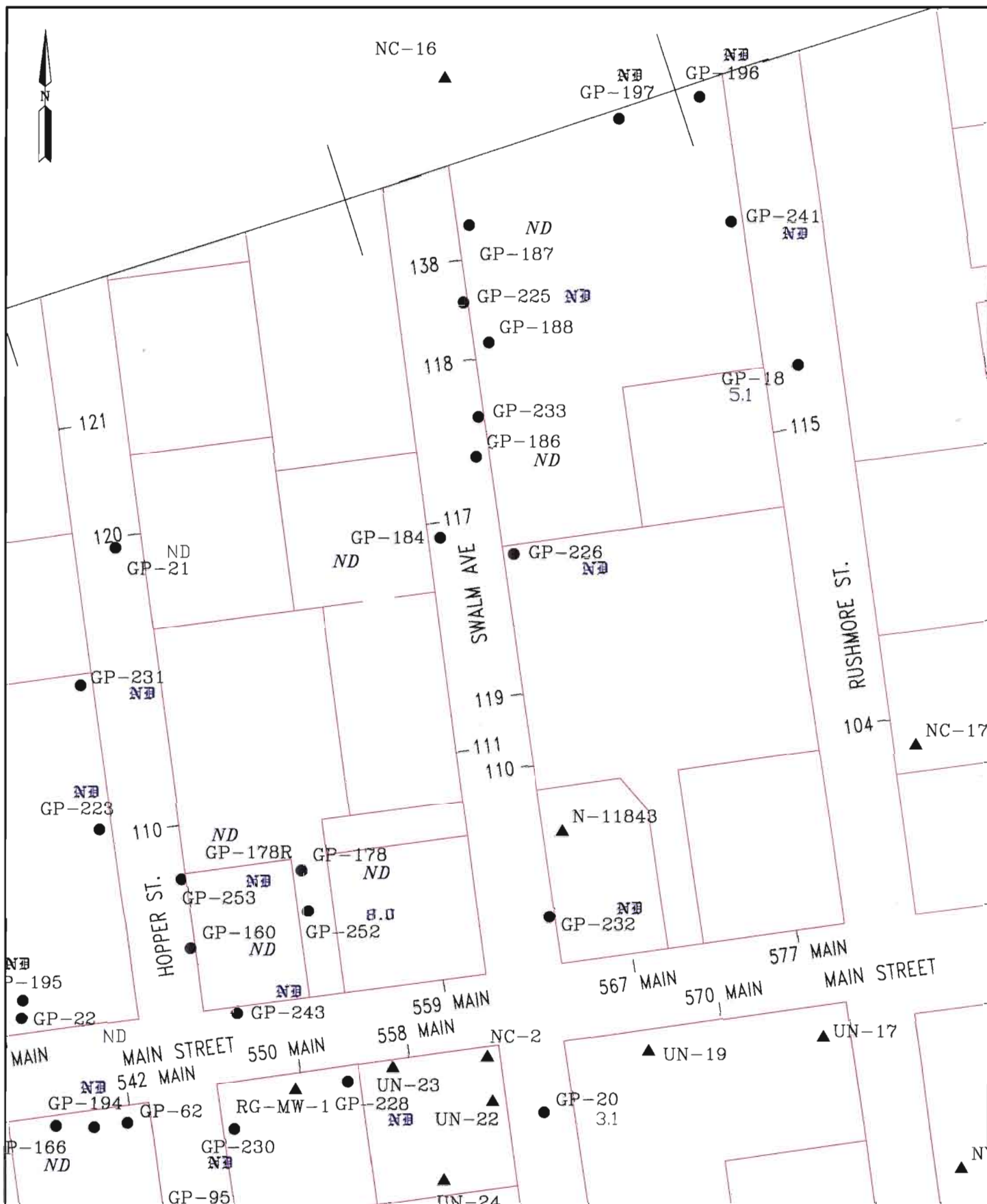












NOTE: All data in ug/l.

Scale in Feet

120 0 120



Lawler, Matusky &  
Skelly Engineers, LLP

▲ - Monitoring Well  
Sample Location

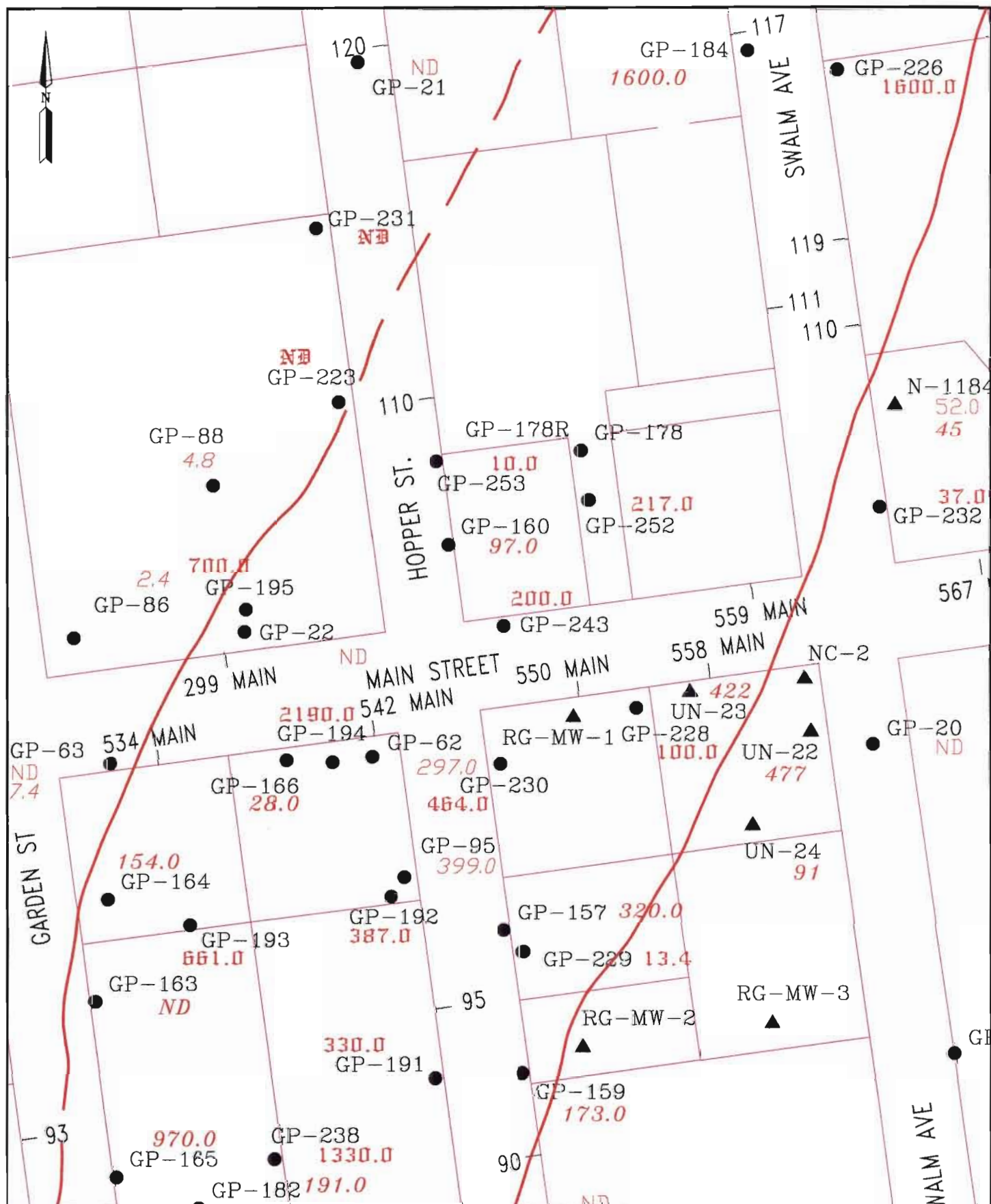
120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.34  
SWALM AVE SITE  
118-138 SWALM AVE  
TCA IN GROUNDWATER  
85 FT +









NOTE: All data in ug/l.

Scale in Feet

100 0 100

● - Geoprobe/Soil Sample Location

▲ - Monitoring Well Sample Location

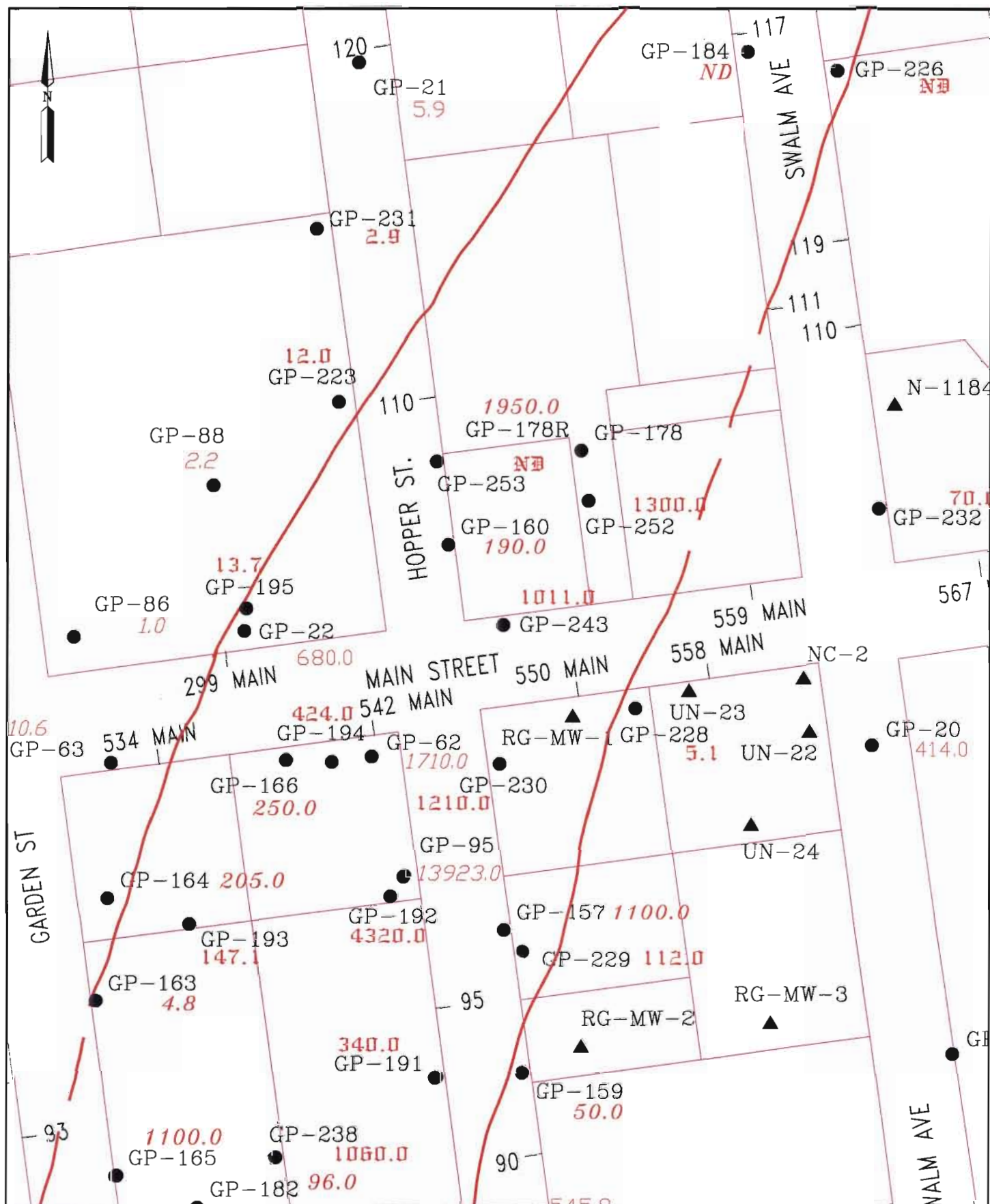
Lawler, Matusky & Skelly Engineers, LLP

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.36  
NCIA DATA REVIEW SITES  
110 HOPPER ST AND  
111-117 SWALM AVE  
PCE IN GROUNDWATER  
WATER TABLE TO 65 FT







NOTE: All data in ug/l.

Scale in Feet



Lawler, Matusky &  
Skelly Engineers, LLP

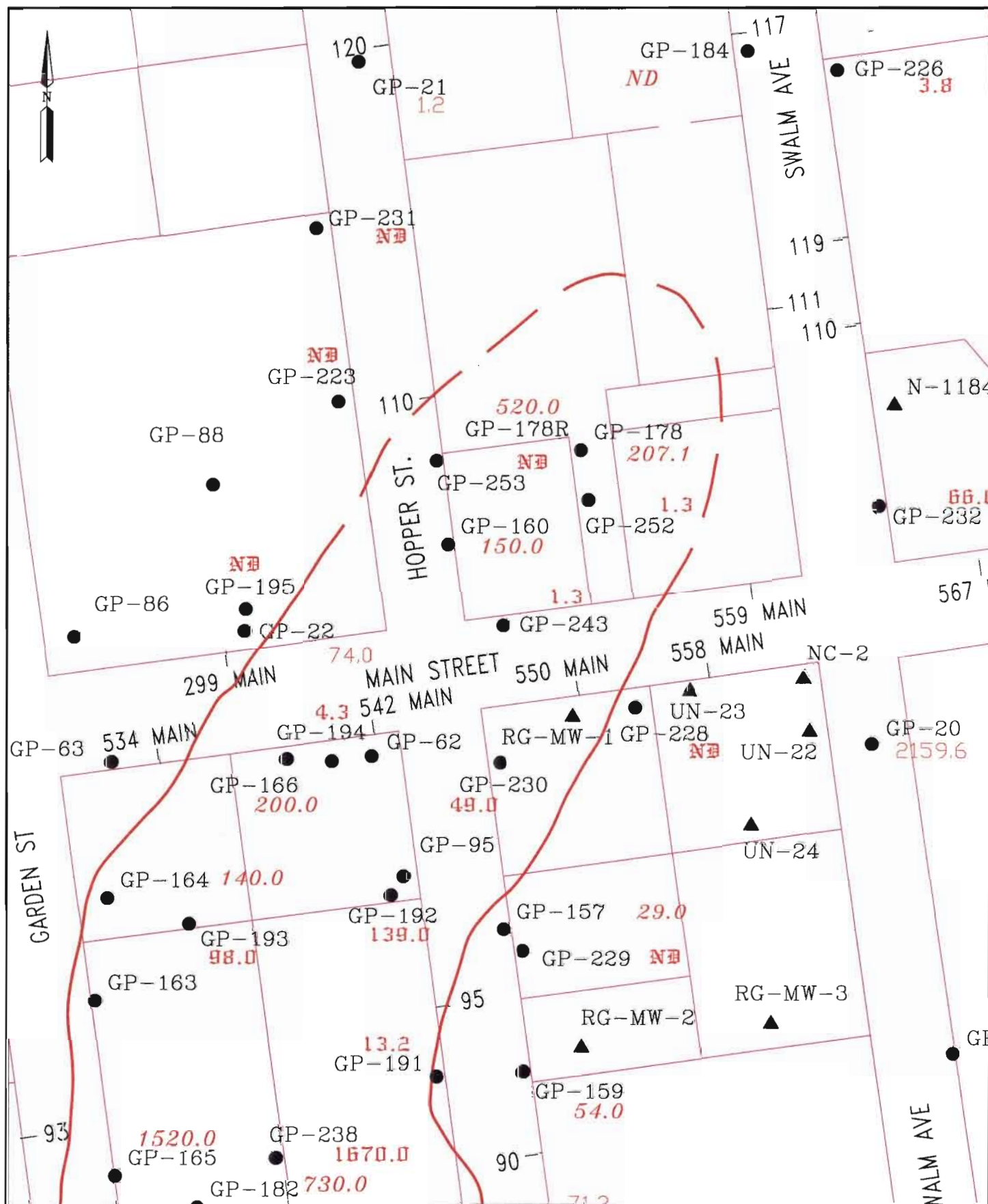
● - Geoprobe/Soil Sample Location ▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.37  
NCIA DATA REVIEW SITES  
110 HOPPER ST AND  
111-117 SWALM AVE  
PCE IN GROUNDWATER  
65 TO 85 FT







NOTE: All data in ug/l.

Scale in Feet



● - Geoprobe/Soil Sample Location

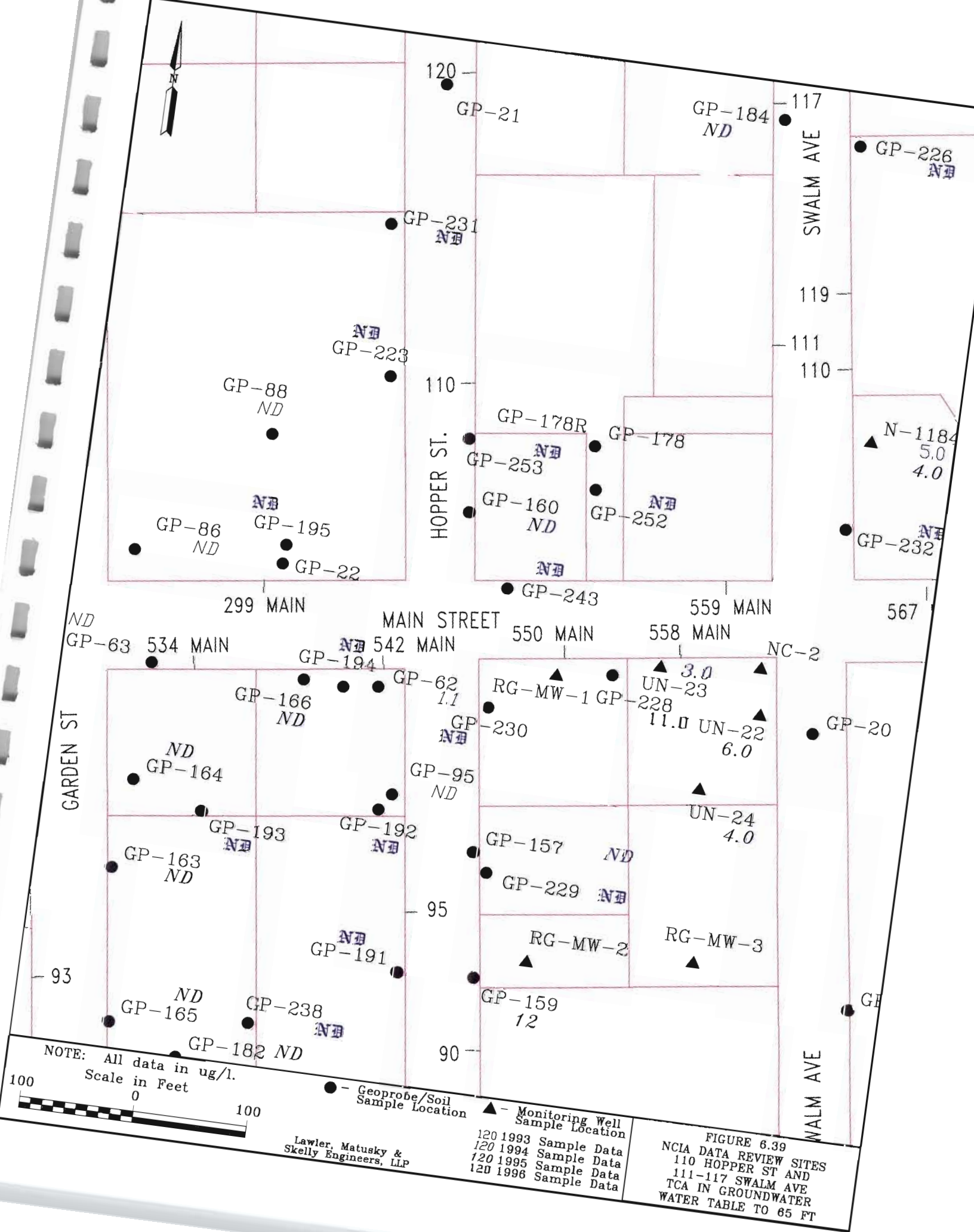
▲ - Monitoring Well Sample Location

Lawler, Matusky & Skelly Engineers, LLP

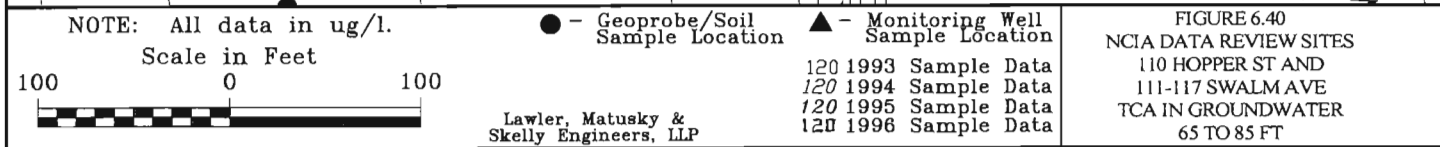
120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.38  
NCIA DATA REVIEW SITES  
110 HOPPER ST AND  
111-117 SWALM AVE  
PCE IN GROUNDWATER  
85 FT +



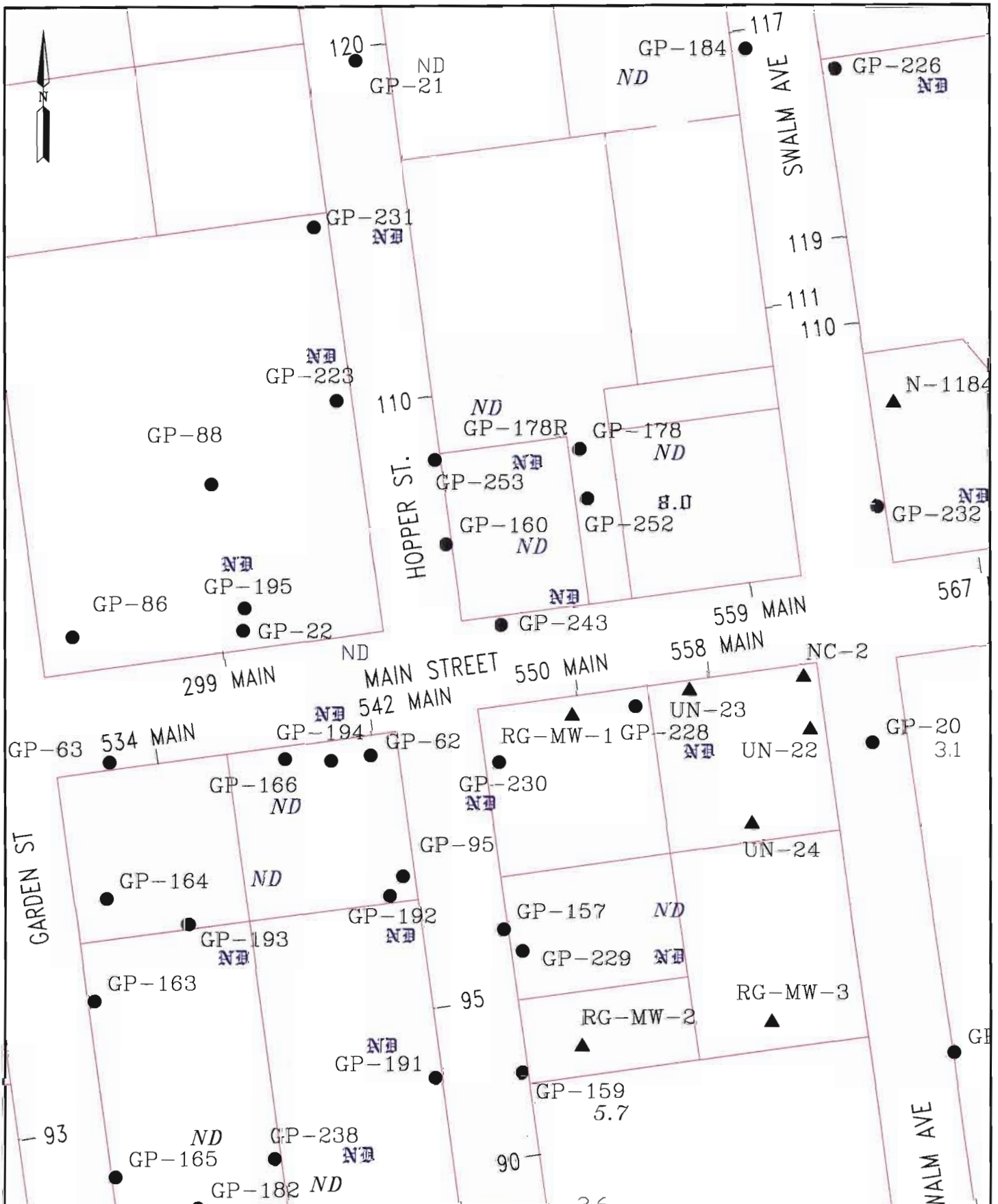












NOTE: All data in ug/l.

Scale in Feet

100 0 100



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

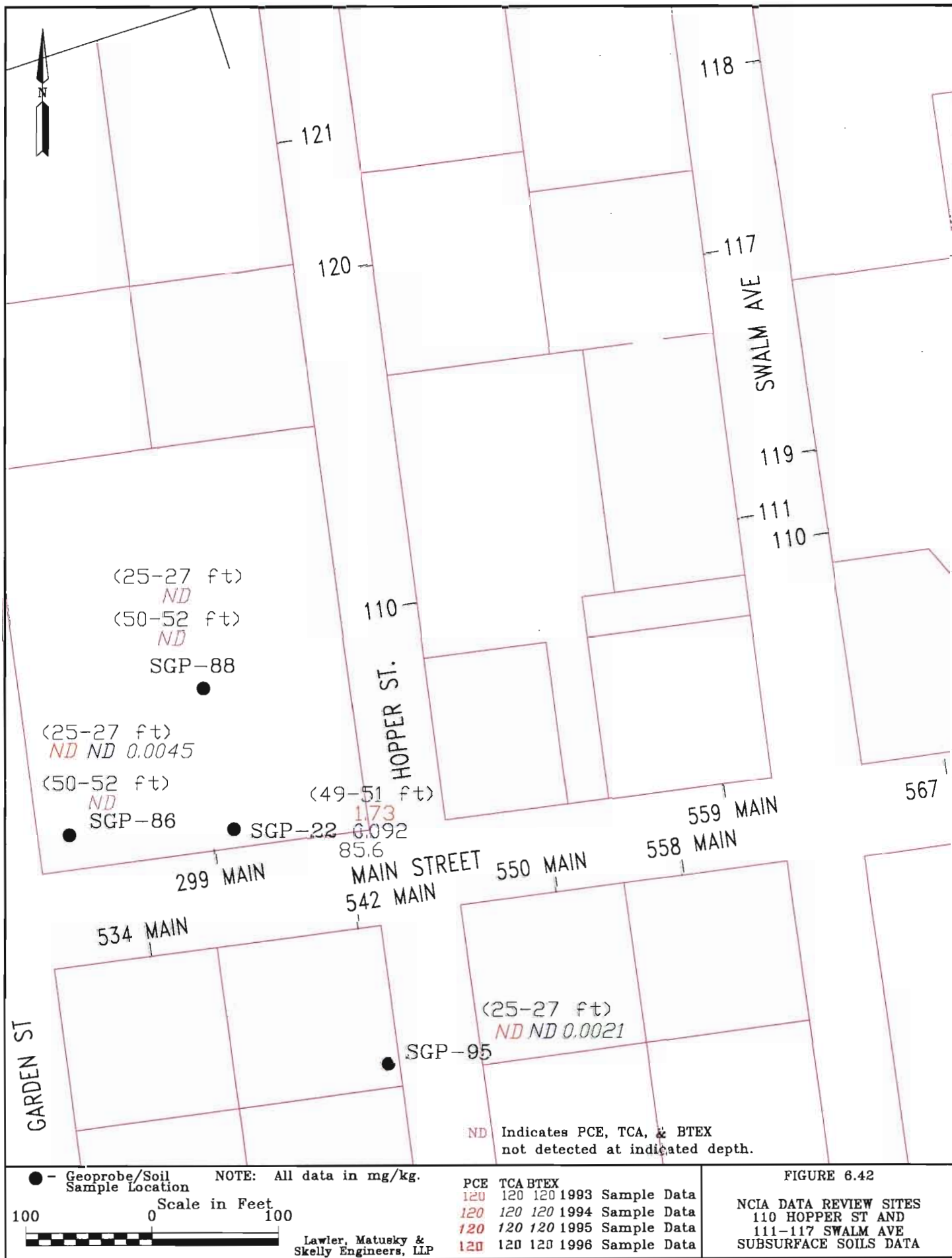
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.41  
NCIA DATA REVIEW SITES  
110 HOPPER ST AND  
111-117 SWALM AVE  
TCA IN GROUNDWATER  
85 FT +









### 6.4.3 Facility Discussion

#### *118-138 Swalm Avenue (Block 164, Lots 19 to 29)*

118-138 Swalm Avenue is currently occupied by Liqui-Mark Corporation. They have manufactured various types of children's pens and markers at this address since June 1994. They lease the interior of the building from Barton, Eaton & Allen Corporation. The interior of the building includes office space, production areas, storage, and shipping and receiving areas. A facility inspection of the property indicated that the Liqui-Mark operation uses and stores large quantities of chemicals. However, these chemicals do not contain any PCE- or TCA-related compounds; most of the chemicals are nontoxic inks and dyes for the pens. During the facility inspection it was found that a narrow trough once went from the south end of the building to the north end of the building. The trough is now sealed and its use is not known; it appeared that it ended at the former connection to the old leachpools found to the north of the building. The file review indicates the property was developed in 1961 and was formerly occupied by a mechanical engraving company, a plastic extrusion company, a vitamin manufacturer, and an ink ribbon manufacturer. The chemical usage records for these operations do not specifically indicate that PCE- or TCA-related compounds were used and stored. Based on what types of operations these occupants would have conducted, it is likely that they used products with PCE- and/or TCA-related compounds.

In the groundwater PCE-related contaminants were found at concentrations in excess of 100 ppb at the downgradient position of this property (Figure 6-29). The highest concentrations were found at the water table to 65 ft, and only trace levels of PCE-related contaminants were found in the probe points collected at the greater depths. PCE-related contaminants at the shallow depth were 1600 ppb at GP-226 (1600 ppb PCE), 1100 ppb at GP-233 (1100 PCE), and 1000 ppb at GP-22 (1000 ppb PCE). The most upgradient point in this area (GP-196) does not indicate the presence of PCE- or TCA-related contaminants above 10 ppb. A total of four soil probe locations were completed at 118-138 Swalm Avenue; the locations were selected based on a plan showing the old leachpool locations. Target compounds were detected in three of the four points completed. Concentrations range from ND in SGP-200 (11-12 ft and 14-15 ft) to 0.708 mg/kg PCE at SGP-198 (18-19 ft) (Figure 6-35). TCE, toluene, and methylene chloride were also detected at low concentrations in several of the soil probe samples.

Based on past usage at the site (which suggests the use of target compounds), the identification of an on-site source for the contamination, and a demonstrated impact to the groundwater this property should appear on the registry as a Class 2 site.

## **6.5 SYLVESTER STREET SITE**

The figures depicting the results for the Sylvester Street area are broken down into three sets. The first set (Figures 6-43 through 6-49) covers 69 Sylvester Street. The second set (Figures 6-50 through 6-56) covers 33 Sylvester and 49 Sylvester Street. The third set (Figures 6-57 through 6-63) covers 29 New York Avenue and 36 Sylvester Street.

### **6.5.1 Groundwater Plume**

The PCE-related contaminant-impacted area of the Sylvester Street site at the water table is vertically and laterally extensive (Figures 6-43 to 6-44, 6-50 to 6-51, 6-57 to 6-59). There appear to be two PCE-related contaminant plumes present in the Sylvester Street site area. The western plume appears to extend from just north of 84 Kinkel Street downgradient to just north of 11 Sylvester Street. The eastern plume seems to originate from New York Avenue, downgradient to 18 Sylvester Street. The relative size of the PCE-related contaminant-impacted area remains essentially the same from water table to 85 ft, where the size of the impacted area decreases significantly. PCE is the primary PCE-related contaminant, although trace to moderate levels of TCE and DCE were detected at several locations.

The TCA-related contaminant-impacted area of the Sylvester Street site at the water table is vertically and laterally extensive (Figures 6-46 to 6-48, 6-53 to 6-55, 6-60 to 6-62). As with the PCE-related contaminant plume, there appear to be two TCA-related contaminant plumes in the site vicinity. The western plume appears to originate near the Class 2 hazardous waste site at 62 Kinkel Street, the former Laka Industries, and extends downgradient to just south of 33 Sylvester Street. The eastern plume extends from the vicinity of 97 Brooklyn Avenue to just north of 11 Sylvester Street. The relative size of the impacted area appears to decrease with depth. TCA is the primary TCA-related contaminant of concern; low levels of DCA were also detected. Likely source areas for the western TCA-related contaminant plume appear to be 49 and 69 Sylvester Street. The eastern plume has its origins outside the Sylvester Street site area and likely originates at the Class 2 facilities located on New York Avenue, Brooklyn Avenue, and Main Street.

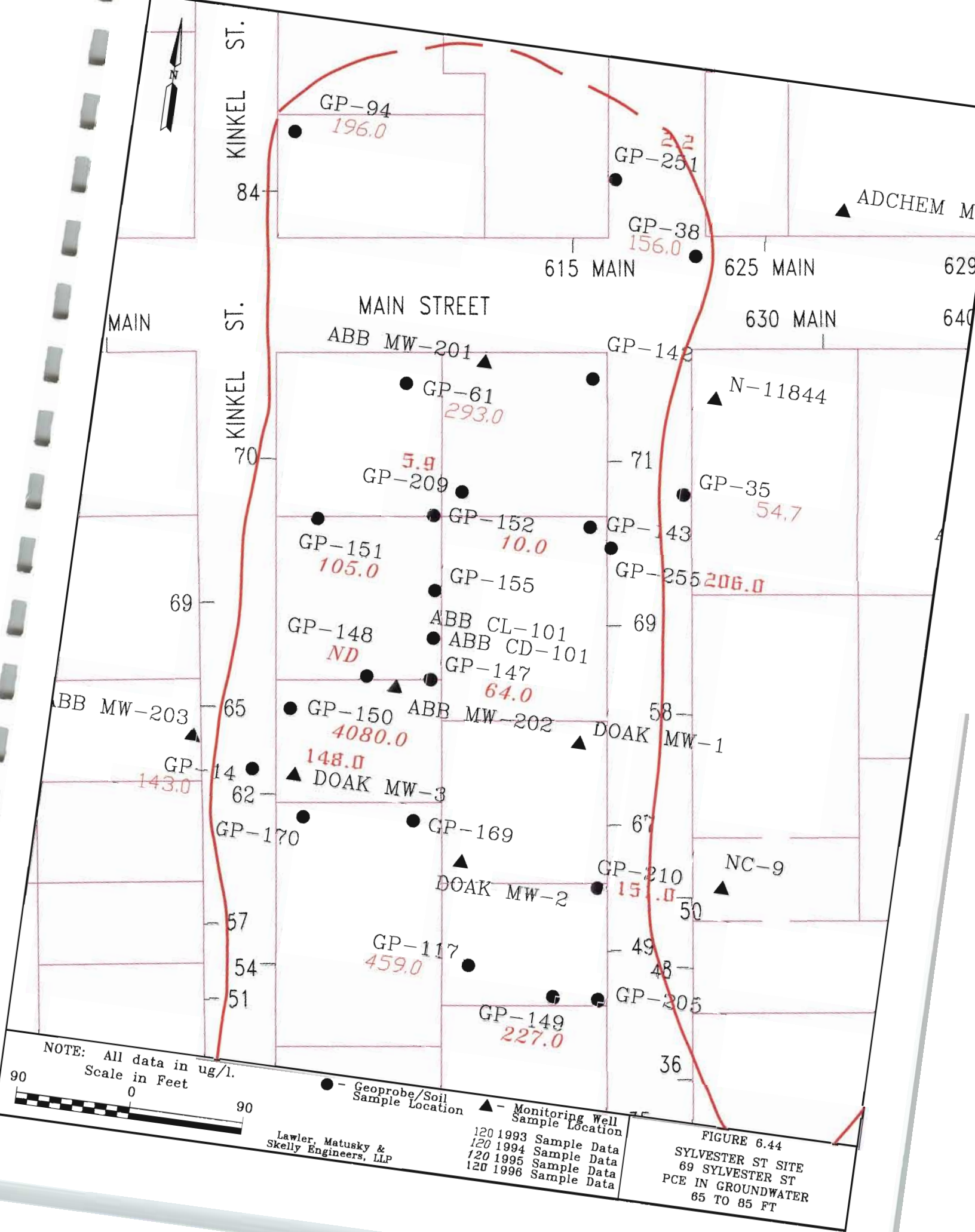
### **6.5.2 Soil Contamination**

Soil sampling was performed at six sampling points during the 1996 investigation at the Sylvester Street site (Figures 6-49, 6-56 and 6-63). PCE-related compounds were not detected in any of the soil samples. TCA-related compounds were detected in two of six samples collected. BTEX compounds were detected in one of six samples. Previous soil sampling in



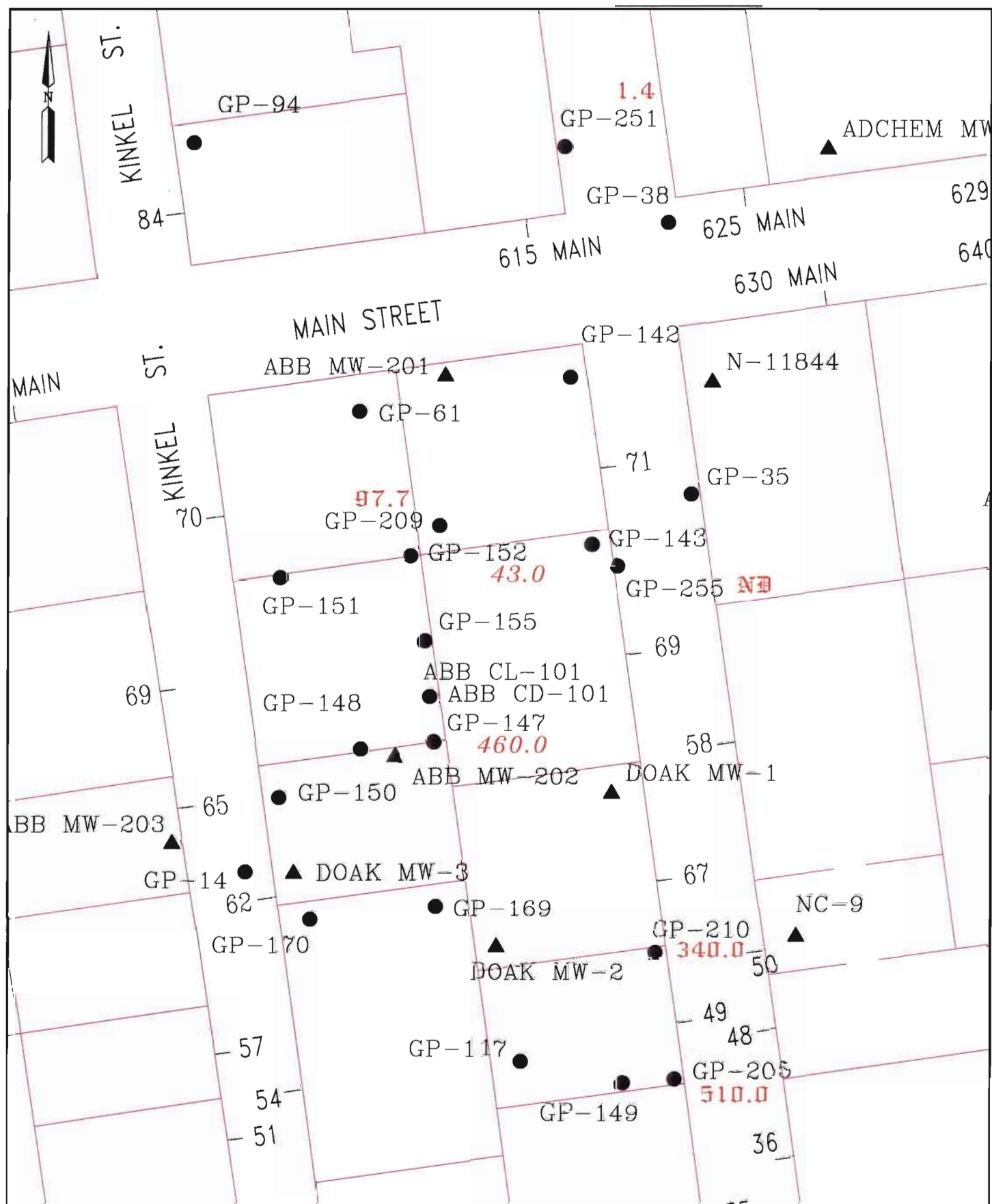












NOTE: All data in ug/l.  
Scale in Feet



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

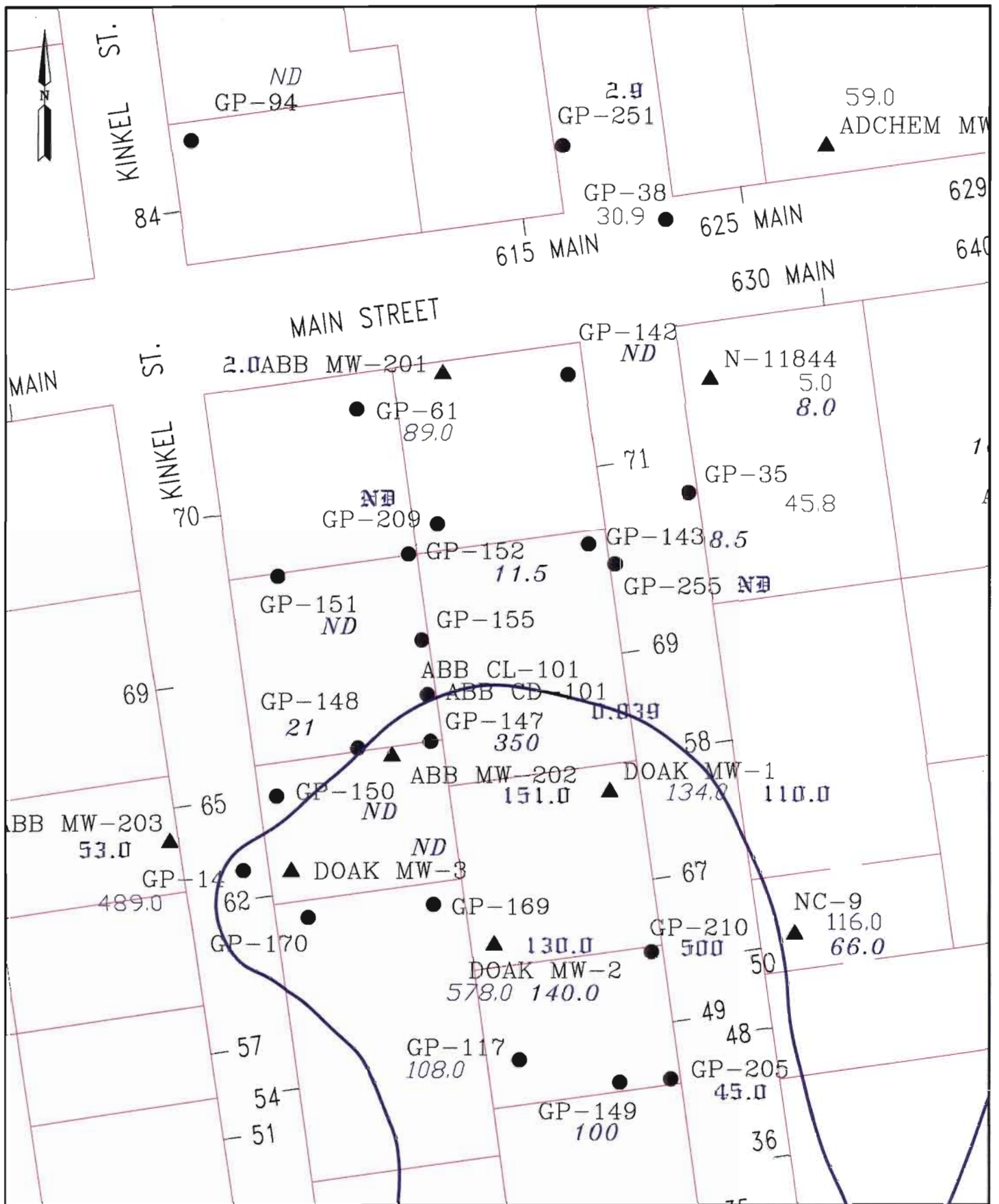
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

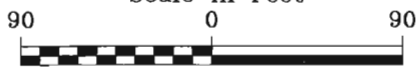
FIGURE 6.45

SYLVESTER ST SITE  
69 SYLVESTER ST  
PCE IN GROUNDWATER  
85 FT +





NOTE: All data in ug/l.  
Scale in Feet



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Skelly Engineers, LLP

● - Geoprobe/Soil Sample Location  
▲ - Monitoring Well Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.46

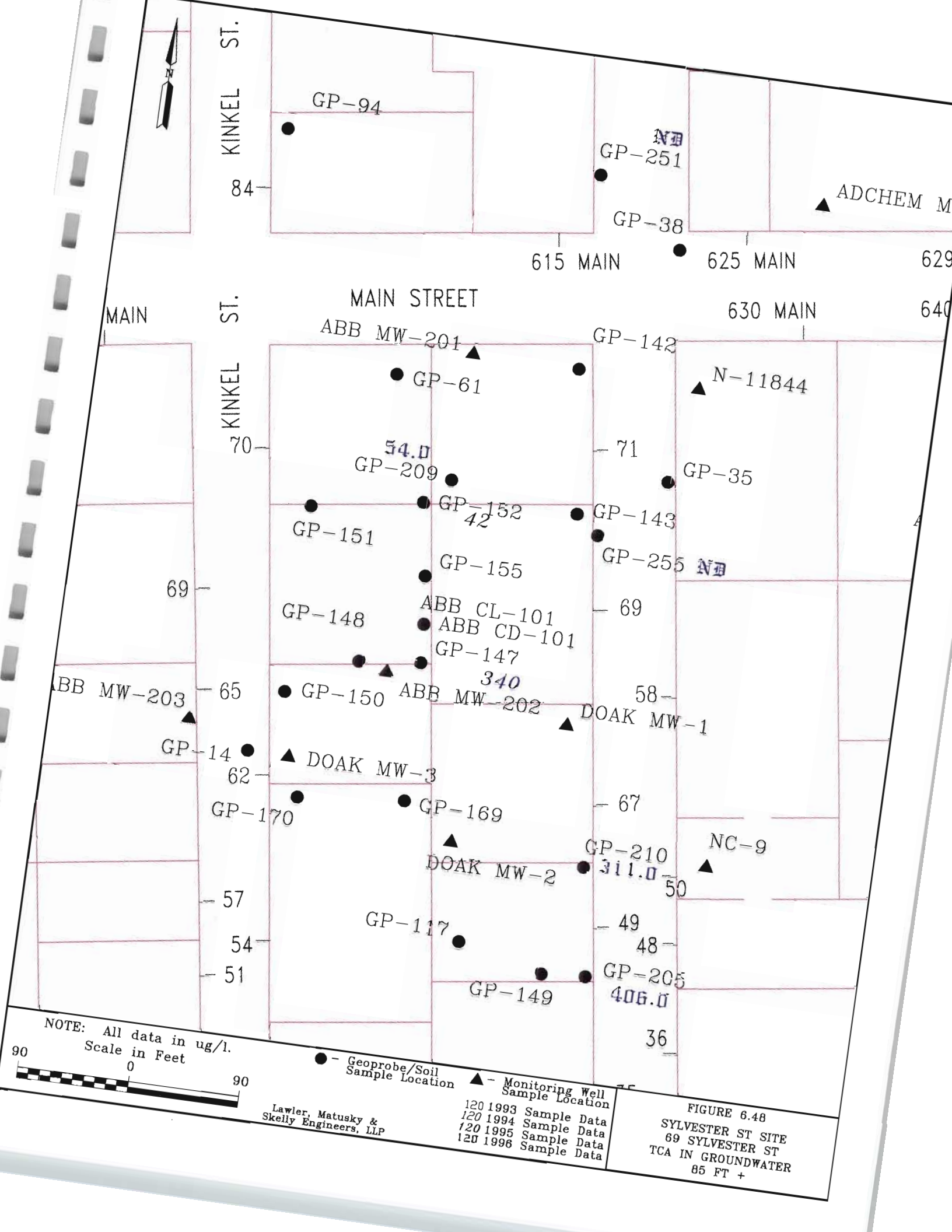
SYLVESTER ST SITE  
69 SYLVESTER ST  
TCA IN GROUNDWATER  
WATER TABLE TO 65 FT



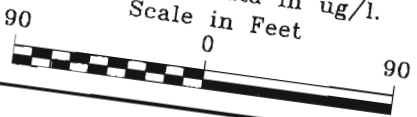








NOTE: All data in ug/l.  
Scale in Feet



Lawler, Matusky &  
Skelly Engineers, LLP

- - Geoprobe/Soil Sample Location
- ▲ - Monitoring Well Sample Location
- 120 1993 Sample Data
- 120 1994 Sample Data
- 120 1995 Sample Data
- 120 1996 Sample Data

FIGURE 6.48  
SYLVESTER ST SITE  
69 SYLVESTER ST  
TCA IN GROUNDWATER  
85 FT +





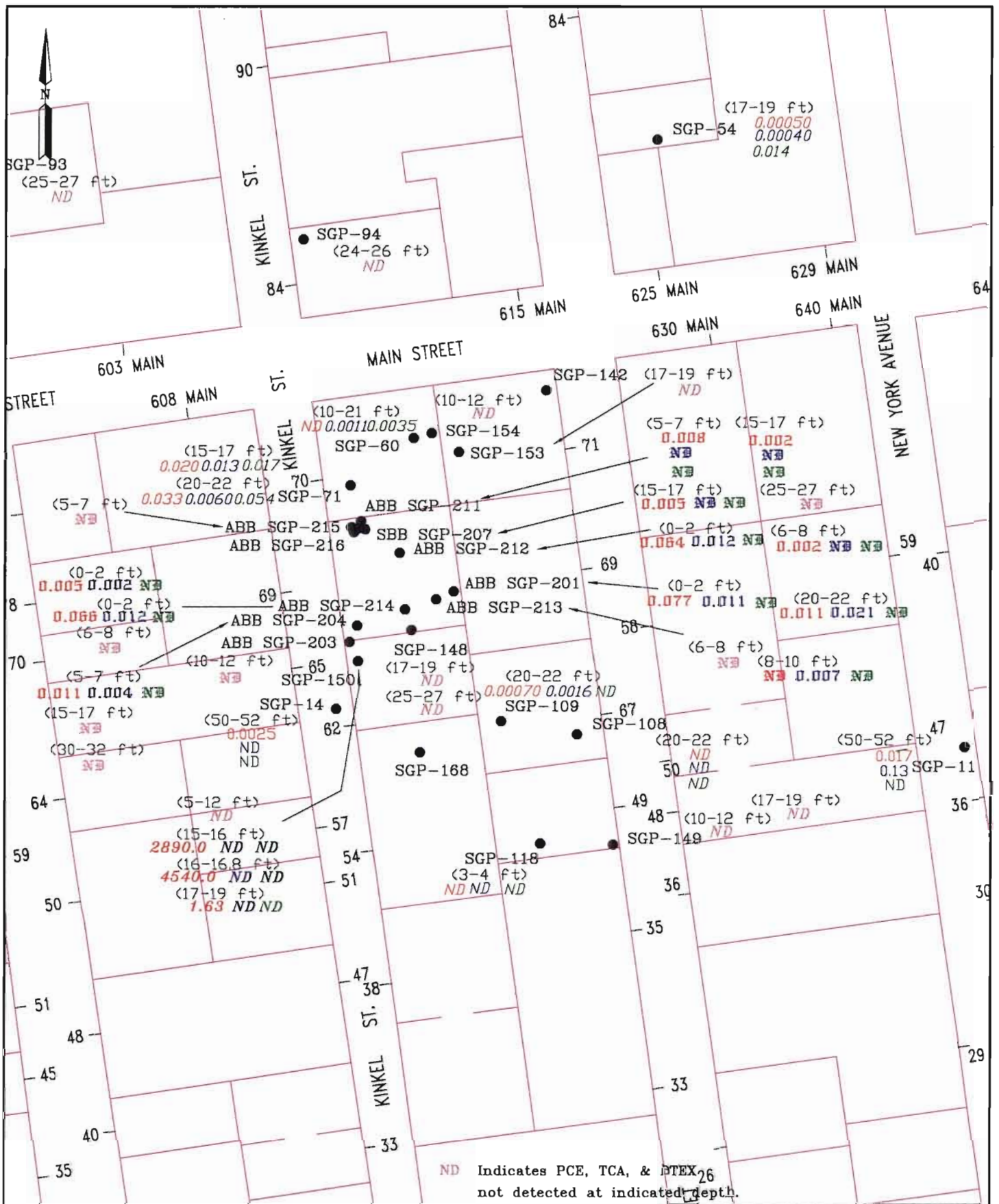


FIGURE 6.49  
SYLVESTER ST SITE  
69 SYLVESTER ST  
SUBSURFACE SOILS DATA

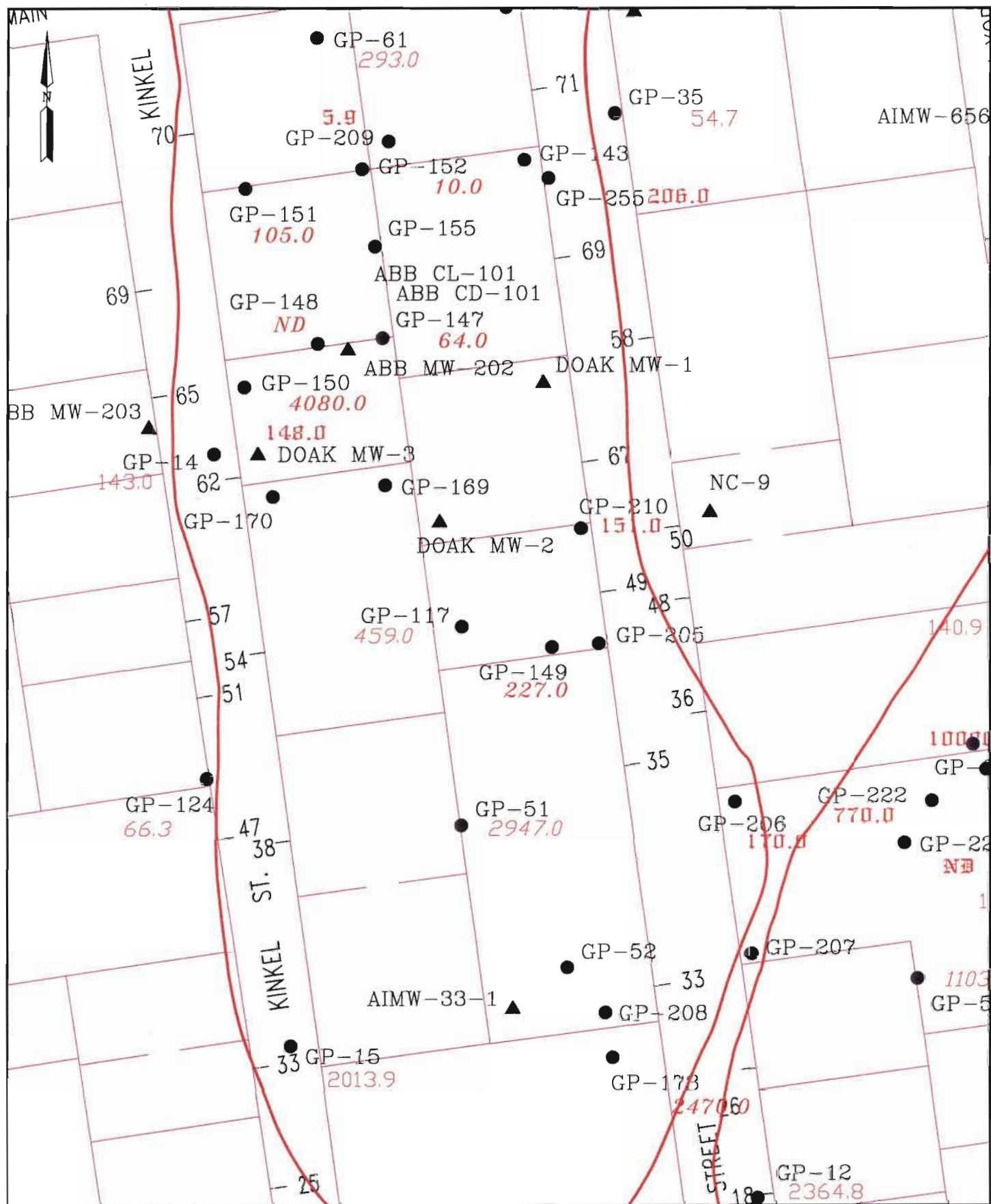
Lawler, Matusky &  
Skelly Engineers, LLP











NOTE: All Data in ug/l.

Scale in Feet

100 0 100



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.51

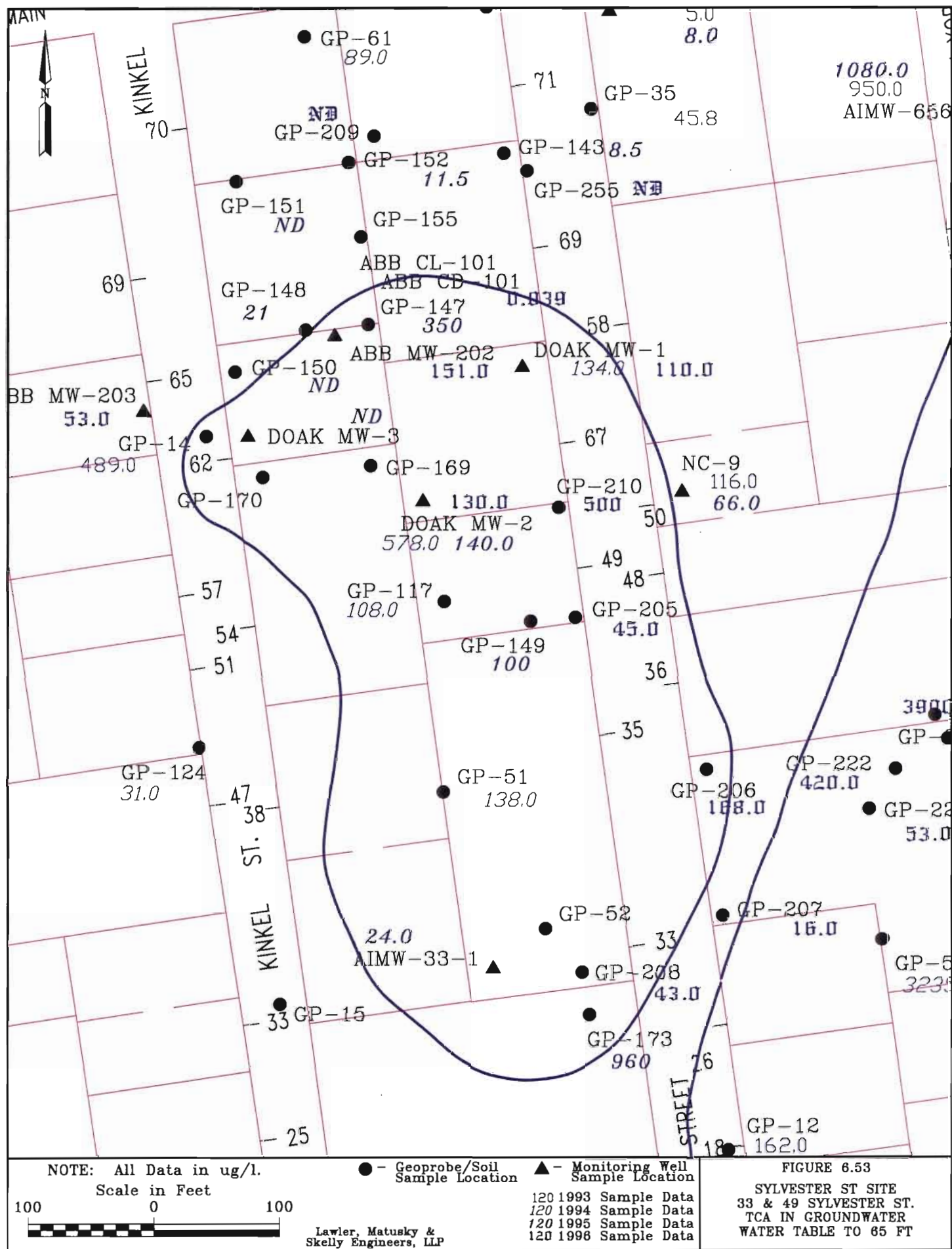
SYLVESTER ST SITE  
33 & 49 SYLVESTER ST.  
PCE IN GROUNDWATER  
65 TO 85 FT



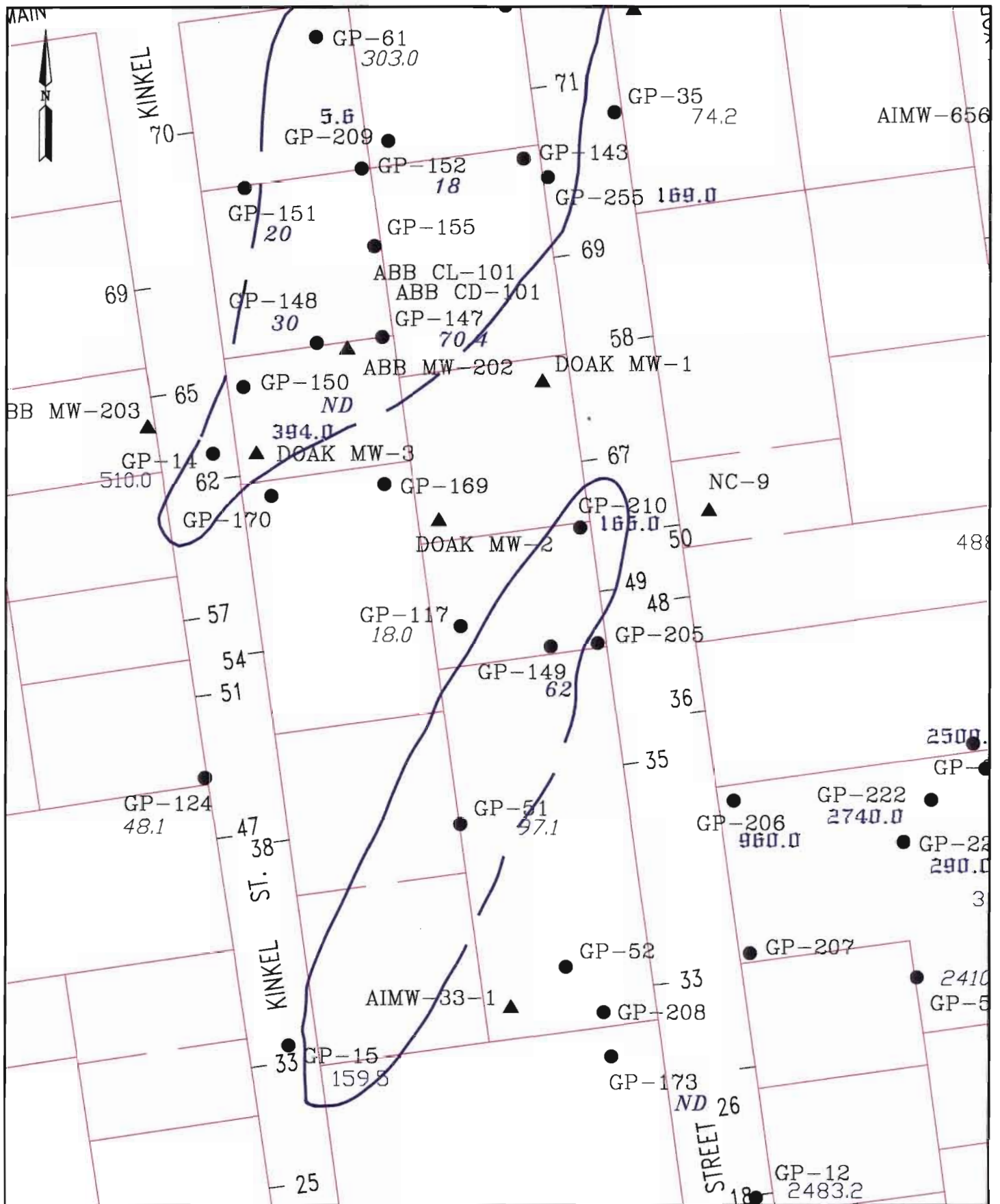












NOTE: All Data in ug/l.  
Scale in Feet

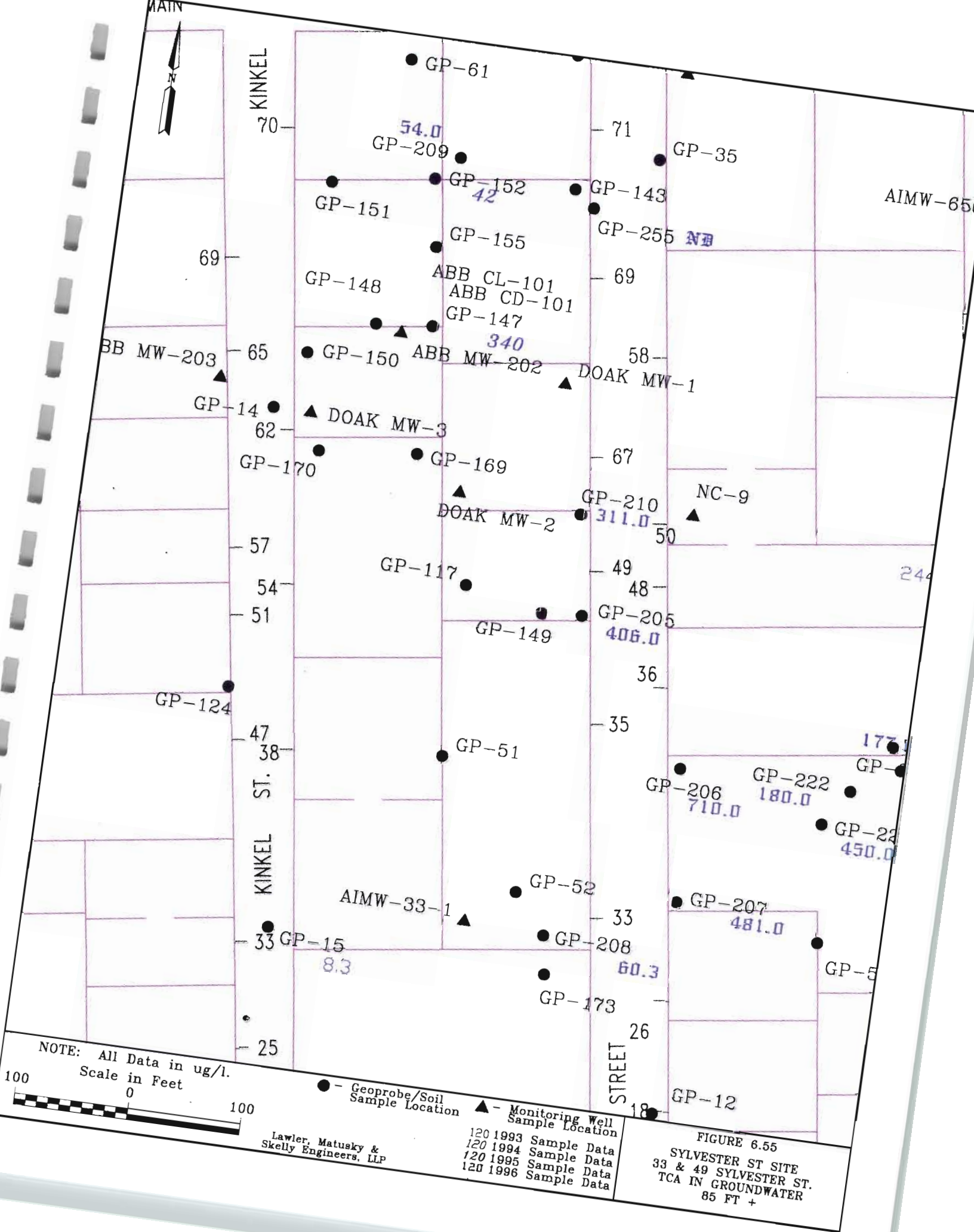


● - Geoprobe/Soil Sample Location  
▲ - Monitoring Well Sample Location  
120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data  
Lawler, Matusky & Skelly Engineers, LLP

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

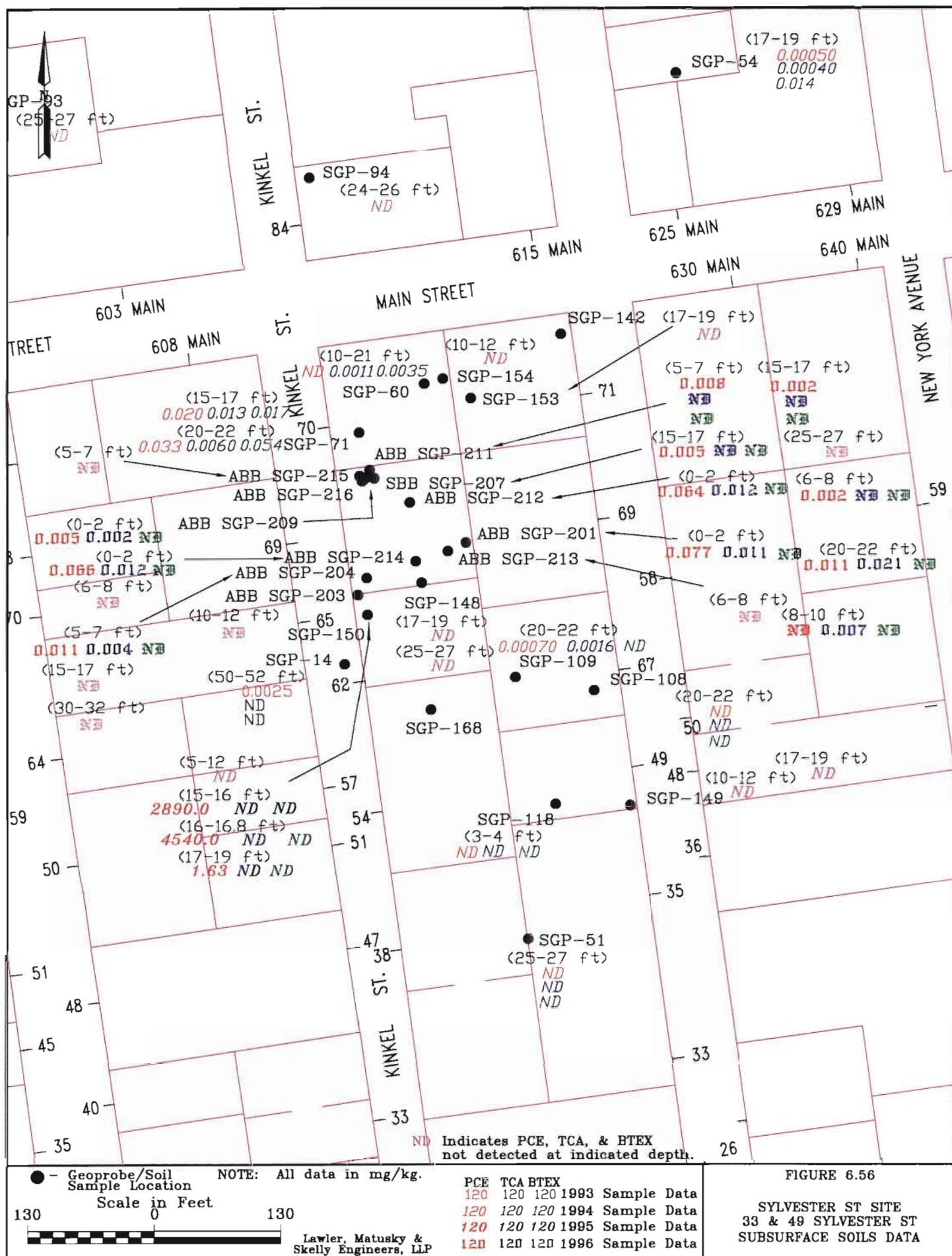
FIGURE 6.54  
SYLVESTER ST SITE  
33 & 49 SYLVESTER ST.  
TCA IN GROUNDWATER  
65 TO 85 FT





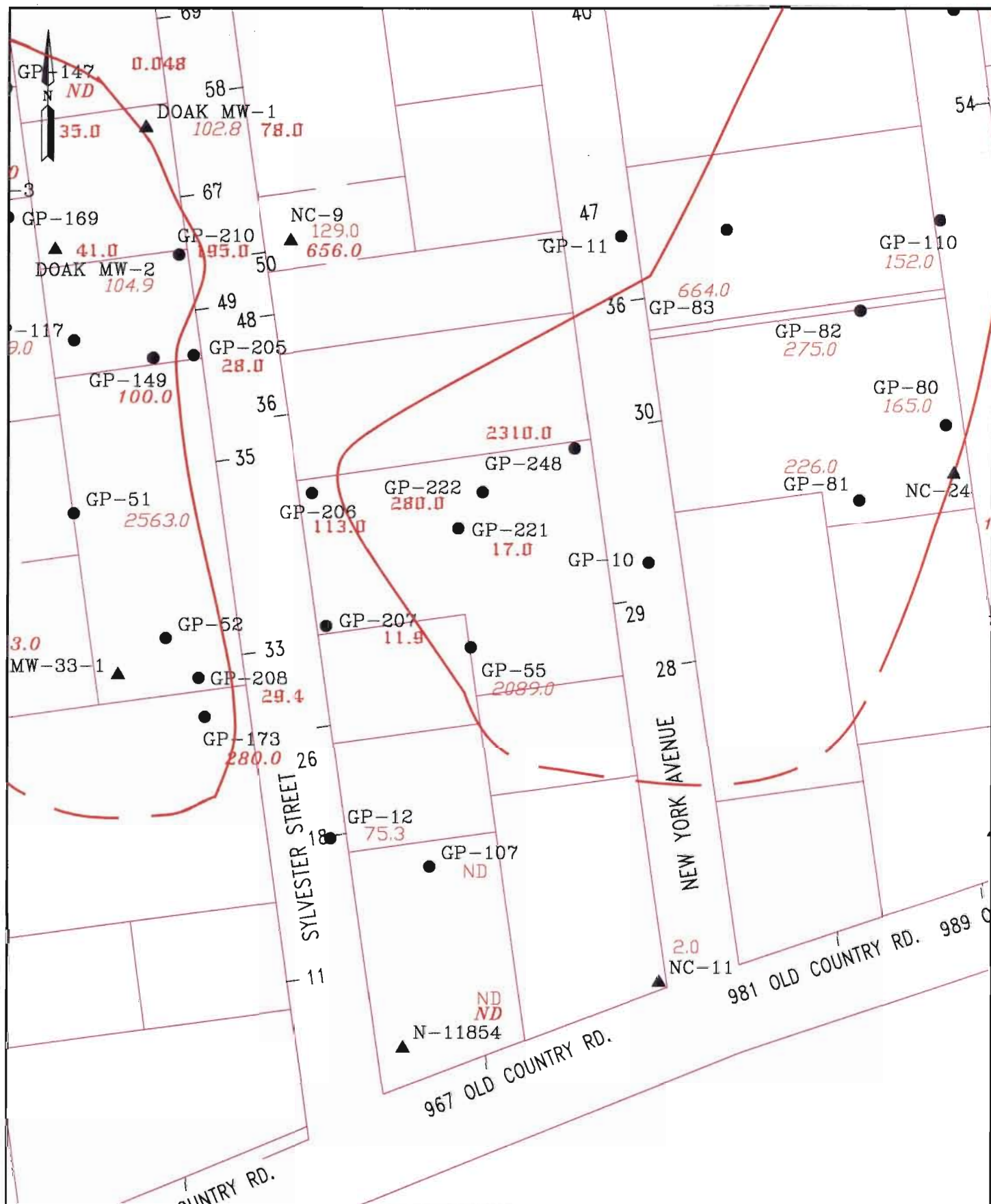












NOTE: All Data in ug/l  
Scale in Feet



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

▲ - Monitoring Well  
Sample Location

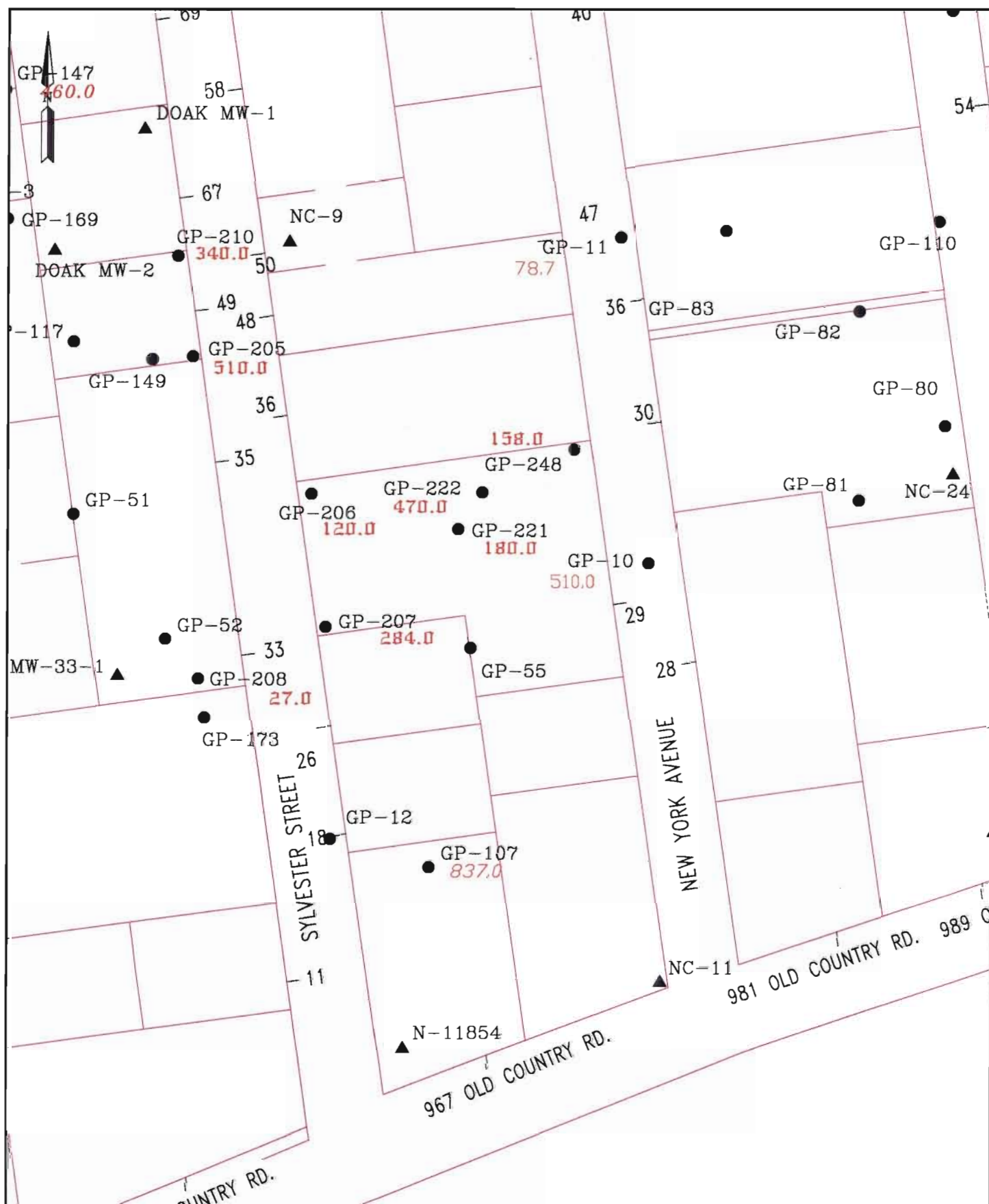
120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.57  
FORMER TISHCON FACILITY SITE  
29 NEW YORK AVENUE  
PCE IN GROUNDWATER  
WATER TABLE TO 65 FT









NOTE: All Data in ug/l  
Scale in Feet

60 0 60



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

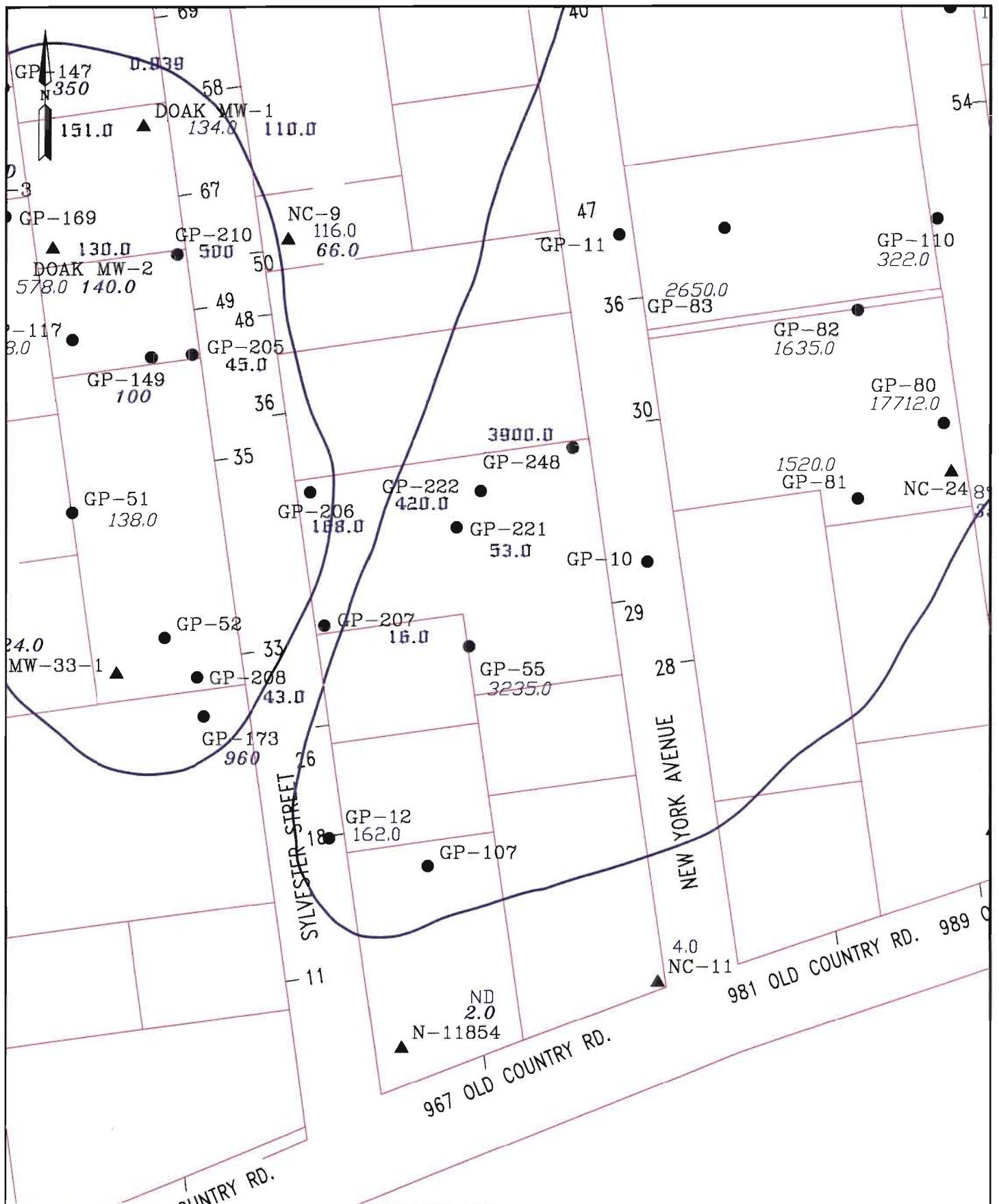
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.59  
FORMER TISHCON FACILITY SITE  
29 NEW YORK AVENUE  
PCE IN GROUNDWATER  
85 FT +







NOTE: All Data in ug/l  
Scale in Feet

60 0 60



Lawler, Matusky &  
Skelly Engineers, LLP

● - Geoprobe/Soil  
Sample Location

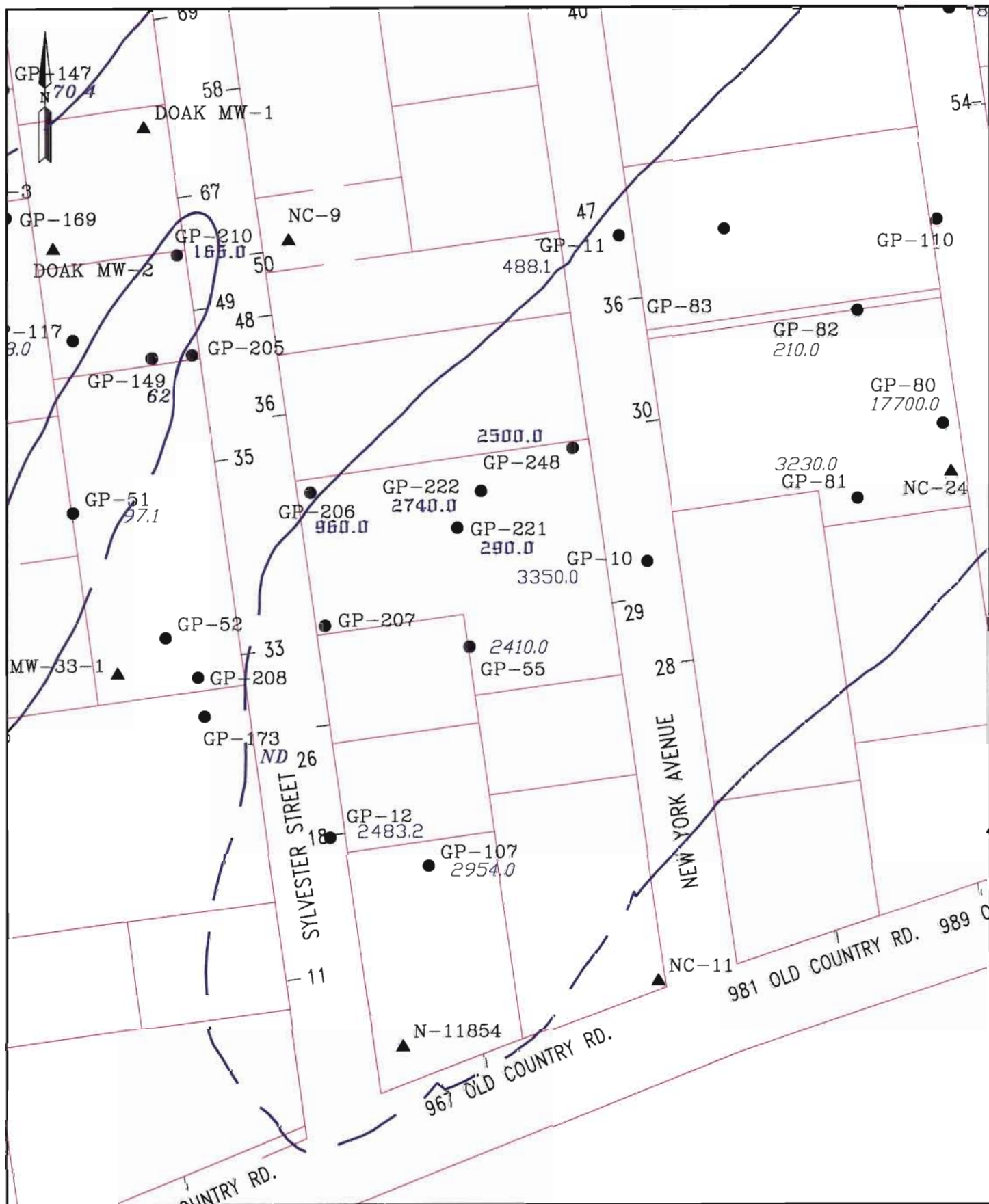
▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.60  
FORMER TISHCON FACILITY SITE  
29 NEW YORK AVENUE  
TCA IN GROUNDWATER  
WATER TABLE TO 65 FT







NOTE: All Data in ug/l  
Scale in Feet

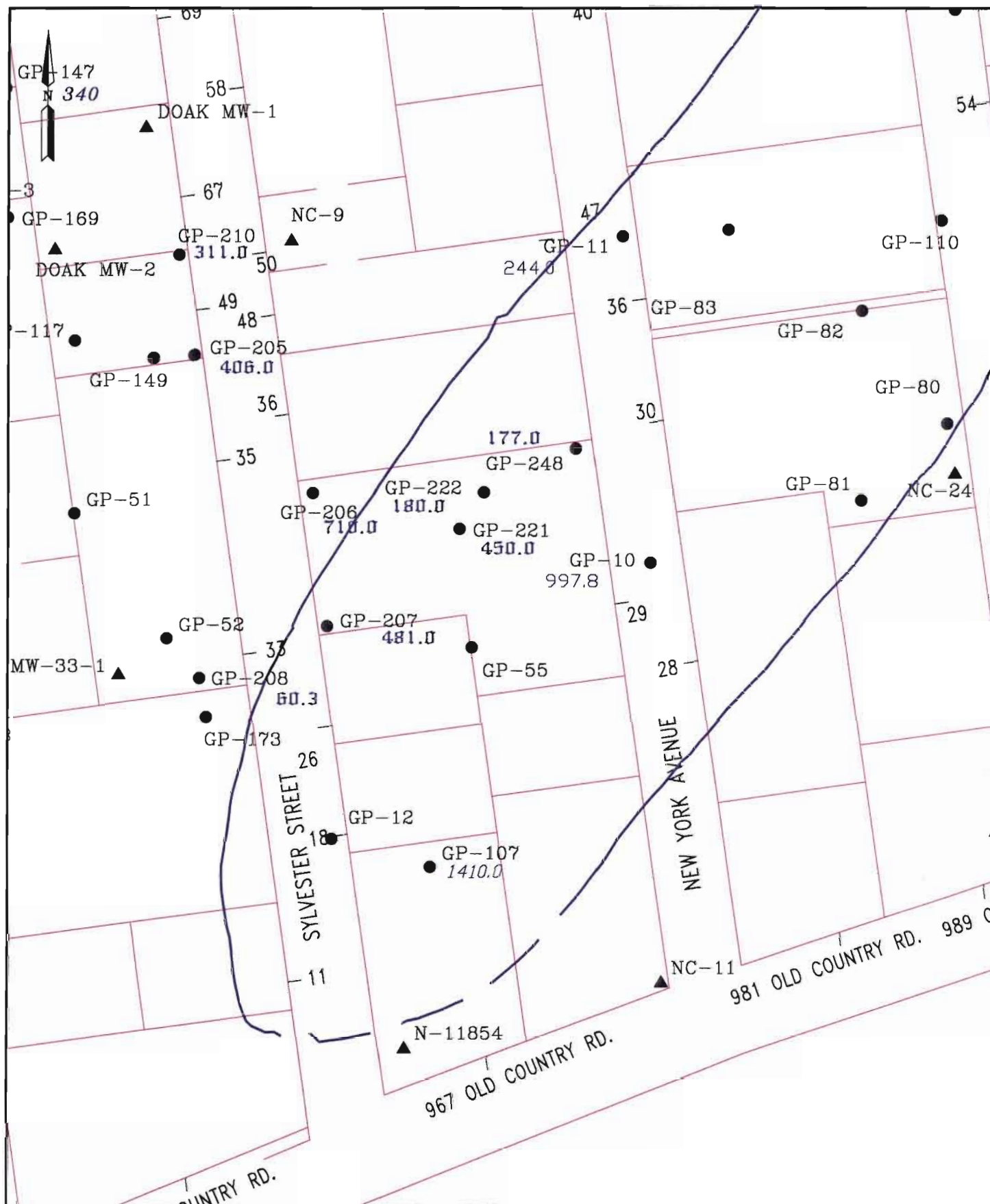


Lawler, Matusky &  
Skelly Engineers, LLP

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.61  
FORMER TISHCON FACILITY SITE  
29 NEW YORK AVENUE  
TCA IN GROUNDWATER  
65 TO 85 FT





NOTE: All Data in ug/l  
Scale in Feet

60 0 60



Lawler, Matusky &  
Skelly Engineers, LLP

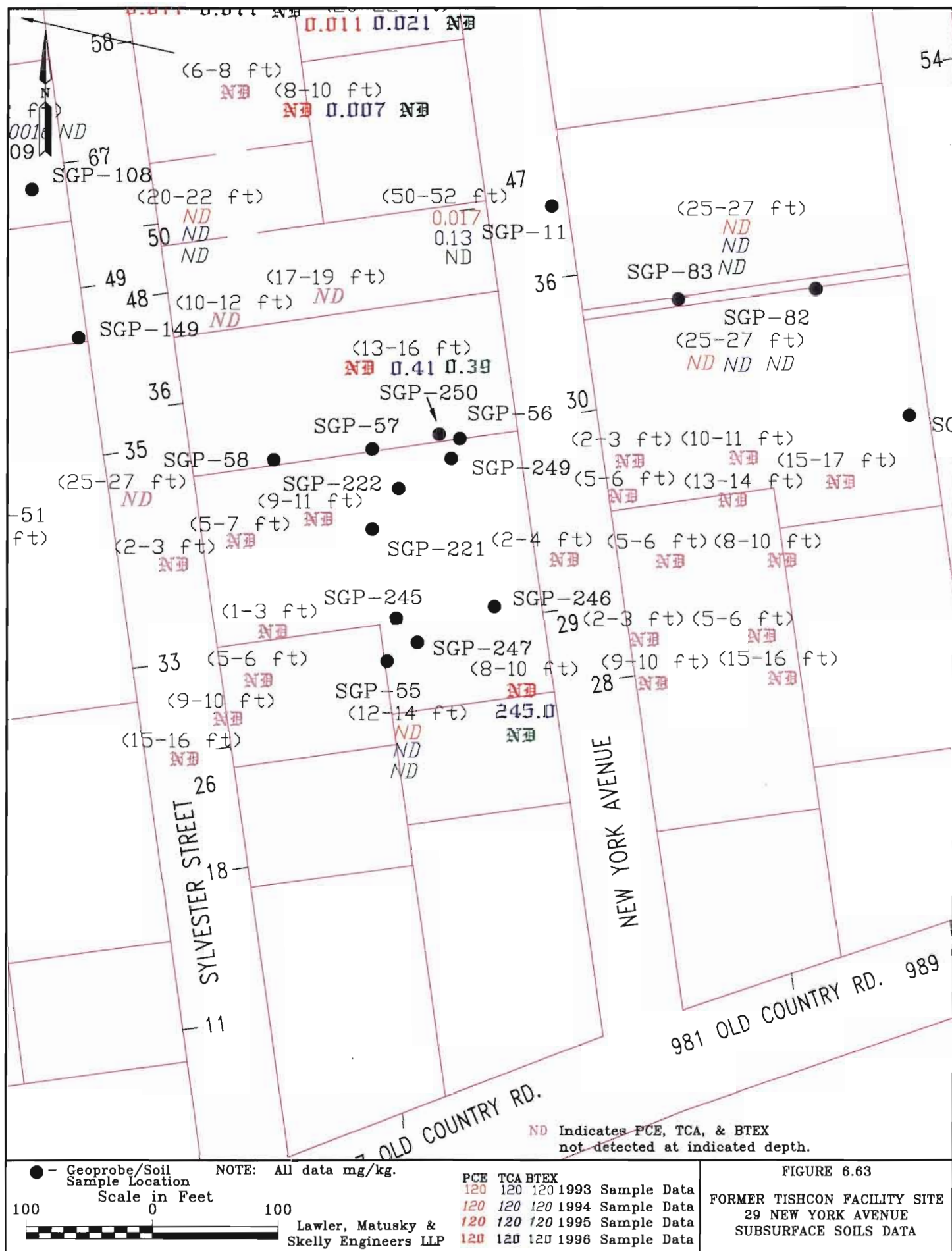
● - Geoprobe/Soil  
Sample Location

▲ - Monitoring Well  
Sample Location

120 1993 Sample Data  
120 1994 Sample Data  
120 1995 Sample Data  
120 1996 Sample Data

FIGURE 6.62  
FORMER TISHCON FACILITY SITE  
29 NEW YORK AVENUE  
TCA IN GROUNDWATER  
85 FT +









the Sylvester Street site clearly showed a source area at 62 Kinkel Street. The remedial investigation at 68 Kinkel also found low levels of contaminants.

### 6.5.3 Facility Discussion

#### *69 Sylvester Street (Tax Block 76, Lots 73 to 77)*

This address is currently occupied by T. Sarro Salvage and formerly by Suzanna Knitting Mills. The building covers most of the lot except for narrow alleys on each side of the building with a larger storage yard to the rear. Currently this yard contains several trailer storage units and miscellaneous piles of scrap electronics, which are shipped to China for parts. Although there is an environmental impact to the groundwater at this site in the downgradient (GP-147) portion, no usage history (Appendix B) or suspected sources could be located. The records search did indicate that Suzanna Knitting Mills used small amounts of lubricating oils during a NCDOH chemical survey. No target compounds were listed on this chemical survey. The upgradient groundwater samples for this property include GP-143, GP-35, GP-152, GP-209, and GP-255. Both PCE- and TCA-related contaminants did not exceed 100 ppb for any of these samples, with the exception of the intermediate depth in GP-255 (PCE-related compounds at 206 ppb) (Figures 6-43 to Figure 6-48). The downgradient groundwater probe samples for this property include GP-147, DOAK MW-1, and several of the groundwater probes collected during the remedial investigation at 69 Kinkel Street (ABB 1996). The concentrations of PCE- and TCA-related compound were 102.9 and 134 ppb, respectively, in DOAK MW-1. At shallow depth in GP-147, PCE- and TCA-related compound concentrations were ND and 350 ppb, respectively. At the intermediate depth the PCE-related contaminant concentration increased (64 ppb) and the TCA-related contaminants decreased (70.4 ppb). At greatest depth elevated concentrations of both PCE-related contaminants (360 ppb) and TCA-related contaminants (340 ppb) were found. The results of the probes taken during the remedial investigation at 68 Kinkel Street do not clearly indicate that the 69 Sylvester Street is responsible for the groundwater contamination. GP-147 remains the only point that demonstrates high levels of PCE- and TCA-related contaminants. It is recommended that this property not be included on the registry of inactive hazardous waste sites. There is a lack of documented chemical usage and a lack of documented on-site sources, and it is unlikely that a on-site source will be found. The on-site impact to groundwater is possibly from an upgradient property or controlled by the clay layer discovered in the Sylvester Street area.

#### ***49 Sylvester Street (Tax Block 76, Lots 66 to 68)***

This address is currently occupied by Micro-Ray Corporation, a small precision machine shop where cutting oils are used. The building is of one-story block construction. There is an alley and an open rear storage yard on the south side of the building. Suspected former leachpools are located off the southeast corner of the building and rear storage yard. The detailed file review indicated that International Ribbon and Carbon (IRC) was located at this address from 1977 to 1981. IRC has a documented TCA usage of 500 gal/year. In 1978 a leachpool sample showed DCA at 70  $\mu\text{g/l}$  and PCE at 20  $\mu\text{g/l}$  (Appendix B). Additional potential source sampling was conducted during the site investigation (LMS 1995) but no target compounds were detected. A soil probe (SGP-149) was installed during the multisite PSA; analysis of soil samples collected at three depth intervals (10-12, 17-19, and 25-27 ft) did not detect target compounds (Figure 6-56). Two wells, DOAK MW-2 and NC-9, are in an upgradient position. Both contain TCA-related contaminants similar to the downgradient on-site points (GP-117, GP-149, GP-205) (Figure 6-43 to Figure 6-48). An additional upgradient probe (GP-210) was completed during the Task 4 PSA field investigation; this point had concentrations of PCE-related contaminants similar to the downgradient points (Figure 6-50 to Figure 6-56). A single downgradient point (GP-51) had very high concentrations of PCE-related contaminants (Figures 6-50 and 6-51). At the shallow depth PCE-related contaminants were 2563 ppb; at the intermediate depth the PCE-related contaminants were 2947 ppb. It is recommended that this property remain a potential registry site until the investigations at the Class 2 in the area are completed. Based on the results of these investigation a final determination will be made.

If a focused remedial investigation on the upgradient property indicates that the groundwater impact is from these properties based on documented chemical usage, and a sample indicating a previous on-site source, this property should be reclassified as a Class 4 site.

#### ***33 Sylvester Street (Block 76, Lots 57 to 65)***

The building on this property was constructed in 1961 and is currently used by Arkwin Industries as a warehouse. Although Arkwin Industries has a large usage history of 1,1,1-TCA at other sites, no documented use for 1,1,1-TCA was found for this address. The concentrations of PCE-related contaminants were very high on this property during the previous phases of the PSA (Figure 6-50 to Figure 6-55). Previously completed downgradient groundwater probes include GP-173 and GP-51, both of which have significant PCE-related contaminants at the shallow and intermediate depth (Figure 6-50 and Figure 6-51). Previously completed upgradient groundwater probes include GP-149 and GP-117. GP-149 and GP-117 at the shallow depth have similar total PCE-related contaminants concentrations (100 ppb in GP-



149 and 119 ppb in GP-117). GP-149 and GP-117 at the intermediate depth also have elevated total PCE-related contaminants concentrations (227 ppb in GP-149 and 459 ppb in GP-117). For PCE-related contaminants, the downgradient point (GP-51) is 25 times the upgradient (100 ppb in GP-149 and 2563 ppb in GP-51). An additional upgradient probe location was completed (GP-205) at the shallow depth; PCE-related contaminants totaled 28 ppb, which is a lower value than previously found in GP-149. An additional downgradient point was also completed (GP-208) at the shallow depth; this point also exhibited lower concentrations than the previously found in GP-173. Comparisons of the deeper depths are difficult as the Hydropunch was unable to collect a sample at the intermediate depth and the Geoprobe could not sample at the deeper depth. It is likely that the presence of a clay lens found at an intermediate depth during the Hydropunch probe sampling controls the contaminant distribution in this area. The extent of the clay lens is unknown but appears to exist over much of the Sylvester Street Block. Target compounds were not found in the single soil probe (SGP-51) completed during the site investigation (LMS 1995).

Based on no clearly documented usage or on-site source, this property should not appear as a Class 2 site on the registry. However, this property does exhibit significant groundwater contamination and should remain a potential registry site until a clearly defined upgradient source for this contamination is found.

#### ***29 New York Avenue (Tax Block 77 , Lots 25-28 and 50-55)***

This property is a former Tishcon facility and currently appears as a Class 2 site on the registry. Further sampling was conducted on this property to supplement the existing data for this property and to investigate the possibility that contamination from this site is impacting the Sylvester Street PSA area. During the initial site inspection for the Task 4 field work it was discovered that the building was under renovation, providing a opportunity to sample within the building near suspect areas (floor drains, drain lines). A number of soil and groundwater probes were installed (GP-221, GP-222, SGP-221, SGP-222) (Figure 6-57 to Figure 6-63). These probes indicate both PCE- and TCA-related contaminants in excess of 100 ppb are present in the on-site groundwater (Figure 6-57 to Figure 6-63). PCE- and TCA-related compounds were not detected in the soils taken inside the existing building (SGP-221 and SGP-222) (Figure 6-63). The GPR survey indicated that the interior drainline piping, including the series of floor drains, lead through the building and are connected to the county sewer along New York Avenue. This was later confirmed when NCDOH and NYSDEC dye tested the floor drains. The dye was introduced into the floor drain furthest to the north; eventually the dye appeared in a manhole along New York Avenue just south of 29 New York Avenue. It is suspected that any former leachpools that might have received wastes from the floor drain

would be located in the paved parking area just south of the 29 New York Avenue building. A soil/sediment sample was taken from the open grate catch basin located south of the 29 New York Avenue building in the paved parking lot area. This sample had a strong chemical odor and an oily appearance. The mobile laboratory results indicated that the sample contained 245 ppm of TCA-related contaminants (65 ppm 1,1-DCA and 180 ppm 1,1,1-TCA). The semivolatile analysis conducted on the sample showed several compounds below the quantitation limit and a high concentration of vitamin E. It would appear that Tishcon disposed of waste containing vitamin E into this catch basin.

It is recommended that this property remain on the registry as Class 2 site. Past usage of the building indicates chemical usage, soil sampling clearly indicates an on-site source, and the groundwater below the property has been impacted. An IRM should be conducted on any contaminated leachpools or catch basins to remove the most heavily contaminated soils.

### ***36 Sylvester Street (Tax Block 77, Lots 21-24 to 56-58)***

This property is located just north of 29 New York Avenue and is currently occupied by Tishcon. Preliminary file review information on this site indicates that this property was previously occupied by National Gear Products. This company reported using various chemicals, including cutting oils and mineral spirits for degreasing. During the GPR survey of 29 New York Avenue it was found that the leachpools located in the northern alley of 29 New York Avenue appear to be connected to pools on the 36 Sylvester Street property. Geoprobings confirmed the presence of an abandoned leachpool in this area. A single soil sample was taken from the bottom of the leachpool (13-16 ft). TCA- and BTEX-related contaminants were found in the soils: 410 ppb of TCA and 390 ppb of BTEX (Figure 6-63). Several downgradient points (GP-248, GP-222, and GP-221) clearly show that the groundwater downgradient of this property has been impacted (Figure 6-57 to Figure 6-63). However, this groundwater impact is possibly from an upgradient property at 36 New York Avenue. It is recommended that 36 Sylvester Street property be classified as a potential registry site until it is determined whether the noted source area and groundwater contamination is a result of off-site activities.

## **6.6 NEW CASSEL DATA REVIEW SITES**

During the last phase of the PSA investigation a number of properties were found to have limited file review data available for assessing whether the property may be potentially responsible for the noted groundwater contamination. In general, these properties are within the most heavily contaminated areas of the industrial area, and the limited available data

suggested that in most cases the groundwater contamination source was located upgradient of the property. Based on the additional file reviews and sampling conducted during Task 4, the status of these properties can now be resolved.

#### **6.6.1 Groundwater Plume**

Two of the New Cassel data review sites (750 Main Street and 1226 Old Country Road) are within the immediate vicinity of the Tops Appliance City PSA site. The large plume that covers most of the Block 328 area near the Tops Appliance City PSA site is discussed in Section 6.3.1. The other two New Cassel data review sites (110 Hopper Street, 111 and 117 Swalm Avenue) are immediately downgradient of the Swalm Avenue PSA area. The groundwater plume in this PSA area is discussed in Section 6.41.

#### **6.6.2 Soil Contamination**

Soil samples were not required on the data review sites. Soil data for the Tops Appliance City PSA area (adjacent to 750 Main Street and 1226 Old Country Road) are discussed in Section 6.3.2. Soil data for the Swalm Avenue PSA area (adjacent to 110 Hopper Street and 111 and 117 Swalm Avenue) are discussed in Section 6.4.2.

#### **6.6.3 Facility Discussion**

##### ***750 Main Street (Lot 179)***

750 Main Street, presently a parking lot for Tops Appliance City, was formerly the site of a building that was removed as part of the mall expansion in the early 1990s. No usage of PCE-related compounds by Tops Appliance City was documented at this site. The detailed file review did not reveal the former occupants of this property. A Phase II investigation conducted by Anson Environmental and submitted to NYSDEC documented the approximate locations of dry wells and cesspools associated with the demolished building. The diagram in the Anson report was not drawn to scale, so the exact location of the cesspools could not be determined. GPR surveys conducted in this area did not reveal anomalous regions possibly associated with cesspool locations. Soil sample SGP-126 appears to be in close proximity to one of the cesspools; however, PCE contamination detected in this sample was low (4.4 ppb), not necessarily indicative of a source of PCE contamination. Concentrations of PCE-related compounds found in the groundwater sampled around this site are high (tens of thousands of ppb) (Figures 6-22, 6-23, and 6-24). Samples collected downgradient of groundwater flow are generally higher in PCE concentration than those collected upgradient of groundwater flow.

As this site is downgradient of three Class 2 registry sites suspected of discharging hazardous waste and have high concentrations of PCEs, it is difficult to distinguish the contaminants from each site. A documented usage history for this property could not be established and soil samples do not suggest a residual source. Additional file review updates for this property did not reveal any additional information on this address. The elevated PCE-related contaminants in the groundwater appears to be from an off-site source. As this property has no documented sources on-site, no documented chemical usage, and an apparent off-site source for the noted groundwater contamination, this property should not appear on the registry.

#### ***1226 Old Country Road (Lot 134)***

1226 Old Country Road is presently occupied by Westbury Toyota. A detailed review for this property was not conducted as it was previously believed that extensive contamination did not extend into this property. No documentation of any chemical use at this site exists. GPR surveys revealed no anomalies on this site. High concentrations, in excess of 10,000 ppb, of PCE-related compounds were detected in groundwater samples taken along the western portion of this site (Figures 6-22, 6-23, and 6-24). Groundwater samples taken upgradient were shown to contain higher concentrations of PCE-related compounds (GP-134 [ $<65$  ft] had 20,000 ppb and GP-136 [ $<65$  ft] had 2200 ppb). Groundwater samples taken in the northern portion of this site at GP-145 ( $<65$  ft, 68-85 ft) had 22,500 and 40,200 ppb, respectively, and the downgradient samples at GP-180 (65-85 ft,  $>85$  ft) had 12,900 and 14,800 ppb, respectively. A detailed file review conducted on the property indicates this lot was developed between 1951 and 1961. Former uses of the property include Westbury Electronics and the County Family Court. The present occupant, Westbury Toyota, moved to the property in 1994. The source of the groundwater contamination at the property has not been fully determined, but it is likely that the high concentrations of PCE-related contaminants are from an off-site source. It is recommended that this property not appear on the registry based on an off-site source, no past chemical usage, and no documented on-site sources.

#### ***110 Hopper Street (Block 164, Lots 66 to 68)***

110 Hopper Street is occupied by Express Steel. A detailed file review was not conducted during the previous phase of the PSA at this property as it was believed to be upgradient of the plume boundary. GPR surveying and soil sampling were not conducted at this property for the same reason. Groundwater samples collected upgradient of the site contained concentrations of PCE-related compounds equal to those detected in groundwater samples collected downgradient of the site. Although the groundwater below this property has a demonstrated environmental impact, the source of groundwater contamination at 110 Hopper Street has been

demonstrated to be upgradient of this property. This property should not be included on the registry.

***111 and 117 Swalm Avenue (Block 164, Lots 69 and 64)***

Adjacent properties 111 and 117 Swalm Avenue are occupied by Harco Trucking and Harmon Associates, respectively. A detailed file review was not conducted at these properties during the last phase of the PSA as it was believed to be upgradient of the plume boundary. GPR surveying and soil sampling were also not conducted on these properties. The additional file reviews and information provided by the current owners did not show usage of target compounds at this property. Groundwater samples collected upgradient of these sites contain concentrations of PCE-related compounds equal to the concentrations detected in groundwater samples collected downgradient of the sites. Although these sites have been environmentally impacted, the source of groundwater contamination at both 111 and 117 Swalm Avenue has been demonstrated to be upgradient of these properties. This property should not be included on the registry.



## CHAPTER 7

### RECOMMENDATIONS

Based on the conclusions of Task 4 of the multisite PSA investigation, presented in Chapter 6, LMS recommends the following classification of facilities within the remaining potential registry sites and data review sites in the NCIA.

#### 7.1 HOPPER/MAIN STREET SITE

##### *95 Hopper Street - Bilt-Rite Steel Buck*

- Documented usage of hazardous waste
- No source
- Groundwater plume documented as emerging from site
- Recommendation - this property should remain a potential registry site until an upgradient source for the on-site groundwater contamination is determined.

##### *542 Main Street - Als Tool and Die*

- No documented usage
- No source
- In general, upgradient groundwater concentration greater than downgradient, but one sample had high concentration (13,900 ppb) over cesspool area.
- Recommendation - this property should remain a potential registry site until an upgradient source for the on-site groundwater contamination is determined.

##### *550 Main Street - Royal Guard Fence*

- Documented usage of degreasers
- No source
- Groundwater plume documented as emerging from site
- Recommendation - this property should not appear on the registry of hazardous waste sites.

##### *299 Main Street - One Stop Auto and Truck Center*

- Documented usage of hazardous waste
- Target compounds detected in soils from 49-51 ft
- Groundwater plume was documented as emerging from site
- Recommendation - this property should be listed on the registry of hazardous waste sites.

***Lot at the Northeast Corner of Hopper and Main Street***

- Past uses suggest usage of hazardous waste
- Access to investigate potential on-site denied by land owner
- Groundwater plume documented as emerging from site
- Recommendation - this property should be listed on the registry of inactive hazardous waste sites to allow remedial investigations to locate any possible on-site source areas.

**7.2 E-Z-EM SITE**

***717-765 Main Street - EZ-EM***

- No documented usage
- No source
- No groundwater plume from site, except possibly from cesspool in southeast corner
- Recommendation - this property should not appear on the registry of hazardous waste sites.

***750 Summa Avenue - EZ-EM***

- Documented usage/spillage
- No source
- Small groundwater plume
- Recommendation - this property should be placed on the registry of inactive hazardous waste sites as a class 4 site.

**7.3 TOPS APPLIANCE CITY SITE**

***776-790 Summa Avenue - NYCE, Liberty Tempest***

- No documented usage
- No source
- Low level groundwater plume
- Recommendation - this property should not appear on the registry of hazardous waste sites.

***1099 Old Country Road - Tops Appliance City***

- Documented usage/generation of F001 hazardous waste
- Trace contamination found in on-site soils
- High-concentration groundwater plume below the site
- Recommendation - this property should not appear on the registry of hazardous waste sites.



## **7.4 SWALM AVENUE SITE**

### ***118-138 Swalm Avenue - Liqui-Mark Corporation***

- Documented usage of hazardous Waste
- Source of hazardous waste found in leachpool
- Groundwater plume documented as emerging from site
- Recommendation - this property should be listed on the registry of hazardous waste sites.

## **7.5 SYLVESTER STREET SITE**

### ***69 Sylvester Street - T. Sarro Salvage***

- No documented usage
- No source
- Groundwater plume documented as emerging from site
- Recommendation - this property should not appear on the registry of hazardous waste site.

### ***49 Sylvester Street - Micro-Ray Corporation***

- Documented usage of hazardous waste
- Source of hazardous waste found in leachpool in 1978
- Groundwater plume on-site
- Recommendation - this property should remain a potential registry site until such time as the suspected upgradient source of this contamination is found.

### ***33 Sylvester Street - Arkwin Industries***

- Documented usage of hazardous waste by Arkwin at other facilities in NCIA
- No source
- High-concentration groundwater plume emerging from site
- Recommendation - this property should remain a potential registry site until such time as the suspected upgradient source for this contamination is found.

### ***29 New York Avenue - Former Tishcon Corporation***

- Documented usage
- On-site source
- Groundwater plume on-site
- Recommendation - this property should remain on the registry of hazardous wastes sites as a class 2 site.

### ***36 Sylvester Street - Tishcon Corporation***

- Documented chemical usage does not clearly indicate PCE- or TCA-related compound use
- On-site source may be from adjacent property
- Groundwater plume on-site
- Recommendation - this property should be classified as a potential registry site until the source of the on-site contamination is determined.

## **7.6 NEW CASSEL DATA REVIEW SITES**

### ***750 Main Street - Tops Appliance City***

- No documented usage
- Trace contamination found in on-site soils
- High-concentration on-site groundwater plume
- Recommendation - this property should not appear on the registry of hazardous waste sites

### ***1226 Old Country Road - Westbury Toyota***

- No documented usage
- No source
- High-concentration groundwater plume may be from upgradient sources or from discharge from site in northwest corner
- Recommendation - this property should not appear on the registry of hazardous waste sites.

### ***110 Hopper Street - Express Steel***

- No chemical usage documented
- No apparent on-site sources
- Upgradient plume greater than downgradient plume, source of plume shown to be upgradient
- Recommendation - this property should not appear on the registry of hazardous waste sites.

### ***111-117 Swalm Avenue - Harco Trucking - Harmon Associates***

- No chemical usage documented
- Source not investigated
- Upgradient plume greater than downgradient plume, source of plume shown to be upgradient
- Recommendation - this property should not appear on the registry of hazardous waste sites.

## **7.7 RECOMMENDATIONS FOR THE SOURCE AREAS AND GROUNDWATER CONTAMINANT PLUMES**

Task 4 of the PSA has completed the classification of the individual suspect facilities at the industrial area. At this stage any remaining work at the industrial area should address the two remaining issues associated with the groundwater contamination. The first issue involves removal of any remaining sources that might be contributing to the groundwater contamination. The second issue is how to remediate the existing groundwater plumes to limit further environmental impact.

A number of on-site sources have been identified during the SI and PSA and it is expected that additional sources will be found during an remedial investigation activities at the Class 2 sites. LMS recommends conducting IRM's to remove any on-site sources. Based on the nature and extent of any on-site sources these IRM's can range from removal and off-site disposal to more complex in-situ methods to remove the contaminants.

A total of seven distinct plume areas have been identified during the SI and PSA. Currently limited data on the off-site and vertical extent of these plumes is available. Even with the limited data it is apparent that at least one of these plumes is currently impacting the Bowling Green water supply. LMS recommends conducting IRM's on the most heavily contaminated areas (Arkwin/Tishcon Plume, and the Block 328 plume) in an effort to contain and remove any DNAPL and heavily contaminated groundwater. However, before evaluating individual IRM's additional data on the potential water supply receptors, and nature and extent of the heavily contaminated zones should be collected.



## **REFERENCES CITED**

ABB Environmental Services (ABB). 1996. Remedial Investigation at 68 Kinkel Street. Prepared for the New York State Department of Environmental Conservation.

Lawler, Matusky & Skelly Engineers LLP (LMS). 1995. Site Investigation Report, New Cassel Industrial Area. Prepared for the New York State Department of Environmental Conservation.

Lawler, Matusky & Skelly Engineers LLP (LMS). 1996. Multisite PSA Report, New Cassel Industrial Area. Prepared for the New York State Department of Environmental Conservation.

Nassau County Department of Health (NCDOH) and Dvirka and Bartilucci Consulting Engineers. 1986. Investigation of Contaminated Aquifer Segments Nassau County, NY.

**APPENDIX A**  
**FILE REVIEW**

**NEW YORK STATE SUPERFUND CONTRACT**

**PRELIMINARY SITE ASSESSMENT  
DETAILED SITE HISTORY**

**New Cassel Industrial Area Site  
North Hempstead, Nassau County**

**Site No. 130043 J,N,O,P,Q**

**Work Assignment No. D002676-12.1**

**MARCH 1997**

**Prepared for:**

**Lawler, Matusky & Skelly, Engineers  
One Blue Hill Plaza  
Pearl River, New York 10965**

**Under Contract to:**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

**Prepared by:**

**YEC, Inc.  
612 Corporate Way  
Valley Cottage, New York 10989**





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## REFERENCES



## **1.0 SITE HISTORY**

### **1.1 BACKGROUND INFORMATION**

#### **1.1.1 Location**

The New Cassel Industrial Area (NCIA) site is in the unincorporated village of Westbury in the town of North Hempstead, Nassau County, New York (Figure 1-1 LMS 1996). The site comprises approximately 170 acres and is bounded by the Long Island Railroad on the north, Old Country Road on the south, Frost Street on the east and Grand Street on the west (Figure 1-2 LMS 1996).

#### **1.1.2 Historical Land Use**

An aerial photograph from 1950 indicates that the NCIA was primarily a residential and agricultural community. By 1962, the primary land use at the site changed to commercial and industrial. Industrial and commercial development continued throughout the 1970's and 1980's. At present, the NCIA consists of over one hundred (100) facilities which include machine shops, factories, warehouses, automobile body shops, recycling facilities, laboratories and textile and plastics manufacturing facilities (NCDOH 1994).

#### **1.1.3 Previous Investigations**

A number of previous investigations have been conducted at the NCIA including:

- "Investigation of Contaminated Aquifer Segments, Nassau County, New York" Nassau County Department of Health, 1986
- "Subsurface Investigation Property Located at 550 Main Street, Westbury, New York, Prepared for Royal Guard Fence Co., Inc." EEA, Inc., 1992
- "Phase II Investigation Report for Nassau County Section 11 Block 328 Lots 46 and 176", Anson Environmental Ltd., 1992
- "Phase II Investigation Report for Nassau County Section 11 Block 328 Lots 159, 170, 171, 164, 166, 23-26, 29-45, 63-67, 117, 58-61, 118, 162, 186, 142, 154, 178, 179, 181, 185, 183, 173; Block 160 Lots 129-133, 173-177", Anson Environmental, 1992
- "The New Cassel Industrial Area, A Toxic Pollution Profile", Community Toxics Assistance Project of the New York Public Interest Research Group, 1994
- "Petition for Delisting Property within the New Cassel Industrial Area, Harmon Associates Corporation, 86 Garden Street and an Adjacent Parking Lot on

Hopper Street, New Cassel, New York", CA Rich Consultants, Inc., 1994

- "Phase II Investigation Report for Nassau County Section 11 Block Lots 142, 154, 160, 178, and 181", Anson Environmental LTD, 1995
- "New York State Superfund Contract, Site Investigation, New Cassel Industrial Area Site, North Hempstead, Nassau County", Lawler, Matusky and Skelly Engineers, 1995
- "Environmental Investigation, 750 Summa Avenue, Westbury, New York", Anson Environmental Ltd., 1996
- "New York State Superfund Contract, Multi-Site PSA Report, New Cassel Industrial Area Site, North Hempstead, Nassau County", Lawler, Matusky & Skelly Engineers, 1996

The investigations have identified a number of Class 2 Registry Sites, a number of potential registry sites, and sites to be delisted.

## **1.2 PURPOSE AND SCOPE**

### **1.2.1 Purpose**

Based on the findings of the LMS PSA Report (LMS 1996), it was concluded that an additional field investigation and detailed site history of various properties within the New Cassel Industrial Site was required. In order to obtain information for a detailed site history, YEC, Inc. (YEC), under contract to Lawler, Matusky & Skelly Engineers (LMS), conducted a file review for 17 properties within the site. The objectives of this task were to:

- Verify and update original data base
- Cross reference addresses/uses for untapped sources of information
- Document existence/non-existence of agency files for each address
- Review historical chemical usage and waste disposal activities regarding chemicals of concern

### **1.2.2 Scope**

YEC conducted a review of the following:

- Existing LMS data base and files

- Aerial photography
- Historical maps
- Files from federal, state, county and local agencies

Additionally, YEC reviewed the LMS data base from the PSA Report which summarized the current and past occupants of the properties in the NCIA site. The information in the data base was reviewed for accuracy and supplied to various agencies. YEC collected additional information from federal, state, county and local files. This information was used to update the data base and create a reference file for the detailed site history of the parcels within each of the areas of the NCIA site.

Historical aerial photographs of the NCIA site were used to develop a land use history of each parcel. The scale was selected to provide identification of the smaller features on site. The following is a list of the dates and scales of the reviewed aerial photographs:

<u>Year</u>	<u>Scale</u>
1950	1" = 200'
1961-62	1" = 400'
1962	1" = 200'
1970	1" = 400'
1978	1" = 200'
1984	1" = 200'
1990	1" = 333'
1992	1" = 200'

YEC reviewed the following historical maps to obtain information on the NCIA prior to, during and after the industrial development of the area:

<u>Map</u>	<u>Date</u>	<u>Scale</u>
Sanborn	1968	1" = 100'
USGS Topographic	1897	1" = 5,208'

USGS Topographic	1898	1" = 5,208'
US Army Corps of Engineers	1911	1" = 5,208'
USGS Topographic	1950	1" = 2,000'
USGS Topographic	1954	1" = 2,000'
USGS Topographic	1967	1" = 2,000'
NYSDOT/USGS Topographic	1991	1" = 2,000'

As part of the detailed site history task, YEC conducted a file search to determine if information existed documenting chemical usage and waste disposal activities at each parcel within the NCLIA site. The following is a list of all agencies contacted and the information requested and received:

#### **FEDERAL**

United States Environmental Protection Agency  
Region II  
26 Federal Plaza  
New York, New York 10270

**Information Requested:** File Information from:  
Office of Solid Waste RCRA (Hazardous Waste Data Mgt. System)  
Office of Air and Radiation (Compliance Data System)  
Office of Pesticides and Toxic Substances (Pesticides and TSCA Enforcement)

**Information Received:** File information from:  
Pesticides and Toxic Substance Branch  
Hazardous Waste Data System, Office of Solid Waste (RCRA)

#### **STATE**

New York State Department of Environmental Conservation  
Albany, NY

**Information Requested:** Region I chemical bulk storage database  
Region I spills database

**Information Received:** Region I chemical bulk storage database  
Region I spills database

New York State Department of Environmental Conservation  
Region I  
SUNY Campus  
Building 40  
Stony Brook, New York 11794  
(516) 444-0373

**Information Requested:** File review (SPDES, Hazardous Waste and RCRA files)

**Information Received:** Miscellaneous files

**COUNTY**

Nassau County Department of Public Works  
1 West Street  
Mineola, New York 11501  
(516) 571-3139

**Information Requested:** Plans showing location of cesspools, drywells or leachpools.

**Information Received:** Plans for various properties showing locations of cesspools, drywells and leachpools

Nassau County Fire Commission  
Office of the Fire Marshall  
899 Jerusalem Avenue  
P.O. Box 128  
Uniondale, New York 11553  
(516) 572-1038

**Information Requested:** File Review (Hazardous Materials, Emergency Response, and Regulatory Tank Storage Divisions)

**Information Received:** Miscellaneous files and site plans

Nassau County Department of Health  
240 Old Country Road  
Mineola, New York 11501  
(516) 571-2307

**Information Requested:** File review (Hazardous Waste, Spills, Article XI, and Industrial Chemical Survey files)

**Information Received:** Miscellaneous files and data base information

Nassau County Clerks Office  
240 Old Country Road  
Mineola, New York 11501  
(516) 571-2664

**Information Requested:** Owner names and addresses

**Information Received:** Owner names and addresses

Nassau Department of Public Works  
Planning Department  
1 West Street  
Mineola, New York 11501  
(516) 571-3139

**Information Requested:** Site plans, utility plans

**Information Received:** Site plans

#### LOCAL

Town of North Hempstead Building Department  
210 Plaindome Road  
Manhasset, New York 11030  
(516) 869-7680

**Information Requested:** Building plans, Certificates of Occupancy for NCLA

**Information Received:** None



## **2.0 HOPPER/MAIN STREET SITE**

### **2.1 SITE DESCRIPTION**

The following properties are included in the Hopper/Main Street site:

- 95 Hopper Street
- 542 Main Street
- 550 Main Street
- 299 Main Street

### **2.2 HISTORICAL PROPERTY INFORMATION**

#### **2.2.1 95 Hopper Street**

This address has been occupied by Bilt-Rite Steel Buck Corporation (JGL Custom Metal Doors Corporation), a manufacturer of metal doors and frames, since 1971. Prior to 1971, a 1968 Sanborn map indicates that an iron works company existed on the site. Public works records indicate a sewer hookup was made on 4/22/81. This facility has been recently abandoned by Bilt-Rite Steel Buck.

NCDOH records indicate that the current occupant of this address, Bilt-Rite Steel Buck Corporation, used the following chemicals:

Naphtha  
Toluene  
Xylol  
Chromate  
Lead  
Xylene  
Ethylbenzene  
Polyester Resin  
Metals  
Paint primer  
Latex paint  
Lubricating oil  
Hydraulic oil

According to NCDOH records, an authorized waste hauler removed F003 waste (spent non-halogenated solvents) from this address. An application for a 5,055 gallon storage tank for paint primer and for bulk storage for a variety of chemicals was made to the NCDOH in 8/88 by Bilt-Rite. A letter dated 12/1/91 from Bilt-Rite Steel to NCDOH indicated the presence of three 1,000 gallon capacity underground oil tanks at this address.

NYSDEC spills database indicates that a spill of an unspecified amount of red paint occurred at this address on 11/18/94.

### **2.2.2 542 Main Street**

This building has been occupied by Al's Tool and Die, Inc., a metal parts fabricator, since approximately 1968. No prior ownership is known. There is no documentation of any chemical usage at this site, other than an annual usage of 5 gallons of water soluble cutting oil. Metal shavings generated were taken to a scrap dealer.

### **2.2.3 550 Main Street**

Owned by Royal Guard Fence Company since the 1950's, this site contains three underground fuel storage tanks and an aboveground waste oil storage tank. Two 2,500 gallon underground fuel tanks were installed in 1994 and a 4,000 gallon underground tank was installed in 1978. The 4,000 gallon underground gas tank failed a Petrotite systems test in 1989. It was cited in 1991 by the NC Fire Inspector for being out of service without removal or abandonment. NYSDEC spills records indicate that fuel spills from tanks of unspecified amounts occurred in 1989, 1993, and 1996. The spill in 1989 was due to a crack in the tank fill pipe and entered the groundwater.

There are three dry wells located in the pavement and one interior floor drain documented at this address. Sewer hookup was made in 1983. Prior to that, sewage was discharged to an on-site septic system (1954-1983). Chemical usage at this site is limited to minimal amounts of cutting oil, muriatic acid, and paint thinners (EEA 1992). Scrap metal is removed from the site.

### **2.2.4 299 Main Street**

The western portion of the existing building at 299 Main Street was erected between 1950 and 1962 with the eastern portion added between 1962 and 1970. Since April 1994, One Stop Auto and Truck Center occupied this address. Island Transportation Corporation (ITC), a trucking company, occupied the property from at least 1963 until 1983. During its operations, it generated 400 to 500 gal/month of waste lube oil and used 40 gal/month of safety solvent #5. The liquid and solid waste was removed by authorized waste haulers, and the wash room waste was collected in two on-site cesspools. Additionally, Sam Ton Salvage, a junkyard, used this address from before 1970 until 1993. The company apparently occupied the rest of the Block 144 but used 299 Main Street as its address. In 1993, Sam Ton Salvage moved to 96 Urban Avenue.

In January 1963, two 4,000 gallon underground diesel fuel tanks were installed by ITC (NCFC 1980b). One 4,000 gallon underground gasoline tank was installed by ITC in 1966 and one 10,000 gallon underground diesel tank was installed in 1972. ITC used Trichloroethylene (TCE) to wash asphalt residues from its tank trailers prior to 1980. Approximately 275 gallons were used during a period from July to December 1978 (NCDOH 1979a). The TCE was reclaimed on-site and reused. ITC replaced the TCE with Dubois Chemical Spra-Jel (NCDOH 1979b). The chemical constituents of Spra-Jel are as follows:

Petroleum solvent, kerosene cut

Orthodichlorobenzene  
Hi flash coal tar naphtha  
Pine oil  
Alkanolamide  
Amine oxide

An NCDOH inspection in April 1978 listed a storage of 2,841.5 lbs of TCE and oil saturation at the storage area. In October 1978, ITC was cited by the NCDOH for oil around the building and on the sidewalk east of the building. During 1979, NCDOH sampled groundwater at Island Transport when it discovered ITC was discharging wastewater from its truck cleaning operations into the street. The samples contained the following petroleum product parts per billion (ppb) concentrations:

Benzene	359 ppb
Xylene	2,003 ppb
Toluene	766 ppb
Aliphatic Hydrocarbon	1,571 ppb

(NCDOH 1979b). In 1980, a 10,000 gallon diesel tank failed a pressure test (NCFC 1980b). A record search produced no further information regarding this incident. In April 1981, ITC was cited by the NC Fire Inspector for a leaking 2,000 gallon diesel fuel tank at 111 Garden Street. As a result, the NYSDOT sent a letter to ITC, dated November 4, 1981, indicating that the NYSDOT would hire a contractor on November 20, 1981 to install four-inch PVC observation wells to groundwater.

An authorized hazardous waste hauler maintained two (2) solvent parts washing stations for ITC. However, there is no record of loss from those self-contained stations.

In August of 1990, Sam-Ton Towing and Salvage were cited by the USEPA Underground Injection Control for illegally injecting fluids into the ground via Class V well types. The letter stated that the hydrogeology in the well vicinity has the potential to allow ground water contamination. On November 2, 1993, a fire occurred at the former Sam Ton Salvage address (NYSDEC 1993b). A New York State Department of Environmental Conservation spill report noted that at least seven (7) drums of unknown contents spilled during the fire.



### **3.0 EZ-EM SITE**

#### **3.1 SITE DESCRIPTION**

This site consists of 2 adjacent properties occupying most of the block:

- 717-765 Main Street
- 750 Summa Avenue

#### **3.2 HISTORICAL PROPERTY INFORMATION**

##### **3.2.1 717-765 Main Street**

The building at this address was erected in 1959 (Sanborn 1968). Since 1971, several businesses occupied these premises, including a manufacturing and development company and a warehouse.

The building connected to the municipal sewer system in December 1987. NCDPW plans show one cesspool in the front of the building (NCDPW 1987).

Since 1991, E-Z EM, a developer and manufacturer of diagnostic imaging products, (LIBN 1995) occupied this building. After processing, the waste stream, containing barium sulfate rinseate, went to a 1,500 gallon settling tank installed in December 1990 on the northeast portion of the property. The tank was connected to the county sewer. According to NCDOH records (NCDOH 1992a), E-Z EM used the following chemicals:

- Barium Sulfate
- Paints and Thinners
- Printing Chemicals (Inks and Cleaners)
- Sodium Saccharine Powder
- Vinyl Cement (Solvent Based Adhesive)
- Laboratory Analytical Chemicals

The chemicals were stored inside the building. An authorized hazardous waste hauler removed waste oil, flammable waste solvents, and Barium Sulfate from the premises.

In July 1992, NCDOH issued EZ-EM a Toxic or Hazardous Materials Storage Facility Permit for the bulk storage of unspecified chemicals and Barium Sulfate (NCDOH 1992b). In 1995, the NYSDEC issued a permit allowing for the discharge of small amounts of chloroform, carbon tetrachloride and formaldehyde into the atmosphere. A permit application was filed during 1995 to allow for the discharge of small amounts of ethanol, bromine, n-hexane, methylcyclopentane and acetonitrile to the atmosphere.

Records indicate that Fortunoff's Warehouse occupied this address from 1977 to 1989. In

1989, the Office of the County [Nassau] Executive (OCE) received an anonymous complaint regarding employee health problems due to the use of "harsh chemicals" during working hours (OCE 1989). No further information was discovered regarding the incident.

A record search produced no additional information regarding either the chemical usage or waste disposal activities of other occupants of this address.

### **3.2.2 750 Summa Avenue**

Sanborn maps indicate a building for a food service equipment company was built in 1968. A second building was attached to the food service building in 1969. The building is a two-story office/warehouse with a 70,000 sq.ft. footprint. The site was occupied by Advanced Food Service Equipment Manufacturing, Inc., a stainless steel kitchen equipment supplier, from 1968 to 1991. It was also occupied by Micro Industries, a machine shop, from 1971 to 1982. Since 1992, the property has been leased to EZ-EM, a diagnostics imaging processing company.

Records indicate that the following chemicals were stored or used at this site:

#### **Micro Industries**

Grease

Hydraulic Oil

#### **Advance Food Service**

1,1,1 Trichloroethane

Solvents

#### **EZ-EM**

Barium Sulfate

Printing chemicals

There are eleven drywells around the perimeter of the building- six sanitary cesspools in front, two on the west side, and three in the rear. NC Department of Public Works records indicate that the building was hooked up to city sewer on 5/24/83. There is a degreaser vat located in the building, in the southwest corner. The floor drain located near the degreaser was sealed shut in 1978 at the recommendation of the NCDOH. The degreaser sludge (1,1,1 trichloroethane and waste oil) was stored in 55-gallon drums in the rear of the facility for transport by a licensed waste hauler. The drywell was sampled by the NCDOH in May 1978 and analyzed by H2M. The analysis indicated that the drywell contained 480 ppb 1,1,1 TCA. In 1985, the degreaser was removed.

## **4.0 TOPS APPLIANCE CITY SITE**

### **4.1 SITE DESCRIPTION**

This site contains the following properties located in the southeast corner of the New Cassel Industrial Area:

- 1099 Old Country Road
- 776-790 Summa Avenue

### **4.2 HISTORICAL PROPERTY INFORMATION**

#### **4.2.1 1099 Old Country Road**

According to a 1962 aerial photograph and a 1968 Sanborn Map, a structure was built at this address in the early 1960's. Records dating back to 1968 indicate the building was occupied by an auto body shop and an auto painting company. Nationwide Auto Painting/Autobody operated there until 1988. Jessco Co. address was indicated as 1099 Old Country Road in a Hazardous Waste Manifest associated with drum removal in 1988 (see details below). Westbury Nissan operated there in 1992 and the current occupant is Tops Appliance City.

NCDPW documents show this building was demolished sometime between 1993 and 1995 (LSA 1993). A parking lot currently occupies this lot (Anson 1995). Additionally, NCDPW records indicate drywells in front of the building along Old Country Road. The municipal sewer connection date is unknown. However, the sewer was disconnected and capped in June 1993, perhaps prior to demolition (LSA 1993).

In 1987 the Nassau County Fire Commission (NCFC 1987) issued a violation notice to Nationwide Auto Body at 1099 Old Country Road. The notice listed the following:

- Obstructed sprinkler control valves
- Improper storage of 55 gallon drums of flammable liquids

A 1988 NCDOH site inspection indicated that Nationwide Auto Body no longer occupied the building. Thirty (36) drums (paint thinners, grease and antifreeze) were left inside the building and one drum appeared to be leaking. NCDOH contacted the property owner and instructed the drums be overpacked, tested for contents and removed from the building (NCDOH 1988b). On August 8, 1988, the USEPA issued a Notification of Hazardous Waste Activity form (USEPA 1988a) stating that the property owner was a generator of hazardous waste, which included (but was not limited to) the following:

- F001 (Spent halogenated solvents used in degreasing)
- F003 (Spent non-halogenated solvents)

According to NYSDEC Title 6 of the Official Compilation of Codes, Rules and Regulations (6 NYCRR) Part 371, F001 and F003 wastes include (but are not limited to) the following chemicals:

F001 (Tetrachloroethylene, Trichloroethylene, 1,1,1 Trichloroethane)  
F003 (Xylene, Ethylbenzene, Methanol)

Records indicate that the chemical waste was removed from the building by authorized hazardous waste haulers in October 1988 (SA 1988).

#### 4.2.2 776-790 Summa Avenue

This 42,000 square foot building (NCDC 1975) was erected in 1958 (Sanborn 1968). Supreme Metal Fabricators (1971-1992) and Advance Food Service Company (1975) (both manufacturers of metal food service equipment) were located at this address (NCDC 1975 and 1988). Nassau County Department of Health (NCDOH) records indicate that both companies were owned by Bar King Metal Fabricators, Inc. (NCDOH 1977a).

The 776/790 Summa Avenue building connected to the municipal sewer system in May 1983. The sewer permit application showed no indication of floor drains or cesspools (NCDPW 1983a).

Of the various businesses occupying this address, Supreme Metal Fabricators reported using chemicals during its operation. The NCDOH records (NCDOH 1987a) indicate that Supreme Metal Fabricators used the following chemicals:

Grease	4 pounds
Lacquer Thinner	100 gallons
Lacquers	260 gallons
Lubricating Oil	50 gallons
Cutting Oil	1 gallon
Miscellaneous Organics	100 pounds
Petroleum Distillates	275 gallons
Unknowns	175 gallons/100 pounds

The final disposition of these chemicals is unknown. However, a NCDOH document (NCDOH 1977a) indicates that cutting oil, mixed with water, was discharged to the municipal sewer system. According to a report published by the New York Public Information Research Group (NYPIRG), Supreme Metal Fabricators generated hazardous waste (spent non-halogenated solvents) (NYPIRG 1994). A record search with the United States Environmental Protection Agency (USEPA) did not disclose any file information for this company.

Advance Food Service, listed at 776/790 Summa Avenue in 1975 also occupied 750 Summa



Avenue from 1971 to 1991. A record search uncovered no documentation of chemical usage by this company at 776/790 Summa Avenue.

A record search provided no information regarding either the chemical usage or waste disposal practices of other occupants at this address.

1860 222 0300

## 5.0 SWALM AVENUE SITE

### 5.1 SITE DESCRIPTION

This site contains one address:

- 118-138 Swalm Avenue

### 5.2 HISTORICAL PROPERTY INFORMATION

#### 5.2.1 118-138 Swalm Avenue

According to aerial photo maps, the building on this property was built in 1961. It was enlarged sometime between 1962 and 1969. According to Sanborn maps, in 1968 the building contained a mechanical engraving company and a plastic extrusion company. Street address directory records indicate that All Records Distributors operated there from 1971 to 1974, Allomatic Industries from 1975 to 1977, Louis Jordan Labs from 1978 to 1980, Varitek Machine from 1979 to 1992, Atlas Graphics in 1985. Liqui-Mark Corporation, the current occupant, has been there since at least 1994. Other sources indicate that Atlas Graphics, an aluminum and magnesium embossing, printing company, has operated at 567 Main Street from 1978 to the present.

Chemical generated or stored on-site are as follows:

Louis Jordan Labs (vitamin manufacturer)

- Vitamins
- Sugars
- Antihistamines
- Fill Capsules
- Package creams

Varitek Machine Co. (ink ribbon manufacturer)

- Ethyl Acetate
- Methyl Ethyl Ketone
- Naphtha
- Isopropyl Alcohol
- UCAR solution vinyl VYHHB9314
- Carbon black

Liqui-Mark Corporation

- Propylene Glycol Methyl Ether
- Ethylene Glycol
- Propylene Glycol
- Dipropylene Glycol
- Ethylene Glycol Phenyl Ether
- Oleic Acid
- Dimethyl Sulfoxide

- Isopropyl Alcohol
- Diethylene Glycol
- Methyl-p-hydroxybenzoate
- Ethanol (denatured)
- Glycerin
- Miscellaneous inks
- Miscellaneous dyes

Sewer hookup was made on 8/1/80. A complaint was filed with the NCDOH in 1979 accusing Louis Jordan Labs of discharging industrial waste to the cesspool causing frequent overflows and seepage onto the front sidewalk in front of 110 Swalm Avenue.

A fire occurred at Varitek Machine Company on 1/22/86 in the electrical panel which spread to stored chemicals, including UCAR solution vinyl and carbon black. The fire was extinguished with the sprinkler system and a premises inspection was recommended due to the storage of flammable chemicals.

In 1983, Varitek Machine Co. installed five 1000 gallon underground storage tanks. The items stored were ethyl acetate, methyl ethyl ketone (two tanks), naphtha, and isopropyl alcohol. They were cited in 1990 by the NC Fire Inspector for storage of the tanks without proper inventory, no secondary containment, and no leak monitoring system. The tanks were drained, filled with concrete slurry and abandoned in 1990. A chemical inventory by the NC Fire Department listed the following additional items stored to those listed above at Varitek:

- Methylene chloride
- Sulfonated sperm oil
- Oleil Alcohol
- Rape seed oil
- Blown rape seed oil
- Lanoline
- Silicone resin
- Ready mixed inks
- Aluminum powder
- Alkali blue
- Talcum powder
- Microfine wax
- Titanium dioxide
- Polyurethane resin
- Polyvinyl formal resin
- Bakelite PVC resin
- Polyester film
- Nylon film
- Polyethylene film

## **6.0 SYLVESTER STREET SITE**

### **6.1 SITE DESCRIPTION**

This site contains the following properties:

- 33 Sylvester Street
- 49 Sylvester Street
- 69 Sylvester Street

### **6.2 HISTORICAL PROPERTY INFORMATION**

#### **6.2.1 33 Sylvester Street**

The building at this address was constructed in 1961 (Sanborn 1968). A record search uncovered information about only two (2) occupants after 1971 (Tennis Only and Arkwin Industries, Inc.). Prior to 1971, no occupant information was obtained.

Arkwin Industries, Inc. (current occupant) manufactures hydraulic and pneumatic fuel components for air craft accessories and missiles. The company uses 1,1,1-TCA in varying quantities. Arkwin Industries uses 33 Sylvester Street for shipping, receiving, and storage. Arkwin reported that they do not use 1,1,1 TCA at this address (LMS 1995).

Documented chemical storage at this site in 1987 by Arkwin Industries includes:

- Miscellaneous oil
- Ammoniated stripper
- Miscellaneous paint
- Fuel oil #2

A 275 gallon fuel oil tank was installed in 3/84 in the rear of the building. It was removed 12/5/90.

#### **6.2.2 49 Sylvester Street**

Since 1971, a construction company, a ventilation and filter service company, printing shops, and an electro-mechanical parts manufacturer conducted business at 49 Sylvester Street (LMS 1995). A record search produced no information regarding occupants prior to 1971.

In December 1988, the building connected to the municipal sewer system. There are two (2) cesspools located in the rear southwest corner of the property (LMS 1995).

International Ribbon and Carbon (1977-1981) and Molty Stryk Inc. (1982-1985) are two (2) companies reportedly using chemicals during their business operation. Documents suggest that Molty Stryk, Inc. operated as a subsidiary or division of International Ribbon and Carbon. Both companies had the same corporate officers (LMS 1995). While International Ribbon and Carbon manufactured correctable ribbon, a record search did not reveal an exact type of business operation for Molty Stryk Inc..

A September 1977 NCDOH industrial chemical survey (NCDOH 1977d) noted the following chemical usage at International Ribbon and Carbon:

TCA	500 gallons
Ethyl Alcohol	5000 pounds

The final disposition of these chemicals was listed as either part of the final product or evaporation.

An April 1978 building inspection noted a 1,1,1-TCA storage tank located approximately 5 to 10 feet away from a floor drain that connected to a cesspool located in the rear southwest corner of the building. Additionally, the inspection report noted ethyl alcohol drums staged inside the building at the southeast corner. There was no change in chemical usage for the facility. An illustration accompanying the inspection report noted the words "sample" next to one of the cesspools which may have connected to the floor drain. A subsequent laboratory report dated June 4, 1978, shows results for water sample taken at International Ribbon and Carbon (NCDOH 1978). The sample results showed the following ppb ( $\mu\text{g/L}$ ) concentrations:

Methylene Chloride	130 ppb
1,1-Dichloroethane (DCA)	70 ppb
PCE	20 ppb.

A March 1981 United States Environmental Protection Agency (USEPA) Notification of Hazardous Activity application, Molty Stryk, Inc. reported generating F005 type spent non-halogenated solvents. The application noted a "first notification" for waste generation by the company (USEPA 1982).

According to the NYSDEC spills database, leakage from 55 gallon drums occurred on July 12, 1989. The material and quantity were unspecified.

On July 21, 1989, a chemical spill occurred in the dumpster outside the vacant building at 49 Sylvester Street. A painter cleaning up in the abandoned building discarded a bottle of chemicals in the dumpster. An NCDOH inspector investigating the cleanup of the site discovered that the chemicals were leaking and fuming in the dumpster. State, county and local authorities responded to the incident and discovered the following chemicals in the dumpster:

Formic Acid	Two (2) Pints
Hydrochloric Acid	One (1) Pint
Sulfuric Anhydride	Three (3) Pints
Sulfuric Acid	One (1) Pint

Following the incident, these chemicals were repacked and properly discarded. Additionally, NYSDEC and NCDOH investigators opened several manhole covers. The investigators discovered "a leachpool with a black liquid and floating sludge (NCDOH 1989c)." A record search revealed no additional information regarding any subsequent actions following this chemical spill incident or the leachpool sludge discovery.

A 1996 NCDOH storage permit for Micro-Ray Corp., a manufacturer of small electromagnetic parts, lists storage of small amounts of cutting oil, kerosene, way lube, and bearing oil.

### **6.2.3 69 Sylvester Street**

Since 1973, several printing shops, a knitting mill and a salvage company conducted business at this address (LMS 1995). A record search produced no information regarding occupants prior to 1973.

Of the business occupying this address, Suzana Knitting Mills reported using oils. A September 1977 NCDOH industrial chemical survey (NCDOH 1977d) listed 30 to 40 gallons of machine lubricating oil. The final disposition of the oil was reported as being absorbed onto rags. The chemical usage or waste disposal activities of the other occupants is unknown.





## **7.0 DATA REVIEW SITES**

### **7.1 SITE DESCRIPTION**

This site contains various properties around the NCIA including:

- 750 Main Street
- 1226 Old Country Road
- 110 Hopper Street
- 111 & 117 Swalm Avenue
- 29 New York Avenue

### **7.2 HISTORICAL PROPERTY INFORMATION**

#### **7.2.1 750 Main Street**

A 1978 aerial photograph indicates an east and west addition (730 and 750 Main Street) to the northern section (740 Main Street) of 1085 Old Country.

In 1979, a municipal sewer permit was issued for the building at 730 Main Street. The sewer permit indicates this building was occupied by Fortunoff's Second Choice (a department store) (NCDOH 1979). Currently, Tops Appliance City occupies this building. No further information was discovered regarding other occupants at this address.

According to NCDPW documents (LSA 1993), 750 Main Street was demolished sometime between 1993 and 1995. Currently, a parking facility occupies this lot (Anson 1995). No information was discovered documenting any occupants of this address.

#### **7.2.2 1226 Old Country Road**

According to Sanborn maps, the structure at this site was built between 1951 and 1961. Since then, there have been no visible changes to the size of the building. The original address for this building was 1200 Old Country Road. In 1971, the building was occupied by Westbury Electronics and county family court offices. From 1972 to 1992, county court offices occupied the building. Since 1994, the site has been occupied by Westbury Toyota. Sewage hookup to this building occurred on 9/29/79.

According to the NYSDEC spills report, a spill occurred at 1200 Old Country Road on 4/1/92. The report lists the occupant as Island Transport. The spill involved a tank overflow of 30 gallons of #2 fuel oil spilled onto the ground.

#### **7.2.3 110 Hopper Street**

Records dating back to 1968 indicate the building at 110 Hopper Street was erected in 1958

(Sanborn 1968). Street address directory records list the site occupants as follows: 1971-75 Structural Enclosures, 1972-75 Contemporary Packaging Corporation, 1981 MPS Industries, 1983 Egon Baron Commercial Art, 1991-92 Flexitherm, 1992 Endodynamics. The current occupant is Express Steel. From 1975 to 1984, Contemporary Packaging Corporation (CPC), a manufacturer and printer of polyethylene bags (NCDOH 1977e), listed 90 Hopper Street as their address.

A site plan shows two cesspools located near the northwest corner of the building. The site was hooked up to city sewer on 10/29/82.

NCDOH records indicate that CPC used the following chemicals and generated the following waste at 110 Hopper Street (NCDOH 1987a):

#### Chemicals

Ethanol	22,000 gallons
Isopropyl Alcohol	1,300 gallons
Propyl Acetate	1,300 gallons

#### Waste

Inks	24,000 pounds
Non-Halogenated Solvents	2,200 pounds

A September 1979 NCDOH site inspection of 110 Hopper Street states that CPC discharged non-contact cooling water into drywells in the rear of the building, at the northwest corner. No chemical discharge was observed. The inspection report also stated that a waste hauler removed all wastes in sealed cans and drums. However, the waste removal company was not on the NYSDEC list of approved waste scavengers (NCDOH 1979d).

According to the NCDOH Air Pollution Management System Current Application Data List (NCDOH 1987b), CPC discharged the following chemicals into the atmosphere from their facility at 110 Hopper Street:

Ethanol	25,272 pounds/year
Isopropyl Alcohol	2,527 pounds/year
Aliphatic Alcohol	1,404 pounds/year
Isopropyl Acetate	2,527 pounds/year

A report released by the New York Public Interest Research Group (NYPIRG 1994) stated that the USEPA issued an identification number to Contemporary Packaging Corporation at 110 Hopper Street. NCDOH records dated 6/92 indicated the following chemicals stored by EZ-EM:

Barium Sulfate  
Isopropyl Alcohol  
Vinyl cement solvent adhesive  
Thinners  
Resins

NYSDEC spills database list a car accident at this location on 8/28/94. A vehicle was backed into a Lilco transformer causing a small spill of mineral spirits and non PCB oil.

#### **7.2.4 111 & 117 Swalm Avenue**

In 1950, this property was occupied by a farmhouse with barns and miscellaneous stockpiles. In 1964, the house and associated buildings were replaced with a 200' x 80' masonry building. In 1968 the building was occupied by a surgical manufacturing company and a beer wholesaler. A 1970 aerial photo shows an outdoor storage area near the west edge of the property. A 1984 aerial photo shows an addition at the northeast corner of the building.

The occupants of the building since 1971 are as follows: 1971-76 EZ-EM, 1971-72 Spade Parts Mfg., Middlesex Paper, Near East Co., Fimex Corp, Nehoc Mfg., Faran Co. There is no listing for that property from 1977-1992. The current occupant is Harco Trucking.

The lot contains 2 draining inlets on both sides of the building. Sewage hookup was done on 3/3/87. No documentation of chemical storage or generation was found.

#### **7.2.5 29 New York Avenue**

The current building at 29 New York Avenue was built in 1952 with an addition added by 1956. Building plans for the addition show a proposed location of a septic tank with three leaching pools located in the southeast quarter of the property. The sewer hookup date for the building was April 1, 1980.

The occupants of this site since 1971 are as follows: 1971-84 Money Scan Systems, 1971-76 Spectronics Corp., 1971-78 Black Light Eastern, 1971-73 Scientific Apparatus, 1971-84 Cooper Brothers Co., 1979-80 Custom Coatings, Inc., 1979-91 Tishcon Corp., 1979-91 Eckhart Corp. As of 1992, Tishcon Corp., a vitamin manufacturer, listed their address as 30 New York Avenue.

According to Anson Environmental Phase II Investigation (August 1992), Tishcon is listed as a RCRA site generating 1000 kg/mo of non-acutely hazardous waste or 1 kg/mo acutely hazardous waste. A NCDOH chemical storage location database, based on a 1983 survey, listed the following chemicals at this address:

Calcium stearate

- Calcium sulfate
- Cellulose
- Dicalcium phosphate
- Gum arabic
- Isopropyl alcohol
- Magnesium stearate
- Methanol
- Methylene chloride
- Shellac
- Stearic Acid
- Sugars
- Talc
- 1,1,1 Trichloroethane
- Starch
- Vitamins
- Dextrin
- Ethyl cellulose
- Gum tragacanth
- Polyvinylpyrrolidone (PVP)
- Silica gel

NCHD site visit notes dated July 15, 1986 indicated that Tishcon occupied 5 buildings at various addresses in the Westbury area. The building at 29 New York Avenue was listed as the main office/production. At the request of the NCHD, Tishcon provided a complete raw material list used in their manufacture of vitamins. In addition to the items listed above, the list included food derivatives, capsules, dyes, mineral compounds, preservatives, drugs, soap, and the solvents:

- Propylene glycol
- Polyethylene glycol

Nassau County Fire Department (NCFD) records indicate that a fire occurred at this address on May 22, 1985. The NCFD issued an Order to Remove Violations issuance to Tishcon. Tishcon was directed to properly dispose of hazardous materials involved in the fire including:

- Thiamine Mono Nitrate
- Methanol
- Shellac

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APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	Contract	NYSDEC Class GA
Sample Depth, ft	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	Required	Groundwater
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/18/02	02/03/03	05/06/03	07/30/03	Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	U	1	2	U	0.8	0.9	0.7	0.86	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	540 D	440 D	480 D	190 E	420	130 D	230 D	310 D	0.5	5 ST
Methylene Chloride	1.9	U	U	U	0.9	U	U*	0.74	0.5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	0.77	0.5	5 ST
1,1-Dichloroethane	140 D	140 D	140 D	52 E	95	63 D	63 D	70 D	0.5	5 ST
2,2-Dichloropropane	**	U	U	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	48 **E	35	42 D	17	39	38	32	36	0.5	5 ST
Chloroform	5.2	2	4	2 B	4	4	4.9	4.4	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	230 D	220 D	210 D	75 E	140	82 D	100 D	110 D	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	0.8	U	0.5	5 ST
1,2-Dichloroethane	2.2	U	2	U	2	2	2	1.6	0.5	0.6 ST
Trichloroethene	580 D	500 D	450 D	190 E	360	210 D	320 D	350 D	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST*
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST*
1,1,2-Trichloroethane	1.5	2	U	U	1	2	1.4	1.2	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	49 JD	53 D	52 D	26	50	39	38 D	45 D	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	U	U	0.5	---
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U*	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
<b>Total VOCs</b>	1597.8	1393	1382	552	1112.7	570.9	812.8	930.57		---

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
---: Not established  
☒ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	Contract	NYSDEC Class GA
Sample Depth, ft	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150	Required	Groundwater
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/16/02	02/03/03	05/06/03	07/30/03	Detection	Standard or
Dilution Factor	1.0	1.0	50.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	0.7	1	U	1	U	1	0.7	0.98	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	900 D	770 D	390 D	670 E	275 D	190 D	380 D	730 D	0.5	5 ST
Methylene Chloride	7.1	U	50 D	3	0.9	3	U*	2.2	0.5	5 ST
trans-1,2-Dichloroethene	0.5	U	U	U	U	U	U	1	0.5	5 ST
1,1-Dichloroethane	230 D	250 D	130 D	210 E	70 D	110 D	140 D	150 D	0.5	5 ST
2,2-Dichloropropane	**	U	**	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	54 **E	40	25 **D	40 E	21	34	32	34 D	0.5	5 ST
Chloroform	5.7	3	U	U	2	4	4.1	4.1	0.5	7 ST
Bromochloromethane	U	U	U	4 B	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	350 D	350 D	160 D	270 E	107 D	120 D	160 D	270 D	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	0.93	U	0.5	5 ST
1,2-Dichloroethane	5.1	U	U	U	2	5	3.4	4.1	0.5	0.6 ST
Trichloroethene	1200 D	1000 D	490 D	920 E	322 D	440 D	700 D	1000 D	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
1,1,2-Trichloroethane	2.1	2	U	2	0.8	2	2	1.7	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	67 E	74 D	28 D	70 E	22	27 D	55 D	73 D	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	U	U	0.5	—
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U*	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
<b>Total VOCs</b>	<b>2822.2</b>	<b>2490</b>	<b>1273</b>	<b>2190</b>	<b>822.7</b>	<b>936</b>	<b>1498.13</b>	<b>2271.08</b>		

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
\*: Sample result highly estimated, based on validation criteria  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
—: Not established  
☒ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	180-200	180-200	180-200	180-200	180-200	180-200	180-200	180-200		
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/17/02	02/03/03	05/06/03	07/30/03		
Dilution Factor	1.0	1.0	50.0	1.0	10.0	10.0	1.0	1.0		
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	0.7	1	U	U	U	1	1.1	0.95	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	1100 D	750 D	530 D	520 D	911 D	890 D	550 D	720 D	0.5	5 ST
Methylene Chloride	8.9	U	55 D	U	7	3	U*	3.6	0.5	5 ST
trans-1,2-Dichloroethene	0.8	U	U	U	U	U	0.54	1.5	0.5	5 ST
1,1-Dichloroethane	310 D	280 D	180 D	170 D	310	250 D	250 D	200 D	0.5	5 ST
2,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	82 **E	64 D	43 **D	38 D	64	57 D	57 D	43 D	0.5	5 ST
Chloroform	2.4	3	U	37 BD	4 J	3	3.2	3	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	350 D	280 D	180 D	170 D	320	270 D	190 D	210 D	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	1.2	U	0.5	5 ST
1,2-Dichloroethane	7	U	U	U	7	8	5.8	6.4	0.5	0.6 ST
Trichloroethene	1000 D	790 D	550 D	480 D	895 D	760 D	750 D	680 D	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST*
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST*
1,1,2-Trichloroethane	3.6	3	U	4	4 J	3	3	2.7	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	150 D	130 D	38 D*	77 D	130	120 D	99 D	110 D	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	U	U	0.5	—
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
<b>Total VOCs</b>	<b>3015.4</b>	<b>2301</b>	<b>1578</b>	<b>1496</b>	<b>2652</b>	<b>2163</b>	<b>1910.64</b>	<b>1981.15</b>		<b>—</b>

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
—: Not established  
□ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5***	MW-5	Contract Required	NYSDEC Class GA
Sample Depth, ft	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	Detection	Groundwater Standard or Guidance Value
Date of Collection	11/05/01	01/24/02	04/25/02	07/17/02	10/18/02	01/30/03	05/07/03	07/29/03	Limit	Guidance Value
Dilution Factor	1.0	1.0	1.0	1.0	5.0	1.0	1.0	1.0	(ug/l)	(ug/l)
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	U	U	U	U	U	U	0.68	U	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	11	10	3	2	8	55 D	180 D	17	0.5	5 ST
Methylene Chloride	U	U	U	U	U	U	U*	U*	0.5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethane	15	2	0.8	U	2	13	50 D	6.4	0.5	5 ST
2,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	U	0.5	1	6	12	6	U	U	0.5	5 ST
Chloroform	U	U	0.3 J	U	U	U	1.2	0.55	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	15	15	4	3	7	39	190 D	35	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	0.74	U	0.5	5 ST
1,2-Dichloroethane	U	U	U	U	U	U	0.99	U	0.5	0.6 ST
Trichloroethene	2.5	2	2	1	7	35	84 D	2.6	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	3.7	16	25	19	9	18	64 D	11	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	0.72	U	0.5	—
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Total VOCs	33.7	45.5	36.1	31	45	166	581.73	72.55		—

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria  
\*\*\*: Based upon review of historical results and the 8th quarter results it appears that samples MW-5 and MW-6 were inadvertently switched during the May 2003 sampling event.

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
—: Not established  
□ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6***	MW-6	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130		
Date of Collection	11/05/01	01/25/02	04/25/02	07/17/02	10/18/02	01/30/03	05/07/03	07/28/03		
Dilution Factor	1.0	1.0	10.0	1.0	5.0	1.0	1.0	1.0		
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	U	U	U	U	U	U	U	1.4	0.5	5 ST
Fluorotrichloromethane	U	U	1 J	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	270 D	72 D	100 D	99 D	135	150 D	36	190 D	0.5	5 ST
Methylene Chloride	1.3	U	U	5 D	U	12	U	U*	0.5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethane	52 D	36	33	29	31	47 D	8.4	68 D	0.5	5 ST
2,2-Dichloropropane	**	U	**	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	22 **	13	9 **	9	21	15	2.5	7.4	0.5	5 ST
Chloroform	1.1	U	1	U	U	1	U	1.4	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	240 D	89 D	96 D	90 D	122	170 D	23	270 D	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	U	U	0.5	5 ST
1,2-Dichloroethane	0.8	U	U	U	U	U	U	U	0.5	0.6 ST
Trichloroethene	93 D	54 D	43	51 D	59	89 D	27	45 D	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	80 D	37 D	68 E	47 D	60	58 D	15	56 D	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	1 B	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	U	U	0.5	---
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
<b>Total VOCs</b>	<b>761.2</b>	<b>301</b>	<b>351</b>	<b>330</b>	<b>428</b>	<b>542</b>	<b>111.9</b>	<b>639.2</b>		

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria  
\*\*\*: Based upon review of historical results and the 8th quarter results it appears that samples MW-5 and MW-6 were inadvertently switched during the May 2003 sampling event.

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
---: Not established  
  Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	Contract Required	NYSDEC Class GA
Sample Depth, ft	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	Detection	Groundwater
Date of Collection	11/05/01	01/25/02	04/24/02	07/16/02	10/18/02	01/29/03	05/07/03	07/30/03	Limit	Standard or Guidance Value
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	U	0.5	0.7	2	0.5	0.6	0.74	1.8	0.5	5 ST
Methylene Chloride	U	U	U	U	U	U	U	U	0.5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethane	0.7	1	1	2	1	2	1.4	1.8	0.5	5 ST
2,2-Dichloropropane	**	U	**	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	23 **	18	15 **	18	22	27	15	19	0.5	5 ST
Chloroform	U	U	U	U	U	U	U	U	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	U	0.5	0.6	2	0.5	0.7	0.7	1.1	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	U	U	0.5	5 ST
1,2-Dichloroethane	U	U	U	U	U	U	U	U	0.5	0.6 ST
Trichloroethene	2	3	3	8	4	4	2.6	6	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	5.2	6	4	6	U	7	5.3	7.8	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	2	U	2	1.6	3.7	0.5	---
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Total VOCs	30.9	29	24.3	40	28	43.3	27.34	41.2		---

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

+: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
---: Not established  
☒ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	Contract Required	NYSDEC Class GA
Sample Depth, ft	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	Detection	Groundwater
Date of Collection	11/05/01	01/25/02	04/24/02	07/17/02	10/18/02	01/29/03	05/07/03	07/30/03	Limit	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		Guidance Value
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
Vinyl Chloride	U	U	U	U	U	U	U	U	0.5	2 ST
Bromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
Chloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethene	U	0.8	U	0.5	1	1	1.5	2.3	0.5	5 ST
Methylene Chloride	U	0.6	U	U	U	U	U	U	0.5	5 ST
trans-1,2-Dichloroethene	U	U	0.9	U	U	U	U	U	0.5	5 ST
1,1-Dichloroethane	1.3	2	2	1	3	3	2.7	3.4	0.5	5 ST
2,2-Dichloropropane	**	U	**	U	U	U	U	U	0.5	5 ST
cis-1,2-Dichloroethene	1.7 **	2	2 **	2	4	4	3.5	4.3	0.5	5 ST
Chloroform	U	U	U	U	U	U	0.57	U	0.5	7 ST
Bromochloromethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1-Trichloroethane	0.7	0.7	0.8	U	1	1	1.3	1.4	0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U	U	U	U	0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U	U	U	U	0.5	5 ST
1,2-Dichloroethane	U	U	U	U	U	U	U	U	0.5	0.6 ST
Trichloroethene	1.1	2	U*	0.8	2	2	2.3	3.6	0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U	U	U	U	0.5	1 ST
Bromodichloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Dibromomethane	U	U	U	U	U	U	U	U	0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
trans-1,3-Dichloropropene	U	U	U	U	U	U	U	U	0.5	0.4 ST *
1,1,2-Trichloroethane	U	U	U	U	U	U	U	U	0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U	U	U	U	0.5	5 ST
Tetrachloroethene	1.1	1	1	0.8	2	3	1.5	2.9	0.5	5 ST
Dibromochloromethane	U	U	U	U	U	U	U	U	0.5	50GV
Chlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
Bromoform	U	U	U	U	U	U	U	U	0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U	U	U	U	0.5	0.04 ST
Bromobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Hexchlorobutadiene	U	U	U	U	U	U	U	U	0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Methyl-tert-butyl ether	U	U	U	U	U	U	U	U	0.5	---
Benzene	U	U	U	U	U	U	U	U	0.5	1 ST
Toluene	U	U	U	U	U	U	U	U	0.5	5 ST
Ethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
m-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
o-Xylene	U	U	U	U	U	U	U	U	0.5	5 ST
Styrene	U	U	U	U	U	U	U	U	0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Propylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
2-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
4-Chlorotoluene	U	U	U	U	U	U	U	U	0.5	5 ST
tert-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
sec-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U	U	U	U	0.5	5 ST
n-Butylbenzene	U	U	U	U	U	U	U	U	0.5	5 ST
Total VOCs	5.9	9.1	6.7	5.1	13	14	13.37	17.9		---

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2- dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

\*: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
---: Not established  
☐ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value



APPENDIX B  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
VOLATILE ORGANIC COMPOUNDS

Sample Identification	MW-9	MW-9	MW-9	MW-9	MW-9			Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	310-315	310-315	310-315	310-315	310-315				
Date of Collection	07/17/02	10/18/02	02/03/03	05/09/03	08/01/03				
Dilution Factor	1.0	1.0	1.0	1.0	1.0				
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)			(ug/l)	(ug/l)
Dichlorodifluoromethane	U	U	U	U	U			0.5	5 ST
Chloromethane	U	U	U	U	U			0.5	5 ST
Vinyl Chloride	U	U	U	U	U			0.5	2 ST
Bromomethane	U	U	U	U	U			0.5	5 ST
Chloroethane	U	U	U	U	U			0.5	5 ST
Fluorotrichloromethane	U	U	U	U	U			0.5	5 ST
1,1-Dichloroethene	1	2	U*	1.3	1.3			0.5	5 ST
Methylene Chloride	U	U	0.8	U	U			0.5	5 ST
trans-1,2-Dichloroethene	U	U	U	U	U			0.5	5 ST
1,1-Dichloroethane	U	U	U*	U	U			0.5	5 ST
2,2-Dichloropropane	**	U	U	U	U			0.5	5 ST
cis-1,2-Dichloroethene	0.8 **	1	1	0.81	0.67			0.5	5 ST
Chloroform	U	U	U	U	0.72			0.5	7 ST
Bromochloromethane	U	U	U	U	U			0.5	5 ST
1,1,1-Trichloroethane	2	2	U*	1.6	1.5			0.5	5 ST
1,1-Dichloropropene	U	U	U	U	U			0.5	5 ST
Carbon Tetrachloride	U	U	U	U	U			0.5	5 ST
1,2-Dichloroethane	U	U	U	U	U			0.5	0.6 ST
Trichloroethene	15	21	22	13	13			0.5	5 ST
1,2-Dichloropropane	U	U	U	U	U			0.5	1 ST
Bromodichloromethane	U	U	U	U	U			0.5	50GV
Dibromomethane	U	U	U	U	U			0.5	5 ST
cis-1,3-Dichloropropene	U	U	U	U	U			0.5	0.4 ST*
trans-1,3-Dichloropropene	U	U	U	U	U			0.5	0.4 ST*
1,1,2-Trichloroethane	U	U	U	U	U			0.5	1 ST
1,3-Dichloropropane	U	U	U	U	U			0.5	5 ST
Tetrachloroethene	1	1	2	0.67	1.1			0.5	5 ST
Dibromochloromethane	U	U	U	U	U			0.5	50GV
Chlorobenzene	U	U	U	U	U			0.5	5 ST
1,1,1,2-Tetrachloroethane	U	U	U	U	U			0.5	5 ST
Bromoform	U	U	U	U	U			0.5	50GV
1,1,2,2-Tetrachloroethane	U	U	U	U	U			0.5	5 ST
1,2,3-Trichloropropane	U	U	U	U	U			0.5	0.04 ST
Bromobenzene	U	U	U	U	U			0.5	5 ST
1,3-Dichlorobenzene	U	U	U	U	U			0.5	3 ST
1,4-Dichlorobenzene	U	U	U	U	U			0.5	3 ST
1,2-Dichlorobenzene	U	U	U	U	U			0.5	3 ST
1,2,4-Trichlorobenzene	U	U	U	U	U			0.5	5 ST
Hexachlorobutadiene	U	U	U	U	U			0.5	0.5 ST
1,2,3-Trichlorobenzene	U	U	U	U	U			0.5	5 ST
Methyl-tert-butyl ether	U	U	U	0.51	U			0.5	—
Benzene	U	U	U	U	U			0.5	1 ST
Toluene	U	U	U	U	U			0.5	5 ST
Ethylbenzene	U	U	U	U	U			0.5	5 ST
m-Xylene	U	U	U	U	U			0.5	5 ST
p-Xylene	U	U	U	U	U			0.5	5 ST
o-Xylene	U	U	U	U	U			0.5	5 ST
Styrene	U	U	U	U	U			0.5	5 ST
Isopropylbenzene (Cumene)	U	U	U	U	U			0.5	5 ST
n-Propylbenzene	U	U	U	U	U			0.5	5 ST
1,3,5-Trimethylbenzene	U	U	U	U	U			0.5	5 ST
2-Chlorotoluene	U	U	U	U	U			0.5	5 ST
4-Chlorotoluene	U	U	U	U	U			0.5	5 ST
tert-Butylbenzene	U	U	U	U	U			0.5	5 ST
1,2,4-Trimethylbenzene	U	U	U	U	U			0.5	5 ST
sec-Butylbenzene	U	U	U	U	U			0.5	5 ST
p-Isopropyltoluene(p-Cymene)	U	U	U	U	U			0.5	5 ST
n-Butylbenzene	U	U	U	U	U			0.5	5 ST
Total VOCs	19.8	27.0	25.8	17.9	18.3				—

QUALIFIERS:

U: Compound analyzed for but not detected  
J: Compound found at a concentration below the CRDL, value estimated  
\*\*: Result reported as a sum of 2,2-dichloropropane and cis-1,2-dichloroethene  
E: Compound concentration exceeds instrument calibration range, value estimated  
D: Result taken from reanalysis at a secondary dilution  
B: Compound found in the method blank as well as the sample  
U\*: Result qualified as non-detect based on validation criteria

NOTES:

+: Value pertains to the sum of the isomers  
ST: Standard  
GV: Guidance Value  
—: Not established  
☐ Indicates value exceeds NYSDEC Class GA groundwater standard or guidance value

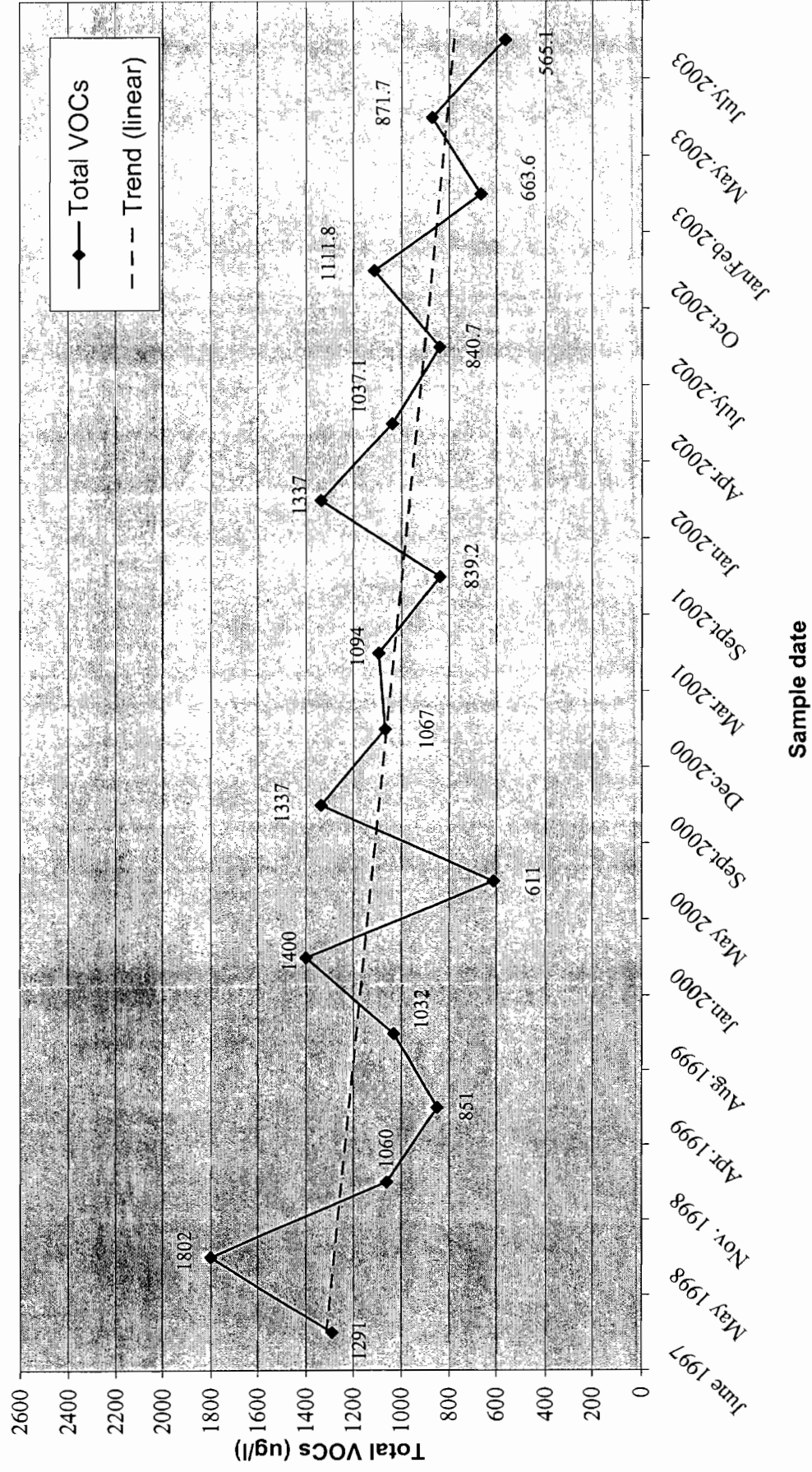
# Appendix C



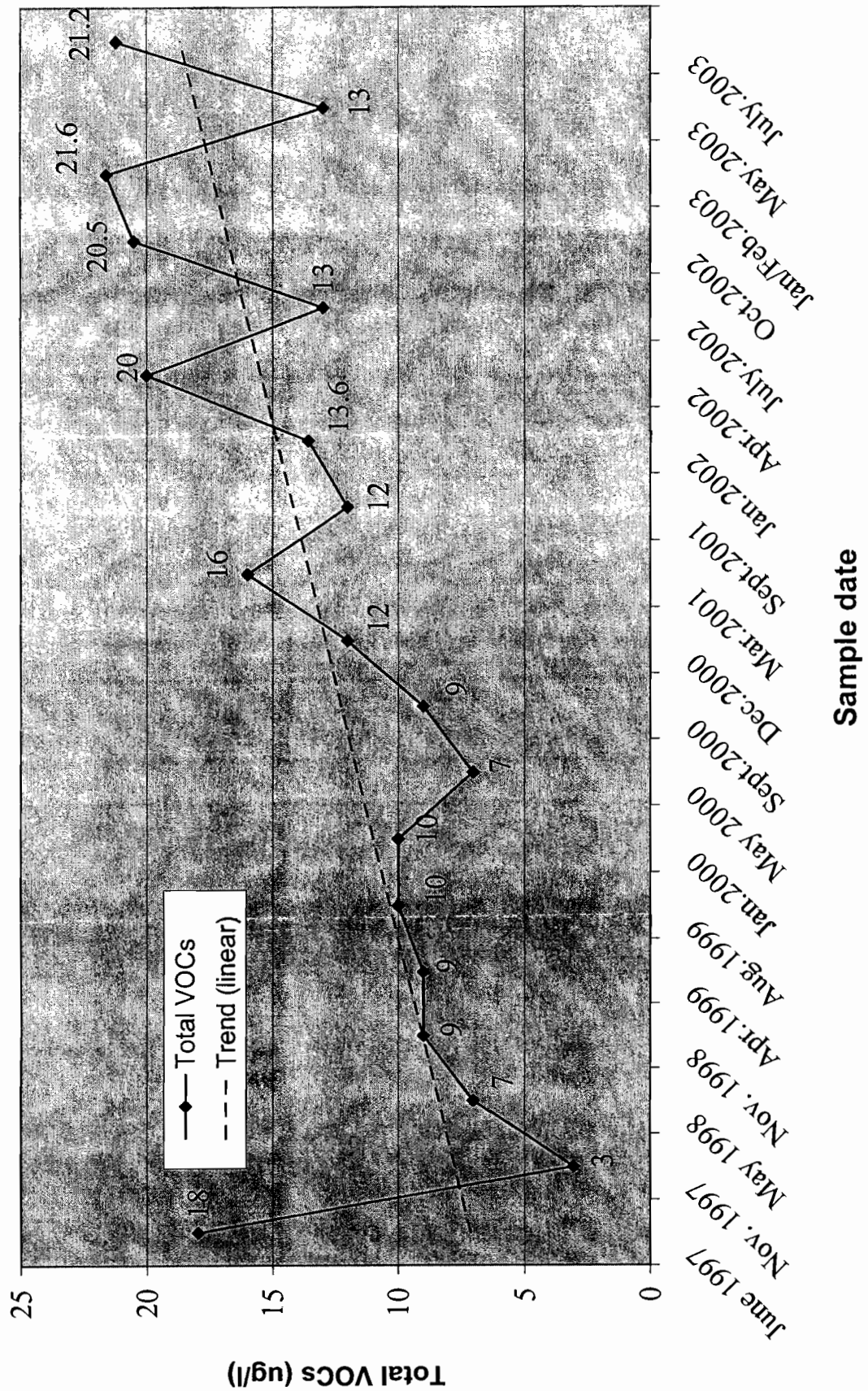
## **APPENDIX C**

### **HISTORIC CONCENTRATION GRAPHS FOR EARLY WARNING WELLS AND OFF-SITE MONITORING WELLS - TOTAL VOLATILE ORGANIC COMPOUNDS**

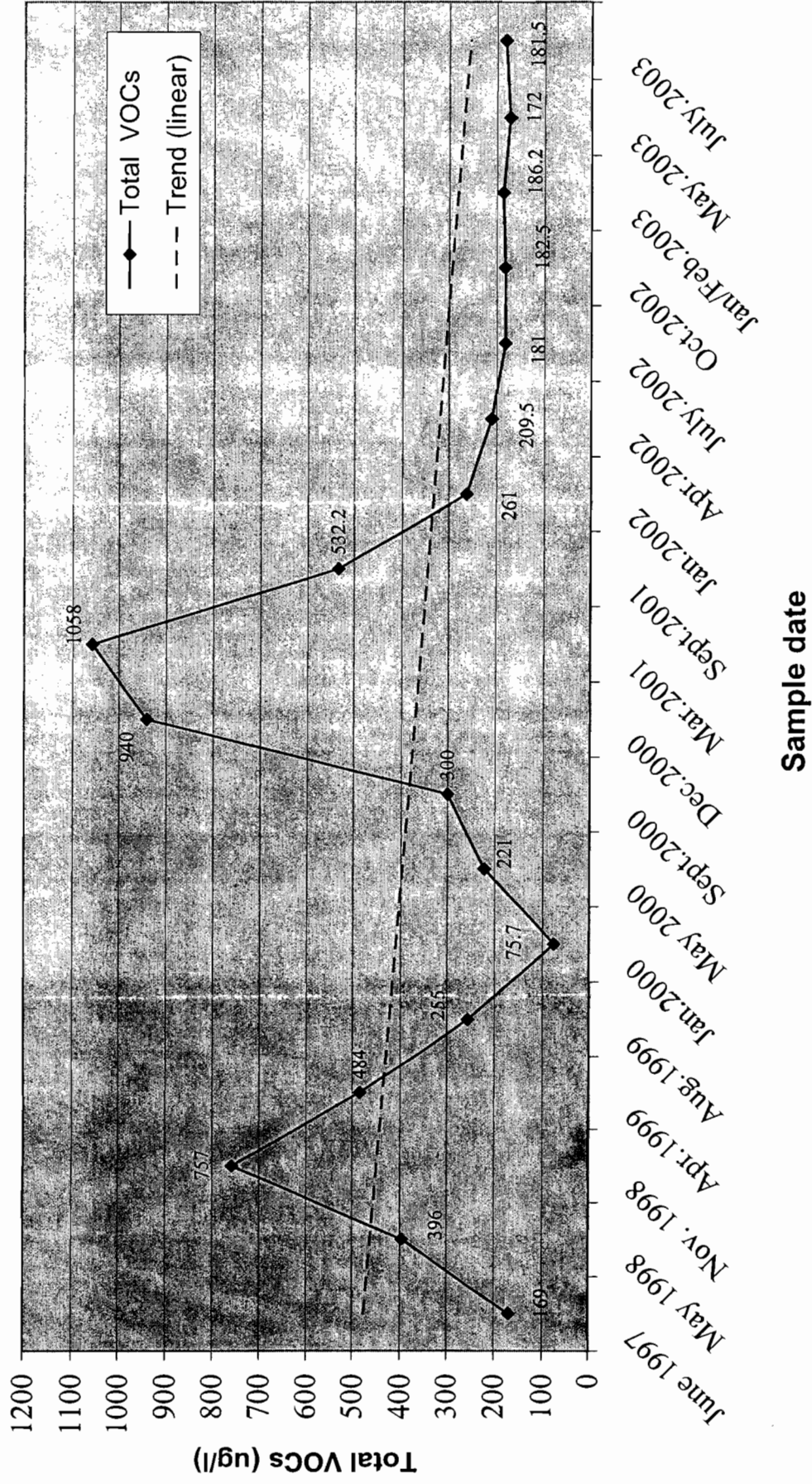
# **EW-1B** **(Screen depth 154 to164 feet bls)**



**EW-1C**  
**(Screen depth 506 to 516 feet bls)**

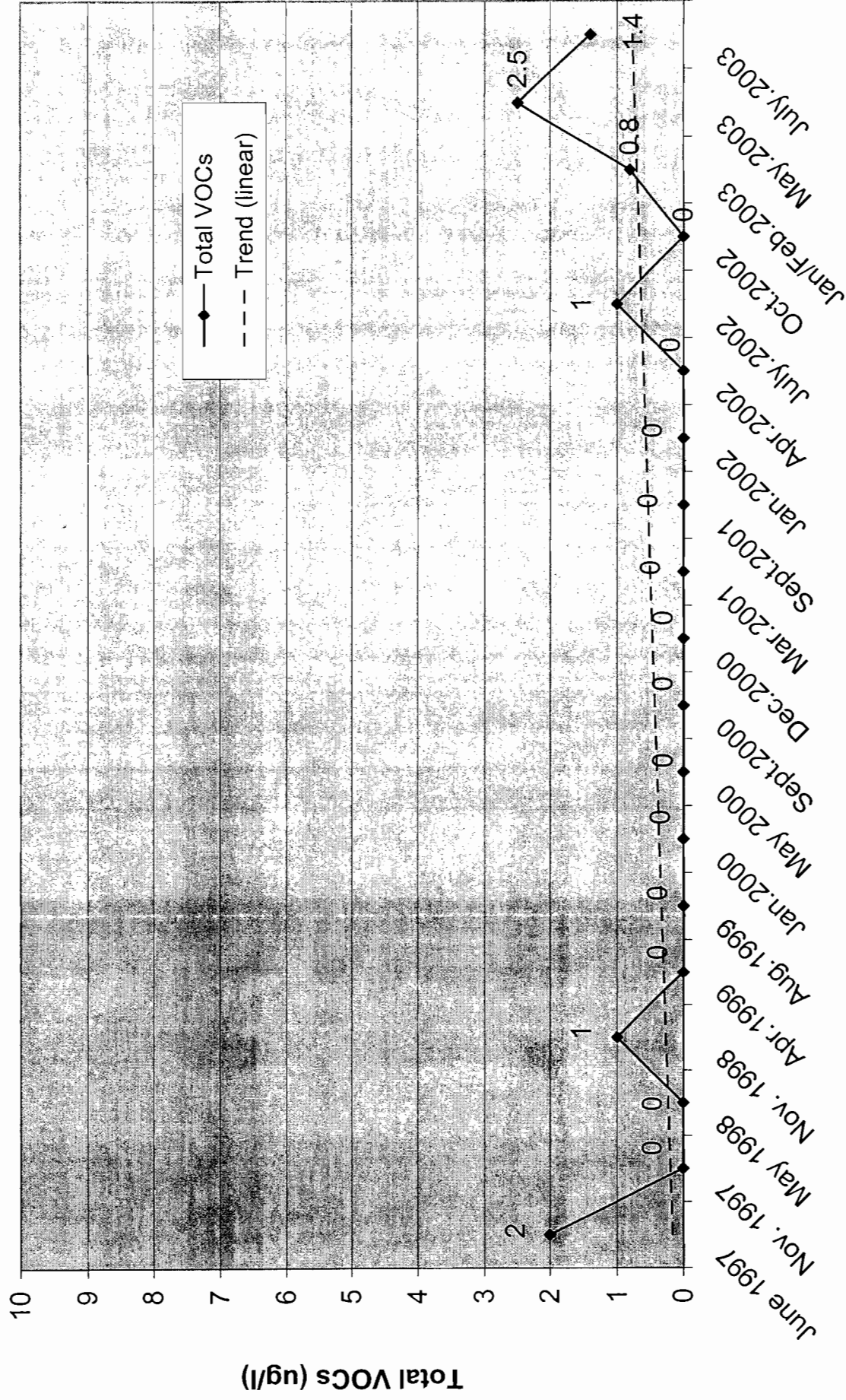


# **EW-2B** (Screen depth 132 to 142 feet bls)



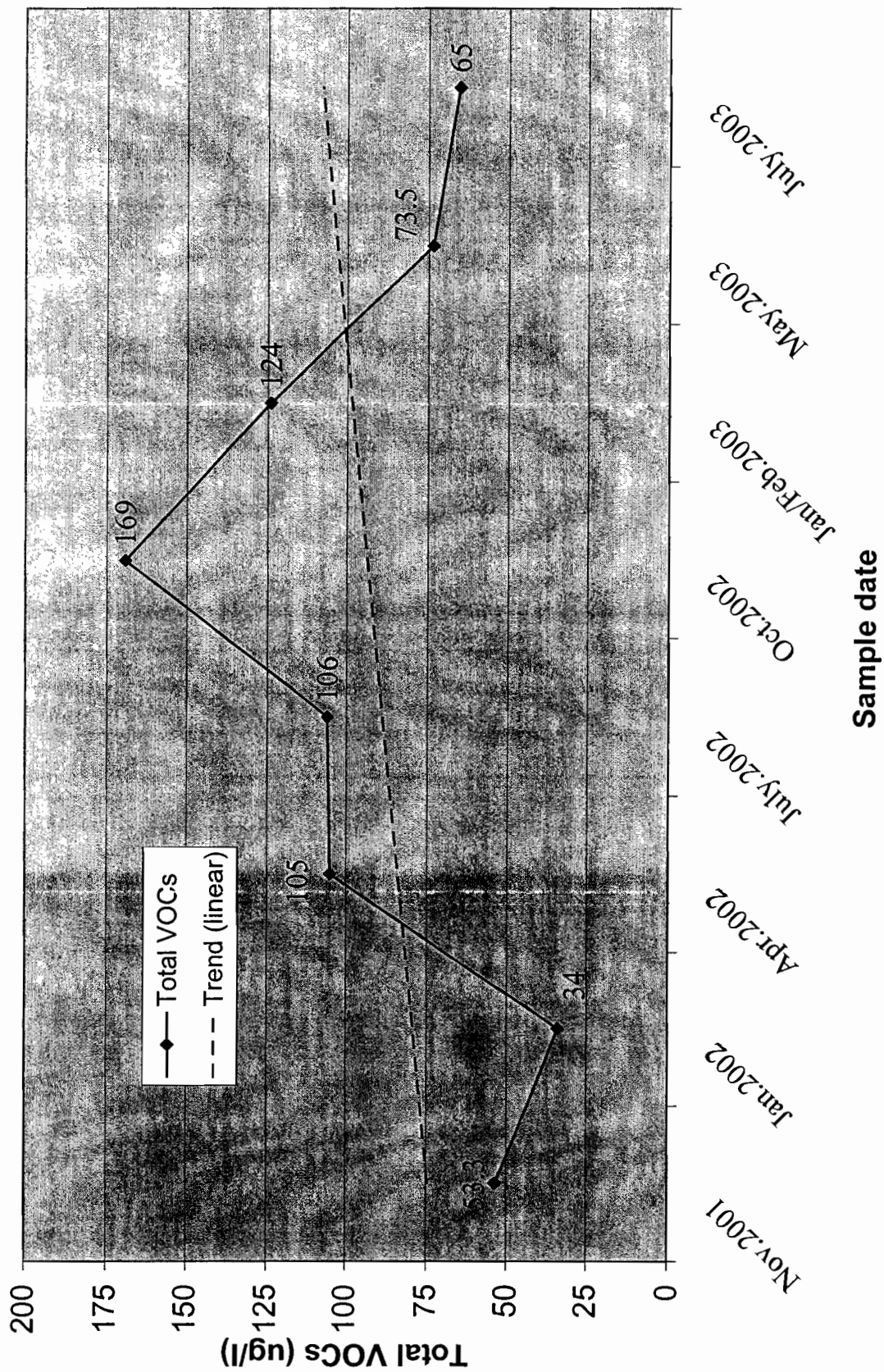


**EW-2C**  
 (Screen depth 504 to 514 feet bls)



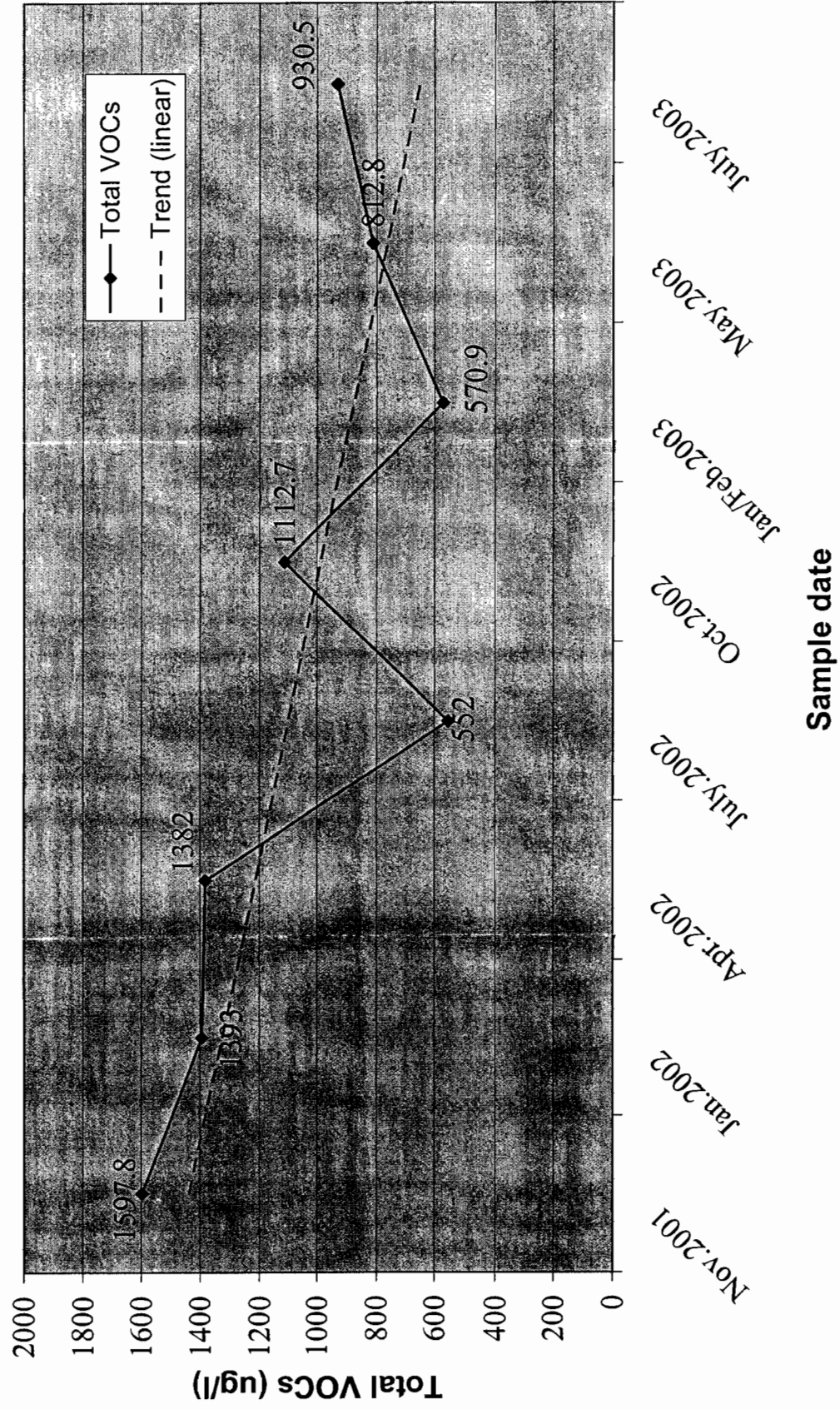
**Sample date**

**MW-1**  
**(Screen depth 90 to 110 feet bls)**

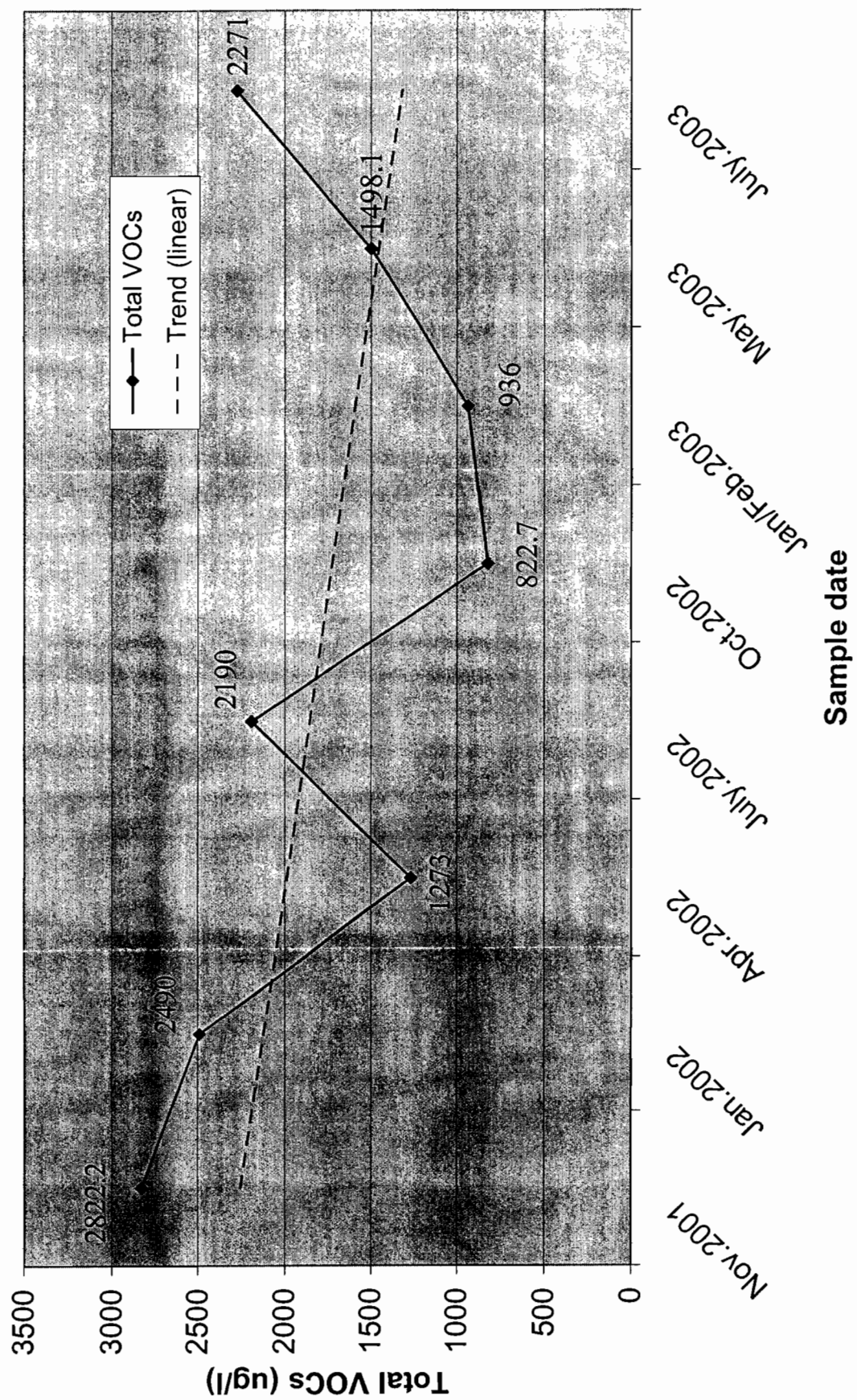




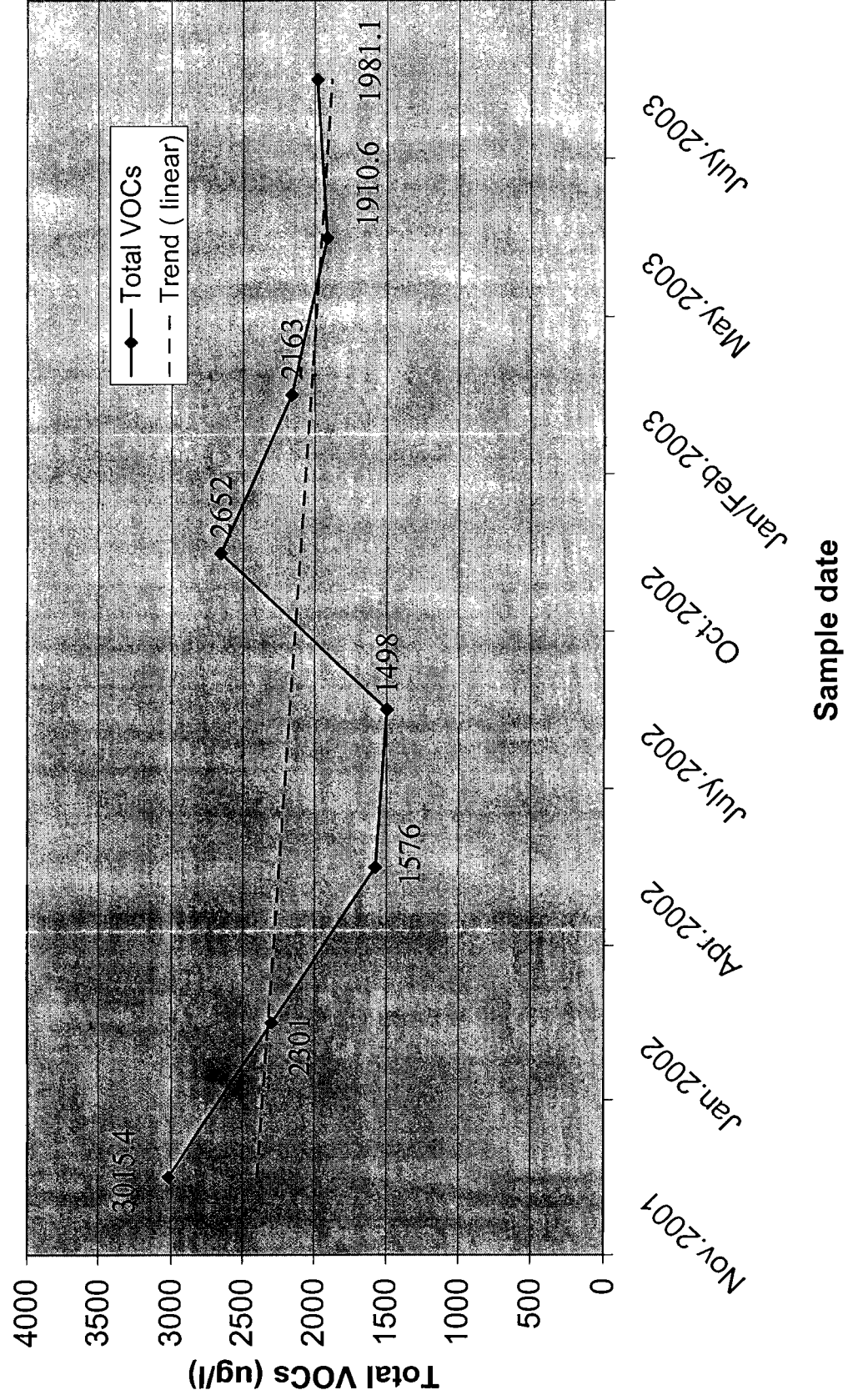
**MW-2**  
(Screen depth 110 to 130 feet bls)



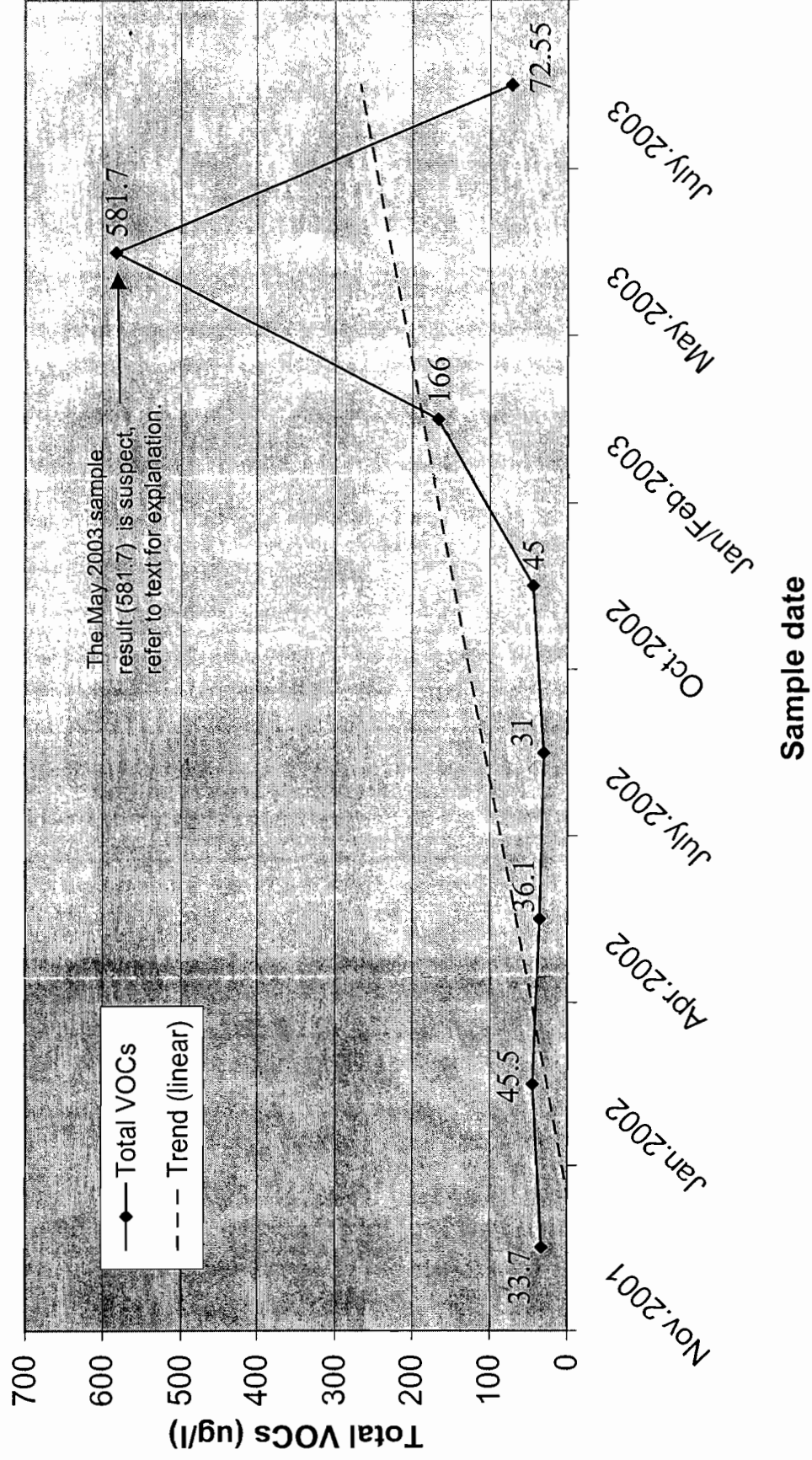
**MW-3**  
**(Screen depth 150 to 150 feet bls)**



**MW-4**  
**(Screen depth 180 to 200 feet bls)**

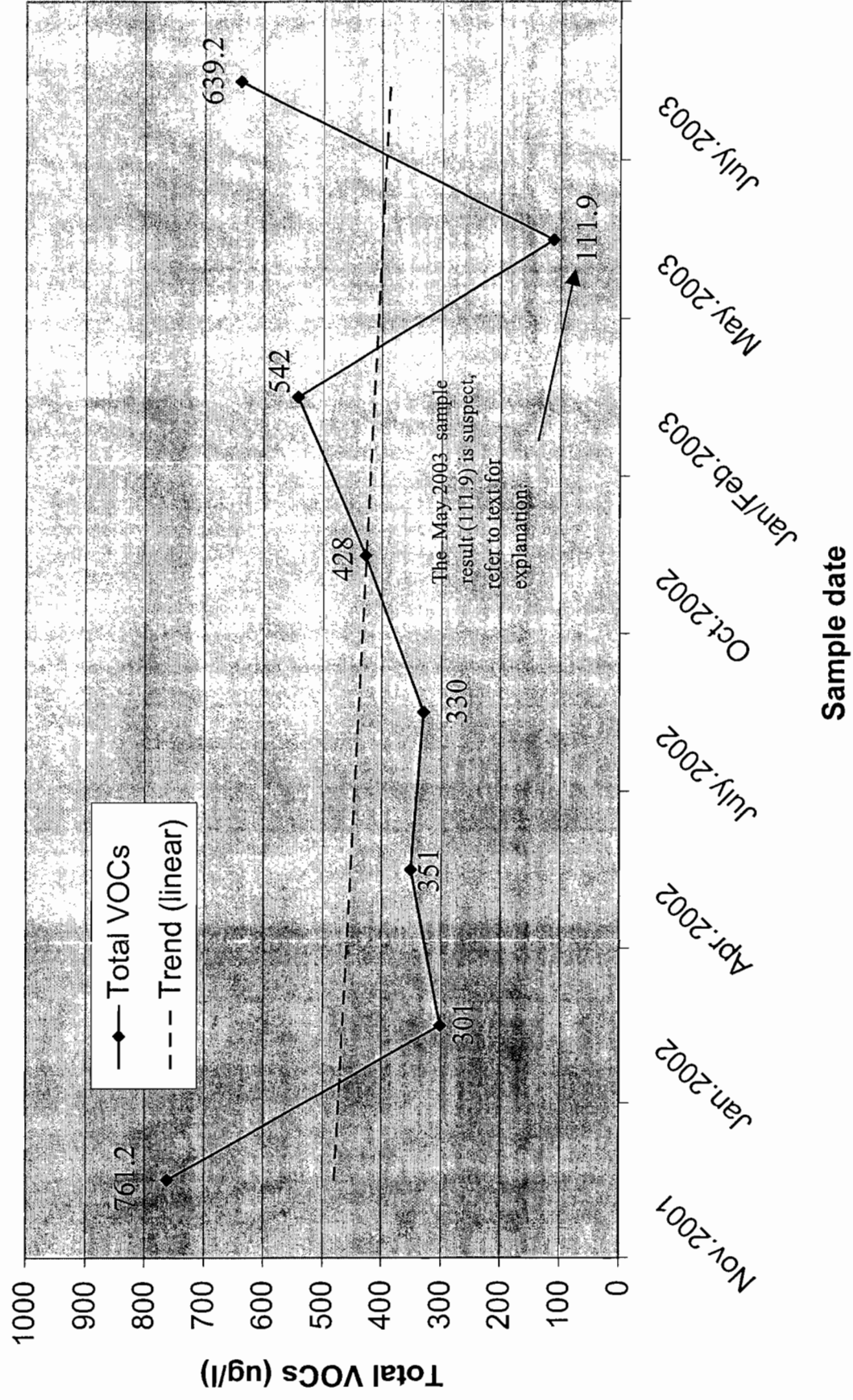


# **MW-5** (Screen depth 90 to 110 feet bls)

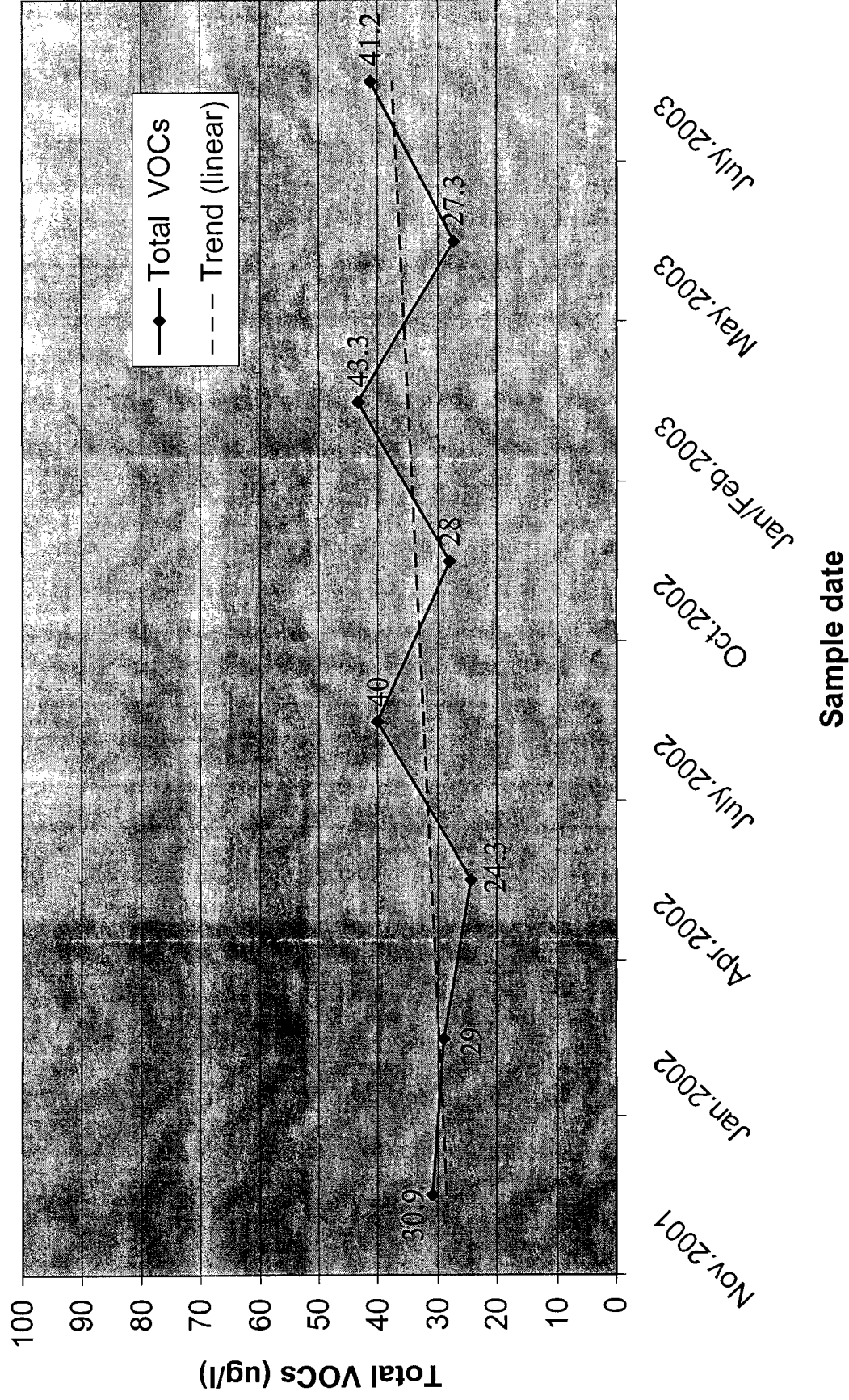




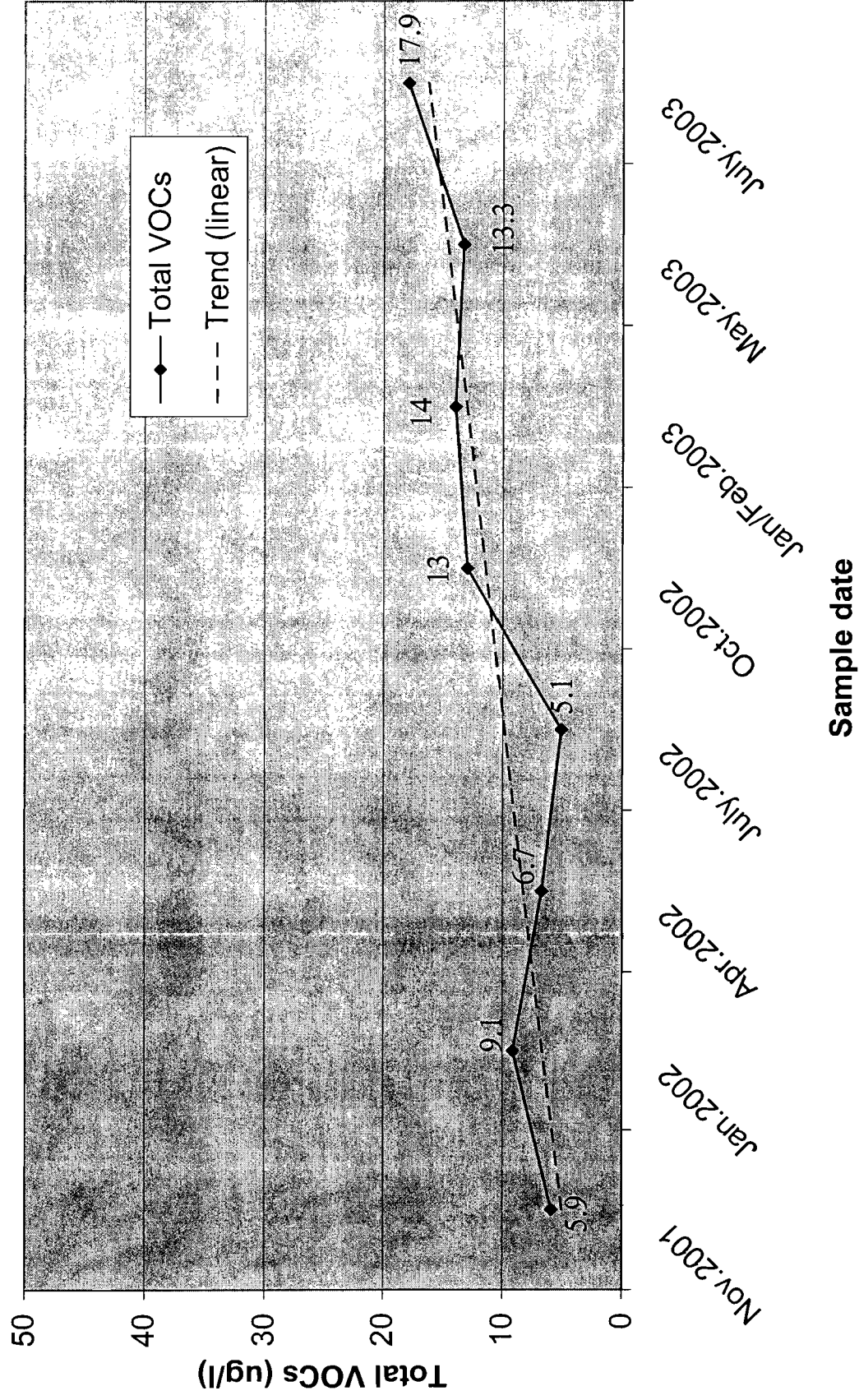
**MW-6**  
**(Screen depth 110 to 130 feet bls)**



**MW-7**  
**(Screen depth 90 to 110 feet bls)**

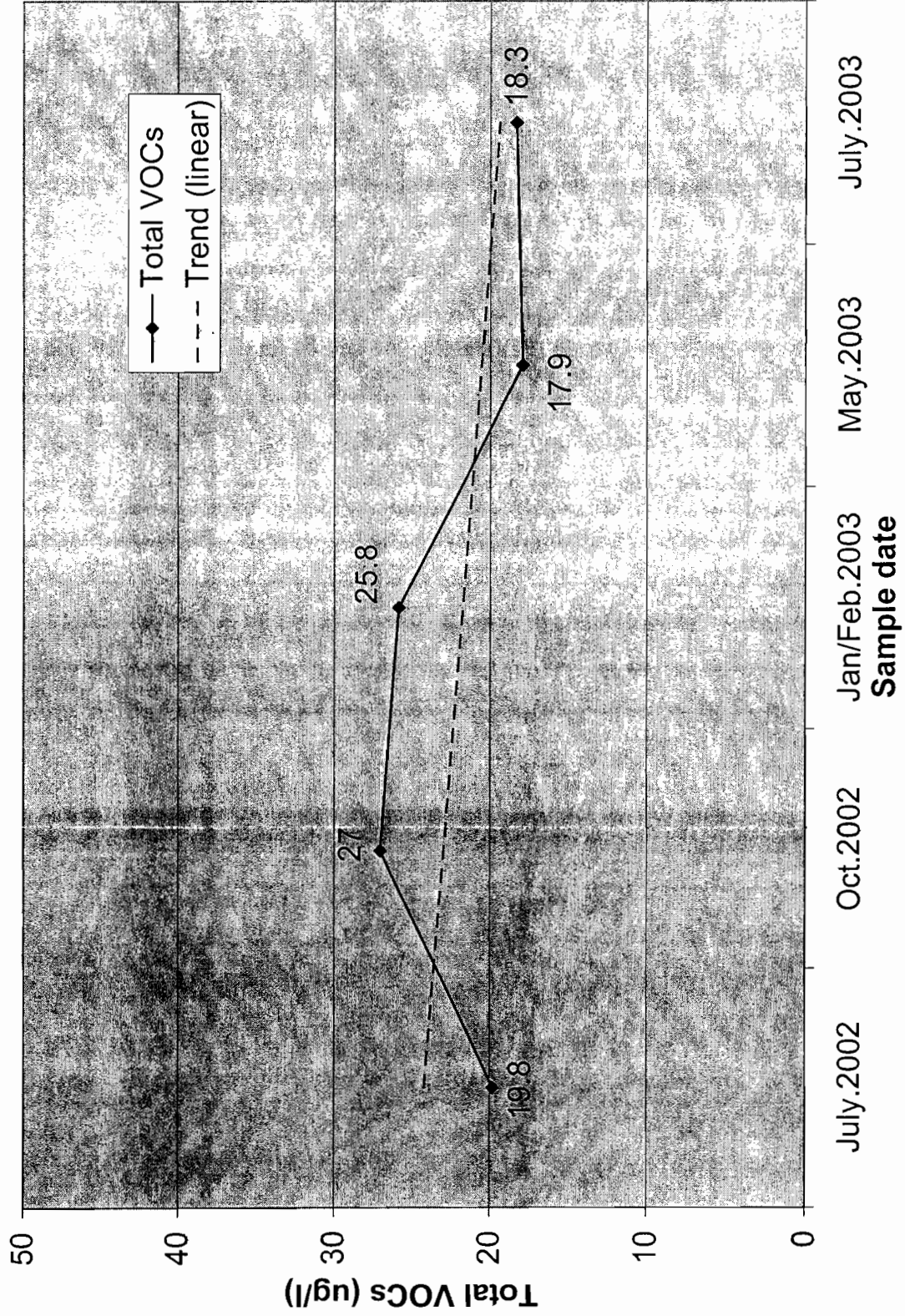


**MW-8**  
(Screen depth 119 to 139 feet bls)





**MW-9**  
**(Screen depth 305 to 315 feet bls)**





## Appendix D

## **APPENDIX D**

### **EARLY WARNING WELL AND OFF-SITE MONITORING WELL NATURAL ATTENUATION MONITORING PARAMETER RESULTS**

Sample Identification	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164	EW-1B 154-164
Date of Collection	09/25/01	01/28/02	04/25/02	07/19/02	10/16/02	01/29/03	05/08/03	07/30/03	
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	
Ferrous Iron*	U		U	0.038 B	0.0438 B	U	U	U	0.05
Total Organic Carbon	U		2	2.7	U	U	U	U	5
Alkalinity	20.6	18	20	18	18	17	16	17	10
Chloride	26.9	31.9	33.5	31.2	30	36.6	34	32.2	3
Nitrate	6.071	6.3	6	6.4	6.2	5.8	5.9	5.7	0.05
Sulfate	21.9	23.5	23.1	21.9	23.7	22.9	23.8	20.6	5
Carbon Dioxide	79.8	60	U	64	77	58	57	65	NA
Methane	0.005	U	U	U	U	U	0.0006 J	0.001	0.002

[illegible]

5: Compounding variables at a conventional level below the 0.05 level, various combinations

Standard applies to Total Iron

☐ : Indicates value exceeds NYSDEC Class GA Groundwater Standard or Guidance Value

## APPENDIX D

[illegible]

Sample Identification	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	504-514	504-514	504-514	504-514	504-514	504-514	504-514	504-514	(mg/l)	(mg/l)
Date of Collection	09/25/01	01/28/02	04/25/02	07/19/02	10/16/02	01/30/03	05/08/03	07/29/03		
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	0.339	0.858	0.551						0.05	0.3 ST**
Total Organic Carbon									5	---
Alkalinity	U	1.4	10	10	1	U	U	U	10	---
Chloride	10.6	10	10	6.8	6.9	10	11	10	3	250 ST
Nitrate	4.11	7	6.8	1.9	2	7.1	7.6	7.3	0.05	10 ST
Sulfate	1.773	1.9	1.5	U	U	1.8	1.3	1.9	5	250 ST
Carbon Dioxide	U	2.7	10	14	25	U	14	12	NA	---
Methane	17.4	13	0.074	U	U	U	0.001	U	0.002	---

NOTES:

ST: Standard

---: Not established

\*: Sample analyzed for Total Iron instead of Ferrous Iron

\*\* : Standard applies to Total Iron

**Indicates value exceeds**

or Guidance Value

**APPENDIX D**  
**NEW CASSEL INDUSTRIAL AREA**  
**OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM**  
**MONITORING WELL SAMPLE RESULTS**  
**NATURAL ATTENUATION MONITORING PARAMETERS**

Sample Identification	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	90-110	90-110	90-110	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150		
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/17/02	02/03/03	05/06/03	07/30/03					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0					
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)					
Ferrous Iron*	U	U	U	U	U	U	U	U				0.05	0.3 ST**
Total Organic Carbon	U	U	U	U	U	U	U	U				5	---
Alkalinity	10	4.1	1.9	2.1	10	10	69.2	64.3				10	---
Chloride	38.8	48.9	50	59.7	51.2	56						3	250 ST
Nitrate	5.553	4.1	4.5	5.3	5.2	5.2	5	4				0.05	10 ST
Sulfate	24.2	26	27.3	29.4	25.2	29.5	28.8	30.4				5	250 ST
Carbon Dioxide	66.3	78	66	U	89	69	U	U				NA	---
Methane	0.004	U	U	U	U	U	U	U				0.002	---

Sample Identification	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130		
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/18/02	02/03/03	05/06/03	07/30/03					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0					
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)					
Ferrous Iron*	U	U	U	U	U	U	U	U				0.05	0.3 ST**
Total Organic Carbon	U	U	U	U	U	U	U	U				5	---
Alkalinity	22	0.474	0.265	0.254	0.178	0.193	0.0912 B	0.204				10	---
Chloride	33.5	3.5	2.7	2.6	4.4	30	26	26				3	250 ST
Nitrate	6.813	37.5	27	27	29	38	37	41.2				0.05	10 ST
Sulfate	20.9	6.7	7	5.1	34.2	6	6.3	5.9				5	250 ST
Carbon Dioxide	408	22.8	22.5	18.9	18	19.8	19.7	19.5				NA	---
Methane	0.013	62	62	83	84	70	75	72				0.002	---

**QUALIFIERS:**

U: Compound analyzed for but not detected

NA: Not Available

B: Concentration was above IDL but less than CRDL

J: Compound detected at a concentration below the CRDL, value estimated

E: Concentration exceeds instrument calibration range, value estimated

**NOTES:**

ST: Standard

---: Not established

\*: Sample analyzed for Total Iron instead of Ferrous Iron

\*\* Standard applies to Total Iron

[ ] Indicates Value exceeds NYSDEC Class GA Groundwater Standard

or Guidance Value

Sample Identification	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	Contract Required Detection Limit	NYSDEC Class GA Groundwater Standard or Guidance Value
Sample Depth, ft	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150	130-150	(mg/l)	(mg/l)
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/16/02	02/03/03	05/06/03	07/31/03					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0					
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	U	7.58	5.03	3.95	3.28	3.92	5.56	1.68				0.05	0.3 ST**
Total Organic Carbon	5.505	4.3	2.7	2.3	3.9	U	U	U				5	---
Alkalinity	18	27	18	15	U	U	U	U				10	---
Chloride	36	39.9	35.7	37.6	35.2	38.6	37.8	41.3				3	250 ST
Nitrate	6.505	4.4	4.9	5.1	2.5	4.5	5	5.6				0.05	10 ST
Sulfate	21.1	12.4	17.2	18.9	16.5	21.3	21.8	23.9				5	250 ST
Carbon Dioxide	369	71	72	63	U	U	U	U				NA	---
Methane	1.2	0.097	0.11	0.14	0.077 E	0.071 E	0.053	0.064				0.002	---

Sample Identification	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	Contract	NYSDEC Class GA
Sample Depth, ft	180-200	180-200	180-200	180-200	180-200	180-200	180-200	180-200	Required	Groundwater
Date of Collection	11/02/01	01/24/02	04/24/02	07/16/02	10/17/02	02/03/03	05/06/03	07/31/03	Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	U		U	U	U	U	U	U	0.05	0.3 ST**
Total Organic Carbon	6.309		2.9	2.4	4.3	19	19	19	5	---
Alkalinity	22.0		22	19	19	46.6	45.9	47.8	10	---
Chloride	45.7		46.8	46.9	41.1	9.3	8.3	8	3	250 ST
Nitrate	8.177		8.9	9.2	8.4	6	5.6	5	0.05	10 ST
Sulfate	U		2.3	4.4	5.6	84	87	87	5	250 ST
Carbon Dioxide	466		73	71	98	0.0006 J	0.004	0.003	NA	---
Methane	0.013	U		0.002	0.001				0.002	---

E: Concentration exceeds instrument calibration range, value estimated

Indicates Value exceeds Guidance Value

## APPENDIX D

[illegible]

Sample Identification	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6***	MW-6	Contract	NYSDEC Class GA
Sample Depth, ft	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	Required	Groundwater
Date of Collection	11/05/01	01/25/02	04/26/02	07/17/02	10/18/02	01/30/03	05/07/03	07/29/03	Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	U	0.0457 B	0.0609 B	U	U	0.33	U	U	0.05	0.3 ST**
Total Organic Carbon	U	2	1.9	3.3	U	U	U	U	5	---
Alkalinity	32	27	24	24	24	24	18	23	10	---
Chloride	117	102	99	101	85.8	84.3	52.9	130	3	250 ST
Nitrate	4.885	5.1	4.7	5.2	5	4.5	4.6	4.7	0.05	10 ST
Sulfate	29.1	30.9	26.4	21.3	30.8	22.9	36.8	23.6	5	250 ST
Carbon Dioxide	392	57	53	62	68	51	54	68	NA	---
Methane	0.007	U	U	U	U	U	0.001	0.0006 J	0.002	---

## NOTES:

ST: Standard

---: Not established

\*: Sample analyzed

\*\*\*. Standard applies to Total Iron

Indicates Value excluded from total

or Guidance Value

APPENDIX D  
NEW CASSEL INDUSTRIAL AREA  
OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM  
MONITORING WELL SAMPLE RESULTS  
NATURAL ATTENUATION MONITORING PARAMETERS

Sample Identification	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	Contract	NYSDEC Class GA
Sample Depth, ft	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	Required	Groundwater
Date of Collection	11/05/01	01/25/02	04/24/02	07/16/02	10/18/02	01/29/03	05/07/03	07/30/03	Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	U	0.0693 B	U	U	0.106 B	0.0375 B	U	0.138 B	0.05	0.3 ST**
Total Organic Carbon	U	3.4	1.1	1.4	2.3	U	U	U	5	---
Alkalinity	U	U	U	U	U	U	U	U	10	---
Chloride	18.8	21.8	21.5	22.7	23.7	23.2	32.5	22.8	3	250 ST
Nitrate	5.913	6	5.6	6.3	5.7	5.9	5.7	5.9	0.05	10 ST
Sulfate	31	33.8	28.4	31.1	31.1	30.1	26.8	29.5	5	250 ST
Carbon Dioxide	158	81	U	U	U	U	U	U	NA	---
Methane	0.007	U	U	U	U	U	0.0009 J	0.0008 J	0.002	---

Sample Identification	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	Contract	NYSDEC Class GA
Sample Depth, ft	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	Required	Groundwater
Date of Collection	11/05/01	01/25/02	04/24/02	07/17/02	10/18/02	01/29/03	05/07/03	07/30/03	Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Limit	Guidance Value
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ferrous Iron*	U	10.7	18.2	13.2	7.5	7.09	4.9	2.54	0.05	0.3 ST**
Total Organic Carbon	12.2	6.9	4.4	2.2	3.1	22	19	14	5	---
Alkalinity	14	38	53	42	28	24.6	52	24.2	10	---
Chloride	22.9	26.1	25.9	24.7	23.4	3.3	4.8	5	3	250 ST
Nitrate	5.049	2.8	3.4	1.7	3.7	28.8	28.6	30.7	0.05	10 ST
Sulfate	32.7	27.9	22.8	19.6	29.1	48	52	49	5	250 ST
Carbon Dioxide	56.2	U	48	52	60	U	0.006	0.003	NA	---
Methane	0.007	U	0.22	0.16	U	U	U	U	0.002	---

QUALIFIERS:

U: Compound analyzed for but not detected

NA: Not Available

B: Concentration was above IDL but less than CRDL

J: Compound detected at a concentration below the CRDL, value estimated

NOTES:

ST: Standard

---: Not established

\*: Sample analyzed for Total Iron instead of Ferrous Iron

\*\* Standard applies to Total Iron

Indicates Value exceeds NYSDEC Class GA Groundwater Standard or Guidance Value



**APPENDIX D**  
**NEW CASSEL INDUSTRIAL AREA**  
**OFF-SITE GROUNDWATER MONITORING AND ASSESSMENT PROGRAM**  
**MONITORING WELL SAMPLE RESULTS**  
**NATURAL ATTENUATION MONITORING PARAMETERS**

Sample Identification	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	Contract	NYSDEC Class GA
Sample Depth, ft	305-315	305-315	305-315	305-315	305-315	305-315	305-315	Required	Groundwater
Date of Collection	07/17/02	10/18/02	02/03/03	05/09/03	08/01/03			Detection	Standard or
Dilution Factor	1.0	1.0	1.0	1.0	1.0			Limit	Guidance Value
Units	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)			(mg/l)	(mg/l)
Ferrous Iron*	U	U	U	U	U			0.05	0.3 ST**
Total Organic Carbon	1.9	1.4	22	16	15			5	---
Alkalinity	24	27						10	---
Chloride	101	13.4	12.9	12.6	12.8			3	250 ST
Nitrate	5.2	2.2	2	1.9	1.8			0.05	10 ST
Sulfate	21.3	19	22.3	19.1	16.9			5	250 ST
Carbon Dioxide	62	17	13	16	16.5			NA	---
Methane	U	U	U	0.001	U			0.002	---

**QUALIFIERS:**  
U: Compound analyzed for but not detected  
NA: Not Available  
B: Concentration was above IDL but less than CRDL  
J: Compound detected at a concentration below the CRDL, value estimated

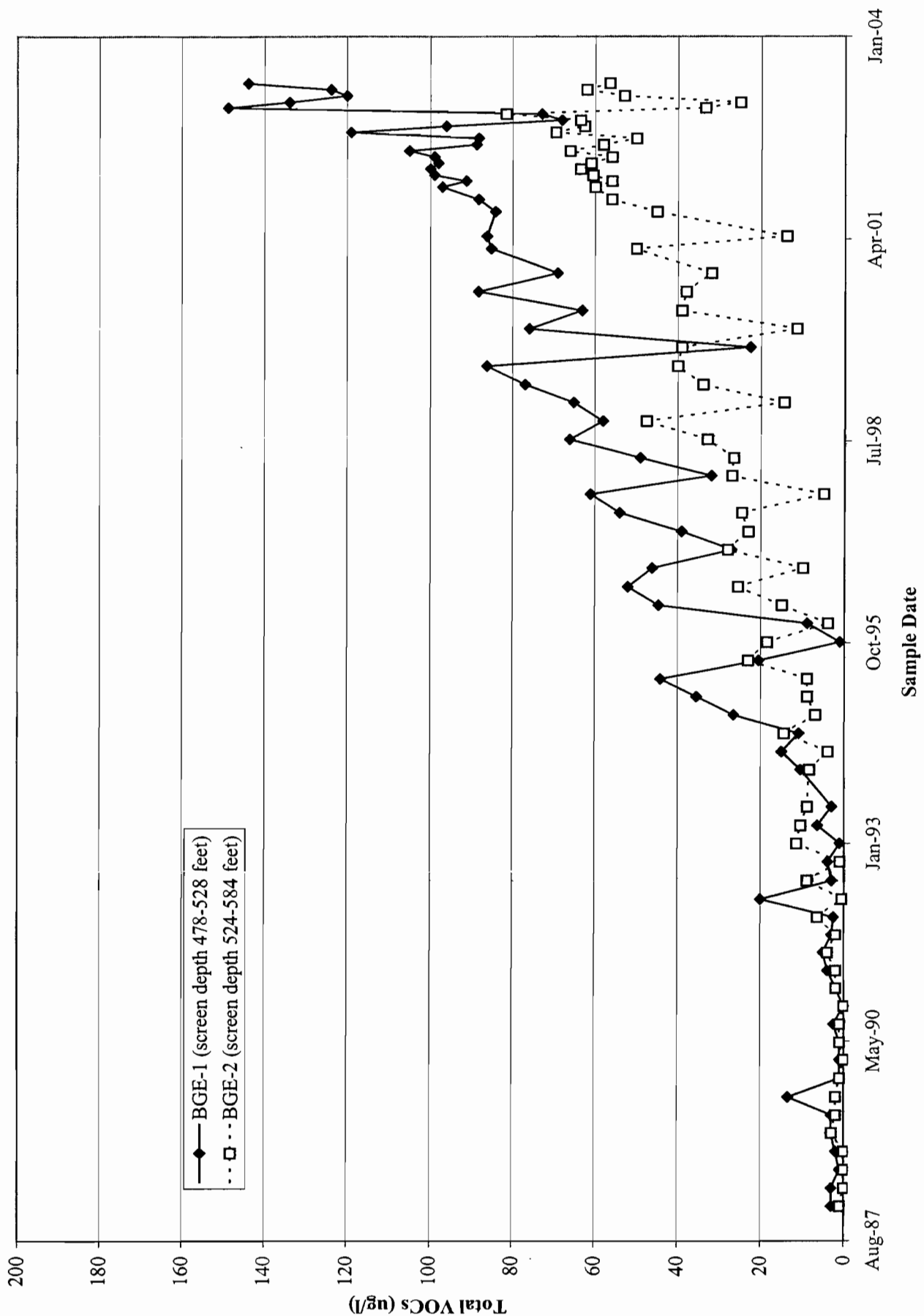
**NOTES:**  
ST: Standard  
---: Not established  
\*: Sample analyzed for Total Iron instead of Ferrous Iron  
\*\*: Standard applies to Total Iron  
: Indicates Value exceeds NYSDEC Class GA Groundwater Standard  
or Guidance Value

## Appendix E

## **APPENDIX E**

### **HISTORIC CONCENTRATION GRAPH FOR BOWLING GREEN ESTATES WATER DISTRICT SUPPLY WELLS (1988-2003) - TOTAL VOLATILE ORGANIC COMPOUNDS**

TOTAL VOCs IN BOWLING GREEN ESTATES WATER SUPPLY WELLS  
(1988-2003)



## Appendix F

## **APPENDIX F**

### **RI/FS WELL SAMPLING GROUNDWATER DATA SUMMARY RI/FS REPORT FIGURES (2000)**

