Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Wantagh Cleaners Site
Village of Wantagh, Town of Hempstead
Nassau County, New York
Site Number 1-30-064

May 1999

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Wantagh Cleaners Inactive Hazardous Waste Disposal Site
Village of Wantagh, Town of Hempstead
Nassau County, New York
Site No. 1-30-064

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Wantagh Cleaners Inactive Hazardous Waste Disposal Site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Wantagh Cleaners Inactive Hazardous Waste Disposal Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site are being addressed by implementing the interim response action identified in this ROD; therefore, the site will no longer pose a significant threat to public health or the environment.

Description of Selected Remedy

Based upon the results of the Focused Remedial Investigation (FRI) for the Wantagh Cleaners Site, the NYSDEC has determined that No Further Action will be necessary at the Wantagh Cleaners Inactive Hazardous Waste Disposal Site. Operation of the air sparging/soil vapor extraction (AS/SVE) Interim Remedial Measure (IRM) currently in place will continue. The components of the IRM are as follows:

- Four air sparging wells and three vapor extraction wells. Each air sparging well has a radius of influence of 25 feet, and each vapor extraction well has a radius of influence of 40 feet. Each air sparging well is screened between 19 and 21 feet below the ground surface (bgs); each vapor extraction well is screened between 3.5 and 9.5 feet bgs.

- An off-site monitoring well will be installed on the south side of Sandhill Road on the leading edge of the plume to monitor the effectiveness of the IRM. This well will be sampled on a semi-annual basis.

- On-site groundwater quality will be monitored on an annual basis to determine whether the remedial goals are being met. Samples will be collected from each of the three on-site monitoring wells (MW-1, MW-2, and MW-3), and the deep well cluster (DW-11, DW-35, and DW-55).

- Effluent air will be monitored to track the performance of the system. Field sampling of effluent air will be conducted using an organic vapor analyzer/gas chromatograph (OVA/GC) at a minimum of once per week during the first month of system operations, and monthly or on an as needed basis thereafter.

- Samples will be collected for lab analysis at the time of system startup, once per month during the first three months of operation, and on a quarterly (or as-needed) basis thereafter. At a minimum, each sampling event will include: one sample of vapors entering the carbon filters, one sample of vapors exiting the carbon filters, and two groundwater samples and/or saturated zone soil samples.

- Institutional controls will be implemented and deed restrictions will be recorded to restrict the future use of groundwater at the site.

Upon successful remediation of the site by the AS/SVE treatment system, the site will be reclassified.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

5/14/99
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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RECORD OF DECISION

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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the Wantagh Cleaners Site (please refer to Figure 1). The Wantagh Cleaners Site is listed in the Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 site. A Class 2 site presents a significant threat to the public health or to the environment and action is required. The Wantagh Cleaners site is located at the intersection of Wantagh Avenue and Sandhill Road in the Village of Wantagh, Town of Hempstead, Nassau County, New York. It has been the location of dry cleaning operations since 1974. Process wastewater was discharged into on-site leaching pools until March of 1991, when the facility was connected to the public sewer system. This process wastewater consisted of a mixture of water and tetrachloroethylene (PCE). In January of 1992, these leaching pools were pumped out, pressure washed, backfilled with clean sand, and capped with concrete. Soil and groundwater samples were collected as part of the Focused Remedial Investigation (FRI) in August and September of 1997, and July of 1998 (please refer to Figure 2). On-site soils are relatively clean, with the exception of soils at shallow depths just downgradient of leaching pool number two (LP-2). Groundwater on-site exhibited high levels of contamination; again, this was seen mostly in the sample location which was downgradient of LP-2. Groundwater samples collected at off-site locations show relatively low levels of contamination migrating off-site.

Dry cleaning operations at the site have resulted in the disposal of tetrachloroethylene (PCE), a hazardous waste, at the site, which was released and has migrated (at low concentrations) from the site to surrounding areas, including a parcel of land just south of Sandhill Road owned by the New York State Office of Parks, Recreation and Historic Preservation. These disposal activities resulted in the following significant threat to the public health and/or the environment:

- a significant threat to human health associated with this site's contravention of groundwater quality standards in a sole source aquifer.

During the course of the investigation certain actions, known as Interim Remedial Measures (IRMs), have been undertaken at the Site in response to the threat identified above. IRMs are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. An air sparging/soil vapor extraction system IRM is currently operating at the site.

The NYSDEC expects that the air sparging/soil vapor extraction system IRM will mitigate significant threats to the public health or the environment posed by the hazardous waste present at the site, provided that it continues to be operated and maintained in a manner consistent with the design. Regularly scheduled sampling events will track the performance of the IRM. If the IRM is successful, then No Further Action will be required for this site. However, if the IRM is not successful, then the situation will be re-evaluated and additional remedial alternatives will be developed.

Based upon the success of the IRM, the findings of the investigation of this Site indicate that the Wantagh Cleaners Inactive Hazardous Waste Disposal Site will no longer pose a threat to human health or to the environment; therefore, No Further Action was selected as the remedy for this Site. Contingent upon the successful operation of the IRM currently in place, the Site will be reclassified in the Registry of Inactive Hazardous Waste Disposal Sites.

This Record of Decision (ROD) identifies the selected remedy and discusses the reasons for this preference.

The NYSDEC has issued this ROD as a component of the citizen participation plan developed pursuant to the New York State Environmental Conservation Law (ECL) and 6 NYCRR Part 375. This document is a summary of the information that can be found in greater detail in the following reports, available at the document repositories:

- Focused Remedial Investigation Work Plan, May 1997
- Focused Remedial Investigation Report, November 1998
- Focused Remedial Investigation Report Supplement, November 1998
- Interim Remedial Measure Design Report, December 1998
- Interim Remedial Measure Project Manual, December 1998

To better understand the site and the investigations conducted, the public is encouraged to review the project documents at the following repositories:

- Wantagh Public Library
  Reference Section
  3285 Park Avenue
  Wantagh, NY 11793
  (516)221-1200
  Mon. - Thurs., 10am-9pm
  Fri., 10am-6pm
  Sat., 10am-5pm; Sun., 1pm-4pm

- NYSDEC Region 1 Headquarters
  SUNY Campus
  Loop Road, Building 40
  Stony Brook, NY 11790-2356
  (516) 444-0241
  Mon. - Fri., 8:30am-4:45pm

- NYSDEC Central Office
  50 Wolf Road, Room 242
  Albany, NY 12233-7010
  (518) 457-1708
  Mon. - Fri., 8:30am-4:45pm
  Attn: Ms. Anna Ruepp

The NYSDEC seeks input from the public on all Proposed Remedial Action Plans (PRAPs). A public comment period for this PRAP was set from February 24, 1999, to March 25, 1999, to provide an opportunity for public participation in the remedy selection process for this site. A public meeting was held on March 18, 1999, at the Jonas Salk Middle School Auditorium. During this meeting, at the request of those in attendance, the public comment period was extended to April 15, 1999.

At the meeting, the results of the investigation and IRMs at the site were presented along with a summary of the proposed remedy. After the presentation, a question and answer period was held, during which the public was encouraged to submit verbal or written comments on the PRAP. The NYSDEC has selected this remedy only after careful consideration of all comments received during the public comment period. The Responsiveness Summary included as Appendix A presents the public comments received and the Department's response to the concerns raised. This Record of Decision is the NYSDEC's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Wantagh Cleaners Site (No. 1-30-064) is located at 920 Wantagh Avenue, at the intersection of Wantagh Avenue and Sandhill Road in the Village of Wantagh, Town of Hempstead, Nassau County, New York. The site occupies an area of approximately 0.26 acres. It consists of a building and a paved parking lot. Bordering the property are Sandhill Road to the south, Wantagh Avenue to the east, a gas station to the north, and a convenience store to the west. To the south of Sandhill Road is an approximately quarter-mile wide parcel of land containing the Southern State Parkway and its access roads. New York State owns a small piece of fenced-in wooded property on the south side of Sandhill Road; a low-flow drainage ditch runs through this property. Approximately 100 feet west of the site is a small intermittent stream. Please refer to Figure 2.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The current owner of the Wantagh Cleaners site (the Potentially Responsible Party (PRP)), has owned this property since 1984. The building is currently being leased to a dry cleaning facility, Wantagh Cleaners. Wantagh Cleaners has been at this location since May of 1991. The previous occupant was Coral Cleaners. While it is not known how long Coral Cleaners occupied the site, it is known that the site has been the location of dry cleaning businesses since 1974.

Site contamination was caused by the introduction of dry cleaning process wastewater into two leaching pools on-site: LP-1 and LP-2. This process wastewater consisted of a mixture of water and tetrachloroethylene (PCE). Primary dry cleaning process wastewater was discharged into LP-1; LP-2 was used for overflow from

LP-1. A third leaching pool on the site, LP-3, was used for the disposal of septic wastewater. While the exact construction details of these leaching pools are unknown, it is known that liquids were discharged to surrounding soils through the bottom of these pools. The base of LP-1 was approximately 15 feet below grade; the base of LP-2 was approximately 11 feet below grade; and the base of LP-3 was approximately 7 feet below grade. The groundwater table is approximately 11 feet below grade.

In November of 1988, the Nassau County Department of Health (NCDOH) notified the PRP that the facility should have been connected to the public sewer system in May of 1985. It also required that all cesspools, leaching pools, and septic tanks on-site be emptied, cleaned, and backfilled.

In November of 1990, NCDOH notified the PRP that the site still had not been connected to the public sewer system. A schedule for complying with this county ordinance was requested.

In March of 1991, the facility was connected to the public sewer system and discharges to the leaching pools ceased. In addition to the leaching pools, an underground fuel oil storage tank was present on-site; this tank was filled with clean sand in 1994.

3.2: Remedial History

- In January of 1991, three months prior to connecting to the public sewer system, the PRP hired a consultant to evaluate alternatives for disposal of sediments in the leaching pools. Aqueous samples from each of the three leaching pools were collected and analyzed for volatile organic compounds (VOCs), total xylenes, and metals. Based upon these results, and with the approval of the NCDOH and the Nassau County Department of Public Works (NCDPW), the leaching pool liquids were disposed at the Bay Park Scavenger Waste Facility.

- In March of 1991, the site was connected to the public sewer system.

- In April of 1991, under the direction of NCDOH, soil/sludge samples were collected from approximately 2 feet beneath the base of LP-1 and LP-3. Based upon these results, the PRP was cited by NCDOH for violating several state and county ordinances related to discharging hazardous and industrial wastes without a permit, and operating a hazardous waste management facility without a permit. The PRP was ordered to cease all unpermitted discharges and submit a Remedial Investigation (RI) Work Plan.

- In August of 1991, an RI Work Plan was prepared by the PRP's consultant.

- Samples from all three leaching pools were collected in September of 1991.

- In January of 1992, liquid and sediments from LP-1 and LP-2 were pumped out beyond the pool bases to a depth of 17 feet below grade; each was then pressure washed. LP-3 was not reported to have been emptied/cleaned. All pools were then backfilled with clean sand and capped with concrete.

- In March of 1994, NYSDEC's consultant completed a Data Records Search and Assessment as part of the Phase 1Preliminary Site Assessment.

- In April of 1994, the site was listed as a suspected inactive hazardous waste site (Class 2a) in the NYS Registry of Inactive Hazardous Waste Disposal Sites.

- In July of 1994 a 1,000 gallon underground fuel oil storage tank was pumped out and filled with clean sand. Because the tank was not leak tested, and a NCDOH representative was not on-site at the time of abandonment, soil samples were later collected downgradient of the tank during the FRI (August and September of 1997) to determine if contaminants were present in nearby soils. The samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX), and total petroleum hydrocarbons (TPHCs). None were detected.

- Between June and November of 1994, NYSDEC's consultant conducted further investigations at the site as part of the Phase 2 Preliminary Site Assessment (PSA). This PSA work was conducted to determine if the site should be reclassified from a Class 2a to a Class 2 site. Soil and groundwater samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) inorganics.

- In May of 1995, NYSDEC reclassifed the site from a Class 2a to a Class 2, based upon the information developed during the PSA. A Class 2 site presents a significant threat to the public health or to the environment and action is required.

- On September 17, 1996, the PRP entered into an Order on Consent with the New York State Department of Environmental Conservation for a Focused Remedial Investigation/Feasibility Study (FRI/FS) and Interim Remedial Measures (IRMs).

- The PRP's consultant conducted the FRI/FS (w/ IRMs), as discussed below in Section 4.1 - Summary of the Remedial Investigation, and in Section 4.2 - Interim Remedial Measures.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate alternatives to address the significant threat to human health or the environment posed by the presence of hazardous waste, the PRP has recently conducted a FRI (August of 1997 through November of 1998).

4.1: Summary of the Focused Remedial Investigation

The purpose of the FRI was to define the nature and extent of any contamination resulting from previous activities at the site, focusing on known areas of contamination.

The FRI was conducted in August and September of 1997. A supplemental FRI was conducted in July of 1998. A report entitled, "Focused Remedial Investigation Revised Report, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064 (November 1998)" has been prepared which describes the field activities and findings of the FRI in detail. A report entitled, "Supplement to Focused Remedial Investigation Revised Report, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064 (November 1998)" has been prepared to describe, in detail, the field activities and findings of the Supplemental FRI.

The FRI included the following activities:

- Soil sampling to the water table, just downgradient of LP-1, LP-2, and LP-3.
- Sampling of existing on-site monitoring wells MW-1, MW-2, and MW-3.
- Installation and sampling of a deep well cluster located off-site in a downgradient direction.
- Sampling of surface soils in the intermittent creek west of the site.
- Sampling of surface soils in the drainage ditch just south of Sandhill Road.
- Sampling of upgradient soils on the north side of the site to determine site background conditions.
- Sampling of storm drain sediments.

The Supplemental FRI included the following:

- Installation of five geoprobe points on the south side of Sandhill Road, and collection of two samples per point, to determine if contamination was migrating off-site via groundwater.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the FRI analytical data were compared to New York State Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Wantagh Cleaners site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For soils, NYSDEC TAGM 4046 provides soil cleanup objectives for the protection of groundwater, background conditions, and health-based exposure scenarios. Guidance values for evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments".

Based on the FRI results, in comparison to the SCGs and potential public health and environmental exposure routes, remediation of soil and groundwater is required. The FRI results are summarized below. More complete information can be found in the FRI Report.

Chemical concentrations are reported in parts per billion (ppb), and parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1 Nature of Contamination

As described in the FRI Report, many soil, groundwater and sediment samples were collected at the Site to characterize the nature and extent of contamination. The main categories of contaminants which exceed their SCGs are volatile organic compounds (VOCs).

The VOCs of concern are: tetrachloroethylene (PCE); trichloroethylene (TCE); 1,2-dichloroethene (1,2-DCE); methylene chloride; and 2-butanone.

4.1.2 Extent of Contamination

Tables 1 and 2 summarize the extent of contamination for the contaminants of concern in soil and groundwater and compares the data with the SCGs for the Site. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

During the FRI, subsurface soil samples were collected on-site just downgradient of each of the three leaching pools. Two soil samples were collected downgradient of each of the three leaching pools (six sample locations). At each location, soil samples were collected at two foot intervals from the surface to the water table and the samples were field screened. The sample with the highest reading at each location was then analyzed for VOCs. Of the six samples analyzed by the laboratory, only one exhibited concentrations of contaminants which exceeded NYS TAGM levels. This was at location S4, just downgradient of LP-2, at a depth of 2-4 feet below ground surface (bgs). Soil at this location exhibited concentrations of 1,2-dichloroethene (0.80 ppm) and 2-butanone (0.44 ppm) that exceeded the NYS TAGM levels of 0.30 ppm for each contaminant.

Sediment

During the FRI, three surface sediment samples were collected from the intermittent creek west of the site. Three samples were also collected from the drainage ditch just south of Sandhill Road. No VOCs were detected in any of the sediment samples collected.

Groundwater

Groundwater at the Wantagh Cleaners site flows in a southeasterly direction, as determined during the 1995 Preliminary Site Assessment (PSA) (see Figure 5).

During the FRI, groundwater samples were collected from each of the three on-site monitoring wells (MW-1, MW-2, and MW-3) and from the off-site deep wells, screened at 11 ft, 35 ft, and 55 ft (DW-11, DW-35, and DW-55, respectively). MW-1, MW-2, and MW-3 are each screened from 2 feet above to 8 feet below the groundwater table (approximately 9 feet bgs to 19 feet bgs). MW-1 is located just downgradient of LP-1; MW-2 is located just downgradient of LP-2; and MW-3 is located just downgradient of LP-3. Groundwater samples from MW-1 and MW-2 exhibited the most significant contaminant concentrations. MW-3, however, exhibited contamination only slightly higher than New York State Groundwater Standards. The deep well cluster did not exhibit any contaminant concentrations in contravention of New York State Groundwater Standards.

The groundwater sample collected from MW-1 exhibited concentrations of tetrachloroethylene (PCE) (46 ppb); trichloroethylene (TCE) (52 ppb); and 1,2-dichloroethylene (1,2-DCE) (8,000 ppb) that significantly exceeded New York State Groundwater Standards of 5 ppb for each contaminant.

The groundwater sample collected from MW-2 exhibited concentrations of tetrachloroethylene (PCE) (35,000 ppb); trichloroethylene (TCE) (3,300 ppb); and 1,2-dichloroethylene (1,2-DCE) (4,500 ppb) that significantly exceeded New York State Groundwater Standards of 5 ppb for each contaminant. Methylene

chloride was found at a concentration of 270 ppb, which significantly exceeds the New York State Groundwater Standard of 5 ppb for this contaminant.

The groundwater sample collected from MW-3 was slightly contaminated, exhibiting only PCE (12 ppb) at a concentration in contravention of the 5 ppb New York State Groundwater Standard.

None of the samples collected from the deep well cluster (DW-11, -35, and -55) exhibited concentrations of any contaminant in excess of New York State Groundwater Standards.

During the Supplemental FRI, groundwater samples were collected from five geoprobe locations just south of Sandhill Road. Two groundwater samples were collected from each location; one from a depth of 10-12 feet bgs (at the groundwater table), and one from a depth of 50 feet bgs. Only one of the ten groundwater samples collected exhibited concentrations of contaminants which exceeded New York State Groundwater Standards. The sample collected from GB-3 at the water table (approximately 11 feet bgs) had tetrachloroethylene (PCE) (73 ppb); trichloroethylene (TCE) (28 ppb); and cis-1,2-dichloroethene (cis-1,2-DCE) (32 ppb) that exceeded the 5 ppb New York State Groundwater Standard.

Surface Water

Surface water samples were planned for both the intermittent creek west of the site, and the drainage ditch just south of Sandhill Road. At the time of the sampling event, both waterways were found to be absent of any surface water. No VOCs were detected in any sediment samples; thus, it is unlikely that any site related contaminants would be detected in surface water samples collected.

4.2: Interim Remedial Measures

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Information collected during the FRI and the Supplemental FRI indicate that:

- Soils contamination is limited to shallow depths just downgradient of LP-2.

- Groundwater contamination is primarily found at shallow depths on-site, with only low concentrations of contaminants migrating off-site at shallow depths in the vicinity of GB-3 (approximately 40 feet west of the intersection of Wantagh Avenue and Sandhill Road).

In order to address soil contamination on-site, and both on-site and off-site groundwater contamination, an air sparging/soil vapor extraction (AS/SVE) system has been installed as an IRM (see Figure 3). The contaminants targeted for remediation are volatile organic compounds (VOCs), specifically:

- tetrachloroethylene (PCE)
- trichloroethylene (TCE)
- 1,2-dichloroethylene (1,2-DCE)
- 2-butanone
- methylene chloride

The purpose of the air sparging component of this system is to volatilize contaminants in the groundwater such that they can later be brought to the surface via the soil vapor extraction component of the system. Four air sparging wells are being employed to adequately address the areas of contamination. Each 21 foot deep well has a radius of influence of 25 feet, and is screened between 19 feet and 21 feet bgs. The flow rate per well is 12.5 cubic feet per minute (cfm), for a combined air sparging flow rate of 50 cfm.

The purpose of the soil vapor extraction component of this system is to recover the volatilized contaminants within the soil pores that were released from the groundwater by the air sparging system. Soil vapors are collected and the contaminants removed by passing the air through a granular activated carbon filter. Three soil vapor extraction wells are being utilized. Each well has a radius of influence of 40 feet, and operates at a flow rate of 33 cfm. The combined flow rate of the soil vapor extraction system (100 cfm) is twice that of the air sparging system (50 cfm).

Effluent air is monitored to track system parameters and overall performance; a record of such readings will be maintained throughout the operation of the system. Field sampling of vapors will be conducted using an organic vapor analyzer/gas chromatograph (OVA/GC) at a minimum of once per week during the first month of system operations, and monthly or on an as needed basis thereafter. Samples will be collected for lab analysis at the time of system startup, once per month during the first three months of operation, and on a quarterly (or as-needed) basis thereafter. At a minimum, each sampling event will include: one sample of vapors entering the carbon filters, one sample of vapors exiting the carbon filters, and two groundwater samples and/or saturated zone soil samples. Quarterly reports will be submitted to the Department for the duration of system operation. The AS/SVE system shall be operated for a minimum of six months. Operation will continue until the contamination source has been remediated.

Groundwater quality will be monitored on an annual basis to determine whether the remedial goals are being met. Samples will be collected from the three on-site monitoring wells (MW-1, MW-2, and MW-3), and the deep well cluster (DW-11, DW-35, and DW-55).

A permanent off-site monitoring well will be installed at the leading edge of the groundwater plume on the south side of Sandhill Road to ensure that contaminated groundwater is not migrating off-site at deeper depths. Samples will be collected continuously to approximately 80 feet. The monitoring well will be installed at the location and depth of the highest detected levels of contamination at the leading edge of the plume. This "guard" well will be monitored on a semi-annual basis.

Institutional controls will be implemented and deed restrictions will be recorded to restrict the future use of groundwater at the site.

4.3: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 2.8 of the FRI Work Plan (May 1997).

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms;

3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Pathways which are known to or may exist at the site include:

- Ingestion: Exposure to site-related contaminants via ingestion is unlikely. Contaminants lie beneath the ground surface. In terms of contaminated soil, the only exposure route is for individuals who dig beneath the paved surface. In terms of contaminated groundwater, again, exposure via ingestion is unlikely. The Wantagh area is serviced by a public water supply. Local public water supply wells draw from depths of 151 to 660 feet below grade. None of these wells are downgradient of the site, given the groundwater flow direction (see Figure 4). In summary, the potential for human exposure to site related contaminants in soil or groundwater via ingestion is highly unlikely.

- Inhalation: The potential for human exposure to site related contaminants via inhalation is also very unlikely. Contaminants will remain beneath the ground surface up to the point where air is drawn up to the surface by the soil vapor extraction system. Air remains in the system piping until it has been treated by the granular activated carbon filter, which removes the site-related contaminants. Effluent air is monitored to ensure that it has been effectively treated prior to its release into the atmosphere.

- Dermal Contact: The potential for human exposure to site-related contaminants via dermal contact exists only for those individuals digging beneath the paved surface of the parking lot.

4.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures which may be presented by the site.

There are no critical animal habitats or endangered animal species within a one mile radius of the site.

Thirteen plant species within a one mile radius of the site are listed as endangered, threatened, or rare; there is one plant species within this same radius which is considered to be "imperiled" on a global level.

No environmental exposure pathways have been identified. Any site-related contamination with the potential to impact the air medium during the operation of the IRM will be mitigated via the filtration/monitoring system being implemented. It is unlikely that plant/animal life in the area will be exposed to any on-site contamination. An analysis of groundwater exiting the site has shown minimal contaminant concentrations migrating off-site; however, this will be remediated via the IRM. The intermittent creek west of the site is not being impacted by site related contaminants.

Because the site is paved, the potential for plant or animal species being exposed to site related contaminants is highly unlikely.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRP entered into an Order on Consent with the NYSDEC on September 17, 1996. The Order (Index #W1-0769-96-07) obligates the responsible parties to implement a Focused Remedial Investigation/Feasibility Study (FRI/FS), and Interim Remedial Measures (IRMs).

SECTION 6: SUMMARY OF THE SELECTED REMEDY

Based upon the success of the IRM, the findings of the investigation of this site indicate that the Wantagh Cleaners Inactive Hazardous Waste Disposal Site will no longer pose a threat to human health or the environment; therefore, No Further Action was selected as the remedy for this site. The AS/SVE system shall be operated for a minimum of six months. Operation will continue until the contamination source has been remediated. Contingent upon the successful operation of the IRM currently in place, the site will be reclassified in the Registry of Inactive Hazardous Waste Disposal Sites.

Concentrations of contaminants in soil and groundwater at the Wantagh Cleaners site exceed SCGs, posing a significant threat to human health.

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at the site. The State believes that the Air Sparging/Soil Vapor Extraction (AS/SVE) system IRM will accomplish this objective, provided that it is operated and maintained in a manner consistent with the design.

As explained in Section 4.2, effluent air is being monitored to track AS/SVE system parameters and overall performance; a record of such readings will be maintained throughout the operation of the system. Field sampling of vapors is being conducted using an organic vapor analyzer/gas chromatograph (OVA/GC) at a minimum of once per week during the first month of system operations, and monthly or on an as needed basis thereafter. Samples will be collected for lab analysis at the time of system startup, once per month during the first three months of operation, and on a quarterly (or as-needed) basis thereafter. At a minimum, each sampling event will include: one sample of vapors entering the carbon filters, one sample of vapors exiting the carbon filters, and two groundwater samples and/or saturated zone soil samples. Quarterly reports will be submitted to the Department for the duration of system operation.

In addition to the groundwater samples collected on-site (described above) as part of the IRM performance monitoring schedule, long term monitoring of groundwater quality will also be conducted. A permanent off-site monitoring well will be installed at the leading edge of the groundwater plume on the south side of Sandhill Road to ensure that contaminated groundwater is not migrating off-site at deeper depths. To determine the best location of the well, a series of geoprobe points will be installed on the south side of Sandhill Road. Samples will be collected continuously to approximately 80 feet. The monitoring well will be installed at the location and depth of the highest detected levels of contamination at the leading edge of the plume. This "guard" well will be monitored on a semi-annual basis. Samples will be collected on an annual basis from on-site (MW-1, MW-2, and MW-3) and off-site (deep well cluster DW-11, DW-35, and DW-55) monitoring wells to ensure that contaminants are not migrating off-site.

Institutional controls will be implemented and deed restrictions will be recorded to restrict the future use of groundwater at the site.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media, and other interested parties.
- A public meeting was held on July 1, 1997, to present to the public the details of the proposed Focused Remedial Investigation (FRI) Work Plan.
- A second public meeting was held on March 18, 1999, to present to the public the details of the Focused Remedial Investigation (FRI), the Interim Remedial Measure (IRM), and the Proposed Remedial Action.
- In April of 1999, a Responsiveness Summary was prepared as part of this ROD (please refer to Appendix A) to address the comments received during the public comment period for the PRAP.

Table 1
Wantagh Cleaners Site
(1-30-064)
Soil Sampling Results
Samples Collected in August 1997 and September 1997

SAMPLE LOCATION:	On-Site							Soil Background Conditions	Soil Cleanup Objectives
SAMPLE DESIGNATION:	S1	S2	S3	S4	S5	S6	SD-1	SB-1	
SAMPLE DEPTH, FEET:	10-12'	4-6'	4-6'	2-4'	10-12'	2-4'	0-0.5'	0-3'	
UNITS:	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
VOCs:									
1,2-Dichlorethene	--	--	0.030	**0.800**	--	0.004	--	--	0.300
2-Butanone	--	--	--	**0.440**	--	--	--	--	0.300
Trichloroethene	--	--	0.011	--	--	--	0.003	0.003	0.700
Tetrachlorethene	--	--	0.110	--	--	0.007	0.014	0.170	1.400
Ethylbenzene	--	--	--	--	0.066	--	--	--	5.500
Xylene (total)	--	--	--	--	0.320	--	--	--	1.200
Toluene	--	--	--	--	--	--	0.008	--	1.5

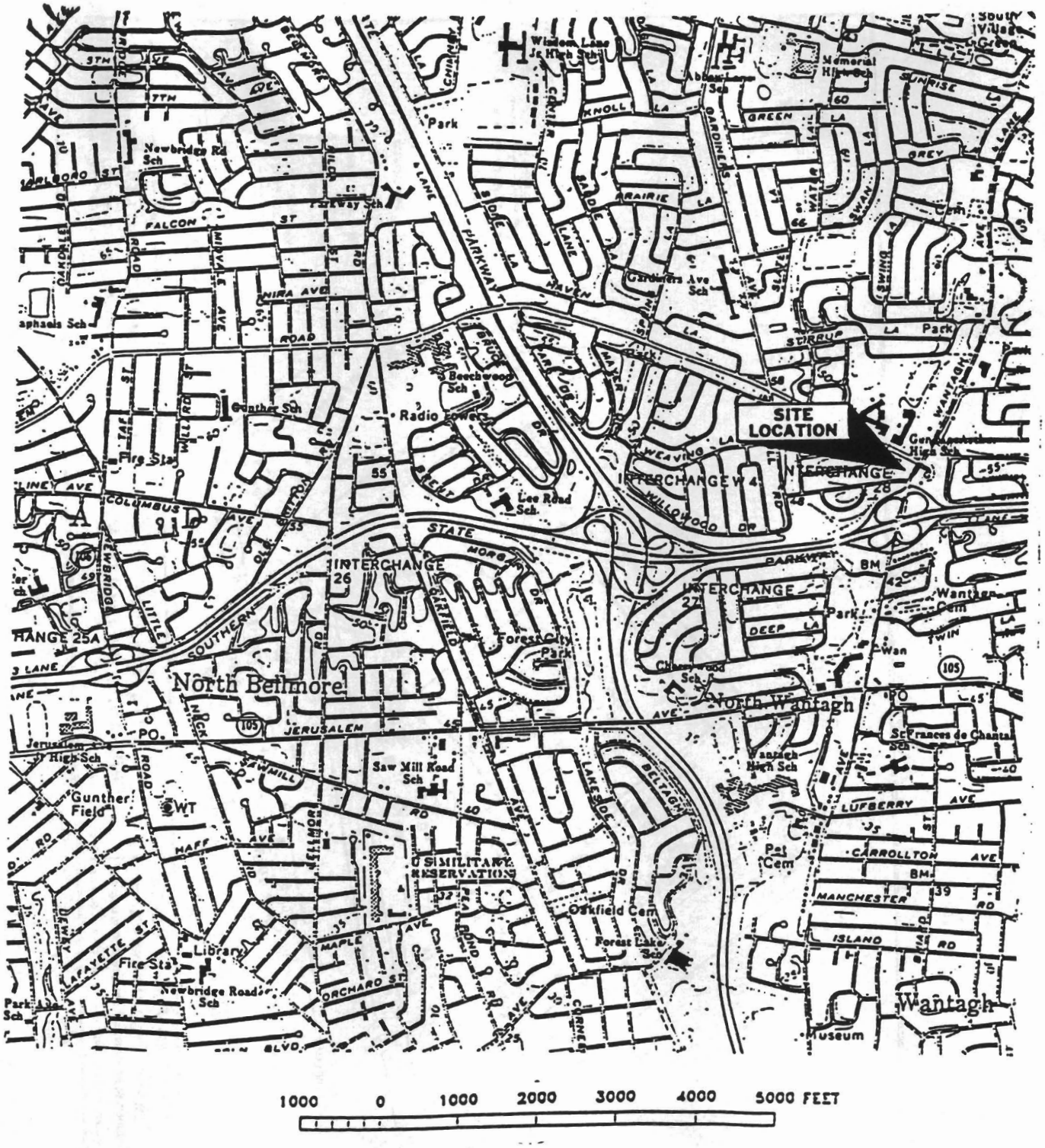
-- Indicates that the analyte was not detected.
Detected Values that are greater than NYS TAGM soil cleanup objectives appear in **bold**.
S On site soil sampling locations
SD Storm Drain sediment sample (composite of four grab samples at a 6 inch depth)
SB Soil background conditions, collected from an unaffected on-site location near the northern property line.

Table 2
Wantagh Cleaners Site
(1-30-064)
Groundwater Sampling Results
Samples Collected in August 1997, September 1997, and July 1998

SAMPLE LOCATION:	On-Site			Off-Site													NYS Class GA
SAMPLE DESIGNATION:	MW-1	MW-2	MW-3	DW-11	DW-35	DW-55	GB-1	GB-1	GB-2	GB-2	GB-3	GB-3	GB-4	GB-4	GB-5	GB-5	Groundwater
SAMPLE DEPTH, FEET:	9-19'	9-19'	9-19'	10-12'	34-36'	54-56'	10-12'	50'	10-12'	50'	10-12'	50'	10-12'	50'	10-12'	50'	Standard
UNITS:	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
VOCs:																	
Vinyl Chloride	–	–	–	–	–	–	–	–	–	–	1.7	–	–	–	–	–	2
1,2-Dichloroethene	**8,000**	**4,500**	2.0	–	–	–	1.6	–	–	–	**32.0**	–	–	–	–	–	5
Bromodichloromethane	–	–	–	–	–	–	1.7	–	1.2	–	–	–	–	–	–	–	N/A
Methylene Chloride	–	**270**	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
1,1-Dichloroethane	–	–	0.5	–	–	–	–	–	–	–	–	–	–	–	–	–	5
1,1,1-Trichloroethane	–	–	0.6	–	–	–	–	–	–	–	–	–	–	–	–	–	5
Ethylbenzene	–	–	–	–	0.4	–	–	–	–	–	–	–	–	–	–	–	5
Xylene	–	–	–	–	0.9	–	–	–	–	–	–	–	–	–	–	–	5
Trichloroethene	**52**	**3,300**	3.0	–	–	–	–	–	–	–	**28.0**	–	–	–	–	–	5
Tetrachloroethene	**46**	**35,000**	**12.0**	–	–	–	2.7	–	–	–	**73.0**	–	–	–	–	–	5

– Indicates that the analyte was not detected.
Detected Values that are greater than NYS TAGM soil cleanup objectives appear in **bold**.
MW On-site shallow monitoring wells sampled during the FRI.
DW Off-site deep monitoring well cluster, installed and sampled during the FRI.
GB Off-site geoprobe location, sampled during the Supplemental FRI.

Figure 1
Wantagh Cleaners Site
(1-30-064)
Site Location Map



Reproduced from USGS Freeport, N.Y. 7.5 Minute Quadrangle

Figure 2
Wantagh Cleaners Site
(1-30-064)
Site Plan and Sampling Locations

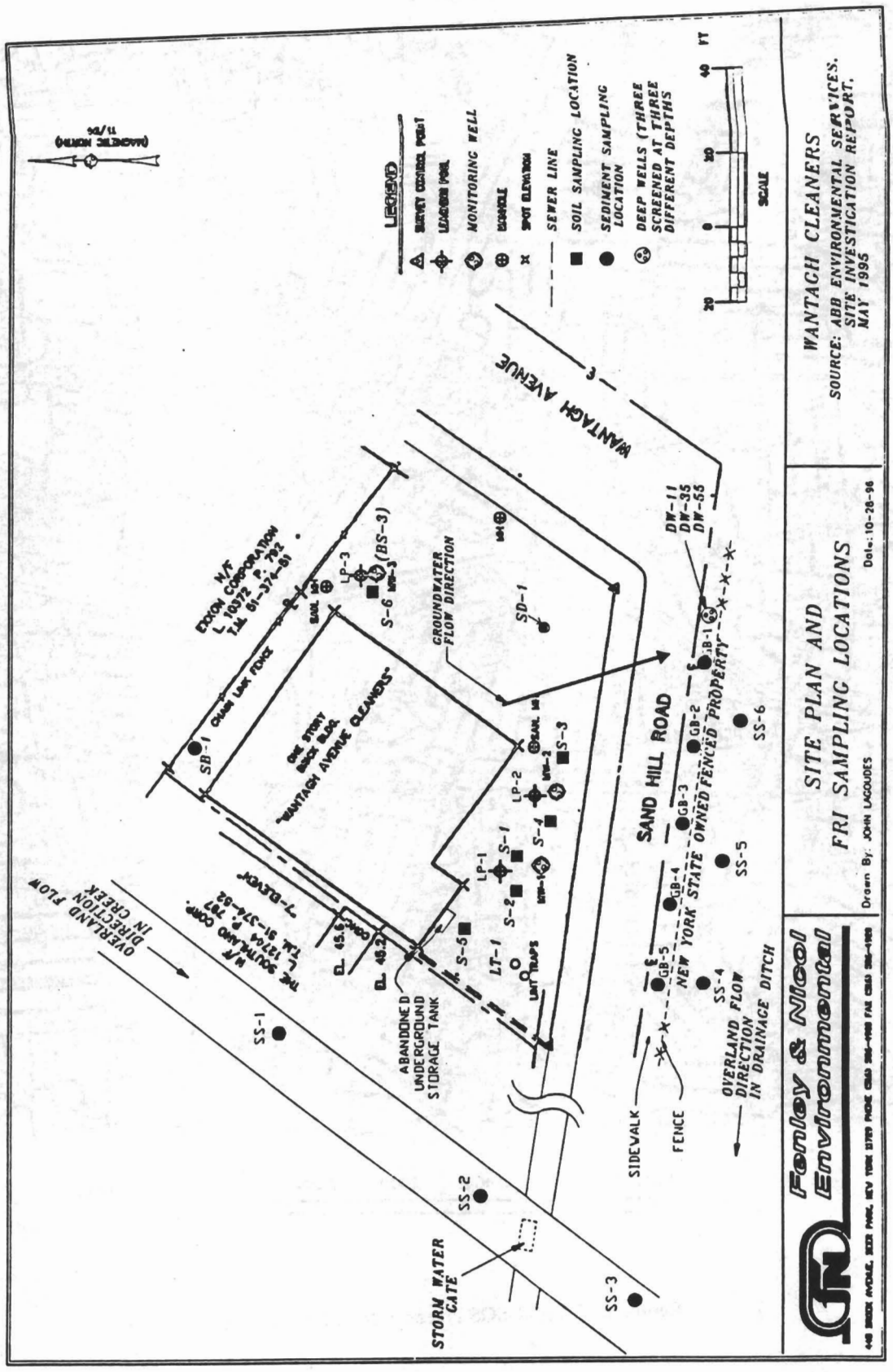


Figure 3
Wantagh Cleaners Site
(1-30-064)
IRM Design

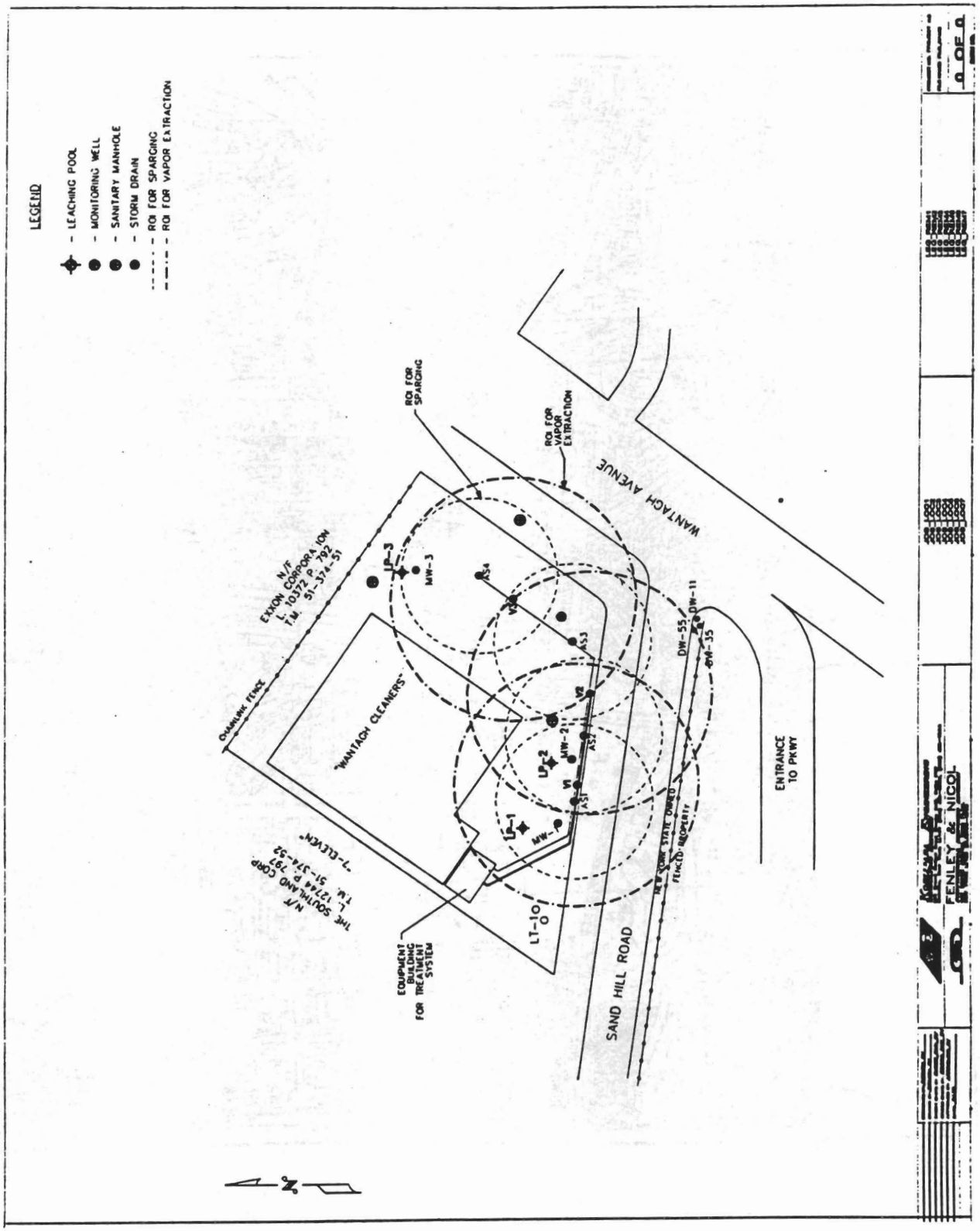


Figure 4
Wantagh Cleaners Site
(1-30-064)
Location of Nearby Public Water Supply Wells

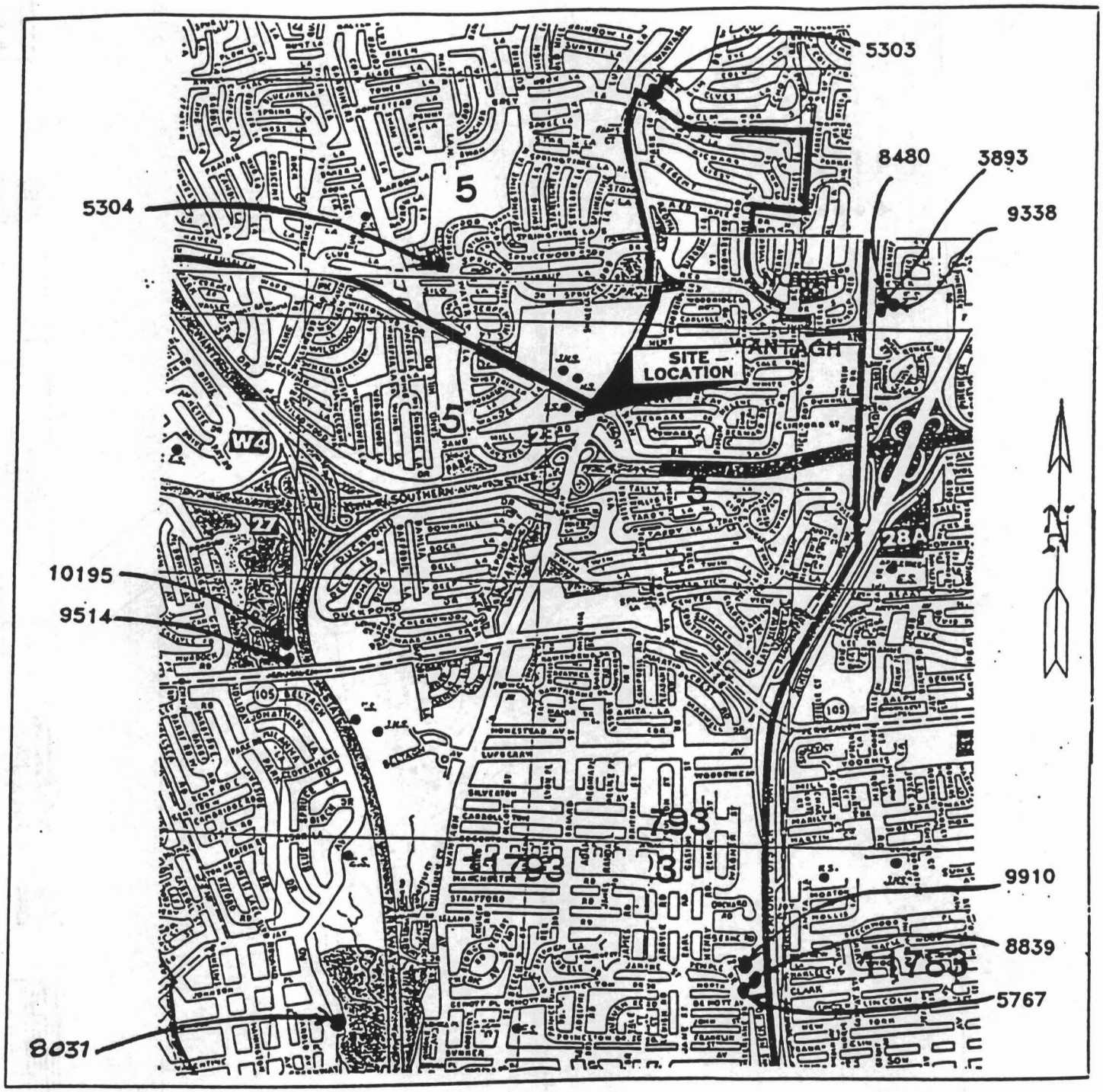
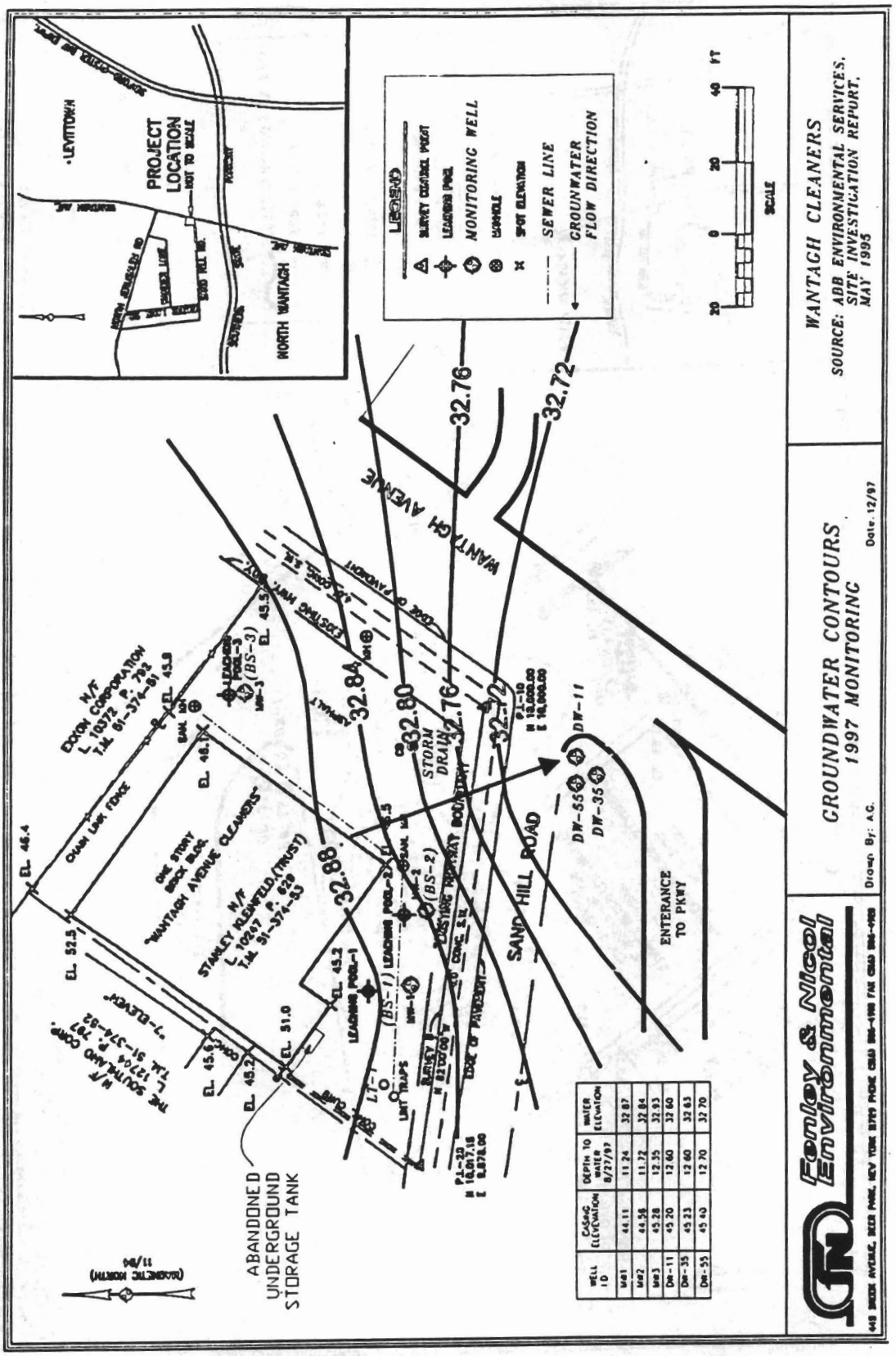


Figure 5
Wantagh Cleaners Site
(1-30-064)
Groundwater Contours



WELL ID	CASING ELEVATION	DEPTH TO WATER 8/27/97	WATER ELEVATION
MW1	44.11	11.24	32.87
MW2	44.56	11.72	32.84
MW3	45.28	12.35	32.93
DW-11	45.20	12.60	32.60
DW-35	45.23	12.60	32.63
DW-55	45.40	12.70	32.70

Figure 6
Wantagh Cleaners Site
(1-30-064)
Plume - Total VOCs

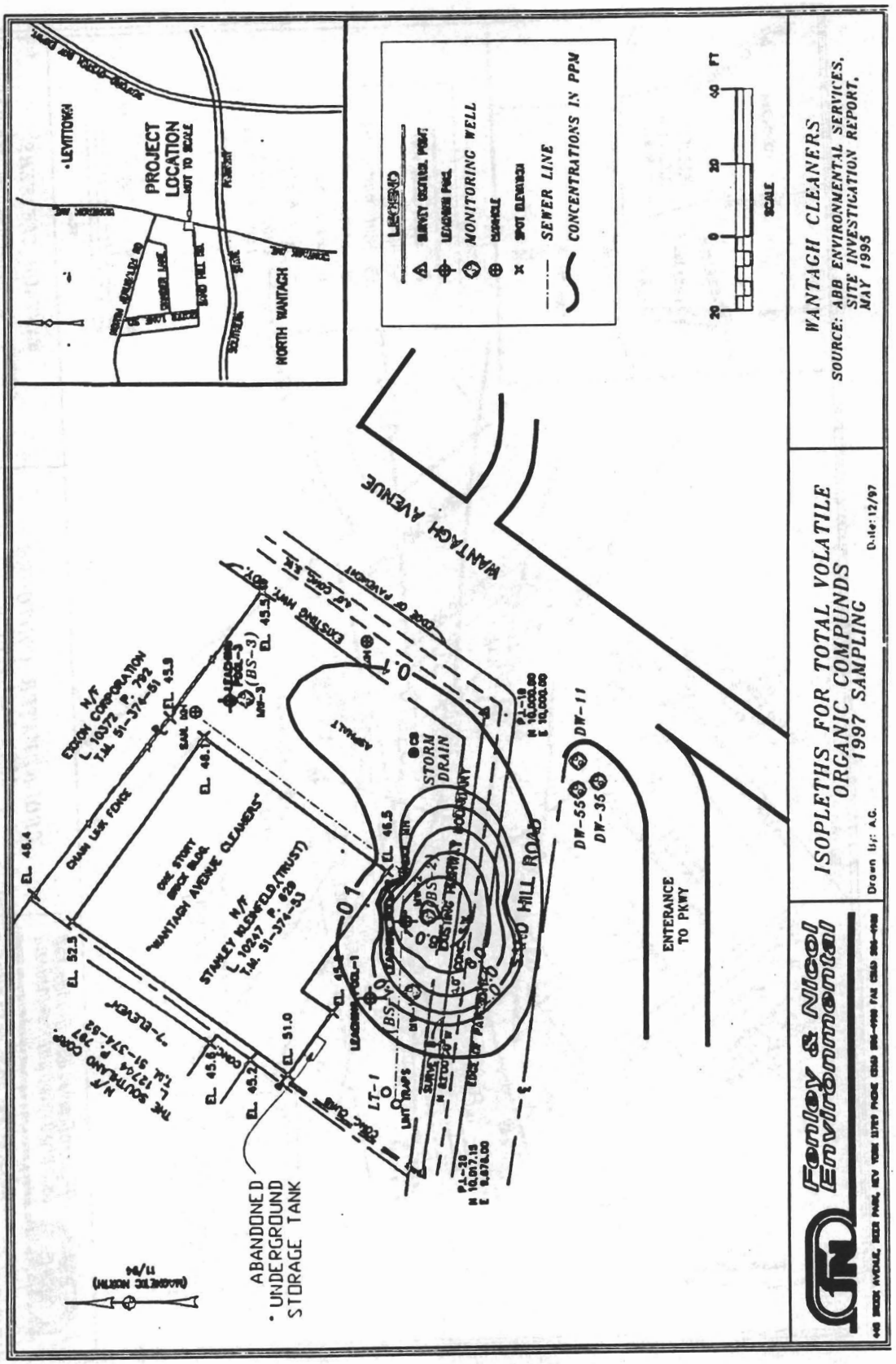


Figure 7
Wantagh Cleaners Site
(1-30-064)
Plume - Tetrachloroethene

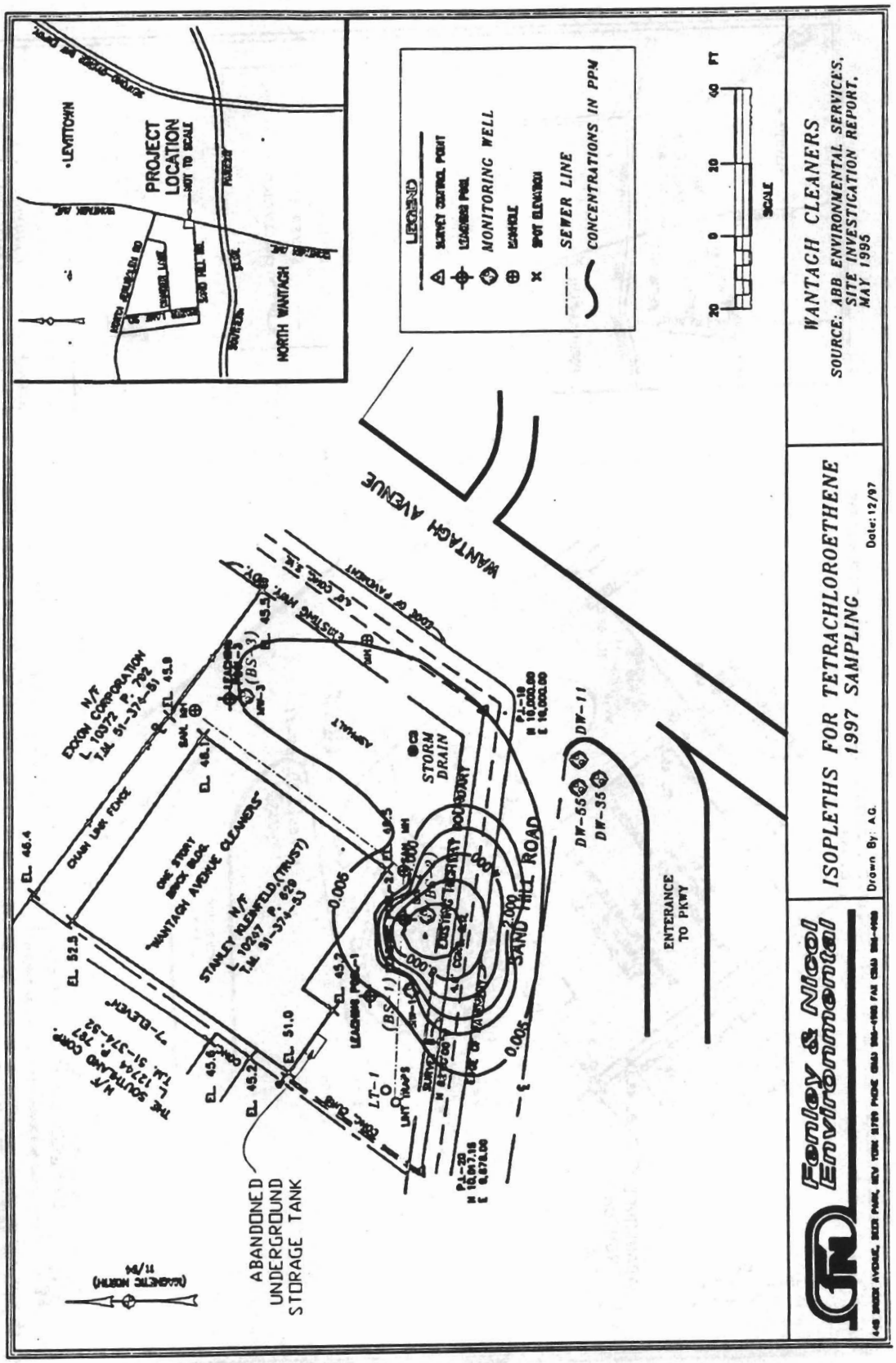


Figure 8
Wantagh Cleaners Site
(1-30-064)
Plume - Trichloroethene

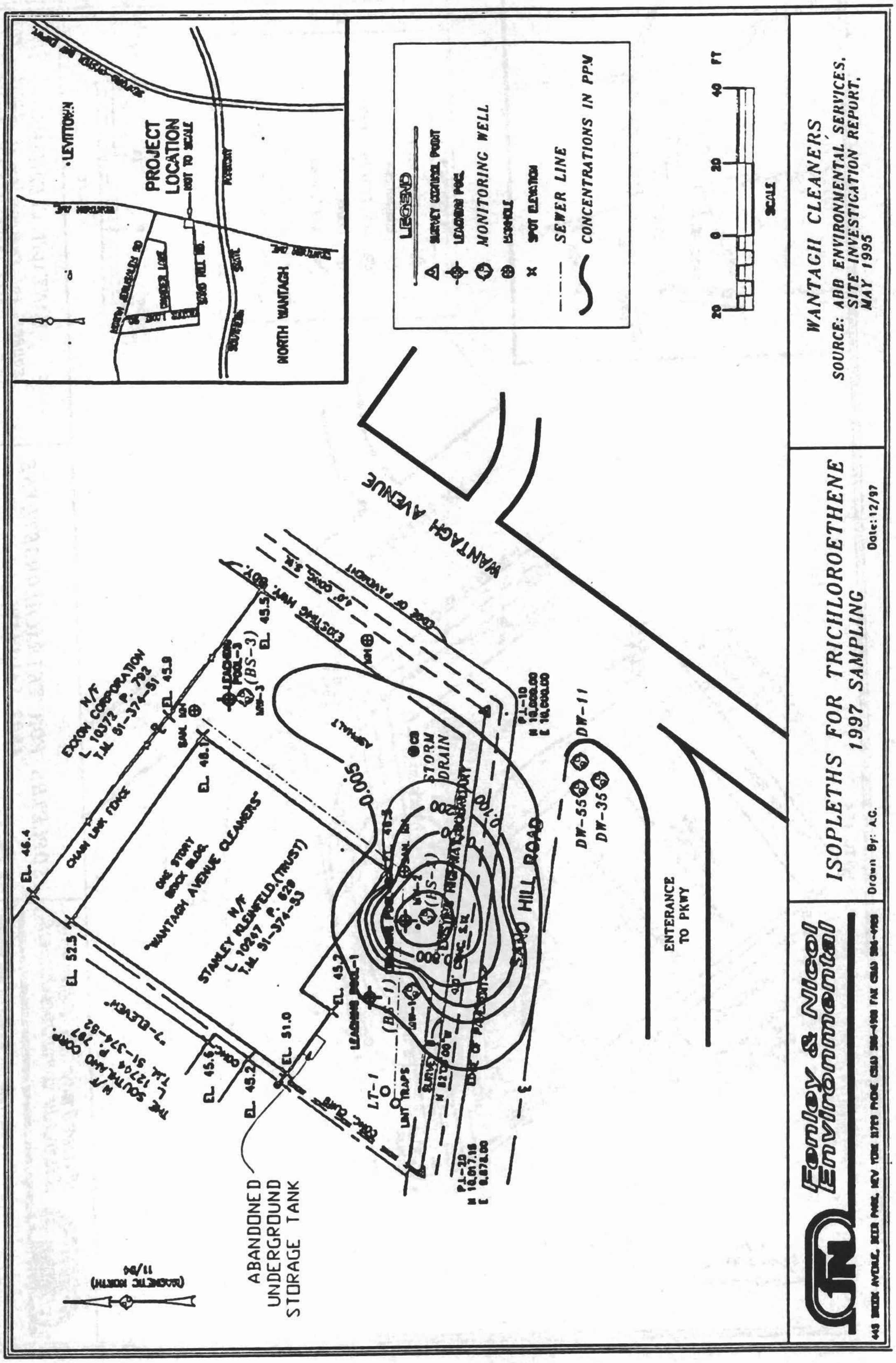
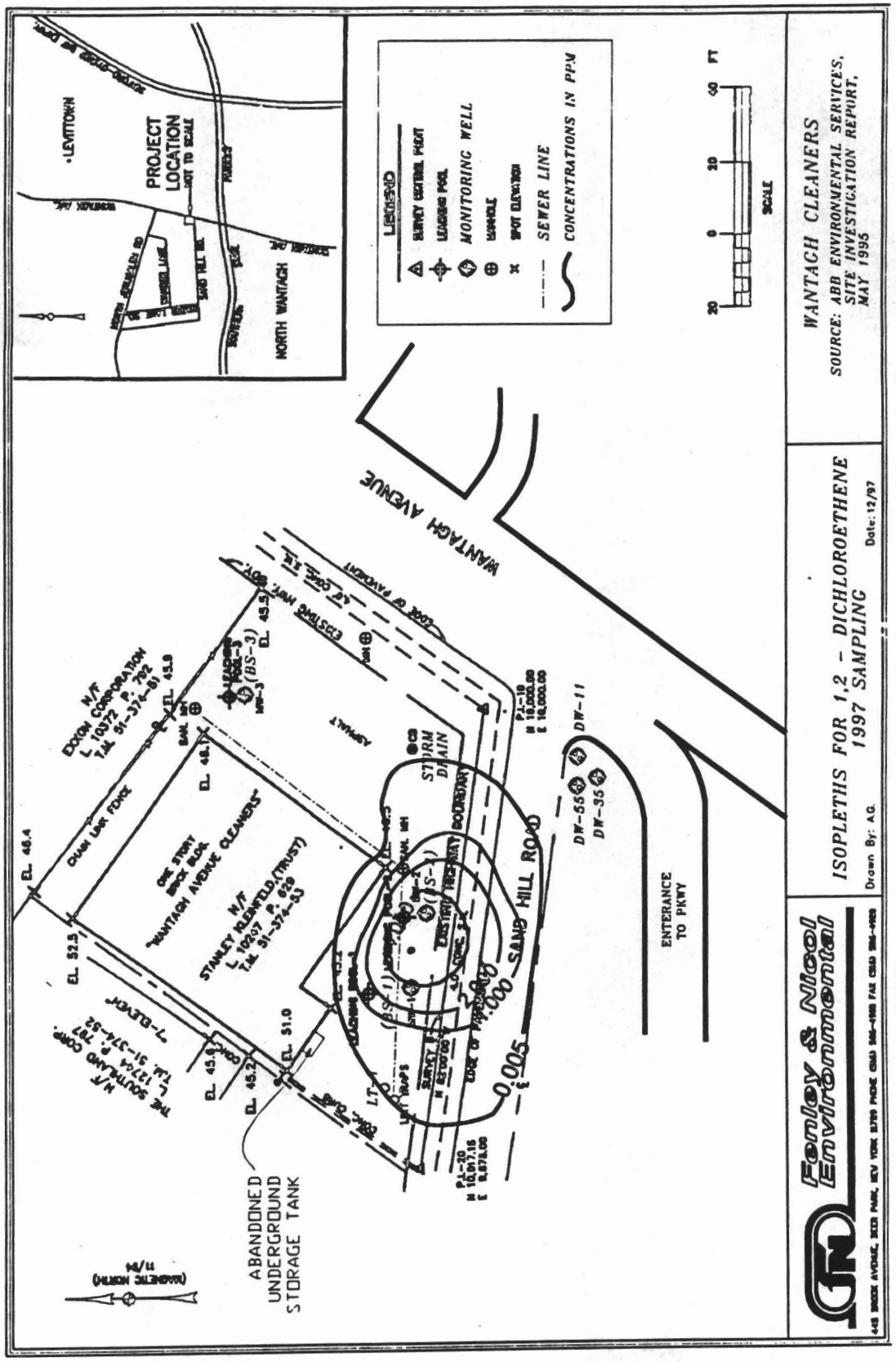


Figure 9
Wantagh Cleaners Site
(1-30-064)
Plume - 1,2-Dichloroethene



APPENDIX A

Responsiveness Summary

Appendix A

RESPONSIVENESS SUMMARY

Wantagh Cleaners Inactive Hazardous Waste Disposal Site
Record of Decision
Village of Wantagh, Town of Hempstead
Nassau County, New York
Site No. 1-30-064

The Proposed Remedial Action Plan (PRAP) for the Wantagh Cleaners Site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repositories on February 23, 1999. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and groundwater at the Wantagh Cleaners Site. The preferred remedy is No Further Action, contingent upon the successful operation of the air sparging/soil vapor extraction system Interim Remedial Measure (IRM) currently in place.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability. This notice was mailed on February 23, 1999. The public comment period for the PRAP began on February 24, 1999.

A public meeting was held on March 18, 1999, which included a presentation of the Focused Remedial Investigation (FRI) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. At the request of the local elected officials, the public comment period for the PRAP was extended from March 26, 1999, to April 15, 1999. Notice of the extension of the comment period was mailed to people on the mailing list.

This Responsiveness Summary responds to all questions and comments raised at the March 18, 1999, public meeting. No written comments were received.

The following comments and responses are paraphrased from the public meeting:

COMMENT 1: When were the public meeting notices mailed?

RESPONSE 1: The public meeting notices were mailed on February 23, 1999.

COMMENT 2: Who were the meeting notices sent to?

RESPONSE 2: They were sent to residents and businesses within 0.2 miles of the Wantagh Cleaners site (227 addresses, as per the Citizen Participation Plan). In addition, 31 state and local officials were notified of the March 18, 1999, meeting. A press release was also issued at this time, to ensure that interested individuals would be aware of the meeting.

COMMENT 3: Since very few members of the public are in attendance, would it be possible to extend the length of the comment period? It seems as if either the wrong people were notified, or the mailing list was not as extensive as it could have been.

RESPONSE 3: In light of your concerns, the NYSDEC will extend the comment period to April 15, 1999. This should allow those who are not in attendance sufficient time to review the PRAP, and provide their comments to the NYSDEC.

COMMENT 4: How will those who are not in attendance know that the comment period has been extended?

RESPONSE 4: Everyone who was notified of the meeting will receive notification that the comment period has been extended.

COMMENT 5: Is there contamination in the area northwest of the site (beyond the convenience store)?

RESPONSE 5: The groundwater flow direction in this area is to the southeast; thus, the area to the northwest of this site is not impacted by the site (contamination from the Wantagh Cleaners site is actually moving away from the area that lies northwest of the convenience store).

COMMENT 6: Is the contaminated groundwater migrating beyond Sandhill Road?

RESPONSE 6: Soil and groundwater samples have not been collected beyond Sandhill Road. Groundwater samples taken along Sandhill Road show low levels of contamination. However, it is unlikely that people will come in contact with contaminated groundwater, due to its depth and because no water supply wells are known to exist near the site. Also, the remediation system installed at the site will reduce the level of contaminants in groundwater.

COMMENT 7: Is the contamination from the Wantagh Cleaners Site reaching the ballfield (located beyond the Southern State Parkway)?

RESPONSE 7: Again, soil and groundwater samples have not been collected in that area. However, based on available data, it is unlikely that any site-related contamination has reached the ballfield.

COMMENT 8: You mentioned that the AS/SVE system is currently under construction. When will this system be turned on?

RESPONSE 8: We anticipate that the system will be up and running by the end of April 1999.

COMMENT 9: How long will the system have to run before the site is remediated?

RESPONSE 9: We are anticipating that the system will be operating for approximately six months. However, operation will continue until the contamination source has been remediated. We expect that the AS/SVE system will mitigate significant threats to the public health or the environment. However, if this system does not prove to be successful, then the remedy will be re-evaluated and additional remedial alternatives will be implemented.

COMMENT 10: Will the air leaving the treatment system be monitored?

RESPONSE 10: Yes. As par of the monitoring plan, effluent air will be monitored both in the field and at a fixed laboratory. Field sampling of effluent air will be conducted using an organic vapor analyzer/gas chromatograph (OVA/GC) at a minimum of once per week during the first month of system operations, and monthly or on an as-needed basis thereafter. Samples of VOCs from the SVE system entering and exiting the carbon filters will be collected for lab analysis at the time of system startup, once per month during the first three months of operation, and on a quarterly (or as-needed) basis thereafter.

APPENDIX B

Administrative Record

Appendix B

ADMINISTRATIVE RECORD

Wantagh Cleaners Inactive Hazardous Waste Disposal Site
No. 1-30-064
April 1999

1. Final Draft Workplan for Focused Remedial Investigation and Interim Remedial Measure, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064, Fenley & Nicol Environmental, Inc. and Korlipara Engineering, May 1997.

2. Focused Remedial Investigation Revised Report, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064, Fenley & Nicol Environmental, Inc. and Korlipara Engineering, November 1998.

3. Supplement to Focused Remedial Investigation Revised Report, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064, Fenley & Nicol Environmental, Inc. and Korlipara Engineering, November 1998.

4. Soil and Groundwater Remediation by Air Sparging and Soil Vapor Extraction, Interim Remedial Measure Design Report, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064, Fenley & Nicol Environmental, Inc. and Korlipara Engineering, December 1998.

5. Soil and Groundwater Remediation by Air Sparging and Soil Vapor Extraction, Interim Remedial Measure, Project Manual, Wantagh Cleaners, Nassau County, New York, Site No. 1-30-064, Fenley & Nicol Environmental, Inc. and Korlipara Engineering, December 1998.