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Mr. D. Steenberg
New York State Department of
Environmental Conservation
Region 5
Route 86
Ray Brook, NY 12977

Subject: Mechanicville Central Avenue Former Manufactured Gas Plant Site Task 3 Report

Dear Mr. Steenberg:

The enclosed report covers Task 3 work activities for the subject investigation. This report contains the results of air, soil, stream sediment, groundwater and surface water sampling at the Mechanicville site.

Please contact Mr. T.M. O'Meara of my staff at (607) 729-2551, extension 4242, if you have any questions.

Sincerely,

P.G. Carney
Manager, Environmental Matters

PGC/RSB/kgt

Enclosure

cc: D. Curtis (NYSDEC, Albany) - w/enclosure
R. Tramontano (NYSDOH, Albany) - w/enclosure

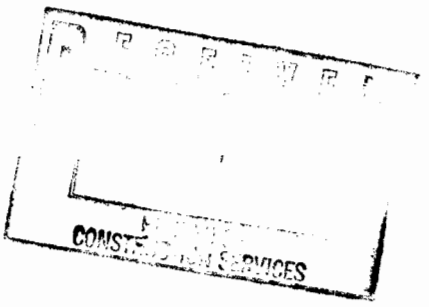
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INVESTIGATION OF THE FORMER COAL GASIFICATION SITE AT MECHANICVILLE, NEW YORK

TASK 3 REPORT
EXPANDED PROBLEM DEFINITION PROGRAM

Prepared for:

NEW YORK STATE ELECTRIC AND GAS CORPORATION
4500 VESTAL PARKWAY EAST
BINGHAMTON, NEW YORK



Prepared by:

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Job No. 4945-03

SEPTEMBER 1989

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EXECUTIVE SUMMARY

The Mechanicville site is located in Mechanicville, New York, along the Anthony Kill. This site is a quarter-mile upstream from the Hudson River, on the western side of North Central Avenue. A water gas plant was operated at the site by New York State Electric and Gas Corporation (NYSEG) and its predecessor companies from 1901 until 1955. Most of the structures utilized in the coal gas manufacturing operation were cleaned out and demolished at the time of closure in 1955. Since then, the site has become a NYSEG natural gas and electric service center. The site is being investigated because it was formerly used for coal gas manufacturing. Samples of soil, groundwater, surface water, stream sediments, and air were collected at and adjacent to the site and tested in a laboratory. The chemical compounds found in the samples are those routinely found at former coal gasification sites; those present at elevated concentrations include polynuclear aromatic hydrocarbons, volatile organic compounds, and cyanide.

This report, completed by E.C. Jordan Co. (Jordan), presents results of the Task 3 Expanded Problem Definition Program for the Mechanicville site. The study builds on the foundation established in the previous Task 2 Initial Field Investigation Program, which provided an understanding of the site land use; the distribution and types of chemicals in soil, groundwater, surface water, and sediments; and the potential for chemical migration. Task 3 included the following objectives:

- o confirmation of Task 2 results
- o further definition of chemical distribution and types of chemicals on-site
- o an assessment of air quality within buildings on the site
- o a more detailed investigation of the potential for chemical migration in groundwater
- o identification of areas/populations which might be impacted by chemicals on-site or chemicals migrating off-site

To achieve the Task 3 objectives, an expanded field program was conducted. Geophysical techniques were utilized for further defining depth to bedrock at the site, and six monitoring wells were installed to obtain more detailed information on groundwater flow direction and chemicals present in groundwater. Soils sampled from five of seven soil borings further defined chemicals present in the soils, and surface water and sediment samples from the Anthony Kill helped to better define migration potential of chemicals found at the site. Air sampling provided background and indoor air quality data for assessment of volatilized contaminant risk.

Task 2 results were confirmed. The Mechanicville site is underlain by 8 to 25 feet of fill material (i.e., sands, gravels, silts, and disturbed shales) which in turn overlies a fractured shale bedrock. Groundwater is 5 to 10 feet

below ground surface and migrates through both the fill material and fractured bedrock. The groundwater migrates northeasterly toward the Anthony Kill in the central and northern portions of the site, and easterly toward the Hudson River on the eastern portion of the site.

Chemicals related to former coal gasification activities were found in soil and groundwater samples collected near the former gas plant structures. The highest chemical concentrations were observed on the northern and eastern portions of the site. Sediment data from the Anthony Kill, as well as groundwater data, indicate that site-derived chemicals are migrating into the surface waters of the Anthony Kill. However, site-derived chemicals were not found at elevated levels in surface water samples collected downstream of the site, which indicates that chemicals are not entering the stream in sufficient quantities to be detected. Low concentrations of volatile aromatic chemicals were found in background and indoor air samples.

Seven chemicals identified in the groundwater exceeded the applicable New York State standards for those chemicals, although presently, there are no known groundwater users near or downgradient of the site. Potential pathways for humans to come into contact with coal-gas-related chemicals are through skin contact, ingestion, and inhalation. Because most of the site is covered by structures or has been paved, exposure to site-derived chemicals is expected to be limited primarily to excavation-related activities that could create contact and inhalation hazards. Contact with Anthony Kill sediments may additionally cause exposure for people on- and off-site. Chemicals found in air samples were well below federal and industry standards for permissible exposure levels.

Based on results from the expanded problem definition program (the presence of coal-gas-related chemicals and the potential for human exposure to these chemicals), Jordan concluded that a risk assessment (Task 4) should be performed for the site to identify potential health risks associated with human exposure to these chemicals. Additionally, the risk assessment would identify whether a program to reduce the concentrations and types of chemicals at the Mechanicville site should be undertaken.

1.0 INTRODUCTION

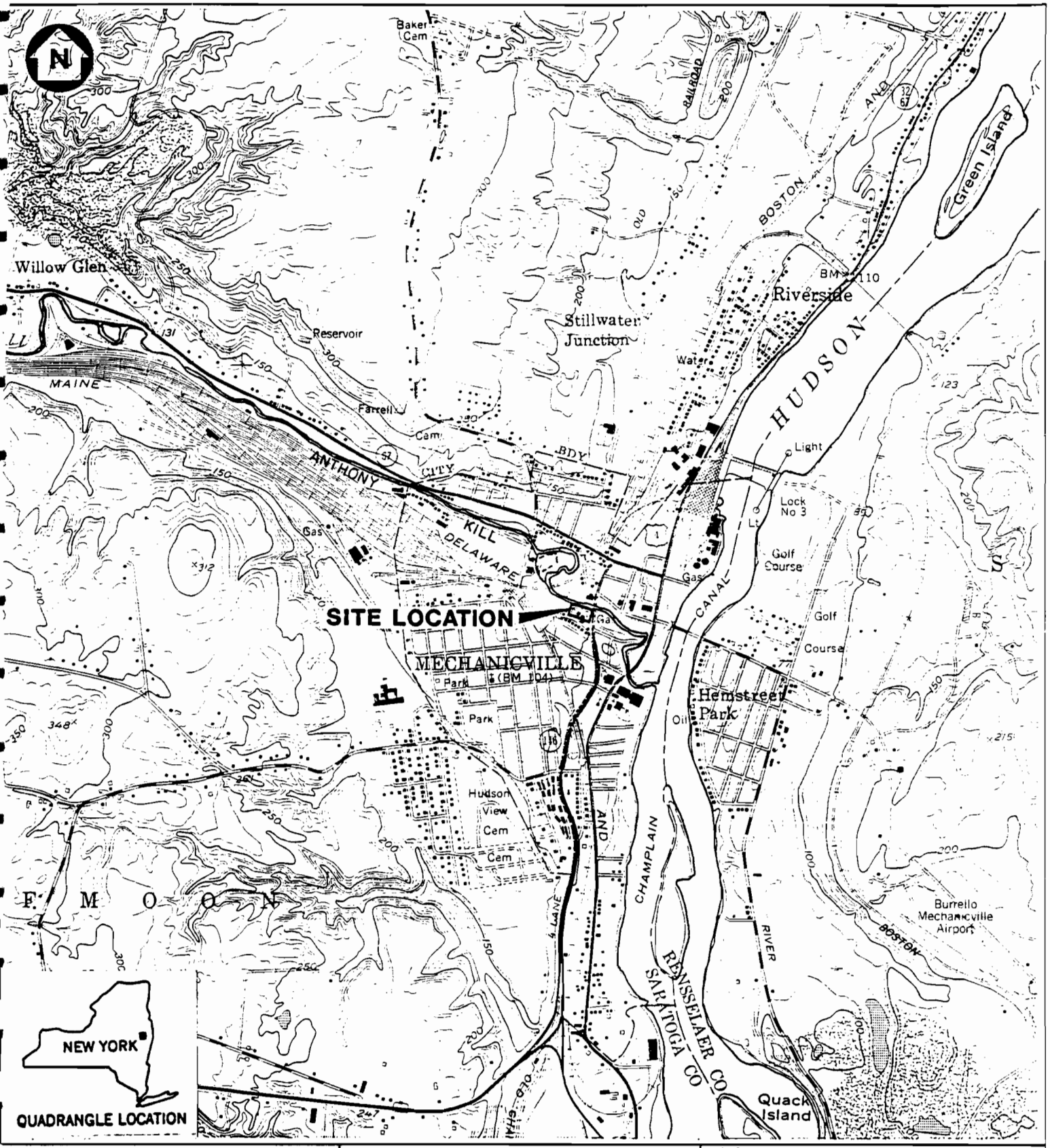
This report was prepared by E.C. Jordan Co. (Jordan) for the New York State Electric and Gas Corporation (NYSEG) under Contract No. 85S-159, Investigation of Former Coal Gasification Sites. It describes the results of Task 3, the Expanded Problem Definition Program, at the Mechanicville site, where coal gas was produced from 1901 to 1955. Task 3 was preceded by the Preliminary Site Evaluation (Task 1) and the Initial Field Investigation Program (Task 2), and will be followed by the Risk Assessment (Task 4) and Conceptual Design (Task 5), provided the need for these tasks is demonstrated. Recommendations for the conduct of future work at the Mechanicville site are included in this Task 3 report.

1.1 PROBLEM SUMMARY

The site is located in Mechanicville, Saratoga County, New York (Figure 1-1). Saratoga County is in the Valley and Ridge Physiographic Province in east-central New York (Heath, et al., 1963). The Hudson River forms the northeastern and eastern boundaries of Saratoga County; the Mohawk River, which is the largest tributary to the Hudson, forms the southeastern boundary. The Anthony Kill, a small tributary, flows into the Hudson River at Mechanicville. The Mechanicville site is adjacent to the Anthony Kill, a quarter-mile upstream from its confluence with the Hudson River. The site lies in a glacial outwash plain, at approximately 95 feet above mean sea level (MSL).

The Champlain Canal once bordered the site on the east. Completed in 1823, the canal connected the Hudson River at Waterford (south of Mechanicville) to Lake Champlain. The canal flowed through Mechanicville along what is now Central Avenue (Figure 1-2). Like the present roadway, the canal was elevated and the water surface was approximately 10 feet above the gas plant site. The hand-dug canal was approximately 12 feet deep and 30 feet wide. The Champlain Canal, abandoned in 1916 when the Barge Canal opened, became a receptacle for garbage, debris, and junk before it was completely filled with soil by the City of Mechanicville in 1917. Later, the state dug up the canal, removed the trash and debris, and prepared the roadbed for Central Avenue (Sheehan, Records).

The history of coal gas production at the site, presented in more detail in the Task 1 Report, is summarized in the following paragraphs. It was reconstructed from old maps and newspaper articles, NYSEG records, and interviews with NYSEG employees (Elvins, 1986; McBride, et al., 1986). The site housed a water gas plant (Figures 1-2 and 1-3) owned by NYSEG and its predecessor companies from 1901 until 1955, at which time coal gas production ended due to the availability of natural gas. Most of the aboveground structures were demolished at the time of closure, including the coal storage shed, gas house, purifier and oxide houses, gas holders, oil tanks, and tar dehydrator (see Figures 1-2 and 1-3). Only the boiler room, indoor substation, and an old office building remain on-site. The filter beds, which are coke-filled wooden troughs set into the ground, were left in the ground and covered with soil after the gas plant closed. These beds had been used to filter residual oil and tar from the gas house condensate before discharge to the Anthony Kill.



BASE MAP SOURCE:
USGS QUADRANGLE
MECHANICVILLE (1980)

E.C. JORDAN CO.
CONSULTING ENGINEERS

TITLE
MECHANICVILLE SITE LOCATION MAP

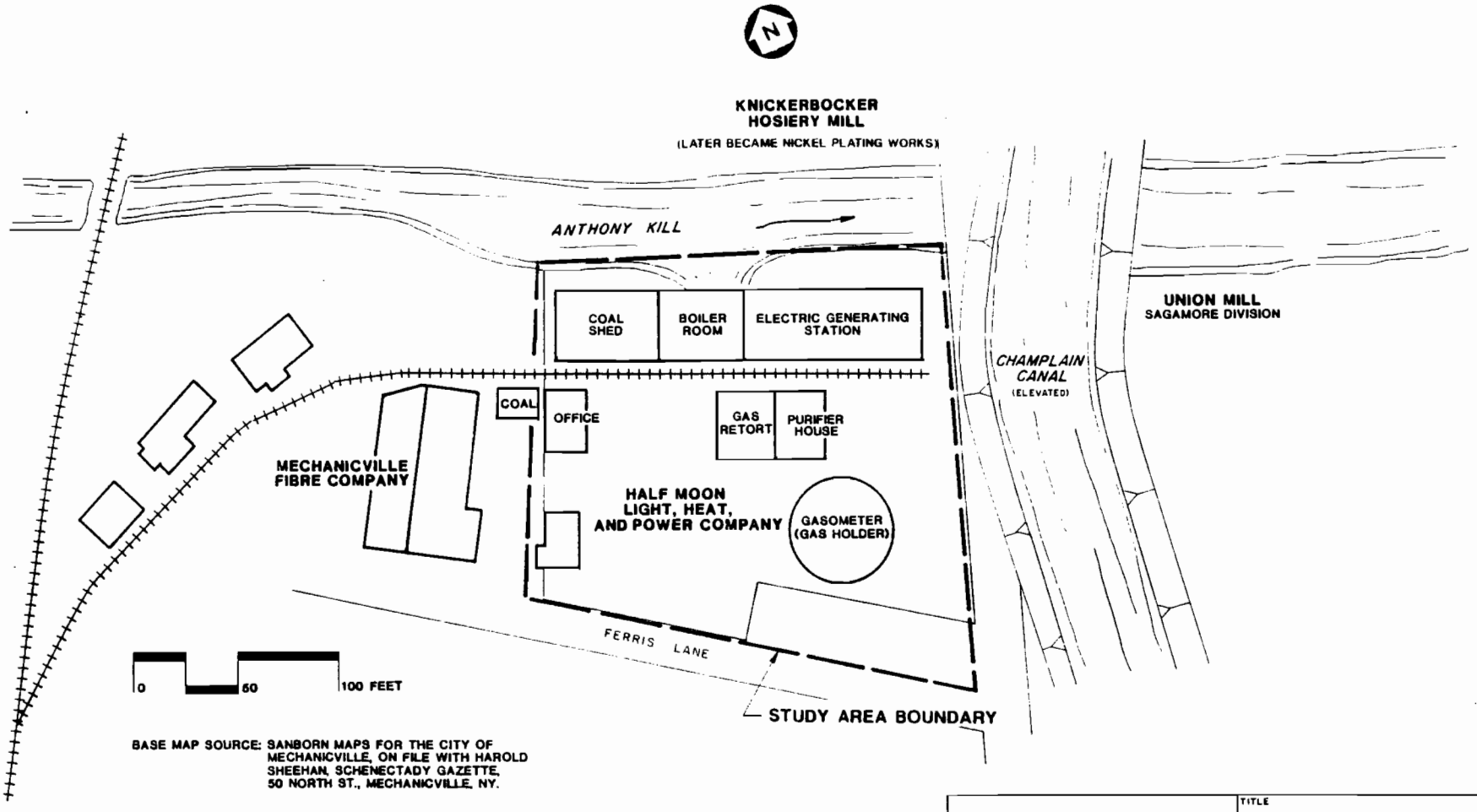
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CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

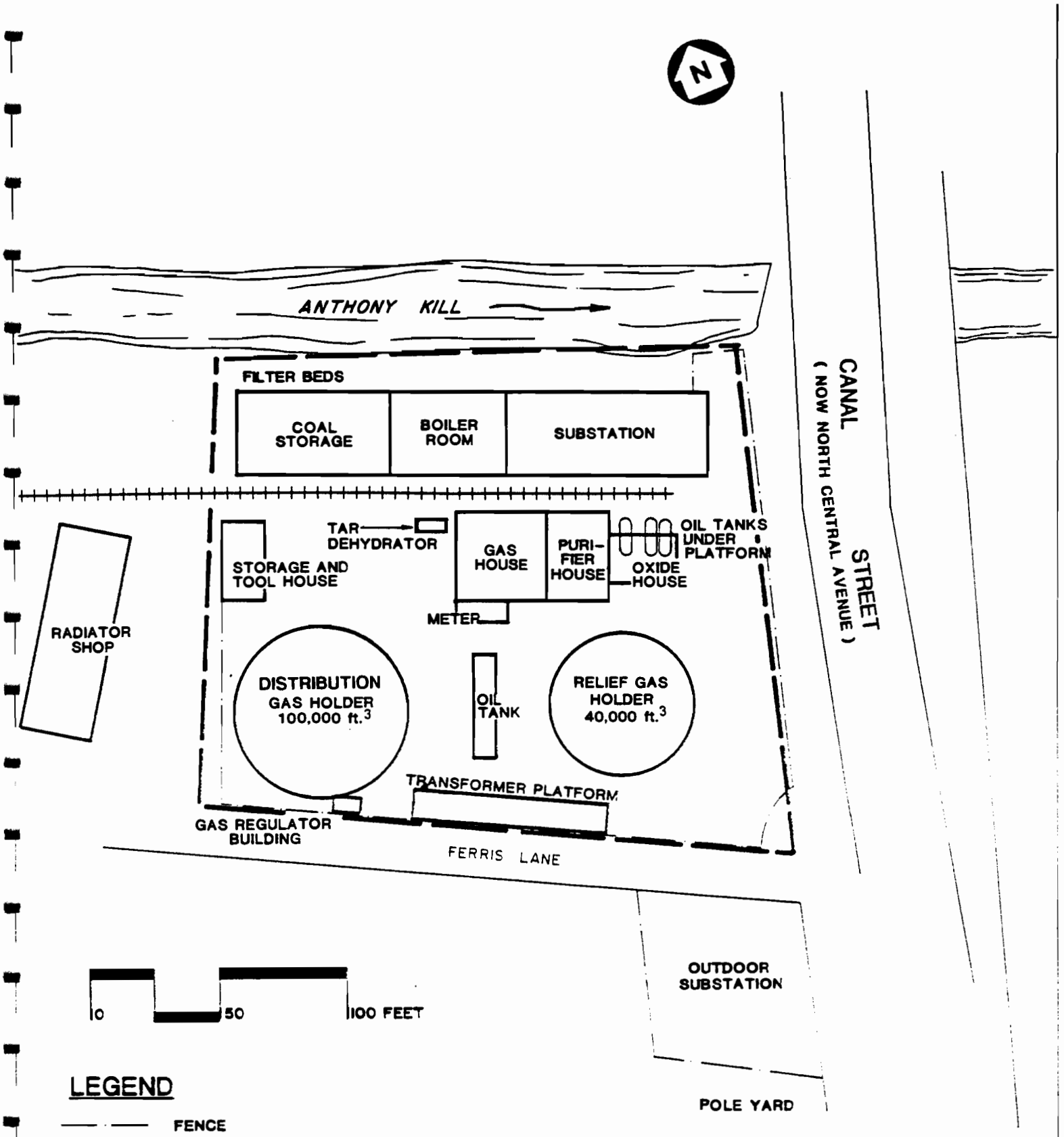
PROJECT NO. 4945-03

FIGURE 1-1



BASE MAP SOURCE: SANBORN MAPS FOR THE CITY OF MECHANICVILLE, ON FILE WITH HAROLD SHEEHAN, SCHENECTADY GAZETTE, 50 NORTH ST., MECHANICVILLE, NY.

E.C. JORDAN CO. CONSULTING ENGINEERS	TITLE: PLAN OF MECHANICVILLE COAL GASIFICATION PLANT CIRCA 1910
CLIENT: NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
	PROJECT NO. 4945 03 **FIGURE 1-2**



LEGEND

- FENCE
- RAILROAD SIDING
- STUDY AREA BOUNDARY

BASE MAP PREPARED BY BROWN, CROSBY, & CO., INC., ENGINEERING DEPARTMENT, 96 WALL ST., NEW YORK, APRIL 1951.

E.C. JORDAN CO. CONSULTING ENGINEERS	PLAN OF MECHANICVILLE COAL GASIFICATION PLANT CIRCA 1951
NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
	JOB NO. 4945-83 FIGURE 1-3

By-products of the coal gasification process included ash and condensate material from the gas house; woodchips from the purifier house; and coal tar and oil sludges. It was common practice at coal gas plants to dispose of ashes and spent oxide material on-site. Ashes and clinkers were shoveled out of the generator at night and spread in the area between the relief holder and Ferris Lane. Some of the spent woodchips were piled on the roadside to be hauled away; others were spread on the lot just west of the active plant area. The purifier house was cleaned out after plant shutdown; however, accumulated tar was left in the base of the relief holder and coke was left in the filter beds.

Ash and cinders are relatively free of organics, but may leach traces of various heavy metals and salts. Spent oxide wastes contain high concentrations of free sulfur, sulfate and sulfide compounds, cyanide compounds, and iron compounds. Coal tar is a complex mixture of organic compounds, composed primarily of polynuclear aromatic hydrocarbons (PAHs), with smaller amounts of phenolics and light aromatic compounds (USWAG, 1984).

After closure of the Mechanicville gas plant in 1955, NYSEG converted the site to a natural gas and electric service center (Figure 1-4). A small natural gas distribution shed was constructed over a portion of the old distribution gas holder. The former boiler room/substation building was converted to offices, a garage, and a supply storage maintenance shop. The old office is now used as a storage shed and tool house. A buried gasoline storage tank, containing unleaded fuel, is located adjacent to the southeastern corner of the old office. The 2,000-gallon tank, installed around 1980, replaced an older tank that was reportedly taking in water. No gasoline leaks were reported (McBride, et al., 1986). The remaining developed portion of the site is a paved parking lot. NYSEG has extended its property boundaries over the years by filling in the Anthony Kill embankment with debris. Therefore, the stream appears wider in Figure 1-3 than in Figure 1-4.

In 1922, NYSEG purchased a quarter-acre lot on the corner of Ferris Lane and North Central Street (Bevis, 1986). This property was vacant during the years the coal gas plant was operating. In 1953, NYSEG built the electrical substation that currently stands on the lot. NYSEG also owns the land on the western side of the site. The portion between the railroad tracks and the Anthony Kill (see Figure 1-4) was purchased by NYSEG in 1952 (Bevis, 1986), and the parcel between the tracks and Ferris Lane was acquired in October 1987. Jordan's investigations focused on the eastern portion of the site (approximately 1 acre), where coal gas production activities occurred.

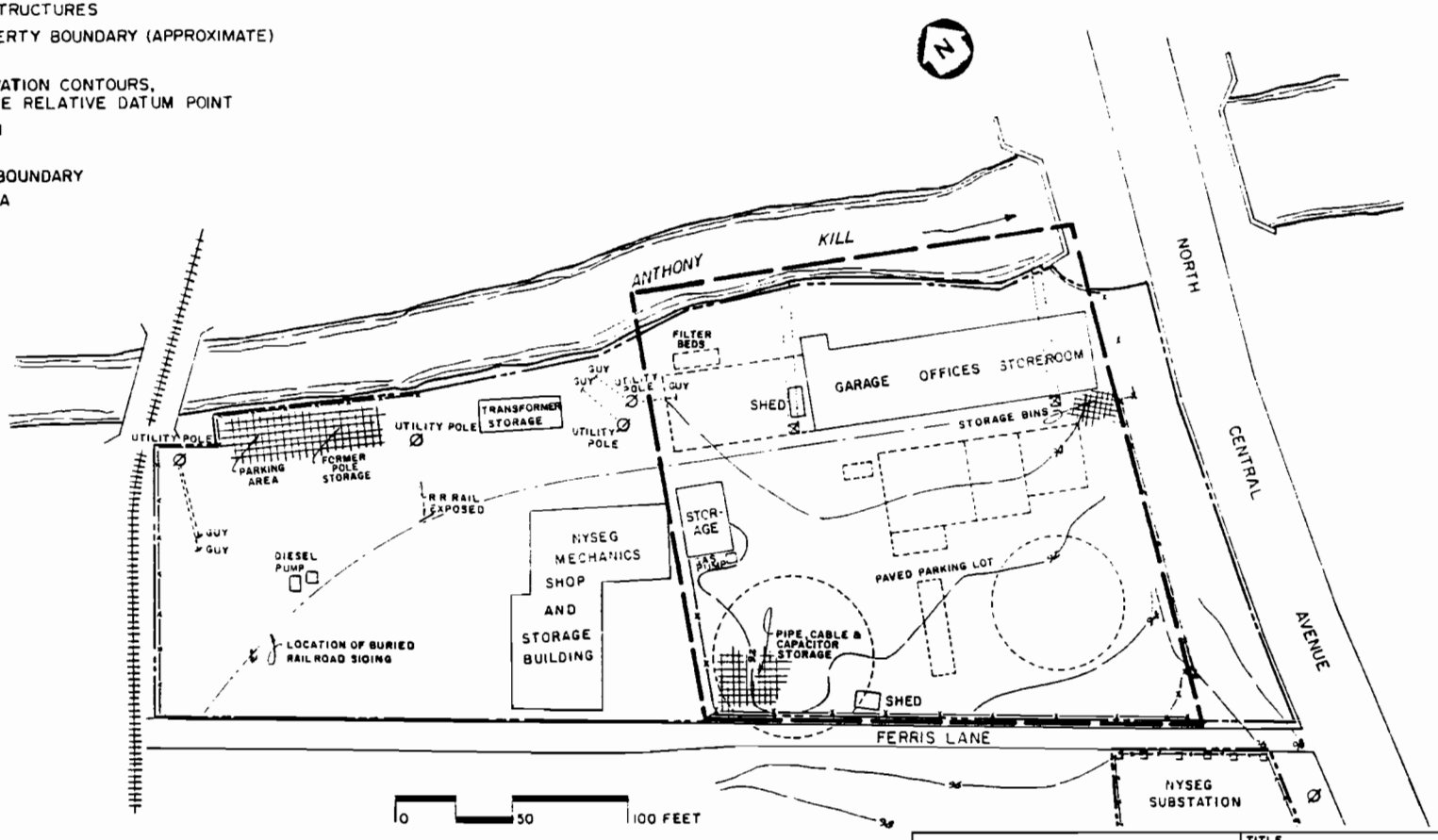
1.2 PURPOSE

In the Preliminary Site Evaluation (Task 1), Jordan developed an understanding of the site's history, environmental setting, and current conditions from available information and site reconnaissance. The Task 1 findings are presented in the Task 1 Report for Mechanicville submitted to NYSEG in August 1986 (E.C. Jordan Co., 1986a).

Based on the Task 1 findings, the scope of Task 2 (Initial Field Investigation) was developed. In this effort, Jordan developed an understanding of the

LEGEND

- APPROXIMATE LOCATION OF FORMER GAS PLANT STRUCTURES
- NYSEG PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- GROUND ELEVATION CONTOURS, IN FEET ABOVE RELATIVE DATUM POINT
- STORM DRAIN
- CULVERT
- STUDY AREA BOUNDARY
- STORAGE AREA



BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87.

ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF FERRIS LANE AND NORTH CENTRAL AVENUE.

E.C. JORDAN CO.
CONSULTING ENGINEERS

CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

TITLE
MECHANICVILLE SITE PLAN - 1987
MECHANICVILLE, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 1-4

environmental characteristics of the site, including hydrogeologic conditions and land use in the area surrounding the site. Also, the presence and nature of chemicals in soil, groundwater, surface water, and sediments were investigated, as well as the potential for chemical migration. Finally, a preliminary assessment of the potential health and environmental risks posed by chemicals found at the site was performed. The Task 2 exploration locations are shown in Figure 1-5. Task 2 findings, as presented in the Task 2 Report for Mechanicville (E.C. Jordan Co., 1987), are summarized as follows:

- The unconsolidated deposits at the site consist primarily of fill soils of varying composition overlying a fractured shale bedrock.

- The bedrock is a gray shale with calcite inclusions and was encountered 9 to 18 feet below ground surface. The upper 1 to 2 feet of the bedrock is highly weathered. The bedrock surface slopes to the north and east. A small east-trending bedrock depression was mapped near the former relief gas holder.

- Groundwater flow is generally north-northeast across the site; however, near the former relief gas holder, the flow is more easterly, toward North Central Avenue. Groundwater in the soil and shallow bedrock system discharges to the Anthony Kill, either adjacent to the site or farther downstream.

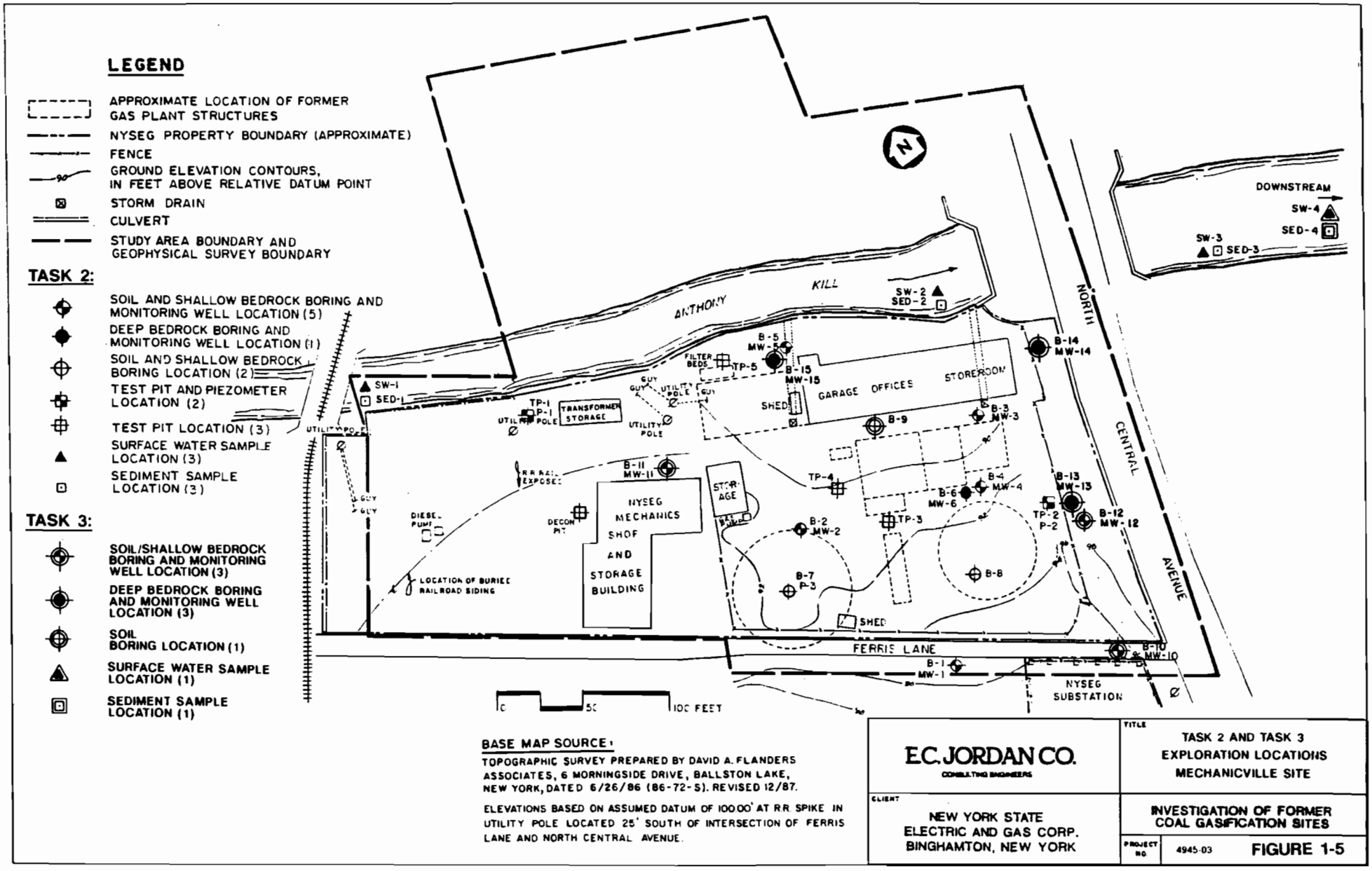
- Land use surrounding the site is predominantly residential and commercial, with the central business district of the city located east and south of the site. Sensitive land uses (i.e., schools, recreation areas, nursing homes) and potential contributors of chemicals to groundwater and surface water (i.e., tanks, drums, a railroad yard, and other industrial property) are within a half-mile radius of the site.

- Volatile organic compounds (VOCs) and PAHs were detected in soils throughout the site study area. Concentrations were highest near the former relief gas holder and the filter beds.

- VOCs and PAHs were detected in groundwater on-site. Contaminant concentrations in groundwater exceeded relevant federal and/or state criteria for public water supply systems in both bedrock and overburden monitoring wells. The highest concentrations of PAHs and VOCs were found at MW-4 and MW-6 (downgradient of the relief gas holder); MW-3 (downgradient of the oxide house); and MW-5 (downgradient of the coal storage shed and filter beds).

- Organic compounds typically associated with coal gasification wastes were found in only one of the surface water samples obtained from the Anthony Kill.

- PAHs were detected using gas chromatography/mass spectrometry (GC/MS) analytical techniques in sediments taken from the Anthony Kill adjacent to the site, but not upstream or downstream of the site.



BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87.

ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT RR SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.

E.C. JORDAN CO.
CONSULTING ENGINEERS

CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

TITLE
TASK 2 AND TASK 3 EXPLORATION LOCATIONS MECHANICVILLE SITE

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 1-5

The high-performance liquid chromatography (HPLC) results showed PAHs at all three locations.

- There are no water supply wells within a 1-mile radius of the site. The potential risks associated with any excavations at the site and possibility of discharge of site-derived chemicals to the Anthony Kill were identified and addressed.

The Expanded Problem Definition Program (Task 3) was designed to (1) confirm Task 2 analytical results; (2) obtain further data on chemical distribution in soil and shallow bedrock at the site and site environs; (3) further investigate the potential for chemical migration in groundwater; (4) assess the air quality within buildings on the site; and (5) identify potential chemical receptors and potentially sensitive land uses. This report summarizes results of the Task 3 investigation and provides recommendations for future activities.

1.3 SCOPE OF TASK 3

Based on the Task 2 findings, a Task 3 investigation program was designed and implemented at Mechanicville (see Figure 1-5). The subtasks completed for Task 3 are summarized as follows:

- A ground-penetrating radar (GPR) survey was performed adjacent to the site on the northern side of the Anthony Kill to extend the area of bedrock surface contouring.

- Four shallow and three deep borings were drilled for further site characterization, including chemical analysis of the soils encountered and bedrock characterization.

- Groundwater monitoring wells were installed in six of the seven borings to obtain further information on groundwater flow direction and chemicals present in groundwater. Two rounds of groundwater sampling and analysis and two sets of water level observations were accomplished in Task 3.

- Rising-head permeability tests were performed in the completed wells to determine the in-situ hydraulic conductivities of soils. Packer pressure tests were conducted in the deep bedrock wells to determine the hydraulic conductivity of the bedrock at the site.

- Task 3 soil and water samples were analyzed for VOCs and semivolatile organic compounds (SVOCs), iron, lead, zinc, cyanide compounds, phenolics, and total organic carbon (TOC). Organic analyses were performed using GC/MS methods rather than the HPLC/ultraviolet (UV) methods used in Task 2.

- A location and elevation survey was completed for the Task 3 borings, monitoring wells, and surface water and sediment sampling locations. The site plan developed in Task 1 was updated to include Task 3 explorations (see Figure 1-5).

- Air quality samples were collected at three indoor locations and one background location at the property-line fence to assess volatilized contaminant risk.

- The geologic, hydrogeologic, and chemical data were evaluated and interpreted to provide an understanding of site conditions (see Section 3.0).

- Potential receptors of site-derived chemicals were identified (see Section 4.3).

- A Task 4 program for assessing risks on-site and at the site boundaries was outlined (see Section 5.2). A schedule and cost estimate for the proposed program were developed (see Section 6.0).

2.0 FIELD ACTIVITIES

Field activities undertaken during Task 3 are described in this section. Field logs, well diagrams, and descriptions of procedures used during field activities are presented in Appendix A. Exploration and sampling procedures are further documented in the Quality Assurance Project Plan (QAPP) (E.C. Jordan Co., 1985b).

2.1 GEOPHYSICAL SURVEY

During Task 1, GPR and seismic refraction results were used to prepare a bedrock surface contour map of the site. The interpreted results correlated well with depths to bedrock observed during the boring program. These geophysical techniques were used in Task 3 to extend the bedrock surface contour map slightly east and north of the site. Figure 1-5 defines the extent of the geophysical survey. The Price Chopper parking lot, located across North Central Avenue east of the site, was not included in the survey because access to the lot was denied by the owners.

During the first week of November 1987, the Task 3 geophysical survey was conducted in areas adjacent to the site on the north and east. The GPR survey was performed with a Geophysical Survey Systems, Inc., Subsurface Interface Radar (SIR) System B. A 10-foot grid was established throughout the GPR investigation area. Seismic refraction profiling was accomplished with a Geometrics ES-2415F Signal Enhancement Seismograph. Seismic refraction work was conducted along 50-foot grid lines. Results of the geophysical investigation are discussed in Section 3.1.

2.2 BORINGS

Seven borings (i.e., B-9 through B-15) were drilled at the site by North Star Drilling of Cortland, New York, between November 9 and 19, 1987 (see Figure 1-5). The borings were drilled to (1) further define the shallow subsurface geology; (2) provide data on the distribution and migration of chemicals in soil and bedrock on-site; and (3) permit installation of monitoring wells. Boring locations were selected following consideration of the Task 2 findings regarding geology, hydrogeology, and chemical distribution, as well as the Task 3 geophysical survey data.

Borings were drilled to bedrock using hollow-stem augers; 3-inch-diameter holes were drilled into the shale bedrock at four borings (i.e., B-11, B-13, B-14, and B-15). Boring depths ranged from 5.5 to 55.5 feet below ground surface. Continuous 2-foot long split-spoon samples were collected above the bedrock (except in B-9), and continuous 10-foot long core samples were taken in the bedrock. Samples were scanned with a photoionization detector (PID) for organic vapors. Reference soil samples (for physical characteristics) and analytical soil samples (for laboratory chemical analysis) were collected from each boring except B-11 and B-13. An analytical sample was not collected at

B-11 because of the unexpectedly shallow bedrock. No samples were collected at B-13 because of its close proximity to B-12.

Core samples collected at B-11, B-13, B-14, and B-15 were logged and placed in core boxes that are presently stored on-site. Boring and rock coring logs completed by a Jordan field geologist are presented in Appendix A-2, along with a table summarizing field observations.

2.3 MONITORING WELLS

Monitoring wells were installed in six of the seven boreholes. Each monitoring well number (i.e., MW-10 through MW-15) corresponds to the number of the borehole in which it was installed; monitoring well locations are shown in Figure 1-5. The monitoring wells were installed to obtain water level measurements, permeability data, and water samples for laboratory chemical analysis. MW-10, MW-11, and MW-12 are shallow overburden wells, and MW-13, MW-14, and MW-15 are deeper bedrock wells. The shallow wells were positioned in the soil and/or shallow bedrock, while the deeper wells were sealed below the bedrock surface. All the wells are located in areas of the site where data were needed to evaluate chemical migration. Two of the deeper wells, MW-13 and MW-15, are adjacent to shallow wells. These well pairs provide data on vertical seepage gradients at the site.

Monitoring wells were constructed using 10-foot-long, 2-inch-inside diameter, stainless steel well screens with 0.01-foot slots, except for MW-11, where a 5-foot screen was used because of the shallowness of bedrock. Flush-mounted, locking protective casings were installed on all wells. Wells were backfilled with clean, graded, quartzite sand, and sealed with a minimum of 2 feet of bentonite pellets. Well installation diagrams are included in Appendix A-3.

The screened zones (including the sand backfill) in MW-10, MW-11, and MW-12 were positioned to coincide approximately with the top 10 feet of the water table, and span soil and/or shallow bedrock strata, as discussed previously. The screened zones of bedrock wells MW-13, MW-14, and MW-15 were positioned to intersect the most permeable zones in the bedrock, as determined by the packer pressure tests performed prior to well placement. Packer test data are presented in Appendix A-4.

The wells were developed using an air compression system. If development water appeared contaminated, it was collected and drummed in Department of Transportation (DOT)-approved containers that were labeled and stored on-site. Upon completion of the well development, rising-head permeability tests were conducted on the wells. Packer pressure tests were also conducted in the deep bedrock wells to characterize permeability of the bedrock at the site. Methods and results of rising-head and packer tests are provided in Appendix A-4.

2.4 GROUNDWATER SAMPLING

Two rounds of groundwater sampling of the 12 Task 2 and Task 3 wells were conducted in December 1987 and March 1988. During each round, water level

measurements were taken at each well. The water level data are presented in Appendix A-5, as well as in Section 3.2.1. Using dedicated bailers, groundwater samples were collected from each well, and quality assurance/quality control (QA/QC) samples (i.e., duplicates, trip blanks, sampler blanks, and filtration blanks) were obtained. The monitoring well sampling procedures followed are detailed in Appendix A-6. Samples were submitted to NYSEG's laboratory for groundwater analyses; results are discussed in Section 3.6.2. The chemical quality assurance data supporting the results are presented in Appendix B.

2.5 SURFACE WATER/SEDIMENT SAMPLING

Three surface water and three sediment sampling stations were selected to investigate the distribution of organic and inorganic compounds along the Anthony Kill (see Figure 1-5). The sampling stations were upstream of the site, adjacent to the site near the outlet of the easternmost drainage culvert, and downstream of the site on the eastern side of the North Central Avenue bridge. Surface water and sediment samples were collected in December 1987 and March 1988. Two samples were collected from each medium at each sampling station. Samples were submitted to NYSEG's laboratory for surface water and sediment analyses; results are discussed in Sections 3.6.3 and 3.6.4, respectively. The chemical quality data supporting the results are presented in Appendix B.

2.6 AIR MONITORING

To evaluate levels of benzene, toluene, ethylbenzene, and xylenes in the indoor air at the site, samples were collected in the office, the adjacent storeroom area, the separate garage building, and an additional background location at the property-line fence. Each location was sampled in duplicate for quality control. Samples were collected using charcoal sorbent tubes; sampling pumps were calibrated in accordance with the National Institute for Occupational Safety and Health (NIOSH) Method 1501. Samples were collected over a 6-hour period, from approximately 10:00 AM to 4:00 PM, on December 28, 1989.

Upon completion of the sample collection, the charcoal tube samples were delivered to the subcontracted analytical laboratory for analysis by solvent desorption with GC flame ionization detection (FID), in accordance with NIOSH Method 1501. A field-biased blank sample was collected and submitted to the laboratory for quality control blank analysis. Results of air quality sampling are discussed in Section 3.6.5.

2.7 SITE SURVEY

Locations of borings, monitoring wells, and geophysical control points were surveyed by David A. Flanders Associates of Ballston Lake, New York, in early December 1987. The surveyor determined ground surface elevations to the nearest 0.1 foot, and the uncapped riser elevations of the monitoring wells to

the nearest 0.01 foot. The reference datum was a railroad spike in the utility pole located between the NYSEG substation and North Central Avenue, south of the site. This point was assumed to be at an elevation of 100 feet. Exploration locations were mapped on the base map developed in Task 1 (see Appendix A-7).

3.0 SITE CHARACTERIZATION

The geology and hydrogeology of the Mechanicville site, as interpreted from data gathered in Tasks 1, 2, and 3, are described in this section. Results of the land use survey and the laboratory chemical analyses of samples collected during Task 3 are also discussed in this section.

3.1 GEOLOGY AND SOILS

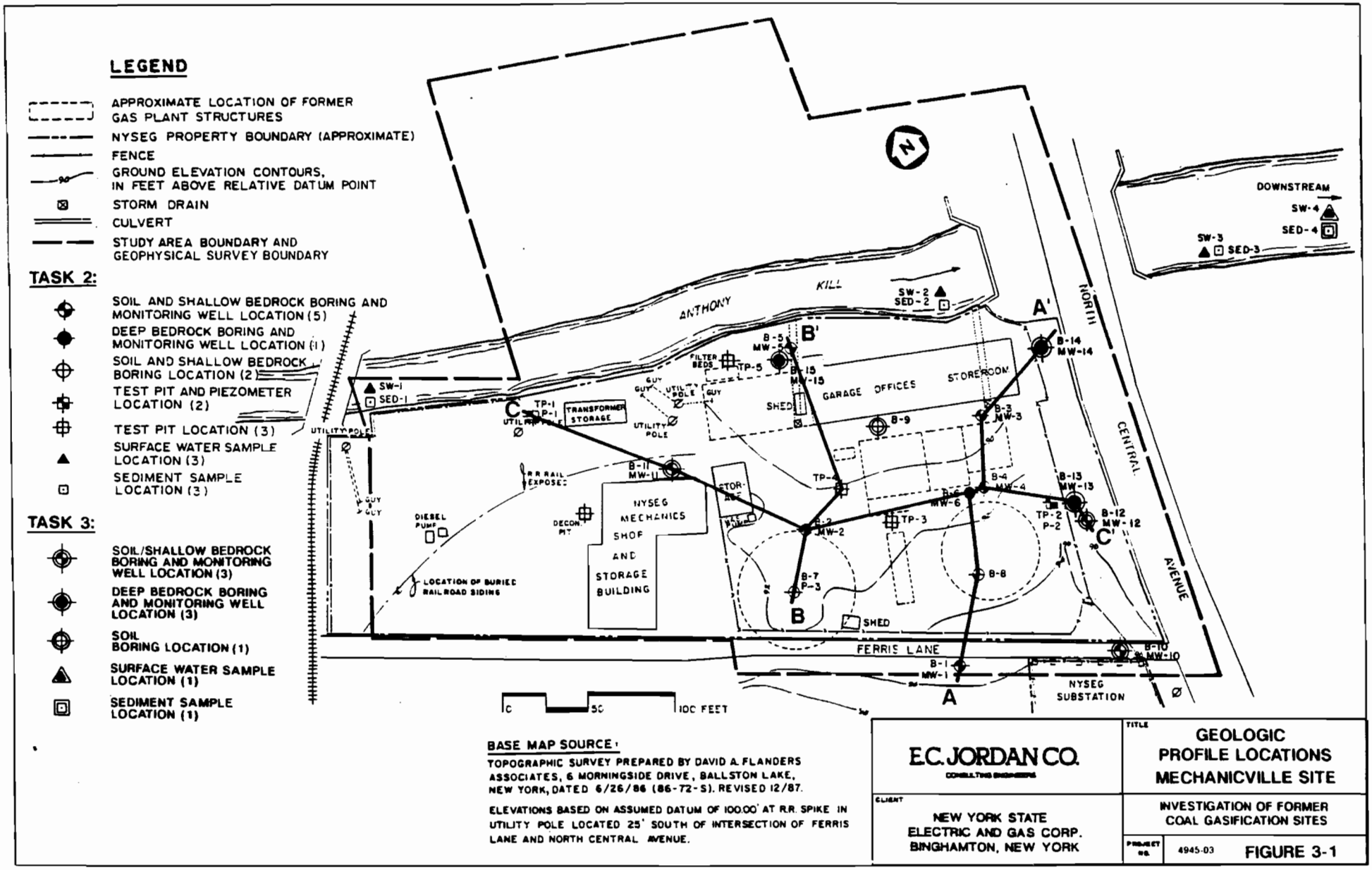
The Saratoga County area is drained by the Hudson River and its tributaries. The Hudson River Valley is formed by highly folded and faulted shales originally deposited as sediments along the continental margin during the Ordovician Period, approximately 500 million years ago. The preglacial Hudson River Valley and its drainage system were probably similar to the present configuration. However, the valleys may have been widened or deepened by subglacial erosion when the Laurentide Ice Sheet flowed south over this area from Canada.

As the ice sheet began its northward retreat, sediment-laden meltwater streams flowed through the Anthony Kill Valley, depositing sands and gravels in the higher energy zones, and clays and silts in quieter water. These glaciofluvial deposits form the terraces that lie along the southern border of Mechanicville.

Subsurface conditions at the Mechanicville site were investigated during Task 2 by means of test pit and boring explorations, and during Task 3 by boring explorations. The shallow geology consists of 3 to 25 feet of fill and silty shale overlying a fractured shale bedrock. The bedrock surface is deepest in the southeastern portion of the site. An interpretation of site stratigraphy is illustrated through geologic profiles located on a plan view of the site (Figure 3-1). The profiles, shown in Figures 3-2 through 3-4, are constructed with a 10:1 vertical scale exaggeration.

The fill, which includes a silty sand and gravel and a clayey silt and fractured shale, forms the upper 8 to 25 feet of the site. In the southeastern portion of the site, where excavation for the relief gas holder occurred, and in the area between the building and the Anthony Kill, a silty shale unit underlies the fill deposits. The silty shale unit is 8 to 9 feet thick in B-4 and B-8, and 1.5 feet thick in B-14. This silty shale unit is loose, moist, and lacks structure, and is interpreted to represent fill material (possibly disturbed weathered bedrock from on-site). Isolated gravelly sand and silty clay till units were also encountered at the site. The unconsolidated deposits overlie a shale bedrock, which is severely weathered in its upper 1 to 2 feet and highly fractured in the upper 5 to 10 feet. Subsurface geologic conditions investigated at the site are described in the following subsections.

Fill. The uppermost fill consists primarily of brown to black silty sand and gravel with organic matter, ash, brick fragments, glass, and woodchips. Within the fill, there is considerable heterogeneity, including zones of clayey silt and fractured shale. The fill averages 8 to 25 feet thick across the site, but thins at the Anthony Kill (see Figures 3-2 and 3-3). The off-site lateral



BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87.

ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.

E.C. JORDAN CO.
CONSULTING ENGINEERS

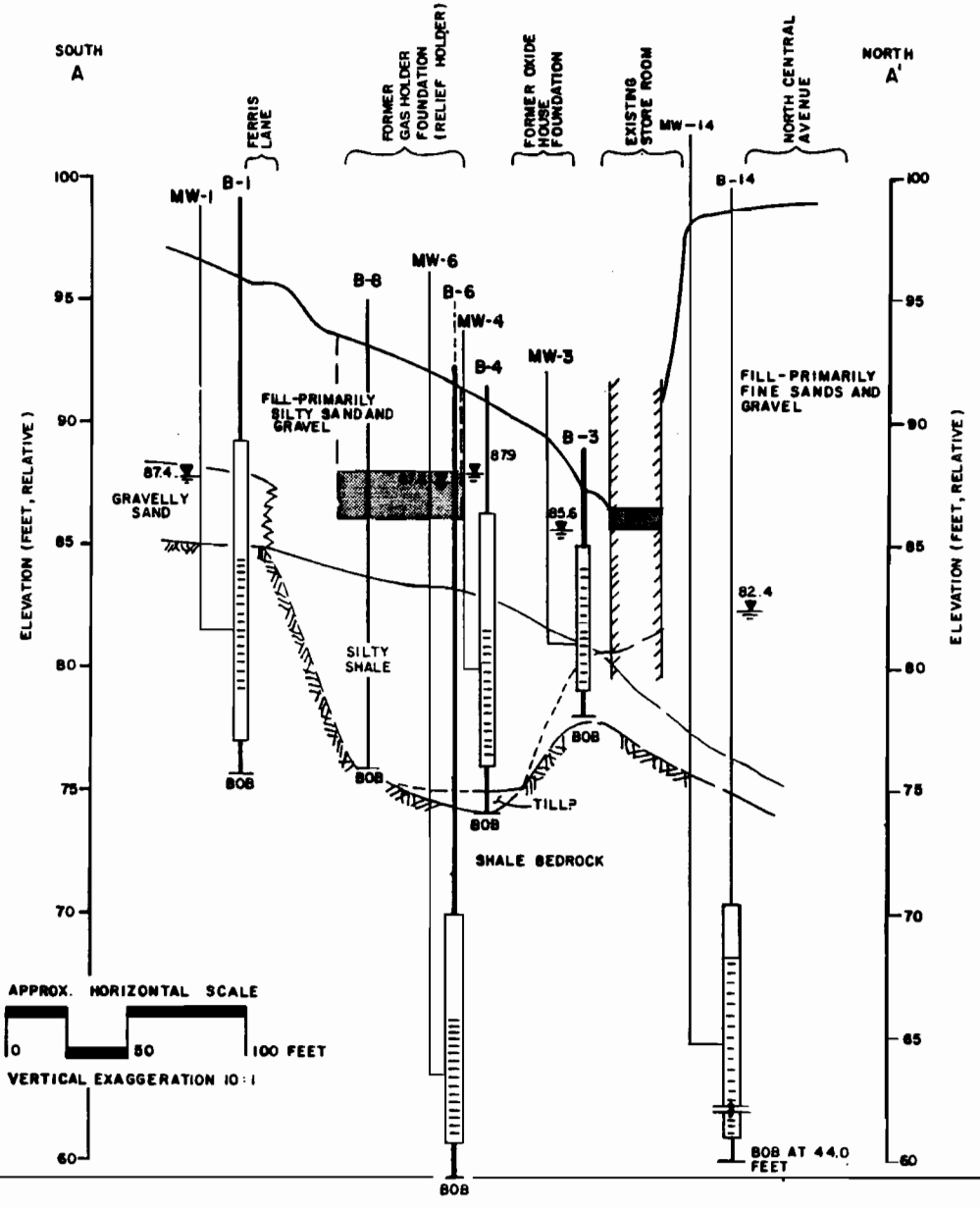
CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

TITLE
GEOLOGIC PROFILE LOCATIONS MECHANICVILLE SITE

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 3-1



GEOLOGIC DESCRIPTIONS

FILL: PRIMARILY SILTY SAND AND GRAVEL WITH ORGANIC MATTER, ASH, BRICK FRAGMENTS, GLASS, AND WOOD CHIPS WITH ZONES OF HIGHER CLAYEY SILT AND FRACTURED SHALE CONTENT.

GRAVELLY SAND: DISCONTINUOUS BROWN TO DARK GRAY SAND AND GRAVEL.

SILTY SHALE: BLACK TO GRAY PLATY SHALE FRAGMENTS WITH INTERSTITIAL SILT. LOOSE AND SATURATED. POSSIBLY FILL.

TILL: DISCONTINUOUS TAN TO LIGHT GRAY SILTY CLAY TILL WITH FINE GRAVEL.

SHALE BEDROCK: LAMINATED, BROKEN, DARK GRAY SHALE WITH CALCITE VEINS AND INCLUSIONS. BEDDING DIPS 30-40° FROM HORIZONTAL; FRACTURES ARE 0-90° FROM BEDDING PLANES. UPPER 1 TO 2 FEET SEVERELY WEATHERED.

LEGEND

MW-1
B-1
87.6
B08

BORING AND MONITORING WELL LOCATION

OBSERVED WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

EFFECTIVE SCREEN LENGTH (ACTUAL SCREEN SHOWN AS ⊟)

BOTTOM OF BORING

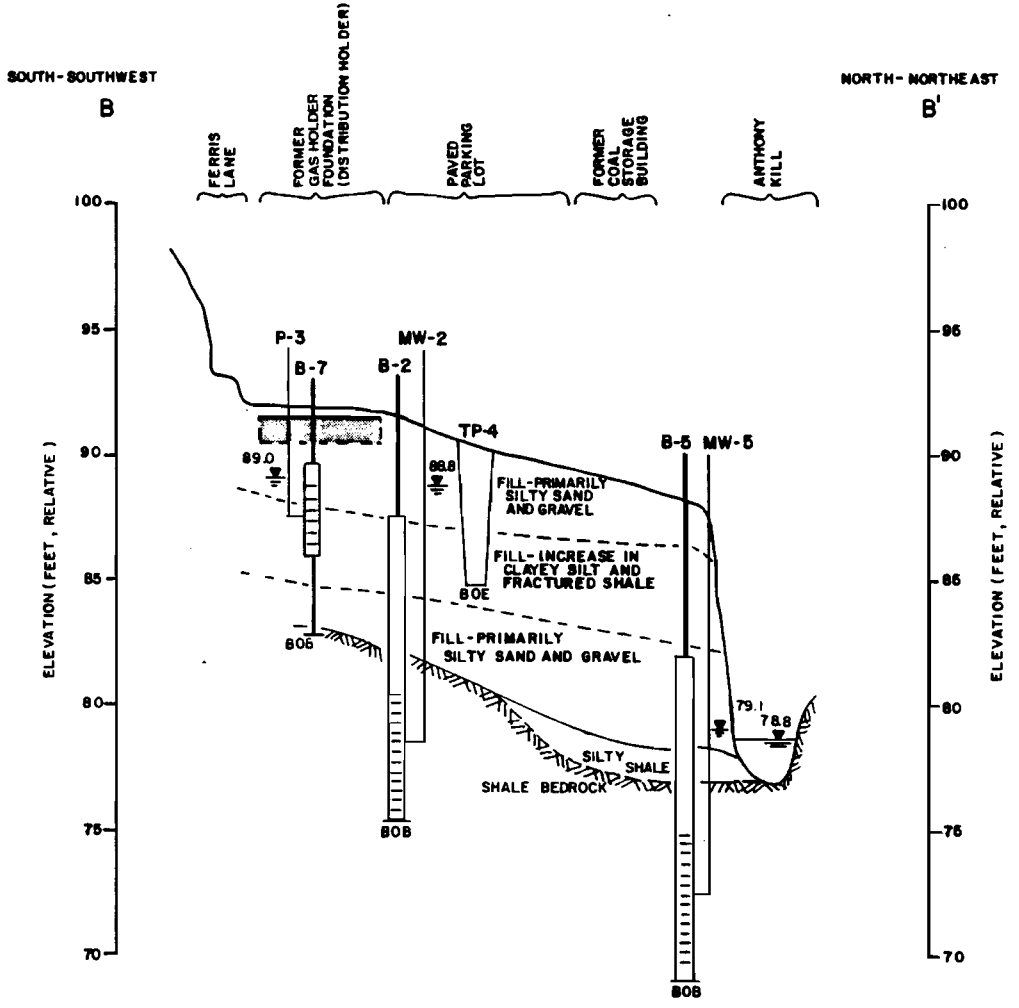
79.3

OBSERVED SURFACE WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

NOTES

1. SEE FIGURE 3-1 FOR LOCATION AND ORIENTATION OF PROFILE.
2. PROFILE IS BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE EXPLORATIONS. ACTUAL CONDITIONS MAY VARY FROM THOSE SHOWN.
3. ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.
4. FOUNDATION STRUCTURE LOCATIONS SHOWN ARE APPROXIMATE.

E.C. JORDAN CO. CONSULTING ENGINEERS	INTERPRETIVE GEOLOGIC PROFILE A-A' MECHANICVILLE SITE
NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
4045-83	FIGURE 3-2



APPROX. HORIZONTAL SCALE

0 50 100 FEET

VERTICAL EXAGGERATION 10:1

GEOLOGIC DESCRIPTIONS

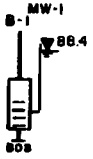
FILL: PRIMARILY SILTY SAND AND GRAVEL WITH ORGANIC MATTER, ASH, BRICK FRAGMENTS, GLASS, AND WOOD CHIPS WITH ZONES OF HIGHER CLAYEY SILT AND FRACTURED SHALE CONTENT.

GRAVELLY SAND: DISCONTINUOUS BROWN TO DARK GRAY SAND AND GRAVEL.

SILTY SHALE: BLACK TO GRAY PLATY SHALE FRAGMENTS WITH INTERSTITIAL SILT. LOOSE AND SATURATED. POSSIBLY FILL.

SHALE BEDROCK: LAMINATED, BROKEN, DARK GRAY SHALE WITH CALCITE VEINS AND INCLUSIONS. BEDDING DIPS 30-40° FROM HORIZONTAL; FRACTURES ARE 0-90° FROM BEDDING PLANES. UPPER 1 TO 2 FEET SEVERELY WEATHERED.

LEGEND

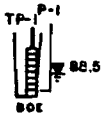


BORING AND MONITORING WELL LOCATION

OBSERVED WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

EFFECTIVE SCREEN LENGTH (ACTUAL SCREEN SHOWN AS ⊟)

BOTTOM OF BORING



TEST PIT AND PIEZOMETER LOCATION

OBSERVED WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

PIEZOMETER SCREEN

BOTTOM OF EXPLORATION

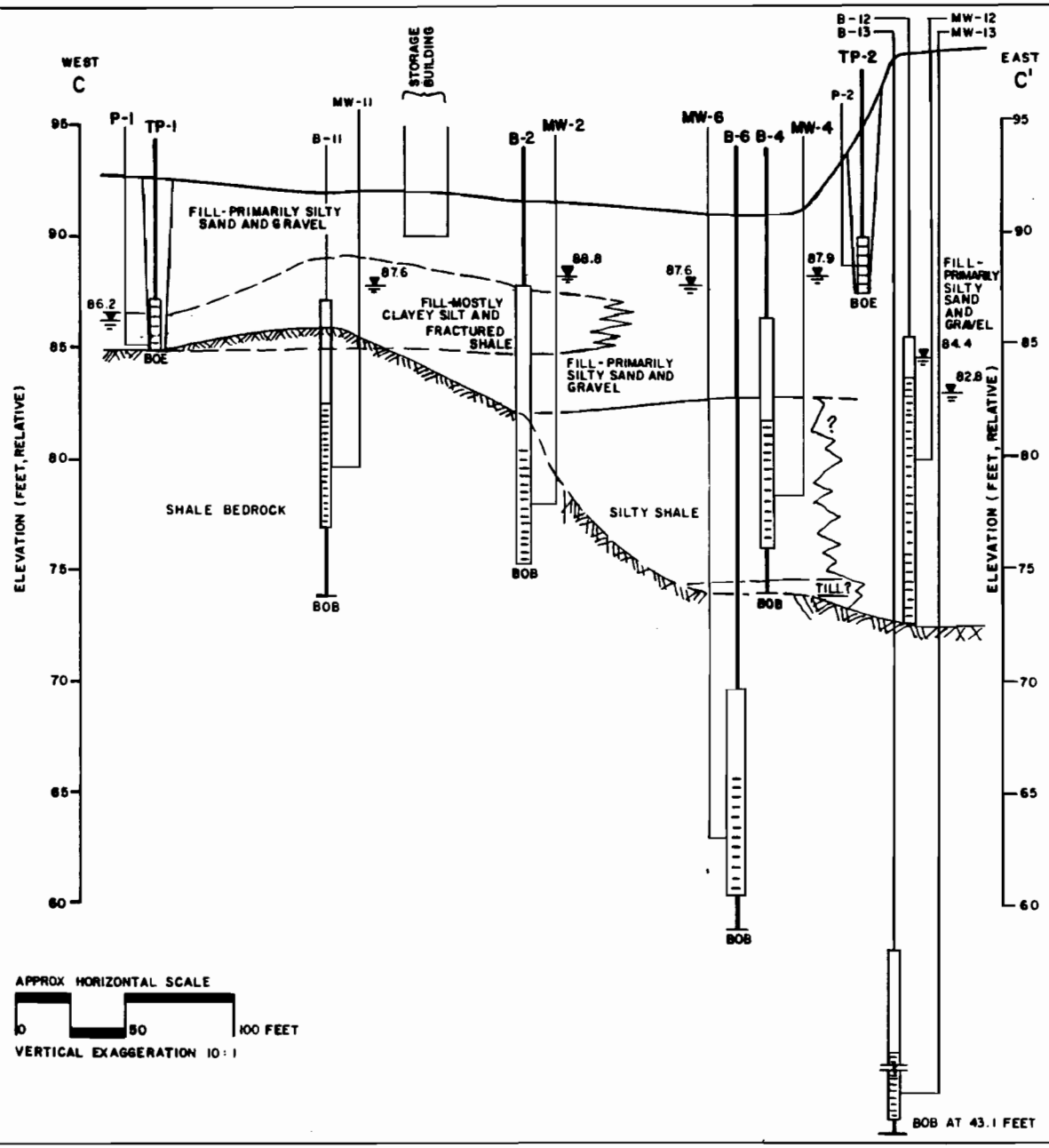
79.3

OBSERVED SURFACE WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

NOTES

1. SEE FIGURE 3-1 FOR LOCATION AND ORIENTATION OF PROFILE.
2. PROFILE IS BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE EXPLORATIONS. ACTUAL CONDITIONS MAY VARY FROM THOSE SHOWN.
3. ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.
4. FOUNDATION STRUCTURE LOCATIONS SHOWN ARE APPROXIMATE.

E.C. JORDAN CO. CONSULTING ENGINEERS	INTERPRETIVE GEOLOGIC PROFILE B-B' MECHANICVILLE SITE
NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
4945-83	FIGURE 3-3



APPROX HORIZONTAL SCALE

0 50 100 FEET

VERTICAL EXAGGERATION 10:1

GEOLOGIC DESCRIPTIONS

FILL: PRIMARILY SILTY SAND AND GRAVEL WITH ORGANIC MATTER, ASH, BRICK FRAGMENTS, GLASS, AND WOOD CHIPS WITH ZONES OF HIGHER CLAYEY SILT AND FRACTURED SHALE CONTENT.

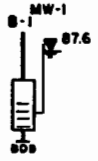
GRAVELLY SAND: DISCONTINUOUS BROWN TO DARK GRAY SAND AND GRAVEL.

SILTY SHALE: BLACK TO GRAY PLATY SHALE FRAGMENTS WITH INTERSTITIAL SILT. LOOSE AND SATURATED. POSSIBLY FILL.

TILL: DISCONTINUOUS TAN TO LIGHT GRAY SILTY CLAY TILL WITH FINE GRAVEL.

SHALE BEDROCK: LAMINATED, BROKEN, DARK GRAY SHALE WITH CALCITE VEINS AND INCLUSIONS. BEDDING DIPS 30-40° FROM HORIZONTAL; FRACTURES ARE 0-90° FROM BEDDING PLANES. UPPER 1 TO 2 FEET SEVERELY WEATHERED.

LEGEND



BORING AND MONITORING WELL LOCATION

OBSERVED WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

EFFECTIVE SCREEN LENGTH (ACTUAL SCREEN SHOWN AS ▭)

BOTTOM OF BORING



TEST PIT AND PIEZOMETER LOCATION

OBSERVED WATER LEVEL (FEET, RELATIVE) ON MARCH 29, 1988

PIEZOMETER SCREEN

BOTTOM OF EXPLORATION

NOTES

1. SEE FIGURE 3-1 FOR LOCATION AND ORIENTATION OF PROFILE.
2. PROFILE IS BASED ON AN INTERPRETATION OF AVAILABLE SUBSURFACE EXPLORATIONS. ACTUAL CONDITIONS MAY VARY FROM THOSE SHOWN.
3. ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.
4. FOUNDATION STRUCTURE LOCATIONS SHOWN ARE APPROXIMATE.

E.C. JORDAN CO. CONSULTING ENGINEERS	INTERPRETIVE GEOLOGIC PROFILE C–C' MECHANICVILLE SITE
NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
4845-83	FIGURE 3-4

extent of the fill is unknown, but is expected to occur east of the site along North Central Avenue where the old Champlain Canal was filled.

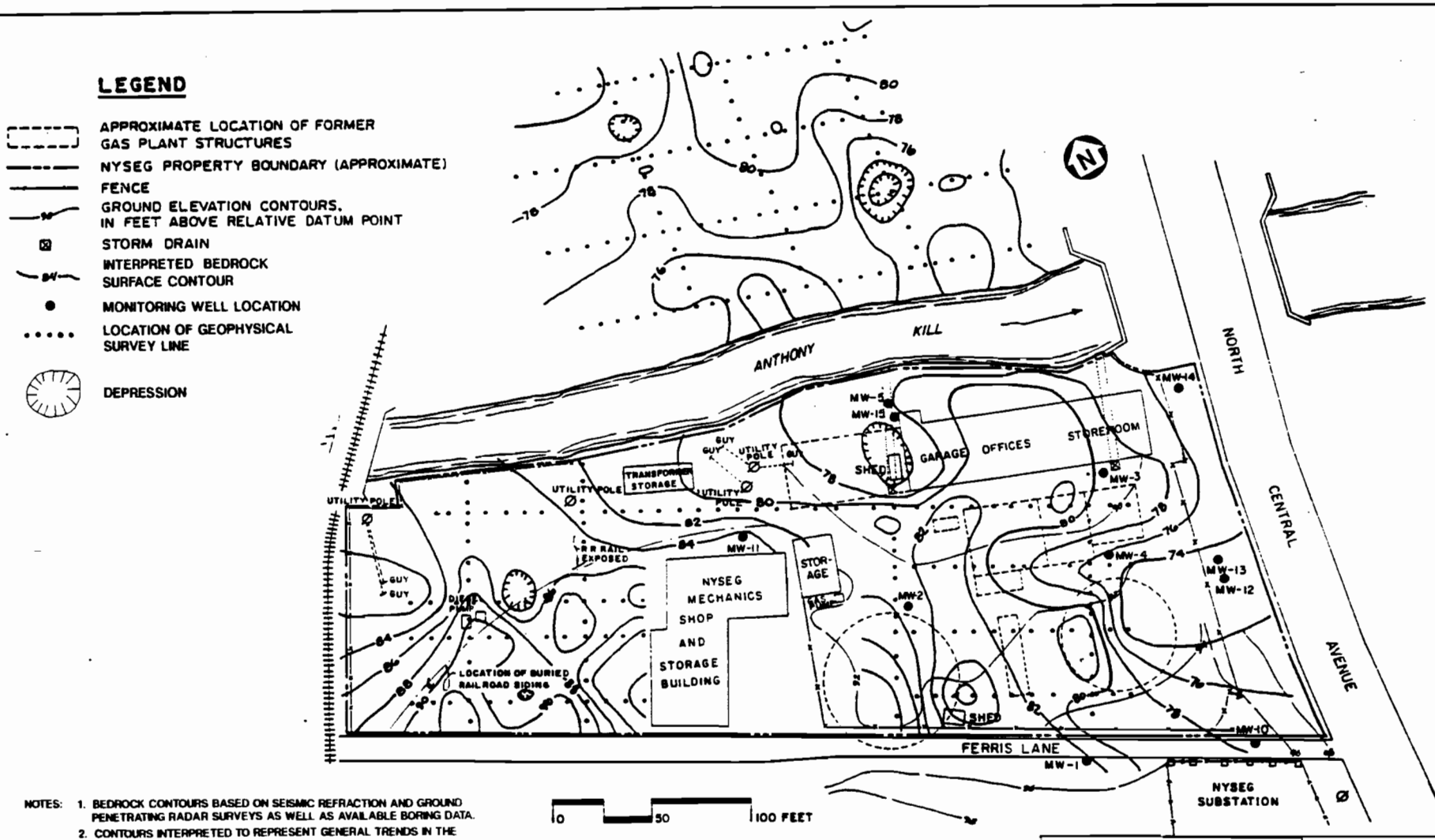
Gravelly Sand. A brown, dense, gravelly sand was encountered in only one boring (B-1) at a depth of 8 feet below ground surface (see Figure 3-2). The gravelly sand unit is 1.5 to 4 feet thick. At B-1, the gravelly sand overlies weathered bedrock. The gravelly sand may be fill or, if the area has not been disturbed, a glaciofluvial deposit.

Silty Shale. In the southeastern portion of the site, and between the present-day office building and the Anthony Kill, a silty shale unit overlies the bedrock. This unit consists of black to gray platy shale fragments with silt. The silty shale is loose, saturated, and lacks a consistent structure. These properties indicate that this area may have been disturbed by excavation, backfilling, and grading during construction of the gas plant. The silty shale in these areas is interpreted to be fill material. The silty shale unit varies in thickness across the site from 1 to 9 feet. It is thickest in the area of the former relief gas holder, near B-4, B-6, and B-8 (see Figure 3-2). The off-site lateral extent of the silty shale layer is unknown.

Till. A thin, discontinuous tan to light gray silty clay till with fine gravel was encountered at the top of the bedrock surface in one boring (B-4). The pocket of till is less than 1 foot thick and is located along the northern edge of a small bedrock trough. The till contained some natural organic matter, suggesting that this remnant till was the original postglacial topsoil at the site. Because the till appears to be laterally discontinuous, it is not anticipated to significantly influence groundwater flow at the site.

Shale Bedrock. The bedrock at the Mechanicville site is a thinly bedded gray shale with calcite inclusions. The upper 1 to 2 feet of the bedrock is severely weathered and contains silt and dry platy shale fragments. Bedrock crops out at several locations along the southern bank of the Anthony Kill. Based on measurements taken from these outcrops, the bedrock strikes nearly east-west, and bedding dips approximately 30 degrees to the south. Bedrock core was obtained in eight borings beneath the highly weathered zone. As observed in the core, the upper portion of the bedrock contains fractures spaced between 2 inches to a foot apart. The primary fractures are parallel to bedding and secondary fractures exist at angles up to 90 degrees to the primary fractures. Some weathering has occurred along the fracture faces. In the deeper borings, more competent bedrock was encountered (i.e., deeper bedrock contained fewer fractures than shallow bedrock). Some of the deeper bedrock fractures contained coal tar or had a distinct coal tar odor. Groundwater movement in the bedrock occurs primarily through the fractures in response to the hydraulic gradient.

A bedrock surface contour map interpreted from the GPR and seismic refraction surveys and boring exploration data collected during Tasks 1, 2, and 3 is shown in Figure 3-5. The contour map depicts the surface of the competent bedrock; 1 to 2 feet of weathered rock lie directly above this unit. A bedrock high is near the former distribution gas holder. Bedrock appears to slope downward from this high, toward both the Anthony Kill (north) and North Central Avenue (east). A small east-trending bedrock depression, approximately 5 feet deep,



NOTES:
1. BEDROCK CONTOURS BASED ON SEISMIC REFRACTION AND GROUND PENETRATING RADAR SURVEYS AS WELL AS AVAILABLE BORING DATA.
2. CONTOURS INTERPRETED TO REPRESENT GENERAL TRENDS IN THE BEDROCK SURFACE.
3. THE CONTOUR INTERVAL (2 FEET) INDICATES DEGREE OF ACCURACY (±1 TO 2 FEET) REPRESENTED BY INTERPRETATION.

BASE MAP SOURCE:
TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK DATED 6/26/86 (86-72-S).

E.C. JORDAN CO.
CONSULTING ENGINEERS

BEDROCK SURFACE CONTOURS MECHANICVILLE SITE

NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

4945-03

FIGURE 3-5

occurs in the center of the site near the location of the former relief gas holder (B-4 and B-6). This small depression may represent a relic postglacial stream channel. Another bedrock low is located in the north-central portion of the site near MW-5 and MW-15. This depression is bowl-shaped and may represent a postglacial stream scour depression. On the northern side of the Anthony Kill, bedrock slopes to the south, toward the stream channel.

3.2 HYDROGEOLOGY

The interpretation of hydrogeologic conditions at the site is based on field and laboratory permeability data and water level observations. The raw data are presented in Appendices A-4 and A-5, respectively. A discussion of the data follows.

Based on observations made during the excavation of borings and test pits, and groundwater measurements from piezometers and monitoring wells, the water table at the site exists at a depth ranging from approximately 2 to 20 feet below ground surface. The water table occurs principally in the fill during both high and low water table conditions. The saturated thickness of soils at the site ranges from approximately 3 to 25 feet.

The screens of MW-1, MW-2, MW-5, MW-10, and MW-11 intercept groundwater in the fill and shallow bedrock. MW-3, MW-4, and MW-12 and piezometers P-1 through P-3 monitor groundwater levels in the fill. MW-6, MW-13, MW-14, and MW-15 monitor groundwater levels at depth in the fractured bedrock and therefore were not considered in developing water table contours. The water table contours for the site are shown in Figure 3-6. The contours were developed using groundwater levels observed on March 29, 1988, from MW-1 through MW-5, MW-10 through MW-12, and P-3. Water level data from P-1 and P-2 were excluded from interpretation because of artificially high water levels (see next paragraph). Groundwater level data collected in August, September, and December of 1987, and in March, June, and December of 1988, resulted in similar contours. Although water level data within bedrock are limited, the data indicate that the groundwater contours for the deeper bedrock would be similar in shape to the water table contours.

Data obtained from the Task 3 field program suggested that water levels obtained from P-1 and P-2 are artificially high because the piezometers were constructed where test pits had been excavated and backfilled. It is believed that the test pits are acting as precipitation and groundwater collecting basins, resulting in elevated groundwater level readings. Therefore, the P-1 and P-2 data were omitted when identifying the groundwater contours for Task 2 and Task 3.

3.2.1 Groundwater Flow Conditions

In Task 2, the water table sloped to the northeast, toward the Anthony Kill. The groundwater flow direction in the southeastern corner of the site, near the former relief gas holder, appeared to be more easterly, toward the Hudson River. It was interpreted that the easterly flow was controlled by the silty shale fill, the bedrock depression, and shallow bedrock fractures.

Task 3 data shown in Figure 3-6 also indicate that groundwater flow in the fill and shallow bedrock is northeasterly toward the Anthony Kill across the western and northern portion of the site, and to the east toward the Hudson River across the remainder of the site. Groundwater migration across the western and northern portion of the site appears to be part of a local flow system, controlled by the presence of the Anthony Kill. On the eastern portion of the site, groundwater is migrating easterly along the east-west trending bedrock channel (see Figure 3-5). The regional flow west of the Hudson River where the site is located is also easterly.

The average horizontal gradient of the water table was calculated to be 0.05 feet/feet (ft/ft) across the site in March 1988. As discussed previously, the primary direction of groundwater flow is northeasterly, toward the Anthony Kill.

Water level data collected from the fill and bedrock wells provide an indication of the vertical seepage gradients for the system. Water levels collected from well clusters in the fill and bedrock at MW-12/MW-13 and MW-4/MW-6 indicate downward vertical gradients. The average vertical groundwater gradient (based on water level data collected between August 1986 and March 1988) at MW-12/MW-13 was 0.06 ft/ft downward from the fill into the bedrock. At MW-4/MW-6, the average vertical groundwater gradient (based on water level data collected in December 1987 and March 1988) was calculated to be 0.02 ft/ft downward from the fill into the bedrock. Water level data collected (in March 1988) for MW-5 and MW-15, both screened in the shallow bedrock, indicated that the shallow bedrock near the Anthony Kill has an upward gradient, potentially indicating discharge to the Anthony Kill from the groundwater system for this period. The surface water elevation data collected in both December 1987 and March 1988 support the presence of a groundwater discharge zone along the Anthony Kill site boundary. Because no surface water elevation data are available during what may be considered high flow in the Anthony Kill, it is not possible to identify whether the gradient could reverse in the vicinity of the stream during high flows.

Groundwater flow within the fractured rock is controlled by the orientation, size, and interconnection of the fractures. Based on visual observations of rock core from the upper 5 to 31 feet of the bedrock formation at eight borings, the primary fractures are oriented 30 to 45 degrees from horizontal. Groundwater movement would occur primarily along these fractures, and these fractures would provide the interconnection for groundwater migration from the bedrock to the fill material and vice versa.

The impervious asphalt paving and buildings that cover most of the site presently limit direct infiltration by precipitation. Two storm drains located in the northern portion of the site collect surface runoff and discharge to the Anthony Kill. Limited rainwater infiltration into the site subsurface soils over the years has minimized the potential for waste constituents to be flushed downward into the groundwater. However, during the coal gas production years, the site was not paved, and conditions were more favorable for the mobilization of waste constituents. The date of paving is not known.

LEGEND

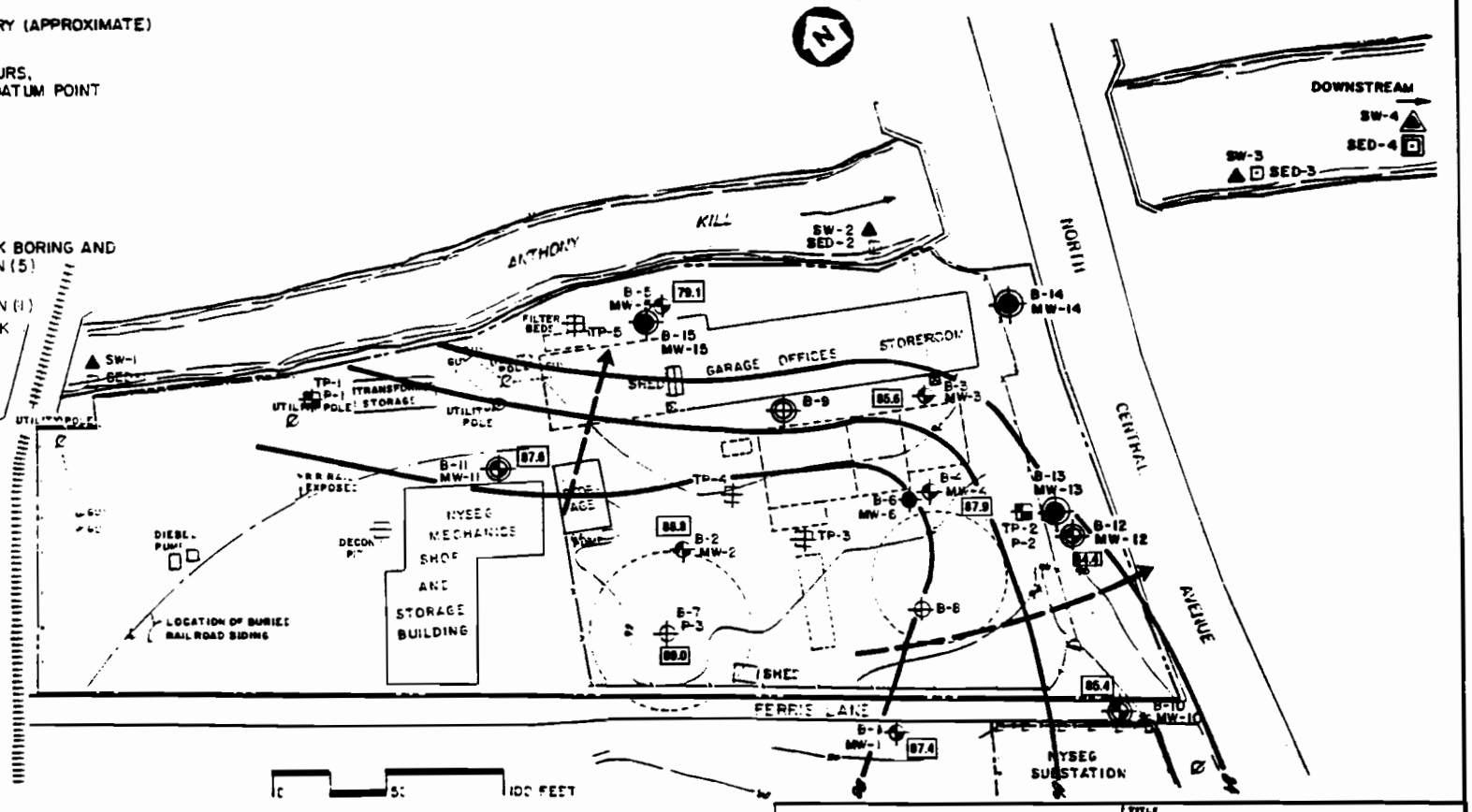
- APPROXIMATE LOCATION OF FORMER GAS PLANT STRUCTURES
- NYSEG PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- GROUND ELEVATION CONTOURS, IN FEET ABOVE RELATIVE DATUM POINT
- STORM DRAIN

TASK 2:

- SOIL AND SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (5)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (1)
- SOIL AND SHALLOW BEDROCK BORING LOCATION (2)
- TEST PIT AND PIEZOMETER LOCATION (2)
- TEST PIT LOCATION (3)
- SURFACE WATER SAMPLE LOCATION (3)
- SEDIMENT SAMPLE LOCATION (3)

TASK 3:

- SOIL/SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (3)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (3)
- SOIL BORING LOCATION (1)
- SURFACE WATER SAMPLE LOCATION (1)
- SEDIMENT SAMPLE LOCATION (1)
- 89.0 WATER LEVEL (FT. RELATIVE) OBSERVED ON MARCH 29, 1988
- INTERPRETED GROUNDWATER SURFACE CONTOUR
- INTERPRETED GROUNDWATER FLOW DIRECTION



BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87.

ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT RR SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE

E.C. JORDAN CO.
CONSULTING ENGINEERS

CLIENT:
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

TITLE
WATER TABLE CONTOURS
MECHANICVILLE SITE
MARCH 1988

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 3-6

In-situ permeability and packer tests were conducted in the monitoring wells during the Task 2 and Task 3 exploration programs to estimate hydraulic conductivities and groundwater flow rates in the soil, the shallow bedrock, and the deep bedrock. The results of in-situ, falling-head, and rising-head permeability tests on the shallow wells screened primarily in the silty shale (MW-3, MW-4, and MW-10) indicate hydraulic conductivities ranging from 2.2×10^{-5} to 1.9×10^{-4} cm/sec, or 0.06 to 0.54 ft/day. In-situ permeability tests in the wells screened primarily in shallow bedrock (MW-1, MW-2, MW-5, and MW-11) indicate hydraulic conductivities ranging from 2.0×10^{-4} to 1.1×10^{-3} cm/sec, or 0.57 to 3.1 ft/day. The in-situ permeability and packer tests conducted in the deeper bedrock wells (MW-6, MW-13, MW-14, and MW-15) indicate hydraulic conductivities ranging from 1.4×10^{-5} to 9.0×10^{-4} cm/sec, or 0.04 to 2.55 ft/day.

The upper fill consists of a heterogeneous mixture of materials that may have a broad range of permeabilities. The upper fill is not saturated; therefore, the range was not defined. The saturated thickness of fill is limited at the site; most of the wells were installed below the upper fill to monitor the groundwater flow. One well (MW-12) was installed in the lower fill and produced a hydraulic conductivity of 4.0×10^{-4} cm/sec, or 1.1 ft/day. A laboratory permeability test was performed on a sample of lower fill collected from test pit TP-1. This sample yielded a hydraulic conductivity of 2.7×10^{-8} cm/sec, or 7.5×10^{-5} ft/day. The extreme variance in permeability is due to the inherent differences in the fill material; MW-12 is installed in silty sand and gravel, whereas the sample tested from TP-1 is a clayey silt.

Groundwater velocity is a function of hydraulic conductivity, effective porosity, and groundwater gradient. The hydraulic conductivity of the silty shale was determined from Task 2 and Task 3 field tests to range from 2.2×10^{-5} to 1.9×10^{-4} cm/sec, or 0.06 to 0.54 ft/day. The geometric mean hydraulic conductivity is calculated to be 1.0×10^{-4} cm/sec, or 0.28 ft/day. Using an effective porosity of 0.25 for the silty shale (Davis, 1969), and a groundwater gradient of 0.06 ft/ft, the corresponding horizontal groundwater flow rate in the silty shale is approximately 20 ft/yr.

Limited published data are available to estimate the porosity of fractured rock; therefore, a "best" estimate for the site was selected. An effective porosity of 0.10 was estimated for the shallow bedrock (Bouwer, 1978). The hydraulic conductivity of the shallow bedrock was found to range from 2.0×10^{-4} to 1.1×10^{-3} cm/sec, or 0.57 to 3.1 ft/day, with the geometric mean of the hydraulic conductivity being 4.0×10^{-4} cm/sec, or 1.10 ft/day. With a groundwater gradient of 0.06 ft/ft, the corresponding horizontal groundwater flow rate for the shallow bedrock is approximately 200 ft/yr.

For the deeper bedrock, the hydraulic conductivity ranged from 1.4×10^{-5} to 9.0×10^{-4} cm/sec, or 0.04 to 2.55 ft/day, with the geometric mean of the hydraulic conductivity being 2.0×10^{-4} cm/sec, or 0.57 ft/day. Using an effective porosity of 0.10 for the deep bedrock as well (Davis, 1969), and a groundwater gradient of 0.06 ft/ft, the corresponding horizontal groundwater flow rate for the deeper bedrock is approximately 104 ft/yr.

In summary, based on the permeability data and seepage gradients, the primary zone of groundwater movement at the site is interpreted to exist within the

fractured zones of the shallow bedrock. Additionally, groundwater flow in the fill and shallow bedrock is northeasterly toward the Anthony Kill across the western and northern portions of the site. Groundwater migration in this area of the site is controlled by the presence of the Anthony Kill. Water level data collected for well pair MW-5/MW-15 indicate that the shallow bedrock near the Anthony Kill has an upward gradient, potentially indicating discharge from the groundwater to the Anthony Kill. For well pairs MW-12/MW-13 and MW-4/MW-6, downward vertical gradients exist, indicating movement of groundwater from fill to bedrock.

3.2.2 Groundwater Usage

Historically, the City of Mechanicville used surface water supplies for a drinking water source. The Mechanicville reservoir is approximately 3 miles northwest of the site, at an elevation approximately 160 feet higher than the site. The reservoir is drained by Plum Brook, which flows into the Anthony Kill a few miles upstream of the site. A few residences outside the city limits, however, use groundwater for drinking water (Renaldi, 1986). The closest domestic wells are nearly a mile southwest (upgradient) of the site in the Town of Halfmoon. Based on information obtained during the records search, there are no active industrial wells in the Mechanicville area. There are two abandoned industrial wells: (1) the West Virginia Pulp and Paper Co. well (2,157 feet deep), located a half-mile northeast of the site; and (2) a bedrock well used by the former Mintzer Petroleum Co. (29 feet deep), located 1.5 miles south (upgradient) of the site (Heath, et al., 1963). The records examined did not report the yields of these wells.

3.3 SURFACE WATER HYDROLOGY

The Anthony Kill and Hudson River are two major surface water bodies near the site. The Anthony Kill flows out of Round Lake in a southeasterly direction, then bends eastward, flowing past the site and emptying into the Hudson River at Mechanicville (see Figure 1-1). The Hudson River is located approximately 1,500 feet east of the site.

Surface runoff from the site flows into two drainage catch basins that empty via underground culverts into the Anthony Kill. Locations of the culverts are shown in Figure 1-4.

3.3.1 Discharge

There are no continuous-record gauging stations on the Anthony Kill. The U.S. Geological Survey (USGS) has periodically taken base-flow measurements at the partial-record stations on the Anthony Kill at Mechanicville (Station No. 01335700: latitude 42°55'05" and longitude 73°42'53") and Coons Crossing (Station No. 01335698: latitude 42°55'13" and longitude 73°44'50") (USGS, 1979). Coons Crossing is located upstream of the site, 3.1 miles to the northwest. Based on base flow measurements, Jordan estimated the annual low flow at the Mechanicville Station at 17 cubic feet per second (cfs) for a drainage basin of 62.4 square miles. The average annual low flow at the Coons Crossing Station was estimated at 15 cfs for a drainage basin of 52.9 square

miles. The USGS maintains a partial-record gauging station on the Hudson River at Mechanicville (Station No. 01335500: latitude 42°54'45" and longitude 73°40'45"). The drainage area upstream of this station is 4,500 square miles. Based on data collected from 1931 to 1956, the 7-day, 10-year low flow at this station is 1,900 cfs (USGS, 1979).

3.3.2 Stream Water Quality

The New York State Department of Environmental Conservation (NYSDEC) assigned a Class D stream classification to the section of the Anthony Kill from the Mechanicville city line to the Hudson River (Hodgson, 1986). Class D waters are designated by NYSDEC for secondary contact recreation, but no higher uses because of intermittent flow or water quality conditions that are not conducive to the propagation of game fish. Farther upstream, between Coons Crossing and Mechanicville, the Anthony Kill is designated Class C(t). Class C waters are suitable for fishing and all other uses, except primary contact recreation or as a source of water for drinking, culinary, or food processing purposes. The "(t)" denotes that the water body is a trout stream (NYSDEC, 1981).

NYSDEC has conducted water quality testing downstream of Mechanicville on the Hudson River, and 2 miles upstream of the site at Plum Brook (which drains the water supply reservoir) (NYSDEC, 1981). The Hudson River test results (1981) showed water quality impairment from coliform bacteria, heavy metals, and polychlorinated biphenyls (PCBs). No impairment was evident at Plum Brook, which has a Class A designation (i.e., suitable for use as a water supply source) (NYSDEC, 1981). It should be noted that the Hudson River drainage basin upstream of the test point encompasses an enormous land area containing numerous potential sources of chemical contamination.

3.4 AIR

VOC contamination in test borings and monitoring wells located in close proximity to the combination office/storeroom building led to concern that these VOCs may result in volatilized or airborne contamination of the indoor air quality. General wind data and air quality data were compiled in Task 1 to assess general background conditions at the site (E.C. Jordan Co., 1986a).

Wind data reported for the Albany County Airport, which is 10 to 12 miles south of the Mechanicville site, indicate that the wind is from the south from May through June. The prevailing wind for the remainder of the year is from the west-northwest. Wind velocities are generally moderate over the Hudson Valley Region with an average annual wind speed reported at the Albany County Airport of 8.8 miles per hour (mph), with monthly averages ranging from 6.9 to 10.4 mph (NOAA, 1971). The airport data are likely to be representative of the general wind conditions in the Albany County area, however, local micrometeorological conditions may be different. Local topography would favor a prevailing northwesterly wind direction for Mechanicville, New York (Taylor, 1986).

Mechanicville was once a control station within the statewide ambient air monitoring network operated by the NYSDEC Bureau of Air Quality Surveillance. The station consisted of a high-volume air sampler operated monthly for the

monitoring of total suspended particles (TSP), 60 feet above grade, 1 to 2 miles south of the Mechanicville site. TSP results collected from 1976 to 1982 ranged from 39 to 47 $\mu g/m^3$ and were below Federal Ambient Air Quality Standards of 75 $\mu g/m^3$. No volatile organic monitoring is known to have been conducted in the area.

3.5 LAND USE

General land uses and cover types were surveyed during Task 2 for the area within a half-mile radius of the site (Figure 3-7). Existing land use maps, street maps, and aerial photographs, combined with field checking, were used to determine general land uses. Potentially sensitive land uses were identified with the assistance of local officials and published data. Potential contributors of chemicals to groundwater and surface water were identified from aerial photographs and during field inspection. Current land uses around the site are described in the following subsections.

3.5.1 General Land Use

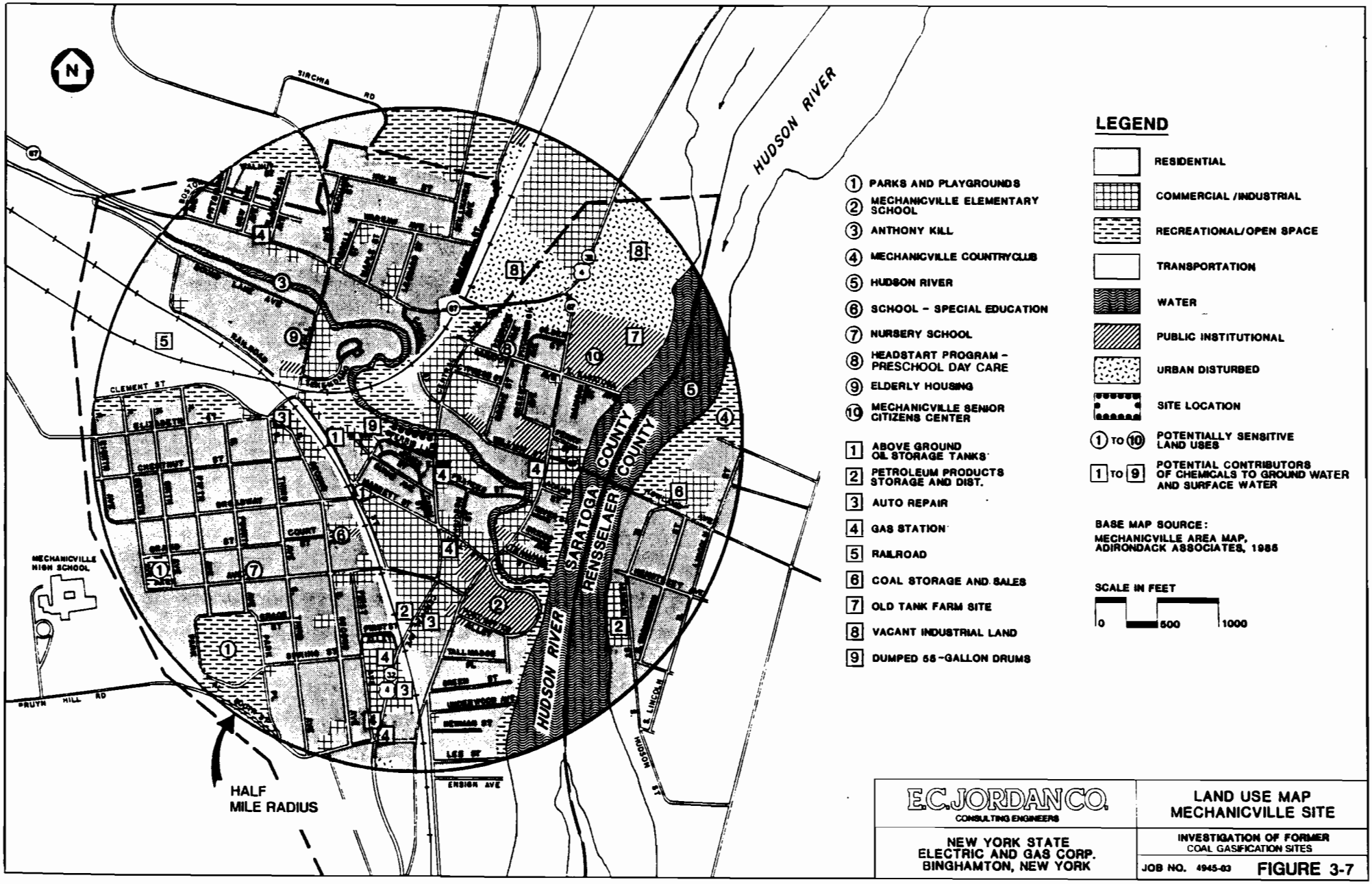
Figure 3-7 depicts present land use and cover types for the area within a half-mile radius of the site. Land uses in the immediate vicinity of the site are both residential and commercial. The central business district of the city, located east and south of the site, is characterized by a mixture of commercial, residential, public, and semipublic land uses, including retail stores, offices, municipal buildings (i.e., city hall, fire station, library, and community services), the post office, and several churches. The central business district is bordered on the east by the Hudson River. The portion of the land use study area on the eastern side of the Hudson River in Schagticoke is predominantly residential.

Southwest of the site, land uses are primarily residential with a few interspersed commercial sites and parks. Railroad yards of the Delaware and Hudson, and Boston and Maine railroads are located west of the site. Land northwest and north of the site is primarily open space, with a few private residences and commercial facilities. The area northeast of the site is a mixture of commercial, residential, and industrial properties.

3.5.2 Potentially Sensitive Land Use

Segments of the human population particularly sensitive to contaminants include the very young, the elderly, and the infirmed. The young are particularly sensitive because a given dose of a harmful material will have a greater effect on a smaller, lighter child than on a larger, heavier adult. A child's immune system is also more susceptible to negative impacts as the physiological systems develop. The elderly and infirmed typically suffer from other medical problems that decrease the body's ability to fight chemical intake. Additionally, the elderly and the infirmed may take medication for other health problems; effects of chemicals on the body may be exacerbated by these drugs.

Therefore, land uses that foster concentrations of these populations are of particular concern in conducting a risk assessment. At the Mechanicville site,



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LAND USE MAP
MECHANICVILLE SITE

INVESTIGATION OF FORMER
COAL GASIFICATION SITES

JOB NO. 4945-03

FIGURE 3-7

these uses include day care centers, schools, recreational areas, nursing homes, and elderly housing projects. Figure 3-7 shows the proximity of these land uses to the site.

3.5.3 Potential Contributors of Chemicals to Groundwater and Surface Water

Potential sources of chemicals in groundwater and surface water presently near the site include aboveground and belowground tanks used for storing petroleum products, vehicle maintenance yards, a railroad yard, a coal storage and sales facility, vacant industrial property, and a drum disposal area. The drums were observed on the vacant lot just west of the site. There are about a dozen 55-gallon drums in poor condition lying on their sides in the grass. The contents and origin of these drums are not known. The location of the potential contributors identified in the land use survey are depicted in Figure 3-7.

As noted in the Task 1 Report (E.C. Jordan Co., 1986a), the segment of the Anthony Kill adjacent to the site was heavily industrialized in the late 1800's and early 1900's. There was a fiber manufacturing company where NYSEG's mechanics shop now stands; a nickel plating factory just north of the site on the Anthony Kill; and a textile mill across North Central Avenue where the Price Chopper supermarket is now located. These and other past industrial sites in the area were very likely sources of chemicals, some of which may still be evident in the environment.

3.6 DISTRIBUTION OF CHEMICALS

The Task 3 sampling and chemical analysis program for Mechanicville included soil, groundwater, surface water, sediment, and air samples. All samples (except for the air samples) were submitted to NYSEG's laboratory. The air samples were shipped to ESA Laboratories of Bedford, MA, for analysis. NYSEG forwarded all soil samples to ERCO of Cambridge, Massachusetts, for analysis. December 1987 groundwater, surface water, and sediment samples were also forwarded to ERCO for VOC and SVOC analyses. NYSEG analyzed March 1988 samples for these parameters. Upstate Laboratory in Syracuse, New York performed all other groundwater, surface water, and sediment analyses for NYSEG.

Analytical parameters and methods are listed in Appendix B-1 and discussed briefly herein. The analytical program for soil and groundwater samples was not varied from Task 2 to Task 3, with one exception. Task 3 organic chemical analyses were performed using GC/MS analytical techniques; results are described in the following sections. Analytical results obtained in Task 2 are in Appendix B-2, while those from Task 3 are included in this section. Minimum detection limits for both sets of data and the raw data from Task 3 analyses are in Appendix B-4.

3.6.1 Soil

Analyses for VOCs, SVOCs, selected trace metals (i.e., iron and zinc), cyanide, total recoverable phenolics (phenols), and TOC were requested for all Task 3 soil samples. The laboratory performed VOC analysis on only 2 of the 6 samples submitted, for reasons that were not explained. The Task 3 soil samples were

collected from depths of 4 to 24 feet below ground surface. All six samples were taken from the silty sand fill above the shale bedrock. Analytical results for Task 3 soil samples are presented in Table 3-1. Concentrations of detected chemicals are expressed in milligrams per kilogram (mg/kg) (parts per million [ppm]). Analytical results from Task 2 soil boring and test pit samples are included in Appendix B-2.

Analyses of soil samples from the Task 2 investigation program at Mechanicville showed the presence of coal tar and coal-gasification-related chemicals (i.e., VOCs, PAHs, and cyanide) near the former relief gas holder, purifier and oxide houses, and filter beds. Task 3 soil sampling was targeted primarily at further defining the distribution of chemicals in deep soil (near the soil/bedrock interface) and in areas adjacent to former site structures and activities. Figure 3-8 illustrates the concentrations of total VOCs, total PAHs, and total cyanide in soil borings at the site, based on both Task 2 and Task 3 sampling results.

Deep soil samples (greater than 15 feet deep) contained lower levels of organics than the samples collected from shallow soils. No VOCs and a low level of PAHs (7.6 mg/kg) were detected in the deepest sample collected (B-12). The sample was taken from silty fine sand, 22 to 24 feet below ground surface garage building, approximately 75 feet from the former purifier and oxide houses. The sample was not analyzed for VOCs, but PAHs were not detected.

The highest levels of VOCs and PAHs were present in samples taken in and near the former relief gas holder, near the former purifier and oxide houses, and in the filter bed area. The highest levels of VOCs (3,800 and 3,410 mg/kg) were observed in samples taken at B-8 (at depths of 13.5 to 15.5 feet and 15.5 to 17.5 feet). B-8 is located at the site of the former relief gas holder. The highest levels of PAHs (9,310; 8,500; and 5,440 mg/kg) were observed in samples taken from B-3, TP-5, and B-8 at approximate depths of 5, 3.5, and 14.5 feet, respectively.

Task 3 Sample B-15, collected just above the shale bedrock (a composite sample collected from a depth of 4 to 8 feet) adjacent to the former filter beds, contained low levels of VOCs (1.45 mg/kg) and no detectable PAHs. In contrast, the shallow soil samples collected nearby from TP-5 and B-5 had much higher levels of VOCs (13.8 and 16.0 mg/kg, respectively) and PAHs (6,565 and 4,654 mg/kg, respectively).

To further define the extent of contamination in the vicinity of the former gas house, Sample B-9 was collected in Task 3 from silty sand 4 to 5.5 feet below ground surface. Sample B-9 was not analyzed for VOCs but contained 118 mg/kg of PAHs. The level of PAHs found at B-9 was within the same order of magnitude as those found in TP-4, but was an order of magnitude less than those observed in B-3 and B-6.

Task 3 included no additional soil sampling in the area of the former distribution gas holder. Task 2 sampling indicated moderate levels of VOCs and PAHs (4.3 and 11.2 mg/kg, respectively, at a depth of 7 to 9 feet) beneath the distribution holder, and trace levels of PAHs but no detectable levels of VOCs adjacent to it at B-2.

TABLE 3-1
Task 3 Soil Boring Analytical Results
Mechanicville Site

SAMPLE IDENTIFIER:	B-09(S-1)	B-10(S-2)	B-10(S-2) DUP-503	B-12(S-2)	B-14(S-2)	B-15(S-1)
DATE OF SAMPLE COLLECTION:	11/17/87	11/17/87	11/17/87	11/19/87	11/17/87	11/19/87
DEPTH (Ft.):	4-5.5	16-18	16-18	22-24	18-20	4-8
ZONE SAMPLED:	Silty sand	Silty sand	Silty sand	Silty fine sand	Silty fine sand	Fill
**** Volatile Organics (mg/kg) (1) ****						
-VOLATILE AROMATICS-						
Benzene	-- (2)	--	--	ND	--	ND
Toluene	--	--	--	ND	--	ND
Ethylbenzene	--	--	--	ND	--	0.570
Styrene	--	--	--	ND	--	ND
Total Xylenes	--	--	--	ND	--	0.880
- OTHER -						
Methylene Chloride	--	--	--	ND	--	ND
2-Butanone	--	--	--	ND	--	ND
Total Volatile Aromatics	--	--	--	ND	--	1.4
Total Volatile Organics	--	--	--	ND	--	1.4
**** Semi-Volatile Organics (mg/kg) (1) ****						
-PAH-						
Acenaphthene	T (3)	T	0.53	2.35	ND	ND
Acenaphthylene	ND (4)	T	T	ND	ND	ND
Anthracene	T	T	T	0.8	ND	ND
Benzo(b)Fluoranthene	T	T	ND	ND	ND	ND
Benzo(k)Fluoranthene	(5)	(5)	ND	ND	ND	ND
Benzo(g,h,i,)Perylene	T	ND	ND	ND	ND	ND
Benzo(a)Anthracene	T	T	T	ND	ND	ND
Benzo(a)Pyrene	T	T	T	ND	ND	ND
Chrysene	T	T	T	ND	ND	ND
Fluoranthene	T	T	T	1.01	ND	ND
Fluorene	T	T	T	1.25	ND	ND
Indeno(1,2,3-cd)Pyrene	T	ND	ND	ND	ND	ND
Naphthalene	60	T	0.45	ND	ND	ND
Phenanthrene	58	0.88	1.1	0.8	ND	ND
Pyrene	T	0.6	T	1.39	ND	ND
-OTHER-						
2-Methylnaphthalene	T	T	T	ND	ND	ND
Dibenzofuran	ND	T	T	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	R (6)	T	R
Total PAH	120	1.5	2.1	7.6	ND	ND
Total Semi-Volatile Organic	120	1.5	2.1	7.6	T	ND
**** Other Chemicals (mg/kg) ****						
-METALS-						
Iron	28000	24000	22000	18000	21000	23000
Zinc	59	42	44	32	49	390
-CYANIDE-						
Total Cyanide	ND	ND	ND	ND	ND	ND
Undistilled Cyanide (7)	ND	ND	ND	ND	ND	ND
-OTHER-						
Total Recoverable Phenolics	0.74	ND	ND	ND	ND	2.6
Total Organic Carbon	33000	22000	24000	22000	32000	42000

NOTES:
(1) VOCs and SVOCs analyzed by GC/MS (USEPA Method 8240 and 8270).
(2) -- = Not analyzed (Laboratory Error).
(3) T = Trace concentrations detected below the quantifiable reporting limit.
(4) ND = Not detected (See Appendix B-4 for minimum detection limits).
(5) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.
(6) Data rejected because analysis of blank indicated sampling or lab-derived contamination.
(7) Undistilled CN = Free and dissociable CN-; method used detected most, but not necessarily all, of amenable CN- present.

LEGEND

- APPROXIMATE LOCATION OF FORMER GAS PLANT STRUCTURES
- NYSEG PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- GROUND ELEVATION CONTOURS, IN FEET ABOVE RELATIVE DATUM POINT
- STORM DRAIN

TASK 2:

- SOIL AND SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (5)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (1)
- SOIL AND SHALLOW BEDROCK BORING LOCATION (2)
- TEST PIT AND PIEZOMETER LOCATION (2)
- TEST PIT LOCATION (3)
- SURFACE WATER SAMPLE LOCATION (3)
- SEDIMENT SAMPLE LOCATION (3)

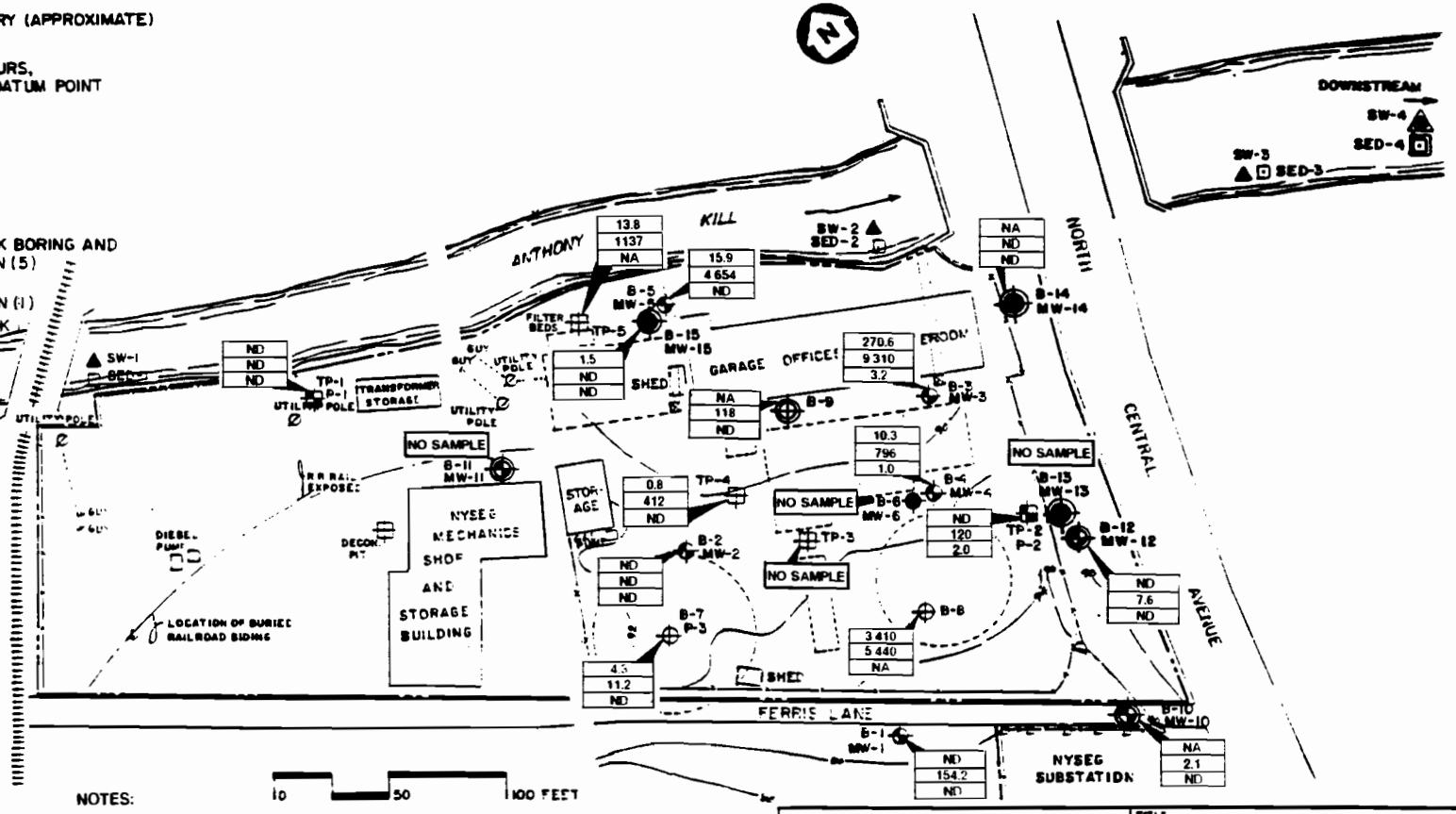
TASK 3:

- SOIL/SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (3)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (3)
- SOIL BORING LOCATION (1)
- SURFACE WATER SAMPLE LOCATION (1)
- SEDIMENT SAMPLE LOCATION (1)

TOTAL VOCs / TOTAL PAHs / TOTAL CN — CONCENTRATIONS DETECTED IN SOIL BORINGS IN mg/kg DURING TASK 2 AND TASK 3 SAMPLING EVENTS.

NA — NOT ANALYZED

ND — NOT DETECTED



NOTES:

1. HPLC ORGANIC ANALYSIS RESULTS ARE SHOWN EXCEPT WHERE GC/MS RESULTS ARE AVAILABLE (TP-5; B-8, B-9, B-10, B-12, B-14, AND B-15).
2. WHERE DUPLICATE SAMPLES WERE ANALYZED BY THE SAME TECHNIQUE, THE HIGHER VALUE IS SHOWN
3. SAMPLES WERE COLLECTED AT DEPTHS BETWEEN 3 AND 24 FEET BELOW GROUND SURFACE.
4. ALL SAMPLES EXCEPT TP-5 AND B-9 WERE COLLECTED BELOW THE WATER TABLE.

BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87. ELEVATIONS BASED ON ASSUMED DATUM OF 100.00 AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE

E.C. JORDAN CO.
CONSULTING ENGINEERS

TITLE: DISTRIBUTION OF CHEMICALS IN SOILS MECHANICVILLE SITE

CLIENT: NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 3-8

Samples B-10 and B-1 were collected away from former coal gasification activities, near Ferris Lane. While Sample B-10 was not analyzed for VOCs, 1.48 mg/kg of PAHs were detected. A duplicate sample from B-10 contained 2.08 mg/kg of PAHs. VOCs were not detectable at B-1, but PAHs were found in the 8- to 10-foot sampling interval at 154 mg/kg.

Results of the metals analyses for both Task 2 and Task 3 soil samples show fairly narrow ranges for iron levels in the natural soils on-site (18,000 to 35,000 mg/kg). Task 3 Sample B-10 from soil 16 to 18 feet below ground surface, considered upgradient from site activities, contained 24,000 mg/kg of iron. There is no evidence that iron levels in on-site soils are elevated by historical or current site activities.

Zinc levels in Task 3 soil samples were consistent with Task 2 results, ranging from 32 to 390 mg/kg. While one Task 2 sample (B-5/S-1) showed a high zinc concentration (1,600 mg/kg), no similar zinc concentrations were found in Task 3 samples. The high concentration of zinc at B-5 could be a result of the use of zinc acetate as a corrosion inhibitor in gas holder sealing waters, a common practice at former coal gas plants (Wilson and Stevens, 1981). Metals concentrations were generally lower in the deeper silty sand than in the overlying fill. This may be more related to the nature of the fill that to any historical or current on-site activities.

Cyanide was only detected in three soil samples, all in the vicinity of the former purifier and oxide houses. The presence of cyanide in the soil (at levels of 1.0 to 3.2 mg/kg) is most likely attributable to spillage during cleaning of the purifier house (Wilson and Stevens, 1981).

Phenolics were detected in two Task 3 soil samples: B-9 (0.74 mg/kg) and B-15 (2.6 mg/kg). Sample B-9 was collected adjacent to the former gas house, and Sample B-15 was taken near the former filter beds. Phenolics were detected in two Task 2 samples at higher levels at B-3 and B-5 (3.6 and 2.6 mg/kg, respectively). Phenolics are widely distributed in the environment, due to both natural (i.e., vegetative decomposition) and manmade processes. Tars and wastewater are the sources of phenolics at coal gas plants, although tars produced by water gas plants, such as the one at Mechanicville, typically contain only negligible amounts of phenolics. Site activities may have contributed to the detectable levels of phenolics in soils at the gas house and filter beds (USWAG, 1984).

TOC analysis is a generic test for organic material and measures all VOCs and SVOCs, as well as naturally occurring biological material. The TOC concentration in the Task 3 soil samples ranged from 22,000 to 42,000 mg/kg. All Task 3 TOC levels were within the range established by Task 2 sampling (8,300 to 190,000 mg/kg). The highest TOC levels (greater than 100,000 mg/kg) typically correlated to soil samples where the highest levels of VOCs and/or PAHs were observed.

Based on results of Task 2 and Task 3 soil sample analyses and the drilling program, coal-tar- and coal-gasification-related chemicals (i.e., VOCs, PAHs, and cyanide) are present in the site's subsurface environment. Field logs of B-3, B-4, B-5, B-6, B-9, B-10, B-12, B-13, and B-15, and test pit excavations

TP-4 and TP-5 further document this. Visible coal tar contamination was observed at depths up to 16.8 feet in soils, and stained bedrock was observed in B-13 at a depth of 55 feet. The logs of the test pits and borings are presented in Appendix A.

3.6.2 Groundwater

During Task 3, groundwater samples were collected in December 1987 and March 1988 from the 12 wells at the site. The six Task 2 wells were sampled on four previous occasions (i.e., September and December of 1986, and March and June of 1987). All groundwater samples were analyzed for VOCs, SVOCs, dissolved iron and zinc, cyanide, phenolics, and TOC (see Appendix B-1 for analytical methods). Conductivity, pH, and temperature were also measured in the field. QA samples included (1) sampler blanks prepared in the field and analyzed for the same parameters as groundwater samples; (2) trip blanks prepared prior to field work and analyzed for VOCs only; and (3) filtration blanks prepared in the field by running deionized water through the filter apparatus (used for dissolved metals samples) and analyzing for selected inorganics. Appendix B-3 contains results of QA sample analyses.

Results of the Task 3 groundwater analyses (expressed in mg/ℓ [ppm]) are presented in Table 3-2 and discussed in the following paragraphs. Appendix B-2 contains Task 2 analytical results.

An interpretation of the distribution of total VOCs in shallow groundwater based on maximum concentrations detected during Task 3 sampling is presented in Figure 3-9. Deep bedrock wells (i.e., MW-6, MW-13, MW-14, and MW-15) typically yielded higher concentrations of VOCs, with the lowest concentration found at MW-15 (0.037 mg/ℓ) and the highest concentration found at MW-13 (62 mg/ℓ).

Volatile aromatic compounds, a subset of VOCs, were detected consistently in all wells except MW-1, MW-2, and MW-11. MW-1, MW-10, and MW-11 are located upgradient of the historical coal gasification plant. MW-2 is downgradient from the former distribution gas holder, but soils data from B-2 and B-7 suggest that little or no organic contaminants are in this area. Volatile aromatics were detected consistently in shallow bedrock wells MW-3, MW-4, MW-5, and MW-12, but were only present in soil samples at the corresponding locations B-3, B-4, and B-5. Volatile aromatics were detected at each of the deep bedrock wells at concentrations typically greater than those in the shallower wells.

PAHs were observed in at least one sample from every groundwater monitoring well except MW-1, MW-2, and MW-11. The average concentrations, averaged over all the samples collected at each well, ranged from nondetectable at MW-11 to 1500 mg/ℓ at MW-12. PAHs were observed at maximum concentrations exceeding 100 mg/ℓ in 4 wells: MW-3, MW-5, and MW-12 (190, 110, and 1500 mg/ℓ, respectively). PAHs were observed at maximum concentrations exceeding 10 mg/ℓ at MW-6 and MW-13 (22 and 11 mg/ℓ, respectively). The distribution of PAHs across the site is similar to the distribution in the soil samples, indicating that contaminated soils are source areas for PAH contaminants found in the groundwater.

TABLE 3-2
Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-01		MW-02		
SCREENED ZONE	SOIL/SHALLOW BEDROCK		SOIL/SHALLOW BEDROCK		
SAMPLE IDENTIFIER	MW-01	MW-01	MW-02	MW-02	MW-02 DUP
DATE OF SAMPLE COLLECTION	12/22/87	3/29/88	12/22/87	3/29/88	3/29/88
-VOLATILE AROMATICS-		** Volatile Organics (mg/l) (1) **			
Benzene	ND (2)	ND	ND	ND	-- (4)
Toluene	ND	ND	ND	ND	--
Ethylbenzene	ND	ND	ND	ND	--
Styrene	ND	ND	ND	ND	--
Total Xylenes	ND	ND	ND	ND	--
-OTHER-					
Methylene Chloride	ND	ND	ND	ND	--
2-Butanone	ND	ND	ND	ND	--
1,1,1-Trichloroethane	ND	ND	ND	ND	--
Vinyl Acetate	ND	ND	ND	ND	--
2-Hexanone	ND	ND	ND	ND	--
Chlorobenzene	ND	T	ND	T	--
1,1-Dichloroethane	ND	ND	ND	ND	--
Trichloroethene	ND	ND	ND	ND	--
Total Volatile Aromatics	ND	ND	ND	ND	--
Total Volatile Organics	ND	T	ND	T	--
		** Semi-Volatile Organics (mg/l) (1) **			
-PAH-					
Acenaphthene	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene (9)	ND	ND	ND	ND	ND
Benzo(g,h,i)Perylene	ND	ND	ND	ND	ND
Benzo(a)Anthracene	ND	ND	ND	ND	ND
Benzo(a)Pyrene	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND
-OTHER-					
2,4 - Dimethylphenol	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
4,6 - Dinitro-2-Methylphenol	ND	ND	ND	ND	ND
4-Methylphenol	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	T (3)	ND	T	ND	ND
Total PAH	ND	ND	ND	ND	ND
Total Semi-Volatile Organics	T	ND	T	ND	ND
		** Other Chemicals (mg/l) **			
-DISSOLVED METALS-					
Iron	0.07	ND	0.04	0.12	0.23
Zinc	ND	0.02	ND	0.02	0.1
-CYANIDE-					
Total Cyanide (13)	0.01	ND	ND	ND	ND
Undistilled Cyanide (10)	ND	ND	ND	ND	ND
-OTHER-					
Total Recoverable Phenolics	0.006	ND	0.016	0.006	0.011
Total Organic Carbon	3.4	2.8	2.9	2.2	2.8
Total New York State Regulated Organics (5)	0.006	ND	0.0160	0.006	0.011
pH (6)	7.5	6.5	7.7	6.6	6.7
Conductivity (7)	1125	1389	1153	1159	1302
Temperature (8)	11.1	10.2	11.9	7.0	7.0

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class GA Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported.

TABLE 3-2 (Continued)
Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-03		MW-04		MW-05	
SCREENED ZONE	SOIL		SOIL		SOIL/SHALLOW BEDROCK	
SAMPLE IDENTIFIER	MW-03	MW-03	MW-04	MW-04	MW-05	MW-05
DATE OF SAMPLE COLLECTION	12/22/87	3/30/88	12/22/87	3/30/88	12/22/87	3/30/88
-VOLATILE AROMATICS-	** Volatile Organics (mg/l) (1) **					
Benzene	0.17	0.15	0.26	0.2	0.15	T
Toluene	0.021	ND	0.23	ND	0.094	ND
Ethylbenzene	0.11	ND	0.058	0.17	ND	0.054
Styrene	ND (2)	ND	ND	ND	ND	ND
Total Xylenes	0.40	0.42	2.2	1.3	0.19	0.16
-OTHER-						
Methylene Chloride	ND	ND	ND	ND	ND	ND
2-Butanone	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	T	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND
Total Volatile Aromatics	0.70	0.57	2.8	1.67	0.43	0.214
Total Volatile Organics	0.70	0.57	2.8	1.67	0.43	0.214
	** Semi-Volatile Organics (mg/l) (1) **					
-PAH-						
Acenaphthene	30	ND	T	T	0.51	22
Acenaphthylene	T (3)	ND	T	T	T	2.7
Anthracene	9.7	ND	ND	T	T	ND
Benzo(b)Fluoranthene	T	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene (9)	ND	ND	ND	ND	ND	1.3
Benzo(g,h,i)Perylene	ND	ND	ND	ND	ND	ND
Benzo(a)Anthracene	T	ND	ND	ND	ND	2.6
Benzo(a)Pyrene	T	T	ND	ND	ND	2.4
Chrysene	T	ND	ND	ND	ND	ND
Fluoranthene	12	T	ND	T	T	9.4
Fluorene	13	ND	T	T	T	10
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ND	ND
Naphthalene	64	ND	1.9	1.4	3.6	30
Phenanthrene	38	ND	T	T	0.32	26
Pyrene	21	ND	ND	ND	T	1.4
-OTHER-						
2,4 - Dimethylphenol	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	T	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	T
2-Chloronaphthalene	ND	ND	ND	ND	ND	T
2-Methylnaphthalene	34	ND	0.65	0.78	1.1	35
2-Methylphenol	ND	ND	ND	ND	ND	ND
2-Nitroaniline	ND	T	ND	ND	ND	T
3-Nitroaniline	ND	ND	ND	ND	ND	T
4,6 - Dinitro-2-Methylphenol	ND	ND	ND	ND	ND	ND
4-Methylphenol	ND	ND	ND	ND	ND	T
4-Nitroaniline	ND	T	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	ND	T
Benzyl Alcohol	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	T	ND	ND
Dibenzofuran	T	T	ND	ND	T	2
Hexachloroethane	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	T
Nitrobenzene	ND	ND	ND	ND	ND	ND
Phenol	ND	ND	T	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	T	ND
Total PAH	190	ND	1.9	1.4	4.4	110
Total Semi-Volatile Organics	220	ND	2.6	2.18	5.5	142.2
	** Other Chemicals (mg/l) **					
-DISSOLVED METALS-						
Iron	8.8	14.4	20	9.25	13	25
Zinc	0.11	0.2	0.52	0.05	0.54	1.09
-CYANIDE-						
Total Cyanide (13)	ND	0.27	0.05	0.05	ND	0.05
Undistilled Cyanide (10)	--	ND	ND	ND	ND	ND
-OTHER-						
Total Recoverable Phenolics	17	0.025	0.021	0.027	0.028	0.026
Total Organic Carbon	50,000 (12)	42	8.4	9.9	8,000 (12)	21
Total New York State Regulated Organics (5)	237.7	0.595	5.421	3.877	5.598	142.34
pH (6)	(11)	(11)	(11)	(11)	(11)	(11)
Conductivity (7)	(11)	(11)	(11)	(11)	(11)	(11)
Temperature (8)	(11)	(11)	(11)	(11)	(11)	(11)

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class 6A Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well. e CN- present.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported.

02-Aug-89

TABLE 3-2 (Continued)
Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-06		MW-10	
SCREENED ZONE	BEDROCK		SOIL	
SAMPLE IDENTIFIER	MW-06	MW-06	MW-10	MW-10
DATE OF SAMPLE COLLECTION	12/22/87	3/30/88	12/22/87	3/29/88
-VOLATILE AROMATICS-		** Volatile Organics (mg/l) (1) **		
Benzene	0.88	0.06	ND (2)	-- (4)
Toluene	0.13	ND	ND	--
Ethylbenzene	0.14	ND	ND	--
Styrene	ND	ND	ND	--
Total Xylenes	2.4	0.04	0.012	--
-OTHER-				
Methylene Chloride	ND	ND	ND	--
2-Butanone	ND	ND	ND	--
1,1,1-Trichloroethane	ND	ND	ND	--
Vinyl Acetate	ND	ND	ND	--
2-Hexanone	ND	ND	ND	--
Chlorobenzene	ND	ND	ND	--
1,1-Dichloroethane	ND	ND	ND	--
Trichloroethene	ND	ND	ND	--
Total Volatile Aromatics	3.6	0.1	0.012	--
Total Volatile Organics	3.6	0.1	0.012	--
		** Semi-Volatile Organics (mg/l) (1) **		
-PAH-				
Acenaphthene	2.2	T	0.10	T
Acenaphthylene	T	T	T (3)	ND
Anthracene	0.89	T	T	ND
Benzo(b)Fluoranthene	T	T	ND	T
Benzo(k)Fluoranthene (9)	T	ND	ND	ND
Benzo(g,h,i)Perylene	T	ND	ND	ND
Benzo(a)Anthracene	T	T	ND	T
Benzo(a)Pyrene	T	ND	ND	ND
Chrysene	T	ND	ND	T
Fluoranthene	1.0	T	T	ND
Fluorene	1.1	ND	0.028	T
Indeno(1,2,3-cd)Pyrene	T	ND	ND	ND
Naphthalene	12	ND	ND	ND
Phenanthrene	3.5	T	T	ND
Pyrene	1.6	T	T	ND
-OTHER-				
2,4 - Dimethylphenol	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	T
2-Chloronaphthalene	ND	ND	ND	ND
2-Methylnaphthalene	4.6	ND	T	ND
2-Methylphenol	ND	ND	ND	ND
2-Nitroaniline	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND
4,6 - Dinitro-2-Methylphenol	ND	ND	ND	T
4-Methylphenol	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	T
Benzoic Acid	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND
Dibenzofuran	T	ND	T	ND
Hexachloroethane	ND	ND	ND	T
N-Nitrosodiphenylamine	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND
Phenol	ND	T	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	0.41
Total PAH	22	ND	0.13	ND
Total Semi-Volatile Organics	27	ND	0.13	0.41
		** Other Chemicals (mg/l) **		
-DISSOLVED METALS-				
Iron	11	5.95	0.64	1.41
Zinc	0.048	0.02	ND	0.02
-CYANIDE-				
Total Cyanide (13)	0.06	0.01	0.01	ND
Undistilled Cyanide (10)	0.07	ND	ND	ND
-OTHER-				
Total Recoverable Phenolics	0.056	0.037	ND	0.029
Total Organic Carbon	10,000 (12)	31	61	11
Total New York State Regulated Organics (5)	30.656	0.137	0.142	0.439
pH (6)	7.7	(11)	7.5	6.6
Conductivity (7)	1154	(11)	1262	1576
Temperature (8)	12.0	(11)	12.4	9.6

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class 6A Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported.

TABLE 3-2 (Continued)
Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-11			MW-12	
SCREENED ZONE	SOIL/SHALLOW BEDROCK			SOIL	
SAMPLE IDENTIFIER	MW-11	MW-11 Dup	MW-11	MW-12	MW-12
DATE OF SAMPLE COLLECTION	12/22/87	12/22/87	3/29/88	12/22/87	3/29/88
-VOLATILE AROMATICS-	** Volatile Organics (mg/l) (1) **				
Benzene	ND	ND	ND	ND	0.12
Toluene	ND	ND	ND	ND	T
Ethylbenzene	ND	ND	ND	ND	1.1
Styrene	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	0.075	1.2
-OTHER-					
Methylene Chloride	ND	ND	ND	ND	ND
2-Butanone	ND	ND	ND	ND	T
1,1,1-Trichloroethane	0.0026	0.0044	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND
Total Volatile Aromatics	ND	ND	ND	0.075	2.4
Total Volatile Organics	0.0026	0.0044	ND	0.075	2.4
	** Semi-Volatile Organics (mg/l) (1) **				
-PAH-					
Acenaphthene	ND	ND	ND	ND	210
Acenaphthylene	ND	ND	ND	ND	T
Anthracene	ND	ND	ND	ND	86
Benzo(b)Fluoranthene	ND	ND	ND	ND	T
Benzo(k)Fluoranthene (9)	ND	ND	ND	ND	T
Benzo(g,h,i)Perylene	ND	ND	ND	ND	ND
Benzo(a)Anthracene	ND	ND	ND	ND	T
Benzo(a)Pyrene	ND	ND	ND	ND	T
Chrysene	ND	ND	ND	ND	T
Fluoranthene	ND	ND	ND	ND	82
Fluorene	ND	ND	ND	ND	110
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	580
Phenanthrene	ND	ND	ND	ND	320
Pyrene	ND	ND	ND	ND	130
-OTHER-					
2,4 - Dimethylphenol	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	ND	540
2-Methylphenol	ND	ND	ND	ND	ND
2-Nitroaniline	ND	ND	T	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
4,6 - Dinitro-2-Methylphenol	ND	ND	ND	ND	ND
4-Methylphenol	ND	ND	ND	ND	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	ND
Benzyl Alcohol	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	T
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
Phenol	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	T	ND	T	ND
Total PAH	ND	ND	ND	ND	1500
Total Semi-Volatile Organics	ND	T	ND	ND	2100
	** Other Chemicals (mg/l) **				
-DISSOLVED METALS-					
Iron	0.15	0.26	0.28	2.7	4.45
Zinc	ND	ND	0.01	ND	0.02
-CYANIDE-					
Total Cyanide (13)	ND	ND	ND	0.8	0.58
Undistilled Cyanide (10)	ND	ND	ND	0.02	ND
-OTHER-					
Total Recoverable Phenolics	0.005	0.01	ND	0.016	0.2
Total Organic Carbon	5.4	8.9	4.9	18	13
Total New York State Regulated Organics (5)	0.0076	0.0144	ND	0.091	2060.6
pH (6)	7.6	7.6	6.9	7.4	(11)
Conductivity (7)	785	1098	939	1470	(11)
Temperature (8)	11.7	11.1	9.1	11.3	(11)

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class 6A Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported

TABLE 3-2 (Continued)
Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-13			MW-14	
SCREENED ZONE	BEDROCK			BEDROCK	
SAMPLE IDENTIFIER	MW-13	MW-13	MW-13 Dup	MW-14	MW-14
DATE OF SAMPLE COLLECTION	12/22/87	3/29/88	3/29/88	12/22/87	3/29/88
-VOLATILE AROMATICS-		** Volatile Organics (mg/l) (1) **			
Benzene	9.6	12	-- (4)	2.3	2.2
Toluene	3.6	6.4	--	0.34	ND
Ethylbenzene	2.0	2	--	0.061	T
Styrene	0.94	1.8	--	ND	ND
Total Xylenes	2.2	3.5	--	0.79	0.16
-OTHER-					
Methylene Chloride	ND	36	--	ND	ND
2-Butanone	ND	ND	--	ND	ND
1,1,1-Trichloroethane	ND	ND	--	ND	ND
Vinyl Acetate	ND	ND	--	ND	ND
2-Hexanone	ND	ND	--	ND	ND
Chlorobenzene	ND	ND	--	ND	ND
1,1-Dichloroethane	ND	ND	--	ND	ND
Trichloroethene	0.053	ND	--	ND	ND
Total Volatile Aromatics	18	26	--	3.5	2.4
Total Volatile Organics	18	62	--	3.5	2.4
		** Semi-Volatile Organics (mg/l) (1) **			
-PAH-					
Acenaphthene	T	T	T	0.069	0.076
Acenaphthylene	T	0.94	0.72	T	T
Anthracene	ND	T	T	T	ND
Benzo(b)Fluoranthene	ND	T	T	ND	ND
Benzo(k)Fluoranthene (9)	ND	T	ND	ND	ND
Benzo(g,h,i)Perylene	ND	ND	ND	ND	ND
Benzo(a)Anthracene	ND	T	T	ND	ND
Benzo(a)Pyrene	ND	T	T	ND	ND
Chrysene	ND	T	T	ND	ND
Fluoranthene	ND	0.3	T	ND	ND
Fluorene	T	ND	ND	T	T
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ND
Naphthalene	4.6	8.1	7.8	T	1.8
Phenanthrene	T	1.3	0.92	T	T
Pyrene	ND	0.45	0.33	ND	ND
-OTHER-					
2,4 - Dimethylphenol	ND	ND	ND	ND	T
2,4-Dinitrotoluene	ND	T	ND	ND	ND
2,6-Dinitrotoluene	ND	T	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND	ND	ND
2-Methylnaphthalene	0.78	2.7	2.1	0.080	0.22
2-Methylphenol	T	ND	ND	T	T
2-Nitroaniline	ND	ND	ND	ND	ND
3-Nitroaniline	ND	ND	ND	ND	ND
4,6 - Dinitro-2-Methylphenol	ND	ND	ND	ND	ND
4-Methylphenol	T	ND	ND	0.029	ND
4-Nitroaniline	ND	ND	ND	ND	ND
4-Nitrophenol	ND	ND	ND	ND	ND
Benzoic Acid	ND	ND	ND	ND	T
Benzyl Alcohol	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	ND	ND	ND
Dibenzofuran	ND	T	T	ND	ND
Hexachloroethane	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND
Nitrobenzene	ND	ND	ND	ND	ND
Phenol	0.58	ND	ND	0.36	T
bis(2-Ethylhexyl)phthalate	ND	ND	ND	T	ND
Total PAH	4.6	11	9.8	0.069	1.9
Total Semi-Volatile Organics	6.0	14	12	0.54	2.1
		** Other Chemicals (mg/l) **			
-DISSOLVED METALS-					
Iron	0.14	0.26	0.18	0.4	0.16
Zinc	ND	0.01	0.02	ND	0.03
-CYANIDE-					
Total Cyanide (13)	0.15	0.1	0.13	0.12	0.09
Undistilled Cyanide (10)	ND	ND	ND	0.02	ND
-OTHER-					
Total Recoverable Phenolics	0.053	0.064	0.058	0.063	0.3
Total Organic Carbon	9	7.6	8.5	9.2	8.6
Total New York State Regulated Organics (5)	23.113	42.814	11.928	4.103	4.756
pH (6)	7.7	6.7	6.4	7.6	6.6
Conductivity (7)	1133	1332	1589	1157	1450
Temperature (8)	12.1	11.6	10.9	12.1	10.1

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class 6A Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported

Task 3 Groundwater Analytical Results
Mechanicville Site

WELL IDENTIFIER	MW-15		
SCREENED ZONE	BEDROCK		
SAMPLE IDENTIFIER	MW-15	MW-15 Dup	MW-15
DATE OF SAMPLE COLLECTION	12/22/87	12/22/87	3/29/88
-VOLATILE AROMATICS-		** Volatile Organics (mg/l) (1) **	
Benzene	0.0026	0.0058	0.018
Toluene	ND	ND	ND
Ethylbenzene	ND	ND	ND
Styrene	ND	ND	ND
Total Xylenes	0.0027	0.0031	0.013
-OTHER-			
Methylene Chloride	ND	ND	ND
2-Butanone	ND	ND	ND
1,1,1-Trichloroethane	0.017	0.025	0.012
Vinyl Acetate	ND	ND	ND
2-Hexanone	ND	ND	T
Chlorobenzene	ND	ND	ND
1,1-Dichloroethane	0.0033	0.0031	ND
Trichloroethene	ND	ND	ND
Total Volatile Aromatics	0.0053	0.0089	0.031
Total Volatile Organics	0.026	0.037	0.043
		** Semi-Volatile Organics (mg/l) (1) **	
-PAH-			
Acenaphthene	0.040	0.026	0.031
Acenaphthylene	0.045	0.027	T
Anthracene	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	ND
Benzo(k)Fluoranthene (9)	ND	ND	ND
Benzo(g,h,i)Perylene	ND	ND	ND
Benzo(a)Anthracene	ND	ND	ND
Benzo(a)Pyrene	ND	ND	ND
Chrysene	ND	ND	ND
Fluoranthene	ND	ND	ND
Fluorene	T	T	0.011
Indeno(1,2,3-cd)Pyrene	ND	ND	ND
Naphthalene	0.091	T	T
Phenanthrene	T	T	T
Pyrene	ND	ND	T
-OTHER-			
2,4 - Dimethylphenol	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND
2-Methylnaphthalene	0.030	T	ND
2-Methylphenol	ND	ND	ND
2-Nitroaniline	ND	ND	ND
3-Nitroaniline	ND	ND	ND
4,6 - Dinitro-2-Methylphenol	ND	ND	ND
4-Methylphenol	ND	ND	ND
4-Nitroaniline	ND	ND	ND
4-Nitrophenol	ND	ND	ND
Benzoic Acid	ND	ND	ND
Benzyl Alcohol	ND	ND	T
Butylbenzylphthalate	ND	ND	ND
Dibenzofuran	ND	ND	T
Hexachloroethane	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND
Nitrobenzene	ND	ND	T
Phenol	ND	ND	T
bis(2-Ethylhexyl)phthalate	ND	ND	ND
Total PAH	0.18	0.053	0.042
Total Semi-Volatile Organics	0.21	0.053	0.042
		** Other Chemicals (mg/l) **	
-DISSOLVED METALS-			
Iron	0.13	ND	0.16
Zinc	ND	0.014	0.01
-CYANIDE-			
Total Cyanide (13)	ND	0.06	ND
Undistilled Cyanide (10)	ND	ND	ND
-OTHER-			
Total Recoverable Phenolics	0.006	0.006	ND
Total Organic Carbon	2.9	3.2	3.9
Total New York State Regulated Organics (5)	0.242	0.069	0.085
pH (6)	7.9	7.9	7.2
Conductivity (7)	949	1125	1029
Temperature (8)	12.1	11.4	13.4

NOTES:
(1) Sample values were obtained by GC/MS (USEPA Methods 624 and 625).
(2) ND = Not detected (see Appendix B-4 for Minimum Detection Limits).
(3) T = Trace (Concentrations detected below quantifiable reporting limits).
(4) -- = Not analyzed (Laboratory reported vial was received broken).
(5) The N.Y. State Class 6A Groundwater Standard for Organics includes phenolic compounds, volatile organics and semivolatile organics; except for Acetone, Styrene, Acenaphthalene, Benzo(g,h,i)Perylene, Dibenzo(a,h)Anthracene and bis(2-Ethylhexyl)phthalate.
(6) pH readings in standard units.
(7) Conductivity readings in micromhos/cm.
(8) Temperature in degrees Celsius.
(9) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coelute.
(10) Undistilled CN = Free and dissociable CN-; method used and detected most, but not necessarily all, of the amenable CN- present.
(11) Sample too contaminated to submerge probes.
(12) Free Product in well.
(13) Total cyanide concentration may be less than distilled cyanide concentration due to analytical methods used and low detection levels.
(14) NR = Not Reported.

LEGEND

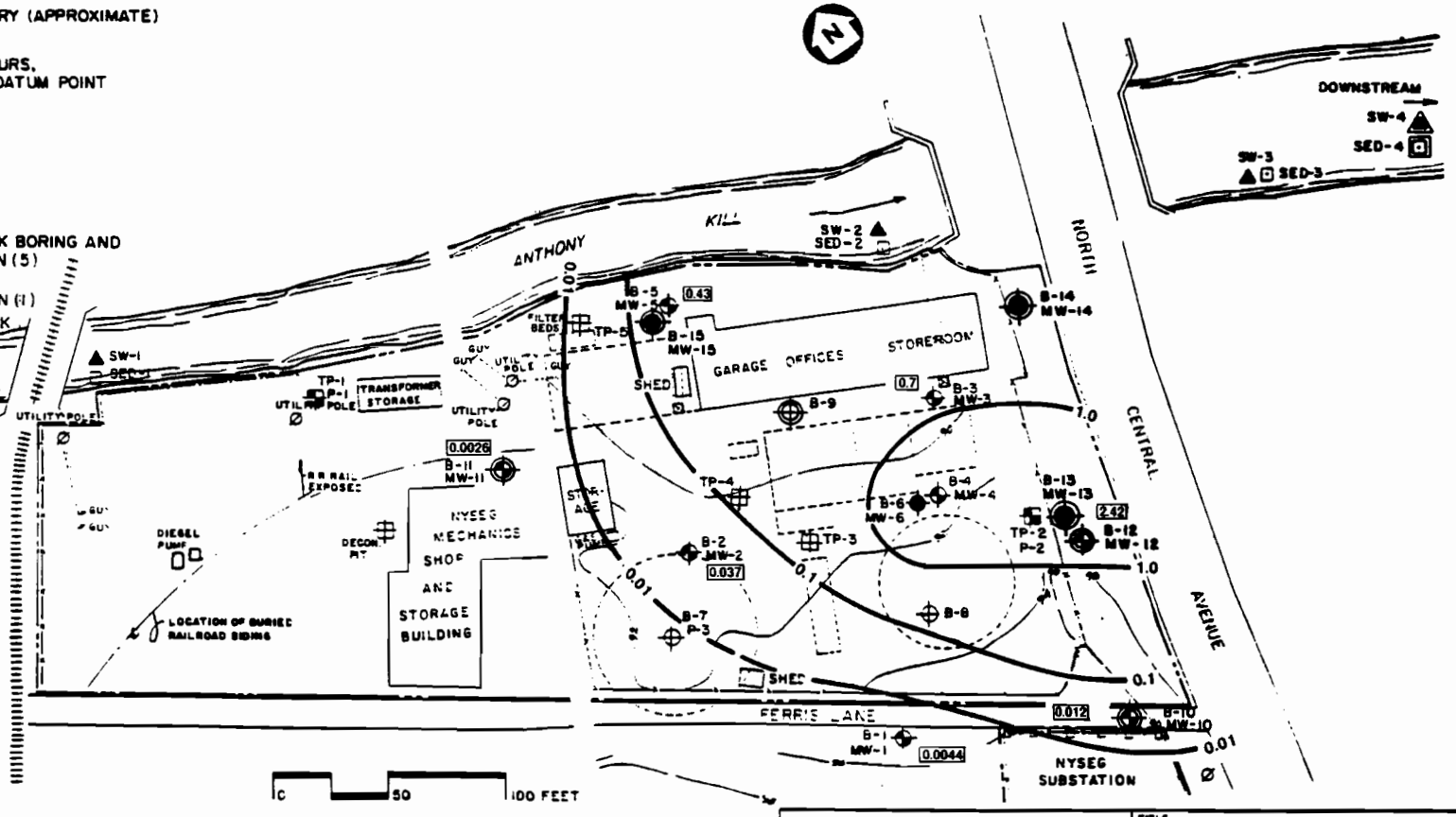
- APPROXIMATE LOCATION OF FORMER GAS PLANT STRUCTURES
- NYSEG PROPERTY BOUNDARY (APPROXIMATE)
- FENCE
- GROUND ELEVATION CONTOURS, IN FEET ABOVE RELATIVE DATUM POINT
- STORM DRAIN

TASK 2:

- SOIL AND SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (5)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (1)
- SOIL AND SHALLOW BEDROCK BORING LOCATION (2)
- TEST PIT AND PIEZOMETER LOCATION (2)
- TEST PIT LOCATION (3)
- SURFACE WATER SAMPLE LOCATION (3)
- SEDIMENT SAMPLE LOCATION (3)

TASK 3:

- SOIL/SHALLOW BEDROCK BORING AND MONITORING WELL LOCATION (3)
- DEEP BEDROCK BORING AND MONITORING WELL LOCATION (3)
- SOIL BORING LOCATION (1)
- SURFACE WATER SAMPLE LOCATION (1)
- SEDIMENT SAMPLE LOCATION (1)
- 1.0 — INTERPRETIVE CONTOUR OF MAXIMUM CONCENTRATION (in mg/l) OF TOTAL VOC s IN SHALLOW GROUNDWATER DURING TASK 3
- 2.42 — MAXIMUM CONCENTRATION IN mg/l OF TOTAL VOC s IN SAMPLE COLLECTED DURING TASK 3



BASE MAP SOURCE:

TOPOGRAPHIC SURVEY PREPARED BY DAVID A. FLANDERS ASSOCIATES, 6 MORNINGSIDE DRIVE, BALLSTON LAKE, NEW YORK, DATED 6/26/86 (86-72-S). REVISED 12/87.

ELEVATIONS BASED ON ASSUMED DATUM OF 100.00' AT R.R. SPIKE IN UTILITY POLE LOCATED 25' SOUTH OF INTERSECTION OF FERRIS LANE AND NORTH CENTRAL AVENUE.

E.C. JORDAN CO.
CONSULTING ENGINEERS

CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

TITLE
DISTRIBUTION OF TOTAL VOC s IN SHALLOW GROUNDWATER MECHANICVILLE SITE

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-03

FIGURE 3-9

The highest organic chemical concentrations in groundwater were found at MW-12 (downgradient of the former relief gas holder), MW-3 (downgradient of the former oxide and purifier houses), MW-5 (downgradient of the former filter beds) and MW-13 (downgradient of the former relief gas holder, adjacent to MW-12); the lowest organic chemical concentrations were found in MW-1, MW-10, and MW-11 (upgradient of the site), MW-2 (adjacent to the former gas distribution holder), and MW-15 (downgradient of the former filter beds, adjacent to MW-5). On at least one occasion, no organics were detected in MW-1, MW-2, and MW-11.

At MW-12, 7 PAH compounds were detected in the March 1988 sample while none were detected in the December 1987 sample. A comparison between the PAH concentrations in Table 3-2 and the solubility limits for PAH compounds in water (see Appendix B-2) indicates that most detectable concentrations are well above the solubility limits. The sampling protocol for the semi-volatile organic analysis does not allow sample filtration; therefore, discrepancies in the PAH results are likely related to differences in the amount of soil in the analytical samples.

Other organic chemicals, including 1,1,1-trichloroethane, 1,1-dichloroethane, and trichloroethene were detected in several groundwater samples at concentrations below 0.1 mg/ℓ. Bis(2-ethylhexyl)phthalate and methylene chloride were detected in ranges attributable to laboratory contamination. These organic compounds showed no pattern of occurrence regarding shallow versus deep wells or upgradient versus downgradient wells, and are not typically associated with coal gasification wastes. These compounds are not believed to be coal gasification plant-derived chemicals; however, they may be associated with site use following closure of the gas plant, or have an off-site origin.

Dissolved iron was present in at least one sample from every groundwater monitoring well. Concentrations in MW-1, MW-2, MW-10, and MW-11, which are considered to provide the most representative background concentrations for the site, ranged from 0.04 to 1.41 mg/ℓ. The wells with the highest concentrations of dissolved iron were MW-4, MW-5, MW-3, MW-6, and MW-12 (25, 20, 14.4, 11, and 4.45 mg/ℓ, respectively). These are the same wells that had the highest concentrations of PAHs, indicating that the elevated iron levels in the groundwater are related to on-site contamination.

Dissolved zinc concentrations were fairly uniform in all groundwater samples. Zinc was detected at least once in every well, in concentrations ranging from 0.01 to 0.11 mg/ℓ, except for one sample from MW-4 and both samples from MW-5, which contained unusually high levels (0.52, 0.54, and 1.09 mg/ℓ, respectively). The maximum zinc concentration at MW-11 (an up-gradient well) was 0.01 mg/ℓ. The elevated levels of zinc found at MW-4 and MW-5 may be related to past site usage of zinc acetate. The uniformity of zinc concentrations at other sampling locations suggests that it is a natural constituent of site groundwater which has not been elevated by site activities.

Cyanide was detected in all wells except MW-2 and MW-11 during Task 3. The highest levels of total cyanide were detected at MW-12 (0.8 and 0.58 mg/ℓ), located downgradient of the former relief gas holder. Other shallow wells

contained cyanide in concentrations ranging from nondetect (ND) to 0.27 mg/ℓ, while deep wells contained cyanide in concentrations ranging from ND to 0.15 mg/ℓ.

Total recoverable phenolics were detected in all wells. The maximum concentration in upgradient well MW-11 was 0.01 mg/ℓ. Phenolics concentrations in the deep wells ranged from ND to 0.3 mg/ℓ, while concentrations in shallow wells ranged from ND to 17 mg/ℓ.

TOC concentrations in the groundwater samples ranged from 2.2 to 61 mg/ℓ, except for three samples in which free product (coal tar) was noted in December 1987 sampling. In these three wells (i.e., MW-3, MW-5, and MW-6), TOC levels ranged from 8,000 to 50,000 mg/ℓ. TOC results do not correlate well with the VOC and SVOC analytical results, indicating there were other organic materials in the samples analyzed.

3.6.3 Surface Water

Task 2 analytical results indicated that site-derived chemicals were not present in the Anthony Kill. Task 3 sampling was designed to further evaluate surface water conditions in the vicinity of the Mechanicville site. Surface water samples were collected from three locations along the Anthony Kill during two sampling episodes (December 1987 and March 1988). Samples were collected upstream (SW-01), adjacent (SW-02), and downstream (SW-04) relative to the site. Locations SW-01 and SW-02 were sampled during Task 2. Downstream location SW-04 was chosen based on the groundwater flow direction at the site, which suggests that site groundwater discharges to the Anthony Kill in the vicinity of SW-04. Samples were analyzed for VOCs, SVOCs, selected trace metals (i.e., iron and zinc), cyanide, phenolics, and TOC. Analytical results are presented in Table 3-3, with concentrations expressed in mg/ℓ (ppm). Task 2 analytical results are included in Appendix B-2. QA water samples included sampler blanks and trip blanks (see Section 3.5.2); results are presented in Appendix B-3.

No VOCs or PAHs were detected in any surface water samples. The only organic compound detected in surface water was bis(2-ethylhexyl)phthalate, found at SW-01 (the upstream location) on both sampling occasions. This compound was detected at low levels (less than 0.5 mg/ℓ) in a range attributable to laboratory contamination. Because it is present only at the upstream sampling location and at a low concentration, and because it is a common laboratory contaminant, it is unlikely that bis(2-ethylhexyl)phthalate is a site-derived chemical.

The metals analyses indicate the presence of iron in samples from all three stations at comparable levels (0.20 to 1.8 mg/ℓ). The highest concentration of iron was found at the location adjacent to the site (SW-02) during both sampling rounds. Zinc was detected in December 1987 samples at SW-02 (0.014 mg/ℓ), and in March 1988 samples at SW-01 and SW-02 (0.02 to 0.03 mg/ℓ). Phenolics were detected in the downstream sample (SW-03) in December 1987, but were not detected in any samples during March 1988. These results show no clear pattern of site contributions of these chemicals to the Anthony Kill.

TABLE 3-3
Task 3 Surface Water Analytical Results
Mechanicville Site

SITE IDENTIFIER:	------UPSTREAM------		------ADJACENT------		-----DOWNSTREAM------	
SAMPLE IDENTIFIER:	SW-01	SW-01	SW-02	SW-02	SW-04	SW-04
DATE OF SAMPLE COLLECTION:	12/22/87	3/30/88	12/22/87	3/30/88	12/22/87	3/30/88
** Volatile Organics (mg/l) **						
- VOLATILE AROMATICS -						
Benzene	ND (1)	ND	ND	-- (2)		
Toluene	ND	ND	ND	--	ND	--
Ethylbenzene	ND	ND	ND	--	ND	--
Styrene	ND	ND	ND	--	ND	--
Total Xylenes	ND	ND	ND	--	ND	--
- OTHER -						
Methylene Chloride	ND	ND	ND	--	ND	--
2-Butanone	ND	ND	ND	--	ND	--
Total Volatile Aromatics	ND	ND	ND	--	ND	--
Total Volatile Organics	ND	ND	ND	--	ND	--
** Semi-Volatile Organics (mg/l) **						
-PAH-						
Acenaphthene	ND	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)Perylene	ND	ND	ND	ND	ND	ND
Benzo(a)Anthracene	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND	ND	ND
-OTHER-						
bis (2-Ethylhexyl) Phthalate	0.39	0.034	ND	ND	ND	ND
Total PAH	ND	ND	ND	ND	ND	ND
Total Semi-Volatile Organics	0.39	0.034	ND	ND	ND	ND
** Other Chemicals (mg/l) **						
-METALS-						
Iron	0.20	0.38	1.1	1.8	0.24	0.42
Zinc	ND	0.03	0.014	0.02	ND	ND
-CYANIDE-						
Total Cyanide	ND	ND	ND	ND	ND	ND
Undistilled Cyanide (3)	ND	ND	ND	ND	ND	ND
-OTHER-						
Total Recoverable Phenolics	ND	ND	ND	ND	ND	0.011
Total Organic Carbon	6.1	4.2	6.1	4.9	4.8	4.7

NOTES:
(1) ND = Not detected (see Appendix B-4 for minimum detection limits).
(2) NA = Not analyzed (laboratory reported vial was received broken).
(3) Undistilled CN = Free dissociable CN-; method used detected most, but not necessarily all, of amenable CN- present

3.6.4 Sediment

Task 2 sediment sampling, performed in September and December of 1986 and March and June of 1987, suggested that site-derived chemicals were present in Anthony Kill sediments adjacent to the site. Task 3 sampling was designed to further evaluate whether site-derived chemicals are present in the Anthony Kill sediments. Task 3 samples were collected during two episodes (December 1987 and March 1988) from the same locations along the Anthony Kill as surface water samples. The samples were analyzed for VOCs and SVOCs. Task 3 analytical results are presented in Table 3-4, with concentrations expressed in mg/kg (ppm). Task 2 analytical results are included in Appendix B-2.

One volatile aromatic compound, ethylbenzene, was detected at low levels (0.087 mg/kg) in December 1987 at SD-02, the location adjacent to the site. A trace concentration of benzene was detected at SD-02 during the March 1988 sampling round. No other VOCs were detected in any of the sediment samples collected and analyzed during Task 3. In Task 2 sampling, benzene was detected at SD-02 (0.07 mg/kg) and toluene was detected at SD-03 (0.07 mg/kg). Ethylbenzene, benzene, and toluene are VOCs typically associated with coal tar wastes.

No PAHs were detected above trace concentrations at SD-01 or SD-04 in Task 3 samples. At SD-02 (adjacent to the site), PAHs were detected in December 1987 (4.6 mg/kg), while only trace amounts were detected in March 1988. PAHs were detected at all three locations sampled in Task 2. GC/MS analysis of Task 2 and Task 3 sediment samples indicated that PAH concentrations adjacent to the site are elevated compared to upstream and downstream sampling locations. At the upstream location, di-n-octylphthalate was detected in March 1988 (25 mg/kg). Di-n-octylphthalate is a common environmental sample contaminant not typically associated with coal tar wastes.

Sediment samples were analyzed for metals, cyanide, or phenolics during Task 2 (at least five samples per location) and during the first round of Task 3. These analytes were omitted from the March 1988 sampling round because the previous analytical results for these compounds were judged to be sufficient. Among the December 1987 samples, iron concentrations were fairly consistent (7,100 to 8,700 mg/kg), while concentrations of zinc, cyanide, and phenolics at SD-02 adjacent to the site are above the range detected in other sediment samples. Zinc and phenolic concentrations at SD-02 were 45 and 2.3 mg/kg, respectively, while the ranges at other locations were 25 to 28 mg/kg for zinc and 0.68 to 1.3 mg/kg for phenolics. The three June 1987 sediment samples contained phenolics at comparable levels (1.8 to 6.1 mg/kg). Although cyanide was not detected at other locations, nor in any of the Task 2 samples, 1.3 mg/kg of total cyanide was detected at SD-02.

3.6.5 Air

Results of the indoor air sampling program, presented in Table 3-5, indicate low levels of benzene and toluene at all sampling locations; ethylbenzene and xylenes were below analytical detection limits for all samples.

Benzene was detected in the indoor samples but not in the background samples. The highest indoor levels were found in the storeroom. A possible source of

TABLE 3-4
Task 3 Sediment Analytical Results
Mechanicville Site

SITE IDENTIFIER	----UPSTREAM----		----ADJACENT----		----------DOWNSTREAM----------			
SAMPLE IDENTIFIER	SD-01	SD-01	SD-02	SD-02	SD-04	DUP-01	SD-04	SD-DUP
DATE OF SAMPLE COLLECTION	12/22/87	3/30/88	12/22/87	3/30/88	12/22/87	12/22/87	3/30/88	3/30/88
** Volatile Organics (mg/kg) **								
-VOLATILE AROMATICS-								
Benzene	ND (1)	ND	ND	T	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	0.087	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	ND	ND	ND	ND	ND	ND
-OTHER-								
Methylene Chloride	ND	R (3)	ND	R	ND	ND	R	R
2-Butanone	ND	R	ND	R	ND	ND	R	R
Total Volatile Aromatics	ND	ND	0.087	T	ND	ND	ND	ND
Total Volatile Organics	ND	ND	0.087	T	ND	ND	ND	ND
** Semi-Volatile Organics (mg/kg) **								
-PAH-								
Acenaphthene	ND	ND	T	ND	ND	ND	ND	ND
Acenaphthylene	ND	ND	T	ND	ND	ND	ND	ND
Anthracene	ND	ND	T	ND	ND	ND	ND	ND
Benzo(a)Anthracene	T	ND	0.53	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	ND	ND	0.94	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	ND	ND	(5)	ND	ND	ND	ND	ND
Benzo(g,h,i,)Perylene	ND	ND	T	ND	ND	ND	ND	ND
Benzo(a)Pyrene	ND	ND	0.59	ND	ND	ND	ND	ND
Chrysene	T (2)	ND	0.58	ND	ND	ND	ND	ND
Dibenz(a,h)Anthracene	ND	ND	T	ND	ND	ND	ND	ND
Fluoranthene	T	ND	T	ND	T	T	ND	ND
Fluorene	ND	ND	T	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)Pyrene	ND	ND	T	ND	ND	ND	ND	ND
Naphthalene	ND	ND	0.48	ND	ND	T	ND	ND
Phenanthrene	T	ND	0.9	T	T	T	ND	ND
Pyrene	T	ND	1.1	ND	T	T	ND	ND
-OTHER-								
4-Methylphenol	ND	ND	T	ND	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	T	ND	ND	ND	ND	ND
Butylbenzylphthalate	ND	ND	T	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	ND	ND	T	ND	ND	ND	ND	ND
Di-n-octylphthalate	ND	25	ND	T	ND	ND	T	T
Total PAH	T	ND	5.1	T	T	T	ND	ND
Total Semi-Volatile Organics	T	25	5.1	T	T	T	T	T
-METALS-								
Iron	7700	NR (4)	8400	NR	8700	7100	NR	NR
Zinc	27	NR	45	NR	25	28	NR	NR
-CYANIDE-								
Total Cyanide (ppm) (6)	ND	NR	1.3	NR	ND	ND	NR	NR
Undistilled Cyanide	ND	NR	ND	NR	ND	ND	NR	NR
-OTHER-								
Total Recoverable Phenolics	1.3	NR	2.3	NR	1.2	0.68	NR	NR
Total Organic Carbon	12000	NR	32000	NR	18000	11000	NR	NR

NOTES:

(1) ND = Not detected (See Appendix B-4 for minimum detection limits).
(2) T = Trace concentrations detected below the quantifiable reporting limits.
(3) R = Data rejected because analysis of blank indicated sampling or lab-derived contamination
(4) NR = Analysis not requested
(5) Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.
(6) Undistilled CN = Free and dissociable CN^-; method used detected most, but not necessarily all, of the amenable CN^- present.

TABLE 3-5

TASK 3 AIR ANALYTICAL RESULTS - ppm
MECHANICVILLE SITE

	Office		Garage		Storeroom		Background	
Sample Identifier	OF-01	OF-02	GA-01	GA-02	ST-01	ST-02	BA-01	BA-01
Date of Sample Collection	12/28/88	12/28/88	12/28/88	12/28/88	12/28/88	12/28/88	12/28/88	12/28/88
Volatile Aromatics[1]								
Benzene	0.03	0.031	0.016	0.015	0.043	0.043	ND[2]	ND
Toluene	0.009	0.009	0.048	0.048	0.012	0.012	0.037	0.028
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND
Total Volatile Aromatics	0.039	0.040	0.064	0.063	0.055	0.055	0.037	0.028

NOTES:

[1] Samples analyzed by NIOSH Method 1501 by ESA Laboratories in Bedford, MA.

[2] ND = Not detected. The minimum detection limits are: benzene - 0.013 ppm; ethylbenzene and xylenes - 0.01 ppm.

benzene may be the forklift parked in the storeroom. Although the engine was not running during the sampling period, it is possible that residual gasoline vapors volatilized into the indoor air.

Toluene was detected in all indoor air samples. This compound also was detected in the background samples at higher levels than the indoor samples. Although an effort was made to locate the background sampler away from any vehicular traffic, it is possible that these samples were affected by general vehicle use in the area.

Duplicate samples showed consistent results for all sample locations, indicating reproducibility among the data collected.

4.0 SITE ASSESSMENT

Chemicals related to coal gasification process and waste streams were detected in the soil and groundwater at or near the site. This section focuses on the significance of the field investigation findings at the site. Section 4.1 discusses the significance of site chemical data in relation to site geology and hydrogeology. Analytical results are compared to relevant regulatory criteria (where available) in Section 4.2. Sections 4.3 and 4.4 contain an analysis of probable receptors and a survey of applicable remedial alternatives, both of which will be expanded upon in subsequent tasks, if appropriate.

4.1 CONTAMINATION ASSESSMENT

Environmental conditions at the Mechanicville site are summarized in Table 4-1 and described in the following paragraphs. The information presented in Table 4-1 is based on the Task 2 and Task 3 analytical results.

Levels of chemicals found in Task 3 soil samples across the site are consistent with Task 2 findings and site coal gasification process history. The highest levels of VOCs, PAHs, and cyanide exist in the shallow soils near the former gas house, purifier and oxide houses, filter beds, and relief gas holder. PAH levels are generally higher than VOC levels in the soil samples. In general, VOCs are more soluble in water than PAHs; therefore, PAHs tend to resist leaching from soils more than VOCs.

Most of the site is currently paved, which prevents infiltration of rainfall and impedes vertical migration of chemicals in the soil. However, the regional groundwater flow direction from west to east may be a vehicle for transporting chemicals beneath the site. Shallow on-site soils, therefore, are considered a continuing source of chemicals for on- and off-site groundwater contamination.

Task 2 and Task 3 groundwater analytical results indicate that site activities impacted water quality in soils, as well as in shallow and deep bedrock. Coal gasification waste-related chemicals (i.e., VOCs, PAHs, iron, cyanide, and phenolics) are present in elevated concentrations in on-site groundwater with respect to upgradient groundwater levels. These chemicals were found in the highest concentrations downgradient of the former relief gas holder, purifiers and oxide houses, and the filter beds. The area downgradient of the former relief gas holder, where elevated VOC and PAH levels were detected, is characterized by a bedrock trough, indicating that chemicals are travelling preferentially along the surface of the bedrock trough in the silty shale and shallow bedrock fractures.

In paired wells, PAH levels generally decrease with depth, while VOC levels show increases with depth. The heavier, less mobile, PAH chemicals are being partly retained on the soils and along the shallow bedrock fractures. The more soluble VOC chemicals are migrating with the groundwater. Downward gradients, measured in paired wells in the bedrock trough along the eastern edge of the site, indicate that these chemicals are carried into the shallow and deeper bedrock. The upward seepage gradient on the bank of the Anthony Kill indicates

TABLE 4-1

SUMMARY OF ENVIRONMENTAL CONDITIONS
MECHANICVILLE SITE

TECHNICAL FACTORS	SUBSURFACE SOILS	GROUNDWATER	SURFACE WATER	SEDIMENT	AIR
Chemicals Present	The following chemicals were detected in the subsurface soils near former coal gasification structures: - VOCs - PAHs - iron and zinc - cyanide compounds - phenolic compounds These chemicals were found in samples collected from the fill soils and silty sand.	The following chemicals were detected in groundwater at the site: - VOCs - PAHs - iron and zinc - cyanide compounds - phenolic compounds - sulfate These chemicals were found in samples collected from roughly the top 10 feet of the water table and from the deeper bedrock.	The following chemicals were found in the Anthony Kill, adjacent to the site: - iron and zinc - cyanide compounds - phenolic compounds - sulfate These chemicals were primarily detected adjacent to the site. Higher concentrations of iron were detected adjacent to the site in Task 3. Higher concentrations of iron and phenols were detected upgradient of the site during Task 2.	The following chemicals were detected in sediments from the Anthony Kill, adjacent to the site: - benzene, toluene, and ethylbenzene - PAHs - iron and zinc - sulfate Benzene, toluene, and sulfate were found in samples adjacent to and/or downstream of the site. PAHs, iron, and zinc were detected upstream as well as downstream and adjacent to the site; with higher concentrations detected adjacent to and downgradient of the site.	The following chemicals were detected in indoor air samples at the site: - benzene - toluene Toluene was also found in the background samples.
Chemical Transport Mechanism	Because chemicals were detected below the water table, transport of soluble chemicals (VOCs, metals, phenolics) in shallow groundwater is likely. Both PAHs and complex cyanides are highly insoluble in water and therefore fairly immobile in the soil environment.	The interpreted direction of shallow groundwater flow is to the north-northeast, with an easterly component in the southeastern corner of the site. Shallow groundwater discharges to the Anthony Kill; regional groundwater flows easterly, toward the Hudson River. Groundwater flow within the fractured rock is controlled by the orientation, size, and interconnection of the fractures. A downward gradient was observed at two multi-level well clusters, while an upward gradient exists at the cluster adjacent to the Anthony Kill.	Dissolved and sediment-attached chemicals in the Anthony Kill may be transported downstream to the Hudson River (approximately a quarter mile).	Sediments deposited in the Anthony Kill may be resuspended during high flow/high energy conditions and carried farther downstream of the site.	Volatile and semivolatile organics found in the soils and sediments at the site may volatilize if these chemicals are exposed to the atmosphere by excavation. Similarly, winds may suspend soil and sediment particles containing site-derived contamination and carry these particles off-site, if exposed.

TABLE 4-1 (Continued)

SUMMARY OF ENVIRONMENTAL CONDITIONS
MECHANICVILLE SITE

TECHNICAL FACTORS	SUBSURFACE SOILS	GROUNDWATER	SURFACE WATER	SEDIMENT	AIR
Expected Persistence of Chemicals in the Environment	There is only a slight tendency for most VOCs to adsorb to soil particles and they are expected to groundwater or slowly volatilize. They also are easily biodegradable by soil bacteria. PAHs strongly adsorb to soil particles, especially soils high in organic content. PAHs undergo microbial degradation and are readily metabolized by multi cellular organisms. The lower molecular weight PAHs (e.g., naphthalene, acenaphthene, fluorene) are degraded more rapidly that the higher molecular weight compounds (benzo(a) pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h) anthracene). Trace metals are non-volatile. Their environmental fate depends on soil/water interactions which are controlled by pH, cation exchange capacity, and organic matter content, among other factors. Amendable cyanide is soluble and biodegradable. Ferro-ferricyanides are stable compounds which are difficult to degrade.	VOCs in groundwater are expected to biodegrade over time. PAHs are relatively insoluble in water, but leaching to groundwater does occur. Dissolved PAHs in groundwater are subject to microbial degradation. However, biodegradation probably occurs more slowly in aquatic systems than in soil. Dissolved PAHs may also undergo rapid, direct photolysis when oxidants are available. The volatility of PAH compounds is low. The behavior of trace metals in groundwater is complex. However, their mobility in groundwater can be significantly retarded by adsorption and precipitation reactions. Amenable cyanide forms a single anion in water which is biodegradable. Ferro-ferricyanides in water form a metal cyanide radical which is difficult to degrade and likely to persist. Phenolic compounds are soluble and biodegradable.	See Groundwater.	See Soil.	VOCs in air are expected to disperse quickly outdoors. In a closed environment with poor ventilation, the VOC dispersion rate would be much slower.

TABLE 4-1 (Continued)

SUMMARY OF ENVIRONMENTAL CONDITIONS
MECHANICVILLE SITE

TECHNICAL FACTORS	SUBSURFACE SOILS	GROUNDWATER	SURFACE WATER	SEDIMENT	AIR
Expected Persistence of Chemicals in the Environment	Therefore, they will persist in the soil environment. Under highly acidic or highly alkaline conditions, ferro-ferricyanides may become soluble. They can be transformed to amenable cyanide and hydrogen cyanide gas under highly acidic conditions. Phenolic compounds have a relatively low volatility and high solubility.				
Existing or Potential Receptors of Chemicals	The probability of direct exposure of humans or animals to chemicals in the soil is low because the site is paved. If excavations were made at the site, however, workers and area residents could be exposed to these chemicals.	Exposure to chemicals in the shallow groundwater may occur during building and utility excavations or through basement seeps in the site vicinity. The only direct groundwater usage in the area is through a few domestic wells nearly 1 mile southwest (upgradient) of the site. Because shallow groundwater appears to flow north-northeast from the site, these wells are unlikely to be receptors of site-derived chemicals.	Direct contact with the surface water by humans is likely in this highly populated area, even though this section of the Anthony Kill is designated for secondary contact recreation only (Class D). Aquatic organisms in the stream are also potential receptors of chemicals.	As with surface water, direct contact with chemicals in sediments is a concern in this urban area, especially for recreational users of the Anthony Kill.	Workers and area residents could be exposed to airborne contaminants during excavation of contaminated soil.

that dissolved chemicals are discharging to the stream. Shallow and deep groundwater migrating off-site to the north and to the east appear to be carrying elevated levels of VOCs, PAHs, and other coal gasification waste-related chemicals off-site.

Analytical results of surface water samples collected from the Anthony Kill do not show an adverse impact attributable to site activities. Although it is likely that chemicals dissolved in groundwater are being discharged from the site to the stream, the resulting surface water concentrations are below detection limits, due to volatilization and dilution. The site groundwater discharge is estimated at less than 0.005 cfs, based on an average hydraulic conductivity of 0.28 ft/day for the unconsolidated soils and 1.1 ft/day for the shallow bedrock. This discharge is less than 0.03 percent of the estimated average annual low flow of 17 cfs on the Anthony Kill at Mechanicville.

Task 2 and Task 3 sediment sampling results indicate that PAH, zinc, cyanide, and phenolic concentrations in the Anthony Kill sediments adjacent to the site are elevated above background levels (upstream) due to site activities; however, downstream sediments do not show elevated levels.

Task 3 air sampling results indicate that benzene and toluene are present at low levels in buildings on-site.

4.2 COMPARISON OF ANALYTICAL RESULTS TO REGULATORY CRITERIA

Analytical results are compared to relevant New York State criteria (where available) in this section. The site assessment process includes a review of potentially relevant environmental and health criteria. The review covered regulatory standards and guidelines included in the following: (1) New York State Regulations, (2) National Drinking Water Regulations, and (3) U.S. Environmental Protection Agency (USEPA) Health Advisories. Relevant criteria are shown in Table 4-2.

Criteria are not developed for chemicals in soil. A qualitative assessment of risks associated with chemicals in this medium is provided in Section 4.2.1. Criteria are also lacking for some of the chemicals detected in groundwater. New York State has established criteria for all chemicals regulated at the federal level, in addition to some that are not. Furthermore, where both federal and state criteria exist for a given chemical, the New York State standard is generally more stringent. Therefore, this assessment uses New York State groundwater standards and guidance values. State standards are enforceable; guidance values are not.

4.2.1 Groundwater

Table 4-2 lists the potentially applicable federal and state criteria for groundwater identified in the criteria review. Most of the presented criteria are based on the assumption that the groundwater will be used as a drinking water supply. The Mechanicville site is not located over a water supply aquifer. Because groundwater is not currently used as a public potable water supply in Mechanicville, drinking water standards are not presently applicable

TABLE 4-2
CRITERIA FOR CHEMICALS FOUND IN GROUNDWATER AND SURFACE WATER
MECHANICVILLE SITE

	NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES (1)				NATIONAL DRINKING WATER REGULATIONS		EPA HEALTH ADVISORIES(4)	EPA AMBIENT WATER QUALITY CRITERIA (5)				
	CLASS D SURFACE WATER		CLASS GA GROUNDWATER					AQUATIC LIFE(6)		HUMAN HEALTH(9)		
	STANDARDS	GUIDANCE VALUES	STANDARDS	GUIDANCE VALUES	MAXIMUM CONTAMINANT LEVELS(2)	MAXIMUM CONTAMINANT LEVEL GOAL(3)	LIFETIME ADULT EXPOSURE	ACUTE (7)	CHRONIC (8)	DRINKING WATER ONLY (10)	FISH CONSUMPTION ONLY	DRINKING WATER AND FISH CONSUMPTION
VOLATILE ORGANICS (MG/L)												
-VOLATILE AROMATICS-												
BENZENE	----	0.006	ND(11)	----	0.005(12)	0	----	5.3	----	0.00067	----	0.00066
TOLUENE	----	----	----	0.05	----	2 (12)	11	17.5	----	15	424	14.3
ETHYLBENZENE	----	----	----	0.05	----	0.68 (12)	3.40	32	----	2.40	3.28	1.4
STYRENE	----	----	0.931	----	----	0.140(12)	----	----	----	----	----	----
TOTAL XYLENE	----	----	----	0.05	----	0.44 (12)	2.20	----	----	----	----	----
m-XYLENE	----	----	----	----	----	----	----	----	----	----	----	----
o-XYLENE	----	----	----	----	----	----	----	----	----	----	----	----
p-XYLENE	----	----	----	----	----	----	----	----	----	----	----	----
TRIMETHYLBENZENE	----	----	----	0.05	----	----	----	----	----	----	----	----
-OTHER-												
ACETONE	----	----	----	----	----	----	----	----	----	----	----	----
METHYLENE CHLORIDE	----	----	----	0.05	----	----	----	12	----	----	----	----
SEMIVOLATILE ORGANICS (MG/L)												
-PAH-												
ACENAPHTHENE	----	----	----	0.02	----	----	----	0.52	----	0.02(13)	----	0.02(13)
ACENAPHTHYLENE	----	----	----	----	----	----	----	----	----	----	----	----
ANTHRACENE	----	----	----	0.05	----	----	----	----	----	----	----	----
BENZO(b)FLUORANTHENE	----	----	----	0.000002	----	----	----	----	----	0.0000031	----	0.0000028
BENZO(k)FLUORANTHENE	----	----	----	0.000002	----	----	----	----	----	0.0000031	----	0.0000028
BENZO(g,h,i)PERYLENE	----	----	----	----	----	----	----	----	----	----	----	----
BENZO(a)ANTHRACENE	----	----	----	0.000002	----	----	----	----	----	0.0000031	----	0.0000028
BENZO(a)PYRENE	----	0.0000012	ND	----	----	----	----	----	----	0.0000031	----	0.0000028
CHRYSENE	----	----	----	0.000002	----	----	----	----	----	0.0000031	----	0.0000028
DIBENZO(a,h,)ANTHRACENE	----	----	----	----	----	----	----	----	----	----	----	----
FLUORANTHENE	----	----	----	0.05	----	----	----	3.98	----	0.19	0.054	0.042
FLUORENE	----	----	----	0.05	----	----	----	----	----	----	----	----
INDENE(1,2,3-cd)PYRENE	----	----	----	0.000002	----	----	----	----	----	0.0000031	----	0.0000028
NAPHTHALENE	----	----	----	0.01	----	----	----	2.3	0.62	----	----	----
PHENANTHRENE	----	----	----	0.05	----	----	----	----	----	----	----	----
PYRENE	----	----	----	0.05	----	----	----	----	----	----	----	----
TOTAL CARCINOGENIC PAH	----	----	----	----	----	----	----	----	----	0.0000031	----	0.0000028
-OTHER-												
BIS(2-ETHYLHEXYL)PHTHALATE	----	----	4.2	----	----	----	----	0.94	0.003	21	50	15
TOTAL NEW YORK STATE REGULATED ORGANICS (14)	----	----	0.1	----	----	----	----	----	----	----	----	----

TABLE 4-2 (CONTINUED)
CRITERIA FOR CHEMICALS FOUND IN GROUNDWATER AND SURFACE WATER
MECHANICVILLE SITE

	NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES (1)				NATIONAL DRINKING WATER REGULATIONS		EPA HEALTH ADVISORIES(4)	EPA AMBIENT WATER QUALITY CRITERIA (5)				
	CLASS D SURFACE WATER		CLASS GA GROUNDWATER					AQUATIC LIFE(6)		HUMAN HEALTH(9)		
	STANDARDS	GUIDANCE VALUES	STANDARDS	GUIDANCE VALUES	MAXIMUM CONTAMINANT LEVELS(2)	MAXIMUM CONTAMINANT LEVEL GOAL(3)	LIFETIME ADULT EXPOSURE	ACUTE (7)	CHRONIC (8)	DRINKING WATER ONLY (10)	FISH CONSUMPTION ONLY	DRINKING WATER AND FISH CONSUMPTION
OTHER CHEMICALS (MG/L)												
-METALS-												
IRON	0.03	----	0.3	----	----	0.3(15)	----	----	----	----	----	----
ZINC	(16)	----	5	----	----	5(15)	----	----	----	5(13)	----	5(13)
-CYANIDE-												
TOTAL CYANIDE	----	----	0.2	----	----	----	0.75	----	----	----	----	----
FERRO-FERRI CYANIDE	----	----	----	----	----	----	----	----	----	----	----	----
FREE CYANIDE	0.022	----	----	----	----	----	----	0.0035	0.052	0.2	----	0.2
-OTHER-												
TOTAL RECOVERABLE PHENOLICS (17)	----	----	0.001	----	----	----	----	----	----	3.5	----	3.5
TOTAL ORGANIC CARBON	----	----	----	----	----	----	----	----	----	----	----	----
SULFATE	----	----	250.0	----	----	----	----	----	----	----	----	----

NOTES:
(1) NYSDEC TECHNICAL AND OPERATIONAL GUIDANCE SERIES 85-W-38 AS REVISED APRIL 1, 1987. CLASS D SURFACE WATERS ARE SUITABLE FOR SECONDARY CONTACT RECREATION; CLASS GA DENOTES FRESH GROUNDWATER WHICH IS A SOURCE OF POTABLE WATER SUPPLY.
(2) MCLs (MAXIMUM CONTAMINANT LEVELS) ARE ENFORCEABLE STANDARDS FOR PUBLIC WATER SUPPLY SYSTEMS PROMULGATED UNDER THE SAFE DRINKING WATER ACT (40 CFR PART 141).
(3) MCLGs (MAXIMUM CONTAMINANT LEVEL GOALS) ARE PROPOSED NON-ENFORCEABLE HEALTH GOALS AND HAVE BEEN SET AT A LEVEL OF NO KNOWN OR ANTICIPATED HEALTH AFFECTS.
(4) EPA HEALTH ADVISORIES (FORMERLY SNARLs) ARE NON-ENFORCEABLE CRITERIA ESTABLISHED BY THE OFFICE OF DRINKING WATER. THEY ARE SET AT LEVELS WHERE ADVERSE HEALTH EFFECTS ARE NOT EXPECTED.
(5) WATER QUALITY CRITERIA WERE FORMULATED TO PROTECT AQUATIC LIFE AND HUMAN HEALTH FROM POLLUTANTS IN SURFACE WATERS. (40 CFR SUMMARY, FRI, NOV. 28, 1980, P. 79318-79379). WATER QUALITY CRITERIA HAVE NO REGULATORY IMPACT, BUT ARE USEFUL IN ESTABLISHING WATER QUALITY-BASED EFFLUENT LIMITATIONS, WATER QUALITY STANDARDS, AND TOXIC POLLUTANT EFFLUENT STANDARDS.
(6) GUIDANCE CRITERIA FOR THE PROTECTION OF FRESHWATER AQUATIC LIFE. CONCENTRATIONS SPECIFIED SHOULD PROTECT MOST (BUT NOT NECESSARILY ALL) AQUATIC FRESHWATER LIFE AND ITS USES.
(7) THE ACUTE TOXICITY LEVEL IS THE MAXIMUM TO WHICH ORGANISMS CAN BE EXPOSED WITHOUT SIGNIFICANT RISK OF ADVERSE IMPACT.
(8) CHRONIC TOXICITY LEVEL IS THE 24-HOUR AVERAGE VALUE THAT ORGANISMS CAN BE EXPOSED TO WITHOUT SIGNIFICANT RISK OF ADVERSE IMPACT.
(9) HUMAN HEALTH GUIDELINES WERE DERIVED BASED ON "GUIDELINES AND METHODOLOGY USED IN THE PREPARATION OF HEALTH EFFECT ASSESSMENT CHAPTERS OF THE CONSENT DEGREE WATER CRITERIA DOCUMENTS" DEVELOPED BY EPA'S OFFICE OF RESEARCH AND DEVELOPMENT.
(10) THESE ADJUSTED CRITERIA, FOR DRINKING WATER INGESTION ONLY, WERE DERIVED FROM PUBLISHED EPA AWQC FOR COMBINED FISH AND DRINKING WATER INGESTION AND FOR FISH INGESTION ALONE. THESE ADJUSTED VALUES ARE NOT OFFICIAL EPA AWQC, BUT MAY BE APPROPRIATE FOR SUPERFUND SITES WITH CONTAMINATED GROUNDWATER. (USEPA SUPERFUND PUBLIC HEALTH EVALUATION MANUAL, OCTOBER 1986, PAGES 61-64).
(11) ND = DETECTABLE BY USEPA METHODS 602 OR 624 (BENZENE) OR METHODS 610 OR 625 (BENZO(a)PYRENE).
(12) PROPOSED
(13) TO PROTECT AGAINST TASTE AND ODOR EFFECTS; NOT HEALTH BASED.
(14) NEW YORK STATE HAS A MAXIMUM WATER QUALITY VALUE OF 0.1 MG/L OF DESIGNATED ORGANIC CHEMICALS FOR SURFACE WATER AND GROUNDWATER DISCHARGES REQUIRING PERMITS. THE DESIGNATED ORGANICS INCLUDE ALL OF THE ORGANIC CHEMICALS LISTED EXCEPT ACENAPHTHYLENE, BENZO(g,h,i)PERYLENE DIBENZO(a,h)ANTHRACENE, AND STYRENE.
(15) SECONDARY MAXIMUM CONTAMINANT LEVELS WHICH APPLY TO PUBLIC WATER SYSTEMS. THESE REGULATIONS CONTROL CONTAMINANTS IN DRINKING WATER THAT PRIMARILY AFFECT THE AESTHETIC QUALITIES RELATING TO THE PUBLIC ACCEPTANCE OF DRINKING WATER (40 CFR PART 143).
(16) ZINC STANDARD FOR CLASS D WATERS IS DETERMINED BY THE FORMULA EXP(0.83[LN(PPM HARDNESS)]+1.95) AND APPLIES TO THE ACID SOLUBLE FORM.
(17) AS MEASURE BY APHA METHOD 510.8 WHICH IS EQUIVALANT TO EPA METHOD 420.1 (SEE APHA, 1985; USEPA, 1983).

at this site; they are included in this assessment for hypothetical comparative purposes.

New York State standards and guidelines are for fresh groundwater used as a source of potable water. The federal Maximum Contaminant Levels (MCLs) are enforceable standards for water supply systems, promulgated under the National Primary Drinking Water Act. Maximum Contaminant Level Goals (MCLGs), established under the Safe Drinking Water Act (SDWA), are nonenforceable health goals designed to prevent adverse health effects or risks. USEPA Health Advisories, established by the Office of Drinking Water, are set at levels where adverse health effects are not expected. Carcinogenic risks are not considered in setting USEPA Health Advisories; however, the duration of exposure to the chemical in drinking water is considered.

As shown in Table 4-2, standards have been promulgated by New York State for 10 of the chemicals detected in the Mechanicville site groundwater: benzene, styrene, benzo(a)pyrene, bis(2-ethylhexyl)phthalate, total regulated organics, iron, zinc, cyanide, phenolic compounds, and sulfate. Concentrations in excess of the New York State standard were measured for all these chemicals in Task 3, except bis(2-ethylhexyl)phthalate, sulfate, and zinc. The exceedances are graphically depicted in Figures 4-1 through 4-5. These figures show Task 2 sample results for comparison. The following discussion focuses primarily on the more recent Task 3 results.

One Task 3 sample exceeded the benzo(a)pyrene standard (nondetectable levels): MW-5 from March 1988 (see Figure 4-1). Benzo(a)pyrene was detected at trace levels in Task 3 samples from MW-3, MW-6, MW-12, and MW-13, but in no other wells.

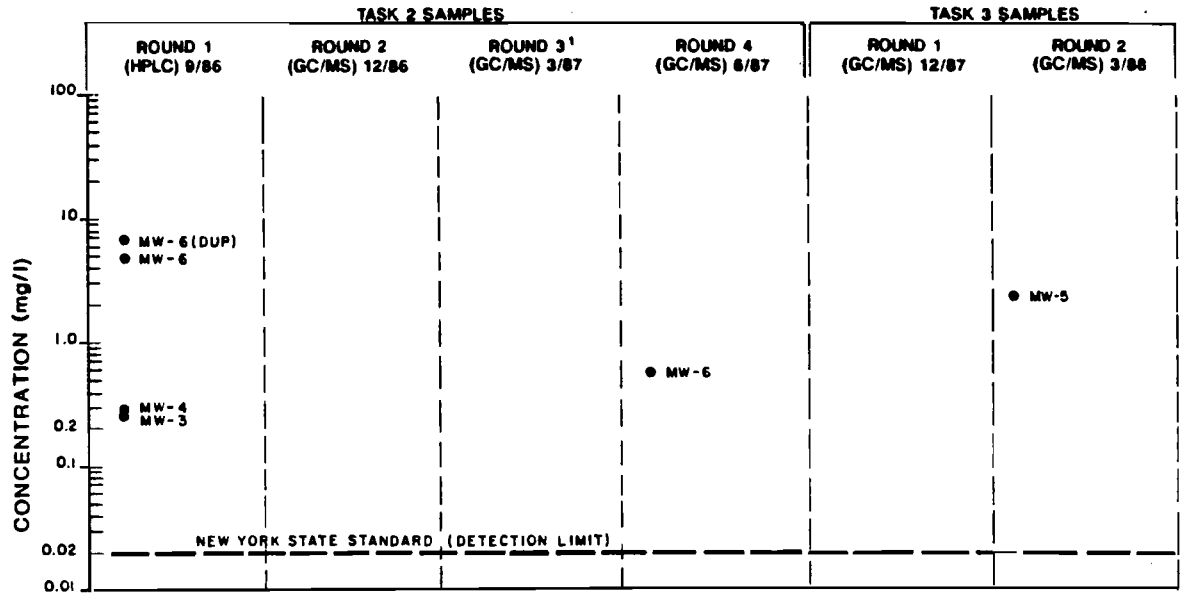
The benzene standard (nondetectable levels) was exceeded at MW-15, MW-14, MW-13, MW-12, MW-6, MW-5, MW-4, and MW-3 (see Figure 4-2). MW-15 contained concentrations of benzene below the standard. Benzene was not detected at MW-1, MW-2, MW-10, or MW-11. One sample from MW-13 exceeded the state standard of 0.931 mg/ℓ (see Figure 4-3). Styrene was not detected in any other wells during Task 3 sampling.

The New York State standard for total cyanide (0.2 mg/ℓ) was exceeded in MW-12 and MW-3 (see Figure 4-4). MW-2 and MW-11 were the only wells sampled during Task 3 that did not contain cyanide. All wells contained detectable iron; concentrations above the 0.3 mg/ℓ state standard were detected in all wells except MW-1, MW-2, MW-11, MW-13, and MW-15.

New York State regulated organics were detected at each well. The standard for this class of compounds (0.1 mg/ℓ) was exceeded in all wells except MW-1, MW-2, and MW-11. The state standard for phenolics (0.005 mg/ℓ) was exceeded in all wells on at least one occasion.

New York State has guidance values for 16 chemicals detected at Mechanicville, all of which were exceeded at one or more monitoring wells. Groundwater samples that contained chemicals in excess of the New York State guidance are listed in Table 4-3. The frequency of Task 3 guidance value exceedances in the wells decreased in the following order: MW-5 (14); MW-13 (12); MW-12, MW-6,

BENZO (a) PYRENE IN GROUNDWATER



SAMPLES IN WHICH BENZO (a) PYRENE WAS NOT DETECTED

ROUND 1 (HPLC) 9/86	ROUND 2 (GC/MS) 12/86	ROUND 3[1] (GC/MS) 3/87	ROUND 4 (GC/MS) 6/87	ROUND 1 (GC/MS) 12/87	ROUND 2 (GC/MS) 3/88
MW-1[2]	MW-1	MW-1	MW-1	MW-1	MW-1
MW-1(GC/MS)[2]	MW-2	MW-2	MW-2	MW-2	MW-2
MW-2	MW-2(DUP)	MW-3	MW-3	MW-3[2]	MW-2(DUP)
MW-3(GC/MS)[2]	MW-3	MW-4	MW-4	MW-4	MW-3[2]
MW-5	MW-4	MW-6	MW-5	MW-5	MW-4
	MW-5	MW-6(DUP)	MW-5(DUP)	MW-6[2]	MW-6
	MW-6			MW-10	MW-10
				MW-11	MW-11
				MW-11(DUP)	MW-12[2]
				MW-12	MW-13[2]
				MW-13	MW-13(DUP)[2]
				MW-14	MW-14
				MW-15	MW-15
				MW-15(DUP)	

[1] MW-5 WAS NOT SAMPLED IN ROUND 3.
[2] TRACE CONCENTRATIONS DETECTED BELOW QUANTIFIABLE REPORTING LIMIT

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BINGHAMTON, NEW YORK

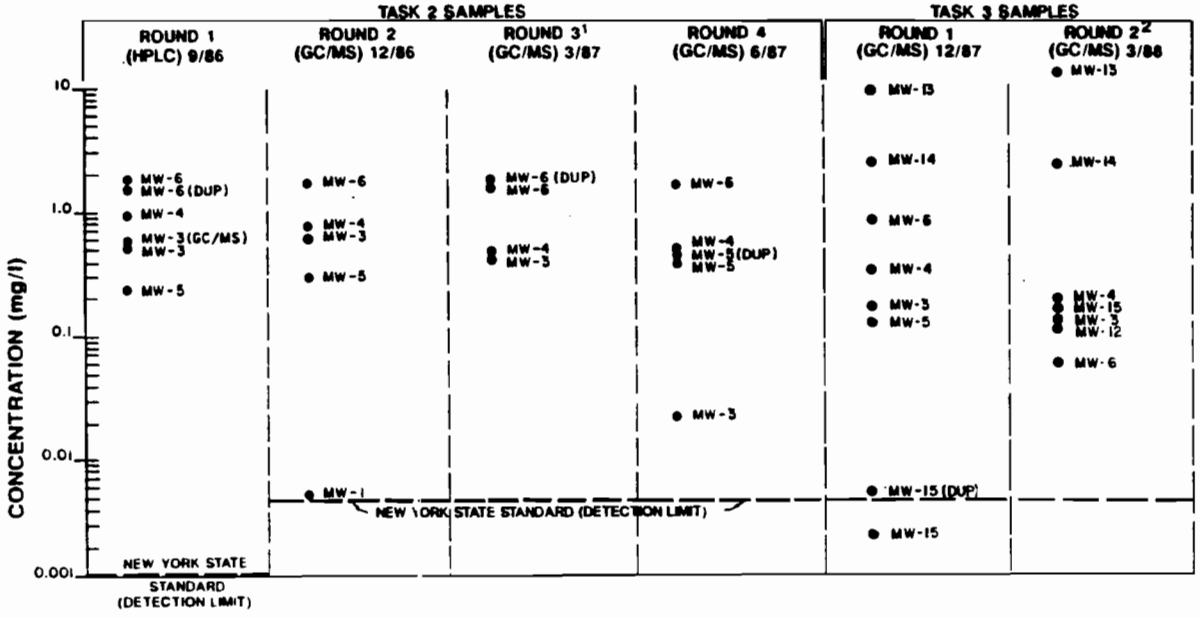
TITLE
BENZO (a) PYRENE IN GROUNDWATER
MECHANICVILLE SITE

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO 4045-03

FIGURE 4-1

BENZENE IN GROUNDWATER



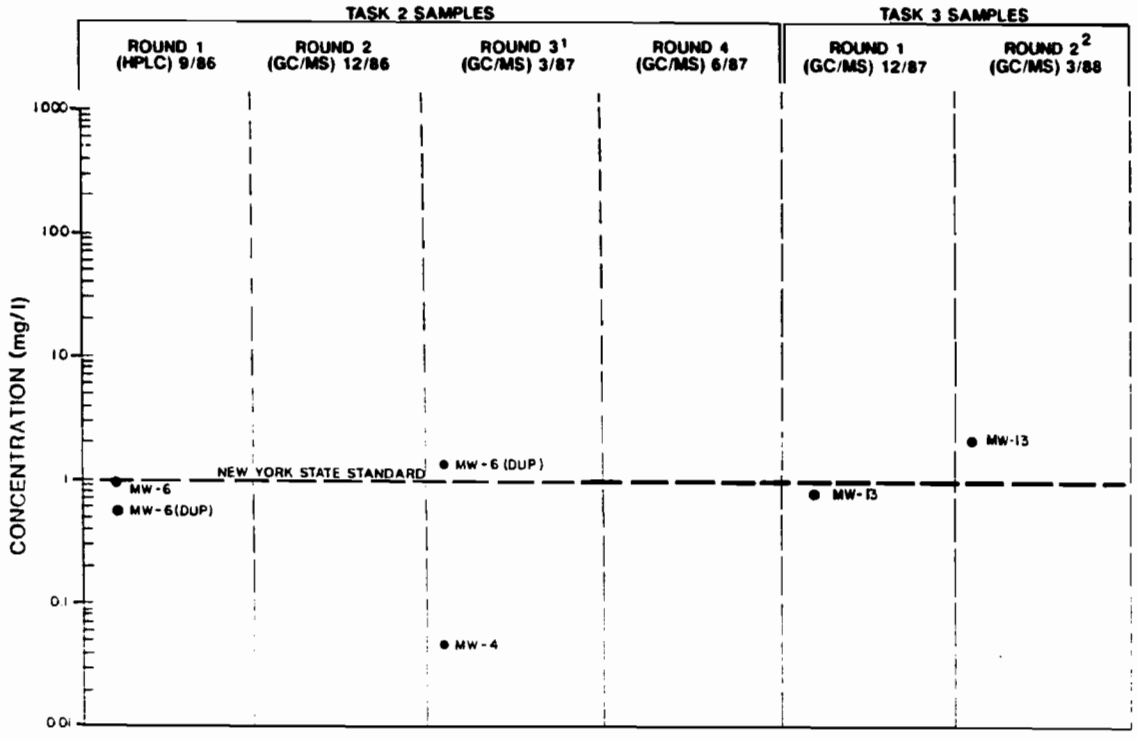
[1] MW-5 WAS NOT SAMPLED IN ROUND 3.

[2] BENZENE ANALYSIS WAS NOT PERFORMED ON ROUND 2 SAMPLES, MW-2(DUP), MW-10, AND MW-13(DUP).

[3] TRACE CONCENTRATIONS DETECTED BELOW QUANTIFIABLE REPORTING LIMIT.

E.C. JORDAN CO. CONSULTING ENGINEERS	TITLE: BENZENE IN GROUNDWATER MECHANICVILLE SITE
CLIENT: NEW YORK STATE ELECTRIC AND GAS CORP. BINGHAMTON, NEW YORK	INVESTIGATION OF FORMER COAL GASIFICATION SITES
PROJECT NO. 4045-03	FIGURE 4-2

STYRENE IN GROUNDWATER



SAMPLES IN WHICH STYRENE WAS NOT DETECTED.

ROUND 1 (HPLC) 9/86	ROUND 2 (GC/MS) 12/86	ROUND 3[1] (GC/MS) 3/87	ROUND 4 (GC/MS) 6/87	ROUND 1 (GC/MS) 12/87	ROUND 2[2] (GC/MS) 3/88
MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
MW-1(GC/MS)	MW-2	MW-2	MW-2	MW-2	MW-2
MW-2	MW-2(DUP)	MW-3	MW-3	MW-2(DUP)	MW-3
MW-3	MW-3	MW-6	MW-4	MW-3	MW-4
MW-3(GC/MS)	MW-4		MW-5	MW-4	MW-5
MW-4	MW-5		MW-5(DUP)	MW-5	MW-6
MW-5	MW-6		MW-6	MW-6	MW-11
				MW-10	MW-12
				MW-11	MW-14 MW-15
				MW-11(DUP)	
				MW-12	
				MW-14	
				MW-15	
				MW-15 (DUP)	

[1] MW-5 WAS NOT SAMPLED ON ROUND 3.

[2] STYRENE ANALYSIS WAS NOT PERFORMED ON ROUND 2 SAMPLES MW-2(DUP), MW-10, AND MW-13(DUP).

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TITLE
STYRENE IN GROUNDWATER
MECHANICVILLE SITE

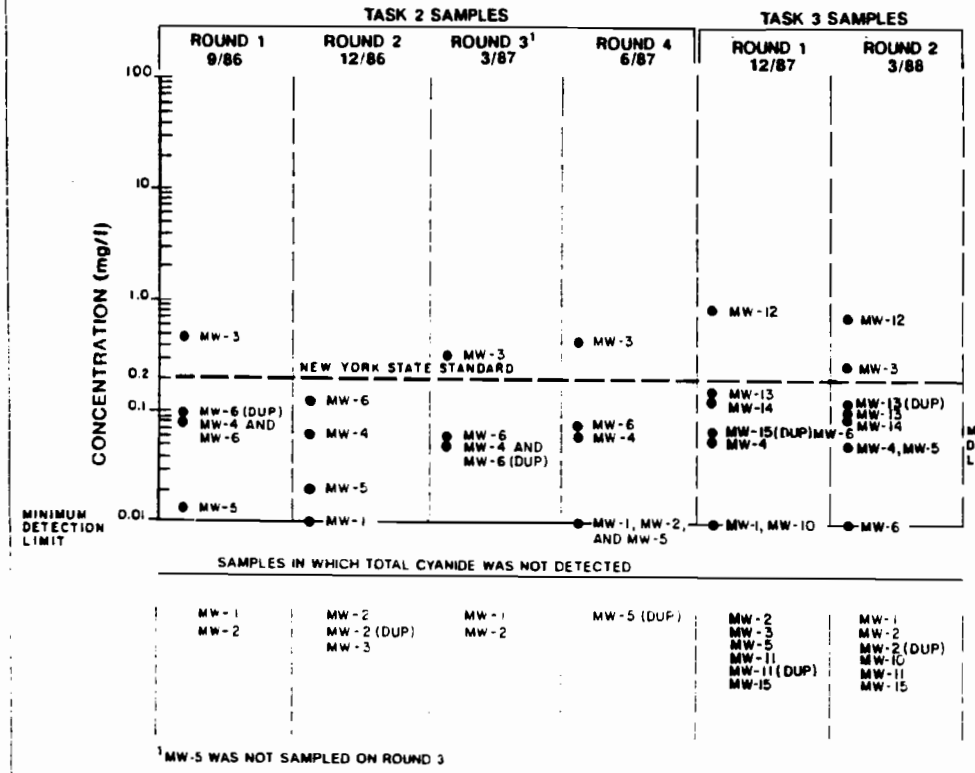
CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4845-03

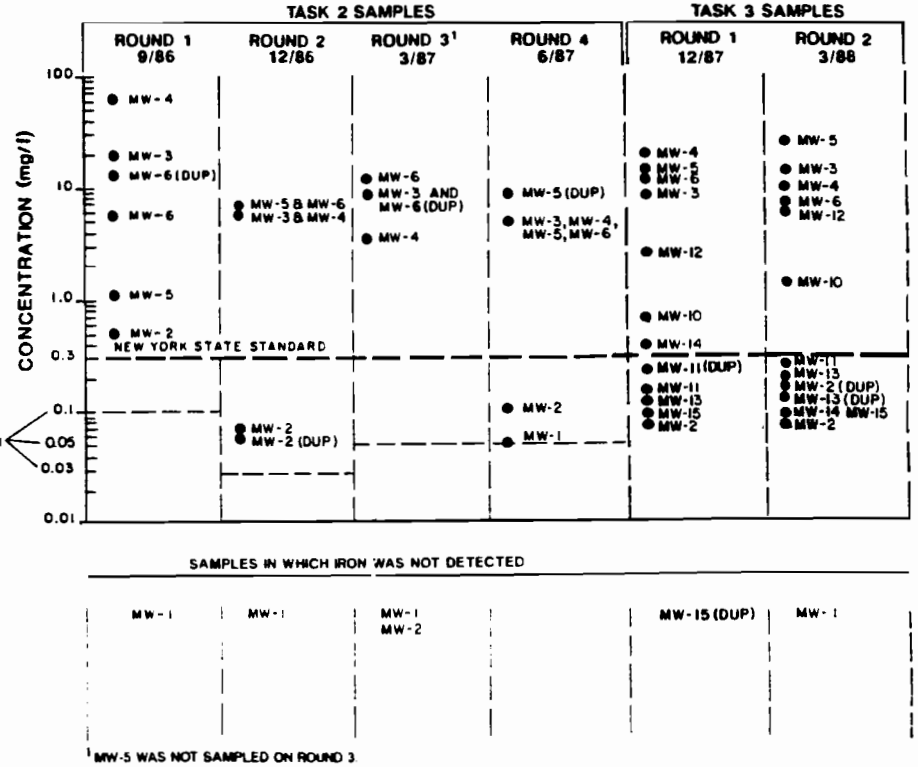
FIGURE 4-3

TOTAL CYANIDE IN GROUNDWATER



[1] MW-5 WAS NOT SAMPLED ON ROUND 3

IRON IN GROUNDWATER



[1] MW-5 WAS NOT SAMPLED ON ROUND 3

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BINGHAMTON, NEW YORK

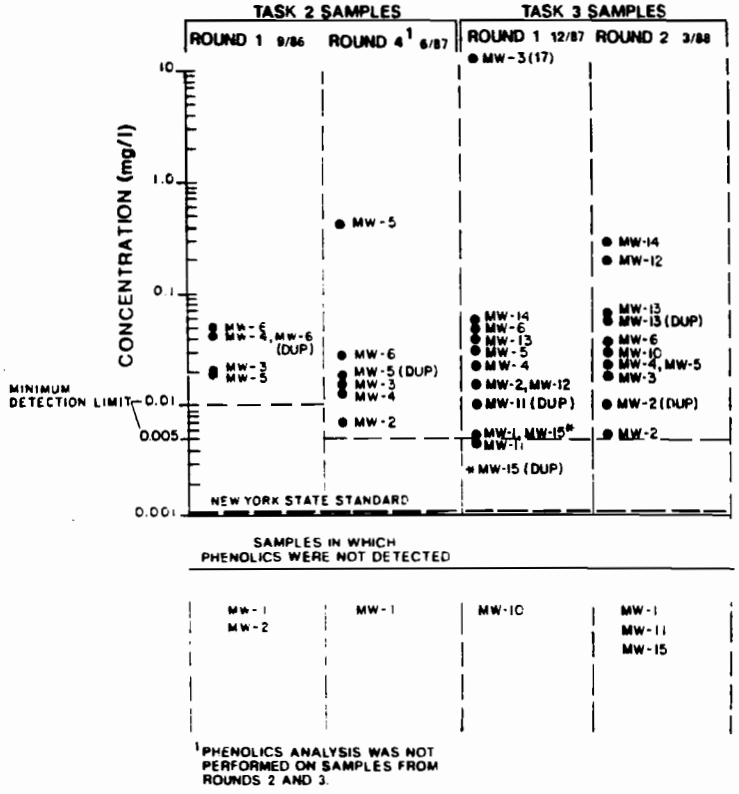
TITLE
TOTAL CYANIDE AND IRON IN GROUNDWATER
MECHANICVILLE SITE

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO. 4945-83

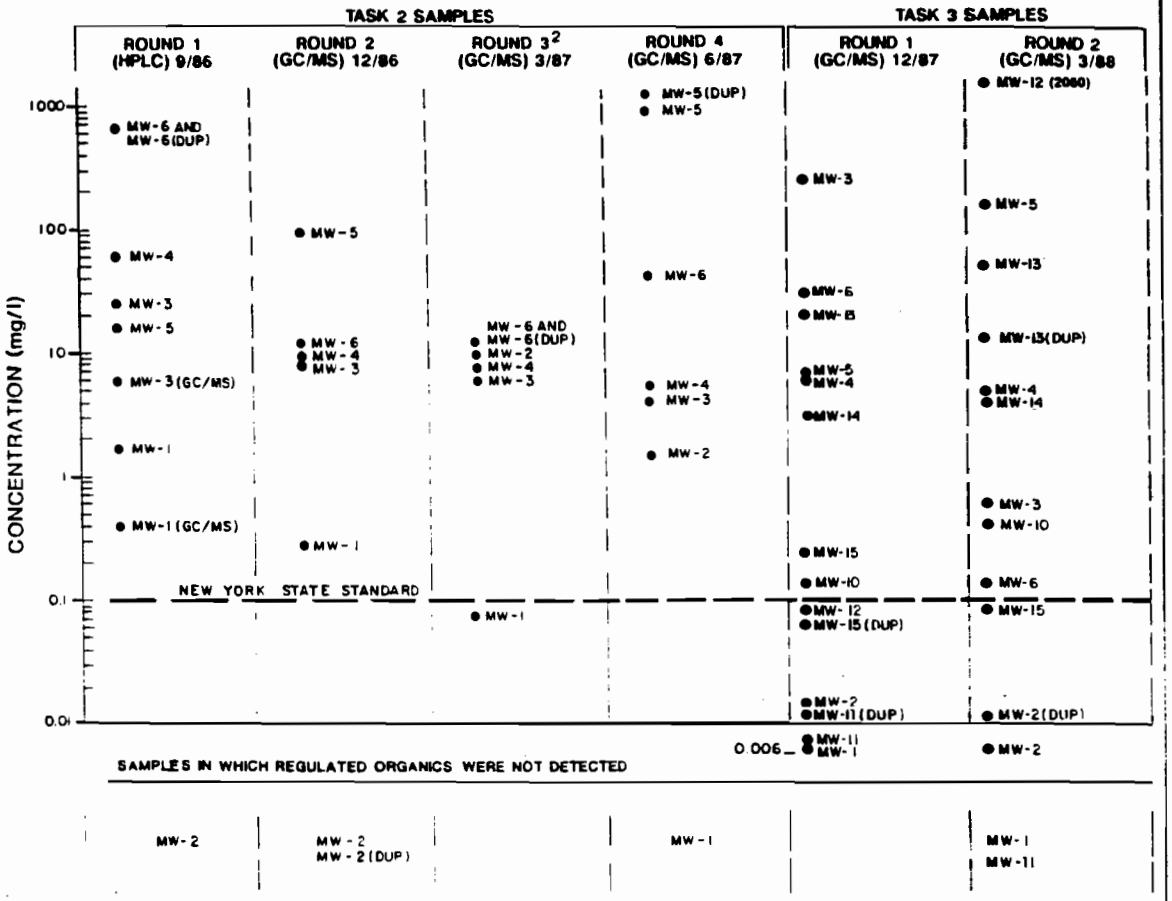
FIGURE 4-4

PHENOLICS IN GROUNDWATER



[1] PHENOLICS ANALYSIS WAS NOT PERFORMED ON SAMPLES FROM ROUNDS 2 AND 3.

TOTAL NEW YORK STATE REGULATED ORGANICS IN GROUNDWATER[1]



[2] MW-5 WAS NOT SAMPLED ON ROUND 3.

[1] THE N.Y. STATE CLASS 6A STANDARD FOR ORGANICS INCLUDES PHENOLIC COMPOUNDS, VOLATILE ORGANICS, AND SEMI-VOLATILE ORGANICS, EXCEPT FOR ACETONE, STYRENE, ACENAPHTHYLENE, BENZO(G,H,I)PERYLENE, DIBENZO(A,H)ANTHRACENE, AND BIS(2-ETHYLHEXYL)PHTHALATE.

E.C. JORDAN CO.
CONSULTING ENGINEERS

TITLE
PHENOLICS AND TOTAL N.Y. STATE REGULATED ORGANICS IN GROUNDWATER
MECHANICVILLE SITE

CLIENT
NEW YORK STATE ELECTRIC AND GAS CORP.
BINGHAMTON, NEW YORK

INVESTIGATION OF FORMER COAL GASIFICATION SITES

PROJECT NO 6945-03

FIGURE 4-5

TABLE 4-3

TASK 3 GROUNDWATER SAMPLES CONTAINING CHEMICALS
IN EXCESS OF NEW YORK STATE GUIDANCE VALUES
MECHANICVILLE SITE

CHEMICAL	GUIDANCE VALUE (mg/ℓ)[1]	WELL NUMBER	ROUND NUMBER
Volatile Aromatics			
Toluene	0.05	MW-4	1
		MW-5	1
		MW-6	1
		MW-13	1,2
		MW-14	1
Ethylbenzene	0.05	MW-3	1
		MW-4	1,2
		MW-5	2
		MW-6	1
		MW-12	2
		MW-13	1,2
		MW-14	1
Total Xylene	0.05	MW-3	1,2
		MW-4	1,2
		MW-5	1,2
		MW-6	1
		MW-12	1,2
		MW-13	1,2
		MW-14	1,2
Methylene Chloride		MW-13	2
PAHs			
Acenaphthene	0.02	MW-3	1
		MW-5	1,2
		MW-6	1
		MW-10	1
		MW-12	2
		MW-14	1,2
		MW-15	1,2
Anthracene	0.05	MW-3	1
		MW-6	1
		MW-12	2
Benzo(k)Fluoranthene	0.000002	MW-5	2

TABLE 4-3 (Continued)

TASK 3 GROUNDWATER SAMPLES CONTAINING CHEMICALS
IN EXCESS OF NEW YORK STATE GUIDANCE VALUES
MECHANICVILLE SITE

CHEMICAL	GUIDANCE VALUE (mg/ℓ)[1]	WELL NUMBER	ROUND NUMBER
Fluoranthene	0.05	MW-3	1
		MW-5	2
		MW-6	1
		MW-12	2
		MW-13	2
Fluorene	0.05	MW-3	1
		MW-5	2
		MW-6	1
		MW-12	2
Naphthalene	0.01	MW-3	1
		MW-4	1,2
		MW-5	1,2
		MW-6	1
		MW-12	2
		MW-13	1,2
		MW-14	2
		MW-15	1
Phenanthrene	0.05	MW-3	1
		MW-5	1,2
		MW-6	1
		MW-12	2
		MW-13	2
Pyrene	0.05	MW-3	1
		MW-5	2
		MW-6	1
		MW-12	2
		MW-13	2

[1]NYSDEC, Division of Water; Technical and Operational Guidance Series 86-W-38; April 1987.

and MW-3 (10); MW-4 and MW-14 (7); MW-15 (3); and MW-10 (1). No exceedances were observed at MW-1, MW-2, or MW-11.

4.2.2 Surface Water

Table 4-2 also contains relevant federal and state surface water criteria. The listed New York State criteria are for Class D waters, which is the classification of the Anthony Kill near the Mechanicville site. USEPA Ambient Water Quality Criteria (AWQC) for aquatic life and public health are also listed.

Iron was the only chemical identified in the Anthony Kill surface water samples that exceeded the New York State Class D standards. The iron standard of 0.3 mg/ℓ was exceeded at SW-2 in December 1987 and at all three sampling locations in March 1988. Both Task 3 upstream samples (SW-1) exceeded USEPA chronic aquatic life AWQC for bis(2-ethylhexyl)phthalate. However, as stated in Section 3.6.3, bis(2-ethylhexyl)phthalate was detected in a range attributable to laboratory contamination; therefore, it is unlikely to be a site-derived chemical. No other AWQC exceedances were noted at any sampling locations.

4.2.3 Air

Table 4-4 presents permissible exposure levels for benzene, toluene, ethylbenzene, and xylene established by the Occupational Safety and Health Administration (OSHA), the American Conference of Governmental Industrial Hygienists (ACGIH), and NIOSH. All samples with measured levels of benzene and toluene indicate levels well below OSHA, NIOSH, and ACGIH permissible exposure levels.

4.3 RECEPTOR ANALYSIS

This section identifies potential receptors at the Mechanicville site; that is, individuals or populations which, under certain circumstances, could be exposed to site-derived contaminants emanating from the soils, groundwater, surface water, and sediments at the site. The potential toxicological effects of prolonged exposure to chemicals detected at the site are summarized in Table 4-5. This receptor analysis is based on information collected in Tasks 2 and 3.

4.3.1 Soil

Under current site conditions, the contaminants in on-site soils pose little or no risk of human exposure via direct contact or ingestion. Most of the site is covered with buildings or pavement. The covered area includes most of the areas where former structures of the coal gasification plant once stood: the boiler room, the electric substation, the tar dehydrator, the distribution gas holder, the oil tank, the relief gas holder, the gas house, and the purifier house. An exception is the location of the filter beds. The filter beds, which are coke-filled wooden troughs set into the ground, were left in the ground and covered with soil after the gas plant closed. These beds had been used to filter residual oil and tar from the gas house condensate before discharge to the Anthony Kill. A test pit and a soil boring in this area

TABLE 4-4

PERMISSIBLE EXPOSURE LIMITS - AIR (ppm)
MECHANICVILLE SITE

Substance	OSHA			NIOSH	ACGIH	
	TWA	CC	Peak	TWA	TLV	STEL
Benzene	10	25	50	1	10	25
Toluene	200	300	500	100	100	150
Ethylbenzene	100	--	--	--	100	125
Xylene	100	--	--	100	100	150

Notes:

TWA = Time Weighted Average (8-hr)

CC = Ceiling Concentration

Peak = Maximum Duration 10 minutes in 8 hours

TLV = Threshold Limit Value

STEL = Short-term (15-minute) Exposure Limit

TABLE 4-5

TOXICOLOGICAL PROPERTIES OF COMPOUNDS IDENTIFIED
IN VARIOUS MEDIA
MECHANICVILLE SITE

COMPOUND CLASS	MEDIA IDENTIFIED IN	SPECIFIC COMPOUNDS	TOXICOLOGICAL PROPERTIES[1]
Volatile Organic Compounds	Groundwater	Toluene, benzene, xylenes, ethylbenzene, trimethylbenzene, styrene	These aromatic compounds are absorbed readily through the respiratory and gastrointestinal (GI) tracts and can also be absorbed through the skin. Benzene has the potential to cause cancer. Depending on the dose received, the other compounds can exert toxic effects on the liver and kidneys; they can also act as central nervous system (CNS) depressants and respiratory irritants.
	Subsurface Soil	All of the above plus n-propylbenzene	
	Sediment	Toluene, benzene	
	Air	Toluene, benzene	
Semivolatile Compounds			
o PAHs	Groundwater	Acenaphthene, acenaphthylene, anthracene, benzofluoranthenes, benzo(g,h,i)perylene, benzo(a) anthracene, benzo(a)pyrene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd) pyrene, naphthalene, phenanthrene, pyrene.	PAHs are a diverse group of compounds of varying toxicity. They are highly lipid-soluble and are absorbed through the GI and respiratory tracts, and to a lesser degree, through the skin. Many PAHs have been shown to be potentially carcinogenic. Other PAHs are thought to be noncarcinogenic; these include fluorene, anthracene, pyrene, naphthalene, phenanthrene, and fluoranthene. The acute toxicity and chronic toxicity of low level exposures are not well understood.
	Subsurface soil Sediment	All of the above plus dibenzo(a,h)anthracene	
o Phenolic compounds	Groundwater Subsurface soil Surface water	Total recoverable phenolics	Depending on the dose, these compounds can produce liver and kidney toxicity and CNS effects. They can act as respiratory and skin irritants.
Inorganic Compounds	Groundwater	Iron, zinc, cyanide, sulfate	Iron and zinc are essential nutrients. However, they can produce objectionable effects such as staining, bad taste, and GI irritation at high levels. Bioavailable cyanide can exert toxic effects on the liver, kidneys, CNS, and cardiovascular system at high levels. Sulfate is a natural constituent of groundwater which affects taste in high concentrations (500 mg/ℓ).
	Subsurface soil	Iron, zinc, cyanide	
	Surface water	Iron, cyanide, sulfate	
	Sediment	Iron, zinc, sulfate	

[1] In assessing the risks to public health and the environment posed by these chemicals, not only toxicological properties but also potential receptors and probable exposure conditions must be considered. These factors will be addressed in the Task 4 risk assessment.

revealed the presence of numerous site-related contaminants. Any human exposure to contaminated soil would most likely be restricted to contact with soils in this area.

Routine access to the site by children or teenagers is unlikely. Most of the site is fenced, and the gates are locked at night. However, children do live near the site. There are residential areas directly bordering the site to the south. There are also many residences southwest of the site. In addition, an elementary school and a special education school are both within a half-mile of the site. Furthermore, the fencing does not completely enclose the property. There is no fence along the Anthony Kill, which is near the area of the filter beds.

Access to the site from the river is possible. Although the waterfront has a steep bank, teenagers could enter the property by walking beneath the bridge at North Central Avenue or alongside the bridge, adjacent to the NYSEG fence. Alternately, one could walk along the bank of the Anthony Kill from the west and enter the site; therefore, site access by trespassers is possible, albeit restricted.

The potential for contact with contaminated soil in the event of access is also low. Contamination has only been documented at depths of 3 feet or more, even in samples taken near the filtering beds. There was no visual, olfactory, or analytical evidence of contamination of the surficial soils. It is likely that subsurface soils would be uncovered following construction or other work-related activities in the future, including subsurface soil remedial actions and the servicing of underground sewer, water, or other utility lines. If excavation occurred, workers could contact the contaminated soils and any uncovered materials.

The possible exposure routes to chemicals in the soil during excavations include direct contact, incidental ingestion, and inhalation of airborne particles and vaporized contaminants. Such exposure could potentially occur for all soils on-site.

4.3.2 Groundwater

There are no known current users of the groundwater near or downgradient of the Mechanicville site. The City of Mechanicville historically and currently obtains drinking water from a surface water source. The Mechanicville reservoir is approximately 3 miles northeast of the site, at an elevation approximately 160 feet higher than the site. The closest domestic wells are nearly a mile southwest (upgradient) of the site in the Town of Halfmoon. No active industrial wells were identified in the Mechanicville area. The two abandoned industrial wells (i.e., the West Virginia Pulp and Paper Co. well and the former Mintzer Petroleum Co. bedrock well) are located northeast (downgradient) and south (cross-gradient) of the site.

Groundwater appears to be discharging to the Anthony Kill. The groundwater beneath the relief gas holder may flow eastward beneath North Central Avenue

and discharge to the Anthony Kill downstream of SW-3/SED-3. Groundwater flow in this area of the site may also be influenced by the old Champlain Canal bed.

It is possible that a groundwater well could be installed at some future date in the commercial area east of the site. As mentioned in Section 2.1, access to the parking lot east of the site was denied by the owners during Task 3 field activities. Such a well might intercept the contaminated groundwater before it discharged to the Anthony Kill.

In addition, there are downward gradients indicating that the surface water recharges the groundwater. Therefore, the movement of groundwater beneath the Anthony Kill to the north or east is possible, albeit not known. Therefore, there are possible future groundwater receptors north of the Anthony Kill.

4.3.3 Surface Water

The site is bounded on the north by the Anthony Kill, which flows into the Hudson River 1,500 feet east of the site. Surface water runoff from the site flows into two drainage catch basins that empty via underground culverts into the Anthony Kill. In addition, shallow groundwater discharges into the Anthony Kill; therefore, it is possible that humans who contact the surface water near the site may be exposed to site-related contaminants. However, surface water data collected from the Anthony Kill downstream from the site do not indicate site-derived contaminants impact stream water quality.

NYSDEC has assigned a Class D stream classification to the section of the Anthony Kill from the Mechanicville city line to the Hudson River (Hodgson, 1986). Class D waters are designated by NYSDEC for secondary contact recreation, but no higher uses because of intermittent flow or water quality conditions that are not conducive to the propagation of game fish.

Because of the proximity of residential neighborhoods in the vicinity of the site, and because the area to the north and west of the site is classified as an open and recreational area, it is possible that local people could come in contact with the surface water adjacent to the site.

4.3.4 Sediment

Site-related contaminants were detected in the Anthony Kill sediment samples, primarily in samples collected adjacent to the site (SED-2). In addition, a recent NYSEG Memorandum (NYSEG, 1988) indicated that coal tar was observed in Anthony Kill sediments near the North Central Avenue bridge during recent construction activities. There is potential for construction workers and other individuals in the area to be exposed to site-related chemicals by contact with contaminated sediments. However, there are other potential sources of chemicals upstream of the site (e.g., the railroad yards).

Access to the banks of the stream at and downstream of the site is possible. The area north and west of the site is classified as open/recreational; therefore, recreational users of the stream could easily access the stream bank west of the site and then walk along the bank to the area adjacent to the site. In addition, this section of the Anthony Kill is used for secondary contact

recreation (e.g., boating), and contact with sediment is possible during these activities. The possible exposure routes for recreational users of the stream and its banks to sediment include direct contact and incidental ingestion.

4.3.5 Air

Indoor air samples collected to evaluate the levels of benzene, toluene, ethylbenzene, and xylenes indicated that ethylbenzene and xylene were not detected and benzene and toluene did not exist at levels indoors which would present a threat to human health.

Excavation at the site could increase the levels of volatile organics found in air samples as well as increase to potential for airborne contaminant transport of semivolatile and inorganic contaminants. Additionally, changing atmospheric conditions (e.g., temperature, wind velocity, and humidity) are expected to impact the levels of airborne and volatilized contaminants found at the site.

4.4 PRELIMINARY IDENTIFICATION OF REMEDIAL ALTERNATIVES

Remedial alternatives that could be used to address the environmental concerns identified at the Mechanicville site during Task 2 and Task 3 are listed in Table 4-6. This list has been revised since the completion of Task 2 to reflect knowledge of the site gained from the Task 3 investigations. The final selection of alternatives will be made after completion of the risk assessment (Task 4).

TABLE 4-6

PRELIMINARY IDENTIFICATION OF REMEDIAL ALTERNATIVES
MECHANICVILLE SITE

MEDIUM	CONCEPTUAL ACTION	REMEDIAL MEASURE	REMARKS
Soil/Sediment	Containment	Capping	Much of the site is presently covered with asphalt and structures. An impervious cap could further reduce infiltration and, therefore, the rate of leaching of chemicals from the soils into the groundwater. A cap would also reduce contact potential. Not applicable to sediment.
	Removal	Excavation and Transport	Involves excavation and removal with subsequent transportation to another location. Potential impact on air quality during excavation and long-term liability at disposal site should be considered. Dredging is also an option for sediment.
	Disposal	Landfilling	Landfill selection depends on whether wastes are hazardous or nonhazardous. If hazardous, they must be disposed of in a properly licensed RCRA landfill.
	Treatment	Incineration	A proven technology, it destroys organics effectively. On-site units require test burns prior to full-scale use.
		Biodegradation	Several recent applications of this technology to coal tar and coal-tar-contaminated soils have been reported in literature. This treatment requires experimentation to determine the proper organisms and optimal operating conditions. It can be applied in situ, through land-farming, or by use of a batch reactor vessel.
		Solidification	Involves mixing the waste with cement or similar additives to incorporate the waste into the cement matrix. Process improves waste handling and is inexpensive. Does not destroy compounds but reduces toxicity by reducing contaminant mobility and availability to biota. Method is currently commercially available.
		Soil Aeration	This process removes organic contaminants from soil/sediment by partitioning. Some further treatment system may be required to treat the air, and potential impacts on air quality must be evaluated. The effect of this process on semivolatile contaminants would have to be evaluated prior to implementation.
		Vacuum Extraction	Underground wells are operated under a vacuum to volatilize and extract soil gases. Vacuum system is constructed on-site to remove and collect volatile and semivolatile compounds from the unsaturated soil zone. May require extensive carbon air treatment system to treat the off-gases. Effectiveness on semivolatile compounds would have to be evaluated prior to implementation. Not applicable to sediment.
	Access Control	Posting Fencing Land Restrictions	Prevents contact with hazardous constituents. Will be considered in conjunction with other technologies. Not applicable to sediment.
	No Action		To be considered in conjunction with other technologies.

TABLE 4-6 (Continued)

PRELIMINARY IDENTIFICATION OF REMEDIAL ALTERNATIVES
MECHANICVILLE SITE

MEDIUM	CONCEPTUAL ACTION	REMEDIAL MEASURE	REMARKS
Groundwater	Containment	Capping	See soils.
	Diversion	Low Permeable Barriers	Retard lateral chemical migration within the soil and weathered bedrock zone by positioning on the competent bedrock surface. Would not retard vertical migration or chemical movement in bedrock fractures.
		Injection Wells/Interceptor Trenches	Control groundwater flow direction. Generally used in conjunction with groundwater extraction.
	In-situ Treatment	Biodegradation	Analysis/culture of the contaminated water to determine the present activity and nutrient levels needed to stimulate hydrocarbon-utilizing bacteria.
		Aquifer Flushing	May include the use of chemical additives. Often used in conjunction with groundwater removal.
		Other Technologies	Cost-effectiveness is dependent on concentration and types of contamination. Physical or physical/chemical technologies such as oxidation and precipitation may be applicable to highly contaminated waters.
	Removal	Extraction of Groundwater via Pumping	If large volumes of water are to be extracted, on-site treatment may be appropriate. May include recharge or discharge to surface drainage. Distribution of contamination and required operating period is not known. May require years of operation.
	Treatment	Carbon Adsorption	Contaminated carbon filters require appropriate disposal or regeneration. Data regarding process efficiency and applicability are available.
		Biodegradation	On-site biological treatment may be considered if large volumes of groundwater require treatment. Extracted groundwater may also be released to publicly owned treatment works for secondary biological treatment depending on present plant capacity, waste characteristics, and feasibility.
		Steam Stripping	Steam stripping is essentially a continuous fractional distillation process using steam to remove organics from aqueous wastes. Residuals, including steam condensate, recovered solvents, and "stripped" effluent must be disposed of or treated.
		Incineration	Likely to destroy organic wastes in groundwater, but process cost is expected to be high.
		UV/Oxidation	UV light is used to enhance the reactivity of oxidants (e.g., ozone or hydrogen peroxide) with organics. Hydrocarbons and chlorinated solvents are effectively destroyed. However, UV light cannot effectively catalyze reactions in opaque solutions. Process by products (e.g., off-gas, froth) are a concern with concentrated wastestreams.
	No Action		To be considered in conjunction with other technologies.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The findings of the Task 2 and Task 3 programs are summarized in this section. Based on these findings, a Task 4 risk assessment program is recommended.

5.1 SUMMARY OF TASK 2 AND TASK 3 FINDINGS

The findings from field investigations and analytical programs conducted during Task 2 and Task 3 at the Mechanicville site are summarized as follows:

- The shallow geology consists of 8 to 25 feet of heterogeneous fill deposits including a silty sand and gravel, a clayey silt and fractured shale, and a silty shale, overlying fractured shale bedrock.

- The water table is approximately 5 to 10 feet below ground surface. Groundwater movement is principally within the silty shale and underlying bedrock fractures.

- Regional groundwater flow is west to east across the site, toward the Hudson River. Locally, groundwater flows to the north-northwest, discharging to the Anthony Kill.

- Chemicals related to former coal gasification activities are present in the soils and in the shallow and deep groundwater near the former gas plant structures; specifically, the purifier and oxide houses, the relief gas holder, and the filter beds.

- The concentrations of seven chemicals (i.e., benzo(a)pyrene, benzene, styrene, total cyanide, iron, regulated organics, and phenolics) in shallow and deep groundwater exceeded the applicable state standards for these chemicals.

- Benzene and toluene were found in all air quality samples collected but concentrations did not exceed applicable OSHA, ACGIH, and NIOSH standards.

- The primary routes identified for off-site chemical migration are via groundwater in the shallow and deep bedrock fractures, and the silty shale fill. Chemical migration is influenced by an east-trending shallow bedrock trough located downgradient of the relief gas holder.

- Land use in the vicinity of the site is both residential and commercial. Day care centers, schools, recreational areas, nursing homes, and elderly housing projects are located in the vicinity of the Mechanicville site. The site itself is used as a natural gas and electric service center.

- Migratory pathways for chemical migration or transport off-site include air (primarily during excavation of site soils), surface

water, groundwater, sediments, and movement of non-aqueous phase coal tar along the bedrock surface and through fractures.

- Potential receptors for chemicals found at the site include more sensitive segments of the population, including the elderly, young children, and the infirm. Additionally, people in the vicinity of the site may be exposed to airborne chemicals predominantly during excavation activities.

From these findings, the following conclusions can be drawn:

- The soils and groundwater in the former active plant area contain chemicals related to the coal gasification process.

- The coal gasification wastes in the subsurface environment are a continuing source of chemicals to soil and groundwater, and groundwater is the vehicle of transport.

- Downward seepage gradients within the bedrock trough near North Central Avenue are carrying chemicals down into shallow and deeper bedrock fractures.

- Chemicals are migrating northeasterly in the groundwater at the site, discharging to the Anthony Kill, and migrating easterly toward the Hudson River. The Anthony Kill is a groundwater discharge zone.

5.2 TASK 4 RECOMMENDATIONS

Jordan recommends that a Task 4 Risk Assessment be conducted for the Mechanicville site. Jordan will assess the risks associated with exposure to site-related contaminants under both existing and future use conditions at the site.

5.2.1 Site Characterization and Extent of Contamination

In the introduction to the Task 4 Report, the site, its surroundings, and the distribution of chemicals on-site will be described. This information will be extracted from the Task 2 and Task 3 reports. Although minimal effort is required to collect this information, its inclusion in the Task 4 Report is necessary for completeness. Based on the areal and vertical distribution of contaminants identified at the site, the appropriate exposure concentrations for assessing risk will be identified.

5.2.2 Selection of Indicator Compounds

If necessary, Jordan will select a subset of the chemicals identified at the Mechanicville site to represent the potential hazards at the site. The compounds selected will be the most toxic, prevalent, frequently detected, mobile, and/or persistent.

5.2.3 Hazard Identification

Jordan will identify the potential hazards associated with exposure to the indicator chemicals and will summarize the toxicologic effects of the indicator chemicals, as identified in both animal and human studies. The hazard identification will include acute and chronic toxicity, carcinogenicity, mutagenicity, teratogenicity, pharmacokinetic properties, and existing health standards and guidelines. The exposure assessment sections for specific chemicals or groups of chemicals will be similar in scope and length to those in Volume III - Risk Assessment (Draft) of the Gas Research Institute's guidance documents entitled, "Management of Manufactured Gas Plant Sites." The evidence on specific toxic endpoints (e.g., the International Agency for Research on Cancer [IARC] and USEPA carcinogenicity classifications) will be provided when available.

5.2.4 Dose-response Assessment

Jordan will identify the dose-response data used to quantitatively assess risks. These data include cancer potency factors for carcinogenic compounds and acceptable daily intake levels (e.g., USEPA-verified reference doses) for noncarcinogenic substances. The toxicologic study of Neal and Rigdon (1967), which was used to develop the Cancer Assessment Group (CAG) potency factor for benzo(a)pyrene, will also be critically reviewed and discussed. The mathematical extrapolation model used to develop the potency factor will also be identified and discussed briefly. A discussion of the uncertainties and limitations of cancer risk assessments will be included.

5.2.5 Comparison to Existing Health Guidelines and Standards

The comparison of the chemical concentrations at the site to existing state and federal health-based criteria and standards completed in Task 3 will be reviewed and updated; if necessary.

5.2.6 Exposure Assessment

In the Task 4 Exposure Assessment, Jordan will summarize the possible pathways of exposure and potentially exposed populations for the Mechanicville site identified in the Task 2 and Task 3 report. Jordan will develop exposure scenarios to assess future risks. Jordan will consult with NYSEG as it develops the exposure scenarios to receive input on the selection of various exposure parameters (e.g., frequency and duration of exposure) and the areas of possible future construction and excavation. The Task 4 report will document all exposure-related parameters used to assess risks.

Pathways by which people are or could be exposed to site-related contaminants will be identified. Both present and future pathways will be identified. Under present conditions, the opportunity for direct contact, incidental ingestion, or inhalation of airborne contaminants is limited to exposure to soils near the streambank in the area of the former filter beds. Most of the site is covered with structures or has been paved. However, present and future excavation, could cause exposure to coal tar-related contaminants. Exposure to construction workers, utility repairpersons, on-site employees, pedestrians,

and commuters will be considered. Dermal contact, incidental ingestion, and inhalation exposure to selected receptor groups will be quantitatively assessed. A day care center, a nursery school, an elementary school, a special education school, an elderly housing project, several parks and playgrounds, and a large area of recreational/open space are all within a half-mile of the site and will be considered in conjunction with the exposure assessment.

Groundwater contamination has been found at the site. The groundwater is migrating northeasterly, toward Anthony Kill, and to the east toward the Hudson River. There are no known groundwater users near or downgradient of the site. The Mechanicville water supply reservoir is upgradient of the site. Therefore, under current use, the potential for public water supply contamination is slight. There is, however, future potential for commercial/industrial groundwater use down-gradient from the site. Potential future groundwater use will be considered in conjunction with the exposure assessment.

The Anthony Kill receives contaminants from discharge of contaminated groundwater, and analysis of river sediments has revealed contamination there. Adjacent to and downstream of the site, the stream is classified as Class D (i.e., it should not be used for water supplies, fishing, or contact recreation). Despite this low classification, children may still fish, boat, or play in the stream and along the banks and construction activities may be undertaken along and within the stream channel. For example, in September 1988 remedial structural work was performed on the Central Avenue Bridge adjacent to the site. Information and results from these construction activities will be incorporated into the risk assessment. Direct contact and incidental ingestion of contaminated sediments will be assessed for health risk.

For each exposure scenario developed, Jordan will identify the population(s) at risk and, if appropriate, estimate the dose received from exposure. The values selected for the exposure parameters will be identified, and appropriate references will be cited.

5.2.7 Risk Characterization

When possible, quantitative estimates of the carcinogenic and noncarcinogenic risks associated with the various exposure scenarios will be provided. If adequate dose-response data do not exist for a chemical of interest, a qualitative discussion of the risks will be provided. Uncertainties associated with the monitoring data, exposure and risk estimates, and risk assessment methodologies (including animal-to-human and high-to-low dose extrapolations) will be discussed.

5.2.8 Development of Target Clean-up Levels

Target clean-up levels (TCLs) for the Mechanicville site will be developed, if appropriate. The need for TCLs depends on findings of the Task 4 Risk Assessment. If chemicals on-site are found to present significant health risks, then TCLs will be developed to guide the planning and implementation of remedial activities.

5.2.9 Environmental Assessment

For the environmental assessment, potential aquatic and terrestrial receptors will be identified by contacting appropriate state and local environmental agencies (i.e., to obtain species lists). Existing site information will be reviewed on soil, groundwater and sediment quality. Applicable criteria or standards from USEPA or New York State DEC will be identified, and concentrations of contaminants found associated with the site will be compared to appropriate standards or criteria.

5.2.10 Development of Scope of Work for Task 5

At the end of Task 4, Jordan will evaluate the need for Task 5 (Conceptual Design). If Task 5 is recommended, a Scope of Work for Task 5 will be developed, including budget and schedule.

5.2.11 Report Preparation

Results of the Risk Assessment and recommendations for further work at the site will be submitted as a draft report to NYSEG for review and approval. A Final Task 4 Report will be submitted following response to the review comments.

6.0 SCHEDULE AND COST

6.1 SCHEDULE

Jordan will begin the Task 4 Risk Assessment within two weeks of receipt of authorization to proceed from NYSEG (expected in mid-July 1989). A Draft Task 4 Report will be submitted to NYSEG in October 1989; this report will be finalized one month following the receipt of comments from NYSEG.

6.2 COST

The estimated cost of the Risk Assessment Program (Task 4) is presented in Table 6-1. This cost is based upon the results of the previous and Task 3 site evaluations as well as the current level of effort required by regulatory agencies for assessing risks at hazardous waste sites. The program costs presented do not include hours for responding to NYSDEC review comments, if required.

GLOSSARY OF ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
AWQC	Ambient Water Quality Criteria
CC	ceiling concentration
CAG	Cancer Assessment Group
cfs	cubic feet per second
CNS	central nervous system
DOT	Department of Transportation
FID	flame ionization detection
ft/ft	feet per feet
GC	gas chromatography
gpm	gallons per minute
GPR	ground-penetrating radar
HPLC	high-performance liquid chromatography
IARC	International Agency for Research on Cancer
MCLs	Maximum Contaminant Levels
MCLGs	Maximum Contaminant Level Goals
MDL	Minimum Detection Limit
mgd	million gallons per day
mg/kg	milligrams per kilogram
MS	mass spectrometry
MSL	mean sea level
ND	nondetect
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
NYSDEC	New York State Department of Environmental Conservation
NYSEG	New York State Electric and Gas Corporation
OSHA	Occupational Safety and Health Administration
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
ppm	parts per million
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
SDWA	Safe Drinking Water Act
SIR	Subsurface Interface Radar
STEL	short-term (15-minute) exposure limit
SVOCs	semivolatile organic compounds

TCL	target clean-up level
TLV	Threshold Limit Values
TOC	total organic carbon
TSP	total suspended particulates
TWA	time-weighted average
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
USWAG	Utility Solid Waste Activity Group
UV	ultraviolet
VOCs	volatile organic compounds

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APPENDIX A

FIELD DATA

APPENDIX A-1

TEST PIT LOGS AND FIELD OBSERVATIONS

TEST PIT OBSERVATIONS
MECHANICVILLE SITE

Test Pit	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
TP-1	7.7	Brown fill with cobbles from 0 to 0.8 ft. and black ash with clinkers and cinders from 0.8 to 2.0 ft. Reddish brown fine sandy silt, small cobbles, large boulders, organic material, bricks and clinkers from 2.0 to 3.0 ft., and brown sandy silt with cobbles, clinkers, glass, wood, and bricks from 3.0 to 6.0 ft. From 6.0 to 7.7 ft., light brown clayey silt with dark stains in root channels and highly fractured shale fragments. Wet, oily sheen at 7.7 ft. No visible coal tar.	Slight odor in black ash layer from 0.8 to 2.0 ft. Slight odor in light brown clayey silt layer from 6.0 to 7.7 ft. PID-background levels.**	Sample TP-1/S-1 at 6.5 to 7.0 ft.*
TP-2	7.5	Brown to dark brown silty sand with sharp angular cobbles from 0 to 1.3 ft. Brown sandy fill with bricks from 1.3 to 2.6 ft. Angular cobbles and boulders from 2.6 to 5.5 ft. with less weathered angular rocks in sand matrix from 5.5 to 7.0 ft. Angular cobbles (>50%) with gray clayey silt and brown sandy silt lenses from 7.0 to 7.5 ft. No visual signs of coal tar wastes.	PID readings of background levels in ambient air. Readings of 10 ppm from sampled material.	Sample TP-2/S-1 at 7.0 to 7.5 ft.*

TEST PIT OBSERVATIONS (continued)

Test Pit	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
TP-3	3.0	Light brown sandy silt with cobbles from 0.2 to 1.0 ft., and dark brown silty fill with cobbles, bricks, concrete from 1.0 to 3.0 ft. Concrete obstruction at 3.0 ft. No visible signs of coal tar or other contamination encountered.	PID readings at background level in ambient air and for soil.	No samples collected due to concrete obstruction.
TP-4	5.5	Light brown sandy silt with cobbles from 0.1 to 0.3 ft. and dark brown sandy silt with cobbles from 0.3 to 1.0 ft. Bricks from 1.0 to 1.5 ft. Light brown sand from 1.5 to 3.0 ft. Angular shale saturated with coal tar from 3.0 to 4.5 ft. and larger angular shale fragments from 4.75 to 5.5 ft. (saturated with coal tar).	PID readings of 30-40 ppm near sampled soil (3 to 4 feet below ground surface).	TP-4/S-1 at 3.0 to 4.0 ft. *
TP-5	6.5	Light brown sandy silt with cobbles from 0 to 1.3 ft and dark brown sandy silt with angular cobbles from 1.3 to 3.0 ft. Highly fractured shale, silt and clay soil, wood chips, and coke fragments saturated with coal tar from 3.0 to 6.5 ft. At 6.5 ft., silt and fractured shale saturated with coal tar.	PID reading of 50 ppm over saturated soil.	TP-5/S-1 from 3.0 to 4.0 ft.* TP-5/S-2 from 4.0 to 6.0 ft.* Duplicate sample TP-5/S-1 Dup.*

* Samples analyzed by ERCO.

** Background PID levels represent ambient air levels obtained outside and upwind of the site boundaries. At the Mechanicville site, background levels were generally less than 5 ppm.

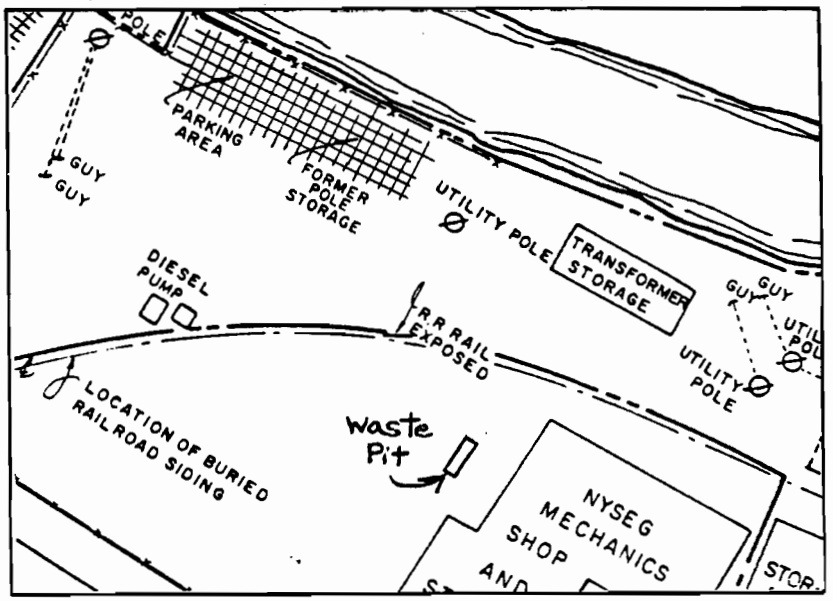
TEST PIT RECORD

SITE Mechanicville - NYSEG 4945-02

TEST PIT Waste Pit DATE 7/21/86 TIME ST. 1000 END 1030

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. S.Wibby
2. C. Moore
3. PT } Maloy (Empire)
4. RC }
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation Meter

PHOTOGRAPHS, ROLL #1

EXPOSURE # 0

NOTES

0' – 0.3' Brown sandy fill with cobbles.

0.3' – 0.7' Asphalt

0.7' – 1.2' Brown sandy fill with cobbles

1.2' – 4.0' Brown to black sandy fill with clinkers, cobbles brick fragments, cobbles, and white/gray ash.

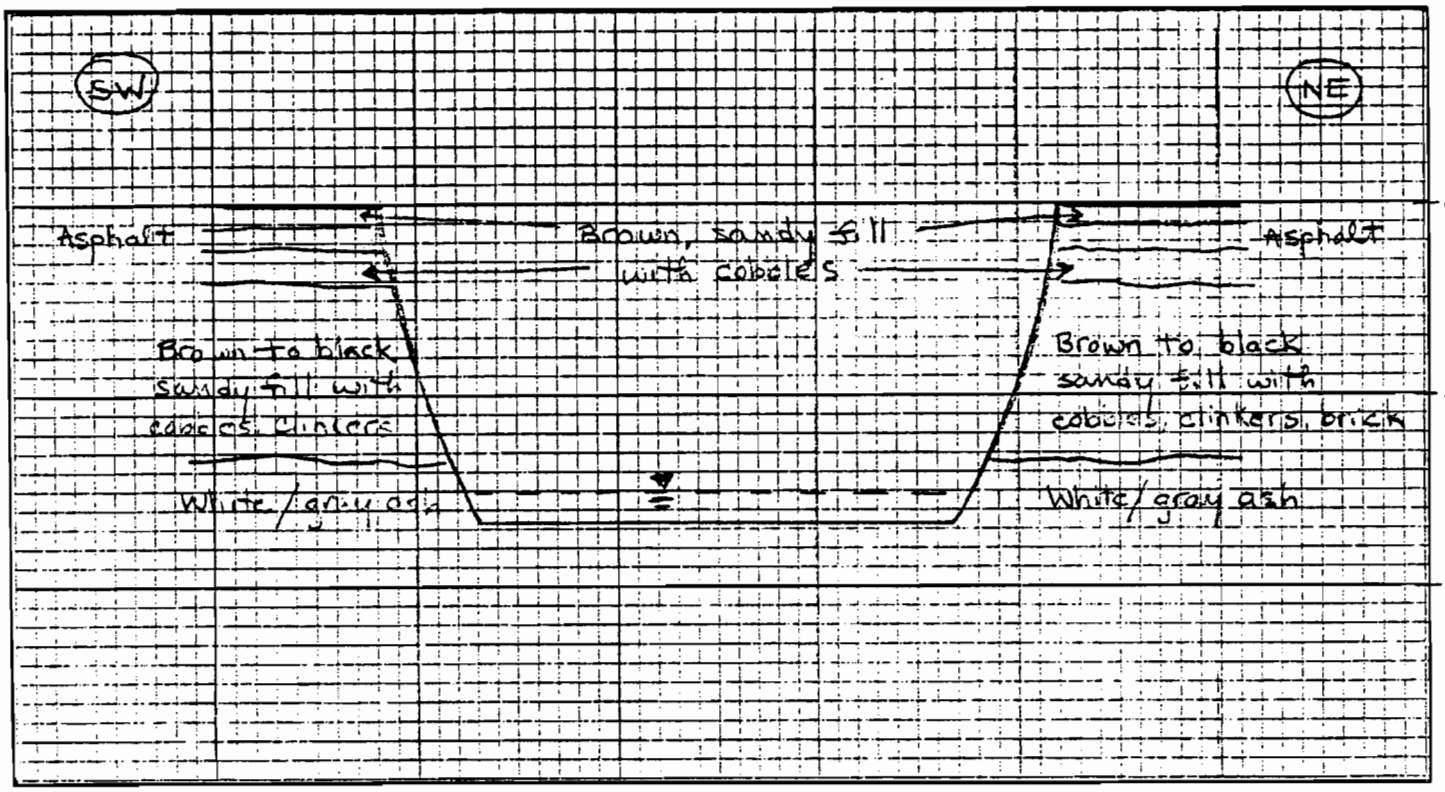
4.0' – 5.0' White/gray ash containing coke, clinkers, some wood, cobbles, and cinders grading back into cobbly brown fill.

∇ at 4.5'

TEST PIT RECORD
PROFILE ALONG TEST PIT- Waste Pit

SITE Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions: W x L x D 2.5' x 10' x 5'

No visible coal tar but ash, coke and clinkers present.

PI readings at background level.

SAMPLES OBTAINED No Samples

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1			
S-2			
S-3			
S-4			
S-5			
S-6			
S-7			
S-8			

REFERENCE: FIELD BOOK, PG. _____

ATTACHMENTS _____

Christina Moore

SIGNATURE

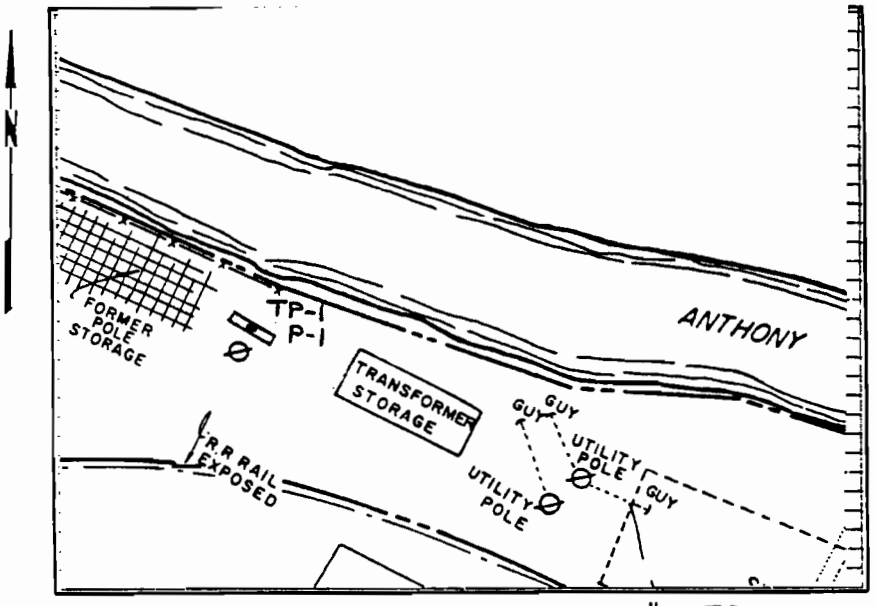
TEST PIT RECORD

SITE Mechanicville NYSEG 4945-02

TEST PIT TP-1 DATE 7/21/86 TIME ST. 10:50 END 11:30

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. S. Wibby
2. C. Moore
3. P. Tierney } Maloy (Empire)
4. R. Ciccateri }
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation meter

PHOTOGRAPHS, ROLL # 1

EXPOSURE 1

NOTES

FILL

0'-0.8' Brown sandy fill with cobbles loose, dry

0.8'-2.0' Black ash with clinkers and cinders oxidized, loose, dry. Slight odor.

2.0'-3.0' Reddish brown fine sandy silt with small cobbles, large rounded boulders, organic material (roots), bricks and clinkers

3.0'-6.0' Brown sandy silt with cobbles, clinkers glass, wood bricks. Dry and loose.

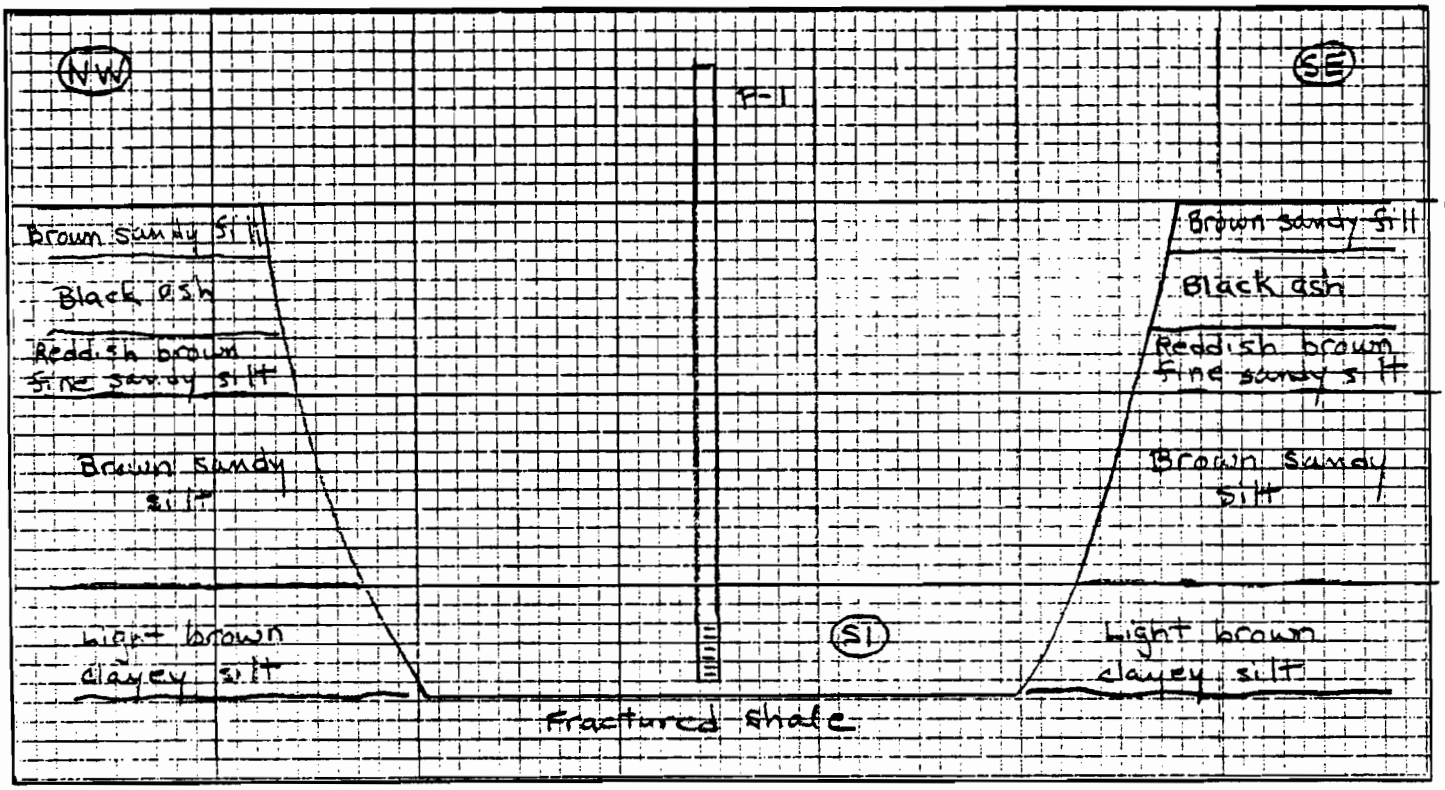
6.0'-7.7' Light brown Clayey silt, cohesive, moist with mottling and slight odor. Dark stains in root channels.

7.7 Bedrock. Highly fractured shale, wet oily sheen. No groundwater seepage.

TEST PIT RECORD
PROFILE ALONG TEST PIT- 1

SITE NYSEG Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions (L x W x D)
14' x 1.5' x 7.7'
No groundwater seepage.
PI readings at background level.
No visible coal tar but ash & clinkers present.
Piezometer (P-1) installed behind utility pole - screened from 6.5' to 7.5'.

SAMPLES OBTAINED

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1	6.5'-7.0'	MEEXTPXX01/11	
S-2			
S-3			
S-4			
S-5			
S-6			
S-7			
S-8			
	Collected soil for		
	lab permeability test.		

REFERENCE: FIELD BOOK, PG. _____
ATTACHMENTS _____

Christina Moore
SIGNATURE

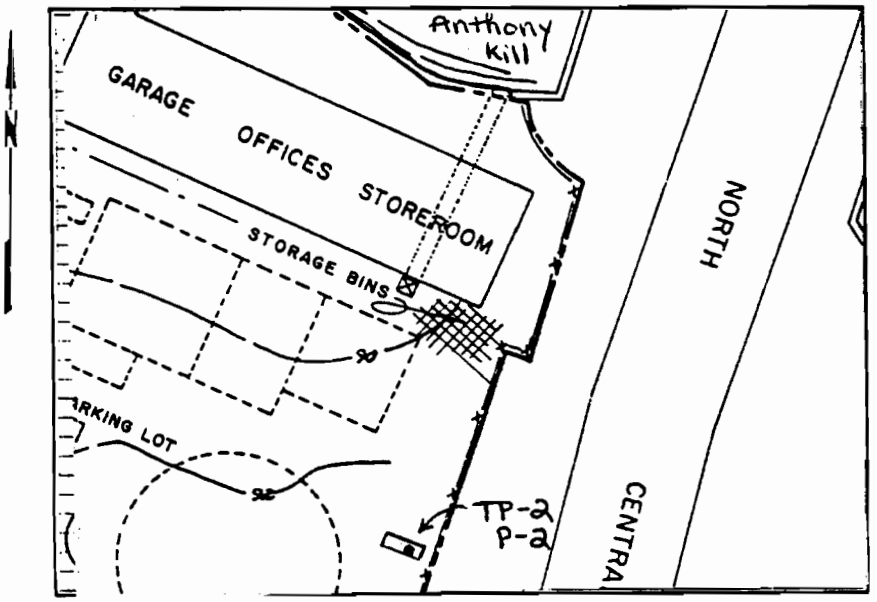
TEST PIT RECORD

SITE Mechanicville - NYSEG 4945-02

TEST PIT TP-2 DATE 7/21/86 TIME ST. 15:30 END 16:45

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. C.Moore
2. S.Wibby
3. PT } Maloy (Empire)
4. RC }
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation meter

PHOTOGRAPHS, ROLL #1

EXPOSURE #9, #10

NOTES 0'-1.3' Brown to dark brown silty sand with sharp angular cobbles (>50%)

1.3'-2.6' Brown sandy fill with bricks, oxidized

2.6'-5.5' Angular cobbles and boulders with some sandy fill. Highly weathered. (75% rock material)

5.5'-7.0' angular rocks, less weathered, with sand matrix

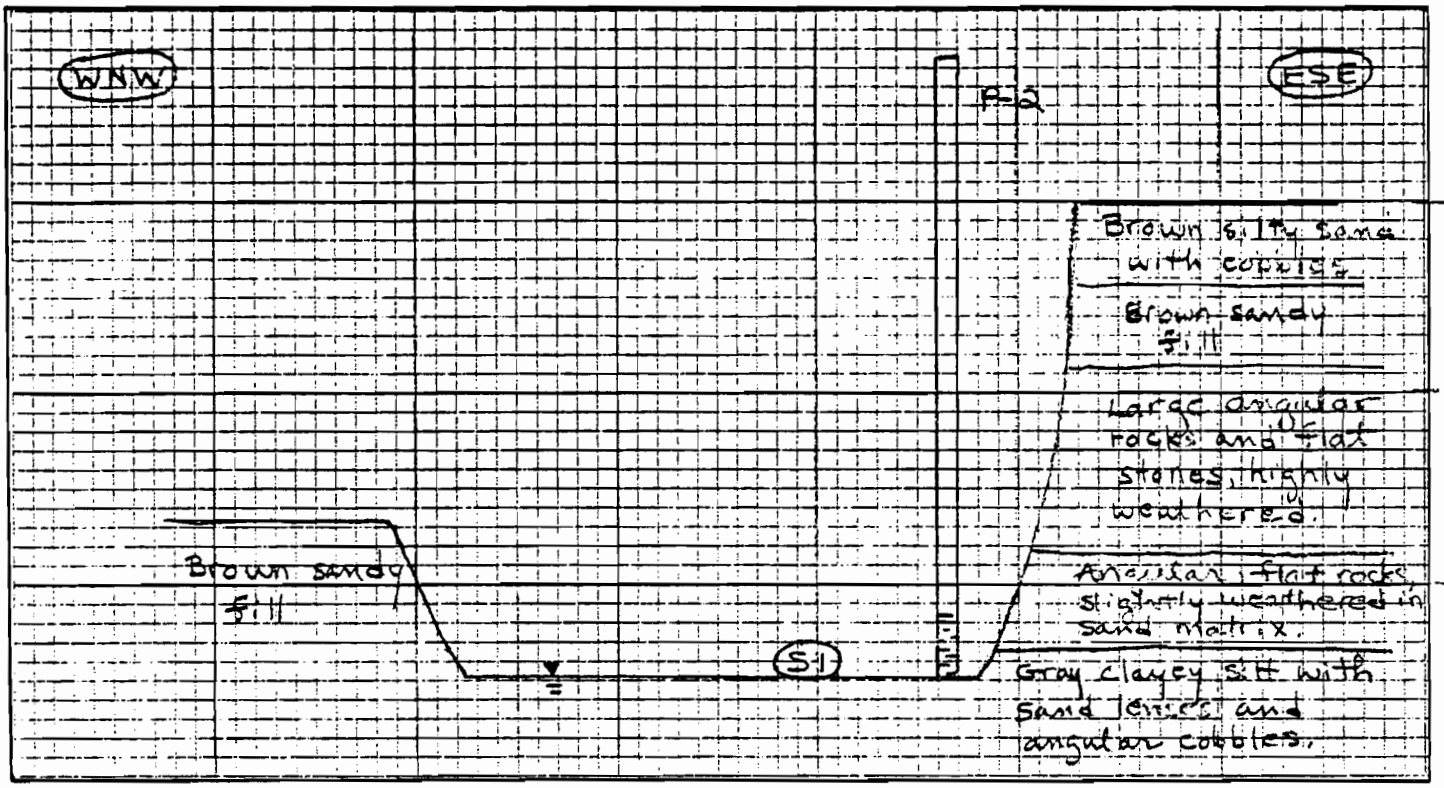
7.0'-7.5' & light gray clayey silt matrix with brown sandy silt lenses with angular cobbles (>50%). Mottling

▽ 7.5'

TEST PIT RECORD
PROFILE ALONG TEST PIT- 2

SITE NYSEG Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions (LxWxD):
11' x 2' x 7.5'

PI readings at background level in ambient air - 10 ppm from sampled material.

No visible coal tar.

Piezometer (P-2) installed on bank - screened from 6.5'-7.5'.

Test pit was dug into the bank.

SAMPLES OBTAINED

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1	7.0'-7.5'	MEEXTPXX02/11	
S-2			
S-3			
S-4			
S-5			
S-6			
S-7			
S-8			

REFERENCE: FIELD BOOK, PG. _____
ATTACHMENTS _____

Christina Moore
SIGNATURE

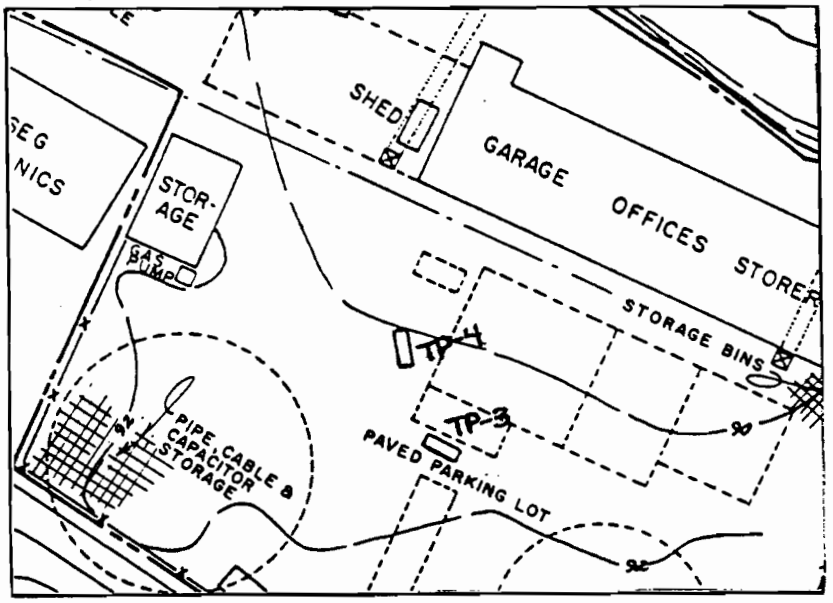
TEST PIT RECORD

SITE Mechanicville NYSE G 4945-02

TEST PIT TP-3 DATE 7/21 TIME ST. 14:15 END 14:30

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. C Moore
2. S Wibby
3. PT } Maloy
4. RC } (Empire)
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N Background
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation meter

PHOTOGRAPHS, ROLL —

EXPOSURE —

NOTES 0.2'-1' Light brown sandy silt with cobbles loose, granular, dry.

FILL

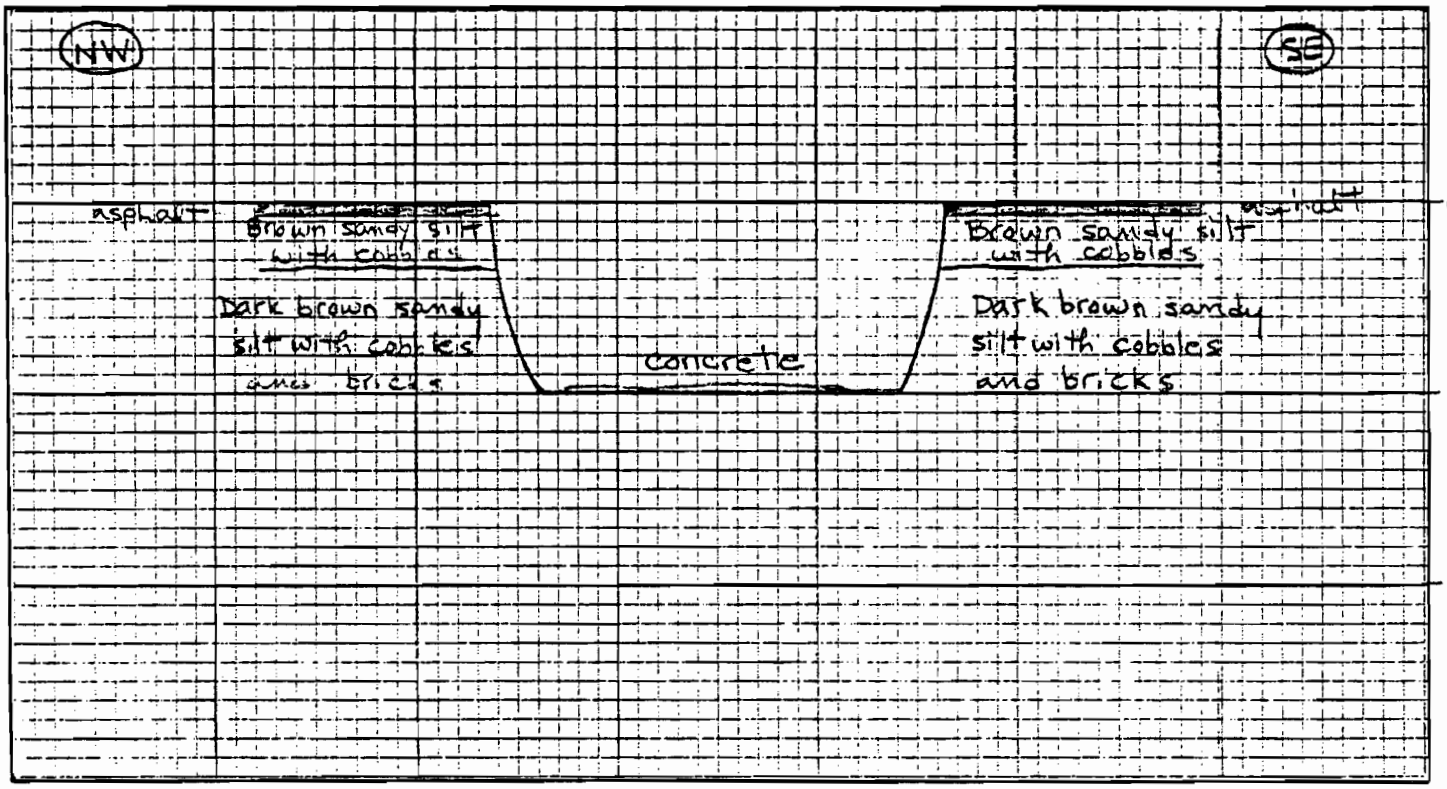
1'-3' Dark brown silty fill with cobbles, bricks, and concrete. Loose, dry and granular.

3' Concrete obstruction - refusal.

TEST PIT RECORD
PROFILE ALONG TEST PIT- 3

SITE NYSEG Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions (L x W x D): 7' x 2' x 3'

PI meter readings at background in ambient air and at soil.

No visible signs of coal tar or other contamination.

Test pit was abandoned after numerous attempts to break through a concrete obstruction encountered at 3.0'.

No groundwater seepage

SAMPLES OBTAINED

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1			
S-2			
S-3			
S-4		No Samples	
S-5			
S-6			
S-7			
S-8			

REFERENCE: FIELD BOOK, PG. _____

ATTACHMENTS _____

Christina Moore

SIGNATURE

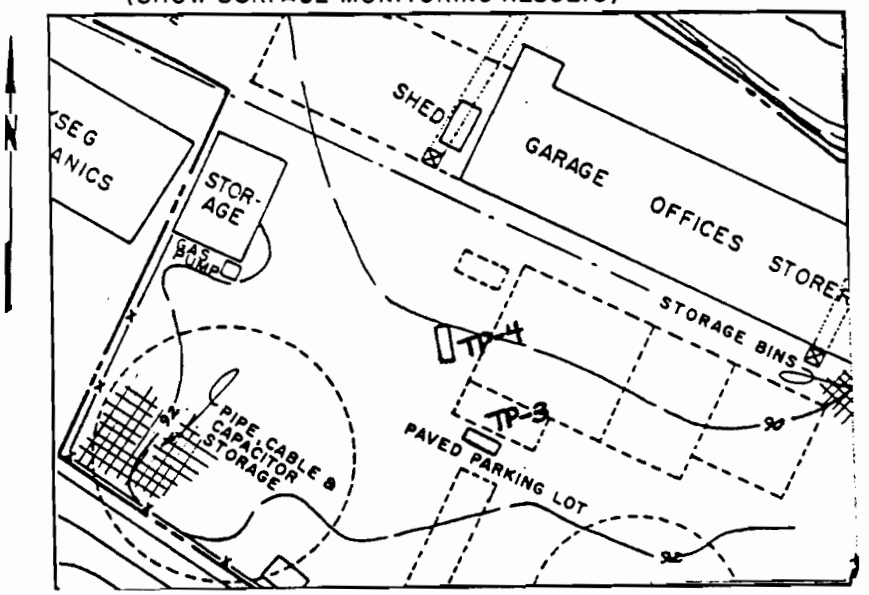
TEST PIT RECORD

SITE Mechanicville NYSEG

TEST PIT TP-4 DATE 7/21/86 TIME ST. 14:40 END 15:00

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. SWibby
2. CMoore
3. PT } Maloy (Empire)
4. RC }
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation meter

PHOTOGRAPHS, ROLL #1

EXPOSURE #6, 7, 8

NOTES 0.1' – 0.3' Light brown sandy silt w/ cobbles loose and dry.

0.3' – 1.0' Dark brown sandysilt w/ cobbles. Loose, dry.

1.0' – 1.5' Bricks

▽ 2.75' 1.5' – 3.0' Light brown sand, medium to fine

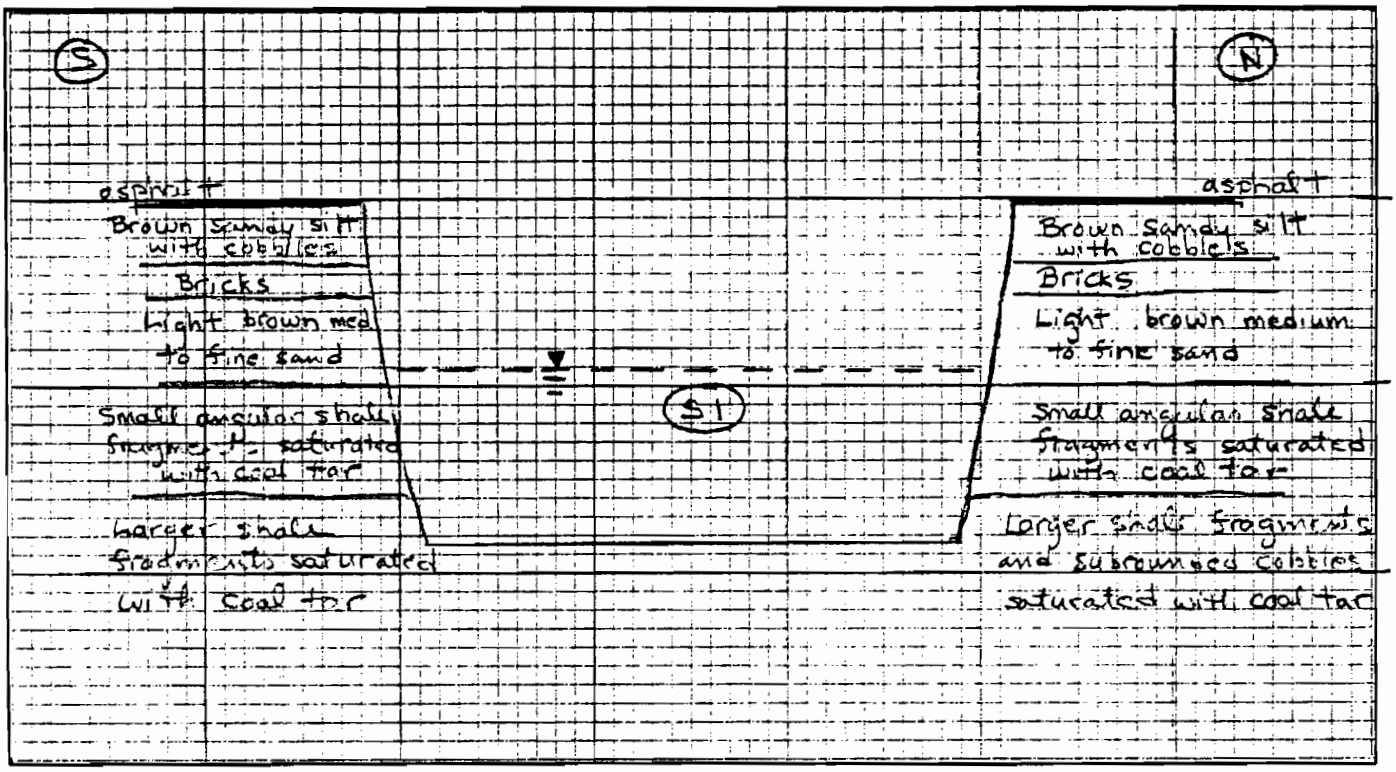
PI – 30 → 40ppm 3.0' – 4.75' angular shale rock fragments saturated with coal tar

4.75' – 5.6' Larger angular shale fragments and subrounded cobbles within clayey silt matrix. Saturated with coal tar

TEST PIT RECORD
PROFILE ALONG TEST PIT- 4

SITE NYSEG Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions (LxWxD): 10' x 2' x 5.5'

PI meter readings of 30-40 ppm near sampled soil.

Coal tar observed from 3' to bottom of pit.

Water flowed rapidly into the pit from the SE corner

SAMPLES OBTAINED

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1	3.0'-4.0'	MEEITPXX04/1	
S-2			
S-3			
S-4			
S-5			
S-6			
S-7			
S-8			

REFERENCE: FIELD BOOK, PG. _____

ATTACHMENTS _____

Christina Moore

SIGNATURE

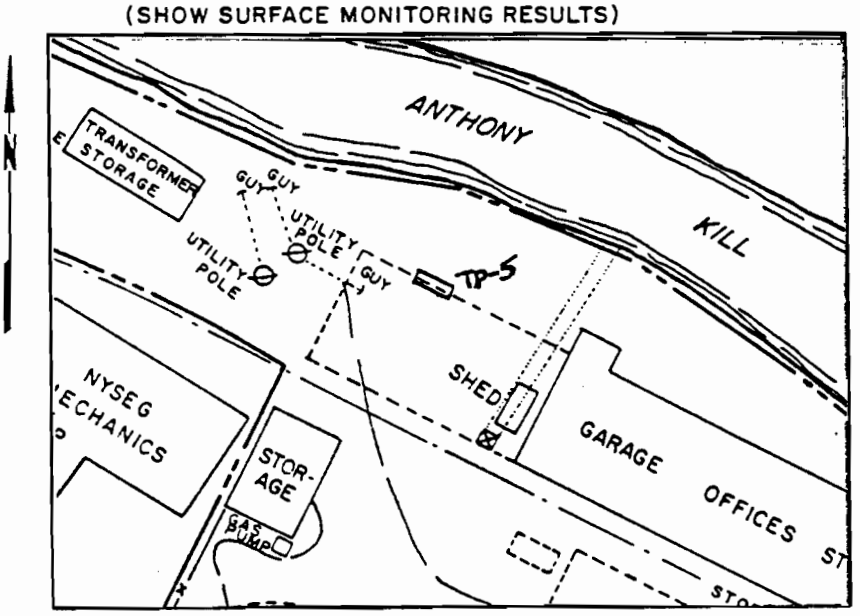
TEST PIT RECORD

SITE Mechanicville NYSEG 4945-02

TEST PIT TP-5 DATE 7/21/86 TIME ST. 12:50 END 13:45

COORDINATES N/A GRID ELEMENT N/A

SKETCH MAP OF TEST PIT SITE
(SHOW SURFACE MONITORING RESULTS)



SCALE 1" = 50 FT

CREW MEMBERS

1. SWibby
2. CMoore
3. PT } Maloy (Empire)
4. RC } Maloy (Empire)
5.
6.

MONITOR EQUIPMENT

PI METER	(Y)	N
EXPLOSIVE GAS	(Y)	N
AVAIL. OXYGEN	(Y)	N
OVA	Y	(N)

OTHER Radiation meter

PHOTOGRAPHS, ROLL #1

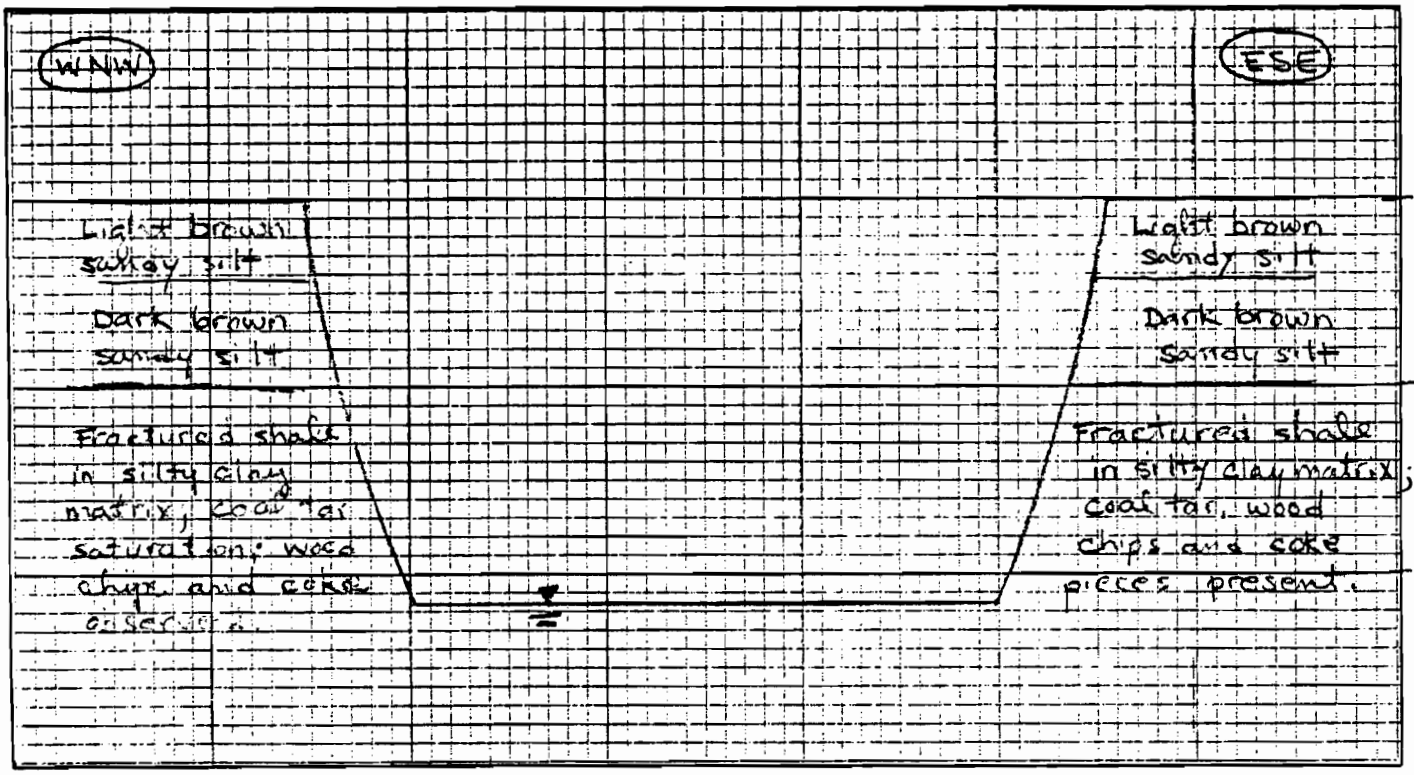
EXPOSURE #2,3,4,5

NOTES 0'-1.3' Light brown sandy silt with cobbles
1.3'-3.0' Dark brown sandy silt with angular cobbles (exposed tile drain at approx. 2')
3.0'-6.5' Highly fractured shale, weathered with silt and clay soil, loose. Wood chips and coke fragments present, saturated with coal tar.
▽ 6.5' Fractured bedrock surface; coal tar saturation; groundwater seepage.

TEST PIT RECORD
PROFILE ALONG TEST PIT- 5

SITE NYSEG Mechanicville

DEPTH (FT) SCALE 1" = 3 FT



NOTES:

Test pit dimensions (LxWxD): 12.5' x 2' x 6.5'

Coal tar saturation from 3' to bottom of pit.

PI meter reading of 50 ppm over saturated soil.

Groundwater seepage observed at bottom of pit.

Tile drain uncovered at approx. 2'.

SAMPLES OBTAINED

NO.	DEPTH (FT)	INIT. SER. NO.	HD. SP. VOA PPM
S-1	3.0'-4.0'	MEEXTPXX05/11	
S-2	4.0'-6.0'	MEEITPXX05/21	
S-3		(GC/MS)	
S-4			
S-5			
S-6			
S-7			
S-8			
Dup of S1	3.0'-4.0'	MEEXTPXX04/11	

REFERENCE: FIELD BOOK, PG. _____

ATTACHMENTS _____

Christina Moore

SIGNATURE

APPENDIX A-2

BORING LOGS AND FIELD OBSERVATIONS

DRILLING OBSERVATIONS
MECHANICVILLE SITE

Test Boring	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
B-1	20.2	Black coke ash up to 3mm diameter, from 3.5 to 4.0 ft. Brick fragments and glass encountered from surface to 8.0 ft. Dark gray shale bedrock at 12.2 ft.	No unusual odors. PID-background levels.[a]	Sample B-1/S-1 from 8.0 to 10.0 ft.[b]
B-2	16.2	Sandy to gravelly fill with shale fragments from 0.5 to 6.0 ft. Weathered shale bedrock at 9.4 feet. No visual signs of coal tar wastes encountered in boring.	No unusual odors. PID-headspace reading of 13 ppm on soil from 4.0 to 6.0 feet. Background levels elsewhere.	Sample B-2/S-1[b] from 8.0 to 9.5 ft.
B-3	9.2	Black, stained wood chips from 2.0 to 4.0 ft. Trace coal tar-stained organics and fly ash from 4.0 to 6.0 ft., and coal tar staining in sandy silt and shale chips from 6.0 to 8.0 ft. Coal tar stains from 8.0 to 9.2 ft. on weathered bedrock with little silt and fine sand.	PID headspace readings of 270 ppm and 250 ppm from 4.0 to 6.0 ft. and 6.0 to 8.0 ft., respectively.	Sample B-3/S-1[b] from 4.0 to 6.0 ft. Sample B-3/S-2 from 6.0 to 8.0
B-4	16.8	Brick chips from 4.0 to 6.0 ft. Coal tar staining noted from 6.0 to 14.0 ft. and 16 to 16.8 ft. Weathered bedrock and shale fragments predominant from 8 to 16 ft.	Coal tar odor from 4.0 - 6.0 ft. PID-ambient air readings of 10 ppm and 2 ppm at 6.0 to 8.0 ft. and 8.0 to 12.0 ft. PID-headspace readings of 10 to 70 ppm from depths of 4.0 to 12.0 ft.	Sample B-4/S-1 from 6.0 to 8.0 ft.[2]

DRILLING OBSERVATIONS (continued)
MECHANICVILLE SITE

Test Boring	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
B-5	19.4	Fill material with brick, coal clinkers, fly ash and shale chips from 6.0 to 8.0 ft. Predominantly sand and gravel with organics, coal clinkers, and wood chips from 8.0 to 9.6 ft. Coal tar sheen on brown silt with shale chips from 10.5 to 11.5 ft. Bedrock at 11.5 ft.	PID background levels for ambient air. PID headspace readings of 22 ppm and 175 ppm from 10.0 to 10.9 ft and 10.5 to 11.5 ft., respectively.	Sample B-5/S-1 from 10.0 to 10.9 ft.[b] Sample B-5/S-2 from 10.5 to 11.5 ft.
B-6	32.0	Casing driven to bedrock at 17 ft. Dark gray shale bedrock thinly laminated, hard, broken, and unweathered.	PID ambient air readings at background levels. 250 - 450 ppm off of augers at 1.5 to 2.5 ft. PID headspace readings of 300 ppm at 9.2 ft. and background levels from 17.0 to 22.0 ft.	No samples collected.
B-7	9.0	Casing spun through concrete pad (0 to 3.0 ft) and spoon pounded to 7.0 ft. Coarse sandy fill with pebbles and shale fragments from 7.0 to 9.0 ft.	No ambient air or headspace readings taken.	Sample B-7/S-1[b] from 7.0 to 9.0 ft.
B-8	17.4	Trace organics from 4.0 to 5.2 ft. Black stains on silt fill and shale fragments from 6 to 6.3 ft. Some coal tar visible on silt with cobbles from 9.5 to 13.5 ft. Extensive coal tar from 13.5 to 15.5 ft. on silty fill and shale fragments. Black, stained silty sand from 15.5 to 17.4 ft.	Slight odor from 4.0 to 6.3 ft. and 9.5 to 11.5 ft. PID ambient air readings of 1-2 ppm from 4.0 to 5.2 ft. PID headspace readings of 1-2 ppm, 20 ppm, and 30 ppm from 4.0 to 5.2 ft., 6 to 6.3 ft, and 7.5 to 9.5 ft, respectively.	Sample B-8/S-1 from 9.5 to 11.5 ft. Sample B-8/S-2 from 13.5 to 15.5 ft.[2] Sample B-8/S-3 from 15.5 to 17.5 ft.[2]

DRILLING OBSERVATIONS (continued)
MECHANICVILLE SITE

Test Boring	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
B-9	5.5	1½" of bituminous material over cobbley to gravelly silty sand (fill) to 4 ft; observable contamination at 2.7 ft, over thinly bedded and weathered rock.	PID headspace readings of 65 ppm from 4 to 5.5 ft; ambient air readings at low levels.	Sample B-9/S-1[c] from 4.0 to 5.5 ft.
B-10	19.7	Brown and black ash fill, cinders, coal, and glass, over tan to black silt (fill) to 9 feet. Observable contamination at 10 ft in gravelly silty sand; becomes less contaminated with depth. Oxidized rock begins near 18.5 ft.	PID headspace readings at background to 10 ft., increasing to 10 ppm and gradually diminishing to 6 ppm at 19 ft.	Sample B-10/S-1[c] from 16.0 to 18.0 ft.
B-11	18	Brown to olive brown silty sand to sandy silt (fill) to weathered rock at 3 ft. Hit solid rock near 6 ft.	No unusual odors. PID readings at background levels.	No analytical samples collected.
B-12	25.5	Black and yellow sand and silty sand over gray, brown and olive brown silty fine sand. Observable contamination below 14 ft.	Observable tar smell below 16 ft. PID headspace readings at background levels to 14 ft.; readings ranged from 9 ppm to 54 ppm down to 25.5 ft.	Samples B-12/S-1[c] from 16.0 to 18.0 ft.
B-13	55.5	See B-12 description. B-13 contains more gravel. Visible coal tar at 16 ft. Large cobble at 16.5 to 18.5 ft. Highly contaminated at 24 ft. Shale bedrock from 25.5 to 55.5 ft. Fracture at 55 ft. shows contamination on faces.	Coal tar odor at 16 ft. PID ranged from 10 to 50 ppm from 15 to 25.5 ft.	No analytical samples collected.

DRILLING OBSERVATIONS (continued)
MECHANICVILLE SITE

Test Boring	Total Depth (ft)	Visual Appearance	Odor and PID Characterization	Samples Collected
B-14	55	Brown, orange, and olive brown fine sands and silts. Weathered rock from 22 to 23.5 ft.	No unusual observations. PID readings at background levels.	Sample B-14/S-1 from 18.0 to 20.0 ft.[c]
B-15	39	Black cinder, ash, brick (fill) to bedrock at 9.0 ft.	No unusual odors but visual evidence of contamination. PID readings of 1.2 ppm at surface to 36 ppm at 6.0 to 8.0 ft.	Sample B-15/S-1 from 4.0 to 7.8 ft.[c] (Collected in a boring 6 ft. south of B-15).

[a] Background PID levels represent ambient air levels obtained outside and upwind of the site boundaries. At the Mechanicville site, background levels were generally less than 5 ppm.
[b] Samples analyzed by ERCO.
[c] Samples analyzed by NYSEG.

MECHANICVILLE BORING LOG

BORING NO. B-1

CLIENT NYSEG			PROJECT NO. 4945-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 7/23/86		COMPLETED 7/24/86
METHOD HSA/NX CORE	CASING SIZE 4.25 I.D.	HNU (1.7) 10.2	PROTECTION LEVEL D
GROUND EL. 96' MSL	SOIL DRILLED 11.0'	ROCK DRILLED 9.2'	TOTAL DEPTH 20.2'
LOGGED BY L. ESPY	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 8.65' 7-25-86

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	SAMPLE GC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA ELEV
0	Bkgd.	D.J. S-1				Bkgd.	0-2.0' Light brown sandy FILL with trace clay, loose, dry. Some glass, moderate amount of roots, and organics. Iron staining on surface. Recovery: .5/2.0	FILL	3 6 7 10	
2.5	Bkgd	D.J. S-2				Bkgd	2-3.5' Brown FILL same as above. 3.5-4.0' Black coke ASH up to 3mm diameter, loose, dry. Highly oxidized from 3.75' to 3.8'. .7/2.0	FILL	7 4 3 3	
5.0	Bkgd.	D.J. S-3				Bkgd.	4-6.0' Dark brown to black silty FILL with up to 1" diameter gravel, some organics, brick fragments and glass, dense, moist, some iron staining. .6/2.0	FILL	4 3 2 3	
7.5	Bkgd.	D.J. S-4				Bkgd.	6-8.0' Brown, silty FILL grading upwards to dark brown silty FILL, some gravel and glass, loose, very moist. .2/2.0	FILL	5 5 3 3	
10	Bkgd.	ANYL S-1 D.J. S-5				Bkgd.	8-10.0' Brown, gravelly SAND, up to 4 mm diameter, somewhat dense, dry. 9.4-9.6' - Black, organic matter with grass 1.0/2.0	SAND	5 5 4 4	
12.5	Bkgd.	R-1				Bkgd.	10-11.9' Brown, gravelly SAND with dry shale fragments up to 1 inch throughout, dense to very dense, dry. 11-11.9' - weathered shale with some silt, little oxidation. Refusal at 11.9'. 1.5/2.0	SAND	12 32 77 100/.4	
							BEDROCK AT 12.2'			
							R-1 12.2-13.6' 308 12.2'. SPIN CASING TO 12.6'. Recovery = 0/1.4' = 0%	SHALE		
15.0	Bkgd.	R-2				Bkgd.	R-2 13.6-17.2' Dark grey SHALE, laminated (1/8" bedding units), hard, very broken, weathering (staining) along bedding planes only. Bedding dips 30°. Primary fractures along bedding planes, secondary, hairline, fractures perpendicular to primary fractures and 1/2" in length. Recovery = 83% RQD = .7'/3.6' = 19%	SHALE	19%	
17.5	Bkgd.	R-3				Bkgd.	R-3 17.0-20.2' (1.1 Ft. CAVE-IN) Dark grey SHALE, same as above. Recovery = 95% RQD = 23%	SHALE	23%	CAVE-IN
20.0										

* U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

EC JORDAN CO

FORM A (HAZMAT)

MECHANICVILLE BORING LOG

BORING NO. B-1

CLIENT NYSEG — PROJECT NO. 4945-08

CONTRACTOR EMPIRE SOILS — DATE STARTED 7/23/86 — COMPLETED 7/24/86

METHOD HSA/NX CORE — CASING SIZE 4.25 I.D. — HNU (LT) 10.2 — PROTECTION LEVEL D

GROUND EL. 96' MSL — SOIL DRILLED 11.0' — ROCK DRILLED 9.2' — TOTAL DEPTH 20.2'

LOGGED BY L. ESPY — CHECKED BY CM — DATE 9/22/86 — ▽ BELOW GROUND 8.65' 7-25 88

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLA	SAMPLE OC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA
20.0		R-3					R-3 Cont.	SHALE		CAVE-IN
							BOB 20.2 FT. CAVE-IN TO 18.9			
22.5										

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

EC JORDAN CO

FIELD LOG FOR BORING IN ROCK - A.

BIT USE
N - NEW
R - RESET
U - USED

CONVENTIONAL ROCK DRILLING

PROJECT NO. 4945-02
BORING NO. B-1 (M)
PAGE 1 OF 1
LOGGED BY L. ESPY DATE 7/23/86 /7/24/86
CHECKED BY JWP DATE 9/22/86

DEPTH	SAMPLE TYPE AND NO.	TOP DEPTH FT.	TOP DEPTH IN.	LGTH. FT IN.	RECOVERY FT IN.	RECOVERY %	ROD IN.	ROD %	BIT USE	DRILLING TIME MIN./FT.	DRILL WATER RETURN %	COMMENTS ON DRILLING AND SAMPLING
	R-1	12.2	'	1.4'	0	0	0	0	U	-	NA	1.4 FEET OF Granular material caved in. Washed out of R-2. Redrilled 12.2 - 13.6'.
	R-2	13.6	'	3.6'	3.06'	85%	.7'	19%	U	Approx 8 min/ft	NA	Return water muddy brown color.
				ROD FOR R-2 - 2 PIECES								
	R-3	17.2		3.0'	2.9'	95%	.7'	23%	U	6-7 min/FT	NA	1.1 FT. CAVE-IN BEFORE SETTING 17.2.
				ROD FOR R-3 - 1 PIECE								
	EOB	20.2										

MECHANICVILLE BORING LOG

BORING NO. B-2

CLIENT NYSEG			PROJECT NO. 4945-[illegible]
CONTRACTOR EMPIRE SOILS	DATE STARTED 8/1/86		COMPLETED 8/1/86
METHOD HSA/NX CORE	CASING SIZE 4.25 I.D.	HNU (LT) 10.2	PROTECTION LEVEL D
GROUND EL. 90' MSL	SOIL DRILLED 9.5'	ROCK DRILLED 6.7'	TOTAL DEPTH 16.2
LOGGED BY L. ESPY	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 5.94' 8-1-86

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLR	SAMPLE OC	OTHER - WATER LEVEL HNU HEADSPACE (PPM)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA
0	Bkgd.	D.J. S-1			Bkgd.	0.5-2.0' Black, sandy to gravelly FILL, with rounded pebbles, Loose, dry.	FILL	12 | 14 | 8	
2.5	Bkgd.	D.J. S-2			Bkgd.	2-4' FILL, with 3 discrete layers: 2-3.4' Calcite, blocky (2" dia.) dry, angular chunks 3.4-3.9' Brown silty SAND, loose, dry 3.9-4.0' - Dark grey SHALE fragments in moist silty matrix. Very Wet at 3.8'. REC. 55%	FILL	6 | 10 | 3 | 4	
5.0	Bkgd.	D.J. S-3			13 ppm	4-6' Sandy to gravelly FILL with 2" pebbles, subrounded to 5.7'. 5.7-6.0'-Greenish-grey SILT to clayey SILT with some iron staining, trace organics, dense, moist. Recovery 35%	FILL / SILT	3 | 3 | 1 | 2	
7.5'	Bkgd.	D.J. S-4			Bkgd.	6-8' Orangish-grey clayey SILT with subrounded pebbles, dense, moist grading downwards to orangish grey silty coarse SAND with angular SHALE fragments, dense, damp. REC. 50%	SILT	3 | 12 | 6 | 14	
10.0	Bkgd.	D.J. S-5 ANVL S-1			Bkgd.	8-9.5' Dark grey silty coarse SAND, angular to 9.4' At 9.4' - Dark grey angular SHALE fragments, very thinly bedded, dry. REC. 45%	SAND	12 | 40 | 100/.5	
12.5	Bkgd.	R-1			Bkgd.	Weathered BEDROCK AT 9.4' SET CASING AT 12.6 WASH OUT HOLE. BEGIN CORING R-1 9.5-13.5' Dark grey SHALE with 25% calcite in top 3/10 ft., v. thinly bedded (1/4-1"), hard, v. broken to broken, some weathering along bedding fractures (staining), calcite veins along bedding planes, bedding dips 30°. Recovery = 4.5/4.0' (CAVE-IN) RQD = 54%	SHALE		
15.0	Bkgd.	R-2			Bkgd.	R-2 13.5-16.2' Dark grey SHALE, massive, hard, unweathered, only 2 mechanical breaks which are along bedding planes. Recovery = 100% RQD = 100%	SHALE		
17.5						BOB 16.2'			
20.0'									

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

EC JORDAN CO.

FIELD LOG FOR BORING IN ROCK - A.

NYSEG Mechanicville, NY

PROJECT NO. 4945-02
BORING NO. B-2
PAGE 1 OF 1

LOGGED BY L. ESPY DATE 8/1/86
CHECKED BY JWP DATE 9/22/86

BIT USE
N - NEW
R - RESET
U - USED

DEPTH	FOR EACH RUN							DRILLING		DRILL WATER RETURN %	COMMENTS ON DRILLING AND SAMPLING
	SAMPLE TYPE AND NO.	TOP DEPTH FT. IN.	LGTH. FT. IN.	RECOVERY FT. IN.	RECOVERY %	ROD IN.	ROD %	BIT USE	TIME MIN./FT.		
9.5	R-1	9.5'	4'	4.5'	100+	NA	54%	U	6/FT	NA	4' RUN.
	R-2	13.5'	2.7'	2.5	93%	NA	100%	U	6/FT	NA	2.7' Run
		16.2									

MECHANICVILLE BORING LOG

BORING NO. B-3

CLIENT NYSEG			PROJECT NO. 4945-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 8/5/86		COMPLETED 8/6/86
METHOD H.S. AUGER	CASING SIZE 4.25' ID	HNU (11.7) / 10.2	PROTECTION LEVEL C
GROUND EL. ~89' MSL	SOIL DRILLED 9.2'	ROCK DRILLED N/A	TOTAL DEPTH 9.2'
LOGGED BY SNW	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 2.5' 8/14/86

PI METER MALFUNCTIONING
SUSPECT AMBIENT AIR DATA

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	GC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA	ELEV. (FT)
0							0.5' Asphalt				
		D.J. S-1					0.5'-2.0' Black, fn-cs sand, some gravel and angular shale chips, grading to sandy silt and shale chips; Dry; med. dense .75'/1.5	Fill	5 4 3		
		D.J. S-2					2.0'-4.0' Tan to gray silty sand w/ angular shale chips; some black stained wood chips. loose; moist. 30% shale chips. Recovery .8Z/2.0	Fill	5 4 3 3		▽
5		Anly. S-1				270 (8/11)	4.0'-6.0' Black silt (75%) w/ little angular shale chips grading to silt w/ some shale chips; trace coal tar stained org., wood and fly ash; loose; wet. 1.8'/2.0'	Fill	1 1 1 1		
		Anly S-2				250 (8/11)	6.0'-8.0' Black sandy silt w/ shale chips and wood fragments; loose; wet; friable; Coal tar stained; dry very fractured shale in the end of the sample; iron stained; horiz. and vertical fractures (Rec. 1.3'/2.0')	Fill & WX Bdk	.		
							8.0-9.2' Weathered bedrock w/ little silt and fine sand; Horiz. and vert. fractures; platy and angular rock fragments; Coal tar stains, loose and wet at 8.0-8.3'; Tan, dry and dense at 8.3'-9.2'	WX Bdk	15 72 100/.2		
10							Bottom of boring at 9.2' Weathered bedrock at 8.0'-9.2' Bedrock at 9.2'				
15											
20											

* U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

EC JORDAN CO

FORM A (HAZMAT)

MECHANICVILLE BORING LOG

BORING NO. B-4

CLIENT NYSEG			PROJECT NO. 4045-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 7/29/86		COMPLETED 7/30/86
METHOD HSA/NX CORE	CASING SIZE 4.25 I.D.	HNU 11.7/10.2	PROTECTION LEVEL D/C
GROUND EL. 92' MSL	SOIL DRILLED 16.8	ROCK DRILLED NONE	TOTAL DEPTH 16.8
LOGGED BY SNW	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 3.2' (7-29-86)

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	SAMPLE GC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA ELE
	Bkgd						Auger through Pavement to .5			
	Bkgd	D.J. S-1				Bkgd	.5-2.0' Light Brown Sand Fill w/ angular to sub-rounded gravel. Ash, brick chips, Black staining at 1.2' below G.S. Loose and dry. .7/1.5	Fill	13 9 6	
2.5	Bkgd	N.R.				Bkgd.	2.0'-4.0' No Recovery Boulder was dug out by hand. 0/2.0	Fill	13 12 7 3	
5.0	Bkgd	D.J. S-2				10	4.0'-6.0' Black to Dark Gray Sandy Silt Fill w/ sub rounded Fine gravel and brick chips. Coal tar odor. Loose and Friable. Dry. 1.5/2.0	Fill	2 4 2 2	
7.5	10ppm	D.J. S-3 Anly GC, GC/MS				70+	6.0'-8.0' Black to Brown Sandy Fill w/ small sub rounded to angular gravel, brick chips, loose - wet. grades into - Silty weathered bedrock w/ shale fragments, heavily coal tar stained and moderately oxidized. 1.5/2.0	Fill	4 8 11 14	
10.0	2	D.J. S-4				20+	8.0'-10.0' Black to Brown Silty Weathered Bedrock (50% silt), angular gravel (shale). grading into less silty clay weathered bedrock, coal tar present throughout - 85% Rock Material 2.0/2.0	Fill	14 19 21 31	
		D.J. S-5				70+	10'-12' Clayey Silt weathered Bedrock, 75% angular gravel (shale), Coal tar stained loose, wet. 1.5/2.0	Fill	11 12 12 3	
12.5	Bkgd.	D.J. S-6				Bkgd.	12'-14' Gray Broken Shale Fragments w/ Silt, heavily stained w/ Coal tar. Loose. wet. 1.0/2.0	Fill	1 1 30 47	
15.0	Bkgd.	D.J. S-7				Bkgd.	14-16' Black Silt w/ angular shale chips gravel size. Loose. Wet 50% silt 50% Rck .2/2.0	Fill	2 1 0 2	
17.5	Bkgd.	D.J. S-8				Bkgd.	16-16.8 Tan to Lgt Gray Silt Clay Till w/ small sub rounded pebbles + Fine gravel in the till matrix. Organics w/ Coal tar staining in root canals. Dry. Dessicated. Tight .6/1.1	Till	2 1 100/.1	
20.0							Refusal @ 16.8' EOB - 16.8'			

* U = THIN WALL TUBE S = SPLIT SPOON = = ROCK

EC JORDAN CO

FORM A (HAZMAT)

MECHANICVILLE BORING LOG

BORING NO. B-5

CLIENT NYSEG			PROJECT NO. 4945-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 8/4/86		COMPLETED 8/5/86
METHOD HSA/NX CORE	CASING SIZE 4.25 I.D. /NX40	HNU 11.7/10.2	PROTECTION LEVEL D/C
GROUND EL. 89' MSL	SOIL DRILLED 11.5'	ROCK DRILLED 7.9'	TOTAL DEPTH 19.4
LOGGED BY SNW	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 10.0' 8/5/86

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE	CLP	GC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA
	BKGd.	D.J. S-1					Bkgd	0-2.0 Dk. Brown Silty Sand Fill w/angular gravel, organics, loose, moist. Rec. 1.6/2.0	Fill	3 6 6 4	
2.5	Bkgd.	D.J. S-2					Bkgd	2.0-4.0 Lgt. Brown angular gravel Fill w/ sand and silt interbedded, oxidation staining on shale chips. Loose. Dry. 80% Rock Material. 1.0/2.0	Fill	3 3 3 2	
5.0	Bkgd	D.J. S-3					Bkgd	4.0-6.0 Dk. Brown to Brown Silty Gravel Fill w/ Fine Sand w/ some Black Stained lenses. Loose. moist. 65% angular Shale gravel. 1.2/2.0	Fill	4 2 2 3	
7.5	P.I. MALFUNCTIONING	D.J. S-4						6.0-8.0' Fill - Brick, Coal Clinkers, Brown Sandy Silt, fly ash, shale chips. Mostly Brick (75%) 1.0/2.0	Fill	4 7 11 7	
		D.J S-5						8-9.6' Dk. Brown to Brown Sand Silt Fill w/ gravel, organics, coal clinkers, wood chips. predominately sand + gravel. 9/1.6	Fill	7 12 19 100/1.1	
10.0		Auger to 10'									
		Anly S-1					22	10.0-10.9' Dk. Brown silt w/ Rock (shale) chips-gravel size organics, Mod. Loose, wet .5/.9	SILT	15 100/.4	
		Anly S-2					175	10.5-11.5 Dk. Brown silt w/ angular shale chips (gravel) Coal tar sheen, loose, wet .9/1.0	SILT	21 52 100%	
								Bedrock at 11.5			
12.5								R-1 10.6-11.6 Metasedimentary Erratic Boulder 11.6-12.9 - Void Space - Sediment, wood chips shale fragments. 12.4-15.3 - Gray shale, thin darker laminations (1-2 mm thick spaced every 1/2" to 1", Hard, Massive Calcite inclusions. Unweathered to trace weathering, 30-40° Bedding planes. Fractures occur at 60° across bedding planes. Rec. = 4.45/5.0 = 89%	SHALE		
15.0								R-2 15.34-16.1 Gray Shale Same as above No Natural Fractures Rec-76%	SHALE	Not Determinable Due to Coring Problems	
17.5								R-3 16.1-19.5 Gray shale same as above, No Natural Fractures. Rec. = 100% RQD = 88%	SHALE		
20.0								BOB - 19.4			

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

ECJORDANCO

FIELD LOG FOR BORING IN ROCK - A.

BIT USE
N - NEW
R - RESET
U - USED

PROJECT NO. 494502
BORING NO. B-5
PAGE 1 OF 1
LOGGED BY SNW DATE 8/4/86 - 8/5/86
CHECKED BY JWD DATE 9/22/86

DEPTH	FOR EACH RUN								DRILLING		DRILL WATER RETURN %	COMMENTS ON DRILLING AND SAMPLING
	SAMPLE TYPE AND NO.	TOP DEPTH FT.	TOP DEPTH IN.	LGTH. IN.	RECOVERY IN.	RECOVERY %	RQD IN.	RQD %	BIT USE	TIME MIN./FT.		
	R-1	10	6	5.0	4.45	89%		89%	U	9/ft		
	R-2	15	34	1.3	1.0	76%		NA*	U	*		* Due to mechanical problems RQD cannot be accurately interpreted
	R-3	16	1	3.4	3.5	100%		86%	U	9/ft		

MECHANICVILLE BORING LOG

BORING NO. B-6

CLIENT NYSEG			PROJECT NO. 4945-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 7/24/86		COMPLETED 7/29/86
METHOD HSA/NX CORE	CASING SIZE 4.25" I.D.	HNU (LT) 10.2	PROTECTION LEVEL C/D
GROUND EL. 92' MSL	SOIL DRILLED 17'	ROCK DRILLED 15'	TOTAL DEPTH 32.0
LOGGED BY L. ESPY	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND Unknown

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	SAMPLE GC	CASING BLOW COUNTS / FT. & OTHER	HNU HEADSPACE (PPM)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA
0							DRIVING CASING TO BDRK. NO SAMPLING.			NO MONITORING WELL INSTALLATION
							AUGER TOP 0.5' ASPHALT & FILL			
	Bkgd				47	250-450 ppm off Augers	DIFFICULT TO KEEP CASING STRAIGHT.			
2.5'					48					
					49					
					30		3.5' Standing water			
5.0'							BLOWS NOT RECORDED			
	Bkgd									
7.5					11					
					12					
							BLOWS NOT RECORDED			
	Bkgd					300 ppm	9.2' - DRIVING DIFFICULT AT 9.2'. CASING KICKED OUT AT ANGLE, POSSIBLE COBBLE.			
10.0'					17					
					19					
					25					
12.5					43					
					18					
15.0'					35		14.3' CUTTINGS IN RINSEWATER LOOK LIKE WEATHERED ROCK.			
							16.4' DRIVING DIFFICULT. ROLLER-BIT FROM 16.4-17.0' TO REAM & WASH HOLE.			
17.5							R-1 17.0-22.0' Dark grey SHALE, very thinly bedded (30° dip), hard, broken, Un-weathered except along bedding planes			
	Bkgd	R-1				Bkgd	Recovery - 90%			
20.0'							RQD - 71%			

*U = THIN WALL TUBE S=SPLIT SPOON R=ROCK

EC JORDANCO

MECHANICVILLE BORING LOG

BORING NO. B-6

CLIENT NYSEG			PROJECT NO. 4945-11
CONTRACTOR EMPIRE SOILS	DATE STARTED 7/24/86		COMPLETED 7/29/86
METHOD HSA/NX CORE	CASING SIZE 4.25" I.D.	HNU (LL) 10.2	PROTECTION LEVEL C/D
GROUND EL. 92' MSL	SOIL DRILLED 17'	ROCK DRILLED 15'	TOTAL DEPTH 32.0'
LOGGED BY L. ESPY	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND Unknown

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	GC	OTHER	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DATA
20.0		R-1 (con't)					R-1 (con't) See page 1 for description.	SHALE BDRY		
22.5	Bkgd	R-2				Bkgd.	R-2 22.0 - 27.0' Dark grey SHALE, thinly laminated (.03-.1"), hard, broken, unweathered. Iron oxidation staining in upper (17-18) fractures. Bedding laminae offset by vertical, discontinuous fractures and foldmy. Fractures occur along calcite (30-40°) inclusions. Minor amount of inclusions, concoidal in shape. Recovery - 102% RQD - 80%	SHALE 24.7		
25.0										
	Bkgd.	R-3				Bkgd.	R-3 27.0-32.0' Dark grey SHALE, same as above except fewer inclusions than in R-2. Fractures perpendicular to bedding at 45-90°. Some evidence of deformation. Recovery = 100% RQD = 83%	SHALE		
30.0										
							BOB 32.0'			
35.0										

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

ECJORDANCO

FIELD LOG FOR BORING IN ROCK - A.

BIT USE
N - NEW
R - RESET
U - USED

PROJECT NO. 4995-02
BORING NO. B-6
PAGE 1 OF 1
LOGGED BY SNW/L.ESPY DATE 7/28/86 - 7/29/86
CHECKED BY JWP DATE 9/22/86

DEPTH	FOR EACH RUN								DRILLING		DRILL WATER RETURN %	COMMENTS ON DRILLING AND SAMPLING
	SAMPLE TYPE AND NO.	TOP DEPTH FT.	TOP DEPTH IN.	LGTH. IN.	RECOVERY IN.	RECOVERY %	RQD IN.	RQD %	BIT USE	TIME MIN./FT.		
17.0'	R-1	17.	0	5'	4.5'	90%	NA	71%	U	NA	NA	MANY MECHANICAL Breaks in Rock, Few Natural
22.0	R-2	22.	0	5'	5.0	102%	NA	80%	U	9/ft	NA	Mechanical breaks, fractures along calcite inclusions
32.0	R-3	32.	0	5'	5.0	100%	NA	83%	U	8/ft.	NA	Verticle to Near Verticle discontinuous fractures present.

MECHANICVILLE BORING LOG

BORING NO. B-7

CLIENT NYSEG			PROJECT NO. 1945-02
CONTRACTOR EMPIRE SOILS	DATE STARTED 7/31/86		COMPLETED 8/1/86
METHOD HSA/NX CORE	CASING SIZE 4.25" ID	HNU (LT) 10.2	PROTECTION LEVEL D
GROUND EL. 92' MSL	SOIL DRILLED 8.8'	ROCK DRILLED NONE	TOTAL DEPTH 9.0
LOGGED BY L. ESPY	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 3.9

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	SAMPLE GC	OTHER - WATER LEVEL HNU HEADSPACE (PPM)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)	WELL DIAGRAM
0						SPIN CASING THRU CONCRETE PAD.	ASPHALT		
						0-.3 - ASPHALT	CONCRETE		
						.3-1.2 CONCRETE PAD	VOID		
						1.2-2.1 VOID	FILL		
2.5					3.0 ▽	2.1-3.0 BOULDER FILL			
		NO RECOVERY				3-5' Pound spoon. 0% Recovery	3.9 ▽	2 2 2 2	
5.0						5-7' Pound spoon. Recovery 5% - all wash		8 5 3 3	
7.5		ANYL. S-1 DJ S-1				7-9' Dark grey coarse sandy FILL with some 1-2" pebbles, trace clay. Trace wood (may have fallen into hole), calcite piece (1" diam), weathered shale fragments at 8.8-9' - Dark grey, thinly bedded 1" long.	FILL	7 15 53 85	CAVE-IN
10.0						BOB 9.0'	Bdrk		
15.0									
20.0									

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

ECKERDANCO

MECHANICVILLE BORING LOG

BORING NO. B-8

CLIENT NYSEG			PROJECT NO. 1945-01
CONTRACTOR EMPIRE SOILS	DATE STARTED 8/6/86		COMPLETED 8/6/86
METHOD HSA/NX CORE	CASING SIZE 4.25" I.D.	HNU (LT)/10.2 TIP-11.7 HNU-10.7	PROTECTION LEVEL D/C
GROUND EL. 92' MSL	SOIL DRILLED 17.4'	ROCK DRILLED NONE	TOTAL DEPTH 17.4'
LOGGED BY SNW	CHECKED BY CM	DATE 9/22/86	▽ BELOW GROUND 7.5-13.5' (APPROX)

DEPTH (FT)	HNU AMBIENT AIR	SAMPLE NO. & TYPE NO.	SAMPLE CLP	SAMPLE BC	OTHER	HNU HEADSPACE (PPM)	SOIL/ROCK DESCRIPTION	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN OR RQD % (20 40 60 80 100)
0							AUGER THRU ASPHALT TO 0.5'		
.5	Bkgd	D.J. S-1				Bkgd.	.5-2' Lgt. brown to brown Sandy FILL with cobbles and pebbles, platey to rounded, loose, dry, oxidized sediments. Broken rock Rec. 1.0/1.5	FILL	10 12 8
2.5	Bkgd	D.J. S-2				Bkgd.	2-4' Lgt. brown to brown sandy SILT FILL w/ coal clinkers (oxidized) and trace subrounded brick and cobbles. Platey shale chips, loose to compact, dry. REC. 1.3/2.0	FILL	12 29 13 14
5.0	1-2 ppm	D.J. S-3				1-2 ppm	4-5.2' Brown sandy FILL grading to silt FILL with depth, with concrete chips, dry, oxidized shale fragments, subrounded boulder pebbles at 4.7'. Trace organics. Compact, moist. Slight coal tar odor throuout .9/1.2	FILL	10 20 100/.2
	Bkgd.	D.J. S-4				20 ppm (shoe)	6-6.3' Brown silt FILL w/ rounded cobbles, platey shale fragments, and brick shards. Coal tar odor and black stains. Loose and moist. Obstruction from 5.2-7.2. Augered thru. .3/.3	FILL	100/.3
7.5						30 ppm (shoe)	7.5-9.5' Brown silt on outside of spoon. No Recovery. 30 ppm off spoon, no staining. REC. 0/2.0	UNK.	3 2 3 3
	Bkgd.	D.J. S-5 NO REC.							
10.0	Bkgd	ANYL. S-1 D.J. S-6				Bkgd	9.5-11.5' Brown silt w/ pebbles and cobbles, very loose, saturated. Slight coal tar odor, some coal tar present. REC. 2.0/2.0	SILT SILT	4 6 7 9
12.5		D.J. S-7 (mud) S-8 (soil)				Bkgd.	11.5-13.5' Brown silt w/ pebbles and cobbles, very loose, saturated. Coal tar present at 13.3-13.5'. Wood fibers at 13.0' REC. .9/2.0	SILT FILL	9 12 32 8
15.0		ANYL. S-2				Bkgd.	13.5-15.5' - Silty FILL w/ shale fragments and subrounded cobbles, loose, saturated. Extensive COAL TAR. REC. 1.2/2.0	FILL	6 2 2 3
	Bkgd.	GC/MS ANYL. S-3				50-100 ppm	15.5-17.4' Black stained silty SAND with subrounded cobbles, pebbles and shale chips, loose, saturated. REFUSAL AT 17.4'. REC. 1.3/2.0	SILT-SAND	3 3 2 100/.4
17.5							BOB 17.4'		
20.0									

NO MONITORING WELL INSTALLATION

*U = THIN WALL TUBE S = SPLIT SPOON R = ROCK

ECJORDANCO

MECHANICVILLE	TASK 3			BORING NO. B-9
CLIENT NYSEG				PROJECT NO. 4545-03
CONTRACTOR NORTH STAR DRILLING CO.			DATE STARTED 11-11-87	COMPLTD. 11-11-87
METHOD H.S.A.	CASING SIZE 4.25" ID	PID TIP #1		PROTECTION LEVEL D
GROUND EL 88.5 Rel.	SOIL DRILLED 5.5'	ROCK DRILLED NA		TOTAL DEPTH 5.5'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87		▽ BELOW GROUND
SCREEN NA (FT)	RISER NA (FT)	MATERIAL NA PVC SS TF	ID NA	PAGE 1 OF 1

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD %	WELL DATA	EL. (FT)
1	Bg.						AUGERED TO 4' COAL TAR OBVIOUS AT 2.7' VERY GRAVELLY & COBBLY; SHAKES RIG CUTTINGS ARE WET W/ COAL TAR. SURFACE IS 1 1/2" OF BITUMINOUS OVER COBBLY SILTY SAND - FILL					
2												
3												
4		S-1		1.3	Y	65	BLACK SILTY SAND(?) W/ SLUDGE & COAL TAR, SATURATED OVER VARVED WEATHERED ROCK, OLIVE GRAY TO BLACK W/ UNWEATHERED ROCK FRAGMENTS & SILT	SM-GW		23 56 40		
5							B.O.B. @ 5.5'					

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

MECHANICVILLE TASK 3				BORING NO. B-10
CLIENT NYSEG				PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-12-87	COMPLTD. 11-12-87	
METHOD H.S.A.	CASING SIZE 6" I.D.	PID TIP # 1	PROTECTION LEVEL D	
GROUND EL 96.7 Rel.	SOIL DRILLED 19.2'	ROCK DRILLED .5'	TOTAL DEPTH 19.7'	
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND 10.2' 11-20-87	
SCREEN 10.8 (FT)	RISER 8.7 (FT)	MATERIAL PVC (SS) TF	ID 2"	PAGE 1 OF 1

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % (20 40 60 80 100)	WELL DATA	EL. (FT)
	BKG	S-1		1.1		BKG	FILL BR TO BLK MOIST SANDY SILT W/ CINDERS for 1', OVER BLK TO Br ASH FILL W/ CINDERS, COAL PIECES, DRY TO MOIST		ML	10 16 26 16		
		S-2		1.2						7 8 5 7		
5		S-3		.5			4' SILTY SAND (FILL) TAN TO Br TO DARK Br, SAND IS F TO M, TR TO LITTLE GRAVEL, MOIST W/ SOME ASH FILL; SAND IS SLIGHTLY IN APPEARANCE.		SM	3 2 3 3		
		S-4		.7						2 1 2 1		
		S-5		1.0			4' SANDY SILT Br, F. SAND, TR. CLAY, MOIST, W/ BRIGHT ORANGE MOTTLES			2 2 4 2		
10		S-6		.7		100	10' SILTY SAND BL TO RUSTY SILT & F. TO M. Sand, LITTLE GRAVEL, SATURATED, CONTAMINATED		ML	2 1 8 6		▽
		S-7		.7		99	Br TO DK. GRAY TO BL. F. TO M. SAND, TR. GRAVEL, WEATHERED Shale FRAGS. below 15'		SM	3 6 8 5		
15		S-8		1.0		26				2 3 5 5		
		S-9		1.8	Y*	6	TAN TO YELLOW Br, V.F.S., WELL SORTED			6 2 5 3		
	▽	S-10		1.3		6	WEATHERED ROCK 19' TO 19.3' 19.3' TOP OF ROCK AT 19.3'		GW/SM	WOR 50/0.0		
20							B.O.B. 19.7'					

* DUPLICATE SAMPLE

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND
WOR = WEIGHT OF RODS

* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

MECHANICVILLE TASK 3			BORING NO. B-11
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-12-87	COMPLTD. 11-13-87
METHOD H.S.A. & CORING	CASING SIZE 4 1/4" ID.	PID TIP #1	PROTECTION LEVEL D
GROUND EL 92.1 Rel.	SOIL DRILLED 5.5'	ROCK DRILLED* 12.5	TOTAL DEPTH 18'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND 4.17' (11-20-87)
SCREEN (FT)	RISER (FT)	MATERIAL PVC SS TF	ID PAGE 1 OF 1

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % (20 40 60 80 100)	WELL DATA	EL. (FT)
5	BKG.	S-1		1.2		BKG	SILTY SAND (FILL) BROWN TO BLACK, TR. GRAVEL W/ COAL FRAGS, GLASS, CINDERS		SM	4 4 2 4		
		S-2		1.3		BKG	3' SANDY SILT — OLIVE BR TO ORANGE BR, LITTLE GRAVEL, MOIST		ML	4 3 6 10		
		S-3		1.2		BKG	WEATHERED ROCK — BR & BLK, LAYERED, FISSILE, HARD, DRY, LITTLE CLAY,		GW	12 36 40		
							6.0 BEDROCK SHALE FRAGS, COMMON, CRUMBLED					
10		R-1		86 %			SHALE			0 %		
15		R-2		80 %								
							B.O.B. @ 18'					
20												

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

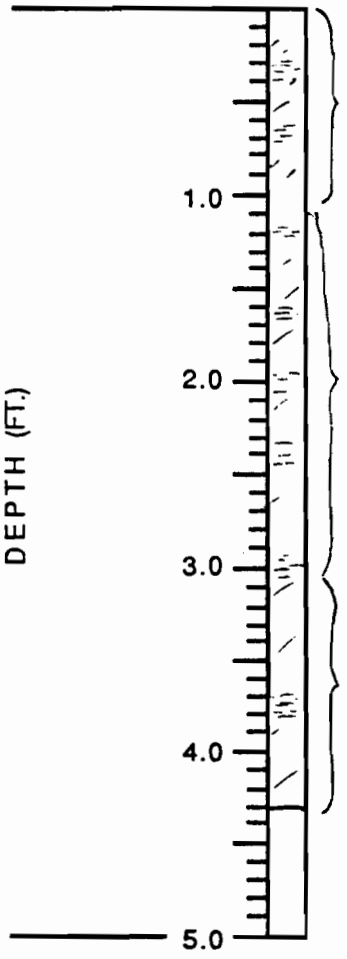
* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 1 OF 2

JOB NO.: 4945-03	BY: NORTH STAR	DATE: 11-12-87	CHK'D BY: CM 12/29/87
BORING NO.: B-11	SAMPLE: R-1	CORE DIA. (IN.): 2	DEPTH (FT.): 8 TO 13
CORE LENGTH (FT.): 5	CORE RECOVERY : 4.3 (FT.) 86 (%)	RQD: 0 (%)	ROCK QUALITY : V. POOR



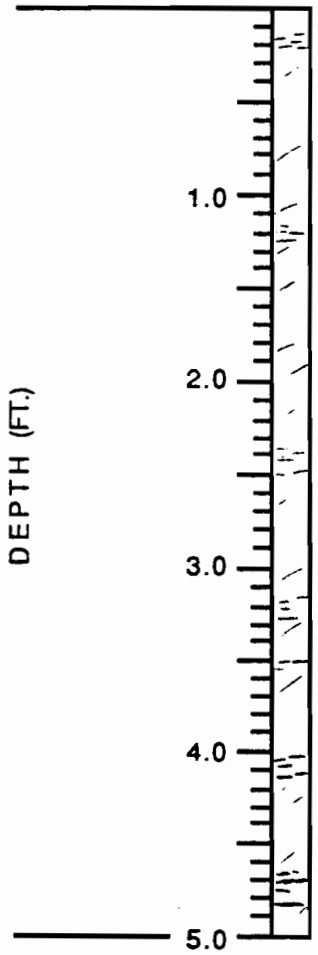
ROCK DESCRIPTION AND IDENTIFICATION

SHALE — DARK GRAY TO BLACK, THINLY BEDDED, W/ BEDS @ 35° TO 45° FROM HORIZONTAL. TOP 1' IS MODERATELY WEATHERED W/ MnO_2 & O_2 STAINING PROMINENT, BECOMES FRESH AT NEAR 11'. FRACTURE FACES AFTER 11' ARE FRESH & SHOW SLICKENSIDE FEATURES. BEDDING IS PARALLEL TO FRACTURES. NO PIECE IS AS LONG AS 3".

VISUAL IDENTIFICATION
ROCK CORES

SHEET 2 OF 2

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-12-87	CHK'D BY: CN 12/29/87
BORING NO.: B-11	SAMPLE: R-2	CORE DIA. (IN.): 2	DEPTH (FT.): 13 TO 18
CORE LENGTH (FT.): 5	CORE RECOVERY : 4 (FT.) 80 (%)	RQD: 80 (%)	ROCK QUALITY : V. GOOD



ROCK DESCRIPTION AND IDENTIFICATION

SHALE UNWEATHERED COMPETENT, FRESH, W/ BEDDING 15° TO 20° FROM HORIZONTAL

15.'-15.4' NATURAL JOINT - NO WEATHERING

17' HEALED V. THIN FRACTURE W/ CALCITE FILLING

MECHANICVILLE	TASK 3	BORING NO. B-12
CLIENT NYSEG		PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.	DATE STARTED 11-18-87 COMPLTD. 11-18-87	
METHOD H.S.A.	CASING SIZE 6" ID	PID TIP #1	PROTECTION LEVEL D
GROUND EL 98.3 Rel.	SOIL DRILLED 25.5'	ROCK DRILLED NA	TOTAL DEPTH 25.5'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND 13.45' (11-20-87)
SCREEN 11 (FT)	RISER 14.5 (FT)	MATERIAL PVC (SS) TF	ID 2"	PAGE 1 OF 1

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % 20 40 60 80 100	WELL DATA	EL. (FT)
	BKG	S-1		1.6		BKG	SILTY SAND: BLACK, MOIST, FIRM IN PLACE w/ ASH FILL & CLINKERS over Br. SILTYS., TR. GRAVEL, SLIGHTLY PLASTIC		SM	5 6 5 5		
		S-2		1.2			2.5' SAND: YELLOW BROWN, FINE SAND, TR. TO LITTLE GRAVEL, MOIST			3 3 3 3		
5		S-3		.2					SP	3 2 3 3		
		S-4		.3			6' SILTY SAND: BROWN, MOIST, LITTLE GRAVEL, SLIGHTLY PLASTIC OVER BROWN WELL SORTED MED. SAND, LITTLE FINE SAND, TR. GRAVEL			7 8 10 10		
		S-5		.6					SM	27 10 17 20		
10		S-6		.9			10' SILTY FINE SAND: BROWN TO DULL YELLOW, TR. TO LITTLE GRAVEL, FIRM IN PLACE, MOIST; SATURATED w/ OBSERVABLE CONTAMINATION AFTER 15.5'			9 11 24 15		
		S-7		1.0						11 10 7 9		
15		S-8		.6		45				7 7 7 5		
		S-9		1.1		10	16' SANDY SILT 18': BROWN TO OLIVE BROWN, TR. GRAVEL - GRADES TO WELL SORTED SAND & SILT		ML	3 4 2 3		
		S-10		.9		13	SILTY SAND & GRAVEL: BLACK, OLIVE BROWN & BROWN w/ ANGULAR COARSE FRAGMENTS (AS IN A TILL), SATURATED; CONTAMINATION DESTROYS LITHOLOGY			4 5 3 4		
20		S-11		.6		54	22'		SM	3 3 3 3		
		S-12		1.3	Y	12	SILTY FINE SAND: GRAY, BROWN, V. WELL SORTED, PERMEABLE, LOOSE			5 4 3 3		
25		S-13		0.4		9				2 5 10 50/0.0		
							B.O.B. @ 25.5'					

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

MECHANICVILLE TASK 3			BORING NO. B-13
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-10-87	COMPLTD. 11-18-87
METHOD H.S.A., CASING, CORING	CASING SIZE 4" I.D.	PID TIP #1	PROTECTION LEVEL D
GROUND EL 98.6 Rel.	SOIL DRILLED 25.5'	ROCK DRILLED 30'	TOTAL DEPTH 55.5'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND 15.67' (11-20-87)
SCREEN 10.8 (FT)	RISER 44.7 (FT)	MATERIAL PVC (SS) TF	ID 2" PAGE 1 OF 2

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % (20 40 60 80 100)	WELL DATA	EL. (FT)
0	BKG											
15		S-1		.6		10	GRAVELLY SILTY SAND (FILL) BROWN, WET, WITH VISIBLE COAL TAR SHEEN & ODOR		SM	27 30 59/.3		
20		S-2		1.2		50	SILTY SAND TAN, WET, TR. GRAVEL, W/. OBVIOUS COAL TAR CONTAMINATION			3 3 3 4		
		S-3		2.0		22	23' GRAVELLY SILTY SAND BRN. TO GRAY BRN C. SAND TR. GRAVEL & SILT OVER WELL SORTED F. SAND, OVER WEATHERED ROCK,		SM/GM	2 2 2 5		
25		S-4		1.0		10	25.5' BEDROCK LITTLE SILT, SAT., CONTAM.			4 59/0.2		
							SHALE BLACK, UNWEATHERED, HARD, THINLY LAMINATED					
30		R-1		97 %								
35												

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

MECHANICVILLE TASK 3			BORING NO. B-13
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-10-87	COMPLTD. 11-18-87
METHOD H.S.A., CASING, CORING	CASING SIZE 4" I.D.	PID TIP #1	PROTECTION LEVEL D
GROUND EL 98.6 Rel.	SOIL DRILLED 25.5'	ROCK DRILLED 30'	TOTAL DEPTH 55.5'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND
SCREEN 10.8 (FT)	RISER 44.7 (FT)	MATERIAL PVC/SS TF	ID 2" PAGE 2 OF 2

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % 20 40 60 80 100	WELL DATA	EL. (FT)
35							SHALE BLACK, FRESH UNWEATHERED BEDDING ON MM SCALE					
40		R-2		100 %								
45												
50		R-3		100 %			FRACTURE AT 55' PRODUCED COLORS ON RETURN WATER – CORE SHOWED VISIBLE COAL TAR CONTAMINATION					
55							B.O.B. @ 55.5'					
60												

PROPORTION	(-)AMOUNT(+)	ABBREVIATION	
trace (tr)	0-10%	f-fine	gr-gray
little (li)	10-20%	m-medium	br-brown
some (so)	20-35%	c-coarse	blk-black
and	35-50%		

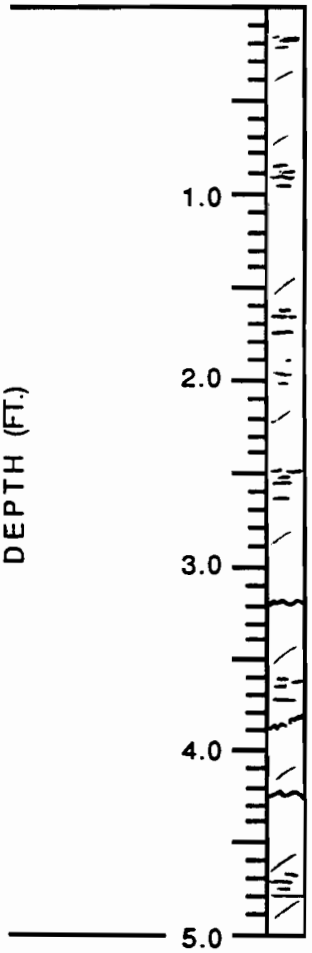
* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 1 OF 3

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-17-87	CHK'D BY: CM 12/29/87
BORING NO.: B-13	SAMPLE: R-1	CORE DIA. (IN.): 2	DEPTH (FT.): 25 TO 35.5
CORE LENGTH (FT.): 10	CORE RECOVERY : 9.7 (FT.) 97 (%)	RQD: 95 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

SHALE BLACK, UNWEATHERED, HARD, THINLY LAMINATED,

BEDDING ∠'S FROM HORIZONTAL

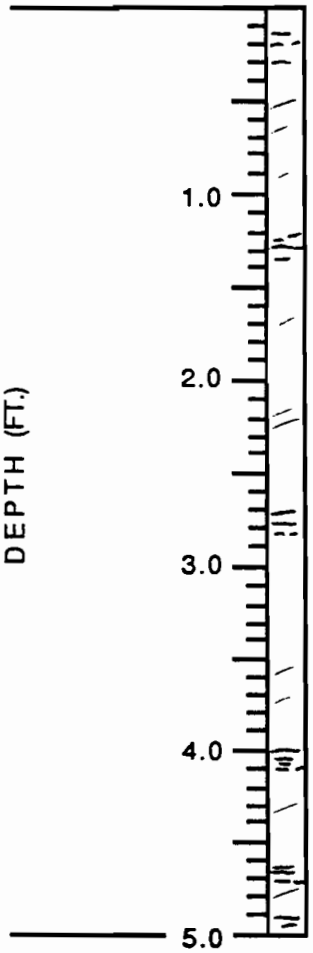
DEPTH	∠
26'	45-50°
28'	10°
30'	15°
32'	15°
34'	15°

AT : 33.4', 34', 31.7' HAVE V. SMALL JOINTING, REHEALED.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 2 OF 3

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-17-87	CHK'D BY: CM 12/29/87
BORING NO.: B-13	SAMPLE: R-2	CORE DIA. (IN.): 2	DEPTH (FT.): 35 TO 45
CORE LENGTH (FT.): 10	CORE RECOVERY : 10 (FT.) 100 (%)	RQD: 100 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

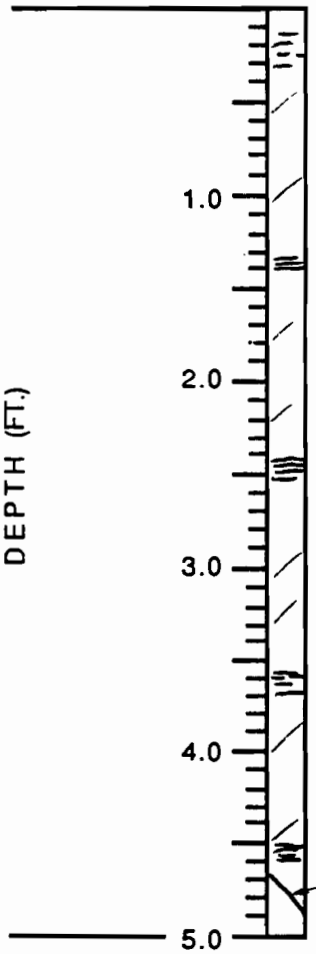
SHALE AS ABOVE
NO UNUSUAL FEATURES

BEDDING AT 15° TO HORIZONTAL

VISUAL IDENTIFICATION
ROCK CORES

SHEET 3 OF 3

JOB NO.: 4945-03	BY: NORTH STAR	DATE: 11-18-87	CHK'D BY: CM 12/29/87
BORING NO.: B-13	SAMPLE: R-3	CORE DIA. (IN.): 2	DEPTH (FT.): 45 TO 55.5
CORE LENGTH (FT.): 10	CORE RECOVERY: 10 (FT.) 100 (%)	RQD: 98 (%)	ROCK QUALITY: EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

SHALE FRESH, UNWEATHERED, BLACK TO BLACKISH GRAY W/ THIN BEDDING ON MM SCALE

BEDDING AT 20° TO 25° FROM HORIZONTAL

55' - FRACTURE (ZONE) W/ GRAVEL SIZE SHALE FRAGMENTS & CALCITE FRAGMENTS. HAS VISIBLE COAL TAR SMELL & SHEEN ON FRACTURE FACES (& RETURN WATER ALSO)

55.3' - 2 HEALED FRACTURES @ 62°

55.5' - BEDDING OF 20° TO HORIZONTAL W/ FRACTURE @ 62° FROM HORIZONTAL

E.C. JORDAN CO.

MECHANICVILLE TASK 3			BORING NO. B-14
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-9-87	COMPLTD. 11-19-87
METHOD H.S.A. & CORING	CASING SIZE 4" ID	PID TIP# 1	PROTECTION LEVEL D
GROUND EL 98.7 Rel.	SOIL DRILLED 23.5'	ROCK DRILLED 31.5'	TOTAL DEPTH 55'
LOGGED BY T. LONGLEY	CHECKED BY CN	DATE 12/29/87	▽ BELOW GROUND 16.45' (11-20-87)
SCREEN 11 (FT)	RISER 30 (FT)	MATERIAL PVC (SS) TF	ID 2" PAGE 1 OF 2

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % (20 40 60 80 100)	WELL DATA	EL. (FT)
	BKG	S-1		.8		BKG	SAND — BROWN, TRACE GRAVEL, DRY		SP	1 1 1 1		
		S-2		.4						1 1 1 1		
							4.5' V. FINE SAND					
5		S-3		1.6			BRIGHT ORANGE TO BRN, VARIED, LITTLE SILT, BLACK & DK. BRN. LENSES, BL. CINDER MAT'L. @ 7.5'			2 3 3 2		
		S-4		1.6					SM	3 5 5 6		
							8' GRAVELLY SANDY SILT — BROWN, ORANGE, DK. GRAY, SLIGHTLY PLASTIC, FIRM IN PLACES, MOIST			4 6 7 9		
10		S-5		.5					ML			
		S-6		1.1						5 12 10 13		
		S-7		.6						12 19 12 10		
							14' V. FINE SAND					
15		S-8		1.2			16' OLIVE BRN, LITTLE SILT, TR. GRAVEL, MOIST, PROM. MOTTLES		SP	8 6 2 3		
		S-9		1.8			SILTY FINE SAND — BRIGHT ORANGE, OLIVE BROWN, TR. GRAVEL, V. WELL SORTED, MOIST W/ DK. BRN. MOTTLES; WT AFTER 18'; GRAY SHALE FRAGS. @ 20'-FIRM & WELL GRADED HERE			– 2 3 3		
		S-10		1.0	Y				SM	6 11 12 13		
20		S-11		.2						18 12 11 8		
							22' WEATHERED ROCK - DK. GRAY TO BLACK FRESH SHALE FRAGS. W/ BR. MUDDY SANDY SILT					
		S-12		.2			23.5 BEDROCK		GM	6 7 10 59/.1		
25							SHALE — BLACK, THINLY LAMINATED, HARD, FRESH, UNWEATHERED					
30		R-1		95 %			AT 33.8', SET OF JOINTS - RETURN WATER SHOWED SOME COLORS OF CONTAMINATION					
35												

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

MECHANICVILLE	TASK 3		BORING NO. B-14
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-9-87 COMPLTD. 11-19-87	
METHOD H.S.A. & CORING	CASING SIZE 4"ID	PID TIP #1	PROTECTION LEVEL D
GROUND EL 98.7 Rel.	SOIL DRILLED 23.5'	ROCK DRILLED 31.5'	TOTAL DEPTH 55'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND
SCREEN 11 (FT)	RISER 30 (FT)	MATERIAL PVC/SS/TF	ID 2" PAGE 2 OF 2

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % 20 40 60 80 100	WELL DATA	EL. (FT)
35	BKG	R-2		97 %			SHALE SOME DRILLERS BREAKS IN AN OTHERWISE FRESH, UNWEATHERED BLACK, THINLY LAMINATED BLACK SHALE					
40		R-3		100 %								
45		R-4		100 %								
50											CUTTINGS & SAND	
55							BOB @ 55'					

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

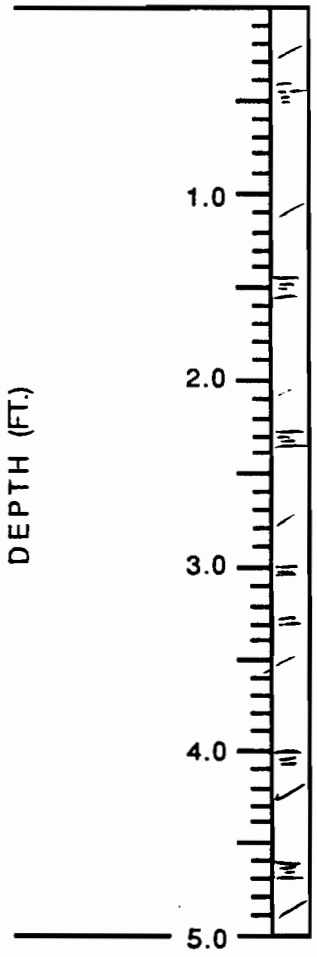
* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 1 OF 4

JOB NO.: 4945-03	BY: NORTH STAR	DATE: 11-19-87	CHK'D BY: CM 12/29/87
BORING NO.: B-14	SAMPLE: R-1	CORE DIA. (IN.): 2	DEPTH (FT.): 25 TO 35
CORE LENGTH (FT.): 10	CORE RECOVERY: 9.5 (FT.) 95 (%)	RQD: 83 (%)	ROCK QUALITY: GOOD



ROCK DESCRIPTION AND IDENTIFICATION

SHALE BLACK THINLY LAMINATED, HARD, FRESH, UNWEATHERED

27.7'-28.4' } MICRO FRACTURES THAT
31.4'-32.4' } RETAIN WATER AS CORE DRIES

FROM 28' TO 35', NUMEROUS BREAKS - MOSTLY PARALLEL TO BEDDING

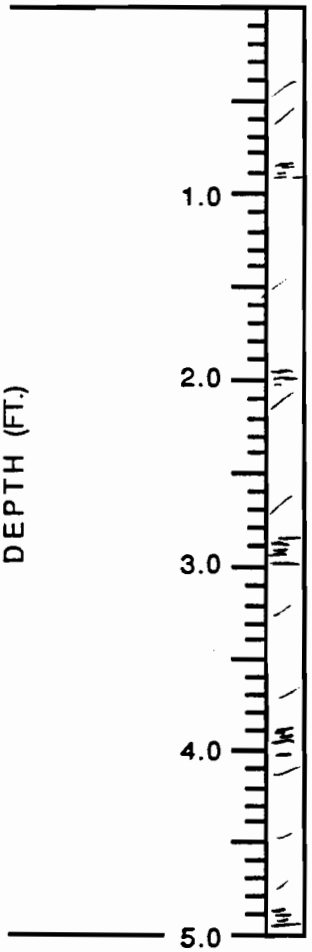
AT 33.8', HAVE A SET OF RANDOMNLY ORIENTATED JOINTS; DURING DRILLING, THE RETURN WATER FROM THIS ZONE SHOWED A SHEEN; CORE GIVE NO TIP READINGS

BEDDING	DEPTHS	ANGLES
	26'	25°
	31'	35°
	34'	20°

VISUAL IDENTIFICATION
ROCK CORES

SHEET 2 OF 4

JOB NO.: 4945-03	BY: NORTH STAR	DATE: 11-19-87	CHK'D BY: CM 12/29/87
BORING NO.: B-14	SAMPLE: R-2	CORE DIA. (IN.): 2	DEPTH (FT.): 35 TO 42
CORE LENGTH (FT.): 7	CORE RECOVERY: 6.8 (FT.) 97 (%)	RQD: 91 (%)	ROCK QUALITY: EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

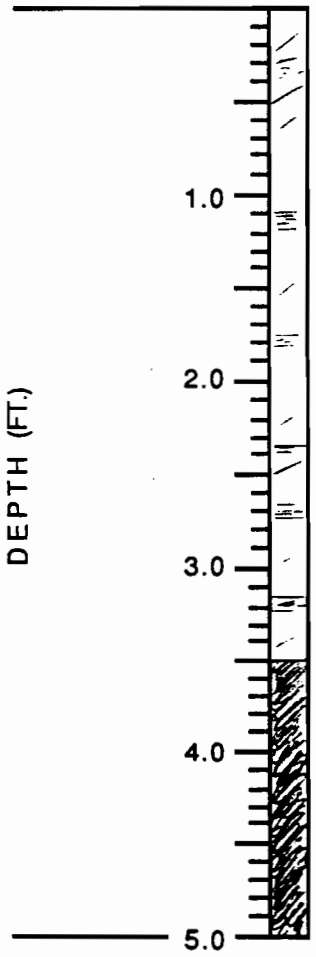
SHALE AS ABOVE

38.7' to 41' HIGH ANGLE FRACTURES 80° FROM HORIZONTAL - REHEALED & LINED W/ CALCITE - NO APPARENT WEATHERING - BROKE DUE TO DRILLING ACTION

VISUAL IDENTIFICATION
ROCK CORES

SHEET 3 OF 4

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-19-87	CHK'D BY: CM 12/29/87
BORING NO.: B-14	SAMPLE: R-3	CORE DIA. (IN.): 2	DEPTH (FT.): 42 TO 45
CORE LENGTH (FT.): 3	CORE RECOVERY : 3 (FT.)/100 (%)	RQD: 100 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

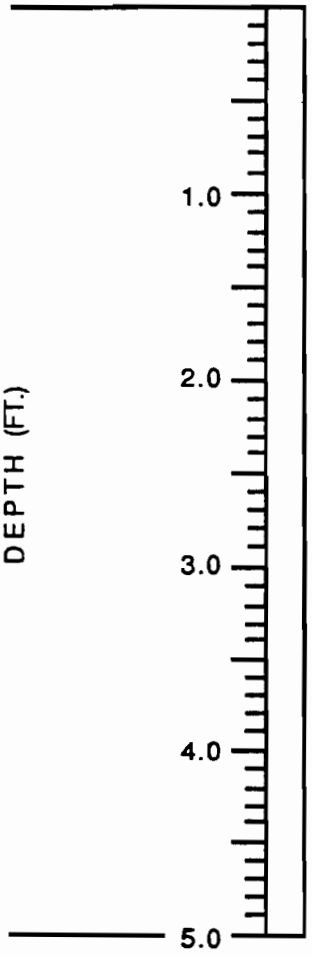
SHALE AS ABOVE

BEDDING	DEPTHS	ANGLES
	36'	20°
	40'	15°
	42'	15°

VISUAL IDENTIFICATION
ROCK CORES

SHEET 4 OF 4

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-19-87	CHK'D BY: CM 12/29/87
BORING NO.: B-14	SAMPLE: R-4	CORE DIA. (IN.): 2	DEPTH (FT.): 45 TO 55
CORE LENGTH (FT.): 10	CORE RECOVERY : 10 (FT.)/100 (%)	RQD: 98 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

SHALE AS ABOVE
COMPETENT, FRESH, NO WEATHERING
HARD

SOME DRILLERS BREAKS

E.C. JORDAN CO.

MECHANICVILLE TASK 3			BORING NO. B-15
CLIENT NYSEG			PROJECT NO. 4945-03
CONTRACTOR NORTH STAR DRILLING CO.		DATE STARTED 11-13-87	COMPLTD. 11-17-87
METHOD H.S.A. & CORING	CASING SIZE 4" I.D.	PID TIP #1	PROTECTION LEVEL D
GROUND EL 88.5 Rel.	SOIL DRILLED 8.7'	ROCK DRILLED 30.3'	TOTAL DEPTH 39'
LOGGED BY T. LONGLEY	CHECKED BY CM	DATE 12/29/87	▽ BELOW GROUND 8.19' (11-20-87)
SCREEN 11 (FT)	RISER 13 (FT)	MATERIAL PVC SS TF	ID 2" PAGE 1 OF 1

DEPTH (FT)	HNU AMB. AIR	SAMP. NO. & TYPE	SAMPLE	RECOVERY	ANALYTICAL	HNU HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION	LITHOLOGIC SYMBOL	SOIL CLASS OR ROCK FRACTURES	BLOWS/6-IN RQD % (20 40 60 80 100)	WELL DATA	EL. (FT)
0	BKG	S-1		1.2		BKG	FILL — Black cinder & ash fill, trace coal, some brick pieces, etc., moist, loose			2 8 5 1		
		S-2		0.0						1 2 3 3		
5		S-3		0.7		BKG				1 1 1 1		
		S-4		1.4		BKG	7.5' Gravelly silty sand, brn. to dk brn. moist. over highly weathered oriented shards of rock - soil			1 4 6 8		
		S-5		0.9		BKG	8.0 9.0'			16 45 50/0.2		
10							SHALE BEDROCK					
							Black to grayish black, thinly laminated, fresh, few drillers breaks.					
15		R-1		82 %								
20												
25		R-2		99 %			Break at 25.5'					
30		R-3		100 %								
35							B.O.B. @ 39'					

PROPORTION	(-)AMOUNT(+)
trace (tr)	0-10%
little (li)	10-20%
some (so)	20-35%
and	35-50%

ABBREVIATION	
f-fine	gr-gray
m-medium	br-brown
c-coarse	blk-black

BKG = BACKGROUND

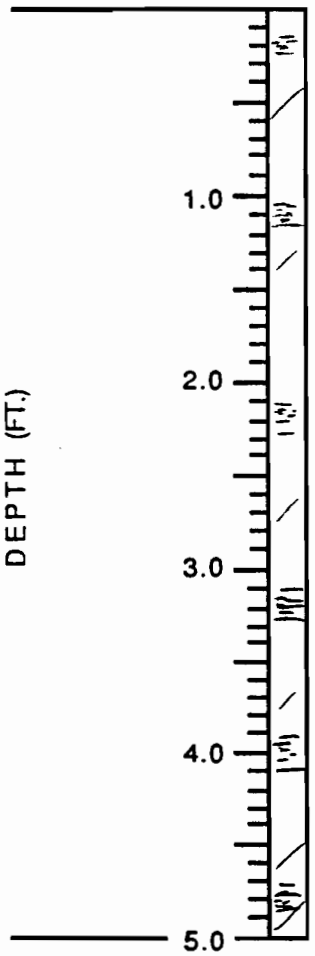
* U= THIN WALL S= SPLIT SPOON R= ROCK

E.C. JORDAN CO.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 1 OF 3

JOB NO.: 4945-03	BY: NORTH STAR	DATE: 11-16-87	CHK'D BY: CM 12/29/87
BORING NO.: B-15	SAMPLE: R-1	CORE DIA. (IN.): 2	DEPTH (FT.): 11 TO 21
CORE LENGTH (FT.): 10	CORE RECOVERY : 10 (FT.)/100(%)	RQD: 100 (%)	ROCK QUALITY : EXCELLENT



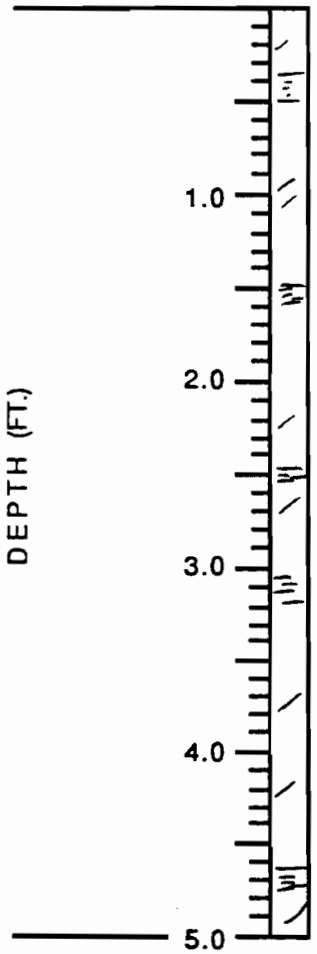
ROCK DESCRIPTION AND IDENTIFICATION

SHALE — BLACK TO GRAYISH BLACK, THINLY LAMINATED, FRESH, BEDDING AT 50° TO HORIZONTAL, HARD CALCITE LAYERS IN MM SCALE PARALLEL TO BEDDING. A FEW DRILLERS BREAKS.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 2 OF 3

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-16-87	CHK'D BY: CM 12/29/87
BORING NO.: B-15	SAMPLE: R-2	CORE DIA. (IN.): 2	DEPTH (FT.): 21 TO 29.5
CORE LENGTH (FT.): 8.5	CORE RECOVERY : 8.4 (FT.) 99 (%)	RQD: 94 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

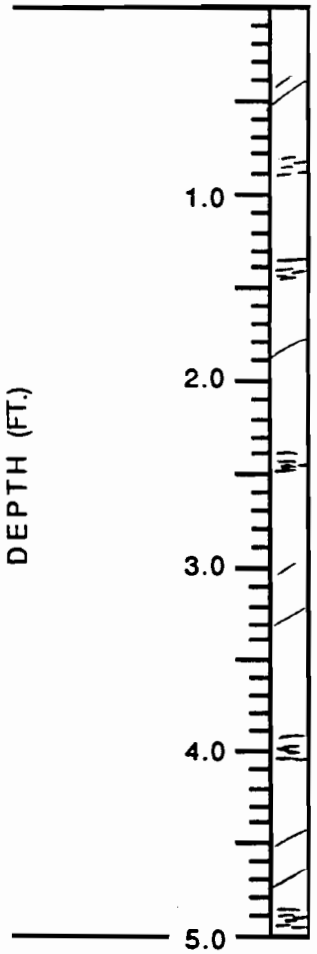
SHALE AS ABOVE; SOME DISSEMINATED PYRITE PRODUCED H_2S SMELL WHILE DRILLING

25.5' - NATURAL BREAK @ 40° FROM HORIZONTAL - IN REHEALED FRACTURE ZONE - SOME SERICITE HERE.

VISUAL IDENTIFICATION
ROCK CORES

SHEET 3 OF 3

JOB NO.: **4945-03**	BY: NORTH STAR	DATE: 11-16-87	CHK'D BY: CM 12/29/87
BORING NO.: B-15	SAMPLE: R-3	CORE DIA. (IN.): 2	DEPTH (FT.): 29.5 TO 39
CORE LENGTH (FT.): 9.5	CORE RECOVERY : 9.5 (FT.) 100 (%)	RQD: 100 (%)	ROCK QUALITY : EXCELLENT



ROCK DESCRIPTION AND IDENTIFICATION

SHALE AS ABOVE

BEDDING DEPTHS	∠ FROM HORIZ.
30'	45°
34'	40°
37'	35°
39.5'	25°

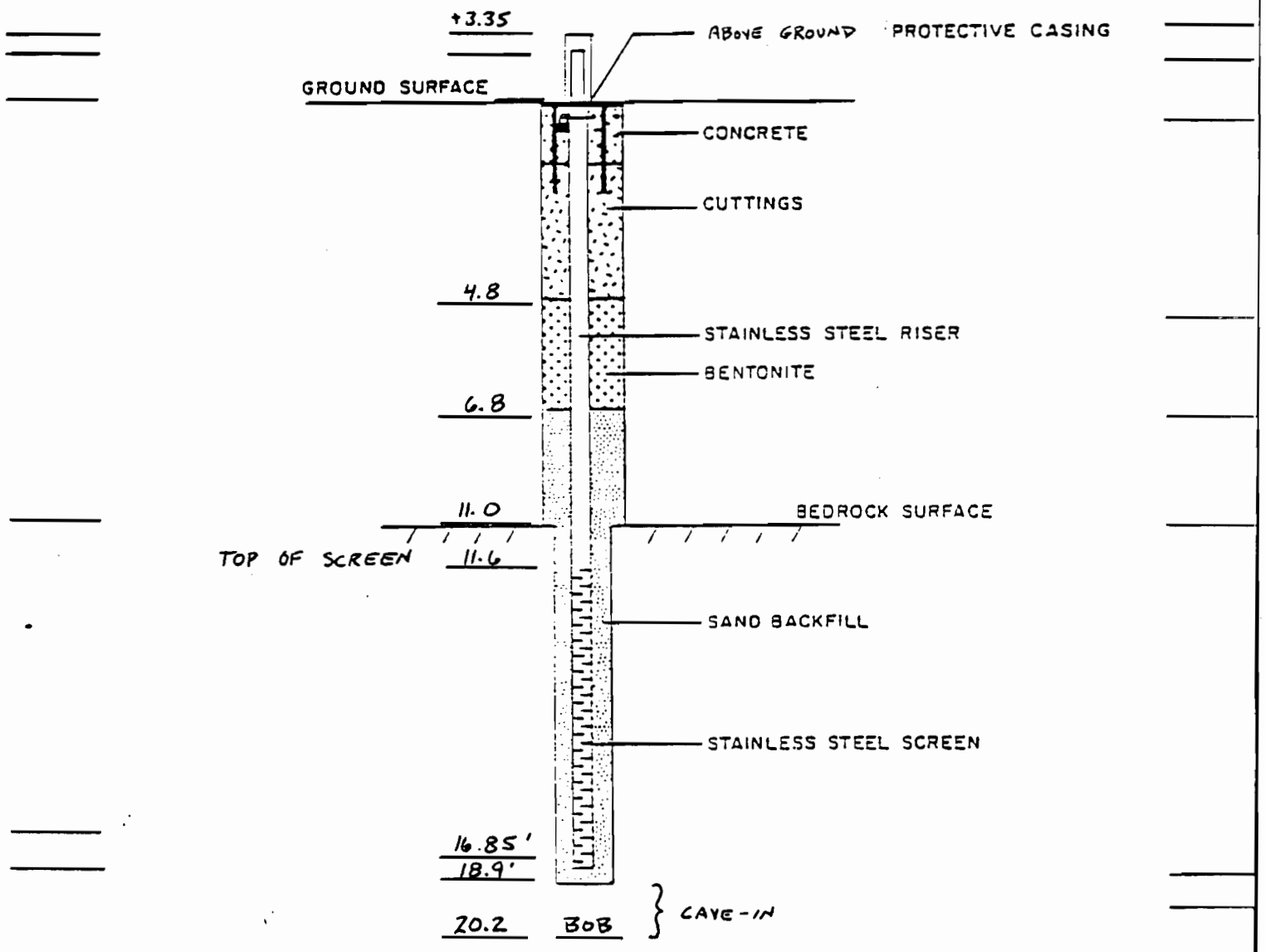
AT 31.8', 35.6, & 36.4' HAVE FRACTURES BUT THEY ARE FRESH & UNWEATHERED

APPENDIX A-3

MONITORING WELL INSTALLATION DIAGRAMS

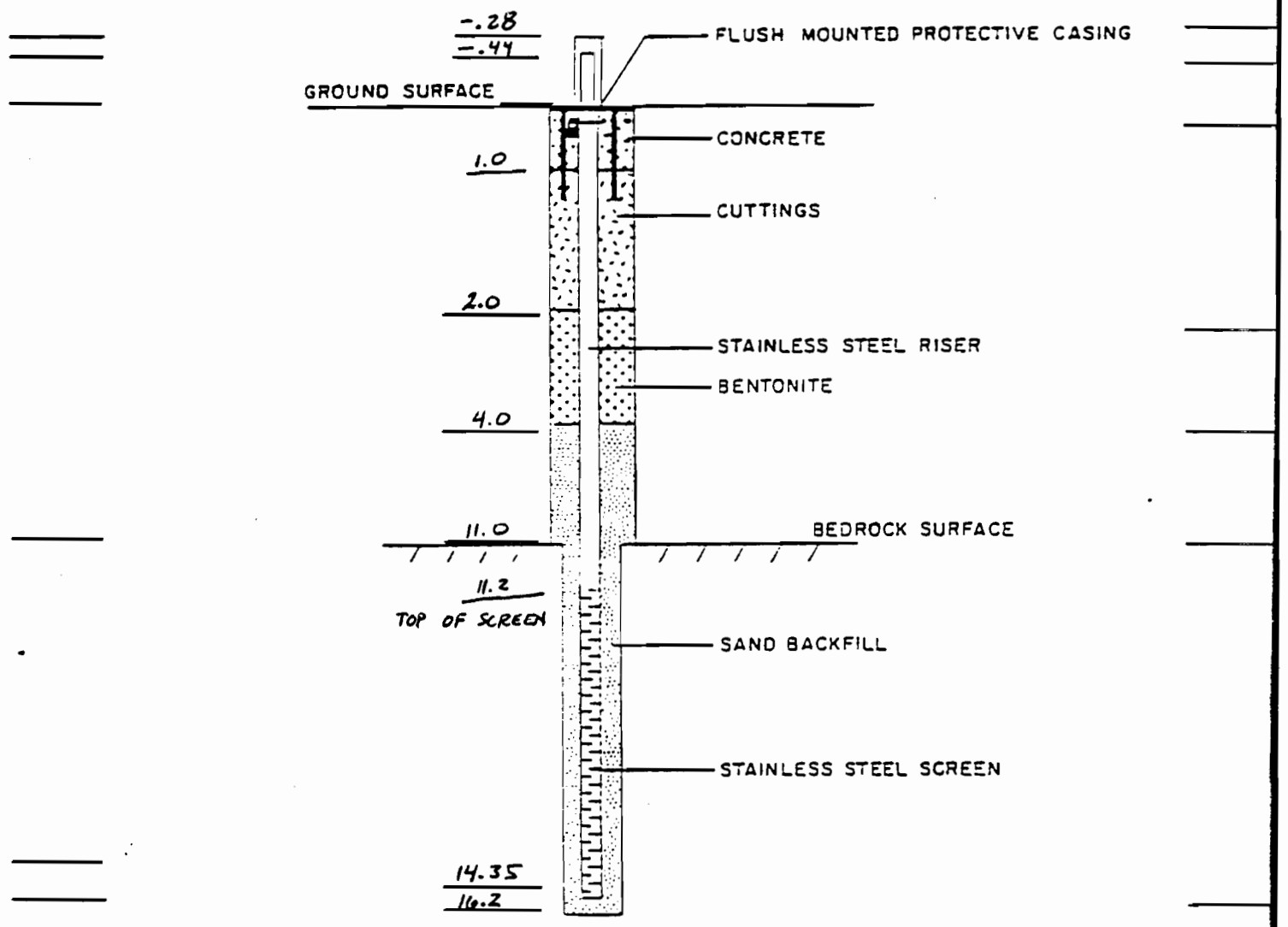
MONITORING WELL INSTALLATION DIAGRAM

PROJECT NO.	PROJECT NAME NYSEG	WELL NO.
4945-02	MECHANICVILLE	MW-1
INSTALLED BY L. ESPY, S. WIBBY	DATE INSTALLED 8/1/86	BORING DIAMETER 8.75"
WELL DIAMETER 2.0"	WELL MATERIAL SS	BACKFILL MATERIAL #3 JERSEY SAND



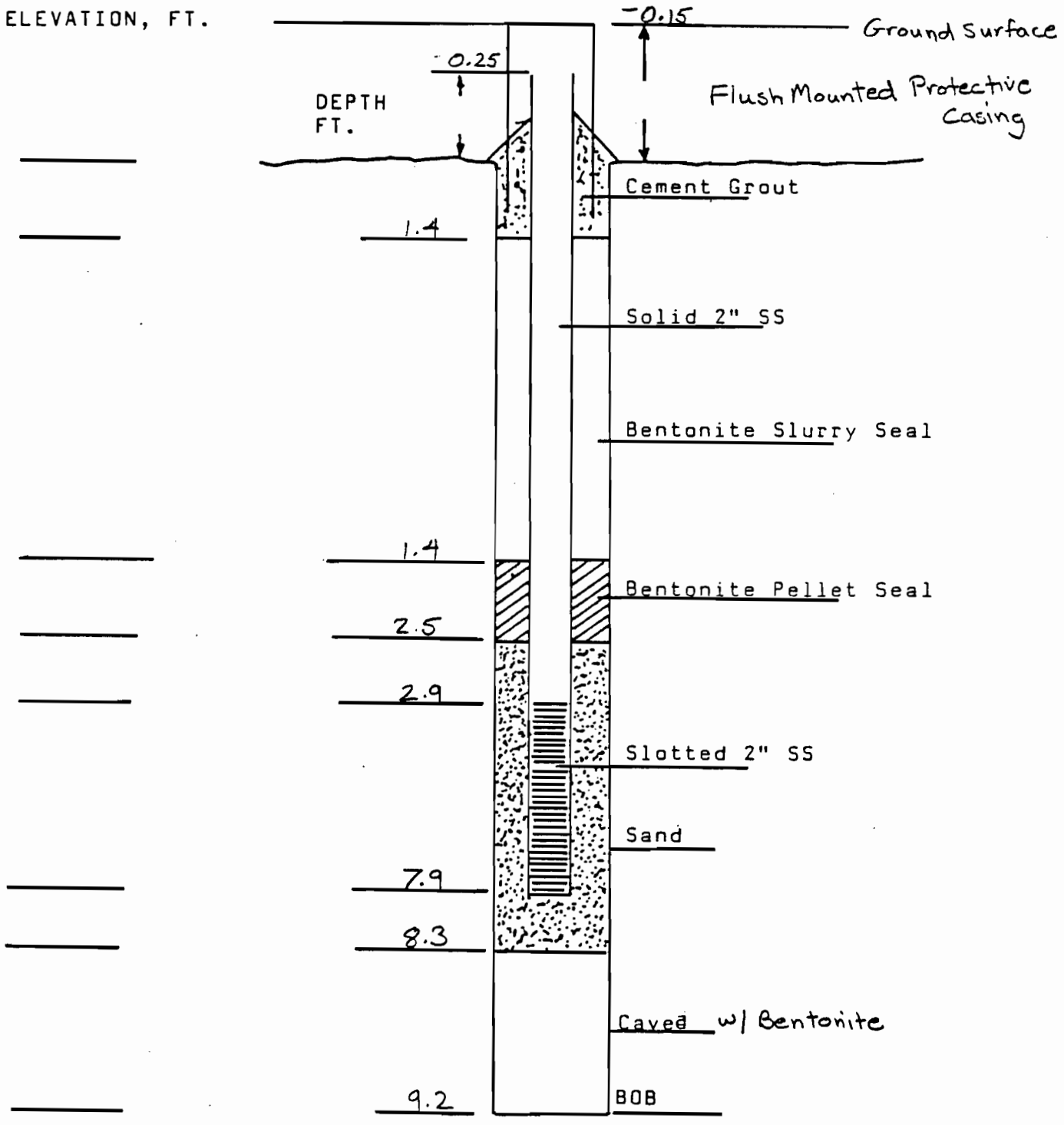
MONITORING WELL INSTALLATION DIAGRAM

PROJECT NO.	PROJECT NAME	WELL NO.
4945-02	NYSEG MECHANICVILLE	MW-2
INSTALLED BY L. ESPY, S. WIBBY	**DATE INSTALLED** 8/1/86	**BORING DIAMETER** 8.75"
WELL DIAMETER 2.0"	**WELL MATERIAL** SS	**BACKFILL MATERIAL** #3 JERSEY SAND



WELL INSTALLATION DETAILS

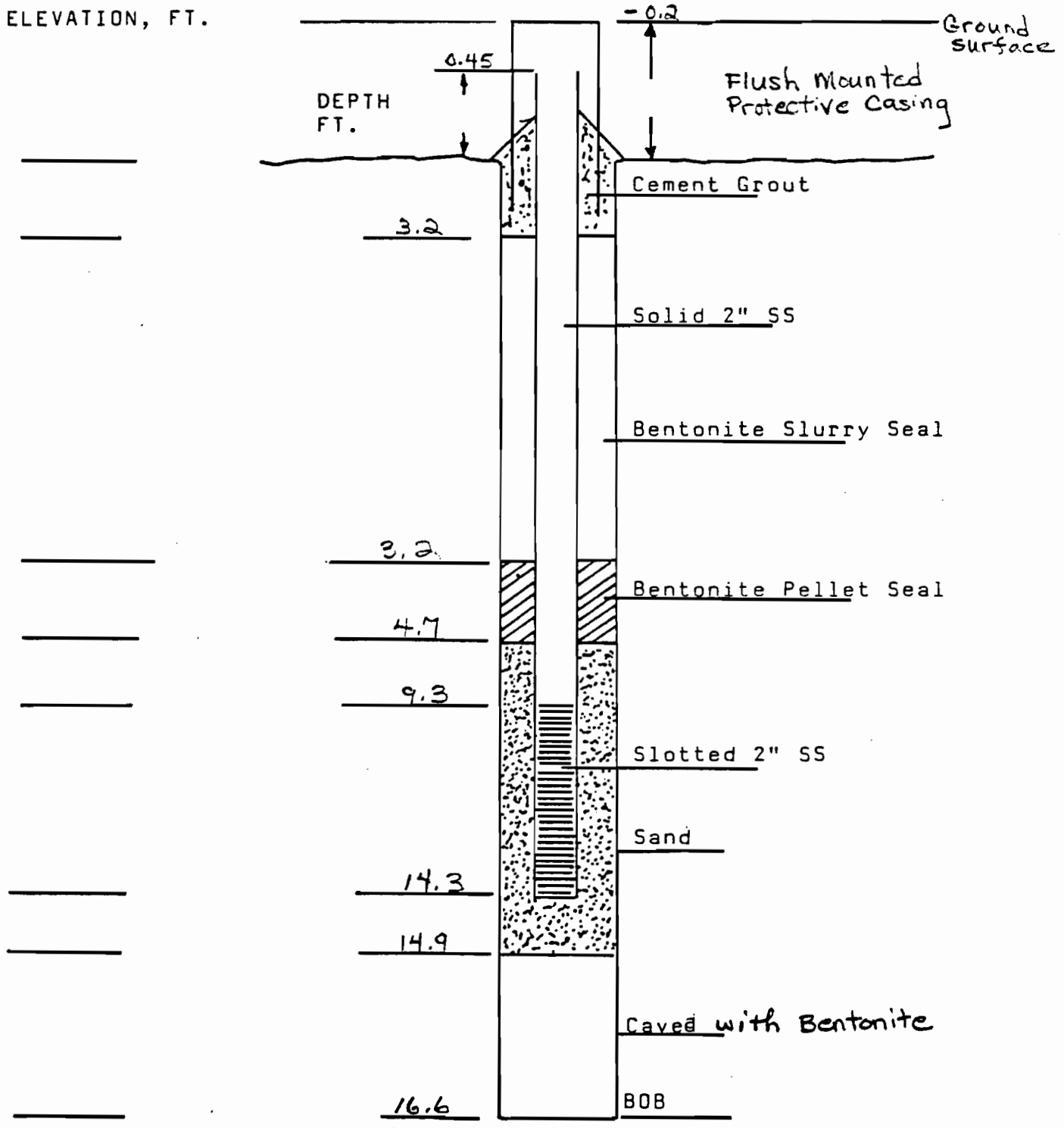
Project No. 4945-02	Project Name NYSEG MECHANICVILLE	Well No. MW-3
Installed By SNW/JWP	Date Installed 8/6/86	Boring Diameter 8.75"
Well Diameter 2"	Well Material SS	Backfill Material #3 Jersey Sand



EC JORDAN CO

WELL INSTALLATION DETAILS

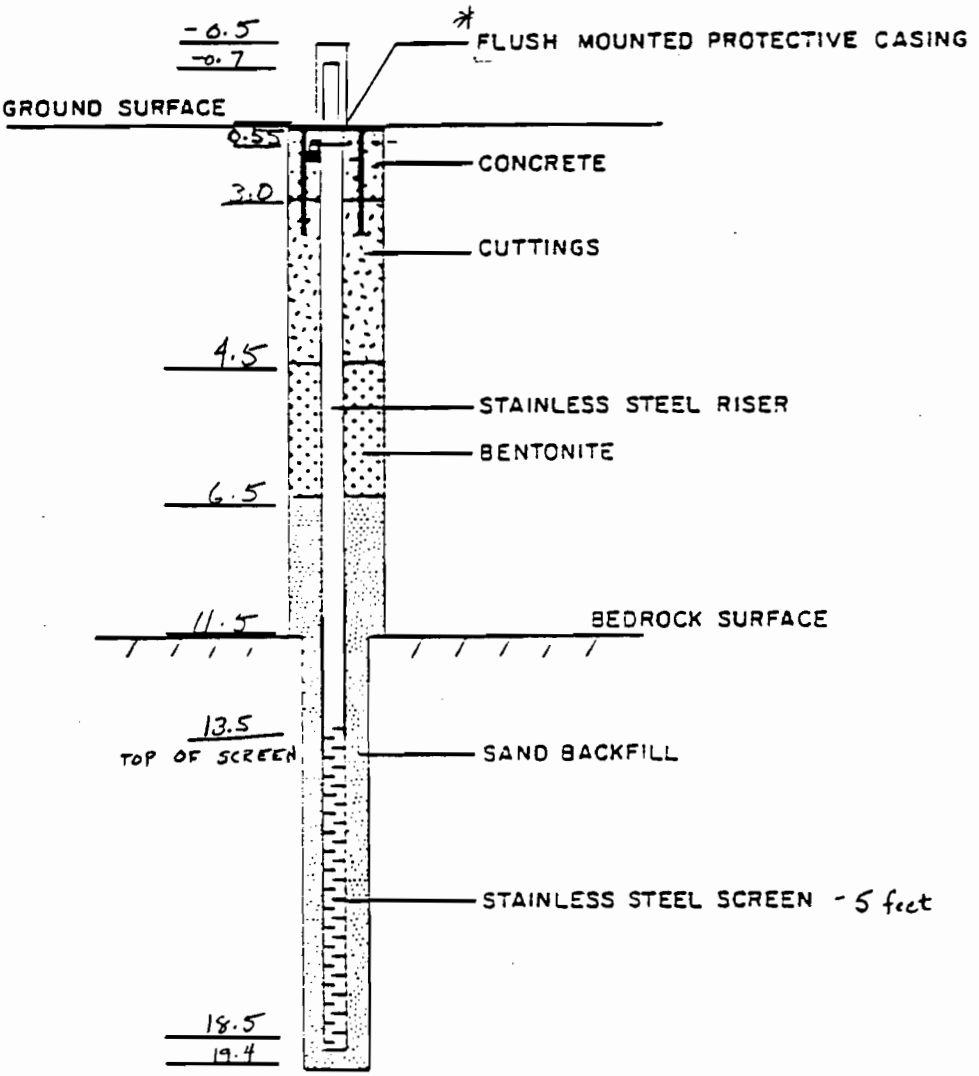
Project No. 4945-02	Project Name NYSEG Mechanicville	Well No. MW-4
Installed By SNW, LWE, ICM	Date Installed 7/30/86	Boring Diameter 8.75"
Well Diameter 2"	Well Material Stainless Steel	Backfill Materiel # 3 Jersey sand



MONITORING WELL INSTALLATION DIAGRAM

PROJECT NO.	PROJECT NAME	WELL NO.
4945-02	NYSEG MECHANICVILLE	MW-5
INSTALLED BY	**DATE INSTALLED**	**BORING DIAMETER**
SNW ; JWP	8/5/86	8.75"
WELL DIAMETER	**WELL MATERIAL**	**BACKFILL MATERIAL**
2.0"	SS	#3 Jersey Sand

ELEV., FT. DEPTH, FT.



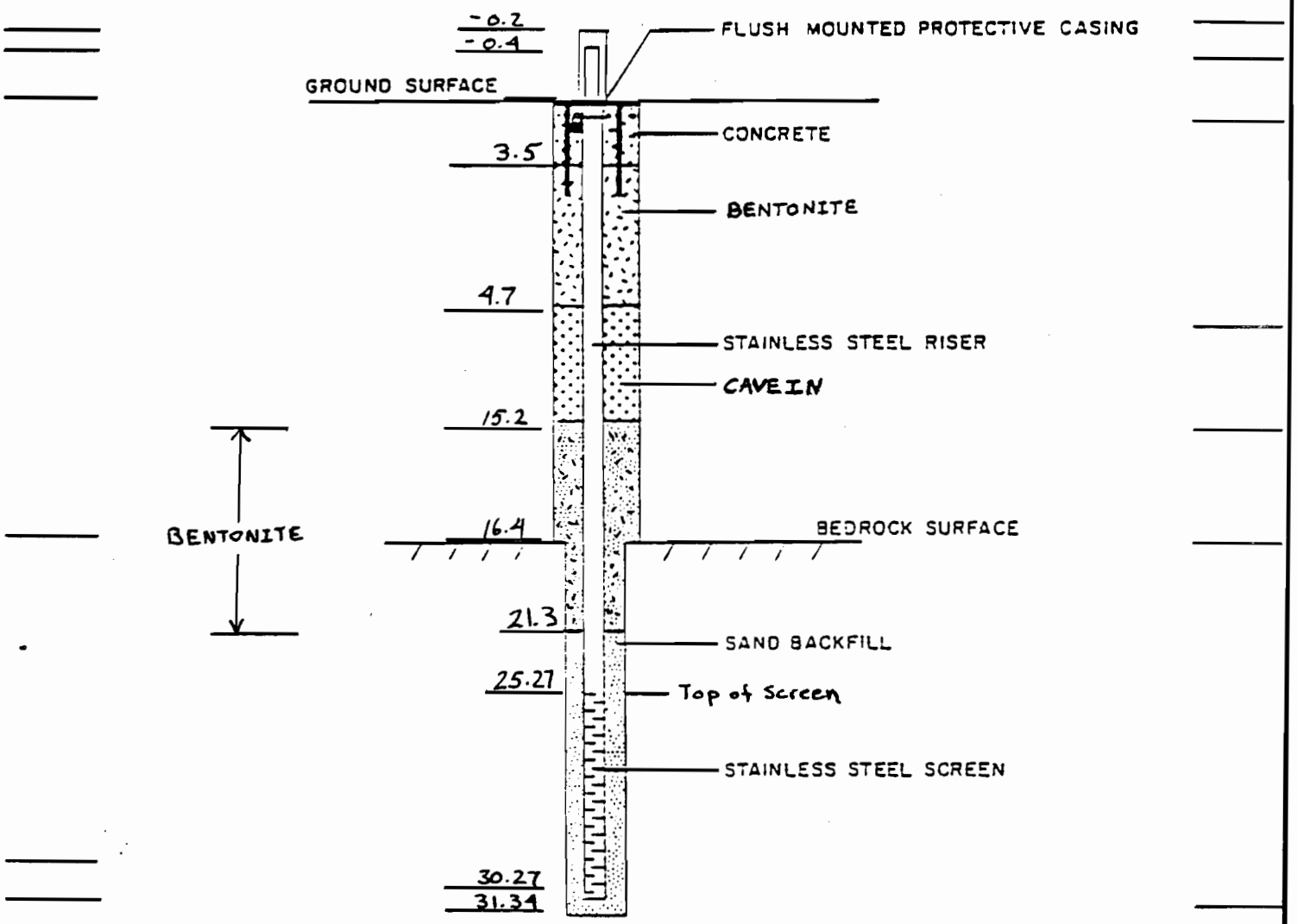
EC JORDAN CO

MONITORING WELL INSTALLATION DIAGRAM

PROJECT NO.	PROJECT NAME	WELL NO.
4945-02	NYSEG MECHANICVILLE	MW-6
INSTALLED BY	**DATE INSTALLED**	**BORING DIAMETER**
SNW	7-29-86	4.0"
WELL DIAMETER	**WELL MATERIAL**	**BACKFILL MATERIAL**
2.0"	SS	#3 JERSEY SAND

ELEV., FT.

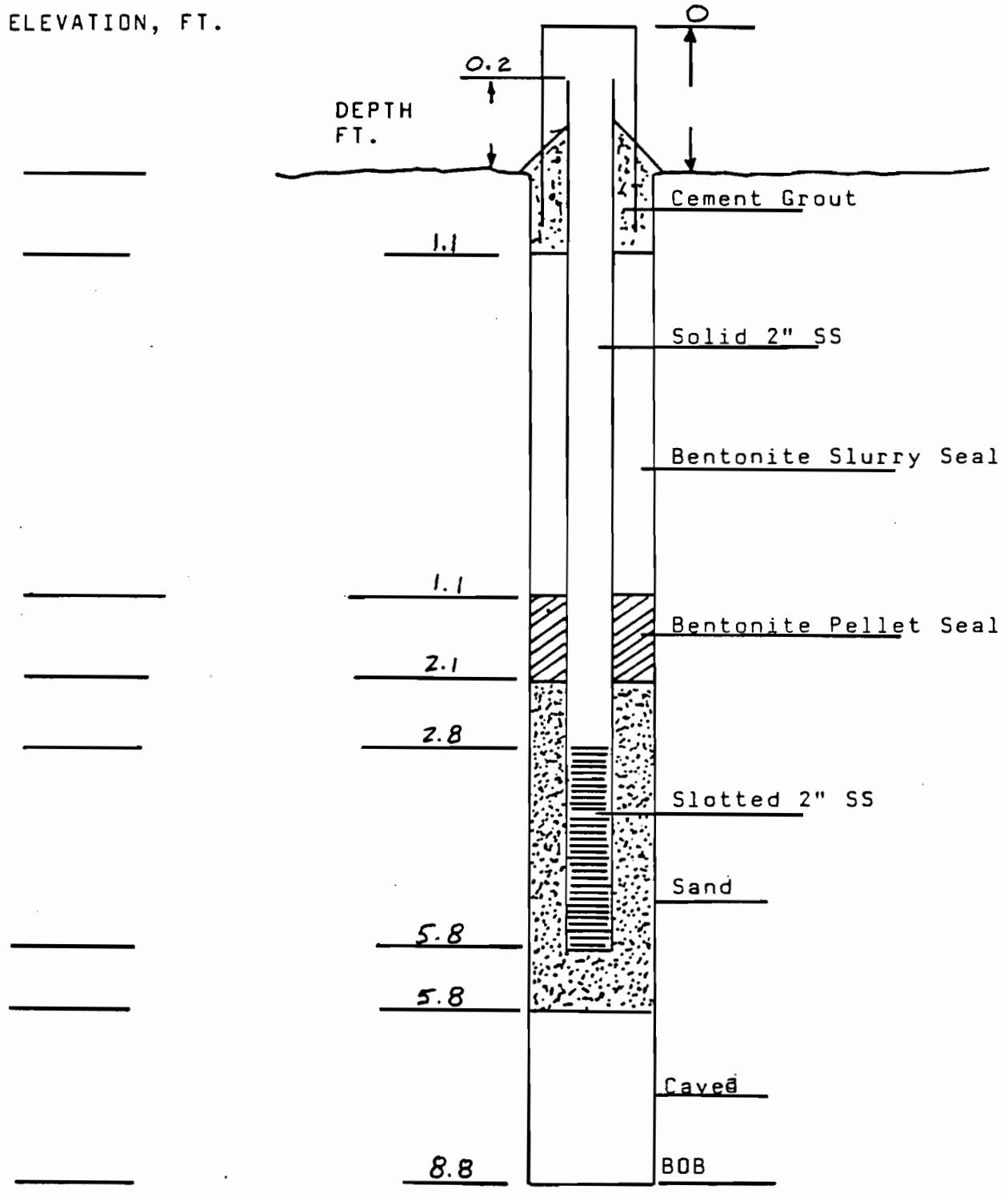
DEPTH, FT.



EC JORDAN CO

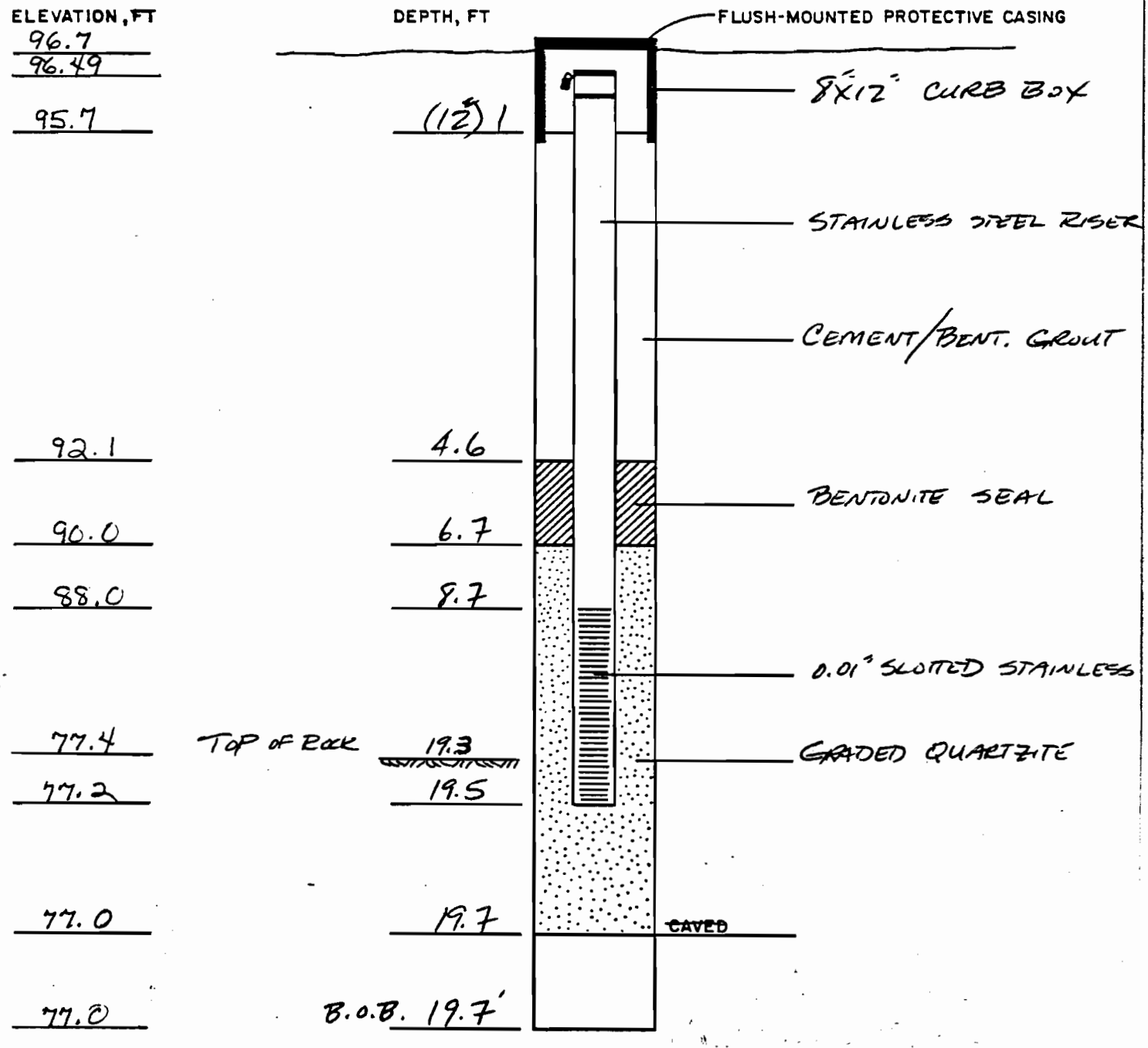
WELL INSTALLATION DETAILS

Project No. 4945 - 02	Project Name NYSEG MECHANICVILLE	Well No. Piezometer P-7
Installed By S. Wibby L. Espy	Date Installed 7-31-86	Boring Diameter 8.75"
Well Diameter 2.0"	Well Material PVC	Backfill Material #3 JERSEY SAND



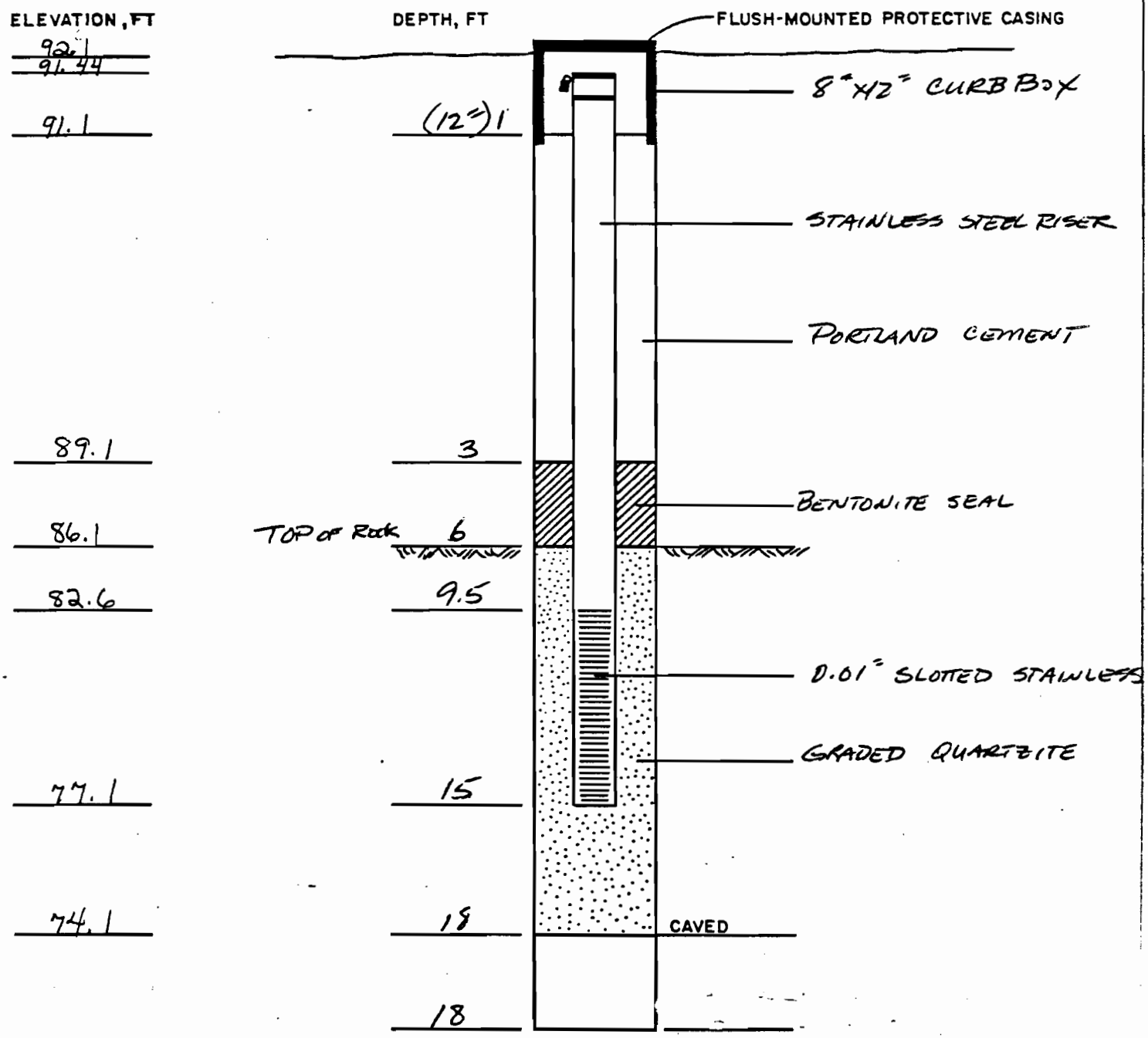
WELL INSTALLATION DETAILS

PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK 3	WELL NO. MW-10
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-12-87	BORING DIAMETER 6"
WELL DIAMETER 2"	WELL MATERIAL SCHEDULE 40 304 STAINLESS STEEL	BACKFILL MATERIAL #4 Q-Rok GRADED QUARTZITE



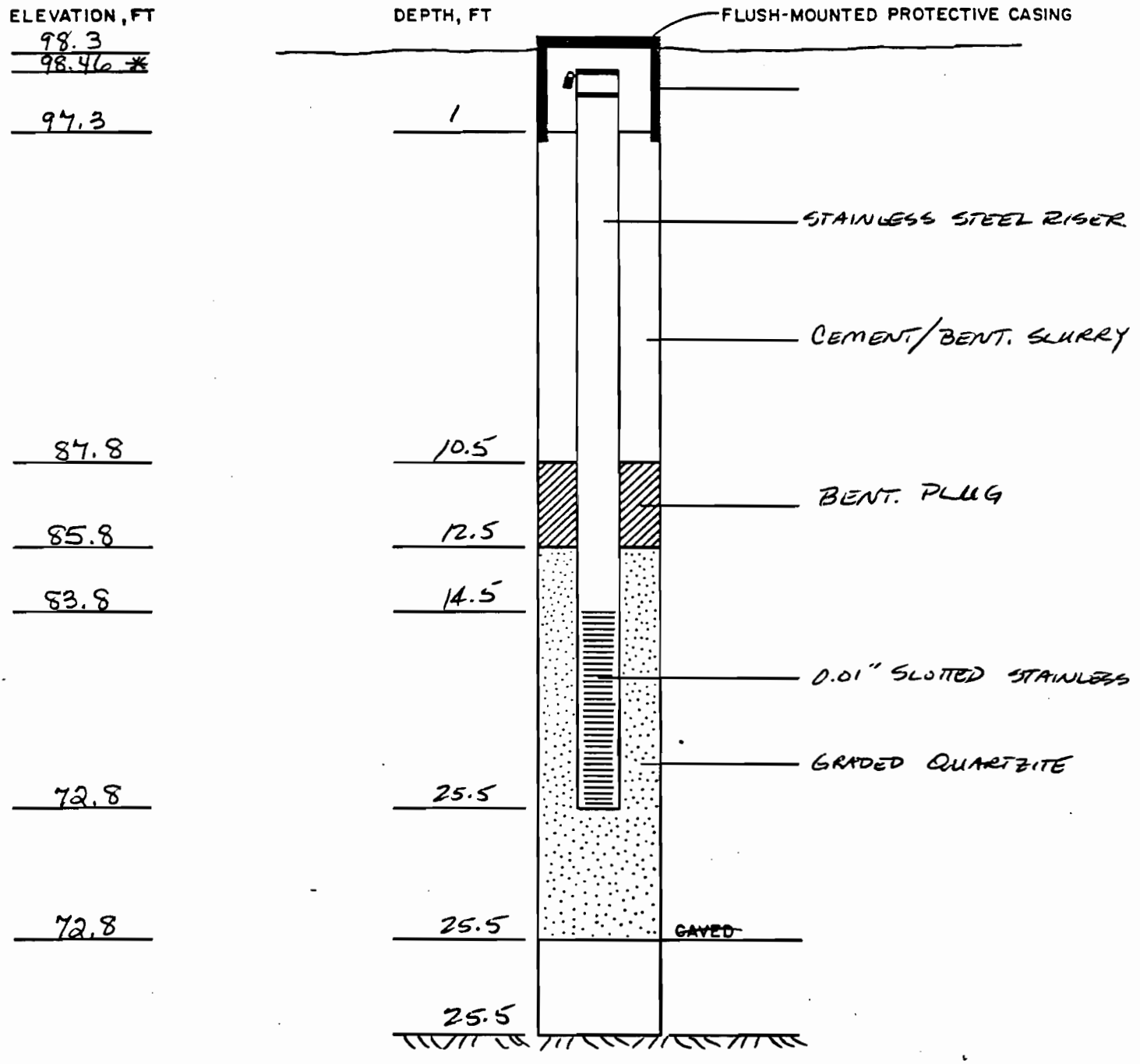
WELL INSTALLATION DETAILS

PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK 3	WELL NO. MW-11
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-13-87	BORING DIAMETER 6"
WELL DIAMETER 2"	WELL MATERIAL SCH. 40, 304 STAINLESS STEEL	BACKFILL MATERIAL GRADED QUARTZITE



WELL INSTALLATION DETAILS

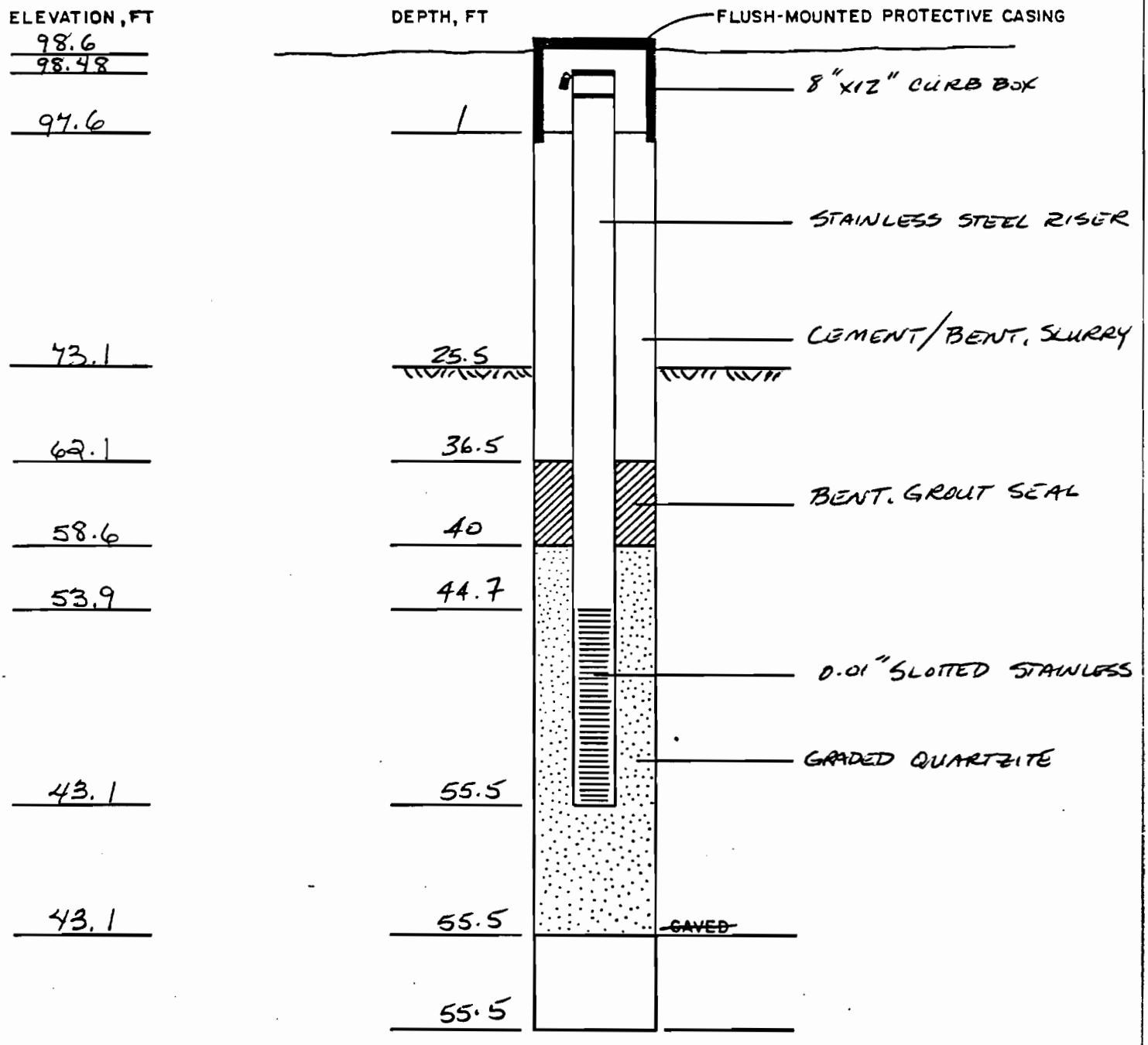
PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK 3	WELL NO. MW-12
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-18-87	BORING DIAMETER 6"
WELL DIAMETER 2"	WELL MATERIAL SCH 40, 304 STAINLESS STEEL	BACKFILL MATERIAL GRADED QUARTZITE



* Riser is slightly above the ground surface

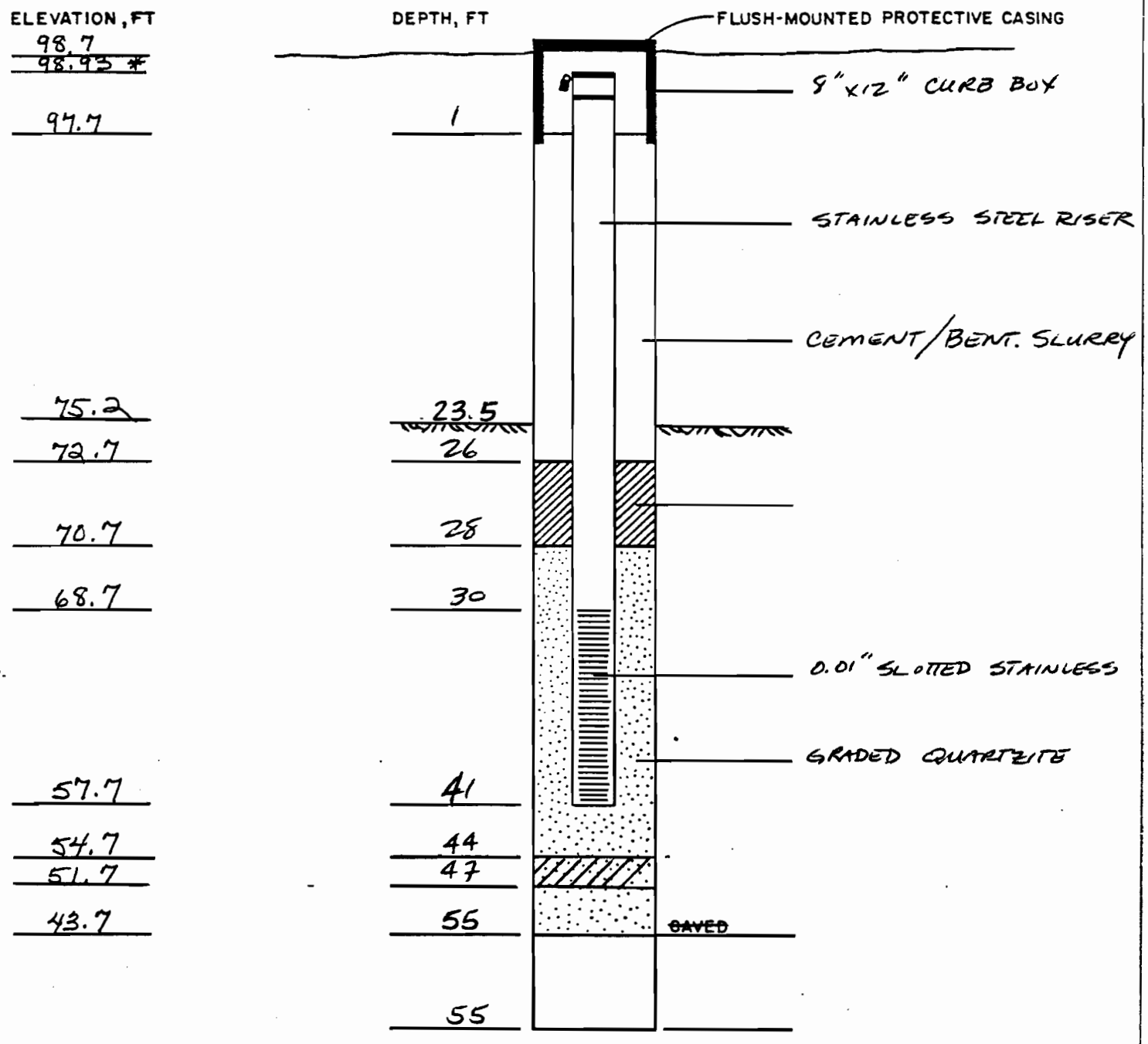
WELL INSTALLATION DETAILS

PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK 3	WELL NO. MW-13
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-18-87	BORING DIAMETER 10" Soil / 4" & 3" IN Rock
WELL DIAMETER 2"	WELL MATERIAL Sch. 40, 304 STAINLESS STEEL	BACKFILL MATERIAL GRADED QUARTZITE



WELL INSTALLATION DETAILS

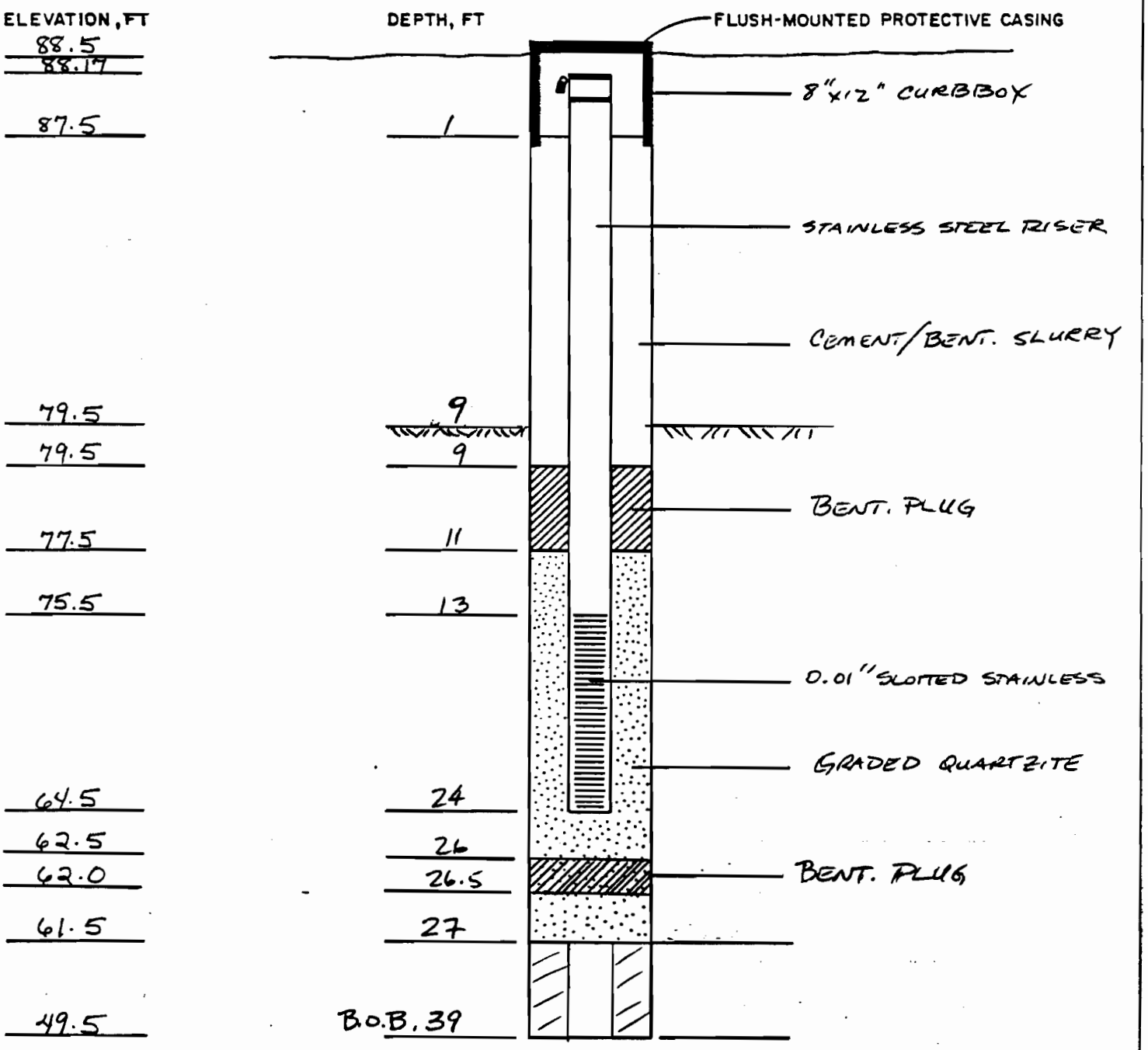
PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK3	WELL NO. MW-14
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-19-87	BORING DIAMETER 11" SOIL 4" & 3" IN ROCK
WELL DIAMETER 2"	WELL MATERIAL SCH 40, 304 STAINLESS STEEL	BACKFILL MATERIAL GRADED QUARTZITE



* Riser is slightly higher than the ground surface.

WELL INSTALLATION DETAILS

PROJECT NO. 4945-03	PROJECT NAME NYSEG MECHANICVILLE TASK 3	WELL NO. MW-15
INSTALLED BY NORTH STAR DRILLING	DATE INSTALLED 11-17-87	BORING DIAMETER 10" Soil 4" & 3" in Rock
WELL DIAMETER 2"	WELL MATERIAL SCH 40, 304 STAINLESS STEEL	BACKFILL MATERIAL GRADED QUARTZITE



APPENDIX A-4

PERMEABILITY AND DISCHARGE TEST METHODS AND CALCULATIONS

PERMEABILITY TEST METHODS

FALLING HEAD METHOD

In this method, an excess head is created in the monitoring well/piezometer by adding a volume of water which is then allowed to seep into the soil. Measurements are made of the water level in the monitoring well/piezometer over a given period of time. These measurements are continued until the rate of decrease or excess head becomes small.

RISING HEAD METHOD

In this method, water is removed from the monitoring well/piezometer and the rate of rise of the water level is observed until the rate of rise in water level becomes small.

PACKER TEST METHOD

This method is used to test the permeability of bedrock. Water is introduced under pressure to the borehole through tubing that discharges the water into a subsurface interval isolated by inflatable plugs. This allows water to seep only into the bedrock zone of interest. A flow meter was used to make measurements of the amount of water that the formation accepts.

PERMEABILITY DATA SHEET
EXAMPLE CALCULATION - FALLING HEAD TEST
MECHANICVILLE SITE

TYPE OF TEST: Falling head

Equation: $$K_h = \frac{(d^2)\ \ell n\ \frac{2mL}{D}}{8L\ (t_2 - t_1)} \times \ell n\ \frac{H_1}{H_2}$$ For uniform soil conditions

Test Data for MW-1:

m = Transformation Ratio = 1
L = Length of monitored zone = 12.1 feet = 368.8 cm
D = Diameter of borehole = 7.5 inches = 19.05 cm
d = Diameter of well pipe = 2 inches = 5.08 cm
t_1 = Time when flow rate begins to stabilize = 50 seconds
H_1 = Head at t_1 = 0.61 feet
t_2 = Time when flow rate stabilization drops = 180 seconds
H_2 = Head at t_2 = 0.03 feet

PERMEABILITY DATA SHEET
EXAMPLE CALCULATION - RISING HEAD TEST
MECHANICVILLE SITE

TYPE OF TEST: Rising head

Equation: $$K_h = \frac{(d^2)\ \ell n\ \frac{2mL}{D}}{8L\ (t_2 - t_1)} \times \ell n\ \frac{H_1}{H_2}$$ For uniform soil conditions

Test Data for MW-11:

m = Transformation Ratio = 1
L = Length of monitored zone = 5.5 feet = 167.64 cm
D = Diameter of borehole = 6 inches = 15.24 cm
d = Diameter of well pipe = 2 inches = 5.08 cm
t_1 = Time when flow rate begins to stabilize = 100 seconds
H_1 = Head at t_1 = 1.49 feet = 45.42 cm
t_2 = Time when flow rate stabilization drops = 390 seconds
H_2 = Head at t_2 = 0.61 feet = 18.59 cm

PERMEABILITY DATA SHEET
EXAMPLE CALCULATION - PACKER TEST
MECHANICVILLE SITE

TYPE OF TEST: Packer Test

Equation: $K_h = \frac{Q}{2\pi L H} \ln \frac{L}{r}$ $\quad L \geqq 10r$

Test Data for MW-13:

Q = Constant rate of flow into the borehole = 7.4 gal/min = 481 cm^3/sec
L = Length of test section = 13 feet = 396.24 cm
H = Differential head on test section = 1,597.2 cm
r = Radius of the borehole = 2 inches = 5.08 cm

PERMEABILITY TEST RESULTS
MECHANICVILLE SITE

STRATA TESTED	APPROXIMATE DEPTH OF TEST INTERVAL[1]	TEST LOCATION	TYPE TEST	HYDRAULIC CONDUCTIVITY cm/sec	HYDRAULIC CONDUCTIVITY ft/day	REMARKS
Task 2 Wells						
Fill, Natural Soil, Weathered & Unweathered Rock	7'-19'	MW-1	In Situ	9.5×10^{-4}	2.7	Falling Head
Fill, Natural Soil, Weathered & Unweathered Rock	4'-16'	MW-2	In Situ	1.1×10^{-3}	3.1	Falling Head
Fill, Weathered Rock	2.5'-9'	MW-3	In Situ	1.6×10^{-4}	0.45	Falling Head
Fill, Weathered & Unweathered Rock	5'-16.5'	MW-4	In Situ	1.9×10^{-4}	0.54	Falling Head
Fill, Natural Soil, Weathered & Unweathered Rock	6.5'-19.5'	MW-5	In Situ	5.4×10^{-4}	1.5	Falling Head
Weathered & Unweathered Rock	21.5'-31.5'	MW-6	In Situ	7.5×10^{-5}	0.21	Falling Head
Unweathered Rock	25'-30'	MW-6	In Situ	1.8×10^{-4}	0.51	Packer Test (15 psi)
Unweathered Rock	25'-30'	MW-6	In Situ	2.0×10^{-4}	0.57	Packer Test (30 psi)
Task 3 Wells						
Natural Soil, Weathered Rock	7'-20'	MW-10	In Situ	2.2×10^{-5}	0.06	Rising Head
Unweathered Rock	6'-18'	MW-11	In Situ	2.0×10^{-4}	0.57	Rising Head
Natural Soil	12.5'-25.5'	MW-12	In Situ	4.0×10^{-4}	1.10	Rising Head
Unweathered Rock	40'-55.5'	MW-13	In Situ	3.0×10^{-4}	0.72	Rising Head
Unweathered Rock	28'-55'	MW-14	In Situ	2.0×10^{-4}	0.57	Rising Head

5.88.10T
0005.0.0

PERMEABILITY TEST RESULTS
MECHANICVILLE SITE
(continued)

STRATA TESTED	APPROXIMATE DEPTH OF TEST INTERVAL[1]	TEST LOCATION	TYPE TEST	HYDRAULIC CONDUCTIVITY cm/sec	HYDRAULIC CONDUCTIVITY ft/day	REMARKS
Unweathered Rock	11'-39'	MW-15	In Situ	1.0×10^{-4}	0.28	Rising Head
Unweathered Rock	32.5'-45.5'	MW-13	In Situ	5.0×10^{-4}	1.4	Packer Test (15 psi)
Unweathered Rock	32.5'-45.5'	MW-13	In Situ	9.0×10^{-4}	2.6	Packer Test (30 psi)
Unweathered Rock	27'-35'	MW-14	In Situ	9.0×10^{-4}	2.6	Packer Test (10 psi)
Unweathered Rock	27'-35'	MW-14	In Situ	4.0×10^{-4}	1.1	Packer Test (20 psi)
Unweathered Rock	35'-45'	MW-14	In Situ	2.0×10^{-4}	0.57	Packer Test (15 psi)
Unweathered Rock	35'-45'	MW-14	In Situ	2.0×10^{-4}	0.57	Packer Test (30 psi)
Unweathered Rock	13'-21'	MW-15	In Situ	4.0×10^{-4}	1.1	Packer Test (10 psi)
Unweathered Rock	13'-21'	MW-15	In Situ	4.0×10^{-4}	1.1	Packer Test (20 psi)
Unweathered Rock	21'-29.5'	MW-15	In Situ	1.0×10^{-4}	0.28	Packer Test (15 psi)
Unweathered Rock	21'-29.5'	MW-15	In Situ	1.0×10^{-4}	0.28	Packer Test (30 psi)
Unweathered Rock	29.5'-39'	MW-15	In Situ	2.6×10^{-5}	0.07	Packer Test (15 psi)
Unweathered Rock	29.5'-39'	MW-15	In Situ	1.4×10^{-5}	0.04	Packer Test (30 psi)

[1] For rising and falling head tests, interval defined from bottom of borehole to bottom of well seal; zone of influence may be larger or smaller due to hydraulic characteristics of formation.

EXAMPLE CALCULATION
SITE GROUNDWATER DISCHARGE TO THE ANTHONY KILL
MECHANICVILLE SITE

$Q = KiA$

For Mechanicville Site:

Q = groundwater discharge, ft^3/day

K = geometric mean hydraulic conductivity = 0.28 ft/day (silty shale) and 1.1 ft/day (shallow bedrock)

i = groundwater gradient = 0.06 ft/ft

A = aquifer cross sectional area = 200 ft^2 (site length = 200 ft; saturated aquifer thickness = 10 ft)

Q (silty shale) = 33.6 ft^3/day or 0.0004 cfs

Q (shallow bedrock) = 132 ft^3/day or 0.002 cfs

Calculated site groundwater discharge to the Anthony Kill is less than 0.003 cfs.

APPENDIX A-5

GROUNDWATER LEVEL DATA

GROUNDWATER LEVEL DATA
MECHANICVILLE SITE

LOCATION	GROUND ELEVATION (Ft.-Relative[1])	RISER ELEVATION (Ft.-Relative[1])	WATER ELEVATION (Ft. Relative[1]) 8/5/86	9/9/86	12/2/86	3/10/87	6/2/87	12/22/87	3/29/88
MW-1	95.9	98.6	87.3	87.3	87.6	88.4	87.4	87.5	87.4
MW-2	91.6	91.3	88.1	88.9	89.0	89.0	88.4	88.8	88.8
MW-3	87.4	87.3	NA	84.6	85.1	85.7	83.6	85.1	85.6
MW-4	91.0	90.6	86.8	87.1	88.1	88.1	87.6	NM[2]	87.9
MW-5	88.4	87.9	78.4	78.2	78.9	NM	79.9	NM	79.1
MW-6	91.0	90.7	86.8	86.9	86.9	87.7	87.2	87.7	87.6
P-1	92.5	95.0	85.7	85.5	86.7	86.40	85.5	85.8	86.2
P-2	95.2	98.8	87.1	86.9	87.6	89.70	86.9	87.2	87.4
P-3	91.8	91.8	88.6	89.7	91.8	89.30	88.5	NM	89.0
MW-10	96.7	96.5						85.9	85.4
MW-11	92.1	91.4						87.5	87.6
MW-12	98.3	98.5						84.7	84.4
MW-13	98.6	98.5						82.6	82.8
MW-14	98.7	98.9						82.5	82.4
MW-15	88.5	88.2						80.3	81.0
Bridge[3]		86.3						77.7	78.8

NOTES:

[1] Elevation is relative to the assumed datum used to prepare the survey (see Appendix A-7).
[2] NM = Not measured due to well inaccessibility or heavy contamination.
[3] Surface water elevation of Anthony Kill at bridge.

APPENDIX A-6

MONITORING WELL SAMPLING PROCEDURES

MONITORING OF GROUNDWATER WELLS

1. Check the well for proper identification and location.

2. Measure and record the height of protective casing.

3. After unlocking the well and removing any well caps, measure and record the ambient and well-mouth organic vapor levels using the photoionization meter. If organic vapor levels at breathing height reach 5 ppm, the sampler shall utilize the appropriate safety equipment as described in the Health and Safety Plan.

4. Using the electronic water level meter, measure and record the static water level in the well to the nearest 0.01 foot. Measure also the depth to the well bottom from a constant reference point on the top of the well riser. Upon removing the water level wire, rinse it with laboratory-grade isopropanol or ethanol and then distilled water.

5. Calculate the volume of stagnant water in the well casing. Volume in liters equals 0.154 times the square of the inside diameter of the casing (in inches) times the depth of water (in feet).

SAMPLING OF GROUNDWATER MONITORING WELLS

Following the measurements and calculations described above, sampling will commence in the sequence below:

1. Lower the submersible pump or peristaltic pump intake into the well. For shallow groundwater situations, the intake of the suction tubing or of the submersible pump will be lowered to the top of the well screen and the well purged three to five times the calculated volume. Alternatives to this procedure may be necessary if one of the following conditions exist:

   a. If the well screen is very large, making pumping from the top impractical, the suction line or submersible pump should be lowered to the approximate mid-point of the screened portion of the well.

   b. If the well is situated in tight formations such as tills, clays or rock, the purging of the well should be performed from very near the bottom of the well screen. This will facilitate complete removal of standing well water.

2. Connect the instrumentation header to the pump discharge and begin flushing the well. Monitor the in situ parameters (pH, Eh, temperature, and specific conductivity) and measure the volume of groundwater being pumped. Alternately, in situ parameters may be monitored in a beaker filled from the pump discharge. Purging of the standing well water is considered complete when one of the following is achieved:

   a. at least three well volumes have been purged and in situ parameters stabilized, or

b. five well volumes have been purged, or

c. the well has been pumped dry.

3. Record the in situ parameters.

4. After purging, lower the pump intake or bailer, as appropriate for the parameters of concern (i.e. bailer for volatiles; and bailer, peristaltic or submersible pump for all other parameters) to the middle of the screened interval. If the analysis to be performed is for lighter-than-water chemical species, then the pump or bailer should be lowered to the top of the water column for sample collection.

5. Collect the sample(s).

   Volatile and semi-volatile samples are filled directly from the bailer with as little agitation as possible.

   Other samples will be placed directly into the appropriate container from the discharge tubing of the pump or bailer. Where filtration is required, an in-line filter should be used, if possible. Vacuum filtration is an alternative to an in-line device (see attached Table).

6. Remove the pump from the well and decontaminate the pump and tubing by flushing with isopropanol; up to one gallon of the solvent is used as needed. Rinse the pump and tubing with one liter of distilled water for every 40 feet of tubing.

7. Complete sample data records after each well is sampled.

8. Secure the well cap and lock.

STANDARD FIELD FILTRATION PROCEDURES

A. IN-LINE FILTRATION

EQUIPMENT

1. A portable 102-mm acrylic backflushing filter unit
2. 102-mm diameter filter papers, 0.45 µm membrane filters
3. Reagent rinse water (ASTM Type II or better)
4. 20% v/v nitric acid rinse solution

PROCEDURES

1. Attach in-line filter assembly, after assembling filter paper into filter holder, to discharge line of sampling pump. Open by-pass valve completely.
2. Turn sampling pump on, slowly turn by-pass valve closed, allowing flow into the filter. Remove trapped air through the filter bleed valve, if necessary.
3. Discard the initial 100 mℓ ± of filtrate. Collect subsequent filtrate into sample bottle.
4. Rinse barrel and filter holder assembly between samples with three rinses of reagent water. The rinse sequence when elemental parameters will be analyzed is: reagent water - 20% v/v nitric acid - reagent water.

B. VACUUM FILTRATION

EQUIPMENT

1. Two sets of either glass funnel type or self-contained polysulfone filters with sintered glass discs or polysulfone filter plates
2. 47-mm diameter filter papers, 0.45 µm membrane filters
3. Vacuum pump or ISCO peristaltic pump with silicone tubing
4. Reagent rinse water (ASTM Type II or better)
5. 20% v/v nitric acid rinse solution

PROCEDURES

1. Thoroughly rinse sintered glass disc, filter funnel, and stem or polysulfone filter units with reagent water.
2. On the basis of visual clarity of sample, prefiltering with larger pore filters may be required. If sample has a heavy clay content, organics, or suspended matter, prefiltration through a 3.0- or 5.0-µm membrane filter may be necessary.
3. Place membrane filter on filter holder with minimum handling.
4. Attach filter holder with filter to filter funnel and receiver.
5. Swirl and slowly pour sample bottle into filter funnel.
6. Attach suction tubing to filter flask and vacuum pump (or ISCO pump). Pump is turned on in the vacuum mode.
7. Filter a small portion of the sample and discard filtrate after rinsing flask with sample filtrate.
8. If prefiltering was required, pass sample through a 0.45-µm membrane filter using another filtering apparatus.
9. Transfer filtered sample to appropriate bottles.
10. Rinse filtration equipment between samples with at least three rinses of reagent water. The rinse sequence, when elemental parameters are to be analyzed, is: reagent water - 20% v/v nitric acid - reagent water.

C. PRESSURE FILTRATION

EQUIPMENT

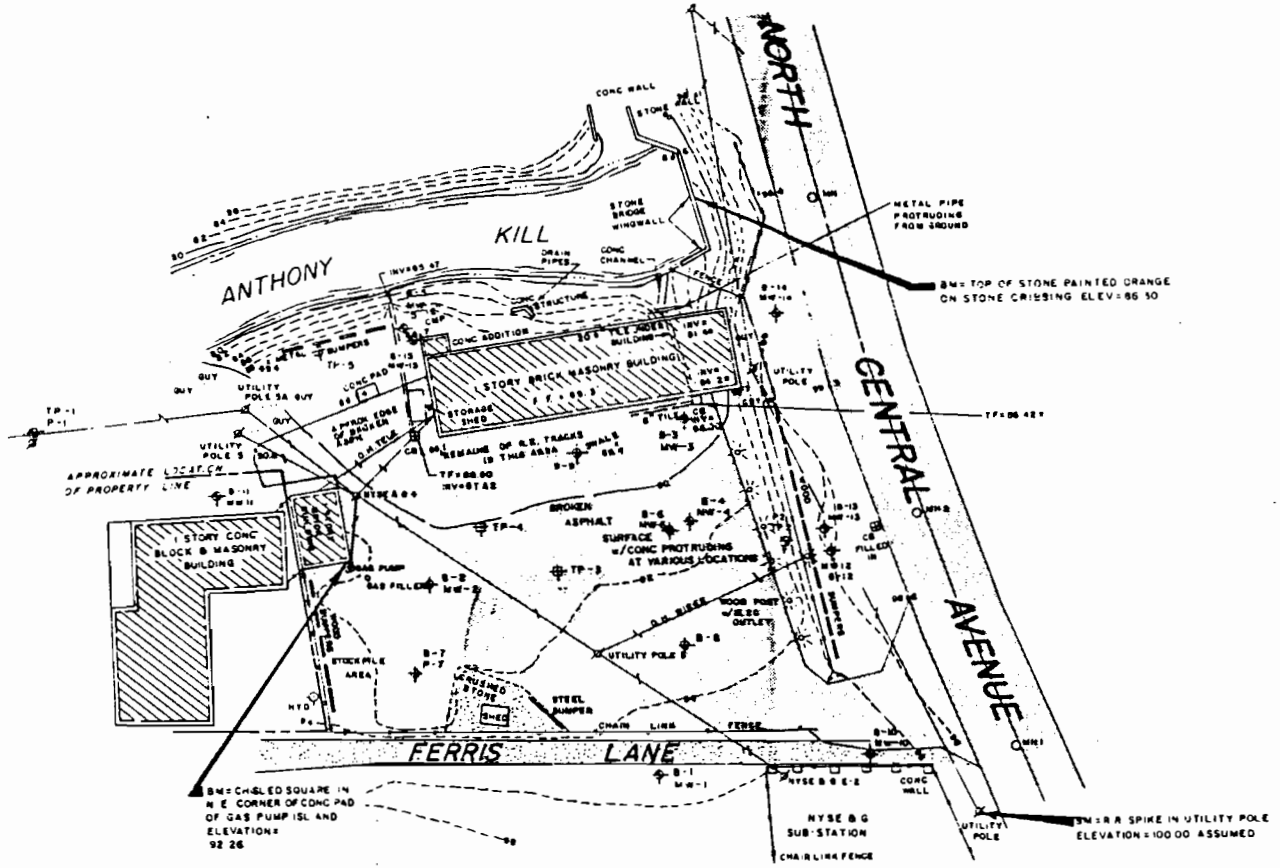
1. Pressure filter apparatus consisting of 1 liter barrel filter, filter holder and pressure hose connectors
2. Source of pressurized gas, i.e., tank of nitrogen, argon, etc.
3. 147 mm filter papers, 0.45 µm membrane filter
4. Reagent rinse water (ASTM Type II or better)
5. 20% v/v nitric acid rinse solution

PROCEDURES

1. If filter barrel has sample valve, assemble filter assembly with 0.45 µm membrane filter and attach pressure hose.
2. If filter barrel does not have a sample valve, assemble filter paper on filter holder.
3. Turn barrel upside down and pour sample into barrel.
4. Place filter holder and filter onto barrel assembly, making sure to align O-ring for a positive seal.
5. Attach swing-away bolts and tighten hand-tight.
6. Turn over filter assembly and attach pressure hose assembly.
7. Slowly turn on pressurized gas and increase pressure regulator to a maximum of 20 psi.
8. Collect filtrate from bottom of barrel assembly.
9. Rinse barrel and filter holder assembly between samples with three rinses of reagent water. The rinse sequence when elemental parameters will be determined is: reagent water - 20% v/v nitric acid - reagent water.

APPENDIX A-7

SITE SURVEY MAP



RECORD OF WORK	DATE		
	6-26 86	PREPARED FOR E C JORDAN CO.	D A F
	10 7 86	MONITORING LOCATIONS & DATA ADDED E C. JORDAN	D A F
	12 4-87	" " , BORING & GEOPHYSICAL	
		SIGHTS ADDED - E C JORDAN	D A F
	12 10 87	ELEVATIONS AT GEOPHYSICAL SURVEY POINTS ADDED	D A F.

TOPOGRAPHIC SURVEY

PORTION OF LANDS OF

NEW YORK STATE ELECTRIC & GAS CORP.

(MECHANICVILLE SITE)

TOWN OF MECHANICVILLE	COUNTY: SARATOGA, N.Y.
SCALE: 1" = 50'	DATE: JUNE 26, 1986

DAVID A. FLANDERS ASSOCIATES

6 MORNINGSIDE DRIVE

BALLSTON LAKE, NEW YORK

MAP BY: DAVID A FLANDERS	LIC. NO: 49,134

86-72-S

MONITORING DEVICE			ELEVATION
MONITORING WELL		#1	98.56
"	"	#2	91.31
"	"	#3	87.31
"	"	#4	90.61
"	"	#5	87.89
"	"	#6	90.65
"	"	#10	96.49
"	"	#11	91.44
"	"	#12	98.46
"	"	#13	98.48
"	"	#14	98.93
"	"	#15	88.17
BORING	#1	GROUND	95.9
"	#2	"	91.6
"	#3	"	87.4
"	#4	"	91.0
"	#5	"	88.4
"	#6	"	91.0
"	#7	"	91.8
"	#8	"	93.2
"	#9	"	88.5
"	#10	"	96.7
"	#11	"	92.1
"	#12	"	98.3
"	#13	"	98.6
"	#14	"	98.7
"	#15	"	88.5
PIEZOMETER		#1	95.02
"		#2	98.83
"		#7	91.76
TEST PIT		#1	92.5
"	"	#2	95.2
"	"	#3	91.4
"	"	#4	90.3
"	"	#5	89.1

NOTE: ELEVATION OF MONITORING WELLS AND PIEZOMETERS TAKEN AT TOP OF EXISTING NOTCH CUT IN TOP OF P.V.C. PIPE.

NOTES:

A. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN COMPILED UTILIZING STANDARD FIELD SURVEY PROCEDURES. NO ATTEMPT HAS BEEN MADE TO SHOW THE SIZE AND LOCATION OF ANY UNDERGROUND UTILITIES OF SUBSURFACE FEATURES WHICH MAY EXIST.

B. ELEVATION DATUM USED IN CONNECTION WITH THE PREPARATION OF SURVEY IS FROM AN ASSUMED DATUM.

C. THE LIMITS OF OWNERSHIP OF LANDS OF NEW YORK STATE ELECTRIC AND GAS CORP.. WHERE NOT READILY APPARENT AT THE TIME OF THIS TOPOGRAPHIC SURVEY, FOR LOCATION OF PERTINENT PROPERTY LINES A BOUNDARY SURVEY IS RECOMMENDED.

APPENDIX B

CHEMICAL DATA

APPENDIX B-1

ANALYTICAL METHODS

TABLE B-1-1

ANALYTICAL METHODS[1]
TASK 2
MECHANICVILLE SITE

Analytical Parameter	Soils and Sediments	Groundwater and Surface Water
Volatile Organic Compounds	Method 8020 with confirmatory analysis of 2 soil samples and one round of sediments using Method 8240	Method 602 for Round 1 samples; Method 624 for subsequent sampling rounds
Semi-Volatile Organic Compounds	Method 8310 with confirmatory analysis of 2 soil samples and one round of sediments using Method 8270	Method 610 for Round 1 samples; Method 625 for subsequent sampling rounds
Cyanide - Total and Ferro-Ferricyanide	Method 9010	Method 335.2
Total Organic Carbon	Method 9060	Method 415.1
Total Phenolics	Method 420.1	Method 420.1
Iron and Zinc	Method 200.7 with 3050	Method 200.7

[1] Method numbers refer to USEPA methods (USEPA, 1983) unless otherwise noted.

TABLE B-1-2

ANALYTICAL METHODS[1]
TASK 3
MECHANICVILLE SITE

Analytical Parameter	Soil and Sediment	Groundwater and Surface Water
Volatile Organic Compounds	Method 8240	Method 624
Semi-Volatile Organic Compounds	Method 8270	Method 625
Cyanide - Total	Method 9010	Method 335.2
Total Organic Carbon	Method 9060	Method 415.1
Total Phenolics	Method 420.1	Method 420.1
Iron and Zinc	Method 200.7 with 3050	Method 200.7

[1] Method numbers refer to USEPA methods unless otherwise noted (USEPA, 1983).

APPENDIX B-2

ANALYTICAL DATA FOR TASK 2 SAMPLES

01/19/88

TABLE B-2-1
CHEMICALS FOUND IN TASK 2 TEST PIT SAMPLES
MECHANICVILLE SITE

SAMPLE IDENTIFIER	TP-1/S-1	TP-2/S-1	TP-4/S-1	TP-5/S-1	TP-5/S-1	TP-5/S-1
ORGANICS ANALYSIS (1)	HPLC	HPLC	HPLC	HPLC	HPLC DUP	GC/MS
DATE OF SAMPLE COLLECTION	7/21/86	7/21/86	7/21/86	7/21/86	7/21/86	7/21/86
SAMPLE DEPTH (FT)	6.5-7.0	7.0-7.5	3.0-4.0	3.0-4.0	3.0-4.0	4.0-6.0
ZONE SAMPLED	FILL	FILL	FILL	FILL	FILL	FILL
VOLATILE ORGANICS (MG/KG)						
-VOLATILE AROMATICS-						
BENZENE	ND (2)	ND	0.220	ND	ND	ND
TOLUENE	ND	ND	0.160	1.000	0.750	0.640
ETHYLBENZENE	ND	ND	0.150	6.600	6.100	2.200
STYRENE	ND	ND	ND	ND	ND	ND
TOTAL XYLENES	-- (3)	--	--	--	--	11.000
m-XYLENE	ND	ND	0.091	4.100	3.100	--
o-XYLENE	ND	ND	0.082	3.900	3.000	--
p-XYLENE	ND	ND	0.062	2.100	1.600	--
TRIMETHYLBENZENE	ND	ND	ND	4.600	5.100	--
n-PROPYLBENZENE	ND	ND	0.083	2.100	2.000	--
-OTHER-						
ACETONE	--	--	--	--	--	ND
METHYLENE CHLORIDE	--	--	--	--	--	1.000
CARBON DISULFIDE	--	--	--	--	--	0.110
TOTAL VOLATILE AROMATICS	ND	ND	0.848	24.400	21.650	13.840
SEMIVOLATILE ORGANICS (MG/KG)						
-PAH-						
ACENAPHTHENE	ND	(4)	ND	290.000	(4)	140.000
ACENAPHTHYLENE	ND	ND	(5)	(5)	(5)	33.000
ANTHRACENE	ND	ND	25.000	470.000	220.000	67.000
BENZO(b)FLUORANTHENE	ND	ND	23.000	ND	ND	13.000
BENZO(k)FLUORANTHENE	ND	ND	ND	ND	ND	21.000
BENZO(g,h,i)PERYLENE	ND	ND	19.000	ND	ND	13.000
BENZO(a)ANTHRACENE	ND	ND	(6)	(6)	ND	35.000
BENZO(a)PYRENE	ND	(4)	13.000	(4)	ND	36.000
CHRYSENE	ND	ND	39.000	110.000	ND	32.000
DIBENZO(a,h)ANTHRACENE	ND	ND	13.000	ND	ND	(4)
FLUORANTHENE	ND	45.000	84.000	880.000	220.000	78.000
FLUORENE	ND	18.000	31.000	620.000	2600.000	89.000
INDENO(1,2,3-cd)-PYRENE	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	19.000	350.000	5200.000	120.000
PHENANTHRENE	ND	12.000	31.000	810.000	260.000	210.000
PYRENE	ND	45.000	96.000	1100.000	ND	250.000
-OTHER-						
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	ND
TOTAL PAH	ND	120.000	412.000	4630.000	8500.000	1137.000
OTHER CHEMICALS (MG/KG)						
-METALS-						
IRON	27000	35000	27000	31000	35000	--
ZINC	260	120	87	79	220	--
-CYANIDE-						
TOTAL CYANIDE	ND	2.0	ND	ND	ND	--
AMENABLE CYANIDE	ND	ND	ND	ND	ND	--
FERRO-FERRI CYANIDE	ND	2.0	ND	ND	ND	--
-OTHER-						
TOTAL RECOVERABLE PHENOLICS	ND	ND	ND	ND	ND	--
TOTAL ORGANIC CARBON	8300	1400	10000	30000	26000	--

NOTES:
(1) INDICATES SAMPLE WAS ANALYZED BY GC/MS (EPA METHODS 8240 AND 8270) OR BY HPLC (EPA METHODS 8020 AND 8310).
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED OR NOT APPLICABLE.
(4) TRACE CONCENTRATIONS DETECTED BELOW THE QUANTIFIABLE REPORTING LIMIT.
(5) ACENAPHTHYLENE AND NAPHTHALENE, COELUTED.
(6) BENZO(a)ANTHRACENE AND CHRYSENE, COELUTED.

TABLE B-2-2
CHEMICALS FOUND IN TASK 2 SOIL BORING SAMPLES
MECHANICVILLE SITE

SAMPLE IDENTIFIER	B-1/S-1	B-2/S-1	B-3/S-1	B-4/S-1	B-5/S-1	B-7/S-1	B-8/S-1	B-8/S-1
ORGANICS ANALYSIS (1)	HPLC	HPLC	HPLC	HPLC	HPLC	HPLC	HPLC	GC/MS
DATE OF SAMPLE COLLECTION	7/23/86	8/1/86	8/5/86	7/29/86	8/4/86	7/31/86	9/6/86	9/6/86
SAMPLE DEPTH (FT)	8.0-10.0	8.0-9.5	4.0-6.0	6.0-8.0	10.0-11.0	7.0-9.0	13.5-15.5	15.5-17.5
ZONE SAMPLED	GRAVELLY SAND	FILL	FILL AND SILTY SHALE	FILL AND SILTY SHALE	SILTY SHALE	FILL	SILTY SHALE	SILTY SHALE
VOLATILE ORGANICS (MG/KG)								
-VOLATILE AROMATICS-								
BENZENE	ND (2)	ND	13.000	ND	0.980	2.400	640.000	380.000
TOLUENE	ND	ND	8.600	0.310	1.600	1.300	840.000	660.000
ETHYLBENZENE	ND	ND	120.000	2.300	6.300	0.170	440.000	250.000
STYRENE	ND	ND	ND	ND	ND	0.180	780.000	720.000
TOTAL XYLENES	-- (3)	--	--	--	--	--	--	1400.000
m-XYLENE	ND	ND	25.000	0.640	1.500	0.180	400.000	--
o-XYLENE	ND	ND	44.000	2.400	ND	ND	320.000	--
p-XYLENE	ND	ND	25.000	0.370	1.500	0.075	210.000	--
TRIMETHYLBENZENE	ND	ND	35.000	3.800	4.200	ND	170.000	--
n-PROPYLBENZENE	ND	ND	ND	ND	ND	ND	ND	--
-OTHER-								
ACETONE	--	--	--	--	--	--	--	ND
METHYLENE CHLORIDE	--	--	--	--	--	--	--	ND
CARBON DISULFIDE	--	--	--	--	--	--	--	ND
TOTAL VOLATILE AROMATICS	ND	ND	270.600	10.320	15.980	4.305	3900.000	3410.000
SEMIVOLATILE ORGANICS (MG/KG)								
-PAH-								
ACENAPHTHENE	9.000	(4)	380.000	42.000	250.000	(4)	600.000	(4)
ACENAPHTHYLENE	ND	(5)	(5)	(5)	(5)	(5)	(5)	670.000
ANTHRACENE	8.000	(4)	670.000	80.000	450.000	(4)	550.000	270.000
BENZO(b)FLUORANTHENE	5.700	ND	(4)	ND	120.000	(4)	200.000	(4)
BENZO(k)FLUORANTHENE	(4)	ND	240.000	ND	ND	0.930	ND	(4)
BENZO(g,h,i)PERYLENE	(4)	ND	(4)	ND	ND	1.400	140.000	(4)
BENZO(a)ANTHRACENE	(6)	(6)	(6)	(6)	ND	(6)	(6)	(4)
BENZO(a)PYRENE	6.200	ND	200.000	(4)	94.000	1.100	140.000	(4)
CHRYSENE	17.000	(4)	780.000	100.000	ND	0.800	480.000	(4)
DIBENZO(a,h)ANTHRACENE	6.300	ND	ND	ND	ND	1.300	ND	ND
FLUORANTHENE	44.000	(4)	1100.000	130.000	750.000	0.890	850.000	290.000
FLUORENE	34.000	(4)	1300.000	120.000	620.000	1.100	2100.000	380.000
INDENO(1,2,3-cd)-PYRENE	ND	ND	ND	ND	ND	ND	ND	(4)
NAPHTHALENE	ND	(4)	2300.000	44.000	760.000	1.900	1500.000	2500.000
PHENANTHRENE	13.000	(4)	940.000	110.000	630.000	0.870	760.000	870.000
PYRENE	11.000	(4)	1400.000	170.000	980.000	0.870	1400.000	460.000
-OTHER-								
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	--	--	--	--	--	ND
TOTAL PAH	154.200	(4)	9310.000	796.000	4654.000	11.210	8720.000	5440.000
OTHER CHEMICALS (MG/KG)								
-METALS-								
IRON	34000	30000	31000	35000	27000	26000	19000	--
ZINC	190	75	130	80	1600	320	61	--
-CYANIDE-								
TOTAL CYANIDE	ND	ND	3.2	1.0	ND	ND	ND	--
AMENABLE CYANIDE	ND	ND	3.2	1.0	ND	ND	ND	--
FERRO-FERRI CYANIDE	ND	ND	ND	ND	ND	ND	ND	--
-OTHER-								
TOTAL RECOVERABLE PHENOLICS	ND	ND	3.6	ND	2.6	ND	ND	--
TOTAL ORGANIC CARBON	110000	6800	100000	23000	110000	76000	190000	--

NOTES:
(1) INDICATES SAMPLE WAS ANALYZED BY GC/MS (EPA METHODS 8240 AND 8270) OR BY HPLC (EPA METHODS 8020 AND 8310).
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TRACE CONCENTRATIONS DETECTED BELOW THE QUANTIFIABLE REPORTING LIMIT.
(5) ACENAPHTHYLENE AND NAPHTHALENE, COELUTED.
(6) BENZO(a)ANTHRACENE AND CHRYSENE, COELUTED.

TABLE B-2-3
CHEMICALS FOUND IN TASK 2 GROUNDWATER SAMPLES
MECHANICVILLE SITE

WELL IDENTIFIER	MW-1					MW-2					MW-3				
SAMPLE IDENTIFIER	MW-101	MW-101	MW-201	MW-301	MW-401	MW-102	MW-202	MW-202 DUP	MW-302	MW-402	MW-103	MW-103	MW-203	MW-303	MW-403
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
VOLATILE ORGANICS (MG/L)															
-VOLATILE AROMATICS-															
BENZENE	ND (2)	ND	0.0055	ND	ND	ND	ND	ND	ND	ND	0.530	0.560	0.608	0.429	0.230
TOLUENE	ND	ND	(4)	ND	ND	ND	ND	ND	ND	ND	0.100	0.120	(4)	0.0576	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.640	0.910	0.715	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL XYLENE	-- (3)	ND	0.010	ND	ND	--	ND	ND	ND	ND	--	0.770	0.640	0.0329	0.379
m - XYLENE	ND	--	--	--	--	ND	--	--	--	--	0.110	--	--	--	--
o - XYLENE	ND	--	--	--	--	ND	--	--	--	--	0.300	--	--	--	--
p - XYLENE	ND	--	--	--	--	ND	--	--	--	--	0.140	--	--	--	--
TRIMETHYLBENZENE	ND	--	--	--	--	ND	--	--	--	--	ND	--	--	--	--
-OTHER-															
ACETONE	--	0.220	3.780	0.059	ND	--	ND	ND	0.0536	ND	--	ND	ND	ND	ND
METHYLENE CHLORIDE	--	ND	ND	ND	ND	--	ND	ND	0.0086	ND	--	ND	ND	ND	ND
TOTAL VOLATILE AROMATICS	ND	ND	0.0155	ND	ND	ND	ND	ND	ND	ND	1.820	2.360	1.967	0.5195	0.609
SEMIVOLATILE ORGANICS (MG/L)															
-PAH-															
ACENAPHTHENE	0.110	0.022	0.012	ND	ND	ND	ND	ND	1.030	0.902	ND	0.420	ND	0.537	0.524
ACENAPHTHYLENE	0.250	0.048	0.018	ND	ND	ND	ND	ND	ND	0.084	2.500	(4)	ND	ND	ND
ANTHRACENE	(4)	(4)	0.031	ND	ND	ND	ND	ND	ND	ND	0.300	(4)	ND	0.226	0.140
BENZO(b)FLUORANTHENE	ND	(4,5)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(k)FLUORANTHENE	ND	(5)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(g,h,i)PERYLENE	ND	(4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(a)ANTHRACENE	(6)	(4)	ND	ND	ND	ND	ND	ND	ND	ND	(6)	(4)	ND	0.102	ND
BENZO(a)PYRENE	(4)	(4)	ND	ND	ND	ND	ND	ND	ND	ND	0.280	(4)	ND	ND	ND
CHRYSENE	0.024	(4)	ND	ND	ND	ND	ND	ND	ND	ND	0.880	(4)	ND	ND	ND
DIBENZO(a,h)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	0.061	0.024	ND	ND	ND	ND	ND	ND	0.930	ND	2.700	(4)	0.680	0.223	0.174
FLUORENE	0.240	0.026	0.010	ND	ND	ND	ND	ND	ND	ND	4.700	(4)	0.660	0.197	0.198
INDENO(1,2,3,-cd)PYRENE	ND	(4)	ND	ND	ND	ND	ND	ND	ND	ND	ND	(4)	ND	ND	ND
NAPHTHALENE	1.200	0.260	0.136	ND	ND	ND	ND	ND	6.034	0.445	13.000	2.600	4.130	2.480	1.914
PHENANTHRENE	0.051	0.035	0.028	ND	ND	ND	ND	ND	1.700	ND	1.300	0.440	ND	0.624	0.140
PYRENE	0.044	0.025	0.017	(4)	ND	ND	ND	ND	ND	ND	0.660	0.200	0.690	0.431	0.264
-OTHER-															
BIS(2-ETHYLHEXYL)PHTHALATE	--	0.073	0.016	(4)	0.040	--	0.016	0.018	1.710	ND	--	0.250	ND	ND	ND
2-METHYLNAPHTHALENE	--	ND	ND	ND	ND	--	ND	ND	ND	0.144	--	ND	ND	ND	0.856
TOTAL PAH	1.980	0.444	0.252	(4)	ND	ND	ND	ND	9.694	1.431	26.320	3.660	6.160	4.820	3.354

TABLE B-2-3 (CONT.)
CHEMICALS FOUND IN TASK 2 GROUNDWATER SAMPLES
MECHANICVILLE SITE

WELL IDENTIFIER	MW-1					MW-2					MW-3				
SAMPLE IDENTIFIER	MW-101	MW-101	MW-201	MW-301	MW-401	MW-102	MW-202	MW-202 DUP	MW-302	MW-402	MW-103	MW-103	MW-203	MW-303	MW-403
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
OTHER CHEMICALS (MG/L)															
-METALS-															
IRON	ND	--	ND	ND	0.05	0.50	0.07	0.06	ND	0.10	20.00	--	6.60	9.70	4.90
ZINC	ND	--	0.007	ND	ND	ND	0.072	0.005	ND	0.09	0.11	--	0.008	0.03	0.02
-CYANIDE-															
TOTAL CYANIDE (12)	ND	--	0.01	ND	0.01	ND	ND	ND	ND	0.01	0.46	--	ND	0.320	0.42
AMENABLE CYANIDE	ND	--	--	ND	ND	ND	ND	--	ND	ND	ND	--	--	ND	ND
FERRO-FERRI CYANIDE	ND	--	0.03	ND	0.01	ND	ND	0.02	ND	0.01	0.46	--	0.05	0.320	0.42
-OTHER-															
TOTAL RECOVERABLE PHENOLICS	ND	--	--	--	ND	ND	--	--	--	0.008	0.020	--	--	--	0.015
TOTAL ORGANIC CARBON	4.1	--	14	3.2	4.2	4.6	9	6	3.7	4.1	11	--	24	15.3	11
SULFATE	--	--	74.6	--	--	--	65.2	60.8	--	--	--	--	17.7	--	--
TOTAL NEW YORK STATE REGULATED ORGANICS (7)	1.750	0.396	0.250	0.000	ND	ND	ND	ND	9.694	1.355	25.660	6.020	8.127	5.340	3.978
FIELD MEASUREMENTS															
pH (8)	5.3	5.3	6.7	7.5	6.6	6.0	6.4	6.4	7.6	6.8	(11)	(11)	(11)	(11)	(11)
CONDUCTIVITY (9)	1830	1830	370	2040	1315	1680	786	786	1890	1225	(11)	(11)	(11)	(11)	(11)
TEMPERATURE (10)	11.2	11.2	8.4	5.9	10.0	17.8	13.3	13.3	3.2	12.6	(11)	(11)	(11)	(11)	(11)

NOTES:
(1) INDICATES WHETHER SAMPLE VALUES WERE OBTAINED BY GC/MS OR HPLC METHODS.
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TRACE CONCENTRATIONS DETECTED BELOW QUANTIFIABLE REPORTING LIMIT.
(5) BENZO(b)FLOURANTHENE AND BENZO(k)FLOURANTHENE, COELUTED.
(6) BENZO(a)ANTHRACENE AND CHRYSENE, COELUTED.
(7) THE N.Y. STATE CLASS GA GROUNDWATER STANDARD FOR ORGANICS INCLUDES PHENOLIC COMPOUNDS, VOLATILE ORGANICS, AND SEMIVOLATILE ORGANICS EXCEPT FOR ACETONE, STYRENE, ACENAPHTHALENE, BENZO(g,h,i)PERYLENE, DIBENZO(a,h)ANTHRACENE, AND BIS(2-ETHYLHEXYL)PHTHALATE.
(8) pH READINGS IN STANDARD UNITS
(9) CONDUCTIVITY IN MICROMHOS/CM
(10) TEMPERATURE IN DEGREES CELSIUS
(11) INDICATES SAMPLE TOO CONTAMINATED TO SUBMERGE PROBES.
(12) TOTAL CYANIDE CONCENTRATION MAY BE LOWER THAN CYANIDE COMPONENTS DUE TO LOW DETECTION LEVELS AND ACCURACY OF ANALYTICAL METHODS

TABLE B-2-3 (CON'T)
CHEMICALS FOUND IN TASK 2 GROUNDWATER SAMPLES
MECHANICVILLE SITE

WELL IDENTIFIER	MW-4				MW-5-(12)				MW-6					
SAMPLE IDENTIFIER	MW-104	MW-204	MW-304	MW-404	MW-105	MW-205	MW-405	MW-405 DUP	MW-106	MW-106 DUP	MW-206	MW-306	MW-306 DUP	MW-406
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	GC/MS	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87
VOLATILE ORGANICS (MG/L)														
-VOLATILE AROMATICS-														
BENZENE	0.950	0.673	0.482	0.494	0.240	0.298	0.412	0.440	1.900	1.600	1.690	1.520	1.630	1.613
TOLUENE	0.760	0.487	0.335	0.409	0.200	0.295	0.400	0.362	1.600	1.200	0.815	0.353	0.353	0.616
ETHYLBENZENE	2.300	0.803	1.140	0.378	0.071	0.270	0.541	0.464	1.700	1.300	0.855	0.943	1.500	1.956
STYRENE	ND	ND	0.051	ND	ND	ND	ND	ND	0.920	0.610	ND	ND	1.370	ND
TOTAL XYLENE	--	1.230	1.440	1.347	--	ND	0.273	0.227	--	--	1.220	1.270	ND	1.452
m - XYLENE	0.850	--	--	--	0.065	--	--	--	1.200	1.000	--	--	--	--
o - XYLENE	0.810	--	--	--	0.120	--	--	--	0.940	0.770	--	--	--	--
p - XYLENE	0.430	--	--	--	0.058	--	--	--	0.570	0.450	--	--	--	--
TRIMETHYLBENZENE	0.088	--	--	--	0.046	--	--	--	0.120	0.100	--	--	--	--
-OTHER-														
ACETONE	--	ND	ND	ND	--	ND	ND	ND	--	--	0.850	ND	ND	ND
METHYLENE CHLORIDE	--	ND	ND	ND	--	ND	ND	ND	--	--	0.350	ND	ND	ND
TOTAL VOLATILE AROMATICS	6.188	3.193	3.448	2.628	0.800	0.863	1.626	1.493	8.950	7.030	4.580	4.086	4.853	5.637
SEMIVOLATILE ORGANICS (MG/L)														
-PAH-														
ACENAPHTHENE	0.980	0.240	0.187	0.218	0.260	17.300	150.280	195.500	37.000	48.000	ND	0.890	1.200	3.580
ACENAPHTHYLENE	8.300	ND	0.041	0.218	2.400	ND	150.280	197.200	26.000	59.000	ND	ND	ND	3.300
ANTHRACENE	0.510	ND	ND	ND	ND	7.600	178.330	227.800	11.000	16.000	ND	ND	ND	5.290
BENZO(b)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND	4.000	6.600	ND	ND	ND	0.540
BENZO(k)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND	7.200	4.100	ND	ND	ND	0.580
BENZO(g,h,i)PERYLENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(a)ANTHRACENE	(6)	ND	ND	ND	ND	ND	18.360	23.970	(6)	(6)	ND	ND	ND	ND
BENZO(a)PYRENE	0.290	ND	ND	ND	ND	ND	ND	ND	4.800	6.500	ND	ND	ND	0.560
CHRYSENE	1.400	ND	ND	ND	ND	ND	ND	26.350	25.000	17.000	ND	ND	ND	0.680
DIBENZO(a,h)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	4.200	ND	0.014	ND	0.150	6.300	43.860	59.500	93.000	74.000	ND	ND	1.310	2.510
FLUORENE	13.000	ND	0.026	0.100	3.900	7.600	62.220	80.920	120.000	140.000	ND	ND	ND	1.980
INDENO(1,2,3,-cd)PYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	33.000	6.120	3.970	2.392	11.000	39.400	331.500	413.100	280.000	300.000	6.980	5.040	5.910	18.760
PHENANTHRENE	2.000	ND	ND	ND	ND	6.700	178.330	227.800	36.000	45.000	ND	1.340	1.530	5.290
PYRENE	1.000	ND	0.027	ND	(4)	8.100	93.450	112.370	36.000	30.000	ND	0.843	ND	ND
-OTHER-														
BIS(2-ETHYLHEXYL)PHTHALATE	--	ND	0.013	ND	--	ND	ND	ND	--	--	ND	ND	ND	ND
2-METHYLNAPHTHALENE	--	ND	ND	0.580	--	ND	197.200	247.690	--	--	ND	ND	ND	7.170
TOTAL PAH	64.880	6.360	4.265	2.928	17.710	93.000	1206.810	1564.510	680.000	746.200	6.980	8.113	9.950	43.070

TABLE B-2-3 (CONT.)
CHEMICALS FOUND IN TASK 2 GROUNDWATER SAMPLES
MECHANICVILLE SITE

WELL IDENTIFIER	MW-4				MW-5-(12)				MW-6					
SAMPLE IDENTIFIER	MW-104	MW-204	MW-304	MW-404	MW-105	MW-205	MW-405	MW-405 DUP	MW-106	MW-106 DUP	MW-206	MW-306	MW-306 DUP	MW-406
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	GC/MS	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87
OTHER CHEMICALS (MG/L)														
-METALS-														
IRON	61.00	6.50	3.86	5.10	1.10	7.50	5.10	9.40	5.50	14.00	7.60	10.10	9.70	4.80
ZINC	0.29	0.02	0.02	0.01	ND	0.021	0.16	0.33	ND	ND	ND	0.01	0.01	0.03
-CYANIDE-														
TOTAL CYANIDE (13)	0.072	0.06	0.050	0.06	0.013	0.02	0.01	ND	0.075	0.081	0.12	0.060	0.050	0.07
AMENABLE CYANIDE	ND	0.04	ND	ND	0.013	--	ND	ND	0.026	0.024	0.10	ND	ND	ND
FERRO-FERRI CYANIDE	0.072	0.02	0.050	0.06	ND	0.06	0.01	0.01	0.049	0.057	0.02	0.060	0.050	0.07
-OTHER-														
TOTAL RECOVERABLE PHENOLICS	0.043	--	--	0.014	0.019	--	0.43	0.017	0.050	0.043	--	--	--	0.031
TOTAL ORGANIC CARBON	12	20	5.2	9.4	7.4	30	16	12	16	16	28	12.5	13.7	14
SULFATE	--	30.9	--	--	--	84.0	--	--	--	--	14.5	--	--	--
TOTAL NEW YORK STATE REGULATED ORGANICS (7)	62.611	9.553	7.621	5.352	16.129	93.863	1058.366	1368.820	662.080	693.663	11.910	12.199	13.433	45.438
FIELD MEASUREMENTS														
pH (8)	(11)	(11)	(11)	(11)	5.8	6.4	(11)	(11)	5.7	5.7	6.9	7.7	7.7	6.7
CONDUCTIVITY (9)	(11)	(11)	(11)	(11)	1640	680	(11)	(11)	1930	1930	1136	2300	2300	1385
TEMPERATURE (10)	(11)	(11)	(11)	(11)	12.7	12.0	(11)	(11)	16.0	16.0	14.3	6.0	6.0	13.1

NOTES:
(1) INDICATES WHETHER SAMPLE VALUES WERE OBTAINED BY GC/MS OR HPLC METHODS.
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TRACE CONCENTRATIONS DETECTED BELOW QUANTIFIABLE REPORTING LIMIT.
(5) BENZO(b)FLOURANTHENE AND BENZO(k)FLOURANTHENE, COELUTED.
(6) BENZO(a)ANTHRACENE AND CHRYSENE, COELUTED.
(7) THE N.Y. STATE CLASS GA GROUNDWATER STANDARD FOR ORGANICS INCLUDES PHENOLIC COMPOUNDS, VOLATILE ORGANICS, AND SEMIVOLATILE ORGANICS EXCEPT FOR ACETONE, STYRENE, ACENAPHTHALENE, BENZO(g,h,i)PERYLENE, DIBENZO(a,h)ANTHRACENE, AND BIS(2-ETHYLHEXYL)PHTHALATE.
(8) pH READINGS IN STANDARD UNITS
(9) CONDUCTIVITY IN MICROMHOS/CM
(10) TEMPERATURE IN DEGREES CELSIUS
(11) INDICATES SAMPLE TOO CONTAMINATED TO SUBMERGE PROBES.
(12) MW-5 ROUND 3 SAMPLING WAS NOT CONDUCTED DUE TO WEATHER OBSTRUCTIONS.
(13) TOTAL CYANIDE CONCENTRATION MAY BE LOWER THAN CYANIDE COMPONENTS DUE TO LOW DETECTION LEVELS AND ACCURACY OF ANALYTICAL METHODS

TABLE B-2-4
CHEMICALS FOUND IN TASK 2 SURFACE WATER SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SW-1					SW-2						SW-3				
SAMPLE IDENTIFIER	SW-101	SW-201	SW-301	SW-301 DUP	SW-401	SW-102	SW-202	SW-202 DUP	SW-302	SW-402	SW-402 DUP	SW-103	SW-103 DUP	SW-203	SW-303	SW-403
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	HPLC	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
VOLATILE ORGANICS (MG/L)																
-VOLATILE AROMATICS-																
BENZENE	ND (2)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL XYLENE	-- (3)	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	ND	ND	ND
m - XYLENE	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	--	--	--
o - XYLENE	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	--	--	--
p - XYLENE	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	--	--	--
TRIMETHYLBENZENE	ND	--	--	--	--	ND	--	--	--	--	--	ND	ND	--	--	--
-OTHER-																
ACETONE	--	ND	ND	ND	ND	--	ND	0.010	ND	ND	ND	--	--	ND	ND	ND
METHYLENE CHLORIDE	--	--	0.0054	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND
TOTAL VOLATILE AROMATICS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SEMIVOLATILE ORGANICS (MG/L)																
-PAH-																
ACENAPHTHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.042	ND	ND	ND	ND	ND	ND
ACENAPHTHYLENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.043	ND	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(b)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(k)FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(g,h,i)PERYLENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(a)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BENZO(a)PYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHRYSENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DIBENZO(a,h)ANTHRACENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INDENO(1,2,3,-cd)PYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PHENANTHRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.020	ND	ND	ND	ND	ND	ND
-OTHER-																
BIS(2-ETHYLHEXYL)PHTHALATE	--	ND	ND	ND	0.016	--	ND	ND	ND	ND	0.012	--	--	0.025	ND	0.030
2-METHYLNAPHTHALENE	--	ND	ND	ND	ND	--	ND	ND	ND	0.069	ND	--	--	ND	ND	ND
TOTAL PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.105	ND	ND	ND	ND	ND	ND

TABLE B-2-4 (CONT.)
CHEMICALS FOUND IN TASK 2 SURFACE WATER SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SW-1					SW-2						SW-3				
SAMPLE IDENTIFIER	SW-101	SW-201	SW-301	SW-301 DUP	SW-401	SW-102	SW-202	SW-202 DUP	SW-302	SW-402	SW-402 DUP	SW-103	SW-103 DUP	SW-203	SW-303	SW-403
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	GC/MS	GC/MS	HPLC	HPLC	GC/MS	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
						##OTHER CHEMICALS (MG/L)##										
-METALS-																
IRON	0.23	0.47	1.09	0.99	0.037	0.23	0.40	0.45	0.79	0.36	0.33	0.22	0.24	0.41	0.78	0.33
ZINC	ND	ND	ND	ND	0.010	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	0.01
-CYANIDE-																
TOTAL CYANIDE (4)	ND	0.01	ND	ND	ND	ND	0.01	ND	ND	0.01	ND	ND	ND	ND	ND	0.01
AMENABLE CYANIDE	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	ND	--	ND	ND
FERRO-FERRI CYANIDE	ND	0.01	ND	ND	ND	ND	0.02	0.03	ND	0.01	ND	ND	ND	0.01	ND	0.01
-OTHER-																
TOTAL RECOVERABLE PHENOLICS	ND	--	--	--	0.24	ND	--	--	--	0.013	0.005	ND	0.037	--	--	ND
TOTAL ORGANIC CARBON	5.5	11	11.9	7.3	6.4	ND	10	9	7.5	6.0	6.0	5.0	5.4	10.0	6.2	5.5
OIL AND GREASE	11	--	--	--	--	--	--	--	--	--	--	ND	--	--	--	--
SULFATE	--	16.4	--	--	--	--	19.3	18.6	--	--	--	--	--	18.4	--	--

NOTES:
(1) INDICATES SAMPLE VALUES WERE OBTAINED BY GC/MS (EPA METHODS 624 AND 625) OR BY HPLC (EPA METHODS 602 AND 610).
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TOTAL CYANIDE CONCENTRATION MAY BE LOWER THAN CYANIDE COMPONENTS DUE TO LOW DETECTION LEVELS AND ACCURACY OF ANALYTICAL METHODS

01/19/88

TABLE B-2-5
CHEMICALS FOUND IN TASK 2 SEDIMENT SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SED-1					SED-2						SED-3				
SAMPLE IDENTIFIER	SED-101	SED-201	SED-301	SED-301 DUP	SED-401	SED-102	SED-202	SED-202 DUP	SED-302	SED-402	SED-402 DUP	SED-103	SED-103 DUP	SED-203	SED-303	SED-403
ORGANICS ANALYSIS (1)	HPLC	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
VOLATILE ORGANICS (MG/KG)																
-VOLATILE AROMATICS-																
BENZENE	ND (2)	ND	ND	ND	ND	ND	ND	ND	0.07	ND	ND	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.070	ND
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL XYLENE	-- (3)	--	ND	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND
o - XYLENE	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND	ND	--	--
m - XYLENE	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND	ND	--	--
p - XYLENE	ND	ND	--	--	--	ND	ND	ND	--	--	--	ND	ND	ND	--	--
-OTHER-																
ACETONE	--	--	ND	ND	5.300	--	--	--	ND	6.600	3.800	--	--	--	ND	4.300
METHYLENE CHLORIDE	--	--	ND	ND	2.400	--	--	--	ND	3.000	2.900	--	--	--	ND	2.300
TOTAL VOLATILE AROMATICS	ND	ND	ND	ND	ND	ND	ND	ND	0.07	ND	ND	ND	ND	ND	0.07	ND
SEMIVOLATILE ORGANICS (MG/KG)																
-PAH-																
ACENAPHTHENE	(4)	ND	ND	ND	ND	(4)	ND	ND	ND	0.700	1.600	0.910	1.100	(4)	ND	ND
ACENAPHTHYLENE	0.740	ND	ND	ND	ND	0.900	ND	ND	ND	ND	1.300	2.700	3.500	8.800	ND	ND
ANTHRACENE	(4)	(4)	ND	ND	ND	(4)	(4)	(4)	(4)	ND	ND	1.100	1.200	(4)	(4)	ND
BENZO(b)FLUORANTHENE	(4)	0.580	ND	ND	ND	(4)	(4)	2.000	(4,5)	ND	ND	1.000	0.940	0.630	(4,5)	ND
BENZO(k)FLUORANTHENE	(4)	(5)	ND	ND	ND	(4)	(5)	4.800	(4,5)	ND	ND	0.930	1.000	(5)	(4,5)	ND
BENZO(g,h,i)PERYLENE	ND	3.100	ND	ND	ND	ND	(4)	15.000	ND	ND	ND	ND	ND	4.400	(4)	ND
BENZO(a)ANTHRACENE	(6)	(6)	ND	ND	ND	(6)	(6)	(6)	(4)	ND	ND	(6)	(6)	(5)	(4)	ND
BENZO(a)PYRENE	(4)	0.450	ND	ND	ND	(4)	(4)	6.100	(4)	ND	ND	0.740	0.800	0.650	(4)	ND
CHRYSENE	0.520	0.610	ND	ND	ND	0.460	(4)	8.500	(4)	ND	ND	2.000	2.100	(4)	(4)	ND
DIBENZO(a,h)ANTHRACENE	ND	0.930	ND	ND	ND	(4)	ND	7.100	ND	ND	ND	ND	1.600	2.300	ND	ND
FLUORANTHENE	0.960	0.470	ND	ND	ND	0.920	(4)	5.600	(4)	ND	ND	2.200	4.700	(4)	(4)	ND
FLUORENE	1.500	ND	ND	ND	ND	1.400	ND	ND	ND	ND	0.500	4.000	4.300	ND	ND	ND
INDENO(1,2,3,-cd)PYRENE	ND	(7)	ND	ND	ND	(4)	ND	(7)	ND	ND	ND	(4)	(4)	(7)	(4)	ND
NAPHTHALENE	3.600	ND	ND	ND	ND	3.300	ND	19.000	(4)	4.400	13.000	10.000	19.000	ND	ND	ND
PHENANTHRENE	0.570	0.390	ND	ND	ND	(4)	(4)	1.800	(4)	ND	ND	2.000	2.300	(4)	(4)	ND
PYRENE	0.690	0.770	ND	ND	ND	0.960	(4)	5.900	(4)	ND	ND	1.900	3.100	(4)	(4)	ND
-OTHER-																
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	(4)	ND	ND	--	--	--	(4)	ND	ND	--	--	--	(4)	ND
2-METHYLNAPHTHALENE	--	--	ND	ND	ND	--	--	--	ND	0.900	ND	--	--	--	ND	ND
DI-N-BUTYL PHTHALATE	--	--	--	--	2.100	--	--	--	--	ND	4.000	--	--	--	--	3.200
TOTAL PAH	8.580	7.300	ND	ND	ND	7.940	(3)	75.800	(4)	5.100	16.400	29.480	45.640	16.780	(4)	ND

TABLE B-2-5 (CON'T)
CHEMICALS FOUND IN TASK 2 SEDIMENT SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SED-1					SED-2						SED-3				
SAMPLE IDENTIFIER	SED-101	SED-201	SED-301	SED-301	SED-401	SED-102	SED-202	SED-202	SED-302	SED-402	SED-402	SED-103	SED-103	SED-203	SED-303	SED-403
ORGANICS ANALYSIS (1)	HPLC	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	GC/MS	GC/MS
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	3/10/87	6/2/87	9/9/86	12/2/86	12/2/86	3/10/87	6/2/87	6/2/87	9/9/86	9/9/86	12/2/86	3/10/87	6/2/87
OTHER CHEMICALS (MG/KG)																
-METALS-																
IRON	16000	9200	10800	8320	15600	21000	19000	16000	9980	30800	23600	13000	13000	20000	13000	33100
ZINC	47	36	37	31	--	51	69	100	46	--	--	65	60	88	76	--
-CYANIDE-																
TOTAL CYANIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AMENABLE CYANIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
FERRO-FERRI CYANIDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
-OTHER-																
TOTAL RECOVERABLE PHENOLICS	ND	ND	ND	ND	3.1	ND	ND	ND	ND	6.1	3.1	ND	ND	ND	ND	1.8
TOTAL ORGANIC CARBON	3000	4600	4790	3320	9700	7700	3500	7600	16100	11000	22000	4500	4600	4600	9350	15000
SULFATE	--	ND	--	--	--	--	60	40	--	--	--	--	--	30	--	--

NOTES:
(1) INDICATES WHETHER SAMPLE VALUES WERE OBTAINED BY GC/MS OR HPLC METHODS.
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TRACE CONCENTRATIONS DETECTED BELOW THE REPORTING LIMIT.
(5) BENZO(b)FLUORANTHENE AND BENZO(k)FLUORANTHENE, COELUTED.
(6) BENZO(a)ANTHRACENE AND CHRYSENE, COELUTED.
(7) INDENO(1,2,3-cd)PYRENE AND BENZO(g,h,i)PERYLENE, COELUTED.

APPENDIX B-3

ANALYTICAL DATA FOR QUALITY ASSURANCE SAMPLES

TABLE B-3-1
CHEMICALS FOUND IN TASK 2 QUALITY ASSURANCE SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SAMPLER BLANK				TRIP BLANK				FILTRATION BLANK			
SAMPLE IDENTIFIER	SB-101	SB-201	SB-301	SB-401	TB-101	TB-201	TB-301	TB-401	FB-101	FB-201	FB-301	FB-401
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	HPLC
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	3/10/87	6/2/87
VOLATILE ORGANICS (MG/L)												
-VOLATILE AROMATICS-												
BENZENE	ND (2)	ND	ND	ND	ND	ND	ND	ND	--	--	--	--
TOLUENE	ND	ND	ND	ND	ND	0.006	ND	ND	--	--	--	--
ETHYLBENZENE	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--
STYRENE	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--
TOTAL XYLENE	-- (3)	ND	ND	ND	--	ND	ND	ND	--	--	--	--
m - XYLENE	ND	--	--	--	ND	--	--	--	--	--	--	--
o - XYLENE	ND	--	--	--	ND	--	--	--	--	--	--	--
p - XYLENE	ND	--	--	--	ND	--	--	--	--	--	--	--
TRIMETHYLBENZENE	ND	--	--	--	ND	--	--	--	--	--	--	--
-OTHER-												
ACETONE	--	0.0438	ND	ND	--	ND	0.0242	ND	--	--	--	--
METHYLENE CHLORIDE	--	ND	ND	0.006	--	(4)	0.0095	ND	--	--	--	--
TOTAL VOLATILE AROMATICS	ND	ND	ND	ND	ND	0.006	ND	ND	--	--	--	--
SEMIVOLATILE ORGANICS (MG/L)												
-PAH-												
ACENAPHTHENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
ANTHRACENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
BENZO(b)FLUORANTHENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
BENZO(k)FLUORANTHENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
BENZO(g,h,i)PERYLENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
BENZO(a)ANTHRACENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
BENZO(a)PYRENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
CHRYSENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
DIBENZO(a,h)ANTHRACENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
FLUORANTHENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
FLUORENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
INDENO(1,2,3,-cd)PYRENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
NAPHTHALENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
PHENANTHRENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
PYRENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
-OTHER-												
BIS(2-ETHYLHEXYL)PHTHALATE	--	--	0.015	0.080	--	--	--	--	--	--	--	--
2-METHYLNAPTHALENE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
TOTAL PAH	ND	ND	ND	ND	--	--	--	--	--	--	--	--

TABLE B-3-1 (CONT.)
CHEMICALS FOUND IN TASK 2 QUALITY ASSURANCE SAMPLES
MECHANICVILLE SITE

SITE IDENTIFIER	SAMPLER BLANK				TRIP BLANK				FILTRATION BLANK			
SAMPLE IDENTIFIER	SB-101	SB-201	SB-301	SB-401	TB-101	TB-201	TB-301	TB-401	FB-101	FB-201	FB-301	FB-401
ORGANICS ANALYSIS (1)	HPLC	GC/MS	GC/MS	GC/MS	HPLC	GC/MS	GC/MS	GC/MS	HPLC	HPLC	HPLC	HPLC
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	3/10/87	6/2/87	9/9/86	12/2/86	3/10/87	6/2/87
OTHER CHEMICALS (MG/L)												
-METALS-												
IRON	ND	ND	0.09	ND	--	--	--	--	ND	ND	ND	ND
ZINC	ND	0.012	ND	ND	--	--	--	--	ND	0.014	ND	ND
-CYANIDE-												
TOTAL CYANIDE	ND	ND	ND	ND	--	--	--	--	--	--	[4]	--
AMENABLE CYANIDE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
FERRO-FERRI CYANIDE	ND	ND	ND	ND	--	--	--	--	--	--	--	--
-OTHER-												
TOTAL RECOVERABLE PHENOLICS	0.012	--	--	ND	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	ND	1	2.3	1.0	--	--	--	--	ND	1	4.1	2.8
SULFATE	--	4.0	--	--	--	--	--	--	--	4.0	--	--

NOTES:
(1) INDICATES WHETHER SAMPLE VALUES WERE OBTAINED BY GC/MS OR HPLC METHODS.
(2) ND = NOT DETECTED (SEE APPENDIX B-4 FOR MINIMUM DETECTION LIMITS).
(3) -- = NOT ANALYZED
(4) TRACE CONCENTRATIONS DETECTED BELOW THE QUANTIFIABLE REPORTING LIMIT.

TABLE B-3-2
Chemicals Detected in Task 3 Quality Assurance Samples
Mechanicville Site

SAMPLE TYPE:	------FILTRATION BLANK------		------SAMPLER BLANK------	
SAMPLE IDENTIFIER:	FB-01	FB-01	SB-01	SB-01
DATE OF SAMPLE COLLECTION:	12/22/87	3/29/88	12/22/87	3/29/88
**** Volatile Organics (mg/l) ****				
-VOLATILE AROMATICS-	NR	NR	ND	ND
-OTHER-				
Acetone	NR	NR	0.16	ND
Chlorobenzene	NR	NR	ND	ND
Total Volatile Aromatics	NR	NR	ND	ND
Total Volatile Organics	NR	NR	0.16	ND
**** Semi-Volatile Organics (mg/l) ****				
-PAH-	NR	NR	ND	ND
-OTHER-				
Phenol	NR	NR	ND	ND
bis (2-Ethylhexyl) Phthalate	NR	NR	ND	ND
Total PAH	NR	NR	ND	ND
Total Semi-Volatile Organics	NR	NR	ND	ND
**** Other Chemicals (mg/l) ****				
-METALS-				
Iron	ND	ND	0.24	ND
Zinc	ND	0.02	ND	ND
-CYANIDE-	NR	NR	ND	ND
-OTHER-				
Total Recoverable Phenolics	NR	NR	ND	0.009
Total Organic Carbon	3.8	4.9	2.1	1.2

NOTES:

(1) Trace concentrations detected below the quantifiable reporting limit.
ND = Not Detected.
NR = Not Requested.

TABLE B-3-2
Chemicals Detected in Task 3 Quality Assurance Samples
Mechanicville Site

SAMPLE TYPE:	------TRIP BLANK------	
SAMPLE IDENTIFIER:	TB-01	TB-01
DATE OF SAMPLE COLLECTION:	12/22/87	3/29/88
** Volatile Organics (mg/l) **		
-VOLATILE AROMATICS-	ND	ND
-OTHER-		
Acetone	ND	
Chlorobenzene	ND	(1)
Total Volatile Aromatics	ND	ND
Total Volatile Organics	ND	ND
** Semi-Volatile Organics (mg/l) **		
-PAH-	NR	NR
-OTHER-		
Phenol	NR	NR
bis (2-Ethylhexyl) Phthalate	NR	NR
Total PAH	NR	NR
Total Semi-Volatile Organics	NR	NR
** Other Chemicals (mg/l) **		
-METALS-		
Iron	NR	NR
Zinc	NR	NR
-CYANIDE-	NR	NR
-OTHER-		
Total Recoverable Phenolics	NR	NR
Total Organic Carbon	NR	NR

NOTES:

(1) Trace concentrations detected below the quantifiable reporting limit.
ND = Not Detected.
NR = Not Requested.

APPENDIX B-4

MINIMUM DETECTION LIMITS
AND
TASK 3 LABORATORY DATA REPORTS

TABLE B-4-1
MINIMUM DETECTION LIMITS
MECHANICVILLE SITE

#TEST PITS (MG/KG)#

SAMPLE IDENTIFIER	TP-1/S-1	TP-2/S-1	TP-4/S-1	TP-5/S-1	TP-5/S-1 DUP	TP-5/S-1 GC/MS
VOLATILE AROMATICS	0.022	0.051	0.024	0.099	0.094	0.096
ACETONE	-- (2)	--	--	--	--	2.4
METHYLENE CHLORIDE	--	--	--	--	--	0.2
CARBON DISULFIDE	--	--	--	--	--	0.4
SEMIVOLATILE ORGANICS	0.043	11.0	5.7	78.0	93.0	13.0
IRON	10.0	10.0	10.0	10.0	10.0	--
ZINC	2.0	2.0	2.0	2.0	2.0	--
CYANIDE (1)	0.3	0.3	0.3	0.3	0.3	--
TOTAL RECOVERABLE PHENOLICS	0.2	0.2	0.2	0.2	0.2	--
TOTAL ORGANIC CARBON	100	100	100	100	100	--

#BORINGS (MG/KG)#

SAMPLE IDENTIFIER	B-1/S-1	B-2/S-1	B-3/S-1	B-4/S-1	B-5/S-1	B-7/S-1	B-8/S-1	B-8/S-1 GC/MS
VOLATILE AROMATICS	0.043	0.052	0.56	0.028	0.54	0.052	10.0	3.6
ACETONE	--	--	--	--	--	--	--	90.0
METHYLENE CHLORIDE	--	--	--	--	--	--	--	9.0
CARBON DISULFIDE	--	--	--	--	--	--	--	3.6
SEMIVOLATILE ORGANICS	5	0.55	170	24	54	0.65	61	130
IRON	10	10	10	10	10	10	10	--
ZINC	2	2	2	2	2	2	2	--
CYANIDE (1)	1	1	1	1	1	1	1	--
TOTAL RECOVERABLE PHENOLICS	1	1	1	1	1	1	1	--
TOTAL ORGANIC CARBON	1000	1000	1000	1000	1000	1000	1000	--

GROUNDWATER (MG/L)

SAMPLE IDENTIFIER ORGANICS ANALYSIS	MW-101 HPLC	MW-101 GC/MS	MW-201 GC/MS	MW-301 GC/MS	MW-401 GC/MS	MW-102 HPLC	MW-202 GC/MS	MW-202 GC/MS DUP	MW-302 GC/MS	MW-402 GC/MS	MW-103 HPLC	MW-103 GC/MS	MW-203 GC/MS	MW-303 GC/MS	MW-403 GC/MS
VOLATILE AROMATICS	0.001	0.002	0.005	0.010	0.005	0.001	0.005	0.005	0.010	0.005	0.050	0.020	0.250	0.010	0.050
ACETONE	--	0.010	0.010	0.010	0.010	--	0.010	0.010	0.010	0.010	--	0.500	0.500	0.010	0.100
METHYLENE CHLORIDE	--	0.050	0.050	0.010	0.005	--	0.050	0.050	0.010	0.005	--	0.050	0.250	0.010	0.050
SEMIVOLATILE ORGANICS	0.020	0.020	0.010	0.010	0.010	0.020	0.010	0.010	0.010	0.050	0.200	0.200	0.010	0.010	0.100
IRON	0.1	--	0.03	0.1	0.1	0.1	0.03	0.03	0.1	0.1	0.1	--	0.03	0.1	0.1
ZINC	0.01	--	0.005	0.02	0.020	0.01	0.005	0.005	0.02	0.02	0.01	--	0.005	0.02	0.02
CYANIDE (1)	0.01	--	0.01	0.02	0.010	0.01	0.01	0.01	0.02	0.01	0.01	--	0.01	0.02	0.01
TOTAL RECOVERABLE PHENOLICS	0.01	--	--	--	0.005	0.01	--	--	--	0.005	0.01	--	--	--	0.005
TOTAL ORGANIC CARBON	0.5	--	5	5	5	0.5	5	5	5	5	0.5	5	5	5	5
SULFATE	--	--	1	--	1	--	1	1	--	1	--	--	1	--	1

(1) TOTAL CYANIDE

TABLE B-4-1
MINIMUM DETECTION LIMITS (1) (CONT'D)
MECHANICVILLE SITE

#GROUNDWATER (MG/L)#

SAMPLE IDENTIFIER ORGANICS ANALYSIS	MW-104 HPLC	MW-204 GC/MS	MW-304 GC/MS	MW-404 GC/MS	MW-105 HPLC	MW-205 GC/MS	MW-405 GC/MS	MW-405 GC/MS DUP	MW-106 HPLC	MW-106 HPLC DUP	MW-206 GC/MS	MW-306 GC/MS	MW-306 GC/MS DUP	MW-406 GC/MS
VOLATILE AROMATICS	0.050	0.050	0.010	0.050	0.010	0.100	0.050	0.050	0.050	0.050	0.250	0.010	0.010	0.050
ACETONE	--	0.100	0.010	0.100	--	0.200	0.100	0.100	--	--	0.500	0.010	0.010	0.100
METHYLENE CHLORIDE	--	0.050	0.010	0.050	--	0.100	8.500	8.500	--	--	0.250	0.010	0.010	0.050
SEMIVOLATILE ORGANICS	0.200	0.010	0.010	0.100	0.200	0.010	0.100	0.100	4.000	4.000	0.010	0.010	0.010	0.500
IRON	0.1	0.03	0.1	0.1	0.1	0.03	0.1	0.1	0.1	0.1	0.03	0.1	0.1	0.1
ZINC	0.01	0.005	0.02	0.02	0.01	0.005	0.02	0.02	0.01	0.01	0.005	0.02	0.02	0.02
CYANIDE (3)	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01
TOTAL RECOVERABLE PHENOLICS	0.01	--	--	0.005	0.01	--	0.005	0.005	0.01	0.01	--	--	--	0.005
TOTAL ORGANIC CARBON	0.5	5	5	5	0.5	5	5	5	0.5	0.5	5	5	5	5
SULFATE	--	1	1	1	--	1	1	1	--	--	1	--	--	1

#SURFACE WATER (MG/L)#

SAMPLE IDENTIFIER ORGANICS ANALYSIS	SW-101 HPLC	SW-201 GC/MS	SW-301 GC/MS	SW-301 GC/MS DUP	SW-401 GC/MS	SW-102 HPLC	SW-202 GC/MS	SW-202 GC/MS DUP	SW-302 GC/MS	SW-402 GC/MS	SW-402 GC/MS DUP	SW-103 HPLC	SW-203 GC/MS	SW-303 GC/MS	SW-403 GC/MS
VOLATILE AROMATICS	0.001	0.005	0.010	0.010	0.005	0.001	0.005	0.005	0.010	0.005	0.005	0.001	0.005	0.010	0.005
ACETONE	--	0.010	0.010	0.010	0.010	--	0.010	0.010	0.010	0.010	0.010	--	0.010	0.010	0.010
METHYLENE CHLORIDE	--	0.005	0.010	0.010	0.005	--	0.005	0.005	0.010	0.005	0.005	--	0.005	0.010	0.005
SEMIVOLATILE ORGANICS	0.020	0.010	0.010	0.010	0.010	0.020	0.010	0.010	0.010	0.010	0.010	0.020	0.010	0.010	0.010
IRON	0.1	0.03	0.1	0.1	0.1	0.1	0.03	0.03	0.1	0.1	0.1	0.1	0.03	0.1	0.1
ZINC	0.01	0.005	0.02	0.02	0.02	0.01	0.005	0.005	0.02	0.02	0.02	0.01	0.005	0.02	0.02
CYANIDE (3)	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
TOTAL RECOVERABLE PHENOLICS	0.01	--	--	--	0.005	0.01	--	--	--	0.005	0.005	0.01	--	--	0.005
TOTAL ORGANIC CARBON	0.5	5	5	5	5	0.5	5	5	5	5	5	0.5	5	5	5
SULFATE	--	1	--	--	--	--	1	1	--	--	--	--	1	--	--

#SEDIMENTS (MG/KG)#

SAMPLE IDENTIFIER	SED-101	SED-201	SED-301 GC/MS	SED-301 DUP	SED-401 GC/MS	SED-102	SED-202	SED-202 DUP	SED-302 GC/MS	SED-402 GC/MS	SED-402 DUP	SED-103	SED-103 DUP	SED-203	SED-303 GC/MS	SED-403 GC/MS
VOLATILE AROMATICS	0.024	0.025	0.080	0.062	1.000	0.025	0.028	0.025	0.070	1.000	1.000	0.025	0.024	0.027	0.066	1.000
ACETONE	--	--	2.000	1.600	1.000	--	--	--	1.700	1.000	1.000	--	--	--	1.700	1.000
SEMIVOLATILE ORGANICS	0.420	0.360	1.100	1.100	0.600	0.410	0.510	0.900	0.940	0.600	0.600	0.500	0.520	0.310	0.990	0.600
IRON	0.1	9200	5	5	2	0.1	19000	16000	5	2	2	0.1	0.1	20000	5	2
ZINC	0.01	36	5	5	0.5	0.01	69	100	5	0.5	0.5	0.01	0.01	88	5	0.5
CYANIDE (3)	0.01	0.1	0.01	0.01	0.3	0.01	0.1	0.1	0.01	0.3	0.3	0.01	0.01	0.1	0.01	0.3
TOTAL RECOVERABLE PHENOLICS	0.01	0.01	0.01	0.01	0.2	0.01	0.01	0.01	0.01	0.2	0.2	0.01	0.01	0.01	0.01	0.2
TOTAL ORGANIC CARBON	0.5	4600	100	100	100	0.5	3500	7600	200	100	100	0.5	0.5	4600	100	100
SULFATE	--	32	--	--	--	--	32	32	5	--	--	--	--	32	--	--

(1) NOMINAL DETECTION LIMITS WERE USED WHEN MDLs WERE NOT REPORTED BY THE LABORATORY.
(2) -- NOT ANALYZED
(3) TOTAL CYANIDE

01/15/88

TABLE B-4-2
QUALITY ASSURANCE SAMPLES
MINIMUM DETECTION LIMITS (1)
MECHANICVILLE SITE

SITE IDENTIFIER	SAMPLER BLANK				TRIP BLANK				FILTRATION BLANK			
DATE OF SAMPLE COLLECTION	9/9/86	12/2/86	3/11/87	6/2/87	9/9/86	12/2/86	3/11/87	6/2/87	9/9/86	12/2/86	3/11/87	6/2/87
VOLATILE AROMATICS	0.001	0.005	0.010	0.005	0.001	0.005	0.010	0.005	-- (2)	--	--	--
ACETONE	0.002	0.010	0.010	0.010	0.002	0.010	0.010	0.010	--	--	--	--
METHYLENE CHLORIDE	0.001	0.005	0.010	0.005	0.001	0.005	0.010	0.005	--	--	--	--
SEMIVOLATILE ORGANICS	0.02	0.010	0.010	0.010	--	--	--	--	--	--	--	--
IRON	0.10	0.03	0.05	0.100	--	--	--	--	0.10	0.03	0.05	0.100
ZINC	0.010	0.005	0.01	0.020	--	--	--	--	0.010	0.005	0.01	0.020
TOTAL CYANIDE	0.010	0.01	0.01	0.01	--	--	--	--	--	--	--	--
TOTAL ORGANIC CARBON	0.50	5	5	5	--	--	--	--	0.50	5	5	5
TOTAL RECOVERABLE PHENOLICS	0.01	--	--	0.005	--	--	--	--	--	--	--	--
SULFATE	--	1	--	--	--	--	--	--	--	1	--	--

(1) NOMINAL DETECTION LIMITS WERE USED WHERE MDLs WERE NOT REPORTED BY THE LABORATORY.
(2) -- NOT ANALYZED

TABLE B-4-3

EXPLANATION OF TERMS AND ABBREVIATIONS
USED IN LABORATORY REPORTS

Term or Abbreviation	Explanation
Flagged Data Table	Presents analytical results corrected for errors and for method blank analysis as required.
RL	Reporting Limit. Indicates concentration at which laboratory can obtain accurate and repeatable results. Commonly referred to as the "Detection Limit."
J	Compound concentration estimated. Detected, but at a concentration below the Reporting Limit.
B	Compound detected in method blank.
U	Analysis performed for compound, but compound not detected.
D	Concentration determined by sample dilution.
R	Concentration value rejected because compound concentration in blank was greater than five times the Reporting Limit.
NA	Sample not analyzed for this compound.
NR	Sample analysis not requested.

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Soil Samples

SAMPLE LOCATION:		MEEDB-XX09/11	MEEDB-XX10/21	MEEDB-XX14/21	MEEDB-XXDU/15	MEEDB-XX12/21	MEEDB-XX15/11
SAMPLE IDENTIFIER:		B-09(S-1)	B-10(S-2)	B-14(S-2)	DUP-503	B-12(S-2)	B-15(S-1)
DATE OF SAMPLE COLLECTION:		11/17/87	11/17/87	11/17/87	11/17/87	11/19/87	11/19/87
UNITS:		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
VOLATILE ORGANIC COMPOUNDS	RL ug/kg						
Chloromethane	10	NA	NA	NA	NA	280 U	340 U
Bromomethane	10	NA	NA	NA	NA	280 U	340 U
Vinyl Chloride	10	NA	NA	NA	NA	280 U	340 U
Chloroethane	10	NA	NA	NA	NA	280 U	340 U
Methylene Chloride	5	NA	NA	NA	NA	120 J	170 U
Acetone	10	NA	NA	NA	NA	2100 UJB	2600 UJB
Carbon Disulfide	5	NA	NA	NA	NA	140 U	170 U
1,1 - Dichloroethene	5	NA	NA	NA	NA	460 UJB	570 UJB
1,1 - Dichloroethane	5	NA	NA	NA	NA	140 U	170 U
Trans-1,2 - Dichloroethene	5	NA	NA	NA	NA	140 U	170 U
Chloroform	5	NA	NA	NA	NA	140 U	170 U
1,2 - Dichloroethane	5	NA	NA	NA	NA	140 U	170 U
2-Butanone	10	NA	NA	NA	NA	280 U	340 U
1,1,1 - Trichloroethane	5	NA	NA	NA	NA	140 U	170 U
Carbon Tetrachloride	5	NA	NA	NA	NA	140 U	170 U
Vinyl Acetate	10	NA	NA	NA	NA	280 U	340 U
Bromodichloromethane	5	NA	NA	NA	NA	140 U	170 U
1,2 - Dichloropropane	5	NA	NA	NA	NA	140 U	170 U
Trans- 1,3 -Dichloropropene	5	NA	NA	NA	NA	140 U	170 U
Trichloroethene	5	NA	NA	NA	NA	610 UJB	750 UJB
Dibromochloromethane	5	NA	NA	NA	NA	140 U	170 U
1,1,2 - Trichloroethane	5	NA	NA	NA	NA	140 U	170 U
Benzene	5	NA	NA	NA	NA	580 UJB	720 UJB
Cis- 1,3 -Dichloropropene	5	NA	NA	NA	NA	140 U	170 U
2-Chloroethylvinylether	10	NA	NA	NA	NA	280 U	340 U
Bromoform	5	NA	NA	NA	NA	140 U	170 U
4-Methyl-2-Pentanone	10	NA	NA	NA	NA	280 U	340 U
2-Hexanone	10	NA	NA	NA	NA	280 U	340 U
Tetrachloroethene	5	NA	NA	NA	NA	140 U	170 U
1,1,2,2 - Tetrachloroethane	5	NA	NA	NA	NA	140 U	170 U
Toluene	5	NA	NA	NA	NA	710 UJB	880 UJB
Chlorobenzene	5	NA	NA	NA	NA	660 UJB	810 UJB
Ethylbenzene	5	NA	NA	NA	NA	140 U	570
Styrene	5	NA	NA	NA	NA	140 U	170 U
Total Xylenes	5	NA	NA	NA	NA	140 U	880
%SOLID		NA	NA	NA	NA	88.6	71.6
DRYWT/DIL FACTOR		NA	NA	NA	NA	28	34

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Soil Samples

SAMPLE LOCATION:	MEEDB-XX09/11	MEEDB-XX10/21	MEEDB-XX14/21	MEEDB-XXDU/15	MEEDB-XX12/21	MEEDB-XX15/11
SAMPLE IDENTIFIER:	B-09(S-1)	B-10(S-2)	B-14(S-2)	DUP-503	B-12(S-2)	B-15(S-1)
DATE OF SAMPLE COLLECTION:	11/17/87	11/17/87	11/17/87	11/17/87	11/19/87	11/19/87
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/kg						
Phenol	330	34000 U	400 U	410 U	450 U	752 U	931 U
bis(2-Chloroethyl)Ether	330	34000 U	400 U	410 U	450 U	752 U	931 U
2-Chlorophenol	330	34000 U	400 U	410 U	450 U	752 U	931 U
1,3 - Dichlorobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
1,4 - Dichlorobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Benzyl Alcohol	330	34000 U	400 U	410 U	450 U	NA	NA
1,2 - Dichlorobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
2-Methylphenol	330	34000 U	400 U	410 U	450 U	NA	NA
bis(2-Chloroisopropyl)Ether	330	34000 U	400 U	410 U	450 U	752 U	931 U
4-Methylphenol	330	34000 U	400 U	410 U	450 U	NA	NA
N-Nitroso-Di-n-Propylamine	330	34000 U	400 U	410 U	450 U	752 U	931 U
Hexachloroethane	330	34000 U	400 U	410 U	450 U	752 U	931 U
Nitrobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Isophorone	330	34000 U	400 U	410 U	450 U	752 U	931 U
2-Nitrophenol	330	34000 U	400 U	410 U	450 U	3760 U	4660 U
2,4 - Dimethylphenol	330	34000 U	400 U	410 U	450 U	752 U	931 U
Benzoic Acid	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
bis(2-Chloroethoxy)Methane	330	34000 U	400 U	410 U	450 U	752 U	931 U
2,4 - Dichlorophenol	330	34000 U	400 U	410 U	450 U	752 U	931 U
1,2,4 - Trichlorobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Naphthalene	330	60000	180 J	410 U	450	752 U	931 U
4-Chloroaniline	330	34000 U	400 U	410 U	450 U	NA	NA
Hexacholorobutadiene	330	34000 U	400 U	410 U	450 U	752 U	931 U
4-Chloro-3-Methylphenol	330	34000 U	400 U	410 U	450 U	NA	NA
2-Methylnaphthalene	330	26000 J	100 J	410 U	260 J	NA	NA
Hexachlorocyclopentadiene	330	34000 U	400 U	410 U	450 U	752 U	931 U
2,4,6 - Trichlorophenol	330	34000 U	400 U	410 U	450 U	752 U	931 U
2,4,5 - Trichlorophenol	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
2-Chloronaphthalene	330	34000 U	400 U	410 U	450 U	752 U	931 U
2-Nitroaniline	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
Dimethyl Phthalate	330	34000 U	400 U	410 U	450 U	752 U	931 U
Acenaphthylene	330	34000 U	130 J	410 U	110 J	752 U	931 U
3-Nitroaniline	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
Acenaphthene	330	31000 J	360 J	410 U	530	2350	931 U
2,4 - Dinitrophenol	1600	170000 U	2000 U	2000 U	2200 U	3760 U	4660 U
4-Nitrophenol	1600	170000 U	2000 U	2000 U	2200 U	3760 U	4660 U
Dibenzofuran	330	34000 U	41 J	410 U	90 J	NA	NA

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Soil Samples

SAMPLE LOCATION:		MEEDB-XX09/11	MEEDB-XX10/21	MEEDB-XX14/21	MEEDB-XXDU/15	MEEDB-XX12/21	MEEDB-XX15/11
SAMPLE IDENTIFIER:		B-09(S-1)	B-10(S-2)	B-14(S-2)	DUP-503	B-12(S-2)	B-15(S-1)
DATE OF SAMPLE COLLECTION:		11/17/87	11/17/87	11/17/87	11/17/87	11/19/87	11/19/87
UNITS:		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/kg						
2,4 - Dinitrotoluene	330	34000 U	400 U	410 U	450 U	752 U	931 U
2,6 - Dinitrotoluene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Diethylphthalate	330	34000 U	400 U	410 U	450 U	752 U	931 U
4-Chlorophenyl-Phenylether	330	34000 U	400 U	410 U	450 U	752 U	931 U
Fluorene	330	16000 J	210 J	410 U	350 J	1250	931 U
4-Nitroaniline	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
4,6 - Dinitro-2-Methylphenol	1600	170000 U	2000 U	2000 U	2200 U	NA	NA
N-Nitrosodiphenylamine (1)	330	34000 U	400 U	410 U	450 U	752 U	931 U
4-Bromophenyl-Phenylether	330	34000 U	400 U	410 U	450 U	752 U	931 U
Hexachlorobenzene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Pentachlorophenol	1600	170000 U	2000 U	2000 U	2200 U	3760 U	4660 U
Phenanthrene	330	58000	880	410 U	1100	800	931 U
Anthracene	330	11000 J	220 J	410 U	260 J	800	931 U
Di-n-Butylphthalate	330	34000 U	400 U	410 U	450 U	752 U	931 U
Fluoranthene	330	18000 J	370 J	410 U	240 J	1010	931 U
Pyrene	330	27000 J	600	410 U	350 J	1390	931 U
Butylbenzylphthalate	330	34000 U	400 U	410 U	450 U	752 U	931 U
3,3' - Dichlorobenzidine	660	68000 U	800 U	810 U	900 U	NA	NA
Benzo (a) Anthracene	330	7500 J	220 J	410 U	100 J	752 U	931 U
bis (2-Ethylhexyl) Phthalate	330	34000 U	400 U	65 J	450 U	R	R
Chrysene	330	7200 J	240 J	410 U	110 J	752 U	931 U
Di-n-Octyl Phthalate	330	34000 U	400 U	410 U	450 U	752 U	931 U
Benzo (b) Fluoranthene	330	12000 DJ	220 DJ	410 U	450 U	752 U	931 U
Benzo (k) Fluoranthene	330	12000 DJ	220 DJ	410 U	450 U	752 U	931 U
Benzo (a) Pyrene	330	11000 J	210 J	410 U	85 J	752 U	931 U
Indeno (1,2,3-cd) Pyrene	330	4200 J	400 U	410 U	450 U	752 U	931 U
Dibenz (a,h) Anthracene	330	34000 U	400 U	410 U	450 U	752 U	931 U
Benzo (g,h,i,) Perylene	330	4500 J	400 U	410 U	450 U	752 U	931 U
p-Chloro-m-cresol		NA	NA	NA	NA	752 U	931 U
4,6,-Dinitro-o-cresol		NA	NA	NA	NA	3760 U	4660 U
Benzidine		NA	NA	NA	NA	6000 U	7450 U
3,3-Dichlorobenzidine		NA	NA	NA	NA	1500 U	1860 U
1,2-Diphenylhyrdrazine		NA	NA	NA	NA	752 U	931 U
n-Nitrosodimethylamine		NA	NA	NA	NA	752 U	931 U
%SOLIDS:		96	82.3	79.7	72.7	88.6	71.6
DRYWT/DIL FACTOR		103.03	1.21	1.24	1.36	2.28	2.8
Total Phenols (ppm)		0.74	0.5 U	0.5 U	0.5 U	0.5 U	2.6
Dissolved Iron (ppm)		28000	24000	21000	22000	18000	23000
Dissolved Zinc (ppm)		59	42	49	44	32	390
Total Cyanide (ppm)		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U
Undistilled Cyanide		NA	NA	NA	NA	NA	NA
TOC		3.3 %	2.2 %	3.2 %	2.4 %	2.2 %	4.2 %

D = Coelution

TABLE B-4-5

17-Aug-89

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:	MEGDMW8601/15	MEGDMW8602/15	MEGDMW8603/15	MEGDMW8604/15	MEGDMW8605/15	MEGDMW8606/15	MEGDMW8710/11
SAMPLE IDENTIFIER:	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
DATE OF SAMPLE COLLECTION:	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l						
Chloromethane	5	5 U	5 U	50 U	50 U	50 U	5 U	5 U
Bromomethane	5	5 U	5 U	50 U	50 U	50 U	5 U	5 U
Vinyl Chloride	5	5 U	5 U	50 U	50 U	50 U	5 U	5 U
Chloroethane	5	5 U	5 U	50 U	50 U	50 U	5 U	5 U
Methylene Chloride	5	5 U	5 U	50 U	50 U	50 U	5 U	5 U
Acetone	50	50 U	50 U	500 U	500 U	500 U	50 U	50 U
Carbon Disulfide	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
1,1 - Dichloroethene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
1,1 - Dichloroethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Trans -1,2 - Dichloroethene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Chloroform	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
1,2 - Dichloroethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
2-Butanone	10	10 U	10 U	100 U	100 U	100 U	10 U	10 U
1,1,1 - Trichloroethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Carbon Tetrachloride	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Vinyl Acetate	10	10 U	10 U	100 U	100 U	100 U	10 U	10 U
Bromodichloromethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
1,2 - Dichloropropane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Trans- 1,3 -Dichloropropene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Trichloroethene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Dibromochloromethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
1,1,2 - Trichloroethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Benzene	2	2 U	2 U	170	260	150	880	2 U
Cis- 1,3 -Dichloropropene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
2-Chloroethylvinylether	10	10 U	10 U	100 U	100 U	100 U	10 U	10 U
Bromoform	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
4-Methyl-2-Pentanone	10	10 U	10 U	100 U	100 U	100 U	10 U	10 U
2-Hexanone	10	10 U	10 U	100 U	100 U	100 U	10 U	10 U
1,1,2,2 - Tetrachloroethane	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Tetrachloroethene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Toluene	2	2 U	2 U	21	230	94	130	2 U
Chlorobenzene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Ethylbenzene	2	2 U	2 U	110	58	20 U	140	2 U
Styrene	2	2 U	2 U	20 U	20 U	20 U	2 U	2 U
Total Xylenes	2	2 U	2 U	400	2200	190	2400	12
DRYWT/DILUTION FACTOR		1	1	10	10	10	1	1

NOTE: Since volatile method blank data was not provided by the laboratory, blank corrections could not be performed.

TABLE B-4-5

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MEGDMW8601/15	MEGDMW8602/15	MEGDMW8603/15	MEGDMW8604/15	MEGDMW8605/15	MEGDMW8606/15	MEGDMW8710/11
SAMPLE IDENTIFIER:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Phenol	20	20 U	20 U	6000 U	*	240 U	800 U	20 U
bis(2-Chloroethyl)Ether	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2-Chlorophenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
1,3 - Dichlorobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
1,4 - Dichlorobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Benzyl Alcohol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
1,2 - Dichlorobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2-Methylphenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
bis(2-Chloroisopropyl)Ether	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
4-Methylphenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
N-Nitroso-Di-n-Propylamine	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Hexachloroethane	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Nitrobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Isophorone	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2-Nitrophenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2,4 - Dimethylphenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Benzoic Acid	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
bis(2-Chloroethoxy)Methane	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2,4 - Dichlorophenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
1,2,4 - Trichlorobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Naphthalene	20	20 U	20 U	64000	1900	3600	12000	20 U
4-Chloroaniline	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Hexacholorobutadiene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
4-Chloro-3-Methylphenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2-Methylnaphthalene	20	20 U	20 U	34000	650	1100	4600	*
Hexachlorocyclopentadiene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2,4,6 - Trichlorophenol	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2,4,5 - Trichlorophenol	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
2-Chloronaphthalene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2-Nitroaniline	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
Dimethyl Phthalate	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Acenaphthylene	20	20 U	20 U	*	*	*	*	*
3-Nitroaniline	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
Acenaphthene	20	20 U	20 U	30000	*	510	2200	100
2,4 - Dinitrophenol	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
4-Nitrophenol	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
Dibenzofuran	20	20 U	20 U	*	200 U	*	*	*
2,4 - Dinitrotoluene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
2,6 - Dinitrotoluene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Diethylphthalate	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
4-Chlorophenyl-Phenylether	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Fluorene	20	20 U	20 U	13000	*	*	1100	28

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l	SAMPLE LOCATION: MEGDMW8601/15	MEGDMW8602/15	MEGDMW8603/15	MEGDMW8604/15	MEGDMW8605/15	MEGDMW8606/15	MEGDMW8710/11
		SAMPLE IDENTIFIER: MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
		DATE OF SAMPLE COLLECTION: 12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
		UNITS: ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
4-Nitroaniline	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
4,6 - Dinitro-2-Methylphenol	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
N-Nitrosodiphenylamine	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
4-Bromophenyl-Phenylether	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Hexachlorobenzene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Pentachlorophenol	100	100 U	100 U	30000 U	1000 U	1200 U	4000 U	100 U
Phenanthrene	20	20 U	20 U	38000	*	320	3500	*
Anthracene	20	20 U	20 U	9700	200 U	*	890	*
Di-n-Butylphthalate	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Fluoranthene	20	20 U	20 U	12000	200 U	*	1000	*
Pyrene	20	20 U	20 U	21000	200 U	*	1600	*
Butylbenzylphthalate	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
3,3' - Dichlorobenzidine	40	40 U	40 U	12000 U	400 U	480 U	1600 U	40 U
Benzo (a) Anthracene	20	20 U	20 U	*	200 U	240 U	*	20 U
bis (2-Ethylhexyl) Phthalate	20	*	*	6000 U	200 U	*	800 U	20 U
Chrysene	20	20 U	20 U	*	200 U	240 U	*	20 U
Di-n-Octyl Phthalate	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Benzo (b) Fluoranthene	20	20 U	20 U	* +	200 U	240 U	* +	20 U
Benzo (k) Fluoranthene	20	20 U	20 U	+	200 U	240 U	+	20 U
Benzo (a) Pyrene	20	20 U	20 U	*	200 U	240 U	*	20 U
Indeno (1,2,3-cd) Pyrene	20	20 U	20 U	6000 U	200 U	240 U	*	20 U
Dibenz (a,h) Anthracene	20	20 U	20 U	6000 U	200 U	240 U	800 U	20 U
Benzo (g,h,i,) Perylene	20	20 U	20 U	6000 U	200 U	240 U	*	20 U
DRYWT/DILUTION FACTOR		1	1	300	10	12	40	1
Total Phenols (mg/l)		0.006	0.016	17	0.021	0.028	0.056	0.005 U
Dissolved Iron (mg/l)		0.07	0.04	8.8	20	13	11	0.64
Dissolved Zinc (mg/l)		0.005 U	0.005 U	0.11	0.52	0.54	0.048	0.005 U
Total Cyanide (mg/l)		0.01	0.01 U	5 U	0.05	0.01 U	0.06	0.01
Undistilled Cyanide (mg/l)		0.01 U	0.01 U	N/A	0.01 U	0.01 U	0.07	0.01 U
TOC (mg/l)		3.4	2.9	50000 **	8.4	8000 **	10000 **	61

Notes:

** = Visible Product

* = Trace concentrations detected below the reporting limit.

+ = Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:	MEGDMW8711/11	MEGXMW87DU/15	MEGDMW8712/11	MEGDMW8713/11	MEGDMWMS13/15	MEGDMWMD13/15	MEGDMW8714/11
SAMPLE IDENTIFIER:	MW-11	MW-11 Dup	MW-12	MW-13	Matrix Spike	Matrix Spike Duplicate	MW-14
DATE OF SAMPLE COLLECTION:	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l

VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Chloromethane	5	5 U	5 U	5 U	100 U	100 U	100 U	50 U
Bromomethane	5	5 U	5 U	5 U	100 U	100 U	100 U	50 U
Vinyl Chloride	5	5 U	5 U	5 U	100 U	100 U	100 U	50 U
Chloroethane	5	5 U	5 U	5 U	100 U	100 U	100 U	50 U
Methylene Chloride	5	5 U	5 U	5 U	100 U	100 U	100 U	50 U
Acetone	50	50 U	50 U	50 U	1000 U	1000 U	1000 U	500 U
Carbon Disulfide	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
1,1 - Dichloroethene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
1,1 - Dichloroethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Trans -1,2 - Dichloroethene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Chloroform	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
1,2 - Dichloroethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
2-Butanone	10	10 U	10 U	10 U	200 U	200 U	200 U	100 U
1,1,1 - Trichloroethane	2	2.6	4.4	2 U	40 U	40 U	40 U	20 U
Carbon Tetrachloride	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Vinyl Acetate	10	10 U	10 U	10 U	200 U	200 U	200 U	100 U
Bromodichloromethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
1,2 - Dichloropropane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Trans- 1,3 -Dichloropropene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Trichloroethene	2	2 U	2 U	2 U	53	40 U	40 U	20 U
Dibromochloromethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
1,1,2 - Trichloroethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Benzene	2	2 U	2 U	2 U	9600	7400	2100	2300
Cis- 1,3 -Dichloropropene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
2-Chloroethylvinylether	10	10 U	10 U	10 U	200 U	200 U	200 U	100 U
Bromoform	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
4-Methyl-2-Pentanone	10	10 U	10 U	10 U	200 U	200 U	200 U	100 U
2-Hexanone	10	10 U	10 U	10 U	200 U	200 U	200 U	100 U
1,1,2,2 - Tetrachloroethane	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Tetrachloroethene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Toluene	2	2 U	2 U	2 U	3600	5500	4900	340
Chlorobenzene	2	2 U	2 U	2 U	40 U	40 U	40 U	20 U
Ethylbenzene	2	2 U	2 U	2 U	2000	1900	1600	61
Styrene	2	2 U	2 U	2 U	940	970	930	20 U
Total Xylenes	2	2 U	2 U	75	2200	2300	2000	790
DRYWT/DILUTION FACTOR		1	1	1	20	20	20	10

NOTE: Since volatile method blank data was not provided by the laboratory, blank corrections could not be performed.

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MEGDMW8711/11	MEGXMW87DU/15	MEGDMW8712/11	MEGDMW8713/11	MEGDMWMS13/15	MEGDMWMD13/15	MEGDMW8714/11
SAMPLE IDENTIFIER:		MW-11	MW-11 Dup	MW-12	MW-13	Matrix Spike	Matrix Spike Duplicate	MW-14
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Phenol	20	20 U	20 U	20 U	580	*	*	360
bis(2-Chloroethyl)Ether	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2-Chlorophenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
1,3 - Dichlorobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
1,4 - Dichlorobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzyl Alcohol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
1,2 - Dichlorobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2-Methylphenol	20	20 U	20 U	20 U	*	1000 U	2000 U	*
bis(2-Chloroisopropyl)Ether	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
4-Methylphenol	20	20 U	20 U	20 U	*	*	*	29
N-Nitroso-Di-n-Propylamine	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Hexachloroethane	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Nitrobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Isophorone	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2-Nitrophenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,4 - Dimethylphenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzoic Acid	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
bis(2-Chloroethoxy)Methane	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,4 - Dichlorophenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
1,2,4 - Trichlorobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Naphthalene	20	20 U	20 U	20 U	4600	5600	9500	*
4-Chloroaniline	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Hexacholorobutadiene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
4-Chloro-3-Methylphenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2-Methylnaphthalene	20	20 U	20 U	20 U	780	*	*	80
Hexachlorocyclopentadiene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,4,6 - Trichlorophenol	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,4,5 - Trichlorophenol	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
2-Chloronaphthalene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2-Nitroaniline	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
Dimethyl Phthalate	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Acenaphthylene	20	20 U	20 U	20 U	*	*	*	*
3-Nitroaniline	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
Acenaphthene	20	20 U	20 U	20 U	*	1000 U	2000 U	69
2,4 - Dinitrophenol	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
4-Nitrophenol	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
Dibenzofuran	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,4 - Dinitrotoluene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
2,6 - Dinitrotoluene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Diethylphthalate	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
4-Chlorophenyl-Phenylether	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Fluorene	20	20 U	20 U	20 U	*	1000 U	2000 U	*

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MEGDMW8711/11	MEGXMW87DU/15	MEGDMW8712/11	MEGDMW8713/11	MEGDMWMS13/15	MEGDMWMD13/15	MEGDMW8714/11
SAMPLE IDENTIFIER:		MW-11	MW-11 Dup	MW-12	MW-13	Matrix Spike	Matrix Spike Duplicate	MW-14
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l							
4-Nitroaniline	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
4,6 - Dinitro-2-Methylphenol	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
N-Nitrosodiphenylamine	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
4-Bromophenyl-Phenylether	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Hexachlorobenzene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Pentachlorophenol	100	100 U	100 U	100 U	2000 U	5000 U	10000 U	100 U
Phenanthrene	20	20 U	20 U	20 U	*	1000 U	2000 U	*
Anthracene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	*
Di-n-Butylphthalate	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Fluoranthene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Pyrene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Butylbenzylphthalate	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
3,3' - Dichlorobenzidine	40	40 U	40 U	40 U	800 U	2000 U	4000 U	40 U
Benzo (a) Anthracene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
bis (2-Ethylhexyl) Phthalate	20	20 U	*	*	400 U	1000 U	2000 U	*
Chrysene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Di-n-Octyl Phthalate	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzo (b) Fluoranthene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzo (k) Fluoranthene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzo (a) Pyrene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Indeno (1,2,3-cd) Pyrene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Dibenz (a,h) Anthracene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
Benzo (g,h,i,) Perylene	20	20 U	20 U	20 U	400 U	1000 U	2000 U	20 U
DRYWT/DILUTION FACTOR		1	1	1	20	50	100	1
Total Phenols (mg/l)		0.005	0.01	0.016	0.053	NR	NR	0.063
Dissolved Iron (mg/l)		0.15	0.26	2.7	0.14	0.23	0.13	0.4
Dissolved Zinc (mg/l)		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013	0.005 U
Total Cyanide (mg/l)		0.01 U	0.01 U	0.8	0.15	0.14	0.15	0.12
Undistilled Cyanide (mg/l)		0.01 U	0.01 U	0.02	0.01 U	0.02	0.02	0.02
TOC (mg/l)		5.4	8.9	18	9	NR	NR	9.2

Notes:

** = Visible Oil

* = Trace concentrations detected below the reporting limit.

+ = Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MEGDMW8715/11	MEGXMW87DU/25	MEGXMW87FB/15	MEGXMW87SB/15	MESUSSXX01/15	MESISSXX02/15	MESDSSXX04/11
SAMPLE IDENTIFIER:		MW-15	MW-15 Dup	FB-01	SB-01	SW-01	SW-02	SW-04
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Chloromethane	5	5 U	5 U	NR	5 U	5 U	5 U	5 U
Bromomethane	5	5 U	5 U	NR	5 U	5 U	5 U	5 U
Vinyl Chloride	5	5 U	5 U	NR	5 U	5 U	5 U	5 U
Chloroethane	5	5 U	5 U	NR	5 U	5 U	5 U	5 U
Methylene Chloride	5	5 U	5 U	NR	5 U	5 U	5 U	5 U
Acetone	50	50 U	50 U	NR	160	50 U	50 U	50 U
Carbon Disulfide	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
1,1 - Dichloroethene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
1,1 - Dichloroethane	2	3.3	3.1	NR	2 U	2 U	2 U	2 U
Trans -1,2 - Dichloroethene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Chloroform	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
1,2 - Dichloroethane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
2-Butanone	10	10 U	10 U	NR	10 U	10 U	10 U	10 U
1,1,1 - Trichloroethane	2	17	25	NR	2 U	2 U	2 U	2 U
Carbon Tetrachloride	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Vinyl Acetate	10	10 U	10 U	NR	10 U	10 U	10 U	10 U
Bromodichloromethane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
1,2 - Dichloropropane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Trans- 1,3 -Dichloropropene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Trichloroethene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Dibromochloromethane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
1,1,2 - Trichloroethane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Benzene	2	2.6	5.8	NR	2 U	2 U	2 U	2 U
Cis- 1,3 -Dichloropropene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
2-Chloroethylvinylether	10	10 U	10 U	NR	10 U	10 U	10 U	10 U
Bromoform	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
4-Methyl-2-Pentanone	10	10 U	10 U	NR	10 U	10 U	10 U	10 U
2-Hexanone	10	10 U	10 U	NR	10 U	10 U	10 U	10 U
1,1,2,2 - Tetrachloroethane	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Tetrachloroethene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Toluene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Chlorobenzene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Ethylbenzene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Styrene	2	2 U	2 U	NR	2 U	2 U	2 U	2 U
Total Xylenes	2	2.7	3.1	NR	2 U	2 U	2 U	2 U
DRYWT/DILUTION FACTOR		1	1	NR	1	1	1	1

NOTE: Since volatile method blank data was not provided by the laboratory, blank corrections could not be performed.

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l	SAMPLE LOCATION: MEGDMW8715/11	MEGXMW87DU/25	MEGXMW87FB/15	MEGXMW87SB/15	MESUSSXX01/15	MESISSXX02/15	MESDSSXX04/11
		SAMPLE IDENTIFIER: MW-15	MW-15 Dup	FB-01	SB-01	SW-01	SW-02	SW-04
		DATE OF SAMPLE COLLECTION: 12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
		UNITS: ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Phenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
bis(2-Chloroethyl)Ether	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2-Chlorophenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
1,3 - Dichlorobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
1,4 - Dichlorobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzyl Alcohol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
1,2 - Dichlorobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2-Methylphenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
bis(2-Chloroisopropyl)Ether	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
4-Methylphenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
N-Nitroso-Di-n-Propylamine	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Hexachloroethane	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Nitrobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Isophorone	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2-Nitrophenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,4 - Dimethylphenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzoic Acid	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
bis(2-Chloroethoxy)Methane	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,4 - Dichlorophenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
1,2,4 - Trichlorobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Naphthalene	20	91	*	NR	20 U	40 U	20 U	20 U
4-Chloroaniline	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Hexacholorobutadiene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
4-Chloro-3-Methylphenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2-Methylnaphthalene	20	30	*	NR	20 U	40 U	20 U	20 U
Hexachlorocyclopentadiene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,4,6 - Trichlorophenol	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,4,5 - Trichlorophenol	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
2-Chloronaphthalene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2-Nitroaniline	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
Dimethyl Phthalate	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Acenaphthylene	20	45	27	NR	20 U	40 U	20 U	20 U
3-Nitroaniline	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
Acenaphthene	20	40	26	NR	20 U	40 U	20 U	20 U
2,4 - Dinitrophenol	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
4-Nitrophenol	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
Dibenzofuran	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,4 - Dinitrotoluene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
2,6 - Dinitrotoluene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Diethylphthalate	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
4-Chlorophenyl-Phenylether	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Fluorene	20	*	*	NR	20 U	40 U	20 U	20 U

TABLE B-4-5

17-Aug-89

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MEGDMW8715/11	MEGXMW87DU/25	MEGXMW87FB/15	MEGXMW87SB/15	MESUSSXX01/15	MESISSXX02/15	MESDSSXX04/11
SAMPLE IDENTIFIER:		MW-15	MW-15 Dup	FB-01	SB-01	SW-01	SW-02	SW-04
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l							
4-Nitroaniline	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
4,6 - Dinitro-2-Methylphenol	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
N-Nitrosodiphenylamine	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
4-Bromophenyl-Phenylether	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Hexachlorobenzene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Pentachlorophenol	100	100 U	100 U	NR	100 U	200 U	100 U	100 U
Phenanthrene	20	*	*	NR	20 U	40 U	20 U	20 U
Anthracene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Di-n-Butylphthalate	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Fluoranthene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Pyrene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Butylbenzylphthalate	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
3,3' - Dichlorobenzidine	40	40 U	40 U	NR	40 U	80 U	40 U	40 U
Benzo (a) Anthracene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
bis (2-Ethylhexyl) Phthalate	20	20 U	20 U	NR	20 U	390	*	20 U
Chrysene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Di-n-Octyl Phthalate	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzo (b) Fluoranthene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzo (k) Fluoranthene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzo (a) Pyrene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Indeno (1,2,3-cd) Pyrene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Dibenz (a,h) Anthracene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
Benzo (g,h,i,) Perylene	20	20 U	20 U	NR	20 U	40 U	20 U	20 U
DRYWT/DILUTION FACTOR		1	1	NR	1	2	1	1
Total Phenols (mg/l)		0.006	0.006	NR	0.005 U	0.005 U	0.005 U	0.005 U
Dissolved Iron (mg/l)		0.13	0.03 U	0.03 U	0.24	0.2	1.1	0.24
Dissolved Zinc (mg/l)		0.005 U	0.014	0.005 U	0.005 U	0.005 U	0.014	0.005 U
Total Cyanide (mg/l)		0.01 U	0.06	NR	0.01 U	0.01 U	0.01 U	0.01 U
Undistilled Cyanide (mg/l)		0.01 U	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U
TOC (mg/l)		2.9	3.2	3.8	2.1	6.1	6.1	4.8

Notes:

** = Visible Oil
* = Trace concentrations detected below the reporting limit.
+ = Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MESXSSXXDU/15	MEGXMW87TB/15
SAMPLE IDENTIFIER:		SW-04 Dup	TB-01
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87
UNITS:		ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l		
Chloromethane	5	5 U	5 U
Bromomethane	5	5 U	5 U
Vinyl Chloride	5	5 U	5 U
Chloroethane	5	5 U	5 U
Methylene Chloride	5	5 U	5 U
Acetone	50	50 U	50 U
Carbon Disulfide	2	2 U	2 U
1,1 - Dichloroethene	2	2 U	2 U
1,1 - Dichloroethane	2	2 U	2 U
Trans -1,2 - Dichloroethene	2	2 U	2 U
Chloroform	2	2 U	2 U
1,2 - Dichloroethane	2	2 U	2 U
2-Butanone	10	10 U	10 U
1,1,1 - Trichloroethane	2	2 U	2 U
Carbon Tetrachloride	2	2 U	2 U
Vinyl Acetate	10	10 U	10 U
Bromodichloromethane	2	2 U	2 U
1,2 - Dichloropropane	2	2 U	2 U
Trans- 1,3 -Dichloropropene	2	2 U	2 U
Trichloroethene	2	2 U	2 U
Dibromochloromethane	2	2 U	2 U
1,1,2 - Trichloroethane	2	2 U	2 U
Benzene	2	2 U	2 U
Cis- 1,3 -Dichloropropene	2	2 U	2 U
2-Chloroethylvinylether	10	10 U	10 U
Bromoform	2	2 U	2 U
4-Methyl-2-Pentanone	10	10 U	10 U
2-Hexanone	10	10 U	10 U
1,1,2,2 - Tetrachloroethane	2	2 U	2 U
Tetrachloroethene	2	2 U	2 U
Toluene	2	2 U	2 U
Chlorobenzene	2	2 U	2 U
Ethylbenzene	2	2 U	2 U
Styrene	2	2 U	2 U
Total Xylenes	2	2 U	2 U
DRYWT/DILUTION FACTOR		1	1

NOTE: Since volatile method blank data was not provided by the laboratory, blank corrections could not be performed.

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:		MESXSSXXDU/15	MEGXMW87TB/15
SAMPLE IDENTIFIER:		SW-04 Dup	TB-01
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87
UNITS:		ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l		
Phenol	20	20 U	NR
bis(2-Chloroethyl)Ether	20	20 U	NR
2-Chlorophenol	20	20 U	NR
1,3 - Dichlorobenzene	20	20 U	NR
1,4 - Dichlorobenzene	20	20 U	NR
Benzyl Alcohol	20	20 U	NR
1,2 - Dichlorobenzene	20	20 U	NR
2-Methylphenol	20	20 U	NR
bis(2-Chloroisopropyl)Ether	20	20 U	NR
4-Methylphenol	20	20 U	NR
N-Nitroso-Di-n-Propylamine	20	20 U	NR
Hexachloroethane	20	20 U	NR
Nitrobenzene	20	20 U	NR
Isophorone	20	20 U	NR
2-Nitrophenol	20	20 U	NR
2,4 - Dimethylphenol	20	20 U	NR
Benzoic Acid	100	100 U	NR
bis(2-Chloroethoxy)Methane	20	20 U	NR
2,4 - Dichlorophenol	20	20 U	NR
1,2,4 - Trichlorobenzene	20	20 U	NR
Naphthalene	20	20 U	NR
4-Chloroaniline	20	20 U	NR
Hexacholorobutadiene	20	20 U	NR
4-Chloro-3-Methylphenol	20	20 U	NR
2-Methylnaphthalene	20	20 U	NR
Hexachlorocyclopentadiene	20	20 U	NR
2,4,6 - Trichlorophenol	20	20 U	NR
2,4,5 - Trichlorophenol	100	100 U	NR
2-Chloronaphthalene	20	20 U	NR
2-Nitroaniline	100	100 U	NR
Dimethyl Phthalate	20	20 U	NR
Acenaphthylene	20	20 U	NR
3-Nitroaniline	100	100 U	NR
Acenaphthene	20	20 U	NR
2,4 - Dinitrophenol	100	100 U	NR
4-Nitrophenol	100	100 U	NR
Dibenzofuran	20	20 U	NR
2,4 - Dinitrotoluene	20	20 U	NR
2,6 - Dinitrotoluene	20	20 U	NR
Diethylphthalate	20	20 U	NR
4-Chlorophenyl-Phenylether	20	20 U	NR
Fluorene	20	20 U	NR

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance and Surface Water Samples

SAMPLE LOCATION:	MESXSSXXDU/15		MEGXMW87TB/15
SAMPLE IDENTIFIER:	SW-04 Dup		TB-01
DATE OF SAMPLE COLLECTION:	12/22/87		12/22/87
UNITS:	ug/l		ug/l

SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l		
4-Nitroaniline	100	100 U	NR
4,6 - Dinitro-2-Methylphenol	100	100 U	NR
N-Nitrosodiphenylamine	20	20 U	NR
4-Bromophenyl-Phenylether	20	20 U	NR
Hexachlorobenzene	20	20 U	NR
Pentachlorophenol	100	100 U	NR
Phenanthrene	20	20 U	NR
Anthracene	20	20 U	NR
Di-n-Butylphthalate	20	20 U	NR
Fluoranthene	20	20 U	NR
Pyrene	20	20 U	NR
Butylbenzylphthalate	20	20 U	NR
3,3' - Dichlorobenzidine	40	40 U	NR
Benzo (a) Anthracene	20	20 U	NR
bis (2-Ethylhexyl) Phthalate	20	20 U	NR
Chrysene	20	20 U	NR
Di-n-Octyl Phthalate	20	20 U	NR
Benzo (b) Fluoranthene	20	20 U	NR
Benzo (k) Fluoranthene	20	20 U	NR
Benzo (a) Pyrene	20	20 U	NR
Indeno (1,2,3-cd) Pyrene	20	20 U	NR
Dibenz (a,h) Anthracene	20	20 U	NR
Benzo (g,h,i,) Perylene	20	20 U	NR
DRYWT/DILUTION FACTOR		1	NR
Total Phenols (mg/l)		0.01	NR
Dissolved Iron (mg/l)		0.25	NR
Dissolved Zinc (mg/l)		0.005 U	NR
Total Cyanide (mg/l)		0.01 U	NR
Undistilled Cyanide (mg/l)		0.01 U	NR
TOC (mg/l)		5	NR

Notes:
** = Visible Oil
* = Trace concentrations detected below the reporting limit.
+ = Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.

TABLE B-4-5

02-Aug-89

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGUMW8601/16	MEGUMW8602/16	MEGXMW87DU/26	MEGUMW8603/16	MEGUMW8604/16	MEGUMW8605/16	MEGUMW8606/16
SAMPLE IDENTIFIER:		MW-01	MW-02	MW-02 Dup	MW-03	MW-04	MW-05	MW-06
DATE OF SAMPLE COLLECTION:		3/29/88	3/29/88	3/29/88	3/30/88	3/30/88	3/30/88	3/30/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Chloromethane	10	10 U	10 U	Broken	100 U	200 U	100 U	50 U
Bromomethane	10	10 U	10 U	Vial	100 U	200 U	100 U	50 U
Vinyl Chloride	10	10 U	10 U	NA	100 U	200 U	100 U	50 U
Chloroethane	10	10 U	10 U	NA	100 U	200 U	100 U	50 U
Methylene Chloride	5	13 UJB	12 UJB	NA	120 UJB	260 UJB	120 UJB	75 UJB
Acetone	10	47 UJB	99 UJB	NA	990 UJB	940 UJB	990 UJB	900 UJB
Carbon Disulfide	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,1 - Dichloroethene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,1 - Dichloroethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
trans-1,2 - Dichloroethene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Chloroform	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,2 - Dichloroethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
2-Butanone	10	33 UJB	70 UJB	NA	700 UJB	660 UJB	700 UJB	195 UJB
1,1,1 - Trichloroethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Carbon Tetrachloride	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Vinyl Acetate	10	10 U	10 U	NA	100 U	27 J	100 U	50 U
Bromodichloromethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,2 - Dichloropropane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Trans- 1,3 -Dichloropropene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Trichloroethene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Dibromochloromethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,1,2 - Trichloroethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Benzene	5	5 U	5 U	NA	150	200	39 J	60
Cis- 1,3 -Dichloropropene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
2-Chloroethylvinylether	10	10 U	10 U	NA	100 U	200 U	100 U	50 U
Bromoform	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
4-Methyl-2-Pentanone	10	10 UJB	10 UJB	NA	100 UJB	200 UJB	100 UJB	70 UJB
2-Hexanone	10	10 UJB	10 U	NA	100 U	200 UJB	100 U	50 UJB
Tetrachloroethene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
1,1,2,2 - Tetrachloroethane	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Toluene	5	25 UJB	25 UJB	NA	250 UJB	500 UJB	250 UJB	130 UJB
Chlorobenzene	5	1.6 J	1.6 J	NA	50 U	100 U	50 U	25 U
Ethylbenzene	5	5 U	5 U	NA	50 U	170	54	25 U
Styrene	5	5 U	5 U	NA	50 U	100 U	50 U	25 U
Total Xylenes	5	5 U	5 U	NA	420	1300	160	40
DRYWT/DILUTION FACTOR		1	1	NA	10	20	10	5

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGUMW8601/16	MEGUMW8602/16	MEGXMW87DU/26	MEGUMW8603/16	MEGUMW8604/16	MEGUMW8605/16	MEGUMW8606/16
SAMPLE IDENTIFIER:		MW-01	MW-02	MW-02 Dup	MW-03	MW-04	MW-05	MW-06
DATE OF SAMPLE COLLECTION:		3/29/88	3/29/88	3/29/88	3/30/88	3/30/88	3/30/88	3/30/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Phenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	15 J
bis(2-Chloroethyl)Ether	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2-Chlorophenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
1,3 - Dichlorobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
1,4 - Dichlorobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Benzyl Alcohol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
1,2 - Dichlorobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2-Methylphenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
bis(2-Chloroisopropyl)Ether	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
4-Methylphenol	10	10 U	6200 U	250 U	620 U	250 U	270 J	100 U
N-Nitroso-Di-n-Propylamine	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Hexachloroethane	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Nitrobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Isophorone	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2-Nitrophenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2,4 - Dimethylphenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Benzoic Acid	50	50 U	31000 U	1250 U	3100 U	1250 U	100 J	500 U
bis(2-Chloroethoxy)Methane	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2,4 - Dichlorophenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
1,2,4 - Trichlorobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Naphthalene	10	10 U	6200 U	250 U	620 U	1400	30000	100 U
4-Chloroaniline	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Hexacholorobutadiene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
4-Chloro-3-Methylphenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2-Methylnaphthalene	10	10 U	6200 U	250 U	620 U	780	35000	100 U
Hexachlorocyclopentadiene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2,4,6 - Trichlorophenol	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
2,4,5 - Trichlorophenol	50	50 U	31000 U	1250 U	3100 U	1250 U	3100 U	500 U
2-Chloronaphthalene	10	10 U	6200 U	250 U	620 U	250 U	140 J	100 U
2-Nitroaniline	50	50 U	31000 U	250 U	83 J	250 U	460 J	500 U
Dimethyl Phthalate	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Acenaphthylene	10	10 U	6200 U	250 U	620 U	30 J	2700	12 J
3-Nitroaniline	50	50 U	31000 U	1250 U	3100 U	1250 U	1200 J	500 U
Acenaphthene	10	10 U	6200 U	250 U	620 U	230 J	22000	120 J
*2,4 - Dinitrophenol	50	50 U	6200 U	1250 U	3100 U	1250 U	3100 U	500 U
4-Nitrophenol	50	50 U	31000 U	1250 U	3100 U	1250 U	3100 U	500 U
Dibenzofuran	10	10 U	6200 U	250 U	88 J	250 U	2000	100 U
2,4 - Dinitrotoluene	10	10 U	31000 U	250 U	300 J	250 U	600 U	100 U
2,6 - Dinitrotoluene	10	10 U	6200 U	250 U	620 U	250 U	260 J	100 U
Diethylphthalate	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
4-Chlorophenyl-Phenylether	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Fluorene	10	10 U	6200 U	250 U	620 U	99 J	10000	100 U

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l	SAMPLE LOCATION: MEGUMW8601/16	MEGUMW8602/16	MEGXMW87DU/26	MEGUMW8603/16	MEGUMW8604/16	MEGUMW8605/16	MEGUMW8606/16
		SAMPLE IDENTIFIER: MW-01	MW-02	MW-02 Dup	MW-03	MW-04	MW-05	MW-06
		DATE OF SAMPLE COLLECTION: 3/29/88	3/29/88	3/29/88	3/30/88	3/30/88	3/30/88	3/30/88
		UNITS: ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
4-Nitroaniline	50	50 U	31000 U	1250 U	120 J	1250 U	3100 U	500 U
4,6 - Dinitro-2-Methylphenol	50	50 U	31000 U	1250 U	3100 U	1250 U	3100 U	500 U
N-Nitrosodiphenylamine (1)	10	10 UJB	6200 UJB	250 UJB	341 UJB	250 UJB	620 JB	100 UJB
4-Bromophenyl-Phenylether	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Hexachlorobenzene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Pentachlorophenol	50	50 U	31000 U	1250 U	3100 U	1250 U	3100 U	500 U
Phenanthrene	10	10 U	6200 U	250 U	620 U	180 J	26000	27 J
Anthracene	10	10 U	6200 U	250 U	620 U	39 J	600 U	13 J
Di-n-Butylphthalate	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Fluoranthene	10	10 U	6200 U	250 U	94 J	27 J	9400	31 J
Pyrene	10	10 U	6200 U	250 U	620 U	250 U	1400	70 J
Butylbenzylphthalate	10	10 U	6200 U	250 U	620 U	37 J	600 U	100 U
3,3' - Dichlorobenzidine	20	20 U	12400 U	500 U	1240 U	500 U	1200 U	200 U
Benzo (a) Anthracene	10	10 U	6200 U	250 U	620 U	250 U	2600	20 J
bis (2-Ethylhexyl) Phthalate	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Chrysene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Di-n-Octyl Phthalate	10	470 UJB	291400 UJB	11750 UJB	29140 UJB	11750 UJB	28200 UJB	4700 UJB
Benzo (b) Fluoranthene	10	10 U	6200 U	250 U	620 U	250 U	600 U	14 J
Benzo (k) Fluoranthene	10	10 U	6200 U	250 U	620 U	250 U	1300	100 U
Benzo (a) Pyrene	10	10 U	6200 U	250 U	230 J	250 U	2400	100 U
Indeno (1,2,3-cd) Pyrene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Dibenz (a,h) Anthracene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
Benzo (g,h,i,) Perylene	10	10 U	6200 U	250 U	620 U	250 U	600 U	100 U
DRYWT/DILUTION FACTOR		1	620	25	62	25	60	10
Total Phenols (mg/l)		0.005 U	0.006	0.011	0.025	0.027	0.026	0.037
Dissolved Iron (mg/l)		0.05 U	0.12	0.23	14.4	9.25	25	5.95
Dissolved Zinc (mg/l)		0.02	0.02	0.1	0.2	0.05	1.09	0.02
Total Cyanide (mg/l)		0.01 U	0.01 U	0.01 U	0.27	0.05	0.05	0.01
Undistilled Cyanide (mg/l)		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
TOC (mg/l)		2.8	2.2	2.8	42	9.9	21	31

TABLE B-4-5

02-Aug-89

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGUMW8710/12	MEGUMW8711/12	MEGUMW8712/12	MEGUMW8713/12	MEGXMW87DU/16	MEGUMW8714/12	MEGUMW8715/12
SAMPLE IDENTIFIER:		MW-10	MW-11	MW-12	MW-13	MW-13 Dup	MW-14	MW-15
DATE OF SAMPLE COLLECTION:		3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Chloromethane	10	Broken	10 U	50 U	1000 U	Broken	200 U	10 U
Bromomethane	10	Vial	10 U	50 U	1000 U	Vial	200 U	10 U
Vinyl Chloride	10	NA	10 U	50 U	1000 U	NA	200 U	10 U
Chloroethane	10	NA	10 U	50 U	1000 U	NA	200 U	10 U
Methylene Chloride	5	NA	12 UJB	65 UJB	36000	NA	300 UJB	12 UJB
Acetone	10	NA	99 UJB	235 UJB	57000 UJB	NA	3600 UJB	99 UJB
Carbon Disulfide	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,1 - Dichloroethene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,1 - Dichloroethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
trans-1,2 - Dichloroethene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Chloroform	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,2 - Dichloroethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
2-Butanone	10	NA	70 UJB	170 JB	2000 UJB	NA	780 UJB	70 UJB
1,1,1 - Trichloroethane	5	NA	5 U	25 U	500 U	NA	100 U	12
Carbon Tetrachloride	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Vinyl Acetate	10	NA	10 U	50 U	1000 U	NA	200 U	10 U
Bromodichloromethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,2 - Dichloropropane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Trans- 1,3 -Dichloropropene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Trichloroethene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Dibromochloromethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,1,2 - Trichloroethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Benzene	5	NA	5 U	120	12000	NA	2200	18
Cis- 1,3 -Dichloropropene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
2-Chloroethylvinylether	10	NA	10 U	50 U	1000 U	NA	200 U	10 U
Bromoform	5	NA	5 U	25 U	500 U	NA	100 U	5 U
4-Methyl-2-Pentanone	10	NA	10 UJB	50 UJB	1000 U	NA	280 UJB	10 UJB
2-Hexanone	10	NA	10 U	50 UJB	1000 U	NA	200 UJB	1.1 JB
Tetrachloroethene	5	NA	5 U	25 U	500 U	NA	100 U	5 U
1,1,2,2 - Tetrachloroethane	5	NA	5 U	25 U	500 U	NA	100 U	5 U
Toluene	5	NA	25 UJB	230 JB	6400	NA	520 UJB	25 UJB
Chlorobenzene	5	NA	5.0 U	25 U	500 U	NA	100 U	5 U
Ethylbenzene	5	NA	5 U	1100	2000	NA	81 J	5 U
Styrene	5	NA	5 U	25 U	1800	NA	100 U	5 U
Total Xylenes	5	NA	5 U	1200	3500	NA	160	13
DRYWT/DILUTION FACTOR		NA	1	5	100	NA	20	1

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGUMW8710/12	MEGUMW8711/12	MEGUMW8712/12	MEGUMW8713/12	MEGXMW87DU/16	MEGUMW8714/12	MEGUMW8715/12
SAMPLE IDENTIFIER:		MW-10	MW-11	MW-12	MW-13	MW-13 Dup	MW-14	MW-15
DATE OF SAMPLE COLLECTION:		3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Phenol	10	100 U	10 U	50000 U	250 U	250 U	44 J	1.7 J
bis(2-Chloroethyl)Ether	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2-Chlorophenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
1,3 - Dichlorobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
1,4 - Dichlorobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Benzyl Alcohol	10	100 U	10 U	50000 U	250 U	250 U	50 U	1 J
1,2 - Dichlorobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2-Methylphenol	10	100 U	10 U	50000 U	250 U	250 U	5.5 J	10 U
bis(2-Chloroisopropyl)Ether	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
4-Methylphenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
N-Nitroso-Di-n-Propylamine	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Hexachloroethane	10	16 J	10 U	50000 U	250 U	250 U	50 U	10 U
Nitrobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	1.1 J
Isophorone	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2-Nitrophenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2,4 - Dimethylphenol	10	100 U	10 U	50000 U	250 U	250 U	6.9 J	10 U
Benzoic Acid	50	500 U	50 U	250000 U	1250 U	1250 U	9 J	50 U
bis(2-Chloroethoxy)Methane	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2,4 - Dichlorophenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
1,2,4 - Trichlorobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Naphthalene	10	100 U	10 U	580000	8100	7800	1800	5.1 J
4-Chloroaniline	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Hexacholorobutadiene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
4-Chloro-3-Methylphenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2-Methylnaphthalene	10	100 U	10 U	540000	2700	2100	220	10 U
Hexachlorocyclopentadiene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2,4,6 - Trichlorophenol	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2,4,5 - Trichlorophenol	50	500 U	50 U	250000 U	1250 U	1250 U	250 U	50 U
2-Chloronaphthalene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
2-Nitroaniline	50	500 U	1.1 J	250000 U	1250 U	250 U	250 U	50 U
Dimethyl Phthalate	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Acenaphthylene	10	100 U	10 U	26000 J	940	720	18 J	5.8 J
3-Nitroaniline	50	500 U	50 U	250000 U	1250 U	1250 U	250 U	50 U
Acenaphthene	10	14 J	10 U	210000	220 J	170 J	76	31
2,4 - Dinitrophenol	50	500 U	50 U	250000 U	1250 U	1250 U	250 U	50 U
4-Nitrophenol	50	28 J	50 U	250000 U	1250 U	1250 U	250 U	50 U
Dibenzofuran	10	100 U	10 U	23000 J	64 J	48 J	50 U	1.1 J
2,4 - Dinitrotoluene	10	100 U	10 U	50000 U	52 J	250 U	50 U	10 U
2,6 - Dinitrotoluene	10	14 J	10 U	50000 U	36 J	250 U	50 U	10 U
Diethylphthalate	10	100 U	10 U	50000 U	1250 U	250 U	50 U	10 U
4-Chlorophenyl-Phenylether	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Fluorene	10	16 J	10 U	110000	250 U	250 U	21 J	11

TABLE B-4-5

02-Aug-89

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l	SAMPLE LOCATION: MEGUMW8710/12	MEGUMW8711/12	MEGUMW8712/12	MEGUMW8713/12	MEGXMW87DU/16	MEGUMW8714/12	MEGUMW8715/12
		SAMPLE IDENTIFIER: MW-10	MW-11	MW-12	MW-13	MW-13 Dup	MW-14	MW-15
		DATE OF SAMPLE COLLECTION: 3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88	3/29/88
		UNITS: ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
4-Nitroaniline	50	500 U	50 U	250000 U	1250 U	1250 U	250 U	50 U
4,6 - Dinitro-2-Methylphenol	50	15 J	50 U	250000 U	1250 U	1250 U	250 U	50 U
N-Nitrosodiphenylamine (1)	10	100 UJB	10 UJB	27500 UJB	137 UJB	250 UJB	50 UJB	5.5 UJB
4-Bromophenyl-Phenylether	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Hexachlorobenzene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Pentachlorophenol	50	500 U	50 U	250000 U	1250 U	1250 U	250 U	50 U
Phenanthrene	10	100 U	10 U	320000	1300	920	23 J	5.7 J
Anthracene	10	100 U	10 U	86000	310 J	210 J	50 U	10 U
Di-n-Butylphthalate	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Fluoranthene	10	100 U	10 U	82000	300	230 J	50 U	10 U
Pyrene	10	100 U	10 U	130000	450	330	50 U	1.7 J
Butylbenzylphthalate	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
3,3' - Dichlorobenzidine	20	200 U	20 U	100000 U	500 U	500 U	100 U	20 U
Benzo (a) Anthracene	10	35 J	10 U	34000 J	110 J	74 J	50 U	10 U
bis (2-Ethylhexyl) Phthalate	10	410	10 U	50000 U	250 U	250 U	50 U	10 U
Chrysene	10	29 J	10 U	32000 J	130 J	110 J	50 U	10 U
Di-n-Octyl Phthalate	10	4700 UJB	470 UJB	2350000 UJB	11750 UJB	11750 UJB	2350 UJB	470 UJB
Benzo (b) Fluoranthene	10	30 J	10 U	12000 J	38 J	85 J	50 U	10 U
Benzo (k) Fluoranthene	10	100 U	10 U	8400 J	41 J	250 U	50 U	10 U
Benzo (a) Pyrene	10	100 U	10 U	28000 J	100 J	72 J	50 U	10 U
Indeno (1,2,3-cd) Pyrene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Dibenz (a,h) Anthracene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
Benzo (g,h,i,) Perylene	10	100 U	10 U	50000 U	250 U	250 U	50 U	10 U
DRYWT/DILUTION FACTOR		10	1	5000	25	25	5	1
Total Phenols (mg/l)		0.029	0.005 U	0.2	0.064	0.058	0.3	0.005 U
Dissolved Iron (mg/l)		1.41	0.28	4.45	0.26	0.18	0.16	0.16
Dissolved Zinc (mg/l)		0.02	0.01	0.02	0.01	0.02	0.03	0.01
Total Cyanide (mg/l)		0.01 U	0.01 U	0.58	0.1	0.13	0.09	0.01 U
Undistilled Cyanide (mg/l)		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
TOC (mg/l)		11	4.9	13	7.6	8.5	8.6	3.9

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGXMW87FB/16	MESUSSMS02/16	MESUSSMD02/16	MEGXMW87SB/16	MESUSSXX01/16	MESUSSXX02/16	MESUSSXX04/16
SAMPLE IDENTIFIER:		FB-01	Matrix Spike	Matrix Spike Duplicate	SB-01	SW-01	SW-02	SW-04
DATE OF SAMPLE COLLECTION:		3/29/88	3/30/88	3/30/88	3/29/88	3/30/88	3/30/88	3/30/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l							
Chloromethane	10	NR	10 U	10 U	10 U	10 U	Broken	Broken
Bromomethane	10	NR	10 U	10 U	10 U	10 U	Vial	Vial
Vinyl Chloride	10	NR	10 U	10 U	10 U	10 U	NA	NA
Chloroethane	10	NR	10 U	10 U	10 U	10 U	NA	NA
Methylene Chloride	5	NR	15 UJB	15 UJB	12 UJB	12 UJB	NA	NA
Acetone	10	NR	180 UJB	180 UJB	99 UJB	99 UJB	NA	NA
Carbon Disulfide	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,1 - Dichloroethene	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,1 - Dichloroethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
trans-1,2 - Dichloroethene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Chloroform	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,2 - Dichloroethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
2-Butanone	10	NR	39 UJB	39 UJB	70 UJB	70 UJB	NA	NA
1,1,1 - Trichloroethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
Carbon Tetrachloride	5	NR	5 U	5 U	5 U	5 U	NA	NA
Vinyl Acetate	10	NR	10 U	10 U	10 U	10 U	NA	NA
Bromodichloromethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,2 - Dichloropropane	5	NR	5 U	5 U	5 U	5 U	NA	NA
Trans- 1,3 -Dichloropropene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Trichloroethene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Dibromochloromethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,1,2 - Trichloroethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
Benzene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Cis- 1,3 -Dichloropropene	5	NR	5 U	5 U	5 U	5 U	NA	NA
2-Chloroethylvinylether	10	NR	10 U	10 U	10 U	10 U	NA	NA
Bromoform	5	NR	5 U	5 U	5 U	5 U	NA	NA
4-Methyl-2-Pentanone	10	NR	14 UJB	14 UJB	10 U	10 U	NA	NA
2-Hexanone	10	NR	10 UJB	10 UJB	10 UJB	10 UJB	NA	NA
Tetrachloroethene	5	NR	5 U	5 U	5 U	5 U	NA	NA
1,1,2,2 - Tetrachloroethane	5	NR	5 U	5 U	5 U	5 U	NA	NA
Toluene	5	NR	26 UJB	26 UJB	25 UJB	25 UJB	NA	NA
Chlorobenzene	5	NR	5 U	2.4 J	5 U	5 U	NA	NA
Ethylbenzene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Styrene	5	NR	5 U	5 U	5 U	5 U	NA	NA
Total Xylenes	5	NR	5 U	5 U	5 U	5 U	NA	NA
DRYWT/DILUTION FACTOR		NR	1	1	1	1	NA	NA

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l	SAMPLE LOCATION: MEGXMW87FB/16	MESUSSMS02/16	MESUSSMD02/16	MEGXMW87SB/16	MESUSSXX01/16	MESUSSXX02/16	MESUSSXX04/16
		SAMPLE IDENTIFIER: FB-01	Matrix Spike	Matrix Spike Duplicate	SB-01	SW-01	SW-02	SW-04
		DATE OF SAMPLE COLLECTION: 3/29/88	3/30/88	3/30/88	3/29/88	3/30/88	3/30/88	3/30/88
		UNITS: ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Phenol	10	NR	MISSING DATA	3.1 J	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)Ether	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
1,3 - Dichlorobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
1,4 - Dichlorobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Benzyl Alcohol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
1,2 - Dichlorobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2-Methylphenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
bis(2-Chloroisopropyl)Ether	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
4-Methylphenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
N-Nitroso-Di-n-Propylamine	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Hexachloroethane	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Nitrobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Isophorone	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4 - Dimethylphenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Benzoic Acid	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
bis(2-Chloroethoxy)Methane	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4 - Dichlorophenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
1,2,4 - Trichlorobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Naphthalene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Hexacholorobutadiene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
4-Chloro-3-Methylphenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4,6 - Trichlorophenol	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4,5 - Trichlorophenol	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
2-Chloronaphthalene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2-Nitroaniline	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
Dimethyl Phthalate	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Acenaphthylene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
3-Nitroaniline	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
Acenaphthene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4 - Dinitrophenol	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
4-Nitrophenol	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
Dibenzofuran	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,4 - Dinitrotoluene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
2,6 - Dinitrotoluene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Diethylphthalate	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-Phenylether	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Fluorene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U

TABLE B-4-5

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MEGXMW87FB/16	MESUSSMS02/16	MESUSSMD02/16	MEGXMW87SB/16	MESUSSXX01/16	MESUSSXX02/16	MESUSSXX04/16
SAMPLE IDENTIFIER:		FB-01	Matrix Spike	Matrix Spike Duplicate	SB-01	SW-01	SW-02	SW-04
DATE OF SAMPLE COLLECTION:		3/29/88	3/30/88	3/30/88	3/29/88	3/30/88	3/30/88	3/30/88
UNITS:		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l							
4-Nitroaniline	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
4,6 - Dinitro-2-Methylphenol	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
N-Nitrosodiphenylamine (1)	10	NR	MISSING DATA	30 UJB	10 UJB	10 UJB	10 UJB	10 UJB
4-Bromophenyl-Phenylether	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Pentachlorophenol	50	NR	MISSING DATA	150 U	50 U	50 U	50 U	50 U
Phenanthrene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Anthracene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Di-n-Butylphthalate	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Fluoranthene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Pyrene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
3,3' - Dichlorobenzidine	20	NR	MISSING DATA	60 U	20 U	20 U	20 U	20 U
Benzo (a) Anthracene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
bis (2-Ethylhexyl) Phthalate	10	NR	MISSING DATA	30 U	10 U	34	10 U	10 U
Chrysene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Di-n-Octyl Phthalate	10	NR	MISSING DATA	1410 UJB	470 UJB	470 UJB	470 UJB	470 UJB
Benzo (b) Fluoranthene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Benzo (k) Fluoranthene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Benzo (a) Pyrene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Indeno (1,2,3-cd) Pyrene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Dibenz (a,h) Anthracene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
Benzo (g,h,i,) Perylene	10	NR	MISSING DATA	30 U	10 U	10 U	10 U	10 U
DRYWT/DILUTION FACTOR		NR		3	1	1	1	1
Total Phenols (mg/l)		NR	NR	NR	0.009	0.005 U	0.005 U	0.011
Dissolved Iron (mg/l)		0.05 U	1.18	1.62	0.05 U	0.38	1.8	0.42
Dissolved Zinc (mg/l)		0.02	0.01	0.02	0.01 U	0.03	0.02	0.01 U
Total Cyanide (mg/l)		NR	MISSING DATA	NR	0.01 U	0.01 U	0.01 U	0.01 U
Undistilled Cyanide (mg/l)		NR	MISSING DATA	NR	0.01 U	0.01 U	0.01 U	0.01 U
TOC (mg/l)		4.9	NR	NR	1.2	4.2	4.9	4.7

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:		MESUSSXXDU/16	MEGXMW87TB/16
SAMPLE IDENTIFIER:		SW-04 Dup	TB-01
DATE OF SAMPLE COLLECTION:		3/30/88	3/29/88
UNITS:		ug/l	ug/l
VOLATILE ORGANIC COMPOUNDS	RL ug/l		
Chloromethane	10	10 U	10 U
Bromomethane	10	10 U	10 U
Vinyl Chloride	10	10 U	10 U
Chloroethane	10	10 U	10 U
Methylene Chloride	5	13 UJB	12 UJB
Acetone	10	47 UJB	99 UJB
Carbon Disulfide	5	5 U	5 U
1,1 - Dichloroethene	5	5 U	5 U
1,1 - Dichloroethane	5	5 U	5 U
trans-1,2 - Dichloroethene	5	5 U	5 U
Chloroform	5	5 U	5 U
1,2 - Dichloroethane	5	5 U	5 U
2-Butanone	10	33 UJB	70 UJB
1,1,1 - Trichloroethane	5	5 U	5 U
Carbon Tetrachloride	5	5 U	5 U
Vinyl Acetate	10	10 U	10 U
Bromodichloromethane	5	5 U	5 U
1,2 - Dichloropropane	5	5 U	5 U
Trans- 1,3 -Dichloropropene	5	5 U	5 U
Trichloroethene	5	5 U	5 U
Dibromochloromethane	5	5 U	5 U
1,1,2 - Trichloroethane	5	5 U	5 U
Benzene	5	5 U	5 U
Cis- 1,3 -Dichloropropene	5	5 U	5 U
2-Chloroethylvinylether	10	10 U	10 U
Bromoform	5	5 U	5 U
4-Methyl-2-Pentanone	10	10 UJB	10 UJB
2-Hexanone	10	10 UJB	10 U
Tetrachloroethene	5	5 U	5 U
1,1,2,2 - Tetrachloroethane	5	5 U	5 U
Toluene	5	25 UJB	25 UJB
Chlorobenzene	5	2.6 J	1.1 J
Ethylbenzene	5	5 U	5 U
Styrene	5	5 U	5 U
Total Xylenes	5	5 U	5 U
DRYWT/DILUTION FACTOR		1	1

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:	MESUSSXXDU/16		MEGXMW87TB/16
SAMPLE IDENTIFIER:	SW-04 Dup		TB-01
DATE OF SAMPLE COLLECTION:	3/30/88		3/29/88
UNITS:	ug/l		ug/l

SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/l		
Phenol	10	10 U	NR
bis(2-Chloroethyl)Ether	10	10 U	NR
2-Chlorophenol	10	10 U	NR
1,3 - Dichlorobenzene	10	10 U	NR
1,4 - Dichlorobenzene	10	10 U	NR
Benzyl Alcohol	10	10 U	NR
1,2 - Dichlorobenzene	10	10 U	NR
2-Methylphenol	10	10 U	NR
bis(2-Chloroisopropyl)Ether	10	10 U	NR
4-Methylphenol	10	10 U	NR
N-Nitroso-Di-n-Propylamine	10	10 U	NR
Hexachloroethane	10	10 U	NR
Nitrobenzene	10	10 U	NR
Isophorone	10	10 U	NR
2-Nitrophenol	10	10 U	NR
2,4 - Dimethylphenol	10	10 U	NR
Benzoic Acid	50	50 U	NR
bis(2-Chloroethoxy)Methane	10	10 U	NR
2,4 - Dichlorophenol	10	10 U	NR
1,2,4 - Trichlorobenzene	10	10 U	NR
Naphthalene	10	10 U	NR
4-Chloroaniline	10	10 U	NR
Hexacholorobutadiene	10	10 U	NR
4-Chloro-3-Methylphenol	10	10 U	NR
2-Methylnaphthalene	10	10 U	NR
Hexachlorocyclopentadiene	10	10 U	NR
2,4,6 - Trichlorophenol	10	10 U	NR
2,4,5 - Trichlorophenol	50	50 U	NR
2-Chloronaphthalene	10	10 U	NR
2-Nitroaniline	50	50 U	NR
Dimethyl Phthalate	10	10 U	NR
Acenaphthylene	10	10 U	NR
3-Nitroaniline	50	50 U	NR
Acenaphthene	10	10 U	NR
2,4 - Dinitrophenol	50	50 U	NR
4-Nitrophenol	50	50 U	NR
Dibenzofuran	10	10 U	NR
2,4 - Dinitrotoluene	10	10 U	NR
2,6 - Dinitrotoluene	10	10 U	NR
Diethylphthalate	10	10 U	NR
4-Chlorophenyl-Phenylether	10	10 U	NR
Fluorene	10	10 U	NR

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Groundwater, Quality Assurance, and Surface Water Samples

SAMPLE LOCATION:	MESUSSXXDU/16		MEGXMW87TB/16
SAMPLE IDENTIFIER:	SW-04 Dup		TB-01
DATE OF SAMPLE COLLECTION:	3/30/88		3/29/88
UNITS:	ug/l		ug/l
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/l		
4-Nitroaniline	50	50 U	NR
4,6 - Dinitro-2-Methylphenol	50	50 U	NR
N-Nitrosodiphenylamine (1)	10	10 UJB	NR
4-Bromophenyl-Phenylether	10	10 U	NR
Hexachlorobenzene	10	10 U	NR
Pentachlorophenol	50	50 U	NR
Phenanthrene	10	10 U	NR
Anthracene	10	10 U	NR
Di-n-Butylphthalate	10	10 U	NR
Fluoranthene	10	10 U	NR
Pyrene	10	10 U	NR
Butylbenzylphthalate	10	10 U	NR
3,3' - Dichlorobenzidine	20	20 U	NR
Benzo (a) Anthracene	10	10 U	NR
bis (2-Ethylhexyl) Phthalate	10	10 U	NR
Chrysene	10	10 U	NR
Di-n-Octyl Phthalate	10	470 UJB	NR
Benzo (b) Fluoranthene	10	10 U	NR
Benzo (k) Fluoranthene	10	10 U	NR
Benzo (a) Pyrene	10	10 U	NR
Indeno (1,2,3-cd) Pyrene	10	10 U	NR
Dibenz (a,h) Anthracene	10	10 U	NR
Benzo (g,h,i,) Perylene	10	10 U	NR
DRYWT/DILUTION FACTOR		1	NR
Total Phenols (mg/l)		0.005 U	NR
Dissolved Iron (mg/l)		0.33	NR
Dissolved Zinc (mg/l)		0.02	NR
Total Cyanide (mg/l)		0.01 U	NR
Undistilled Cyanide (mg/l)		0.01 U	NR
TOC (mg/l)		3.7	NR

TABLE B-4-6

17-Aug-89

FLAGGED DATA TABLE

PROJECT: NYSEG - Mechanicville Sediment Samples

SAMPLE LOCATION:	METUSSXX01/15	METISSXX02/15	METDSSXX04/11	METXSSXXDU/15
SAMPLE IDENTIFIER:	SD-01	SD-02	SD-04	01
DATE OF SAMPLE COLLECTION:	12/22/87	12/22/87	12/22/87	12/22/87
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg

VOLATILE ORGANIC COMPOUNDS	RL ug/kg				
Chloromethane	150	197 U	214 U	200 U	188 U
Bromomethane	150	197 U	214 U	200 U	188 U
Vinyl Chloride	150	197 U	214 U	200 U	188 U
Chloroethane	150	197 U	214 U	200 U	188 U
Methylene Chloride	150	197 U	214 U	200 U	188 U
Acetone	1500	1974 U	2143 U	2000 U	1875 U
Carbon Disulfide	60	79 U	86 U	80 U	75 U
1,1 - Dichloroethene	60	79 U	86 U	80 U	75 U
1,1 - Dichloroethane	60	79 U	86 U	80 U	75 U
trans-1,2 - Dichloroethene	60	79 U	86 U	80 U	75 U
Chloroform	60	79 U	86 U	80 U	75 U
1,2 - Dichloroethane	60	79 U	86 U	80 U	75 U
2-Butanone	300	395 U	429 U	400 U	375 U
1,1,1 - Trichloroethane	60	79 U	86 U	80 U	75 U
Carbon Tetrachloride	60	79 U	86 U	80 U	75 U
Vinyl Acetate	300	395 U	429 U	400 U	375 U
Bromodichloromethane	60	79 U	86 U	80 U	75 U
1,2 - Dichloropropane	60	79 U	86 U	80 U	75 U
Trans- 1,3 -Dichloropropene	60	79 U	86 U	80 U	75 U
Trichloroethene	60	79 U	86 U	80 U	75 U
Dibromochloromethane	60	79 U	86 U	80 U	75 U
1,1,2 - Trichloroethane	60	79 U	86 U	80 U	75 U
Benzene	60	79 U	86 U	80 U	75 U
Cis- 1,3 -Dichloropropene	60	79 U	86 U	80 U	75 U
2-Chloroethylvinylether	300	395 U	429 U	400 U	375 U
Bromoform	60	79 U	86 U	80 U	75 U
4-Methyl-2-Pentanone	300	395 U	429 U	400 U	375 U
2-Hexanone	300	395 U	429 U	400 U	375 U
1,1,2,2 - Tetrachloroethane	60	79 U	86 U	80 U	75 U
Tetrachloroethene	60	79 U	86 U	80 U	75 U
Toluene	60	79 U	86 U	80 U	75 U
Chlorobenzene	60	79 U	86 U	80 U	75 U
Ethylbenzene	60	79 U	87	80 U	75 U
Styrene	60	79 U	86 U	80 U	75 U
Total Xylenes	60	79 U	86 U	80 U	75 U
%SOLID		76	70	75	80
DRYWT/DIL FACTOR		1.32	1.43	1.33	1.25

TABLE B-4-6

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Sediment Samples

SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/kg	SAMPLE LOCATION: METUSSXX01/15 SAMPLE IDENTIFIER: SD-01 DATE OF SAMPLE COLLECTION: 12/22/87 UNITS: ug/kg	METISSXX02/15 SD-02 12/22/87 ug/kg	METDSSXX04/11 SD-04 12/22/87 ug/kg	METXSSXXDU/15 01 12/22/87 ug/kg
Phenol	330	460 U	430 U	450 U	400 U
bis(2-Chloroethyl)Ether	330	460 U	430 U	450 U	400 U
2-Chlorophenol	330	460 U	430 U	450 U	400 U
1,3 - Dichlorobenzene	330	460 U	430 U	450 U	400 U
1,4 - Dichlorobenzene	330	460 U	430 U	450 U	400 U
Benzyl Alcohol	330	460 U	430 U	450 U	400 U
1,2 - Dichlorobenzene	330	460 U	430 U	450 U	400 U
2-Methylphenol	330	460 U	430 U	450 U	400 U
bis(2-Chloroisopropyl)Ether	330	460 U	430 U	450 U	400 U
4-Methylphenol	330	460 U	*	450 U	400 U
N-Nitroso-Di-n-Propylamine	330	460 U	430 U	450 U	400 U
Hexachloroethane	330	460 U	430 U	450 U	400 U
Nitrobenzene	330	460 U	430 U	450 U	400 U
Isophorone	330	460 U	430 U	450 U	400 U
2-Nitrophenol	330	460 U	430 U	450 U	400 U
2,4 - Dimethylphenol	330	460 U	430 U	450 U	400 U
Benzoic Acid	1600	2300 U	2200 U	2300 U	2000 U
bis(2-Chloroethoxy)Methane	330	460 U	430 U	450 U	400 U
2,4 - Dichlorophenol	330	460 U	430 U	450 U	400 U
1,2,4 - Trichlorobenzene	330	460 U	430 U	450 U	400 U
Naphthalene	330	460 U	480	450 U	*
4-Chloroaniline	330	460 U	430 U	450 U	400 U
Hexacholorobutadiene	330	460 U	430 U	450 U	400 U
4-Chloro-3-Methylphenol	330	460 U	430 U	450 U	400 U
2-Methylnaphthalene	330	460 U	*	450 U	400 U
Hexachlorocyclopentadiene	330	460 U	430 U	450 U	400 U
2,4,6 - Trichlorophenol	330	460 U	430 U	450 U	400 U
2,4,5 - Trichlorophenol	1600	2300 U	2200 U	2300 U	2000 U
2-Chloronaphthalene	330	460 U	430 U	450 U	400 U
2-Nitroaniline	1600	2300 U	2200 U	2300 U	2000 U
Dimethyl Phthalate	330	460 U	430 U	450 U	400 U
Acenaphthylene	330	460 U	*	450 U	400 U
3-Nitroaniline	1600	2300 U	2200 U	2300 U	2000 U
Acenaphthene	330	460 U	*	450 U	400 U
2,4 - Dinitrophenol	1600	2300 U	2200 U	2300 U	2000 U
4-Nitrophenol	1600	2300 U	2200 U	2300 U	2000 U
Dibenzofuran	330	460 U	430 U	450 U	400 U
2,4 - Dinitrotoluene	330	460 U	430 U	450 U	400 U
2,6 - Dinitrotoluene	330	460 U	430 U	450 U	400 U
Diethylphthalate	330	460 U	430 U	450 U	400 U
4-Chlorophenyl-Phenylether	330	460 U	430 U	450 U	400 U
Fluorene	330	460 U	*	450 U	400 U

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Sediment Samples

SAMPLE LOCATION:		METUSSXX01/15	METISSXX02/15	METDSSXX04/11	METXSSXXDU/15
SAMPLE IDENTIFIER:		SD-01	SD-02	SD-04	01
DATE OF SAMPLE COLLECTION:		12/22/87	12/22/87	12/22/87	12/22/87
UNITS:		ug/kg	ug/kg	ug/kg	ug/kg
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/kg				
4-Nitroaniline	1600	2300 U	2200 U	2300 U	2000 U
4,6 - Dinitro-2-Methylphenol	1600	2300 U	2200 U	2300 U	2000 U
N-Nitrosodiphenylamine (1)	330	460 U	430 U	450 U	400 U
4-Bromophenyl-Phenylether	330	460 U	430 U	450 U	400 U
Hexachlorobenzene	330	460 U	430 U	450 U	400 U
Pentachlorophenol	1600	2300 U	2200 U	2300 U	2000 U
Phenanthrene	330	*	900	*	*
Anthracene	330	460 U	*	450 U	400 U
Di-n-Butylphthalate	330	460 U	430 U	450 U	400 U
Fluoranthene	330	*	1000	*	*
Pyrene	330	*	1100	*	*
Butylbenzylphthalate	330	460 U	*	450 U	400 U
3,3' - Dichlorobenzidine	660	910 U	870 U	900 U	790 U
Benzo (a) Anthracene	330	*	530	450 U	400 U
bis (2-Ethylhexyl) Phthalate	330	460 U	*	450 U	400 U
Chrysene	330	*	580	450 U	400 U
Di-n-Octyl Phthalate	330	460 U	430 U	450 U	400 U
Benzo (b) Fluoranthene	330	460 U	940 +	450 U	400 U
Benzo (k) Fluoranthene	330	460 U	+	450 U	400 U
Benzo (a) Pyrene	330	460 U	590	450 U	400 U
Indeno (1,2,3-cd) Pyrene	330	460 U	*	450 U	400 U
Dibenz (a,h) Anthracene	330	460 U	*	450 U	400 U
Benzo (g,h,i,) Perylene	330	460 U	*	450 U	400 U
%SOLIDS:		73	74.6	73.1	80.3
DRYWT/DILUTION FACTOR		1.37	1.34	1.36	1.25
Total Phenols (ppm)		1.3	2.3	1.2	0.68
Dissolved Iron (ppm)		7700	8400	8700	7100
Dissolved Zinc (ppm)		27	45	25	28
Total Cyanide (ppm)		1 U	1.3	1 U	1 U
Undistilled Cyanide		N/A	N/A	N/A	N/A
TOC (dry weight)		1.2 %	3.2 %	1.8 %	1.1 %

Notes:
** = Visible Product
* = Trace concentrations detected below the reporting limits.
+ = Benzo(b)Fluoranthene and Benzo(k)Fluoranthene coeluted.

TABLE B-4-6

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Sediment Samples

SAMPLE LOCATION:	METUSSXX01/16	METUSSXX02/16	METUSSXX04/12	METUSSXXDU/16
SAMPLE IDENTIFIER:	SD-01	SD-02	SD-04	SD-DUP
	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
DATE OF SAMPLE COLLECTION:	3/30/88	3/30/88	3/30/88	3/30/88
SAMPLE DEPTH (Ft.):				
UNITS:	ug/kg	ug/kg	ug/kg	ug/kg

VOLATILE ORGANIC COMPOUNDS	RL ug/kg				
Chloromethane	10	1300 U	1400 U	1300 U	1300 U
Bromomethane	10	1300 U	1400 U	1300 U	1300 U
Vinyl Chloride	10	1300 U	1400 U	1300 U	1300 U
Chloroethane	10	1300 U	1400 U	1300 U	1300 U
Methylene Chloride	5	45000 R	~ 54000 R	48000 R	36000 R
Acetone	10	62000 UJB	68000 UJB	61000 UJB	60000 UJB
Carbon Disulfide	5	640 U	710 U	640 U	630 U
1,1 - Dichloroethene	5	640 U	710 U	640 U	630 U
1,1 - Dichloroethane	5	640 U	710 U	640 U	630 U
1,2 - Dichloroethene (Total)	5	640 U	710 U	640 U	630 U
Chloroform	5	640 U	710 U	640 U	630 U
1,2 - Dichloroethane	5	640 U	710 U	640 U	630 U
2-Butanone	10	8400 R	9100 R	9000 R	8400 R
1,1,1 - Trichloroethane	5	640 U	710 U	640 U	630 U
Carbon Tetrachloride	5	640 U	710 U	640 U	630 U
Vinyl Acetate	10	1300 U	1400 U	1300 U	1300 U
Bromodichloromethane	5	640 U	710 U	640 U	630 U
1,2 - Dichloropropane	5	640 U	710 U	640 U	630 U
Trans- 1,3 -Dichloropropene	5	640 U	710 U	640 U	630 U
Trichloroethene	5	640 U	710 U	640 U	630 U
Dibromochloromethane	5	640 U	710 U	640 U	630 U
1,1,2 - Trichloroethane	5	640 U	710 U	640 U	630 U
Benzene	5	640 U	190 J	640 U	630 U
Cis- 1,3 -Dichloropropene	5	640 U	710 U	640 U	630 U
2-Chloroethylvinylether	10	1300 U	1400 U	1300 U	1300 U
Bromoform	5	640 U	710 U	640 U	630 U
4-Methyl-2-Pentanone	10	1300 U	1400 U	1300 U	1300 U
2-Hexanone	10	1300 U	1400 U	1300 U	1300 U
Tetrachloroethene	5	640 U	710 U	640 U	630 U
1,1,2,2 - Tetrachloroethane	5	640 U	710 U	640 U	630 U
Toluene	5	4300 UJB	4800 UJB	4300 UJB	4300 UJB
Ethylbenzene	5	640 U	710 U	640 U	630 U
Chlorobenzene	5	640 U	710 U	640 U	630 U
Styrene	5	640 U	710 U	640 U	630 U
Total Xylenes	5	640 U	710 U	640 U	630 U
%SOLID		78.2	70.8	78.4	79.5
DRYWT/DIL FACTOR		130	140	130	130

FLAGGED DATA TABLE PROJECT: NYSEG - Mechanicville Sediment Samples

SAMPLE LOCATION:		METUSSXX01/16	METUSSXX02/16	METUSSXX04/12	METUSSXXDU/16
SAMPLE IDENTIFIER:		SD-01	SD-02	SD-04	SD-DUP
		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
DATE OF SAMPLE COLLECTION:		3/30/88	3/30/88	3/30/88	3/30/88
SAMPLE DEPTH (Ft.):					
UNITS:		ug/kg	ug/kg	ug/kg	ug/kg
SEMI-VOLATILE ORGANIC COMPOUNDS	RL ug/kg				
Phenol	330	850 U	2300 U	850 U	860 U
bis(2-Chloroethyl)Ether	330	850 U	2300 U	850 U	860 U
2-Chlorophenol	330	850 U	2300 U	850 U	860 U
1,3 - Dichlorobenzene	330	850 U	2300 U	850 U	860 U
1,4 - Dichlorobenzene	330	850 U	2300 U	850 U	860 U
Benzyl Alcohol	330	850 U	2300 U	850 U	860 U
1,2 - Dichlorobenzene	330	850 U	2300 U	850 U	860 U
2-Methylphenol	330	850 U	2300 U	850 U	860 U
bis(2-Chloroisopropyl)Ether	330	850 U	2300 U	850 U	860 U
4-Methylphenol	330	850 U	2300 U	850 U	860 U
N-Nitroso-Di-n-Propylamine	330	850 U	2300 U	850 U	860 U
Hexachloroethane	330	850 U	2300 U	850 U	860 U
Nitrobenzene	330	850 U	2300 U	850 U	860 U
Isophorone	330	850 U	2300 U	850 U	860 U
2-Nitrophenol	330	850 U	2300 U	850 U	860 U
2,4 - Dimethylphenol	330	850 U	2300 U	850 U	860 U
Benzoic Acid	1600	4100 U	11000 U	4100 U	4200 U
bis(2-Chloroethoxy)Methane	330	850 U	2300 U	850 U	860 U
2,4 - Dichlorophenol	330	850 U	2300 U	850 U	860 U
1,2,4 - Trichlorobenzene	330	850 U	2300 U	850 U	860 U
Naphthalene	330	850 U	2300 U	850 U	860 U
4-Chloroaniline	330	850 U	2300 U	850 U	860 U
Hexacholorobutadiene	330	850 U	2300 U	850 U	860 U
4-Chloro-3-Methylphenol	330	850 U	2300 U	850 U	860 U
2-Methylnaphthalene	330	850 U	2300 U	850 U	860 U
Hexachlorocyclopentadiene	330	850 U	2300 U	850 U	860 U
2,4,6 - Trichlorophenol	330	850 U	2300 U	850 U	860 U
2,4,5 - Trichlorophenol	1600	4100 U	11000 U	4100 U	4200 U
2-Chloronaphthalene	330	850 U	2300 U	850 U	860 U
2-Nitroaniline	1600	4100 U	11000 U	4100 U	4200 U
Dimethyl Phthalate	330	850 U	2300 U	850 U	860 U
Acenaphthylene	330	850 U	2300 U	850 U	860 U
2,6 - Dinitrotoluene	330	850 U	2300 U	850 U	860 U
3-Nitroaniline	1600	4100 U	11000 U	4100 U	4200 U
Acenaphthene	330	850 U	2300 U	850 U	860 U
2,4 - Dinitrophenol	1600	4100 U	11000 U	4100 U	4200 U
4-Nitrophenol	1600	4100 U	11000 U	4100 U	4200 U
Dibenzofuran	330	850 U	2300 U	850 U	860 U
2,4 - Dinitrotoluene	330	850 U	2300 U	850 U	860 U
Diethylphthalate	330	850 U	2300 U	850 U	860 U
4-Chlorophenyl-Phenylether	330	850 U	2300 U	850 U	860 U
Fluorene	330	850 U	2300 U	850 U	860 U

TABLE B-4-6

FLAGGED DATA TABLE — PROJECT: NYSEG - Mechanicville Sediment Samples

SAMPLE LOCATION:		METUSSXX01/16	METUSSXX02/16	METUSSXX04/12	METUSSXXDU/16
SAMPLE IDENTIFIER:		SD-01	SD-02	SD-04	SD-DUP
		SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
DATE OF SAMPLE COLLECTION:		3/30/88	3/30/88	3/30/88	3/30/88
SAMPLE DEPTH (Ft.):					
UNITS:		ug/kg	ug/kg	ug/kg	ug/kg
SEMI-VOLATILE ORGANIC COMPOUNDS (Cont.)	RL ug/kg				
4-Nitroaniline	1600	4100 U	11000 U	4100 U	4200 U
4,6 - Dinitro-2-Methylphenol	660	4100 U	11000 U	4100 U	4200 U
N-Nitrosodiphenylamine (1)	330	850 U	2300 U	850 U	860 U
4-Bromophenyl-Phenylether	330	850 U	2300 U	850 U	860 U
Hexachlorobenzene	330	850 U	2300 U	850 U	860 U
Pentachlorophenol	1600	4100 U	11000 U	4100 U	4200 U
Phenanthrene	330	850 U	1900 J	850 U	860 U
Anthracene	330	850 U	2300 U	850 U	860 U
Di-n-Butylphthalate	330	850 U	2300 U	850 U	860 U
Fluoranthene	330	850 U	2300 U	850 U	860 U
Pyrene	330	850 U	2300 U	850 U	860 U
Butylbenzylphthalate	330	850 U	2300 U	850 U	860 U
3,3' - Dichlorobenzidine	660	1700 U	4600 U	1700 U	1700 U
Benzo (a) Anthracene	330	850 U	2300 U	850 U	860 U
Chrysene	330	850 U	2300 U	850 U	860 U
bis (2-Ethylhexyl) Phthalate	330	850 U	2300 U	850 U	860 U
Di-n-Octyl Phthalate	330	25000	2000 JB	1800 JB	520 JB
Benzo (b) Fluoranthene	330	850 U	2300 U	850 U	860 U
Benzo (k) Fluoranthene	330	850 U	2300 U	850 U	860 U
Benzo (a) Pyrene	330	850 U	2300 U	850 U	860 U
Indeno (1,2,3-cd) Pyrene	330	850 U	2300 U	850 U	860 U
Dibenz (a,h) Anthracene	330	850 U	2300 U	850 U	860 U
Benzo (g,h,i,) Perylene	330	850 U	2300 U	850 U	860 U
%SOLIDS:		78.2	70.8	78.4	79.5
DRYWT/DILUTION FACTOR		2.58	6.97	2.58	2.6

APPENDIX B-5

SOLUBILITY DATA

SOLUBILITIES OF PAHs IN WATER (mg/ℓ)[1]

Compound	Verschueren[2]	EPA Treatability Manual[3]
Acenaphthene	--	3.42
Acenaphthylene	3.93	3.93
Anthracene	1.29	0.073
Benzo(a)anthracene	0.044 at 24°C	0.014
Benzo(a)pyrene	0.003 at 20°C	0.0038
Benzo(b)fluoranthene	--	NA[4]
Benzo(k)fluoranthene	--	0.00055
Benzo(g,h,i)perylene	0.00026	0.00026
Chrysene	0.006	0.002
Dibenzo(a,h)anthracene	--	0.0005
Fluoranthene	0.120 at 24°C	0.26
Fluorene	1.9	1.98
Indeno(1,2,3-cd)pyrene	--	0.62
Naphthalene	30.0 at 20°C	34.4
Phenanthrene	0.816 at 21°C	1.29
Pyrene	0.032 at 24°C	0.14

[1] All values are calculated at 25°C unless otherwise noted.

Verschueren, K. Handbook of Environmental Data on Organic Chemicals, Van Nostrand Reinhold Company, New York, New York 1977.

USEPA, Treatability Manual Volume I: Treatability Data, Office of Research and Development, Washington, DC EPA-600/2-82-001a. September 1981 (Revised).

NA - Not available.