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Work Plan

Utility Manufacturing/Wonder King Site
Site ID #1-30-043H

700-712 Main Street
Westbury, NY 11590

Prepared for:
New York State Department of Environmental Conservation
Division of Environmental Remediation
50 Wolf Road
Albany, NY

Revised:
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November 18, 1997

1.0 Introduction

The Utility Manufacturing/Wonder King site is located at 700-712 Main Street, in the New Cassel Industrial Area, Village of Westbury, Town of North Hempstead, Nassau County, New York (see Figure 1). The site has been designated a Class 2 Site by the NYSDEC and listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites. Records indicate that hazardous materials were discharged into cesspools and drywells on the property, and cleaned out by the current owner during 1989 and 1990. Groundwater upgradient and downgradient of the site is contaminated with volatile organic compounds.

The following report and work plan address only that property which is currently occupied by Utility Manufacturing Co., Inc. (700-712 Main Street). The property is owned by Nest Equities Co. Inc. and is located in the eastern sector of the New Cassel Industrial Area.

The purpose of this investigation is to determine if the site is contaminated with volatile organic compounds and evaluate the site's impact, if any, on the groundwater under the site. To assemble the information necessary to determine if the site is a source of contamination a Focused Remedial Investigation (FRI) will be performed that will utilize the data that have been accumulated during previous investigations by the state, Nassau County and Anson Environmental Ltd.

This investigation will be implemented by Anson Environmental Ltd. (AEL) with oversight by the NYSDEC.

2.0 Site Description

The Utility Manufacturing/Wonder King (Figure 2) site is approximately one acre in size and is comprised of one building with pavement on three of the four sides, a fence to the west and south sides with a gate on the north. Trailers are located along the fence on the southern perimeter for the storage of packaging materials, plastic product containers and old machinery.

The original one-story brick building located at 700 Main Street was constructed in 1967. The property was leased to Radalabs. Radalabs manufactured telephones and communications equipment for U.S. Department of Defense programs. Radalabs occupied the building for five (5) years and sublet the building to International Textile Machinery (ITM). ITM rebuilt and sold textile knitting machinery. Utility Manufacturing became the subleasee to ITM in October of 1975. In February of 1976, Utility Manufacturing moved in and ITM moved out of the building. Utility purchased the building in March of 1978. In October of 1975, Utility Manufacturing had acquired the company, Wonder King, and sold products under the name of Utility/Wonder King. The second story addition to the building was built in 1989.

Currently, the Utility Manufacturing facility consists of a 20,000 square foot main floor manufacturing and storage facility, a 10,000 square foot second floor for offices, a technical laboratory, silk screening operation and storage area. This company manufactures a variety of cleaning and lubricating products primarily for commercial and industrial customers. There are no floor drains in the building.

The company utilizes a number of hazardous materials which are inventoried annually for the Nassau County Department of Health (NCDH). Periodic inspections are made of the facility by NCDH. At no time has Utility Manufacturing been notified of any violations by the NCDH. The company has a reputation with NCDH for maintaining accurate and complete chemical inventory records. The annual chemical inventory sheets from 1989 to present will be included in the Focused Remedial Investigation Report.

Utility Manufacturing utilizes Safety Kleen for disposal and recycling of the mineral spirits used in the cleaning of the silk screens. This is the only waste chemical produced by Utility Manufacturing.

There are two 4000-gallon underground storage tanks that are registered with NCDH. The raw materials which are stored in tanks within the facility are also registered and inspected periodically. The tanks were successfully tightness tested in 1996. There is an explosion-proof room with air-driven mixers and filling machines for the methyl ethyl ketone products. The only raw material that is permitted to be stored in 55-gallon drums on pallets in the rear of the facility is an inert, Vaseline-type product which is used in the manufacture of solder flux.

The plant manager's office is located in an elevated mezzanine above the manufacturing area. Most of the machinery is located along the walls with finished product and raw material storage in the center of the space.

2.1 Site History

As part of the development of the work plan, site documents and records from Nassau County Department of Health (NCDH) and the NYSDEC were reviewed. Information collected from these sources will be included in the FRI report.

2.2 Previous Investigations

NCDH Business Inspections. In 1977, NCDH began inspecting businesses located with the NCIA. The NCDH identified 55 facilities that used chemicals in quantities high enough to require permits for handling and storage of the chemical. Utility Manufacturing produces an annual chemical usage inventory and is inspected annually by the NCDH for compliance with environmental regulations.

Investigation of Contaminated Aquifer Segments, Nassau County, NCDH, June 1986. In 1985, as part of a county-wide groundwater investigation, NCDH conducted an investigation of NCIA to evaluate the quality of the groundwater. The investigation, conducted by Dvirka & Bartulucci, for Nassau County, showed groundwater contamination in 36 of 39 wells tested. The contamination plume was migrating toward three public water supply wells located downgradient and within 800 feet of NCIA. Based on these findings, the NYSDEC designated the entire NCIA as an Inactive Hazardous Waste Disposal Site, Class 2.

Private Investigation with NCDH oversight. This property was subject to an investigation of contamination in the sanitary system in 1988. Contamination of an on-site cesspool was discovered when the sewer connection was initiated. Sampling was conducted by H2M Group and,

with the concurrence of NCDH, a remediation plan was implemented for cleanup of the cesspool and the on-site drywells. The cleanup was completed to the satisfaction of NCDH in 1990.

NYS Superfund Contract Site Investigation NCIA, NYSDEC/LMS, February 1995. The NYSDEC, through its consultant, LMS, performed on and off-site soil and groundwater sampling. The on-site sampling did not identify any soil contamination with volatile organic compounds. The subsurface soil samples were collected in or near several leach pools on the property. The on-site groundwater sampling did identify the presence of volatile organic compounds upgradient, under the site and downgradient. As a result of this investigation, the subject property was designated a "P" site, indicating further investigation was required.

One of the findings of the groundwater investigation presented on page 4-3 of the February 1995 LMS report was: "The water table at ANSON MW-9, in the southeast quadrant of the site [NCIA] was anomalously high during both rounds. It was determined during the Geoprobe survey that groundwater is perched on a clayey silt deposit that underlies this area, first encountered at a depth of 45 feet in GP-1 (located 50 ft west of ANSON MW-9). This unit persisted to a depth of approximately 60 ft, then graded downward to a fine sand by 70 ft. As such, the unit is at least 15 ft thick; no soil samples were retrieved from above the 45-47 ft interval. No such perched water conditions were observed for the rest of the [NCIA] site." LMS figure 4-2, illustrates this perched groundwater condition. (see Figure 3). This formation may create a localize northwesterly component to the groundwater flow.

Private Investigation (1995). Given the "P" site designation, Utility Manufacturing commissioned another soil and groundwater investigation of the subject property. The work plan was reviewed by the NYSDEC and revised in accordance with the NYSDEC comments (see Appendix A). The soil and groundwater sampling was conducted in accordance with the work plan during October 1995. Eighteen soil and eighteen groundwater samples were submitted for laboratory analyses during this investigation. Table 1 summarizes these laboratory data. The subsurface soil sampling identified one soil sample at 10 feet below grade in the rear of the building with 46 parts per billion of tetrachloroethene (PCE). This concentration is well below the NYSDEC TAGM soil cleanup objective of 1400 ppb and is under a fully paved area, thereby minimizing the risk.

NYS Superfund Contract Multisite PSA Report NCIA, NYSDEC/LMS, March 1996. Additional investigation was conducted by LMS on behalf of the NYSDEC. There were no additional soil samples collected on the subject property. The resultant report reflects the soil sampling results (no detectable volatile organic compounds) of the previous study.

On page 6-9 of the March 1996 LMS report, the following is stated: "The plume appears to be emerging from the southern end of the 700-712 Main Street property, and the downgradient flow may be affected by the suspected perched water seen at ANSON MW-9."

2.3 Site Geology

The site is situated on outwash plain deposits south of the Ronkonkoma recessional moraine. These deposits consist of a mixture of coarse sand and gravel and constitute the sediments of the Upper Glacial Aquifer.

Figure 4 is a generalized geological cross-section trending north to south across Long Island which shows a southward sloping wedge of unconsolidated deposits unconformably overlying a crystalline bedrock of metamorphic and igneous rock.

As illustrated in the figure, there are three main hydraulically connected aquifers underlying Long Island: the Upper Glacial, Magothy and Lloyd Aquifers. The unconsolidated deposits are late Cretaceous, Pleistocene and Recent in age. The total thickness of the unconsolidated deposits under the site is approximately 1,000 feet.

Upper Cretaceous Series

Raritan Formation - The Raritan formation of Late Cretaceous age is the deepest formation of unconsolidated deposits in the site area. It rests directly on the crystalline bedrock and is unconformably overlain by the Magothy formation. The Raritan formation occurs beneath the entire area of Long Island but does not outcrop. Formation thickness ranges from 300 to 600 feet and is approximately 415 feet thick below the site. The formation is divided into a lower unit (the Lloyd sand member) and an upper unit (Raritan clay).

The clay member functions as an aquitard (confining unit), successfully separating the Lloyd sand member from the overlying Magothy. The clay member also retards the movement of salt water from the Lloyd sand

member on southeastern Long Island. At the site Raritan clay is approximately 175 feet thick.

Recent Deposits

The Recent deposits, not including topsoil and artificial fill, occur beneath bays, in marshlands, on barrier beaches and in stream valleys. Recent deposits are the uppermost and stratigraphically the youngest sediments and are immediately underlain by outwash. The Recent deposits reach a maximum thickness of about 40 feet and are too thin to be represented on geological cross-sections.

Site Specific Geological Information

South of the Utility Manufacturing property, a geological anomaly was identified by LMS in 1993. Depth to water measurements taken in 1993, 1995 and 1997 confirm the presence of perched water on a clay layer that serves as an aquitard. The boring logs for the construction of monitoring well ANSON MW-9 confirm the presence of clay beginning at 38 feet below grade and continuing to 55 feet. At the time of the installation of ANSON MW-9 (1991), groundwater was encountered at 48 feet below grade.

LMS in their 1995 and 1996 reports identified a mound (Figure 3) that directs the flow of groundwater in a northeasterly direction toward the Utility Manufacturing/Wonder King site.

3.0 Scope of the Focused Remedial Investigation

The purpose of the Focused Remedial Investigation (FRI) is:

-to collect lithological information regarding the site,
-to collect soil samples,
-to determine if there is perched water under the site,
-to identify both the quality of the groundwater and
-to determine the direction of groundwater flow

As part of the FRI report, a summary will be prepared of the findings from environmental investigations conducted by NYSDEC, H2M and AEL.

The field investigation will be performed in two phases. Phase One will include the collection of soil samples which will be classified lithologically, installation of two groundwater monitoring wells and sampling of the two

new wells, as well as, three existing monitoring wells. The direction of groundwater flow will be calculated using these five wells.

Based on the findings of the Phase One investigation, the scope of Phase Two will be determined and a work plan developed. The following is a description of the Phase One investigation.

3.1 Soils Investigation

The purpose of this investigation is to gather lithological data regarding the site and to determine if there is a silty clay layer (aquitard) that influences the flow of the groundwater on site. The proposed soil boring locations are designated on Figure 5. The northern soil boring (SB #1) will be conducted through the former cesspool location as per NCDH. One soil boring (SB #2) will be installed on the eastern side of the property and the third (SB #3) will be located in the southwest corner, as close to the property line as possible given the locations of the trailers.

Continuous split spoons will be taken every two feet from the ground surface to the groundwater table (approximately 66 feet below the surface). A sample will be collected at each interval for VOC and Semi-VOC analysis and placed in a sample cooler at 4 degrees C. Based upon the results of the field headspace screening, the two samples with the highest PID reading, from each of the three proposed soil borings will be sent to the NYSDOH ELAP CLP certified laboratory for analysis. Should any waste materials or sludges be encountered during the soil sample, a sample will be collected for analysis.

Upon recovery of each split spoon, a portion of the soil sample will be placed, using a stainless steel spatula, in a wide mouth jar, supplied by the laboratory. The jar will be covered with foil and capped tightly, maintaining a headspace in the jar. A subsample from each split spoon will be packed tightly into a 40 ml. VOA vial. The foil covered jars will be stored at ambient soil temperature, to avoid condensation buildup within the jar. After fifteen to twenty (15-20) minutes, the cap will be removed and the PID probe will be gently pushed through the foil to obtain a reading. The PID readings will be recorded in the field log book. PID readings will determine which split spoon samples will be sent to the laboratory for analysis.

Following the collection of each soil sample, the sample will be classified using the unified soil classification chart and boundary classification from drawing 103-D-347 (Tables 2 and 3).

After the collection of a soil sample, the split spoon sampler will be decontaminated following the protocol identified in the Quality Assurance/Quality Control section.

3.2 Groundwater Investigation

The purpose of the groundwater investigation is to determine the direction of groundwater flow. The impact of site operations will be evaluated to determine if the site is a source of groundwater contamination.

Two of the soil borings (SB #2 and SB #3) will be constructed into new groundwater monitoring wells, MW #3 and MW #4 (Figure 5). If perched water is encountered, a monitoring well will be installed into this waterbody, then an additional well will be installed into the Upper Glacial aquifer adjacent to the perched water monitoring well.

Groundwater samples will be collected from the new wells plus from the existing two wells, MW#1 which is upgradient of the subject property and MW#2 which is located on the northern side of the property. Laboratory analysis will be for volatile organic compounds via EPA method 8260 with NYSDEC ASP Category B deliverables.

The laboratory data will be compared to applicable rules and regulations.

Depth to water measurements will be collected to determine the direction of groundwater flow using MW#1, MW#2, ANSON MW-8, ANSON MW-9 and the two new monitoring wells installed at Utility.

3.2.1 Groundwater Monitoring Well Installation - Ten feet of screen will be installed from 55 to 65 feet below grade. The wells will be constructed per the NYSDEC protocol for the groundwater monitoring wells described in the Appendix B. The NYSDEC comment letter, dated November 17, 1997, is also included as it specifies two requirements for monitoring well installation to be incorporated into the scope of field work.

Following the installation of the monitoring wells, the new wells will be developed by pumping water from them for a minimum of thirty minutes. This pumping will be accomplished using a Grundfos centrifugal pump. The development water will be stored in drums until the drums are sampled for disposal classification. Then, this water will be properly disposed of off site. To document this disposal, waste manifests will be provided illustrating compliance with all ARARs.

The existing monitoring wells will be purged of three to five volumes of water using a Grundfos centrifugal pump. The development water will be stored in drums until sampling for disposal classification. Then, the water will be properly disposed of off site.

3.2.2 Groundwater Sampling - Prior to sampling the monitoring wells, each well will be purged of at least three well volumes. A centrifugal pump with a flow rate of less than five gallons per minutes will be used to purge the wells. Each well will be purged until either the turbidity is reduced to 50 NTUs or purging has been accomplished for thirty minutes. This purge water will be placed in 55-gallon drums and contained on site until the proper disposal method is identified. Samples will be collected using a dedicated bailer.

The centrifugal pump will be decontaminated following its use in each well. The development and purge waters for each well will be placed in labeled drum.

3.3 Laboratory Analysis - Groundwater samples and quality control blanks (trip and field blanks) collected will be kept in an ice-filled cooler and delivered to Accredited Laboratories, a New York State certified laboratory for analysis via EPA method 8260 with NYSDEC ASP Category B deliverables.

3.4 Land Survey - The surface elevations will be measured for all four wells plus ANSON MW#9 and ANSON MW#8. This measuring will be performed by William Welsh, a NYS licensed land surveyor and professional engineer. All elevations will be measured within less than 0.01 feet and reported based upon USGS mean sea level. The elevations will be incorporated into the Nassau County coordinate system.

During this survey, drywells, monitoring wells, building corners, property lines and other major land marks will be noted. The site mapping shall be to scale of not greater than 1" = 30'.

3.5 Focused Remedial Investigation Report

Once the above data are available, they will be evaluated vis-à-vis data previously assembled by H2M, NYSDEC and AEL. Based on these data, recommendations will be made for the next step of the investigation.

A Phase Two work plan will be developed, if necessary, for the next step of the project.

This report is organized in general accordance with the NYSDEC's Technical and Administrative Guidance Memorandum HWR-89-4025 (NYSDEC, 1989) and the USEPA's Office of Solid Waste and Emergency Response Directive 9355.3001 (USEPA, 1988).

4.0 Project Schedule

Two weeks following approval of the above plan, AEL will begin sampling on the site. The soil borings will take approximately three to five days. The soil samples will be submitted to the laboratory for VOC and semi-VOC analysis. The standard laboratory turnaround time for analytical work is two to three weeks. Upon receipt of the laboratory data, the groundwater sampling protocol will be determined.

One week following the installation of the groundwater monitoring wells, the wells will be developed. One week following receipt of the soil sampling data, groundwater samples will be collected for laboratory analysis from the new and existing monitoring wells. Standard laboratory turnaround for analytical work is two to three weeks. Three weeks following receipt of laboratory analytical data, the FRI Report will be submitted describing the findings of Phase One of the investigation.

NYSDEC will be notified one week prior to beginning field work.

5.0 Quality Assurance/Quality Control Plan

5.1 Project Identification

Project Name:	Utility Manufacturing/Wonder King Focused Remedial Investigation Site #1-30-043H
Project Requested by:	New York State Department of Environmental Conservation
Project Manager:	Fritzi Mazzola Gros-Daillon (Anson Environmental Ltd.)

QA Officer:	Dean Anson II (Anson Environmental Ltd.)
Field Operations Manager:	Jeff Bohlen (Anson Environmental Ltd.)

The responsibilities of the Quality Assurance Officer include the development of the sampling and analytical portion of the Quality Assurance Project Plan. The QAO or his designee shall conduct periodic field and sampling audits, interface with the analytical laboratory to make requests and resolve problems, interface with the data validator and develop a project specific data usability report. Documentation of the 40-hour OSHA safety training course and 8 hour refresher is included in the appendix with the resumes (see Appendix C).

5.2 Objective and Scope

The purpose of this investigation is to collect the necessary information and data to define the lithological and groundwater conditions at 700-712 Main Street. The goal will be achieved by conducting a field screening and sampling program with soil and groundwater sample collection for laboratory analysis as part of this investigation. The information obtained will be utilized to determine the areas of concern at the site.

5.3 Monitoring Parameters

Head space readings will be obtained from soil samples collected using a split spoon sampler using a portable field organic vapor meter, OVM 580B and/or PID. Readings obtained will be used in the field as a screening method for the property.

5.4 Data Quality Requirements and Assessment

Accuracy and precision requirements will be addressed for all the data generated. Accuracy, the ability to obtain a true value, is monitored through the use of field and method blanks, spikes and standards and compared to federal and state regulations and guidelines. This will reflect the impact of matrix interferences. Precision, the ability to replicate a value, is monitored through duplicate samples. It is assessed for each matrix and reported with a method reference number. Corrective actions and documentation for sub-standard recoveries or sub-standard precision must be performed by a laboratory.

Data representativeness, comparability and completeness must also be considered when discussing data quality requirements.

- Representativeness is a quality characteristic. It refers to the extent to which a sample is representative of the media and actual conditions at the sampling location. Sampling protocols have been developed to ensure that the samples collected are representative of the respective media (air and/or soil).

- Comparability addresses the internal consistency of measurements, i.e., the use of standard methodology, consistent calibration ranges in the proper instrumentation. The data generated must be comparable to similar data generated by other organizations.

- Completeness is the percentage of measurements which are considered valid. This is evaluated by comparing project objectives with the proposed data acquisition.

Trip blanks, field blanks and duplicate samples will be used to verify the quality of the field sampling and laboratory results. The analytical laboratory will provide the demonstrated analyte-free deionized water and will keep the required records for auditing purposes. The trip blanks will be submitted at a rate of one per cooler of samples transported to the laboratory. The field blanks will be collected for each type of sampling equipment for each day of sampling. The matrix duplicates will be analyzed at a rate of one per twenty samples submitted for each medium. A brief description of each follows.

Trip blank: a sample of demonstrated analyte-free deionized water will be put into a sample bottle by the laboratory prior to leaving the laboratory. This sample is analyzed in the same manner as actual samples and can be an indicator of sample contamination during the transportation of the samples to the laboratory. This sample will be analyzed for VOCs.

Field Blank: Prior to a sampling event, a sample of analyte-free deionized water will be poured over the soil sampling device or through a decontaminated bailer and then into a clean sample vial. These field blanks will be handled in the same manner as an actual sample. This blank can be an indicator of sample contamination due to contaminated sampling devices.

Duplicate samples: Duplicate samples will be taken from a single volume of water in the bailer or soil in the soil sampling device. These samples

will be submitted to the laboratory and will not be marked as duplicates but, instead will be marked as a sample.

The holding time must follow the NYSDEC ASP 95 revision. The samples will be received by the laboratory within 48 hours of sampling. The samples will be preserved by cooling to 4 degrees C. Table 4 outlines the samples to be collected, analytical parameters and holding times.

Analytical data review and evaluation will be conducted by an independent third party data validator. This evaluation will be prepared by Environmental Standards, Inc. of Valley Forge, PA. The data validation report will be prepared upon receipt of the soil and groundwater data and will be incorporated into the FRI report.

5.5 Decontamination Procedures

Field equipment should be decontaminated between sampling locations in order to reduce the chance of cross contamination between sampling locations. A decontamination station will be established for field activities. This will be an area located away from the source of contamination, so as to keep equipment handling to a minimum.

5.5.1 Field Decontamination Procedures - Nondisposable equipment will be decontaminated at intervals (e.g., prior to initial use, prior to moving to a new location, and prior to leaving the site). Different decontamination procedures are used for various types of equipment that perform the field activities.

All sampling tools were decontaminated with tap water and a non-phosphate detergent wash, then rinsed with distilled water and allowed to air dry. This procedure was conducted between each sampling location. All poly tubing and acetate liners were discarded after initial use.

5.6 Calibration Procedures and Preventive Maintenance

Equipment calibration and operating procedures which will include provisions for documentation of frequency, conditions, standards; and records reflecting the calibration procedures, methods of usage, and repair history of the measurement system.

Calibration of field equipment will be done daily at the sampling site so that background contamination can be taken into consideration, and the

instrument calibrated accordingly. Calibration measurements will be recorded on a Calibration Form daily.

5.7 Field Management Documentation

Proper management and documentation of field activities is essential to ensure that the necessary work is conducted in accordance with the sampling plan and QA/QC Plan in an efficient and high quality manner. Field management procedures include following proper chain of custody procedures to track a sample from collection through analysis, noting when and how samples are obtained, preparing a Location Sketch, completing Sample Information Records, Chain of Custody Forms, Field Change Forms, and Equipment Calibration Forms. Copies of each of these forms are provided in the appendix. Pertinent information regarding the site must be documented by the Field Manager in a bound field log book.

5.7.1 Location Sketch - Each soil sampling location will be marked on a location sketch with permanent references.

5.7.2 Sample Information Record - Sample information records will be provided in the FRI report.

5.7.3 Chain of Custody - The Chain of Custody Form is initiated at the laboratory with bottle preparation and shipment to the property. The form remains with the samples at all times and bears the name of the person assuming responsibility for the samples. This person is tasked with ensuring secure and appropriate handling of the bottles and samples.

The Chain-of-Custody Form is filled out and signed by the person performing the sampling. The original of the form travels with the sample and is signed and dated each time the sample is relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler keeps one copy for the project file. The sample bottle must also be labeled with a marker with the minimum of the following information:

-Sample number
-Analysis to be performed
-Date of collection

A copy of the completed form is returned by the laboratory with the analytical results.

5.7.4 Field Change Forms - Whenever there is a required or recommended investigation/sampling change or correction, a Field Change Form must be completed by the Field Operations Manager and NYSDEC on-site representative, if applicable, and approved by AEL's Project Manager and the NYSDEC Project Manager.

5.7.5 Calibration Forms - Calibration of field equipment will be done daily at the sampling site so that any background contamination can be taken into consideration and the instrument calibrated accordingly. All calibration measurements will be recorded on a Calibration Form daily.

5.7.6 Field Log Book - Field log book will be bound and have consecutively numbered, water resistant pages. Pertinent information regarding the site and sampling procedures will be documented. Notations will be made in log book fashion, noting the time and date of entries.

5.7.7 Field Meter Calibration - The OVM 580B and PID will be calibrated using prepared standards of stable, low concentration calibration gases. The following compounds will be programmed into the OVM 580B's computer library prior to analysis:

-Ethylbenzene
-Dichloroethylene (DCE)
-Tetrachloroethylene (PCE)
-Toluene
-Trichloroethylene (TCE)
-Vinyl Chloride

6.0 Health and Safety Plan

6.1 Project Identification

Project Name:	Utility Manufacturing/Wonder King Focused Remedial Investigation Site #1-30-043H
Project Requested by:	New York State Department of Environmental Conservation
Project Manager:	Fritzi Mazzola Gros-Daillon (Anson Environmental Ltd.)

HASP Manager:	Dean Anson II (Anson Environmental Ltd.)
Field Operations Manager:	Jeff Bohlen (Anson Environmental Ltd.)

6.1.1 Introduction and Objectives

Described below are AEL's project health and safety requirements, responsibilities and procedures to protect workers during the FRI for the Utility Manufacturing site located in Westbury, Nassau County, New York.

The purpose of this portion of the FRI is to determine the areas of concern for health and safety issues. This Health and Safety Plan is designed to protect on-site workers and to mitigate the potential of off-site releases. As part of this plan, access to areas of concern and ambient air monitoring will be performed at the location of soil disturbance, downwind, and at the site perimeter to minimize the potential for possible on site and off site exposure.

6.1.2 Requirements

The requirements for worker health and safety are based on the following:
-The Standard Operating Safety, U. S. Environmental Protection Agency (EPA), Office of Emergency and Remedial Response.

-The Occupational Safety and Health Administration (OSHA) Regulations, 29 CFR Parts 1910.120 and 1992.

-Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH, OSHA, USCG and EPA.

-Superfund Amendments Reauthorization Act (SARA), Title 1, Section 126.

6.1.3 Applicability

The protection of AEL's workers' and subcontractors' health and safety and the environment are major concerns during the FRI at the Utility Manufacturing property. Personnel must be protected from the risk of incurring illness or injury during the field investigation at the site. Since

each and every safety hazard associated with the site cannot be anticipated, precautions will be taken to prevent illness or injury to workers during the project. Based on these considerations, this health and safety plan will be applicable for each phase of the FRI at this site as described in this work plan. The implementation of this plan will be based on the judgment of the Project Manager as described in this work plan.

6.2 Site Specific Information

The Utility Manufacturing site is an industrial plant facility located in the New Cassel Industrial Area, Westbury, New York. The principal areas of concern are around the perimeter of the site and the former cesspool location.

6.2.1 Hazard Characterization/Identification

The primary concern at the site is to protect the workers from contaminated subsurface soils and groundwater on and off the site. During this portion of the investigation, exposure to a potential source of contamination is limited. Ambient air monitoring will be performed during any soil disturbance procedures and any field operations that warrant it. The chemical exposure concerns for the site will be discussed by the field project manager with all field personnel at the beginning of each work day.

6.2.2 Potential Exposures

Potential exposure during the FRI will be considered on a daily basis during the performance of the investigation. Therefore, disposable gloves will be worn during any contact with soil on the property.

6.2.3 Level of Protection

Level of protection during the field investigations will be Level D and will be upgraded, if conditions require.

6.3 Site Personnel

The project will require the interaction of government agencies (NYSDEC), contractors, site facility operator and technical specialists. The project team will be composed of Anson Environmental Ltd. and various subcontractors. The Health and Safety Plan will be implemented during all field operations performed on the property. The Field

Operations Manager will be responsible for implementing safety precautions and procedures during all field activities/sampling phases.

6.3.1 General Work Practices

The following general health and safety requirement will apply to all persons working at the site:

1. All personnel working on the investigation team shall read the Health and Safety Plan and sign a copy of the acknowledgment form which is provided with this plan.
2. No employee will be allowed in the active investigations area without the prior knowledge of the field operations manager.
3. All personnel involved in the investigation at the site will notify the filed operations manager of any unsafe conditions and activities.
4. Standard hygiene practices will be implemented such as no smoking, eating or drinking during site investigative work activities. Thorough washing of hands and face is required before eating, drinking or smoking. At all times, personnel should perform investigative activities from upwind directions.
5. Workers will avoid unnecessary contamination such as walking through, sitting on, leaning on or kneeling in areas that are known or suspected to be hazardous.
6. All site personnel shall observe their partners for any signs of adverse effects associated with the work activity and will inform their partner or supervisor of any unusual signs or symptoms that they are experiencing themselves.

6.3.2 Orientation and Training

Each member of the field investigation team has completed the 40-hour training course required by the Occupational Safety and Health Administration for personnel working at hazardous waste sites. Each field team member is trained and experienced in the standard field sampling techniques and procedures to be utilized in this project.

Each person who may be required to use respirator protection has been medically approved, trained and fit tested with a NIOSH approved respirator appropriate for the conditions likely to be encountered. In addition, each field team member participates in an orientation session prior to commencing of work at the site. The orientation will include the following:

Project goals and objectives
Overview of Health and Safety Plan
Health and safety requirements and procedures
Chemicals contaminating the site
Potential health and safety hazards
Safe sampling procedures
First aid and emergency procedures
Use of respiratory protection and respirator fit testing
Use of protective clothing
Decontamination procedures
Waste disposal procedures.

6.3.3 Monitoring Equipment

The principal forms of chemical contamination at the site are believed to be known and are of generally low hazard levels, if appropriate precautionary measures are used. However, routine monitoring for health and safety purposes will be performed during all site activities.

Monitoring equipment will be operated, maintained and calibrated each working day in accordance with the manufacturer's instructions and AEL's quality assurance procedures. Organic vapor monitoring will be conducted during field activities. Should contaminant levels indicate a high hazard potential, operations will be discontinued until the situation is evaluated.

6.3.4 Injuries and Emergencies

Injured or over-exposed person will be removed from the area immediately. Where applicable, first aid will be used and/or emergency rescue team will be called. Depending upon the nature of the injury/emergency, appropriate notifications will be made.

6.4 Levels of Personnel Protection

Four levels of protection (A, B, C and D) will be used as bench marks for selection of personnel protection equipment.

Level A requires the highest degree of protection including a fully encapsulating, chemical resistant suit with a full facepiece, SCBA or supplied air respirator. No situations are anticipated in this investigation that would require this level of protection.

Level B protection requires full chemical resistant clothing with a full facepiece SCBA or supplied air respirator. No levels of VOCs to toxic chemicals are expected at this site that would require this level of protection. However, provisions will be made to have this equipment available should its use be determined to be required. Investigative activities which may result in this level of protection being required, will not be implemented until the equipment has been transported to the site. Implementation of Level B protection shall only be performed when sufficient trained personnel (minimum of two) are available.

Level C protection requires a full facepiece, air purifying cartridge-equipped respirator (or a half facepiece, air purifying cartridge-equipped respirator if specifically approved), and protective coverall (Tyvek or full chemical resistant clothing or other protective clothing if specifically approved.) The level of contaminants in the study area are not expected to require this level of protection. Activities which significantly disturb the soil or generate dust will be closely monitored to determine if upgrading to this level of protection is appropriate. Sampling and handling of highly contaminated waste or soils on site could results in potential exposures where this level of protection is required. The decision to require this level of protection will be made on a case-by-case basis. Unknown hazardous conditions suspected of containing risks which have not been identified as part of this plan shall be investigated in Level C protective clothing.

Level D protection requires standard work clothes, such as protective coveralls, work boots, safety glasses/goggles and hard hat. This protection level applies to situations in which there is minimal dust generation with subsequent inhalation of and dermal risk to hazardous chemicals. It is currently anticipated that this level of protection will be applicable to all investigative activities both on and off site.

Should ambient air monitoring during the study indicate a need for higher protection levels than those currently in use, immediate implementation of the appropriate level or cessation of all activities, which are generating the excessive level shall be performed.

In addition, protection and first aid will be provided for common health hazards associated with outdoor work such as poison ivy, insect bites and stings, and ticks. Since ticks are a known disease vector, affected persons are instructed to report tick bites to a physician. Poison ivy contact should be treated immediately. A medical kit for first aid will be available in the

field. Any signs of rashes, inflammation, irritation or burning sensation will be reported immediately.

6.5 Personal Protective Equipment

All employees at the site will be required to use appropriate protective equipment for protection against potential hazards at the site. Since Level D is anticipated for the investigation, the equipment listed in Section 6.4 will be implemented. If conditions occur which require Level C or greater, conditions will be evaluated and appropriate protective measures will be implemented.

6.6 Emergency Information

The emergency procedures will include notifying emergency and other affected personnel and keeping the locations and emergency telephone numbers in a convenient and readily accessible area at the project site. A map showing the route from the site to the nearest emergency medical facility will be provided in the project area.

Emergency services for the Utility Manufacturing site include:

Nearest Emergency Medical Facility
Nassau County Medical Center
2201 Hempstead Turnpike
East Meadow, NY 11554
(516) 572-0123

Fire Department and Rescue Service
Westbury Fire Department
(516) 334-7968

Police Department
Nassau County Police Department
Third Precinct
214 Hillside Avenue
Williston Park, NY 11596

Emergency calls: 911
Non-emergency calls: (516) 573-6300

Poison Control Center
General area number (516) 542-2323

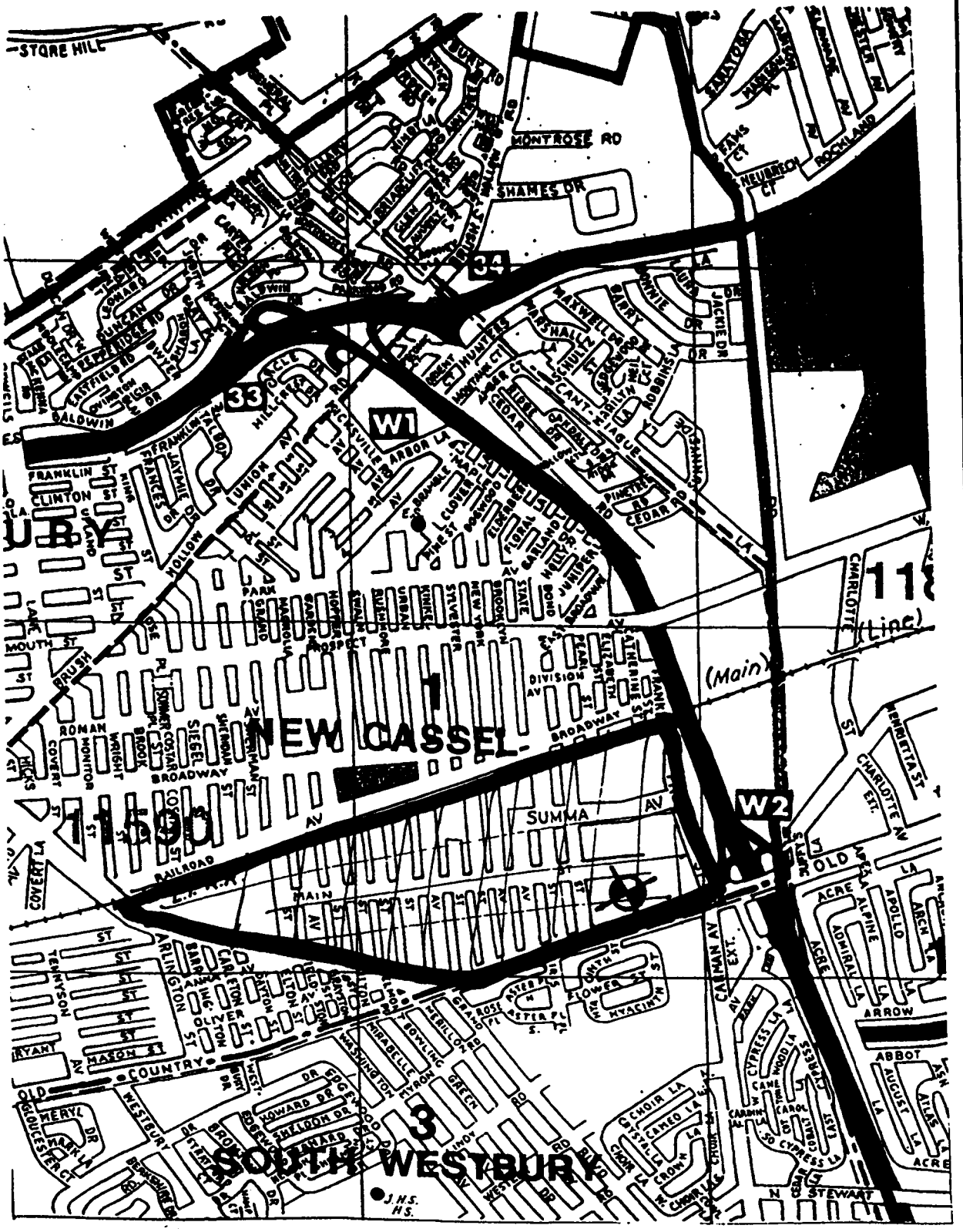


Figure 1 Location of NCIA

Anson Environmental Ltd.

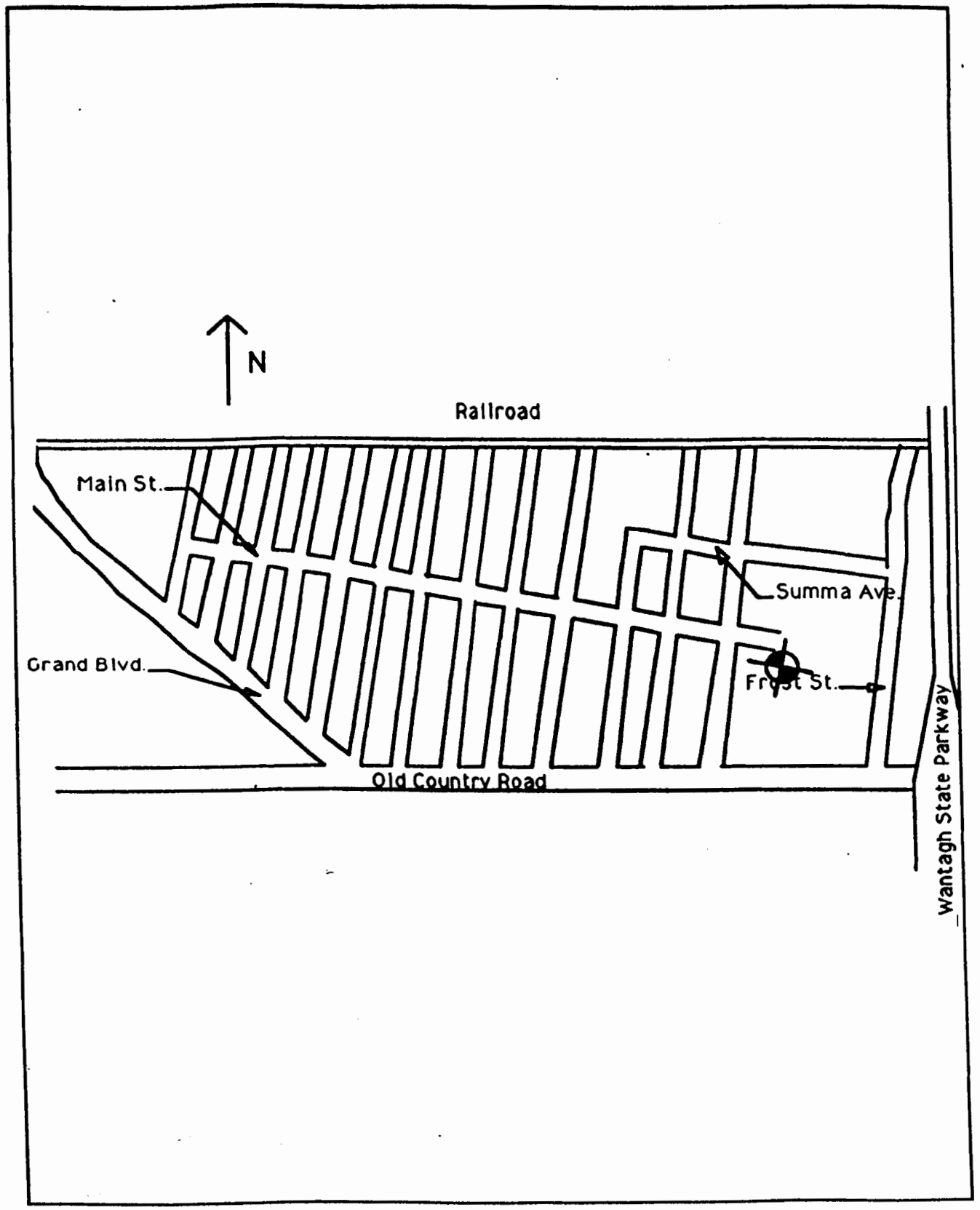


Figure 2 Location of Utility Mfg
Anson Environmental Ltd.

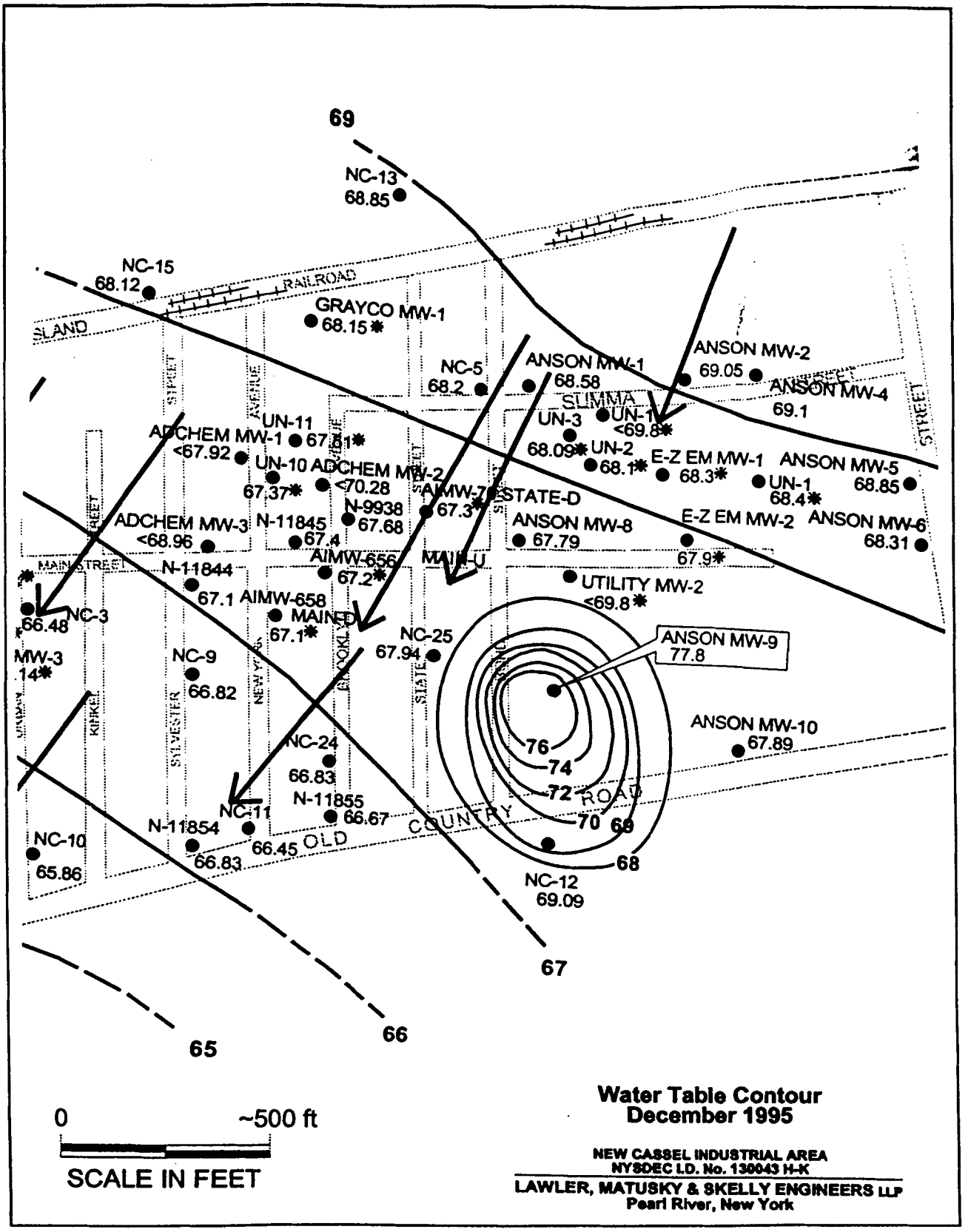
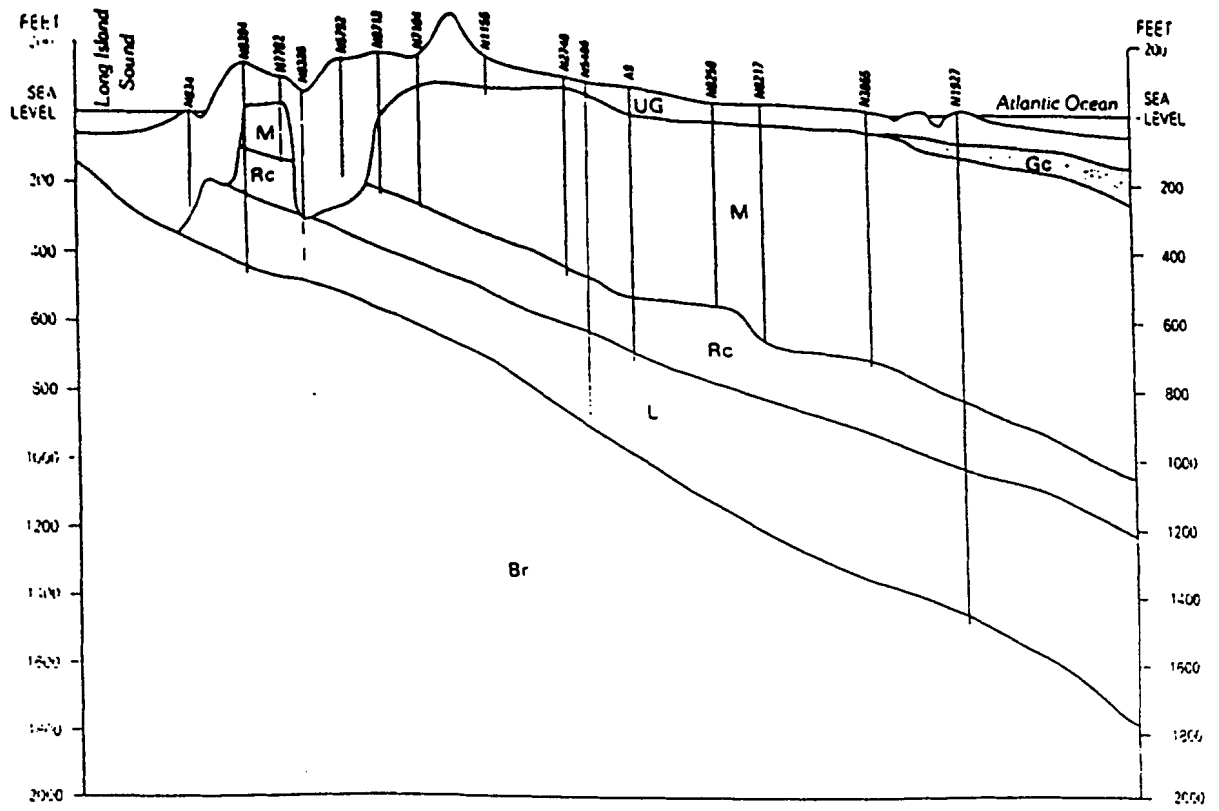


Figure 3 Water Contour (LMS 1996)

Anson Environmental Ltd.



Legend for Hydrogeological Units

UG Upper glacial aquifer
Gc Gardiners Clay
Mg Monmouth greensand
M Magothy aquifer
Rc Raritan confining unit
L Lloyd aquifer
Br Bedrock

Figure 4 Hydrogeological Cross Section

Anson Environmental Ltd.

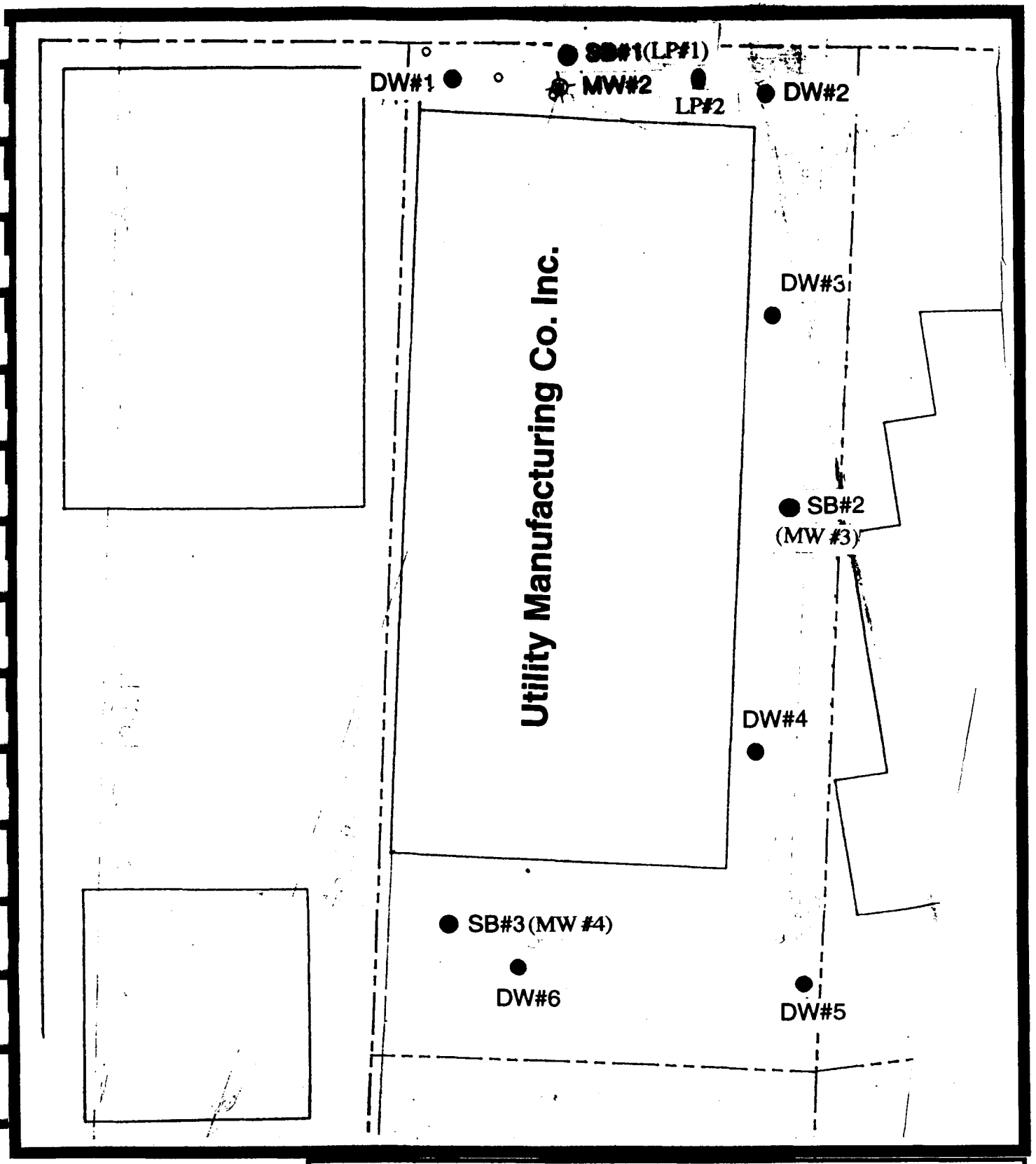


Figure 5 Soil Sampling and Groundwater Monitoring Well Locations

scale 1 inch = approx. 25 ft

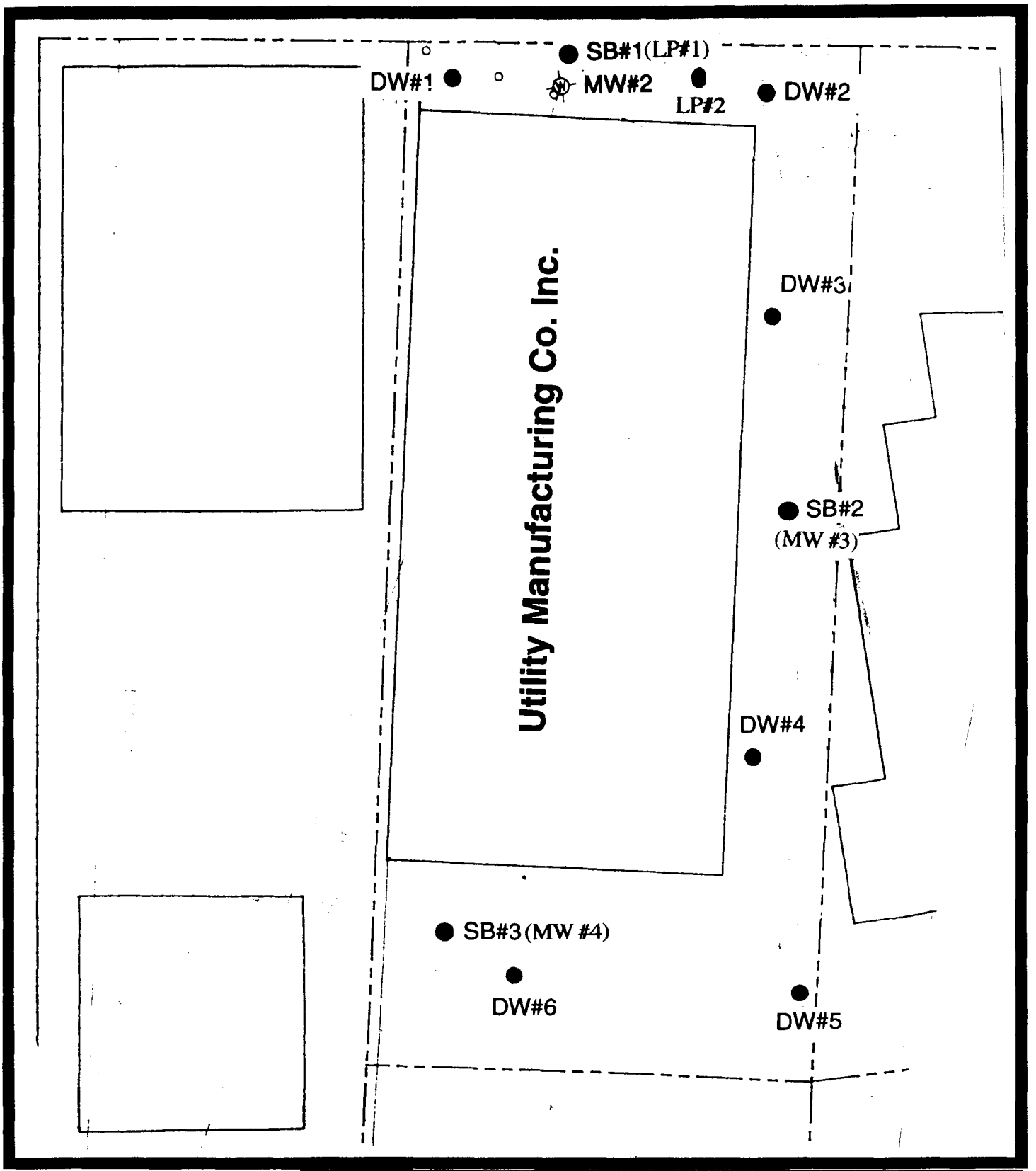


Figure 5 Soil Sampling and Groundwater Monitoring Well Locations

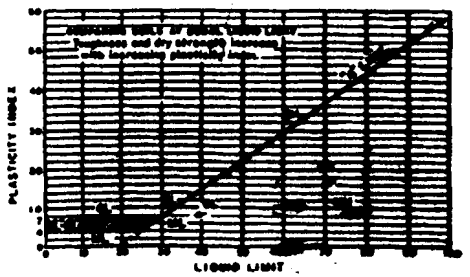
scale 1 inch = approx. 25 ft

		Table 1-Sample Results From Soil Borings							
			(in ppb)						
Compound & Boring #		**Depth Below Grade**			**NYSDEC TAGM**				**GW Standards**
	10'	25'	30'	45'		60'	75'	95'	
Tetrachloroethene					1400				5
SB #1	*		ND			13	2.2	3.1	
SB #2	*		ND			100	19	39 (@85')	
SB #3	*		0.99			94	79	100	
SB #4	*		ND			110	24	20	
SB #5	46		*			24	12	14	
SB #6	*		ND			35	62	19	
DW #1		ND		ND					
DW #2		0.61		ND					
DW #3		ND		ND					
DW #4		2.2		1.8					
DW #5		0.88		1.9					
DW #6		2.7		0.6					
Trichloroethene					700				5
SB #1	*		ND			0.94	1.4	ND	
SB #2	*		ND			5.4	1.3	1.3 (@85')	
SB #3	*		ND			7.3	4.3	3.5	
SB #4	*		ND			8.4	1.2	0.79	
SB #5	ND		*			2.5	1.9	ND	
SB #6	*		ND			3.4	2.3	1.1	
1,1,1-Trichloroethane					800				5
SB #1	*		ND			4.3	11	1.2	
SB #2	*		ND			4	ND	ND	
SB #3	*		ND			20	18	16	
SB #4	*		ND			22	10	13	
SB #5	ND		*			6.7	8.7	13	
SB #6	*		ND			12	2.3	6.3	
* = Sample not selected based upon headspace/deepest sample criteria									
ND = not detected									

UNIFIED SOIL CLASSIFICATION
INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 3 inches and basing fractions on estimated weights)				GROUP SYMBOLS [a]	TYPICAL NAMES	INFORMATION REQUIRED FOR DESCRIBING SOILS	LABORATORY CLASSIFICATION CRITERIA
COARSE GRAINED SOILS: More than half of material is larger than No. 200 sieve size [b]	GRAVELS: More than half of coarse fraction is larger than No. 4 sieve size. (For visual classifications, the ¼" size may be used as equivalent to the No. 4 sieve size.)	CLEAN GRAVELS (Little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes	GW	Well graded gravels, gravel-sand mixtures, little or no fines.	Give typical name; indicate approximate percentages of sand and gravel; max. size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbol in parentheses.	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between one and 3
			Predominantly one size or a range of sizes with some intermediate sizes missing.	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.		Not meeting all gradation requirements for GW
		GRAVELS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.	For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics.	Atterberg limits below "A" line, or PI less than 4 — Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols.
			Plastic fines (for identification procedures see CL below).	GC	Clayey gravels, poorly graded gravel-sand-clay mixtures.		Atterberg limits above "A" line with PI greater than 7
	SANDS: More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SANDS (Little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes.	SW	Well graded sands, gravelly sands; little or no fines.	EXAMPLE:- Silty sand, gravelly; about 20% hard, angular gravel particles ½-in. maximum size; rounded and subangular sand grains coarse to fine; about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (SM)	$C_u = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between one and 3
			Predominantly one size or a range of sizes with some intermediate sizes missing.	SP	Poorly graded sands, gravelly sands, little or no fines.		Not meeting all gradation requirements for SW
		SANDS WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML below).	SM	Silty sands, poorly graded sand-silt mixtures.		Atterberg limits below "A" line or PI less than 4 — Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols.
			Plastic fines (for identification procedures see CL below).	SC	Clayey sands, poorly graded sand-clay mixtures.		Atterberg limits above "A" line with PI greater than 7
FINE GRAINED SOILS: More than half of material is smaller than No. 200 sieve size. (The No. 200 sieve size is about the smallest particle visible to the naked eye)	IDENTIFICATION PROCEDURES ON FRACTION SMALLER THAN No. 40 SIEVE SIZE						
		DRY STRENGTH (CRUSHING CHARACTERISTICS)	DILATANCY (REACTION TO SHAKING)	TOUGHNESS (CONSISTENCY NEAR PLASTIC LIMIT)			
SILTS AND CLAYS: Liquid limit less than 50		None to slight	Quick to slow	None	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity.	Determine percentages of gravel and sand from grain size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse grained soils are classified as follows:- Less than 5%: GW, GP, SW, SP. More than 12%: GM, GC, SM, SC. 5% to 12%: Borderline cases requiring use of dual symbols.
		Medium to high	None to very slow	Medium	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; color in wet condition, odor if any, local or geologic name, and other pertinent descriptive information; and symbol in parentheses.
		Slight to medium	Slow	Slight	OL	Organic silts and organic silt-clays of low plasticity.	For undisturbed soils add information on structure, stratification, consistency in undisturbed and remolded states, moisture and drainage conditions.
SILTS AND CLAYS: Liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.	EXAMPLE:- Clayey silt, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (ML)
		High to very high	None	High	CH	Inorganic clays of high plasticity, fat clays.	
		Medium to high	None to very slow	Slight to medium	OH	Organic clays of medium to high plasticity.	
HIGHLY ORGANIC SOILS		Readily identified by color, odor, spongy feel and frequently by fibrous texture.			Pt	Peat and other highly organic soils.	

Use grain size curve in identifying the fractions as given under field identification.



PLASTICITY CHART
FOR LABORATORY CLASSIFICATION OF FINE GRAINED SOILS

[a] Boundary classifications:- Soils possessing characteristics of two groups are designated by combinations of group symbols. For example GW-GC, well graded gravel-sand mixture with clay binder.

[b] All sieve sizes on this chart are U.S. standard.

ADOPTED BY:- CORPS OF ENGINEERS AND BUREAU OF RECLAMATION - JANUARY 1952

Figure 7.—Unified soil classification chart. From drawing 103-D-347.

Table 2
Unified Soil Classification Chart

D. Boundary Classification - Dual Symbols:

1. Preliminary

a. The procedure for determining the symbols is as follows: Assume the coarser soils and complete the classification; then assign the appropriate group symbol. Assume the finer soil and complete the classification; then assign the second group symbol.

b. The following are examples that may be helpful in determining when the use of dual symbols are required.

If a soil is on more than one borderline, stick to the coarser title.

45% Gravel
45% Sand ⇒ **Silty Gravel (GP-Gm)**
10% Silt-Clay Fines

Use W or P when fines are less than 12 percent.

60% Gravel
29% Sand ⇒ **Poorly graded** ⇒ **Silty Gravel (GP-GM)**
11% Silt

60% Gravel
25% Sand ⇒ **poorly graded** ⇒ **Clayey Gravel (GC)**
15% Clay

Additional examples of soil classification to show importance of estimating percentage of particle sizes:

5% Gravel
25% Sand ⇒ **Sandy Clay (CL)**
79% Clay Fines of medium plasticity

35% Gravel
35% Sand ⇒ **Clayey Gravel (GC-SC)**
30% Plastic Fines

0% Gravel
50% Sand ⇒ **Clayey Sand (SC-CL)**
50% Medium Plastic Clay Fines

0% Gravel
0% Sand
100% Fines (inorganic) ⇒ **Silt (MH)**
Dry Strength - slight to medium
Dilatancy - slow to none
Toughness - slight to medium

0% Gravel
10% Sand
90% Fines (inorganic) ⇒ **Lean Clay (CL)**
Dry Strength - medium to high
Dilatancy - slow to none
Toughness - slight to medium

60% Gravel
30% Sand ⇒ **Clayey Gravel (GW-GC)**
10% Clay Fines
Soil is well graded

Table 3
Boundary Classification
for soil

Table 4
Summary of Sampling Techniques and Protocols
Utility Manufacturing (Page 1 of 2)

Sampling Location	Matrix	Sampling Technique	Analysis/ Method	Holding Time (VTSR)
SOILS				
soil boring former cesspool	soil	PID	PID	none
soil boring east side of property	soil	PID	PID	none
soil boring southwest corner	soil	PID	PID	none
SB#1, SB#2, SB#3	six soils	grab	EPA 8240 EPA 8270	7 days 14 days
GROUNDWATER				
MW#1, MW#2, MW#3, MW#4	liquid	grab	EPA 8260 ASP Category B Deliverables	7 days see below

Table 4
Summary of Sampling Techniques and Protocols
Utility Manufacturing (Page 2 of 2)

NOTES:
VTSR = verified time of sample receipt

ASP = The following EPA methods will be used during the ASP analyses of groundwater:

Analyte	Analytical Method	Holding Time	Preservation
volatile organic compounds	95-1	7 days	cool to 4 degrees C
semi-volatile organic compounds	95-2	5 days to extraction 40 days to analysis	cool to 4 degrees C
1 trip blank/cooler for groundwater samples only	95-1	7 days	cool to 4 degrees C
1 field blank	all parameters being tested in accompanying samples	as specified above based on analysis	

Appendix A

NYSDEC Comments on 1995 Work Plan

Appendix A

NYSDEC Comments on 1995 Work Plan

TEL:

JUN 27 95 10:59 NO.005

Post-it Fax Note 7671	Date 6/24/95
To Dean Amold	From Dave Harrington
Co./Dept. Amold Env.	Co. NYSDEC
Phone # (516) 357-3555	Phone # (518) 457-0969
Fax # (516) 357-3615	Fax # (518) 457-8989

Site Name: Former Wonder King Chemic
Site ID #: 130043H
Site Location: 700-712 Main Street, 45 Bond
Westbury, NY 11590
Nassau County (Region 1)

Prepared By: David Harrington, Environmental Engineer 1, EIS, BHSC, DHWR
Date: May 31, 1995

INTRODUCTION:

This site is located in the eastern section of the New Cassel Industrial Area (NCIA), Town of North Hempstead. The area consists of various light industrial and commercial properties ranging from scrap metal facilities and garbage transfer stations to car dealerships and restaurants.

The NCIA was investigated by NYSDEC between 1992 and 1994 in order to locate the sources of groundwater contamination. During this investigation, a plume of chlorinated solvents (total PCE) was found in the vicinity of Bond Street south of Main Street. Total PCE concentrations were found up to 676 ppb within this plume. However, a source(s) for this plume was not identified due to lack of supporting information.

Since no source was identified during the last investigation, and groundwater contamination has been documented in a sole-source aquifer, a PSA is needed to locate the source(s) of contamination.

GEOLOGIC SETTING:

- Soil Type: medium to fine grained sand, with deposits of silt and clay
- Depth to Groundwater: ~50 feet
- Groundwater Flow Direction: South-southwest
- Groundwater is within an EPA-designated sole-source aquifer.

ANTICIPATED LEVEL OF PROTECTION:

Level D, with Level C backup.

SAMPLING METHODOLOGY/ANALYSIS:

Drilling/sampling unit: Truck-mounted Geoprobe
Analysis: Onsite mobile lab - GC

SAMPLING SUMMARY:

Groundwater:	__ total (# of samples and location to be determined in field) - 3 samples from each proposed point (@ watertable, 20' and 40' below watertable) (Note: samples will be taken until a source or sources of contamination are located.)
Soil:	__ total (# of samples and location to be determined in field) - 1-2 samples from each location (depth depends on location of sample area)
QA/QC:	Several samples selected by consultant will be sent to a base lab to ensure mobile unit is generating good quality data. Daily QC at the field lab to include duplicate, MS, and method blank analysis.

ANALYTICAL PARAMETERS:

Groundwater and Soil:	VOC's as listed in EPA Method 8010 and 8020

OTHER ITEMS:

Facility Inspection:	The consultant will perform a facility inspection at the property in order to determine if discharge of VOCs have occurred onsite. Other items of interest include, but are not limited to, location and condition of chemical storage areas and work areas, and where potential discharges may have occurred.
Site History:	The consultant will perform a detailed records search and interview pertinent facility personnel (if available) for the purpose of constructing a complete site history for the site. Major items of interest include current/previous ownership, current/previous tenants, current/past site operations, current/past chemical usage, current/past disposal practices, any previous investigative work done at this site, and any other information that seems relevant to the investigation. At a minimum, file searches should be conducted at all appropriate county, city, and State agencies.

Work Plan

Former Wonder King Chemical Site
Utility Manufacturing
700-712 Main Street
Westbury, NY 11590
(Site ID# 130043H)

700-712 Main Street
Westbury, NY 11590

September 1995

Introduction

The New Cassel Industrial Area, Town of North Hempstead was designated an Inactive Hazardous Waste Disposal Area in 1988 and field investigations were performed by the NYS Department of Environmental Conservation (NYSDEC) during the summer and autumn of 1993 and summer of 1994. As a result of those investigations, seven Principally Responsible Parties (PRPs) and four "P" sites were identified. The "P" site designation related to sites where additional information was necessary to determine if they were sources of groundwater contamination. One of the "P" sites was the former Wonder King Chemical Site.

The former Wonder King Chemical Site located at 700-712 Main Street, Westbury, New York (see Figure 1). Figure 2 illustrates the findings of the 1995 NYSDEC report regarding 700 Main Street.

This work plan addresses only that property which is currently occupied by Utility Manufacturing Corp (700-712 Main Street). The property is owned by Nest Equities Realty and is located in the eastern sector of the New Cassel Industrial Area.

The purpose of this investigation is to determine if the site is contaminated with volatile organic compounds and evaluate the site's impact, if any, on the groundwater under the site. The purpose of this investigation is to assist the NYSDEC in determining if the site should be included on the Registry of Inactive Hazardous Waste Disposal sites.

In that regard, if the soils on-site are free of volatile organic compounds, then the site will not be included in the Registry.

This investigation will be implemented by Anson Environmental Ltd (AEL).

Scope of Work

This scope of work is divided into three tasks -

documentation of site history and usage (past and present)
inspection of current facility
sampling of drywells, soils and groundwater for volatile organic compounds

Task One - Site History
AEL will perform a search of the records regarding the historical usage of the site including the records in the possession of Utility Manufacturing Corp., Nassau County Department of Health and NYSDEC. Based on this information, a history of the site will be compiled including current and previous:

ownership
tenants
operations
chemical usage
disposal practices

Previous environmental investigations performed on-site will be summarized and documented.

Task Two - Facility Inspection
A facility inspection will be performed noting the location and condition of chemical storage areas and work areas. The locations of where potential discharges might occur will be identified.

Task Three - Drywell, Soil and Groundwater Sampling
A Geoprobe will be used to collect samples from the site including the six drywells currently operating on-site. The former cesspool location will also be sampled. In these locations soil/sediment samples will be collected from 10 and 30 feet below the bottom of the drywells. Decontamination procedures will be implemented to ensure sample integrity. These samples will be collected using a clean acetate liner which will be discarded following the collection of each sample.

Six soil samples will be collected in the locations noted on Figure 3. These samples will be collected at two depths - 10 and 30 feet below grade. Dedicated clean acetate liners will be used to collect each sample.

Data to be gathered during the collection of soil/sediment samples will include a description of the color and classification of the soils.

Groundwater samples will be collected from monitoring wells upgradient of the site as well as by using the Geoprobe. Geoprobe sampling will occur at each boring location,

under drywells and cesspools. Groundwater samples will be collected at 55, 75 and 95 feet below grade.

Laboratory analyses of groundwater and soils will be performed for volatile organic compounds via EPA methods 8010 and 8020.

Trip and field blanks will also be analyzed for volatile organic compounds.

Project Schedule

One week following approval of the above plan, AEL will begin sampling on the site. The sampling will require approximately two weeks to complete. NYSDEC will be notified three days prior to beginning any sampling.

Laboratory analysis will take approximately four weeks to complete. Approximately four weeks following the receipt of laboratory data, a report of findings will be submitted.

Utility Manufacturing aka
Wonder King Manufacturing Site
700-712 Main Street
Westbury, NY

Site # 130043H

September 27, 1995

Sampling Location	Sampling Depth Depth Below Grade	# Samples for Lab Analysis Volatile Organic Compounds
6 drywells	10 and 30 feet	two per drywell
1 cesspool	10 and 30 feet	two samples
six soil borings	10 and 30 feet	6 samples with highest headspace readings or deepest sample (one per boring)
groundwater samples from soil boring locations	55, 75 and 95 feet	18 samples
trip blanks		as necessary

Appendix B

NYSDEC Groundwater Monitoring Well Installation Protocol

ew York State Department of Environmental Conservation
Building 40—SUNY, Stony Brook, New York 11790-2356

Thomas C. Jorling
Commissioner

NYSDEC - DIVISION OF SPILLS MANAGEMENT - REGION 1

MINIMUM REQUIREMENTS FOR SOIL AND GROUNDWATER INVESTIGATIONS

This document applies to parties responsible for sites in the counties of Nassau or Suffolk where a spill or release of petroleum product(s) to the environment has occurred. A responsible party must undertake a site investigation when a NYSDEC Project Manager determines that subsurface petroleum contamination may exist following initial response and cleanup efforts. This outline provides you with minimum requirements for investigating the source(s) and extent of the petroleum contamination. This document is necessarily general in nature. It describes the generally applicable investigative approach utilized on Long Island, however, for particular sites, elements of this approach may be added, deleted, or modified due to specific site and spill characteristics. In addition, the responsible party may apply to the NYSDEC Project Manager for permission to utilize alternative investigation techniques such as soil gas surveys to locate/minimize the number of soil borings and/or monitoring wells.

CONTENTS

April 15, 1994

I. SOIL BORINGS

A. Number of Borings - At least one soil boring shall be performed for approximately 100 square feet of potentially contaminated site area.

B. Boring Specification - Soil samples shall be obtained every five (5) vertical feet by use of a split-spoon sampler. Soil samples must be field screened (i.e. head space anaylsis) with a PID or FID instrument and the instrument responses recorded in the attached drilling log.

The split-spoon sampler shall be decontaminated between samples.

C. Boring Completion - A soil boring may be discontinued when, for three consecutive split spoon samples headspace analysis produces no instrument response or a response which is below background levels. If contamination extends down to the water table, boring can be terminated after sampling at least five (5) feet into the water table.

D. Soil Sample Analysis - Upon completion of soil sample collection, several representative samples shall be submitted to a NYS Environmental Laboratory Approval Program (ELAP) approved laboratory for appropriate analyses. Representative samples must include at least the following:

1. the sample with the highest instrument response
2. the sample before the three consecutive "clean" samples.
3. the first and the last "clean" samples in the three consecutive "clean" samples.

The recommended testing methods are:

1. gasoline	EPA Method 8021
2. fuel oil	EPA Method 8270
3. waste oil	EPA Method 8270, 8010, and TCLP Metals

Laboratory results must be submitted together with the drilling log to this office for review.

E. Monitor Wells Required - Where soil boring, sampling, and analysis indicates potential groundwater contamination, a monitor well or well(s) will be required to be installed in accordance with specifications outlined in this document. In general, where contamination is found within 20 vertical feet of the water table, monitor wells are required.

II. MONITORING WELL INSTALLATION

The following procedures apply to the installation of groundwater monitoring wells.

A. Approval - A diagram indicating the proposed location of the groundwater monitoring well(s) must be provided to the NYSDEC Project Manager for approval.

B. Notice - Inform the NYSDEC project Manager as soon as arrangements have been made to install the well(s). A minimum of 48 hours advanced notice prior to drilling is required.

C. Specifications - The monitoring well(s) must be installed in accordance with the proper design specifications and methods specified hereunder. Unless specifically required by the NYSDEC Project Manager low specification wells are acceptable. All drilling and down-hole equipment is to be contamination free prior to drilling.

D. Completion Report - Upon completion of each groundwater monitoring well the attached completion report and drilling log must be completed and returned to the NYSDEC Project Manager.

E. Well Number - All monitor wells are to be given a unique number designation which must be permanently affixed to the casing, cover, or pavement immediately upon completion.

F. Updated Site Plan - A diagram indicating the actual location and designation of the groundwater monitoring well(s) must be provided to the NYSDEC Project Manager.

G. Cuttings - Should contaminated soil/drill cuttings be produced during groundwater monitoring well installation, the contaminated soil must be properly disposed within 60 days. A contractor with a Part 364 (waste transporter) Permit is required for such removal. You may contact our Division of Hazardous Substance Control at (516)444-0230 for further information concerning the legal transport and disposal of the contaminated soil.

The soil may be temporarily stored on the site while final transport and disposal is arranged. An impermeable liner must remain both above and below the soil to prevent the spread of the contamination.

H. Low Specification Ground Water Monitor Well - Figure 1

1. The well(s) must be installed using 6.25 inch interior diameter hollow stem auger unless prior approval of another method is given. Drilling fluids must not be introduced into the boring (except potable water) without

prior approval. Where potable water is added, the source of the water, amount, and depth at which added must be noted on the well completion report.

2. The well(s) must be four (4) inch diameter schedule 40 flush joint PVC pipe unless prior approval of another type or size is given. The screen must be set at least ten (10) feet into the groundwater, with a minimum screen length of twenty (20) feet. The well screen must be of the same specifications listed above having slots 0.02 inches in width.

3. The annular space between the PVC screen and riser pipe, and the interior wall of the hollow stem auger must be filled with clean drill cuttings or sand which is representative of the subsurface soil, as the augers are removed.

4. The top of the riser pipe must be sealed with a water proof cap covered with an eight (8) inch diameter, steel, bolt-down manhole flush to grade.

I. <u>High Specification Ground Water Monitor Well - Figure 2</u>

1. The well(s) must be installed using 6.25 inch interior diameter hollow stem auger unless prior approval of another method is given. Drilling fluids must not be introduced into the boring (except potable water) without prior approval. Where potable water is added, the source of the water, amount, and depth at which added must be noted on the well completion report.

2. The well(s) must be four (4) inch diameter schedule 40 flush joint PVC pipe, unless prior approval of another type or size is given. The screen must be set at least ten (10) feet into the groundwater, with a minimum screen length of twenty (20) feet. The well screen must be of the same specifications listed above having slots 0.02 inches in width.

3. A number 1 gravel pack must extend from six (6) inches below the bottom of the screen up to two (2) feet above the top of the screen.

4. A one (1) foot thick bentonite seal must be placed above the top of the gravel pack.

5. The remaining annular space between the PVC riser pipe and the interior wall of the hollow stem auger must be filled with a bentonite and cement grout mix.

6. The top of the riser pipe must be sealed with a water proof cap covered with an eight (8) inch diameter, steel, bolt-down manhole flush to grade.

III. MONITORING REQUIREMENTS

A. Fuel Oil, Diesel - Wells must be monitored once a week for the first four weeks, for floating product and depth to water.

1. If floating product is discovered, it must be recovered immediately, and monitoring must continue weekly.

2. If floating product is not encountered in the first four weeks, monitoring may be reduced to monthly.

3. If site remains free of floating product for twelve consecutive months, the file may be reviewed for possible removal from active list

4. The number of wells and frequency of monitoring is subject to change.

5. Dissolved sampling may be required of product-free wells.

B. Gasoline - Monitoring as above, and additionally:

1. Product-free wells must also be sampled for dissolved petroleum constituents once every three months.

   a. Wells must be purged three to five times the volume of standing water in the well before a sample is collected.

   b. Samples must be collected using decontaminated bailers and sampling equipment.

   c. Samples are to be analyzed by a certified laboratory for the presence of benzene, toluene, xylenes and MTBE using EPA Method 602.

C. Monitoring Reports - Monitoring reports must be submitted to this office monthly. Reports must include at least the following:

1. Site sketch indicating numbering and location of wells.

2. Depth to water in each well to nearest hundredth of a foot.

3. Depth to product.

4. Thickness of product.

5. Volume of product recovered that month.

6. Cumulative product recovered since the beginning of monitoring.

7. Dissolved sampling results quarterly.

8. Future actions/recommendations.

Example format of monitoring report is attached.

IV. OTHER INVESTIGATION REQUIREMENTS

A. Source of Spill - Investigate the location(s), cause(s), material(s), and volume spilled.

B. Sensitive Receptors - Identify all sensitive receptors (public/private water supply wells, residences, utility manholes/lines, etc.) which have the potential to be impacted by the spill.

C. Land Use - Evaluate past, present and anticipated changes in the near future regarding land use (residential, commercial, etc.).

D. Hydrogeologic Setting - Determine the hydrogeologic setting of the site, as obtained from existing sources such as prior site investigations, USGS reports, County Health Departments, etc. This includes approximate depth to groundwater and groundwater flow direction, and should be the basis for establishing boring, well, and sampling locations at the site.

E. Site Plan - Develop a site map showing the location of observation wells and important structures (nearby buildings, dry wells, roads). The direction of North and a bar scale must be plotted on the map.

F. Groundwater Contour Map - Each observation well should be surveyed to establish a measuring point elevation tied to a common datum for the site to develop a map showing the direction of localized groundwater flow.

The Navigation Law and associated regulations require the responsible party to restore a site to pre-spill conditions. To meet this goal, at least the following actions should occur at a spill site:

- Remove all free product from the subsurface.
- Ensure that all potential sensitive receptors will not be impacted or have been protected.
- Remediate soil which may be a source of contamination.
- Ensure groundwater achieves regulatory standards.

The DEC will review the investigation data to determine if further investigation and/or remediation is necessary. The spill site will remain on the active list until this office determines that further cleanup is not required.

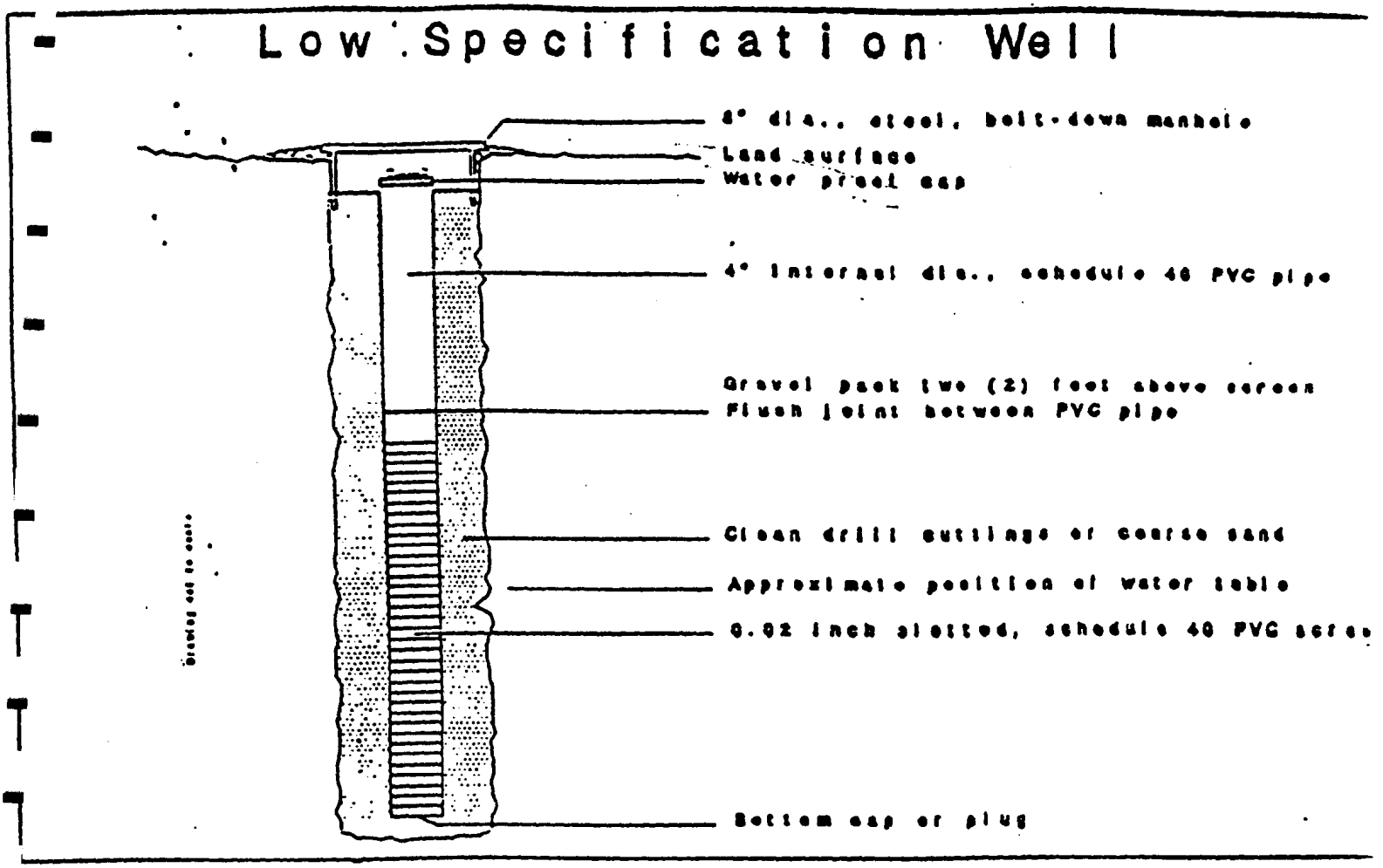

Low Specification Well
8" dia., steel, bolt-down manhole
Land surface
Water proof cap
4" internal dia., schedule 40 PVC pipe
Gravel pack two (2) feet above screen
Flush joint between PVC pipe
Clean drill cuttings or coarse sand
Approximate position of water table
0.02 inch slotted, schedule 40 PVC scre
Bottom cap or plug

FIGURE 1

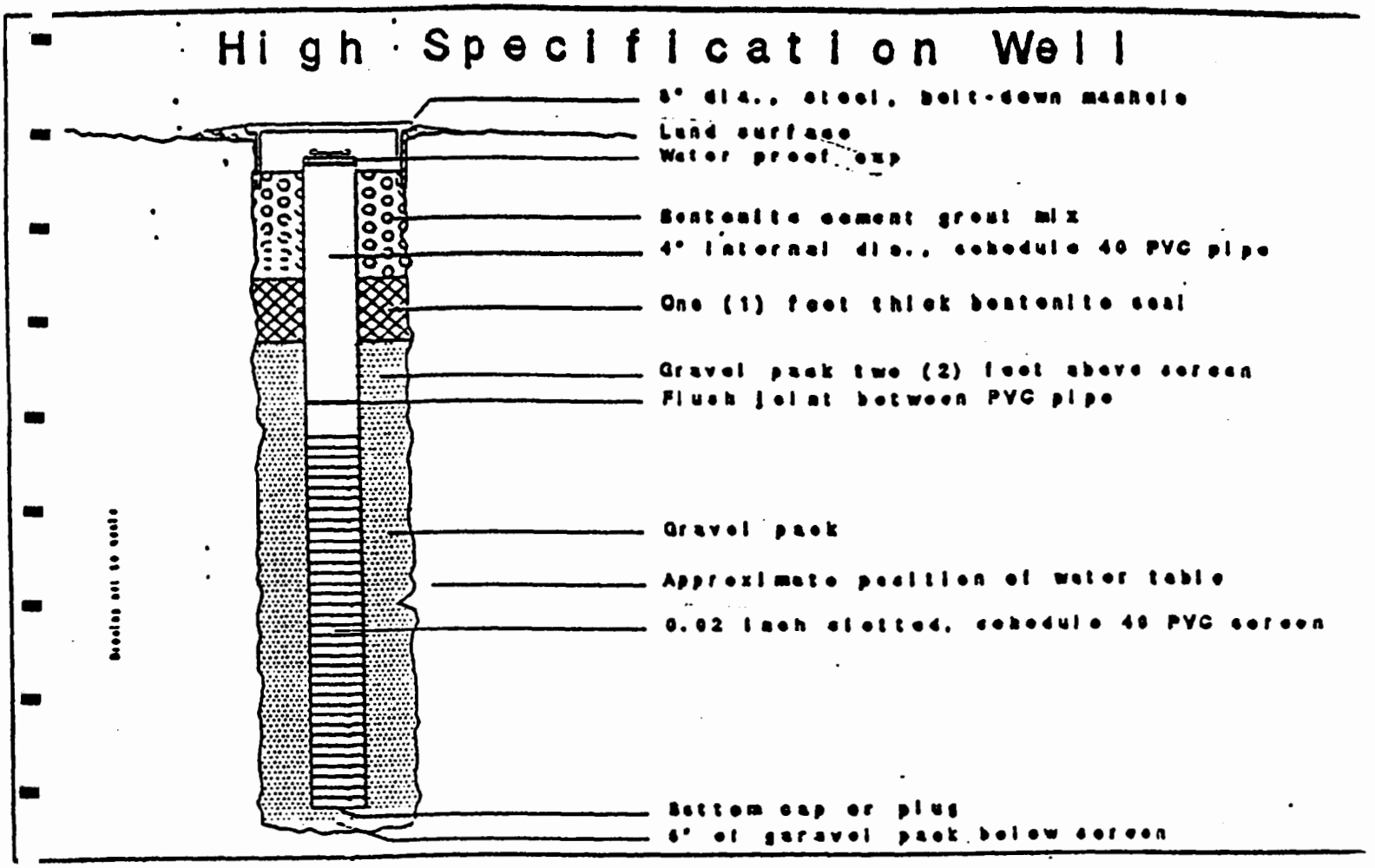

High Specification Well
8" dia., steel, bolt-down manhole
Land surface
Water proof cap
Bentonite cement grout mix
4" internal dia., schedule 40 PVC pipe
One (1) foot thick bentonite seal
Gravel pack two (2) feet above screen
Flush joint between PVC pipe
Gravel pack
Approximate position of water table
0.02 inch slotted, schedule 40 PVC screen
Bottom cap or plug
6" of garavel pack below screen

FIGURE 2

WELL COMPLETION REPORT & DRILLING LOG

SITE_____ SPILL #_____ DATE_____
LOCATION_____

BOREHOLE #_____ TOTAL DEPTH_____ DIAMETER_____
SCREEN: DIA_____ LENGTH_____ TYPE/SIZE_____
CASING: DIA_____ LENGTH_____ TYPE_____
SURFACE SEAL_____ SEAL_____ FILTER PACK_____
WATER LEVEL_____

DRILL CO._____ METHOD_____
DRILLER_____ LOGGED BY_____

DEPTH (FT)	WELL COMPLETION DIAGRAM	SOIL DESCRIPTION (CLASSIFICATION)	REMARKS

GROUNDWATER MONITORING DATA

SPILL # :_____ DATE:_____

LOCATION:_____
_____

WELL #	DEPTH TO PRODUCT	DEPTH TO WATER	THICKNESS OF PRODUCT	VOLUME OF PRODUCT BAILED

PRODUCT RECOVERED THIS PERIOD (GAL):_____
PRODUCT RECOVERED TO DATE (GAL):_____

NOTE: INCLUDE SITE MAP WITH WELL NUMBERS

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

John P. Cahill
Commissioner

Via FAX and Mail

Dean Anson III
Anson Environmental Ltd.
33 Gerard Street
Huntington, N.Y. 11743

November 17, 1997

Re: Utility Manufacturing/Wonder King Site # 1-30-043 H
Focussed Remedial Investigation (FRI) Work Plan

Dear Mr. Anson:

The Department has reviewed the work plan, revised November 1997, for a FRI at the above referenced property in the New Cassel Industrial Area (NCIA). The work plan is approvable subject to the changes noted herein and the signing of the Consent Order . The work plan must incorporated these minor changes.

NYSDEC Comments 10/10/97

i. **27. Section 3.2.1, page 11-** Monitoring well installation Standard Operating Procedures (SOP) must be submitted, which includes redevelopment criteria for the existing monitoring wells. - *Include SOPs* ***in Appendices.***

ANSON Response

Anson submitted the following document - *"NYSDEC-DIVISION OF SPILLS MANAGEMENT-REGION 1 MINIMUM REQUIREMENTS FOR SOIL AND GROUNDWATER INVESTIGATIONS "* dated April 15, 1994

NYSDEC Response

Information was developed for the investigation of petroleum contamination and not for the investigation of DNAPLs. A more appropriate reference is ASTM D 5092-90 " Standard

Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers". The Spills document may be used subject to the following;

II. Monitoring Well Installation

I. High Specification Ground Water Monitoring Well

1.Minimum 2 inch annular space between the inside of the well casing and outside diameter of the riser is required. A four inch monitoring well would be installed by an 8 inch diameter hollow stem auger.

2. The monitoring well shall be installed across the ground water table, utilizing a ten foot screen. Existing wells in the NCIA have ten foot screen, thus a ten foot screen is desired for consistency and comparability. A 0.02 inch slotted screen may used , unless a grain size analysis is performed.

Please make the above revisions to the work plan by attaching this letter to the *"NYSDEC-DIVISION OF SPILLS MANAGEMENT-REGION 1 MINIMUM REQUIREMENTS FOR SOIL AND GROUNDWATER INVESTIGATIONS "* dated April 15, 1994 and submit one unbound copy and eight bound copies to this office per the Consent Order.

Should you have any questions regarding these comments, please call me at (518) 457-3976.

Sincerely yours,

Richard J. Lilley, Jr. P.E.
Project Manager

Enclosure

cc: A. Simons
J. Hussey

Appendix C

Resumes and Training Certificates
Key Personnel

Dean Anson II
President and Supervising Scientist

Experience Summary:

Over 20 years of experience: President of Anson Environmental; Associate and Supervising Environmental Scientist at Storch Associates; Project Manager and Supervising Environmental Scientist at Gibbs & Hill, Inc. Directed and participated in RI/FS studies, site remediation, environmental impact statements, groundwater assessments, technical support for legal counsel, expert witness, negotiations with federal, state, and local regulatory agencies.

Education:

B.A. Zoology, Ohio Wesleyan University, 1969
M.S. Biology, New York University, 1976
M.B.A. Marketing and Finance, New York University, 1981
USEPA Bioremediation Symposium, 1993
OSHA - 40 Hour Health & Safety Operations at Hazardous Materials Sites, 1991
Appointed to Suffolk County Pine Barrens Review Commission
ASCE Modeling Groundwater Quantity and Quality Using Microcomputers, Seminar Participant
ENR Hazardous Waste Management & Cleanup, Seminar Participant
AHERA Building Inspector
AHERA Management Planner
NYS Air Sampling Technician

Key Projects:

° Facility Coordinator and Health and Safety Officer for Anchor Chemical Superfund Site in Hicksville, NY. Implementing Remedial Investigation Project Operations Plan including the new installation of indoor borings, drywell sampling, and installation of groundwater monitoring wells. Developed site specific Health and Safety Plan.

° Principal-in-Charge of soils and groundwater investigations for thirty-five properties (approximately 40 acres) in the New Cassel Industrial Area. Purpose of investigation is to demonstrate that properties did not contribute to groundwater contamination.

° Principal-in-Charge of groundwater investigation at former drycleaning site where remediation included the removal of over 440 tons of contaminated soil and installation of groundwater remediation system to filter tetrachloroethylene from groundwater. Currently performing six-month long engineering study to identify other sources of contamination by volatile organic compounds.

° Principal-in-Charge of RI/FS for groundwater remediation project in Great Neck, Long Island. Site was contaminated by leaking underground storage tanks which discharged volatile organic compounds. Approximately 400 tons of contaminated soil were removed and groundwater sampling program is ongoing.

° Developed Health and Safety Plan for Katonah Municipal Well site in Bedford, New York included soils investigation at the municipal pump house. Plan was accepted by USEPA, Region 2.

° Site Coordinator for Tronic Plating Superfund site in Farmingdale, Long Island. Negotiated work plan with USEPA, Region 2 and developed Project Operation Plan which was implemented by others.

° Principal-in-Charge of several studies to define plumes of groundwater contamination in Nassau and Suffolk Counties. Negotiated groundwater and hazardous waste matters with USEPA and NYSDEC regarding scope of groundwater studies.

Dean Anson II
President and Supervising Scientist (cont)

- Lectured and provided expert witness comments at New York University, Nassau County Bar Association, Suffolk County Pine Barrens Review Commission, and numerous Town Board meetings on Long Island.

- Project Manager for asbestos surveys and asbestos awareness training for Suffolk County Department of Public Works project for 60 County-owned buildings.

- Evaluated environmental conditions at over 100 industrial plants and commercial sites along the East Coast from Connecticut to Virginia.

- Managed removal of over 100 underground storage tanks and installation of new above and underground storage tanks.

- Member of Suffolk County Bar Association Environmental Committee, Hauppauge Industrial Area Environmental Committee, and Huntington Chamber of Commerce Environmental Committee

ENVIRONMENTAL SERVICES

Dean Anson

Has Successfully Completed the

40 HOUR OSHA HAZARDOUS WASTE OPERATIONS CERTIFICATION

Instructor *Date* August 7, 1991

Director of Training *SS #* 148-36-4025

[redacted]

ENVIRONMENTAL SERVICES
Pollution Control

Fritzi Mazzola Gros-Daillon
Vice President/Senior Environmental Scientist

Experience Summary:

Over 20 years of experience: Manager of Quality Assurance at Anson Environmental; Independent Management Consultant; Vice President at Bankers Trust Company, District Manager for Consolidated Edison Company. Project management, quality control and assurance, contractor coordination and administrative management.

Education:

B.S. Business Administration, Bloomfield College, 1979
M.S. Business Policy, Columbia University, 1981
OSHA 40 hour HAZWOPER Certification, 1997
Certified Environmental Inspector (CEI), 1991
In Situ and On-Site Bioreclamation Symposium, 1993
NYS Air Sampling Technician, 1993
Indoor Air Quality Seminar, 1991
Hazardous Waste in New York Seminar, 1991
Asbestos Awareness Course, 1990

Key Projects:

° Performed environmental assessments in over fifty industrial and commercial buildings on Long Island. Assessments included identification of operations out of compliance with environmental regulations, searches of regulatory databases and files, site reconnaissance, and report preparation.

° Quality Assurance Officer for asbestos surveys in 60 Suffolk County-owned buildings where over 1,500 samples were collected for laboratory analysis. Sample data were entered into a computerized database for the prioritization of abatement activities.

° Quality Assurance/Quality Control officer, providing technical oversight and guidance on variety of environmental projects including resource allocation, hazardous material contamination, proposal, and work plan preparation.

° In the past year, coordinated the removal of over 50 underground storage tanks in Nassau and Suffolk Counties.

° Project Manager for the groundwater investigation and subsequent delisting petitions for forty-two properties within the State Superfund New Cassel Industrial Area. Delisting petitions have been successful in thirty-seven cases with the balance still under review by the NYSDEC.

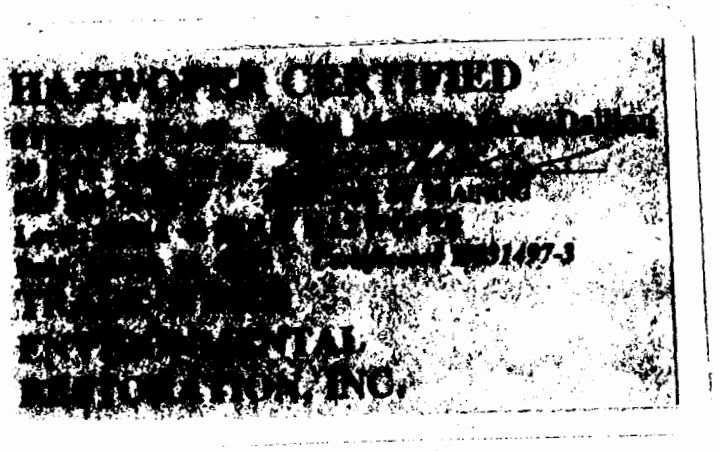
° Project Manager of groundwater investigation at former drycleaning site. Investigation includes the sampling of eleven groundwater monitoring wells located in the Upper Glacial Aquifer and delineation of contaminant plume. Alternative remediation technologies under consideration by client.

° Evaluated laboratory data for groundwater remediation project in Great Neck, Long Island. Site was contaminated by leaking underground storage tanks which discharged volatile organic compounds that have contaminated the Upper Glacial Aquifer.

° Responsible for oversight of all data validation, field schedules, laboratory analyses, and report production at Anson Environmental.

° Site Manager for Federal Superfund site during installation of monitoring wells and soil borings. Coordinated sample shipment to laboratories and correspondence with USEPA. Conducted data evaluation and assisted in preparation of Remedial Investigation Report.

° Coordinated several underground storage tank removal projects for local clients in small commercial and residential properties, including coordination with appropriate County officials.



Jeffrey Bohlen
Environmental Geologist

Experience Summary:
Over 2 years experience: Field Technician, Anson Environmental Ltd. Summer positions in construction and marine industries.

Education:
B.S. Environmental Geology, Long Island University, Southampton, 1995.

Summer Hydrogeology Field Course at Western Michigan University, 1995.

OSHA 40-Hour Hazardous Waste Course (HAZWOPER), 1995.

Key Projects:

° Designed and installed soil vapor extraction system (SVES) at Dry Cleaners where tetracholorethrene contamination was identified in drywells, leaching pools and floor drains. Remediation was started by using a vactor truck to excavate the most grossly contaminated soils. The horizontal and vertical extent of contamination was identified by installing borings and correction continuous split spoons to define soil conditions onsite.

° Participated in Phase I and II investigations at a former jewelry plating facility. This work included the collection of samples from an onsite drywell and from beneath the concrete flooring of the facility. The facility was successfully closed to the satisfaction of the NYSDEC.

° Field manager in charge of collecting groundwater and soil samples at a manufacturing facility in the New Cassel Industrial Area. This work involved determining the complex geological subsurface conditions and evaluating the impact on groundwater beneath the site.

° Participated in several Phase I investigations for properties across Long Island. This work included site inspections, research of site history, and data base searches of government documents.

° Provide ongoing bioremediation system support for remediation of large underground fuel oil spill.

DeLisle Associates LTD

3651 Vanrick Drive
Kalamazoo, Michigan 49002

certifies that

JEFFREY BOHLEN

has attended and participated in

OSHA 40 HOUR HAZARDOUS OPERATIONS AND EMERGENCY RESPONSE 29 CFR 1910.120

which has been presented by
DeLisle Associates LTD
(616) 373-4500

Certificate Number H-1621

Presented On June 2, 1995

Expiration Date June 2, 1996

Larry B Hall
Authorized Signature

HAZWOPER CERTIFIED

STUDENT'S NAME: Jeff Bohlen

NRC
NATIONAL RESPONSE CORPORATION

Level : Refresher
Hours : 8
Date : 6/11/97
Soc Sec #: 053-74-8778

29CFR 1910.120 BY: George Wallace III
Director Of Training

Certificate Number: 97067-1186