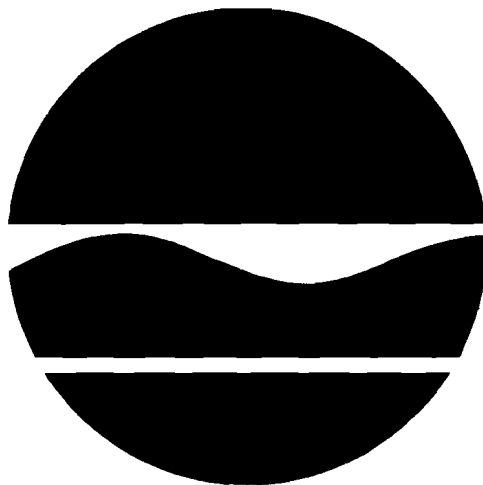


425 Merrick Avenue Site
Westbury, Town of Hempstead, Nassau County,
New York
Site No. 1-30-061

PROPOSED REMEDIAL ACTION PLAN

February 2002



Prepared by:

Division of Environmental Remediation
New York State Department of Environmental Conservation

PROPOSED REMEDIAL ACTION PLAN

425 Merrick Avenue Site
Westbury, Town of Hempstead, Nassau, New York
Site No. 130061
February 2002

SECTION 1: SUMMARY AND PURPOSE **OF THE PROPOSED PLAN**

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the 425 Merrick Avenue Site, a Class 2 inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, past research and development activities have resulted in the disposal of a number of hazardous wastes, including polychlorinated biphenyls (PCBs), mercury and polynuclear aromatic hydrocarbons (PAHs) at the site, some of which were released or have migrated from the site to the surface soils of an adjoining property. These disposal activities have resulted in the following significant threats to the public health and/or the environment:

- a significant threat to human health associated with potential direct contact and ingestion of the contaminated soils and waste materials.

During the course of the investigation certain actions, known as Interim Remedial Measures

(IRMs), were undertaken at the 425 Merrick Avenue site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. The IRMs undertaken at this site included:

- Excavation and off-site disposal of PCB-impacted soils from several on-site locations including grease pits, former septic fields, storm drains, and test pits.
- Excavation and off-site disposal of PAH-impacted soils from test pits and septic fields.
- Excavation and off-site disposal of mercury-impacted soils from beneath Building II, test pits, septic fields, and off-site west of Building II.

During these IRMs, approximately 660 cubic yards of impacted soils were properly disposed at off-site facilities. Based on the success of the IRMs, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore, "No Further

Action" is proposed as the remedy for this site. In addition, the NYSDEC also proposes to delist the site from the New York State Registry (the Registry) of Inactive Hazardous Waste Disposal Sites.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

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

- "Site Investigation and Interim Remedial Measure (SI/IRM) Work Plan," March 1997
- "Preliminary Report for Interim Remedial Measure and Site Investigation," October 1997
- "Supplemental Investigation Work Plan," August 1999
- "Sub-Foundation Soil Sampling Plan," November 2000
- "Site Investigation and Interim Remedial Measure Report," December 4, 2000
- "Site Investigation/ Interim Remedial Measure Report Addendum," February 2002,

and other relevant reports and documents, available at the document repositories.

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

East Meadow Public Library
1886 Front Street
East Meadow, New York 11554
Attn.: Mr. John Franzen
(516) 794-2570

Mon. - Fri. : 9:00 a.m.- 9:00 p.m.
Sat.: 9:00 a.m.- 1:00 p.m. (summer)
Sun.: 1:00 p.m.- 5:00 p.m. (fall, winter, spring), closed summer

NYSDEC - Region 1
SUNY, Building 40
Stony Brook, New York 11790-2356
Attn.: Mr. Girish Desai, Project Manager
(631) 444-0243
Mon. - Fri.: 8:30 a.m.- 4:45 p.m.

The NYSDEC seeks input from the community on all PRAPs. A public comment period has been set from February 1, 2002 through March 11, 2002 to provide an opportunity for public participation in the remedy selection process for this site. A public meeting is scheduled for February 25, 2002 at the Westbury Recreation Center, 348 Post Avenue, Westbury, New York, beginning at 7:30 p.m.

At the meeting, the results of the SI/IRM will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held,

during which you can submit verbal or written comments on the PRAP.

The NYSDEC may modify the preferred alternative or select another remedy based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and responses provided in the Responsiveness Summary section of the Record of Decision. The Record of Decision is the NYSDEC's final selection of the remedy for this site. Written comments may be sent to Mr. Desai at the above address through March 11, 2002.

SECTION 2: SITE LOCATION AND DESCRIPTION

The 425 Merrick Avenue site is located on Merrick Avenue in Westbury, Town of Hempstead, Nassau County, New York. The site is bounded by a commercial office building to the north, Eisenhower Park to the east, a commercial building to the south, and the Meadowbrook Parkway to the west. A site location map is presented in Figure 1.

The site is approximately 2 acres and is currently a vacant, open lot. Prior to demolition activities that took place in the year 2000, there was one main building, several smaller buildings and smaller structures located around the main building. A 40-foot diameter vacuum sphere was located on the southern portion of the property, just southwest of the main building. The site layout and building designations are shown on Figure 3. All on-site buildings and related structures were demolished, and concrete slabs, walls and columns were

removed between August 2000 and November 2000. All areas were backfilled with clean fill.

A groundwater supply well (N10115 T) for the facility was located in the central portion of the site and was abandoned on August 16, 2000. Two older supply wells on the property were previously abandoned. No public water lines extend to the former on-site buildings. Two active public water supply wells, one inactive public supply well, one domestic well and 16 industrial wells are located within a 1-mile radius of the site. All three public supply wells and the domestic well are located hydraulically upgradient of the site. Two industrial wells are located downgradient of the site. Groundwater monitoring at the site does not indicate significant contamination from the site.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Since 1939, the site has been used for commercial purposes. The facility was operated as research laboratories from the early 1950's until it closed in late 1989. A number of companies and organizations have occupied the site, using it for various laboratory and research and development (R&D) activities in the aerospace, aeronautical, telecommunications and energy industries. One of the initial tenants and operators was Advanced Technologies, Inc. (ATI). ATI, General Applied Science Laboratories (GASL), New York University (NYU) and Westbury Combustion Corporation were involved with R&D work at the site for the aerospace industry and various governmental agencies. GASL and NYU, together with the site owner (Meadowbrook

Management and Realty Corporation), are considered potential responsible parties (PRPs) for the contamination at the site.

Experimental facilities at the site included a blow-down type wind tunnel, a shock tunnel, shock tubes, sonic boom testing rooms, gun barrel testing room, combination test facilities, and a microwave laboratory.

The site was connected to the sanitary sewer in August 1979. Prior to August 1979, the site waste lines discharged to on-site septic systems. One septic system, located along the northern portion of the property in the areas of Shed III, received waste from the Main Building. A second septic system, located west of the Main Building adjacent to Shed VII, also received waste from the Main Building. A third septic system, located just south of the vacuum sphere (Shed I) received waste from Building II (see Figure 2).

After NYU vacated the property in August 1990, 200-300 containers ranging in size from 1 to 55 gallons, were discovered at various locations throughout the property, including at least 150 55-gallon drums, stockpiled in a partially fenced area. These drums contained residual waste liquids, including oils and demolition-related debris.

There were three aboveground storage tanks located on-site. Two small (275 gal.) tanks were utilized for the storage of kerosene and #2 Fuel oil, and a 6,000 gallon aboveground tank was used for storage of heating oil.

A 300-gallon gasoline underground storage tank (UST) was discovered during the excavation of the main building's water tank along its southern side wall. The tank and approximately five cubic yards of

gasoline-impacted soil were removed and properly disposed off-site. The results of a confirmatory endpoint soil sample from the bottom of the UST excavation showed levels below NYSDEC's soil cleanup guidelines. The excavation was backfilled with crushed concrete from construction & demolition (C&D) of the on-site buildings.

Waste from the operation of the site may have included PCBs from the transformers, capacitors, and machine oils used in compressors, mercury from laboratory instrumentation and cuttings and filings from fabrication of tools containing chromium.

The site is currently owned by Meadowbrook Management and Realty Company, Inc., and is unoccupied.

3.2: Remedial History

On April 30, 1991, several agencies performed an inspection of the site, including the NYSDEC, the Nassau County Department of Health (NCDH), the Nassau County Department of Public Works (NCDPW), and the Nassau County Police Department. The inspection revealed that a large number of drums, containers, and miscellaneous debris, some of which contained petroleum products and hazardous or potentially hazardous substances, were present in organized and unorganized groupings throughout the site. Meadowbrook Management and Realty Corporation, the site owner, conducted a waste characterization and preliminary site investigation of the site.

Under an order from the NCDH, the owner inventoried, consolidated, and properly disposed the containerized wastes off-site.

- In June and August of 1991 and August of 1992, follow-up investigations of stained soils indicated significant contamination by PCBs and 1,2-dichlorobenzene.
- In August of 1991 and October 1994, Geoprobe points were installed to collect groundwater samples at the site. The concentrations of chromium, mercury, lead and PCBs detected were above the NYSDEC Ambient Water Quality Standards and Guidance values.

This site was listed as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State in January 1993. A Class 2 designation indicates that there is a significant threat or impact to human health and/or the environment.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate alternatives to address the potential threat to human health and the environment posed by the presence of hazardous waste, the PRPs recently completed a Site Investigation and Interim Remedial Measures (SI/IRM).

4.1: Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site.

The SI was conducted in three phases. The first phase was conducted between July 1997 and October 1998, the second phase between May 2000 and June 2000, and the third phase was conducted in November 2000. A report

entitled "Site Investigation and Interim Remedial Measure Report," dated December 4, 2000 was prepared which describes the field activities and findings of the SI in detail. An addendum to the SI/IRM report was issued in August 2001.

The SI included the following activities:

- Historical records were searched to determine background information.
- Site visits were conducted to assess current conditions at the site, identify the previous sampling locations, and identify areas of potential concerns that would require investigations.
- An investigation into regional environmental concerns in the area was conducted.
- Certain engineering tasks were performed to provide adequate and safe access to areas being investigated and remediated. Site preparation consisted of the partial demolition of Shed VII, and removal of overhead piping and piping support structures with the 40-ft diameter vacuum sphere.
- A video inspection of a crawl space was conducted to identify the presence of any containers, vessels, or tanks and to determine the direction and structure of drainage piping.
- All interiors of the on-site buildings and substructures were inspected for the presence of potentially hazardous materials, floor drains, sumps and former supply wells.

- Excavation of 3 test pits to locate underground drainage/leach fields.
- Installation of 15 soil borings and 3 monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions. A total of 51 soil samples were collected.
- Soil samples were analyzed for PCBs and mercury with the immunoassay field test kits to define the extent of potentially impacted soils.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the SI analytical data were compared to environmental standards, criteria, and guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the 425 Merrick Avenue site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines based upon the protection of groundwater, background conditions, and health-based exposure scenarios.

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. The IRMs described in Section 4.2 were completed and have adequately addressed the contamination. Table 1 summarizes soil contamination before and after the IRMs. More complete information can be found in the SI and IRM Reports.

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

4.1.1: Site Geology and Hydrogeology

The site is underlain first by the Upper Glacial Aquifer, a regional sand and gravel aquifer. The saturated thickness of the Upper Glacial Aquifer ranges from 20 to 40 feet. The depth to groundwater ranges from approximately 15 feet below land surface (bls) in the western portion of the site to approximately 25 feet bls in the eastern portion of the site. The regional direction of groundwater flow in the Upper Glacial Aquifer in the vicinity of the site is in the southerly direction.

The Magothy Aquifer underlies the Upper Glacial Aquifer and is approximately 500 feet thick in the study area. The Magothy Aquifer is composed of interbedded lenses of sand, silt, and clay in various mixtures, with coarse sand and gravel deposits common near its base. Within a 1-mile radius of the site, the identified public supply wells and the wells used for irrigation or commercial purposes are installed in the Magothy Aquifer. The Magothy Aquifer, in turn is underlain by the Raritan Formation. The Raritan Formation is composed of the upper Raritan Clay, a regional confining layer, followed by the more permeable Lloyd Sand. The Lloyd Sand sits directly upon crystalline bedrock.

4.1.2: Nature of Contamination

As described in the SI and IRM report, many soil and groundwater samples were collected at the site to characterize the nature and extent of contamination.

The main categories of contaminants which exceed their SCGs are polychlorinated biphenyls (PCBs), inorganics (metals) and polynuclear aromatic hydrocarbons (PAHs) found in soils at various locations as described below.

The inorganic contaminants of concern are mercury and chromium.

Several PAHs, including benzo(a) anthracene, benzo(k) fluoranthene, benzo(b) fluoranthene chrysene, and benzo(a) pyrene were detected in one or more soil samples, above their recommended soil cleanup objectives.

PCBs including Aroclor-1254 and Aroclor-1248 were detected in several soil samples, above the recommended soil cleanup objectives.

4.1.3: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soil, and compares the data with the SCGs for the site. Table 2 provides this information for contaminants of concern in groundwater. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

During the SI, surface soil samples were collected from a depth of 0 to 2 feet below land surface and sub-surface soil samples were collected from a depth of 2 feet below land surface. PCBs were detected in several surface and sub-surface soil samples. In those samples total PCB concentrations ranged from non-detect to 290 ppm in surface soil samples and non-detect to 2,670 ppm in sub-surface

soil samples. Levels of PCBs were detected in the surface soil samples above the 1 ppm surface soil cleanup guideline in test pit VI, north pit, west of building II and northwestern portion of the site. Levels of PCBs were detected in the subsurface soil samples above the 10 ppm cleanup guideline in grease pit 1, grease pit 2, test pit VII, storm drain 3, and northern septic field. The locations of these samples are shown on Figure 2.

Several metals including mercury, chromium, arsenic, nickel, and copper were detected at levels above the soil cleanup guidelines in test pit VII, test pit VIII, test pit IX, northern septic field, north pit, and sub-foundation of building II. In those samples mercury concentrations ranged from non-detect to 102 ppm, chromium concentrations ranged from non-detect to 199 ppm, arsenic concentrations ranged from non-detect to 14.6 ppm, nickel concentrations ranged from non-detect to 34.6 ppm and copper concentrations ranged from non-detect to 78.8 ppm. While beryllium, iron, and zinc were detected above the guidelines for those analytes, the concentrations were generally consistent throughout the site and are background concentrations. Additionally, these concentrations are within background levels for the eastern United States as provided in the NYSDEC TAGM 4046.

Several PAHs including benzo(a) anthracene, chrysene, benzo(b) fluoranthene, benzo(k) fluoranthene, benzo(a) pyrene, and dibenzo(a,h) anthracene, were detected above the cleanup guidelines in the northern septic field. In those samples benzo(a) anthracene concentrations ranged from non-detect to 1.2 ppm, chrysene concentrations ranged from non-detect to 1.4 ppm, benzo(b) fluoranthene concentrations ranged from non-detect to 1.3 ppm, benzo(k) fluoranthene concentrations

ranged from non-detect to 1.1 ppm, benzo(a)pyrene concentrations ranged from non-detect to 1.1 ppm and dibenzo(a,h)anthracene concentrations ranged from non-detect to 0.05 ppm. In addition to the PAHs discussed above, pentachlorophenol (a SVOC) was found at 1.1 ppm in TP-VII S above the guideline of 1.0 ppm. 1,2,4-trichlorobenzene was detected at 11 ppm in the southern septic field leaching ring in a split sample analyzed by the NYSDEC.

Petroleum related VOCs were not detected above NYSDEC cleanup guidelines in soil samples collected at the site. In addition, analysis of VOCs detected no concentrations in exceedance of cleanup guidelines.

The soil detections discussed above were prior to the IRMs conducted at the site. Post-IRM confirmatory end-point soil sample concentrations from these locations were below the soil cleanup guidelines, with the exception of isolated detections of mercury and PCBs. Five of the 24 soil samples contained mercury slightly above the cleanup guideline of 0.1 ppm, to a maximum value of 0.2 ppm. A post-excavation soil sample collected from the bottom of GP-1, at a depth of 12 feet below grade, contained PCBs at 211 ppm. Soil samples collected from the sides of GP-1 contained PCBs at a maximum concentration of 5.5 ppm. Physical constraints prevented additional soil removal at that location during the IRM. After the excavation was backfilled, a soil boring was drilled in the center of GP-1 to further delineate the vertical limit of PCBs exceeding the 10 ppm subsurface soil cleanup guideline. The laboratory results of two soil samples collected from 14 to 16 feet below grade and 16 to 18 feet below grade contained PCBs at

1.87 ppm and 0.074 ppm, well within the cleanup guideline. Because the PCB detection 12 feet below grade was isolated, and at a sufficient depth to prevent significant exposure, the NYSDEC determined that no further excavation was necessary.

Groundwater

Three monitoring wells were installed into the shallow water table (Upper Glacial) aquifer based on the results of the soil investigation and IRM analytical results. The locations of the monitoring wells are shown on Figure 2. The upgradient monitoring well MW-1 was installed at the northern boundary of the site to assess background groundwater quality. Monitoring well MW-2 was installed south of GP-1 to assess potential groundwater impacts from PCBs observed in GP-1, and monitoring well MW-3 was installed to assess potential groundwater impacts along the western boundary of the site, downgradient of the majority of the research structures located in Building II and Sheds III, VII, VIII, and IX.

Groundwater samples were collected on three occasions; January 14, 1998, March 12, 1998 and May 13, 1998 from the existing supply well and the three monitoring wells.

Water-level elevations and groundwater flow are depicted on Figure 3.

VOCs and SVOCs were not detected in groundwater samples above the NYSDEC Ambient Water Quality Standards and Guidance Values. Groundwater quality results are provided in Table 2. While PCBs were detected above the ambient standards of 0.09 ppb in the first round of groundwater

sampling, two subsequent rounds of groundwater samples did not detect PCBs above the detection limit of 1 ppb in the groundwater beneath the site. Concentrations of VOCs detected in groundwater samples included 1,1-dichloroethene at 2 ppb in Well MW-3, and acetone at 6 ppb, 4-methyl-2-pentanone at 4 ppb, and toluene at 2 ppb in N10115T. Four SVOC constituents were detected in groundwater samples which included phenol at 2 ppb in N10115T; diethylphthalate at 0.5 ppb in MW-3 and 0.8 ppb in N10115T; di-n-butyl phthalate at 0.4 ppb in MW-3, 0.6 ppb in MW-1, and 4 ppb in N10115T; and bis (2-ethylhexyl) phthalate at 51 ppb in N10115T.

At the date of sample collection and analysis (January, 1998), bis (2-ethylhexyl) phthalate at 51 ppb was just above the existing ambient groundwater quality standard of 50 ppb. Therefore, further analysis for bis (2-ethylhexyl) phthalate was not conducted. The groundwater investigation phase of this project was completed in May 1998, before the revised standard of 5 ppb was adopted in August 1999. This well, N10115T, was abandoned in August 2000 in preparation for site demolition. The presence of bis (2-ethylhexyl) phthalate, a common constituent of plastics, only in supply well N10115T may be attributable to components of the water supply turbine pump removed from the well just prior to sampling. The plastic components of the supply well pump, turned off since the facility closed in 1989, may have contributed bis (2-ethylhexyl) phthalate to silts accumulating in the dormant well. The relatively high turbidity of the groundwater sample from N10115T suggests that silts were included in the analysis of this sample. Bis (2-ethylhexyl) phthalate was not

found in any other monitoring well. Bis (2-ethylhexyl) phthalate is also a common contaminant in analytical laboratories and is frequently reported in environmental samples. Bis (2-ethylhexyl) phthalate was not detected in soil or shallow groundwater samples, nor was it identified among the hazardous materials removed from the site. No source of bis (2-ethylhexyl) phthalate contamination to the environment from former operation of the site was observed.

Total copper at 242 ppb and manganese at 470 ppb in N10115T were detected above the Ambient Water Quality Standards and Guidance Values of 200 ppb and 300 ppb respectively. Concentrations of total iron in all four wells ranged from 406 ppb in MW-3 to 49,800 ppb in N10115T which were above the Ambient Water Quality Standards and Guidance Value of 300 ppb for Iron. Concentrations of iron detected throughout the site are indicative of naturally occurring levels of iron in the groundwater.

Waste Materials

Potentially hazardous materials were discovered in the Main Building. The type and volumes of these materials are listed in Table 4-4 of the SI and IRM report. Over 1100 pounds of potentially hazardous material was discovered inside the buildings including three capacitors, two vessels of liquid mercury, paints, resins, waste oils and other items. As explained in more detail in Section 4.2 below, these materials were removed as an IRM.

4.2: Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the SI.

In conjunction with the site investigation, identified impacted areas were remediated as IRMs. Prior to and during the completion of the site investigation, alternative remedial measures were assessed to address contamination detected at the site. The alternative remedial measures applicable to the chemical constituents of concern for the site included contaminant fixation, stabilization, and removal. Contaminant removal was selected for the following reasons: (1) the limited volume of contaminated soils found on-site, (2) to remediate contamination in the shortest time frame, (3) to achieve unrestricted future use of the site, and (4) cost-effectiveness.

IRMs were conducted for several areas in which SCGs were exceeded based on the previous investigations and the site investigation. These areas included the two grease pits located beneath the vacuum sphere, the vicinity of test pit VII, storm drain 3, the southern septic system cesspool and leaching ring, borings B-12, B-17, B-21, northern septic field (B-32), and surface soil samples locations A, B, C, D, E, F, and B-23. (see Figure 2).

The IRMs were conducted in four phases:

- The Phase I IRM was conducted in July 1997 and December 1997 for PCB-impacted soils identified during the previous investigations. The Phase I work consisted of excavation and

off-site disposal of PCB-impacted soils from the test pit VII, test pit -VI (B-21), grease pit 1(GP-2), Grease Pit 2 (GP-2), storm drain 3 (SD-3), and northwestern portion of the Site (B-12).

- The Phase II IRM was conducted in January 1998 and April 1998 for PAHs, PCBs and mercury-impacted soils identified during the Phase I SI. The Phase II work consisted of excavation and off-site disposal of PAH- impacted soils from a cesspool and a leaching ring located south of the vacuum sphere, mercury-impacted soils from Test Pit-IX (B-23), and PCB-impacted soils from Test Pit VIII (B-17).
- The Phase III IRM was conducted in June 2000 for mercury-impacted and PCB-impacted soils identified during the supplemental site investigation. The Phase III IRM work consisted of excavations and off-site disposal of soils from North Pit, west of Building II and Northern Septic Field.
- The Phase IV IRM was conducted from April 2001 and June 2001 for mercury-impacted soils identified during the sub-foundation investigation. The Phase IV IRM work consisted of excavations and off-site disposal of soils from sub foundation of Building II (MR-4) and continuation of excavations around soil sampling locations A, B, C, D, E, F.

A total of approximately 660 cubic yards of contaminated soils were removed from the site during these IRMs.

Reports entitled "SI and IRM Report," dated December 4, 2000 and "SI/IRM Addendum Report" dated August 2001 were prepared which discuss the IRM activities and findings of final confirmatory post-excavation endpoint results.

The locations of the IRMs are shown on Figure 2. The limits of the IRM excavations for PCBs and mercury were determined using immunoassay field test kits to indicate when the cleanup criteria were met. Field immunoassay test kit results are provided in Appendix D of the SI and IRM Report. A total of 38 post-IRM confirmatory soil samples were collected for laboratory analysis from the excavations for confirmation of the field test kit results.

The impacted soils were removed, using the soil cleanup objectives specified in the NYSDEC TAGM 4046, to levels consistent with pre-release or background conditions and/or the elimination of potential threats to human health and the environment. Post-IRM sampling was conducted to confirm that the soil cleanup objectives had been met, and the results of all soil samples are presented in the "SI and IR Report" dated December 4, 2000 and the "SI/IRM Report Addendum" dated August 2001. A Project Summary is included at the end of this PRAP as Table 3.

In addition to these IRMs, general site cleanup activities were performed to address potentially hazardous materials remaining at the site as identified during the site inspection conducted in August 1997.

The general site cleanup activities have removed all potentially hazardous materials from the site eliminating any additional potential impacts.

Asbestos abatement activities within the on-site structures were performed between August 28, 2000 and September 8, 2000. Asbestos containing waste was removed and disposed off-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.

An exposure pathway is the manner by which an individual may come in 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.

The primary exposure pathways of concern at the 425 Merrick Avenue Site consisted of the potential for dermal contact with, ingestion of, and inhalation of contaminated soils and particulates, and/or contact with contaminated materials in drainage structures and grease pits. These pathways have been addressed through a series of remedial measures completed at the site. All areas of soil contamination identified during the site investigations have been excavated and properly disposed of off-site. Any residual concentrations of contaminants that may exist at the site are either of inconsequential

amounts or are sufficiently deep to prevent any significant threat to human health. Thus the IRMs at this site have effectively eliminated this pathway of exposure through removal of contaminated soils.

4.4: Summary of Environmental Exposure Pathways

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

Because the impacts were limited to the unsaturated zone, groundwater has not been affected, and contaminants have not migrated off-site nor affected groundwater use.

No environmental exposure pathways or ecological risks were identified. There appears to be no wildlife habitat present. Consequently, there are no fish and wildlife concerns at the site. An evaluation of the environmental exposure pathways was not required.

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 following is the chronological enforcement history of this site.

Orders on Consent

<u>Date</u>	<u>Index</u>	<u>Subject</u>
3/31/97	W1-0621-92-09	IRM & Investigation

The NYSDEC and the Meadowbrook Management and Realty Corp., General Applied Science Laboratories, Inc., and New York University entered into a Consent Order on March 31, 1997. The Order obligates the responsible parties to conduct a site investigation and interim remedial measures.

SECTION 6: SUMMARY OF THE REMEDIAL GOALS AND PROPOSED ACTION

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health and/or the environment from the hazardous waste present at the site. The NYSDEC believes that the remedial activities conducted at this site to date, which are described in Section 4.2 Interim Remedial Measures, would accomplish this objective.

Based on the results of the Site Investigations and the IRMs that have been performed at the site, the NYSDEC is proposing No Further Action as the preferred remedial alternative for the site. The NYSDEC would also delist the site from the New York State Registry of Inactive Hazardous Waste Disposal Sites.

Table 1. Site Investigation /Interim Remedial Measure Soil Quality Evaluation, 425 Merrick Avenue, Westbury, New York.

Constituent	Range of Concentrations (ppm) July 1997 to June 2001	Site Investigation Samples Above Cleanup Objectives ⁽¹⁾	Maximum Post IRM Confirmatory Sample Concentrations (ppm) July 1997 to June 2001	Soil Cleanup Objectives (ppm)
PCBs-Surface Soil	ND to 290	B-12, B-21, A, B, C, D, E, F	0.74	1 (surface)
PCBs-Subsurface Soil	ND to 2,670	B-24, B-32, GP-1/GP-2, TP-VII	8.7*	10 (subsurface)
Benzo(a)anthracene	ND to 1.2	B-12, B-13, B-16	0.067	0.224
Chrysene	ND to 1.4	B-12, B-13, B-16	0.072	0.4
Benzo(b)fluoranthene	ND to 1.3	B-12, B-13, B-16, B-24, B-28	0.067	0.224
Benzo(k)fluoranthene	ND to 1.1	B-12, B-13, B-16, B-24, B-28	0.056	0.224
Benzo(a)pyrene	ND to 1.1	B-12, B-13, B-16, B-17, B-23, B-24, B-27, B-28, TP-VII BTM	0.067	0.061
Dibenzo(a,h)anthracene	ND to 0.05	B-13	ND	0.014
Pentachlorophenol	ND to 1.1	TP-VII S	ND	1
Phenanthrene	ND to 97	B-32	ND	50
Arsenic	ND to 14.6	TP-VII S	1.5	7.5 or SB
Chromium	ND to 199	B-23, TP-VII S	4.6	50 or SB
Copper	ND to 78.8	B-17, TP-VII S	8.7	25 or SB
Mercury	ND to 102	B-17, B-23, B-32, TP-VII S, A, B, C, D, E, F, MR-4	0.2**	0.1
Nickel	ND to 34.6	TP-VII S	3.3	13 or SB

ppm Parts per million.

⁽¹⁾ NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objective and Cleanup Levels (April 1995).

ND Not detected.

SB Site background.

J Estimated value.

Note: Samples A, B, C are grab samples collectively identified as the North Pit (NP) IRM.

Samples D, E, F are grab samples from collectively identified as the IRM west of Building 2 (BLD 2).

* PCBs were detected at 12 feet below grade in Sample GP-1 Bottom at 211 ppm. However, additional sampling at GP-1 demonstrated that residual PCB contamination, if any, was isolated and at a depth sufficient to render it insignificant in respect to any threats as per NYSDEC.

** Mercury concentrations in 5 of the 24 post-IRM end-point samples are slightly above the RSCO of 0.1 ppm (TAGM 4046).

Sample ID	Location	Hq Concentration (ppm)
B-17 SOUTH	South Wall	0.12 J
BLD2-C	North Wall	0.13
W. Wall #1 (BLD 2)	West Wall	0.11
NP-C	West Wall	0.13
SSDSr/SQS NP- E. Wall	East Wall	0.2

Table 2. Site Investigation/Interim Remedial Measure Groundwater Quality Evaluation, 425 Merrick Avenue, Westbury, New York.

Constituent	Date	Range of Concentrations (in ppb)	Location of Detectable Concentrations	NYSDEC Ambient Water Quality Standards & Guidance Values (in ppb)
<u>Volatile Organic Compounds</u>				
1,1-Dichloroethene	1/13/98	ND to 2	MW-3	5
4-Methyl-2-pentanone	1/13/98	ND to 4	N10115T	--
Toluene	1/13/98	ND to 2	N10115T	5
<u>Semi-Volatile Organic Compounds</u>				
Phenol	1/13/98	ND to 2	N10115T	1
bis(2-Ethylhexyl)phthalate	1/13/98	ND to 51	N10115T	5 ⁽¹⁾
<u>Polychlorinated Biphenyls (PCBs)</u>				
Total PCBs	3/12 & 5/13/1998	ND	--	0.09
<u>Metals</u>				
Arsenic	1/13/98	ND to 3.4 B	MW-1	25
Barium	1/13/98	40.3 B to 97.7 B	MW-1, MW-2, MW-3, & N10115T	1,000
Cadmium	1/13/98	1.0 to 1.1 B	MW-1, MW-2, & MW-3	5
Chromium	1/13/98	1.0 B to 8.2 B	MW-2 & MW-3	50
Cobalt	1/13/98	ND to 2.5 B	MW-2 & N10115T	--
Copper	1/13/98	ND to 242	N10115T	200
Iron	1/13/98	231 to 49,800	MW-1, MW-2, MW-3, & N10115T	300
Lead	1/13/98	ND to 13.3	MW-1, MW-3, & N10115T	25
Magnesium	1/13/98	2,400 B to 11,000	MW-1, MW-2, MW-3, & N10115T	35,000
Manganese	1/13/98	14.9 B to 470	MW-1, MW-2, MW-3, & N10115T	300
Mercury	1/13/98	ND to 0.32	N10115T	0.7
Nickel	1/13/98	5.1 B to 9.5 B	MW-1, MW-2, MW-3, & N10115T	100
Selenium	1/13/98	2.1 B to 3.4 B	MW-1, MW-2, MW-3, & N10115T	10
Vanadium	1/13/98	ND to 11.4 B	MW-1, MW-2, & MW-3	--
Zinc	1/13/98	23.8 to 95.9	MW-1, MW-2, MW-3, & N10115T	300

ppb Parts per billion.

-- Not applicable.

ND Not detected.

⁽¹⁾ Revised from 50 ug/L as of 8/4/99.

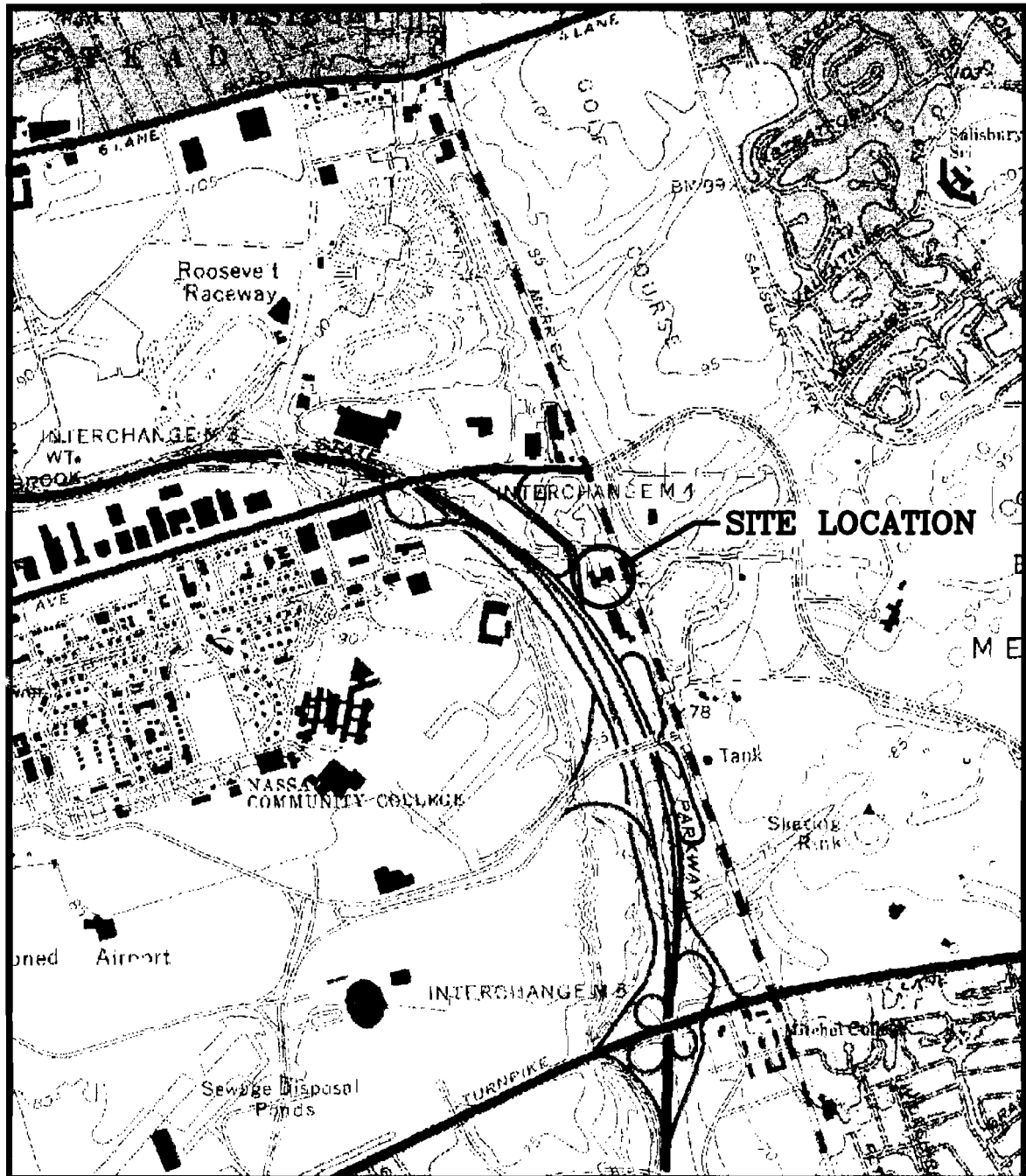
B Analyte result between instrument detection limit (IDL) and contract required detection limit (CRDL).
SSDSr/GWQS

No further remediation is needed based on the results of the site investigation and the success of implemented IRMs to remove contamination detected at the Site. The following provides a summary of the findings drawn from the Site Investigation and IRM activities at the Site.

Area of Concern	Sample ID	Impacts Detected	Action Taken	Actions Recommended
TP-I	B-27	None	None required	No further action
TP-II	B-14	None	None required	No further action
TP-III	B-15	None	None required	No further action
TP-IV	B-16	PAHs	Test Pit delineated PAHs in former roadbed.	No further action
TP-V	B-20	None	None required	No further action
TP-VI	B-21	PCBs	IRM removed PCBs detected above RSCOs.	No further action
TP-VII	---	PCBs & Metals	IRM removed PCBs and metals detected above RSCOs.	No further action
TP-VIII	B-17	Hg & Cu	IRM removed metals detected above RSCOs.	No further action
TP-IX	B-23	Hg & Cr	IRM removed metals detected above RSCOs.	No further action
West of Building II	D, E, F	PCBs & Hg	IRM removed PCBs and metals detected above RSCOs.	No further action
Grease Pit 1	GP-1	PCBs	IRM removed PCBs detected above RSCOs.	No further action
Grease Pit 2	GP-2	PCBs	IRM removed PCBs detected above RSCOs.	No further action
Storm Drain 1	B-29	None	None required	No further action
Storm Drain 2	B-28	PAHs	Identified in former roadbed. No action taken.	No further action

Area of Concern	Sample ID	Impacts Detected	Action Taken	Actions Recommended
Storm Drain 3	B-24	PCBs	IRM removed PCBs detected above RSCOs.	No further action
Storm Drain 4	B-25	None	None required	No further action
Storm Drain 5	B-26	None	None required	No further action
Northern Septic Field	B-32, B-19	PCBs, PAHs, & Hg	IRM at septic tank removed PCBs, PAHs, and Hg detected above RSCOs. None required in leach field.	No further action
Central Septic Field	B-18	None	None required	No further action
Southern Septic Field	B-22	SVOCs	IRM removed SVOCs detected above RSCOs.	No further action
Former Transformers	B-30	None	None required	No further action
Northwestern Portion of Site	B-12	PCBs	IRM removed PCBs detected above RSCOs.	No further action
North Pit	A, B, C	PCBs & Hg	IRM removed PCBs and metals detected above RSCOs.	No further action
Sub-Foundation of Building 2	MR-4	Hg	IRM removed metals detected above RSCOs.	No further action

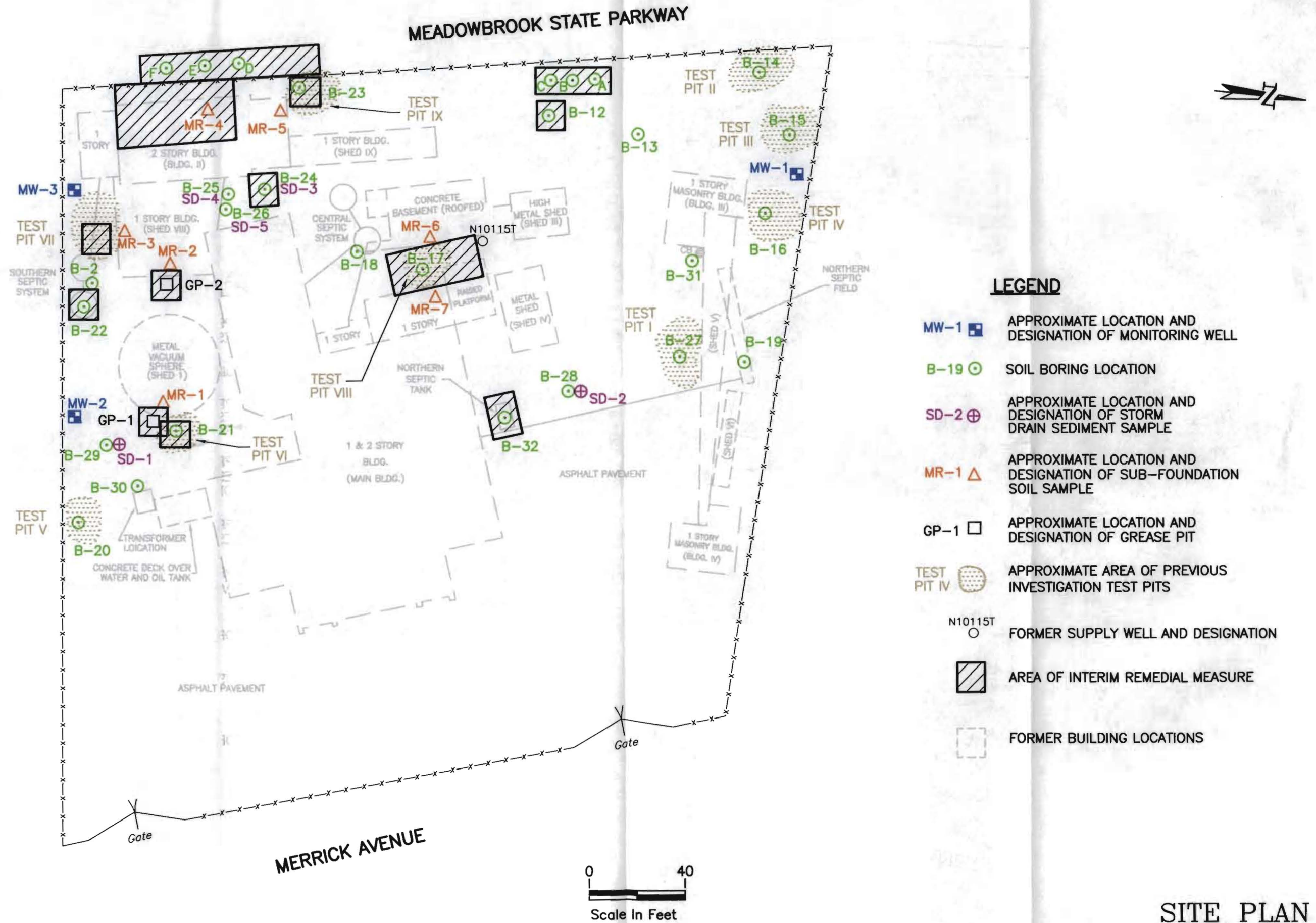
**425 MERRICK AVENUE
WESTBURY, NEW YORK**



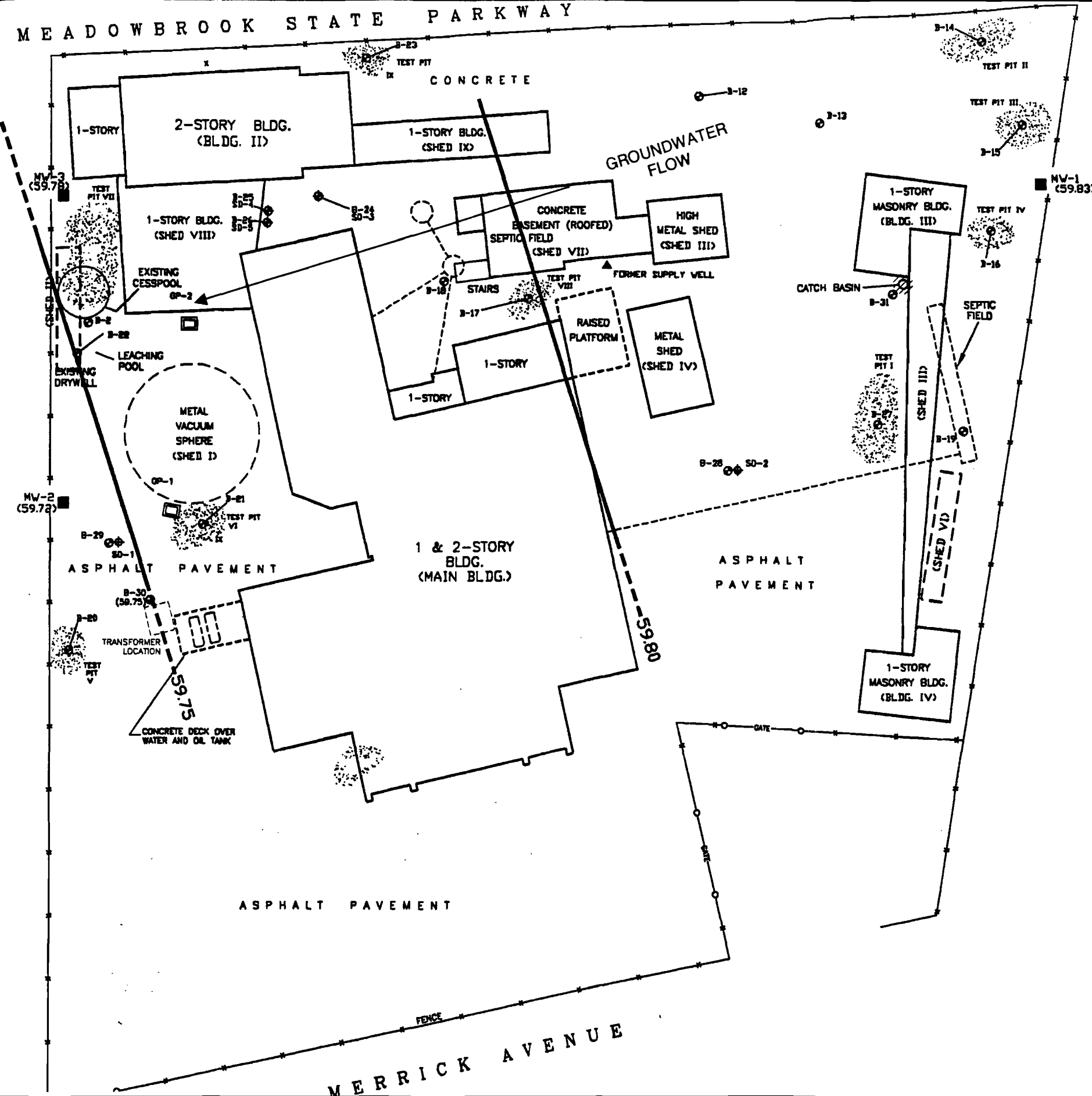
SCALE 1"=2000'

U.S.G.S. 15 MINUTE QUADRANGLE
FREEPORT, NEW YORK

LOCATION MAP



MEADOWBROOK STATE PARKWAY



EXPLANATION

- MW-1 APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELL
- GP-2 APPROXIMATE LOCATION AND DESIGNATION OF GREASE PIT
- ⊙ B-12 SOIL BORING LOCATIONS
- ◆ SD-2 APPROXIMATE LOCATION AND DESIGNATION OF STORM DRAIN SEDIMENT SAMPLE
- (59.83) WATER TABLE ELEVATION MEASURED ON MAY 13, 1998
- 59.83--- LINE OF EQUAL GROUNDWATER ELEVATION (DASHED WHERE INFERRED)
- TEST PIT I APPROXIMATE LOCATION OF TEST PIT
- APPROXIMATE LOCATION AND DESIGNATION OF FORMER BUILDING

0 50 FT

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NO.	DATE	REVISION DESCRIPTION	BY

ARCADIS GERAGHTY & MILLER

88 Dwyer Road
Melville, NY 11767
Tel 516/240-7000 Fax 516/240-7010



425 MERRICK AVENUE SITE
WESTBURY, NEW YORK

DRAWN GS/WHC	DATE 10/21/97	PROJECT MANAGER VHK	DEPARTMENT MANAGER
GROUNDWATER CONTOUR MAP FOR THE SITE LOCATED AT 425 MERRICK AVENUE, WESTBURY, NEW YORK		LEAD DESIGN PROF. CHECKED G. ERNST	DRAWING NUMBER 3
PROJECT NUMBER NY000962.0001			