FINAL REMEDIAL INVESTIGATION WORK PLAN

FOR BÖWE SYSTEC, INC.

NYSDEC SITE # 1-30-048

SEPTEMBER 23, 1992

Project Requested By: New York State Department of Environmental Conservation

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FINAL REMEDIAL INVESTIGATION WORK PLAN
FOR
NYSDEC SITE # 1-30-048
(BÖWE SYSTEC, INC)
200 FRANK ROAD
HICKSVILLE, NEW YORK

SEPTEMBER 23, 1992

1.0 - BACKGROUND

This work plan provides a scope of work for the conductance of a remedial investigation at the former Bowe System and Machine (Böwe Systec, Inc.) property located at 200 Frank Road, Hicksville, New York. The 200 Frank Road property ("the property") was included on the list of the New York State Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Sites as a Class 2 Site (DEC NO. 1-30-48) in October 1991 due to volatile organic contamination at the property.

The remedial investigation will provide data on current site conditions and will be used to recommend remedial measures, as appropriate. This remedial investigation will be conducted under an executed order on consent. Any deviation from the agreed upon protocols in this work plan will be discussed with the NYSDEC prior to implementation.

1.1 - Objectives

The overall objectives of the remedial investigation (RI) are to determine the nature, extent and concentration of volatile organics at the property. The information gathered during the investigation will be presented to NYSDEC and used by Bowe to initiate remedial measures, if appropriate. The specific objectives of the remedial investigation are as follows:

(1) Provide sufficient analytical data on the site so that areas that have been previously identified or suspected as potential source areas of contamination are confirmed or are determined to be either free of contamination or below regulatory levels.

(2) If source areas are present, determine the nature, type, physical extent and migratory path of contamination at and/or emanating from that location so that appropriate remedial measures can be implemented.

(3) Determine the impact of contamination quantified on human health and the environment.

(4) Areas that are free of contamination or already properly remediated will be documented to NYSDEC.

(5) If required, present and discuss the data necessary to support the development of remedial measures.

Analytical data will be collected to achieve these objectives using methods in accordance with NYSDEC protocols and analyzed by approved methods subject to NYSDEC ASP Contract Laboratory Protocol (CLP) procedures. The investigation will draw upon data acquired in previous investigations as well as the new data acquired during this study to the maximum extent possible.

The potential pathways of contaminant migration are air, soil and groundwater. This remedial investigation will concentrate on the soil and groundwater pathway, which has been shown to be the most significant at this site. Groundwater monitoring will be utilized to estimate if groundwater contamination exists, as well as to determine groundwater flow direction and velocity.

The subsequent RI Report will be formatted as outlined in the USEPA Guidance Document, "Guidance on Remedial Investigations Under CERCLA", EPA/540/G-89/004, October 1988. Development of this work plan, in conjunction with the site-specific Health and Safety Plan (bound under separate cover), are the initial requirements for an RI.

2.0 - SITE BACKGROUND AND HISTORY

2.1 - Site Description and Operation

The property located at 200 Frank Road in Hicksville, New York is shown in the attached location map included as Figure 2.1.1. Böwe Systec, Inc. purchased the property in early 1980's. The previous property owner was reported as Dyna Magnetic Devices. The previous facility operation is not known; information available indicates an industrial profile developed by the Nassau County Department of Health (NCDH) in which Dyna Magnetic was identified as a user of trichloroethylene (TCE) on the order of 200 gallons per year.

The property is 2.098 acres in size and contains a one story masonry building that is 25,000 square feet as shown in Figure 2.1.2. The building was vacant when Böwe purchased it. During Böwe's occupancy, an office area encompassed 5,700 square feet of the building, with the remainder of the building being used for either warehousing or assembly/testing/rebuilding of dry cleaning machines.
American Permac (Permac), a dry cleaning equipment importer, previously shared the building with Bowe. Besides importing, Permac did some assembly, testing and rebuilding of dry cleaning machines on the premise. To accomplish this testing, tetrachloroethylene (PCE) was used and was contained in a 300 gallon above ground tank centered along the south wall of the building. In October 1990, this tank was removed and the PCE was sold to dry cleaners in the area.

During the testing of dry cleaning machines, municipally supplied non-contact cooling water was used to cool the tetrachloroethylene which was continuously reused in the testing process. The non-contact cooling water was then discharged to a floor drain that emptied into a drywell system that extends into the outside rear portion of the property. Under normal operation, no cross connection between PCE and non-contact cooling water was possible. The location of the floor drain and drywell system is indicated on the site map (Figure 2.1.2).

Other chemical usage on-site was minor and consisted of very low quantities of paints, thinners, solvents and oils. Table 2.1.1 itemizes the limited chemical inventory and amounts historically used. Böwe has vacated the property which is currently only used for storage of printed paper, which does not require the use of any chemicals.

Surrounding land use has been identified as light industry to the southwest, residential to the southeast, Valley Transit (vacant) to the east, Jodee Plastics (manufacturing) to the north, and Metco (manufacturing) to the west.

2.2 - Previous Site Investigations and Remediation

Previous site investigations conducted at the property were reviewed and a summary is presented below. Copies of reports on pertinent site investigations or remediation are attached as Appendix A. Additional historic information was provided by Böwe.

Approximately 10 to 15 gallons of PCE was spilled inside the building into a floor drain. This drywell was determined to lead into drywell no. 1 by a dye tracer test. Other areas of volatile organic contamination may exist, including a small spill into the truck bay drywell (drywell no. 8), and the unpaved area located outside the former paint spray booth door, where solvents may have been spilled.

Groundwater monitoring wells installed as part of an environmental assessment conducted by Soil Mechanics Drilling Corporation in January 1990 indicated elevated concentrations of PCE in the groundwater at the original four monitoring wells (MW Nos. 1-4) installed on-site. The results of this testing program led to a supplemental investigation by Soil Mechanics in February 1990 which consisted of the collection of soil/sediment samples at depths from the property drywells and an examination of an unpaved area outside the building. The soil/sediment samples were analyzed for priority pollutant metals and volatile organic compounds (VOCs).

Elevated concentrations of VOCs were reported at drywell nos. 1, 2, 3, 8 and at the unpaved area located outside the former paint spray booth door, to the southwest of the building. Analytical testing for metals indicated elevated levels of copper and zinc, only at drywell no. 1.

Analytical results for drywell nos. 4, 5, 6 and 7 indicated that VOCs were not present above detection levels at a depth of two to four feet below the bottom of the drywells. A recommendation was made to conduct site remediation to remove the source of VOC contamination present at drywell nos. 1, 2 and 3.

Site remediation, consisting of the excavation and removal of impacted soils surrounding drywell nos. 1, 2 and 3, was performed under the oversight of NYSDEC. This remediation program was conducted to the satisfaction of NYSDEC and documented in a report dated April 17, 1991 by Fenley & Nicol, Inc. The connection between drywell no. 1 and the floor drain inside the building was removed.

After this site remediation program, additional monitoring wells (MW Nos. 5, 6 & 7) were installed downgradient of the remediated drywells to provide supplemental monitoring of groundwater quality.

Subsequent to the services provided by the previous contractors, Holzmacher, McLendon & Murrell, P.C. (H2M) was retained to perform a Site Screening Investigation (SSI) prior to implementation of an approved Remedial Investigation work plan.

The objective of the (SSI) was to provide an overview of the existing conditions at the site by tentative identification of source areas and, to a limited degree, the extent of contamination. An additional objective was to provide data for the development of Interim Remedial Measures (IRMs) for the site. In order to accomplish this objective, four main areas of concern were investigated. These areas included: Area 1 (drywells 1, 2, and 3); Area 2 (drywell 8); Area 3 (stressed vegetation along southwest corner of building); and Area 4 (septic system). Drywells 4, 6, and 7 were also investigated, although past studies indicated little to no contamination at these locations. In addition, groundwater samples were collected from existing and temporary wells (that were installed during the SSI). Groundwater elevations were also measured in order to define the direction of groundwater flow and potential direction of contaminant transport (see Appendix A for SSI report).

The data collected during the SSI provided a timely assessment of potential future remedial efforts.

Based on the scope of work executed for the SSI, H2M concluded the following:

- Evidence of PCE contamination in drywell DW-8 indicates this area on site to be a potential source of groundwater contamination. The soil samples collected at 10'-12' (bottom of drywell) and 23'-25' both exhibited elevated VOC concentrations by the PID. Laboratory analysis of the sample from 10'-12' indicates that elevated levels of PCE, identifying DW-8 as a potential source area.

- Soil samples collected from Drywells DW-1, DW-2, DW-3, DW-4, DW-6 and DW-7 do not provide evidence of VOC contamination. These results support past investigations and remedial efforts.

- The shallow soils in the grassy area (near the former spray booth), have apparently been impacted by VOCs (within a limited area). This area may be a source of VOC contaminants to the groundwater since laboratory analysis of soil samples SB-1 (2'-4') and SB-2 (2'-4') indicated elevated levels of PCE.

- The results of the three (3) sanitary system samples indicate no source of PCE. However, in sample LP-2, VOCs were detected that are commonly found in sanitary waste streams. The presence of dichlorobenzenes could indicate evidence of aromatic toilet discs usually placed in restroom facilities. The absence of these VOCs in the groundwater indicates that the extent is limited.

- The groundwater flow direction indicates a localized influence from the recharge basin, located southwest of the site. Typically, a local groundwater mound results from groundwater recharging from a basin. The regional groundwater flow was measured to be south/southeast and may slightly fluctuate with changes in precipitation and amount of recharge over the area.

- Based on the groundwater flow direction, the groundwater sampling points selected for this SSI provided downgradient coverage of the areas of concern on site. The groundwater sampling results indicate a VOC plume (primarily PCE) at the property boundary to the south. This is evidenced by the concentrations of VOCs detected at the most downgradient wells (MW-6, T-1, and T-2). Concentrations of PCE detected in the groundwater are similar to past results (1991). However, the presence of other VOCs indicates the breakdown of PCE by natural degradation over time. The highest concentration of PCE in the groundwater was detected at MW-6, which is generally downgradient of both the grassy area (Area 3) and drywell DW-8.

Based on the findings of this SSI, H2M provided the following recommendations:

- If acceptable by NYSDEC, register and abandon/remove fuel oil UST, independent of the RI.

- If acceptable by NYSDEC, retain a licensed hauler to pump and clean (wash) out the entire sanitary system (septic tank and 2 leaching pools) independent of the RI. Material removed from the sanitary system should be disposed of at a licensed facility to accept such waste.

- Implement the RI Work Plan to collect additional data for deep soils and contact NYSDEC to discuss an Interim Remedial Measure (IRM) at the former spray booth area and DW-8. The IRM should be the excavation and disposal of shallow soils (5' depth). Once sufficient data has been obtained for deep soils, contact NYSDEC to discuss the possibility of additional IRMs for remediation (if necessary).

- Implement the RI Work Plan to collect additional data and evaluate alternatives for remediation of groundwater in order to capture contaminant groundwater on site. Once sufficient data has been obtained, contact NYSDEC to discuss alternatives to conduct an IRM for groundwater remediation (if necessary). Alternatives may include: no action; pump and treat with recovery wells and air stripper; pump and treat with carbon adsorption; or air sparging.

- Investigate the drainage patterns of the site area and determine the potential for the recharge basin to act as a source.

- Wells presently on site should be tested for hydraulic connection to the aquifer. Wells MW-1 through MW-4 may not provide accurate monitoring points due to inadequate surface sealing. H2M will propose redrilling and/or repair to wells as necessary during the RI and upon approval by NYSDEC.

Since the SSI work has been completed and submitted to NYSDEC, the UST has been removed, the sanitary system has been cleaned and an IRM work plan has been submitted for the shallow soils at the former spray booth area and DW-8.

3.0 - HYDROGEOLOGY

The regional and local hydrogeology of the area surrounding the Hicksville property is presented below.

3.1 - Regional Hydrogeology

The geologic formations that underlie Nassau County are composed of a series of thick deposits of unconsolidated water bearing sediments of late Cretaceous and Pleistocene age. These unconsolidated deposits are underlain by crystalline bedrock of Precambrian age.

There are three primary water-yielding aquifers underlying Nassau County. These aquifers, from shallow to deep are, (1) Upper Glacial, (2) Magothy and (3) Lloyd Aquifer. These aquifers are considered to be hydraulically connected, with the Glacial and Magothy contributing recharge for the underlying aquifer.

The Upper Glacial aquifer, consisting of highly permeable sand and gravel with occassional thin clay beds, is not commonly used for drinking water supply in Nassau County due to impact of local industry and other forms of land use. The saturated Upper Glacial aquifer is approximately 100 feet thick in Nassau County. The Magothy aquifer is the principal water supply aquifer underlying Nassau County. It consists primarily of lenticular beds of very fine to medium sand that are interbedded with clay and sandy clay, silt and some gravel and sand. The majority of fine sediments are within the upper half of the aquifer. Beds of coarse sand with gravel are common in the lower 100 to 150 feet of the aquifer. The Magothy is absent in many areas along the north shore and reaches its maximum thickness of 1000 feet in the southern part of Nassau County.

Below the Magothy is the Raritan clay. It is a significant confining unit above the Lloyd aquifer that consists mainly of clay and silty clay from 0 to 200 feet in thickness. The clay has a very low hydraulic conductivity, but does not totally prevent movement of water between the Magothy and the underlying Lloyd aquifer.

The Lloyd aquifer is the oldest and deepest water-bearing unit. It rests on impermeable crystalline bedrock and consists of lenticular deposits of clay, silt, sandy clay, sand and gravel. The top of the aquifer dips southeast from about 500 feet below sea level in the northern part of the county to more than 1,400 feet below sea level at the southern portion. The Lloyd aquifer ranges from 200 to 300 feet in thickness within the county.

The groundwater flow direction in central Nassau County is to the northeast in the vicinity north of the groundwater divide and to the south, south of the divide.

3.2 - Regional Groundwater Quality

The geographic area surrounding the 200 Frank Road property has been identified by Nassau County Department of Health (NCDH) as a contaminated aquifer segment in a report entitled "Investigation of Contaminated Aquifer Segments, Nassau County, New York, June 1986". Records are available on numerous releases of VOCs in the West Hicksville area. As a result, this area has been extensively studied by NCDH and areas of VOC contamination were delineated in the report cited above. The groundwater underlying this area is documented as being impacted primarily by 1,1,1-trichloroethane (1,1,1-TCA), in excess of 5,000 ug/l. Based upon groundwater analytical data generated by NCDH, significant VOC contamination has migrated into the Magothy aquifer, up to at least 265 feet deep. The primary VOC present at depth within the Magothy is trichloroethene.

3.3 - Local Hydrogeology

The local hydrogeologic units correspond to the previously discussed regional hydrogeologic units. The major aquifers beneath the vicinity of the study area are the Upper Glacial and Magothy aquifers. The Upper Glacial aquifer is the most permeable with an estimated horizontal hydraulic conductivity of 270 ft/day (Franke and Cohen, 1972).

Deposits in the Magothy containing less well sorted sand and gravel with interbedded clay and silt deposits have much lower hydraulic conductivities.

The predominant groundwater flow direction as based upon groundwater elevation information from on-site monitoring wells range from south-southwest to south-southeast due to the nearby recharge basin and variable precipitation events as shown in Figures 3.3.1 and 3.3.2. The depth to groundwater underlying the Böwe property is approximately 50 feet below grade. Based upon elevation data collected from December 1991, an average hydraulic gradient of 0.0013 ft/ft exists across the site. On the basis of the hydraulic gradient data and an average hydraulic conductivity, a localized groundwater velocity of approximately 430 feet per year can be calculated. This velocity is consistent with the groundwater velocity values established in literature for this region.

H2M will supplement this information with additional aquifer testing during the RI (see (see Section 6.0).

3.4 - Public Water Supply

The site lies within the Hicksville Water District. A preliminary review of the public water supply wells within the Hicksville Water District indicates that 11 wells are located within a three mile radius down gradient of the site (refer to Figure 3.4.1). Table 3.4.1 presents a summary of the well depths and pumping capacities. As shown in Table 3.4.1, all public supply wells are screened in the Magothy aquifer between 495 feet and 649 feet below grade.

The history of the water quality in the down gradient wells indicates that all 11 wells are on treatment systems. Treatment includes pH adjustment, disinfection, and iron capture. Five of these wells are subject to VOC removal when in use (two of these wells are currently inactive).

The five wells being treated for VOC contamination have shown traces of trichloroethene (TCE) and tetrachloroethene (PCE) contamination in the past. Two of these wells are also being treated for 1,1-dichloroethane and 1,1,1-trichloroethane.

4.0 - SCHEDULE AND PROJECT MANAGEMENT

4.1 - Schedule

A task-by-task schedule for remedial investigation activities is set forth in this Work Plan and is provided in the Milestone Chart (Figure 4.1.1).

4.2 - Project Management

General direction of the RI will be provided by Martin O. Klein, C.P.G. Mr. Klein has over 8 years of hydrogeological supervisory and project management experience with state and federal hazardous waste site remedial investigations. Mr Klein has extensive experience managing various hazardous/industrial waste investigations and remediation projects and has the authority within the firm to apply additional resources to the project as the need arises.

The proposed project organization is presented on Figure 4.2.1. The Project Manager (PM) has primary responsibility for plan development and implementation of the RI/FS, including coordination among the RI/FS leaders and support staff, development of bid packages, acquisition of engineering or specialized technical support, and all other aspects of the day-to-day activities associated with the project. The PM identifies staff requirements, directs and monitors site progress, ensures implementation of quality procedures and adherence to applicable codes and regulations, and is responsible for performance within the schedule.

The Quality Assurance officer (QAO) for this project will be Gerald A. Granzen of H2M. Mr. Granzen will be responsible for overall project quality including development of the project QA/QC plans, review of specific task QA/QC procedures, review of laboratory, vendor and subcontractor plans and procedures, and auditing specific tasks at established intervals. The QAO will report directly to the officers in charge of this project and will work independent of the project manager's reporting structure. Appendix B includes the QAO's resume.

Susan Bianchetti will be the Senior Project Hydrogeologist and RI leader for H2M. At H2M, she has provided project management for hazardous waste and hydrogeologic investigations conducted as part of RI/FS processes at sites located in New York, and New Jersey. Ms. Bianchetti's past project management experience includes remedial efforts at numerous industrial state and federally regulated facilities associated with improper discharges to soil and groundwater.

The RI leader is responsible for on-site management for the duration of all site operations, including the activities conducted by H2M such as sampling, and the work performed by subcontractors, such as well drilling and surveying. The RI leader will provide consultation and decide on factors relating to sampling activities and changes to the field sampling program.

The RI leader and PM will ensure that the analytical laboratory will perform analyses as described in the Field Sampling Program (FSP). The QAO will be responsible for assuming that proper collection, packaging, preservation and shipping of samples is performed in accordance with EPA guidelines. Project progress meetings will be held, as needed, to evaluate project status, discuss current items of interest, and review major deliverables such as the FSP, Health and Safety Plan (HASP) and the RI report.

As Figure 4.2.1 shows, the project will be managed by Martin O. Klein, C.P.G. The review group at H2M will include John J. Molloy, P.E. and Vice President; and Gary J. Miller, P.E. and Assistant Vice President. The review group will be responsible for providing project oversight and checks on the project manager. This will include review of technical work, scheduling, project billings and assessment of the level of effort for the project. The review group at H2M will provide feedback to the project manager as necessary.

The resumes of these and other key members of the remedial investigation team are presented in Appendix B.

5.0 - TECHNICAL WORK PLAN

The following scope of work has been developed to further characterize the Bōwe property under the RI in order to assess current environmental conditions. Figure 5.1 illustrates the proposed locations of the areas identified on-site which will be further investigated.

5.1 - Data Quality Objective (DQO) Needs

The DQOs for the RI will be applicable for all data collection activities at the site. DQOs will be incorporated into the Field Sampling Program (FSP) and the Quality Assurance/Quality Control Section of the RI (Sections 6.0 and 8.0). All data collection activities for this project are anticipated to occur during the RI portion of the study.

The primary data users for this project will be H2M, NYSDEC and New York State Department of Health (NYSDOH). No secondary data users are contemplated at this time. The available data for the site was presented previously in Sections 2.0 and 3.0.

Data to be collected during the implementation of the FSP will characterize the nature and extent of contamination. This will allow for the preparation of the risk assessment (by H2M), the RI report, Treatability Study (if necessary), and the Feasibility Study report.

For this project, it is anticipated that Level I (screening) will be used during any soil sampling or groundwater monitoring well installation and sampling. Level I includes monitoring for total volatile organic vapor concentrations. Level I field monitoring for total VOCs (excluding methane) will be performed by using an HNu (photoionization detector - PID or a Century 128 OVA). The field monitoring results will be utilized for determining which soil samples are to be laboratory tested for select parameters as per Level IV DQO.

Laboratory methods for inorganics will be AA or ICP and methods for organics will be GC/MS in order to achieve low detection limits (ppb).

The analytical data to be obtained for this project will be analyzed by H2M Labs, Inc. to conform to analytical Level IV. The data used will be for risk assessment, site characterization, evaluation of alternatives, and engineering design.

5.2 - Preliminary Identification of ARARs and TBCs

5.2.1 - Potential Applicable or Relevant and Appropriate Requirements

The National Contingency Plan (NCP) (50 Federal Register 47912, November 20, 1985) and the SARA/CERCLA Compliance Policy guidance define applicable requirements as the federal and state requirements for hazardous substances, which would be legally binding at the site, if site response were to be undertaken regardless of CERCLA Section 104. Relevant and appropriate requirements are defined applicable, apply to facilities or problems similar to those encountered at this site, so that their use is well suited. In other words, requirements may be relevant and appropriate if they would be applicable except for jurisdictional restrictions associated with the requirements. With respect to the selection of remedial alternatives, relevant and appropriate requirements are to be afforded the same weight and consideration as applicable requirements.

The following federal and state regulatory requirements are potentially applicable or relevant and appropriate to the site:

1) Contaminant-Specific

Federal:

- Resource Conservation and Recovery Act (RCRA) Groundwater Protection Standards and Maximum Concentration Limits (40 CFR 264, Subpart F)
- Clean Water Act, Water Quality Criteria (Section 304) May 1, 1987 - Gold Book)
- National Ambient Air Quality Criteria (NAAQS) (40 CFR 50)
- Safe Drinking Water Act, Maximum Contaminant Levels (MCLs) 40 CFR 141.11-.16

New York State

- New York Groundwater Quality Standards (6 NYCRR 703)
- New York State Drinking Water Act Maximum Contaminant Levels (MCLs) (10 NYCRR 5)
- New York Surface Water Quality Standards (6 NYCRR 702)
- New York State Raw Water Quality Standards (10 NYCRR 170.4)
- New York RCRA Groundwater Protection Standards [6 NYCRR 373-2 6 (e)]
- New York Ambient Air Quality Standards (6 NYCRR 256 and 257)

2) Location-Specific

Federal

- Executive Orders on Floodplain Management and Wetlands Protection (CERCLA) Floodplain and Wetlands Assessments) # 11988 and 11990
- National Historic Preservation Act (16 USC 470) Section 106 et seq. (36 CFR 800)

- RCRA Location Requirements for 100-year Floodplains [40 CFR 264.18(b)]
- Wetlands Construction and Management Procedures (40 CFR 5, Appendix A)

New York State

- New York State Freshwater Wetlands Law (ECL Article 24, 71 in Title 23)
- New York State Freshwater Wetlands Permit Requirements and Classification (6 NYCRR 663 and 664)
- New York State Floodplain Management Act and Regulations (ECL Article 36 and 6 NYCRR 500)
- New York State Flood Hazard Area Construction Standard

3) Action-Specific

Federal

- RCRA Subtitle C Hazardous Waste Treatment Facility Design and Operating Standards for Treatment and Disposal Systems, (i.e., landfill incinerators, tanks, containers, etc.) (40 CFR 264 and 265) (Minimum Technology Requirements)
- RCRA Subtitle C Closure and Post-Closure Standards (40 CFR 264, Subpart G)
- RCRA Groundwater Monitoring and Protection Standards (40 CFR 264, Subpart F)
- RCRA Generator Requirements for Manifesting Waste for Off-site Disposal (40 CFR 263)

- RCRA Subtitle D Non-hazardous Waste Management Standards (40 CFR 257)
- RCRA Transporter Requirements for Off-site Disposal (40 CFR 270)
- Safe Drinking Water Act, Underground Injection Control Requirements (40 CFR 144 and 146)
- RCRA Land Disposal Restrictions (40 CFR 268) (On-and off-site disposal of excavated soil)
- Clean Water Act - NPDES Permitting Requirements for Discharge of Treatment System Effluent (40 CFR 122-125)
- Effluent Guidelines for Organic Chemicals, Plastics and Resins (Discharge limits) (40 CFR 414)
- Clean Water Act Discharge to Publicly - Owned Treatment Works (POTW)
- National Emissions Standards for Hazardous Air Pollutants (NESHAPSs) (40 CFR 61)
- DOT Rules for Hazardous Materials Transport (49 CFR 107, 171.1 - 171.500)
- Occupational Safety and Health Standard for Hazardous Response and General Construction Activities (29 CFR 1904, 1910, 1926)

<u>New York State</u>

- New York State Pollution Discharge Elimination Systems (SPDES) Requirements (Standards for Storm Water Runoff, Surface Water, and Groundwater Discharges) (6 NYCRR 750-757)
- New York State RCRA Standards for the Design and Operation of Hazardous Waste Treatment Facilities (i.e., landfills, incinerators, tanks,

containers, etc.). Minimum Technology Requirements (6 NYCRR 370-372)

- New York State RCRA Closure and Post-Closure Standards (Clean Closure and Waste-in-Place Closures) (6 NYCRR 372)
- New York State Solid Waste Management Requirements and Siting Restrictions (6 NYCRR 360-361)
- New York State RCRA Generator and Transporter Requirements for Manifesting Waste for Off-site Disposal (6 NYCRR 364 and 372)
- New York State Air Emission Requirements (VOC Emission from Air Strippers and Process Vents, General Air Quality) (6 NYCRR 200-212)

5.2.2 - Potential "To Be Considered" Material

When ARARs do not exist for a particular chemical or remedial activity or when the existing ARARs are not protective of human health or the environment, other criteria, advisories and guidance may be useful in designing and selecting a remedial alternative. The following criteria, advisories, and guidance were developed by the EPA and other federal and state agencies.

1) Federal

- Safe Drinking Water Act National Primary Drinking Water Regulations, Maximum Contaminant Level Goals (MCLGs)
- Proposed Maximum Contaminant Levels (50 Federal Register 46936-47022, November 13, 1985)
- Proposed Federal Air Emission Standards for Volatile Organic Control Equipment (52 Federal Register 3748)

- Proposed Requirements for Hybrid Structures (combined waste-in-place and clean closure) (52 Federal Register 8711)
- USEPA Drinking Water Health Advisories
- USEPA Health Effects Assessment (HEAs)
- TSCA Health Data
- Toxicological Profiles, Agency for Toxic Substances and Disease Registry, U.S. Public Health Service
- Policy for the Development of Water-Quality-Based Permit Limitations for Toxic Pollutants (49 Federal Register 9016)
- Cancer Assessment Group National Academy of Science) Guidance
- Groundwater Classification Guidelines
- Groundwater Protection Strategy
- Waste Load Allocation Procedures
- Fish and Wildlife Coordination Act Advisories
- Federal Guidelines for Specification of Disposal Site for Dredged or Fill Material.

New York State

- New York State Proposed Safe Drinking Water Standards Maximum Contaminant Levels for VOCs (10 NYCRR 5)
- New York State Underground Injection/Recirculation at Groundwater Remediation Sites (Technical Operating Guidance (TOG) Series 7.1.2)
- New York State Analytical Detectability for Toxic Pollutants (85-W-40-TOG)
- New York State Toxicity Testing for the SPDES Permit Program (TOG 1.3.2)

- New York State Regional Authorization for Temporary Discharges (TOG Series 1.6.1)
- New York State Air Guidelines for the Control of Toxic Ambient Air Contaminants (Air Guide 1)

5.3 - Potential Pathways of Contamination

As Sections 2.0 and 3.0 show, a significant amount of soil and groundwater sampling and analysis have been previously performed at the site. The chemical compounds known to be present in the soils and groundwater have been identified by the previous sampling and analysis effort. Therefore, the potential pathways of contamination can be assessed.

The alleged portions of the site affected has been noted as the drywells (DW-4 through 8), former spray booth area, and the septic system. In general, VOCs may be present in the vadose zone soils in these areas. The potential pathway of contamination by VOCs present is downward movement through the vadose zone in solution, due to recharge water from rain. VOCs in solution which reach the groundwater will move, with the groundwater, in the direction of groundwater flow.

The pathway of overland runoff of VOCs as solutes after rain events has been determined to be insignificant due to pavement on the site and the high soil permeability (and the lack of significant topographic gradients in the site area).

Metals and semi-VOCs may enter the groundwater from the vadose zone in the same manner as VOCs. VOCs may also be present in a gaseous state and migrate within the vadose zone or off-gas into the atmosphere or building.

VOCs which exist in the groundwater will travel generally in a south-southeast direction at a velocity equal to or less than the groundwater pore velocity.

A more detailed investigation of the potential pathways of contamination will be performed in the Health Risk Assessment (see Section 10.0).

5.4 - Work Plan Approach

The work plan approach is to present previous site data and evaluate the existing laboratory data, as appropriate for the respective DQOs. This information will be incorporated into the tasks necessary for completion of the RI. DQOs will be incorporated into the FSP and elsewhere, as necessary. Data previously collected (see Appendix A) will be supplemented by additional sampling and analyses in the RI.

The purpose of the RI is to determine the areal and vertical extent of soil and groundwater contamination at the site. Based upon the findings of this RI, remedial alternatives will be presented and the most feasible alternative(s) of remediation will be utilized, as necessary. Mitigation and elimination of any present or potential threat to human health or the environment will be completed.

H2M will provide details of the FSP to obtain data which satisfy the project DQOs (Level IV). The FSP will provide for the implementation of the NYSDEC approved work plan. This RI work plan also outlines field investigation Procedures and Methodology; Quality Assurance/Quality Control (QA/QC); the Fish and Wildlife Impact Assessment Plan; the Health Risk Assessment (HRS) Plan; the Health and Safety Plan (HASP); and the Citizen Participation Plan (CPP).

5.5 - Field Sampling Program (FSP)

Based upon the history of site operation and alleged VOC contamination, a remedial investigatory program has been developed. Areas suspected as potentially contaminated by

VOCs will be focused on as well as the soils beneath the septic system that have not been tested. In this manner, a complete characterization of the property will be completed and the need for additional remedial measures determined.

Borings will be utilized to both field screen and collect soil samples for laboratory analysis. Split spoon samples will be obtained during drilling with select soil/sediment samples collected for laboratory analysis. The procedures to collect split spoon samples are described in Section 6.0.

Monitoring wells will be installed to determine on-site groundwater quality conditions as detailed in Section 6.0. Based on on-site groundwater quality, off-site wells may be required.

A community well survey will be performed to determine if private wells are located downgradient of the site and if they are in use. Although the area is serviced by the Hicksville Water District, if a private well in the vicinity of the site is being used for potable water, a sample will be collected and analyzed for the same parameters as detected in the on-site wells. Public supply wells within a 3 mile radius downgradient of the site have been identified. The history of water quality will be researched and the most recent information will be obtained in order to further assess potential impacts from the Böwe site.

A detailed description of the site investigation tasks are presented below. The NYSDEC will be notified at least five (5) working days prior to any field activities.

5.5.1 - Task 1 - Sampling of Drywell System

Soil borings will be utilized to characterize the drywell system at the Böwe property. The locations of drywells to be investigated (drywell nos. 4, 5, 6, 7, & 8) are shown in Figure 5.1. Drywell nos. 1, 2, and 3 have been remediated (March 1991) under NYSDEC oversight and will not be further examined under the RI. Full documentation of the remediation of these drywells and follow-up sampling are detailed in Appendix A. The present condition of the remaining connected drywell (no. 4) will be further tested as part of this program. In addition, an Interim Remedial Measure (IRM) Work Plan has been submitted to NYSDEC to excavate 5 feet of soil from the bottom of DW-8. However, DW-8 will be further investigated to determine the vertical extent of contamination during this RI.

Soil borings will be drilled either through the center of each drywell (if drywells are dry) or directly adjacent to the drywell locations. Split spoon samples will be collected at five foot intervals starting at the bottom of each drywell (drywell surface soil/sediment samples) or at an equivalent depth of 10 feet below grade at borings adjacent to the drywell. Sampling at DW-8 will begin at 10 or 15 feet below grade or 5 feet below the bottom sediment (due to the IRM to be performed at this location). Split spoon sampling will be conducted to a minimum of 17 feet below the bottom (or projected bottom) of each drywell (see Table 5.5.1.1 for summary of sampling). The split spoon sampling frequency will decrease to ten foot intervals until two consecutive samples exhibit photoionization detector (PID) responses not elevated above background. The PID will be calibrated daily to insure accurate readings.

The sampling will be conducted under the oversight of a qualified hydrogeologist. Split spoon samples will be immediately contained in laboratory-prepared sample bottles. Samples will be screened, upon opening the split spoon, with a PID. The split spoon samples exhibiting the most elevated PID reading at each boring (relevant to background levels) will be retained for laboratory analysis at H2M Labs, Inc. If no sample indicates elevated PID readings, the shallowest soil sample from the boring will be tested by the laboratory.

In addition, the deepest soil sample will also be retained for laboratory analysis. This deep soil sample will provide confirmatory end point samples at the bottom of each boring.

Two (2) soil/sediment samples will be collected for laboratory analysis from each of the drywells (DW-4, 5, 6, 7 and 8).

Soil/sediment samples will be collected in appropriate analytical sample jars and sealed for labeling. All samples will be analyzed for TCL VOCs, TCL semi-VOCs and TCL metals according to Contract Laboratory Protocols (CLP) (NYSDEC ASP 12-91).

The soil sample recorded with the highest PID reading within each boring will be retained for laboratory analysis. In the event that no PID readings are recorded, the shallowest soil sample will be tested. The deepest soil sample will also be tested by the laboratory.

In addition, the one soil sample out of all 10 soil samples (collected from the drywells) recorded with the highest PID reading will be selected for laboratory analysis for TCL pesticides and aroclors or polychlorinated biphenyls (PCBs). This analysis is to confirm that these chemicals were not used, stored, generated or disposed of at the site.

Appropriate QA/QC samples will be collected as specified in Section 8.0. QA/QC samples will include field blanks, trip blanks (one set of blanks per sampling event), a site specific matrix spike/matrix spike duplicate (MS/MSD), and a blind duplicate.

<u>5.5.2 - Task 2 - Borings and Soil sampling at Unpaved Area Outside Former Spray Booth</u>

The previous SSI performed by H2M (see Appendix A) included a PID soil gas survey for this area on site.

Based on the results, shallow soils (2'-4') in a limited area were detected with PCE concentrations only. An IRM work plan has subsequently been submitted to NYSDEC which proposes the excavation of shallow soils at this area of concern. During the implementation of the IRM, a PID will be used to define the horizontal extent of the excavation. Two (2) soil samples will be collected at the base of the excavation in order to determine whether additional sampling will be necessary for delineation of the vertical extent of contamination in the vadose zone. Confirmatory soil samples will be laboratory tested for TCL VOCs, TCL semi-VOCs, and TCL metals. Should the results of the confirmatory sampling indicate no contamination at a five foot depth, this area will be eliminated from the RI.

In the event that confirmatory sampling indicates contamination at a five foot depth, deeper soil sampling will be performed during this RI. At a minimum, two soil borings will be drilled in this area. Split spoon samples will be collected every five feet for the first 19 feet, then every ten feet down to a depth when no PID response is obtained for two consecutive samples.

Two soil samples will be collected for laboratory analysis at each boring and submitted for analytical testing using CLP protocol. The soil sample recorded with the highest PID reading will be retained for TCL VOCs and other parameters as detected in the confirmatory sample. The deepest soil sample obtained from each boring will be tested for TCL VOCs and other parameters as detected in the shallower soil sample within that boring. A field blank and trip blank will be submitted for QA/QC.

During this task, one background soil sample will be collected from a location on site, approved by NYSDEC. The sample will be collected from 0'-2' depth and will be tested by the laboratory for TCL metals only. Background samples should not have natural concentrations of VOCs, semi-VOCs, pesticides or PCBs.

Drill cuttings generated during the drilling of borings (not used for well construction) will be backfilled following NYSDEC approved methods.

5.5.3 - Task 3 - Sampling of Septic System

The soils at the base of the septic system and associated leaching pools will be sampled for analytical testing to determine if there were any improper past discharges to this system. Samples will be collected by use of a hand auger to procure the sediment samples from 1 to 2 feet into the bottom. Analytical testing of sediments from the leaching pools will be conducted for TCL VOCs, TCL semi-VOCs, and TCL metals using CLP protocols.

5.5.4 - Task 4 - Groundwater Investigation

As depicted in Figures 3.3.1 and 3.3.2, elevation data from the groundwater monitoring wells on site indicated that the local groundwater flow direction ranges from south-southwest to south-southeast. Additional monitoring wells are proposed to monitor groundwater quality, upgradient and downgradient of the alleged source areas identified on site.

Based upon a groundwater flow direction to the south-southwest and south-southeast, one additional upgradient and three downgradient wells may be installed as shown in Figure 5.5.4.1. The new upgradient well will be placed at a location to better define upgradient groundwater quality with respect to localized groundwater flow direction (see Figure 5.5.4.1). One new downgradient well will be installed on site to provide a monitoring point east of MW-3. The existing wells will be investigated for the purpose of determining whether use for monitoring is appropriate. Wells may be repaired, abandoned or replaced as deemed necessary and approved by NYSDEC. Abandonment of wells would be conducted as per NYSDEC protocol, as necessary. The construction details of the proposed monitoring wells are described in Section 6.0.

Following the installation of MW-8 and MW-9 (on site), groundwater will be sampled from MW-1, 3, 5, 6, 8 and 9 and laboratory tested for TCL VOCs, semi-VOCs, TCL pesticides and PCBs, and TCL metals in order to accomplish project DQOs.

Wells will be resurveyed and groundwater level measurements will be collected on six occasions for contour maps. Aquifer tests will be conducted for the purpose of estimating hydraulic conductivity. This will be done by performing slug tests by withdrawing a slug of known volume and measuring recovery of the water levels. Data will be analyzed using the Bouwer and Rice Method. Hydraulic conductivities will be estimated and groundwater flow direction and velocity will be calculated. Soil samples from the aquifer will be collected during drilling for sieve analysis at select locations in order to determine grain size distribute and uniformity coefficients. The soil information will be compared to aquifer test results to determine ranges in aquifer characteristics (see Section 6.0 for detail of aquifer characterization).

Based on the groundwater data and aquifer characterization, estimates of contaminant migration will be projected in order to determine the placement of downgradient wells, as necessary. At this point in the RI, off-site wells may not be necessary. However, this will be determined by H2M and NYSDEC after initial aquifer testing. In the event that off-site wells are required by NSYDEC, the wells will be placed at appropriate locations within 1/4 mile downgradient of the site. Limitations to the downgradient well placement should apply as this area of Hicksville has been identified by NCDH as being tainted with VOCs and therefore the potential for other sources of VOCs in the groundwater increases with distance away from the Böwe site.

Two additional downgradient off-site monitoring wells may be installed following the on-site groundwater investigation. The location of the off-site wells will depend upon the data collected from the on-site wells. It should be noted that a right-of-way (ROW) permit may have to be obtained for off-site wells. If the wells are located on a busy street, a construction zone traffic control plan will be set-up.

In the event that off-site wells are installed, a second round of groundwater samples will be collected and analyzed for parameters detected in the downgradient wells on the Bõwe site.

All groundwater samples will be collected and analyzed following strict protocol outlined in Sections 6.0, 7.0 and 8.0 of this work plan (see Table 5.5.1.1 for summary sampling).

6.0 - INVESTIGATION PROCEDURES AND METHODOLOGY

This section of the work plan will outline soil/sediment sampling, well drilling and construction, groundwater sampling and aquifer characterization procedures and methodologies.

6.1 - Soil/Sediment Sampling

Soil borings will be performed at select locations utilizing a hollow stem auger drill rig. All drilling equipment will be decontaminated prior to use at each drilling location as described in Section 8.0. During soil boring, soil/sediment samples will be collected by use of a split spoon samples. Hand auger samples will also be collected from the sanitary system without the use of a drill rig.

6.1.1 - Split Spoon Sampling

Split spoon sampling will be conducted as described in the previous section. Split spoon samples are used to obtain representative soil samples for identification purposes and laboratory tests. Split spoon samples will also be measured for the resistance of the soil to penetration of the sampler by counting blow counts. ASTM procedures D1586-67 will be used for the collection of split spoon samples at locations described in the FSP. Samples will be contained in laboratory prepared sample jars and labeled. Discrete samples will be tested for TCL VOCs and composite samples will be tested for TCL semi-VOCs and TCL metals as required. Pending field screening results with the PID, select samples will be submitted to H2M Labs, Inc. for analysis. Deep samples will also be tested for TCL VOCs, TCL sem-VOCs, and TCL metals. Care will be taken to not exceed sample holding times (see Section 8.0 for outline of QA/QC).

A summary of the ASTM 1586-67 procedures is listed below.

1. Clear out hole to sampling elevation using equipment that will ensure that the material is not disturbed by the operation.

2. With the cleaned split spoon sampler resting on the bottom, drive the sampler with blows from a hammer falling 30-inches until either 18-inches has been penetrated or 100 blows have been applied.

3. This operation will be repeated at select 5-foot intervals during boring or well installation.

4. Record the number of blows required to effect each 6-inches of penetration or fractions thereof.

5. Bring the sampler to the surface and open. Scan with a photoionization detector (PID) or Flame Ionization Detector (FID) field instrument. Describe the PID or FID responses, collect typical samples of soils recovered with respect to composition, structure, consistency, color and soil condition; fill the appropriate sample jars and seal to prevent evaporation of soil moisture. Affix labels to the jars bearing job number, date, time, initials of sampler, boring number, sample number, depth of penetration and length of recovery.

6. Select samples will be chosen by the hydrogeologist and analyzed for particle size distribution. The particle size analysis of the soils will be in accordance with ASTM D422-63.

7. All samples collected will be retained and preserved for future analysis (if necessary).

6.1.2 - Hand Auger Sampling

A cleaned stainless steel hand auger with an appropriate length of extensions will be utilized to collect bottom sediment samples at the base of the two (2) leaching pools on site. This task will be performed after the septic system has been cleaned out. The hand auger will be used to obtain sediment samples at 1'-2' into the bottom sediment as outlined in Section 5.0.

Sediment samples collected from the septic system will be carefully removed from the hand auger by first removing the top and bottom sediment. The sediment in the central portion of the auger will be contained in laboratory-prepared sample bottles and tested for TCL VOCs, TCL semi-VOCs, and TCL metals (as required). Discrete samples will be tested for TCL VOCs and composite samples will be tested for TCL semi-VOCs and TCL metals.

6.1.3 - Field Reporting

Data obtained from borings and split spoon sampling will be recorded in the field log and include the following:

- Name, location and job number
- Date of boring (start, finish)
- Boring number and driller, if available
- Sample number and depth
- Method of advancing sampler, penetration and recovery and blow count
- Type and size of sampler

- PID or FID reading during field screening
- Description of soil
- Thickness of layer
- Depth to water surface
- Type and make of equipment (drill rig, etc.) use
- Size of casing, depth of cased hole.

6.2 - Well Drilling and Construction

The contractor for drilling and related well installation activities will be a licensed monitoring well driller. The driller will be made aware of the nature of the drilling activities and will be experienced in soil/groundwater investigations of this nature.

The monitoring wells will be installed by use of a hollow stem drill rig under the direction of a qualified hydrogeologist. The NYSDEC will be notified at least five (5) working days prior to any field activities.

Prior to commencement of drilling, site-specific underground structures, overhead structures and other surface features which may impede drilling will be identified. Appropriate utilities will be contacted for mark outs. Drill cuttings (soils) generated during the installation of the wells will be stockpiled on site and field screened with a PID for VOCs. If PID readings are not elevated above background readings, the cuttings will be disposed of at the area adjacent to the monitoring well location. If the field screening indicates elevated readings (above 5 part per million) the drill cuttings will be drummed and sampled for disposal characterization to determine the appropriate method of disposal. Drill cuttings generated

Needle deflections will be recorded and compared to ambient background readings. The following procedure will be followed for groundwater sampling:

1. Prior to the purging of the wells for sample collection, a synoptic static water level measured to the nearest hundredth (0.01) foot in each monitoring well shall be taken.

2. To ensure a representative sample from the monitoring well, purging of the well is required. In general, the groundwater standing in the well casing prior to the sample collection will be similar in quality to that in the surrounding aquifer or local groundwater, but it may not be representative.

3. A volume of water equal to three or more times that standing in the casing will be purged from the well before taking the sample. If the monitoring well has a low yield, standing water will be evacuated while the well is dry and a sample collected upon recovery. Wells with high yield can be sampled immediately after evacuation. A decontaminated pump or dedicated polyethylene bailer shall be used to remove the required well volumes. Prior to the sampling event, sampling equipment shall be decontaminated as outlined in Section 8.0. All water removed during the evacuation process shall be discharged to the ground in close proximity to the sampling location, while preventing the water from draining to other locations. Purge water removed from the off-site wells will be containerized and disposed of on-site.

4. Dedicated, laboratory cleaned, polyethylene, disposable bailers will be attached to dedicated polypropylene rope or nylon line. The fourth bailer volume shall be placed in a precleaned, glass jar dedicated to each sampling point, and used to conduct analytical field tests (temperature, pH, turbidity, and specific

around the well casing. This steel cover will be set into a sloped concrete pad, after the grout has been allowed to set.

Wells will be developed by pumping or bailing. Specific conductivity and pH measurements will be taken of the discharge until both parameters stabilize to confirm adequate development. Stabilization will be established when 2 consecutive well volume readings are within 10% of the last reading. Turbidity will also be monitored and the well will be developed until a measurement of less than 50 NTU is achieved or until turbidity stabilizes. Depth to groundwater measurements will be made before and after well development. Field data will be recorded in a bound field notebook.

6.3 - Groundwater Sampling

Following well construction, development, and a rest period of one week, groundwater samples will be collected from MW-1, 3, 5, 6, 8 and 9 on site. Samples will be submitted to H2M Labs, inc. to be tested for TCL VOCs, TCL semi-VOCs, TCL pesticides/PCBs, and TCL metals.

Pending the first round of groundwater sampling results, additional wells may be required off site. Resampling the wells may also be required for confirmation of first round results. However, the analysis may be limited to TCL VOCs only.

Prior to sampling the wells, a 4' x 4' plastic sheet will be placed at the foot of the well. This will be the designated work zone for the sampling event. All sampling equipment will be placed on this sheet to minimize the possibility of contaminating sampling equipment from the surrounding soils. Upon opening the monitoring wells, a PID will be used to screen for total volatile organic contaminants in the ambient atmosphere and in the headspace of the well.

during the installation of the off-site wells will be screened with the PID and transported to the site for disposal.

All drilling equipment will be steam cleaned prior to work. An on-site potable water supply will be available for steam cleaning and other purposes as necessary.

The proposed monitoring wells will be constructed as 4-inch I.D. PVC flush-joint risers with .010 inch (#10) slot-size PVC well screens completed with 15 foot well screens, 5 feet above the water table and 10 feet below. A hollow stem auger rig will be utilized to drill these wells in accordance with New York State Department of Environmental Conservation (NYSDEC) specifications for wells in unconsolidated formations. Split spoon samples will be collected at 5-foot and 10-foot intervals according to the procedures described in Section 6.1.

At all of the monitoring wells, the threaded joints will be sealed using Teflon tape. The annular space around the well screens will be filled with a No. 2 grade sand pack extending from 6-inches below the bottom of the screen to a height of 2 feet above the top of screen. A 2 foot bentonite seal will be placed above the sand pack. The bentonite pellets will be continuously hydrated for sixty minutes prior to installation of the cement/bentonite grout. The depth to the bottom and top of each seal will be measured in the borehole to the nearest 0.1 foot using a weighted tape. The remaining annular space will be tremie grouted with a bentonite/cement slurry. The tremie pipe will be fitted with an elbow to deflect the grout towards the sidewall. A cement/bentonite surface seal will be constructed by filling the annular space of the borehole and will extend from approximately three feet below-grade to grade where a flush mounted well manhole will be installed. A water tight locking cap will be attached to the top of the PVC casing. A 6-inch diameter protective steel casing in a cement collar will be installed over each well. A flush to grade steel cover assembly will be set conductivity). The measurements will be recorded in the field book. All field instruments shall be calibrated daily prior to the sampling events, and cleaned between each sampling point.

The pH probe will first be field calibrated with a No. 7 buffer solution and then with either a No. 10 or No. 4 buffer solution, depending on the anticipated pH of the groundwater sample. The specific conductivity probe will be calibrated with an ionic solution that is closest in conductivity to that anticipated in the groundwater sample. A mercury thermometer will be used to measure temperature and will be tested in the laboratory for accuracy prior to sampling.

The TCL VOC sample will be collected first, followed by any samples to receive TCL semi-VOCs and/or TCL metals analysis. Samples receiving TCL metals analysis will be unfiltered. If groundwater turbidity exceeds 50 NTUs at the time of sample acquisition, a field decision regarding the filtering of samples will be made in consultation with NYSDEC's field geologist and chemist. Samples to be filtered will be filtered in the field immediately after sample collection.

The field filtering apparatus generally consists of a battery-operated peristaltic pump or hand vacuum which forces the sediment-bearing water through flexible tygon tubing onto a plate-type filter. The sediment is retained by the filter, while the filtrate passes through the tygon tubing to a sample container. The filter should have a standard mean pore diameter size of 0.45 micron (um). Most filters are known to leach contaminants in small quantities and some exhibit ion exchange properties for some of the substances in water. Therefore, care must be taken to thoroughly equilibrate the filter with sample water when the filtrate is to be analyzed. Generally, 100 to 250 milliliters (ml) of sample passed through the filter is sufficient for equilbration. This rinse water should then be discarded and an additional quantity of sample filtered to provide the filtrate for chemical analysis. The following procedure will be used for filtering samples:

1. Using a bailer, a clean glass or plastic container will be filled with water.

2. The sample will be filtered and the initial 100 to 250 ml of filtrate will be discarded.

3. The sample bottle will be plastic for metals, will be filled through the discharge line, and the preservative (nitric acid) will be added to reduce pH to <2.

4. The filtering apparatus will then be disassembled and the filter discarded. The apparatus will be rinsed with distilled water and reassembled without the filter so that 100 to 200 ml of distilled water can be pumped through it to clean the internal parts. A new filter will then be installed and the above procedure will be followed for the next sample.

Appropriate QA/QC methodology and sampling protocol for these water quality analyses is reported in Section 8.0 (QA/QC). After all sample bottles are filled, they will be appropriately labeled and put in ice-filled coolers for delivery to the laboratory for analysis. These coolers will be chain-of-custody sealed after closing according to CLP procedures. Completed chain-of-custody forms will accompany all samples.

Site-specific Matrix Spike Duplicate (MS/MSD) samples will be collected in accordance with CLP procedures. One (1) trip blank will accompany the groundwater samples per sampling day. The trip blank vials will be filled in the laboratory using analyte free distilled/deionized water and will accompany the glassware from the laboratory to the field and back to the laboratory. One field blank will be collected per disposable polyethylene bailer lot. The field blank vial(s) will be filled during sampling by adding distilled/deionized water to one of the bailers and then filling the field blank vials from the bailer. The field blank sample will be analyzed for the same parameters as the groundwater. Trip blank samples will be analyzed for TCL VOCs only. In lieu of separate environmental duplicate samples, MS/MSD duplicate samples will be site-specific and will be used and analyzed for the same parameters as the groundwater at a frequency of one for every twenty (20) samples collected. The well cap shall be secured and the above process shall be repeated at the next sampling point.

6.4 - Aquifer Characterization

6.4.1 - Well Elevation Survey

Following installation of the groundwater monitoring wells, a well survey will be performed. It will include all wells to be utilized as part of the remedial investigation. The horizontal distance between each well will be surveyed. Also, the elevation of the top of the riser pipe of the wells will be measured to the nearest 0.01 foot as well as the ground elevation to the nearest 0.1 foot. The survey points will be tied into the closest U.S. Coast and Geodetic survey datum point in relation to the site.

6.4.2 - Groundwater Elevation Measurements

Depth to water measurements will be taken at each of the well locations six (6) times during the RI. These measurements will be taken using a Fischer M-Scope water sensitive probe (or equivalent). The depth to water will be measured to the nearest 0.01 foot and referenced to the top of the well pipe. After use in each well, the measuring device will be cleaned to prevent cross contamination between wells. The probe will be cleaned with a phosphate-free detergent and rinsed with distilled water in between each measurement point.

6.4.3 - Groundwater Level Contour Mapping

Groundwater elevation data collected during measurements will be used to construct groundwater contour maps. Contour maps will depict the water table elevation during the six episodes and used to study flow direction and gradient variation.

6.4.4 - Aquifer Testing

A total of four (4) wells swill be tested for hydraulic conductivity by a slug test. The slug tests will provide data for determining hydraulic conductivity (K) estimates for the screened interval of the aquifer. The slug test will be performed by plugging a decontaminated, 5-foot section of PVC (water-filled and capped at both ends) in the wells. Measurements of water level change will be recorded. The slug will be decontaminated, then introduced into the well and the water level will be given sufficient time to recover to static conditions. Once this is recorded, the slug will be quickly and smoothly removed from the well and the rising head rate of recovery will be recorded. The results will be graphed and K values calculated using the Bouwer and Rice method of analysis. Hydraulic conductivities will be used to calculate groundwater flow velocity and aquifer yield (for potential groundwater recovery systems).

Each groundwater monitoring well will be surveyed to a horizontal and vertical datum (true U.S. Coast and Geodetic Survey Datum).

Depth to water in each of the wells (along with date and time) will be measured using a decontaminated water level indicator (accurate to 0.01 ft). Synoptic measurements will be obtained on the same day of testing.

In addition, select soil samples from the aquifer will be collected and seived for grain size distribution and uniformity coefficient estimates. These estimates will be used for comparison to the slug test data and for remedial design criteria, if necessary. The information obtained from the aquifer characterization and water quality data will enable H2M and NYSDEC to determine the need (and placement) for off-site wells.

7.0 - ANALYTICAL PROCEDURES AND LABORATORY REPORTING

7.1 - The Laboratory

The samples will be analyzed at H2M Labs, Inc. in Melville, New York. H2M Labs, Inc. is a NYSDOH-ELAP-CLP certified laboratory, proficient in all aspects of the 1991 Analytical Services Protocol including the ability to perform continuous liquid-liquid extraction.

The Laboratory Director, John J. Molloy, P.E., has overall responsibility for all operational activities. The Laboratory Quality Assurance Manager, Joann M. Slavin, will review all data and be responsible for laboratory report and quality control.

Analysis is separated into two sections utilizing two Senior Analysts. Ursula Middle will directly supervise the organic laboratory and technicians, and review all analytical and QC data. Sal Badalamenti will supervise the analyses of all inorganics. He will review all raw data, calculations and QC analyses.

A copy of this RI work plan will be supplied to the laboratory prior to analyses.

7.2 - Parameters and Frequency of Analysis

7.2.1. - Soil Matrix

During the well installation and soil borings, the split-spoon soil samples recorded with the highest PID reading from each borehole will be retained. In the absence of elevated PID readings, the shallowest sample will be retained. Also, the deepest soil sample collected from each borehole will also be tested. Selected samples will be analyzed for TCL VOCs, TCL semi-VOCs and TCL metals. Table 7.2.1.1 illustrates the appropriate laboratory methods used for soil sample analysis.

7.2.2 - Water Matrix

The wells to be sampled for the RI will be analyzed according to CLP procedures. At a minimum, one (1) round of sampling will occur. Sampling Event 1 will begin one (1) week after all the wells have been installed and developed, and if necessary, Event 2 may occur 30 days after Event 1. See Table 7.2.2.1 for the appropriate laboratory methods used for water sample analysis.

All groundwater samples collected during the first round will be analyzed for TCL VOCs, TCL semi-VOCs, TCL pesticides and PCBs and TCL metals. During each round of sampling, strict QA/QC protocols must be followed. A trip blank will be carried along with the samples every day which will determine if outside contamination has been introduced. Trip blanks will be analyzed for TCL VOCs only. A field equipment blank will be collected for each method of sampling and analysis, and tested for the same parameters collected that day. A site-specific MS/MSD sample will also be collected at a minimum of one per every twenty samples collected and analyzed for all respective parameters. Field tests will include temperature, pH, turbidity, and specific conductivity and will be taken immediately upon collection.

7.3 - Laboratory Procedures

7.3.1 - Calibration Practices

Instruments and equipment used in H2M Labs, Inc. are controlled by a formal calibration program. The program verifies that equipment is of the proper type, range, accuracy, and precision to provide data compatible with specified requirements. All level) are subject to calibration. Calibration may be performed by H2M personnel using reference standards or externally by calibration agencies or equipment manufacturers.

Implementation of the laboratory calibration program is the responsibility of the Laboratory Manager and Analysts. The Laboratory Quality Assurance (QA) Manager shall review the implementation of the program.

There are two (2) types of calibration pertinent to these laboratory procedures - operational and periodic.

1) Operational Calibration which is routinely performed as part of instrument usage, such as the development of a standard curve for use with an Atomic Absorption Sectrophotometer. Operational calibration is generally performed for instrument systems.

2) Periodic Calibration which is performed at prescribed intervals for equipment, such as balances and ovens. In general, equipment which can be calibrated periodically is a distinct single purpose unit and is relatively stable in performance.

Whenever possible, recognized procedures, such as those published by American Society for Testing and Materials (ASTM) or USEPA, or procedures provided by manufacturers shall be utilized.

7.3.2 - Equipment Identification

Equipment that is subject to calibration shall be uniquely identified so that calibration records can be designated with a specific instrument.

7.3.3 - Calibration Frequency

Instruments and equipment shall be calibrated at prescribed intervals and/or as part of the operational use of the equipment. Frequency shall be based on the type of equipment, inherent stability, manufacturer's recommendations, values provided in recognized standards, intended use, effect of error upon the measurement process, and prior experience.

7.3.4 - Calibration Reference Standards

Two (2) types of reference standards are used within the H2M laboratory for calibration - physical and chemical:

1. Physical Standards, such as weights for calibrating balances and certified thermometers for calibrating working thermometers and ovens, which are generally used for periodic calibration.

2. Chemical Standards primarily used for operational calibration.

Whenever possible, physical and chemical reference standards shall be known relationships to nationally recognized standards (e.g., National Bureau of Standards) or accepted values of natural physical constants. If national standards do not exist, the basis for the reference standard shall be documented.

7.3.5 - Calibration Failure

Equipment that fails calibration or becomes inoperable during use shall be removed from service and segregated to prevent inadvertent use, or shall be tagged to indicate it is out of calibration. Such equipment shall be repaired and satisfactorily recalibrated before reuse.

- Total air dry or nitrogen blowout.

- Distilled/deionized water rinse.

** Only if sample is to be analyzed for metals.

Field Decontamination for Drilling Equipment and Split Spoon Samplers:

Field decontamination will consist of steam cleaning and/or a manual scrubbing to remove foreign material and steam cleaning inside and out. These items will then be stored in such a manner as to preserve their pristine condition.

Field Decontamination for the Pumps and Hoses:

The procedures for the field decontamination of the pumps and hoses shall consist of a manual scrubbing to remove foreign materials followed by an Alconox scrub and tap water rinse. All wash fluid will be collected and disposed of properly.

Personnel Protective Equipment Decontamination Procedures:

The personnel protective equipment decontamination procedure shall consist of the minimum decontamination stations outlined in the Site Health and Safety Plan (Appendix D).

8.4 - Sample Custody

To maintain and document sample possession, chain-of-custody procedures will be followed. A chain-of-custody form contains the signatures of individuals who have possession of the samples after collection and identification in the field.

A sample is under custody if:

1) it is in one's actual possession; or

2) it is in one's view, after being in your physical possession; or

3) it was in one's physical possession and then was locked up or sealed to prevent tampering; or

4) it is in a designated secure place restricted to authorized personnel.

H2M personnel will preserve and retain the unused portions of all samples in their original containers. These samples will be stored until project closeout, at which time they shall be properly packaged and, at the direction of the H2M representative, transported to an off-site location for disposal.

Each person involved with the samples will know chain-of-custody procedures. A detailed discussion of the stages of possession; (1) field collection, (2) transfer, and (3) laboratory custody is presented below:

8.4.1 - Field Chain-of-Custody

Chain-of-Custody procedure for (2) field notebook and boring logs, (2) well key chain, (3) split-spoon sediment samples from well drilling, and (4) environmental samples are included as part of field collection.

Field Notebook and Boring Log Notebook Chain-of-Custody

Dedicated field and log books will be used for the duration of the project. These will be numbered and assigned to the field personnel. A log of the notebook number, the personnel assigned to the notebooks and their affiliation, and the date and time signed out and signed in will be kept. Maintenance of the notebook log will be the responsibility of the field hydrogeologist. Sufficient numbers of notebooks will be provided to allow for reviews of the field data by the project hydrogeologist during the field operations.

All water level data and field notes will be recorded in bound field notebooks. Drilling data will be recorded in boring logs which will be kept in ring binders. Soil sample chain-of-custody forms will also be kept in a ring binder.

Well Key Chain-of-Custody

The field hydrogeologist will be responsible for placing the locks on the protective casings and maintaining chain-of-custody of the keys. The project hydrogeologist will initiate a log tracking each set of keys from the wells. The log will contain the well number, the date and time the lock was installed on the well, the person who received the key, and the date, time and person to whom the key was given for the duration of the project. Each of the people to whom a key is assigned during the project will maintain a separate chain-of-custody log for the key(s) that they are assigned.

Split-Spoon Soil Samples

All split-spoon soil samples taken during drilling will be recorded on both the boring log forms and a chain-of-custody form. The field hydrogeologist will be responsible for the custody of the soil samples. The chain-of-custody form will report the sample I.D., date and time taken, person who received the sample, and date, time and person to whom the sample was released. The sample chain-of-custody forms will be kept in ring binders.

Environmental Samples Chain-of-Custody

When collecting samples for analysis or evidence, only a number which provides a fair representation of the media being sampled will be collected.

The field sampler initiates the chain-of-custody procedure in the field and is the first to sign the from upon collection of samples.

The field sampler is personally responsible for the care and custody of the samples until they are transferred and properly dispatched. Sample tags shall be completed for each sample, using waterproof ink, subjected to proper preservation, and packaged to preclude breakage during shipment. Every sample shall be assigned a unique identification number that is entered on the chain-of-custody form. Samples can be grouped for shipment using a single form.

The record shall be completed in the field as to indicate: project number, unique sample number, sample location (borehole, depth, grid coordinates), sampling date and time, person obtaining the sample, and method of sample preservation. The paperwork will be done and checked at an on-site location.

8.5 - Transfer of Custody and Shipments

All samples will be accompanied by a chain-of-custody record. When transferring the possession of samples, the individuals relinquishing and receiving will sign, date and note the time of transfer. This record documents transfer of custody of samples from the sampler to another person, to a mobile laboratory or to the permanent laboratory.

Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis, with a separate signed custody record enclosed in each sample box or

7.3.6 - Calibration Records

Records shall be prepared and maintained for each piece of equipment subject to calibration. Records demonstrating accuracy of reference standards shall also be maintained.

For instruments and equipment that are calibrated on an operational basis, calibration generally consists of determining instrumental response against compounds of known composition and concentration or the preparation of a standard response curve of the same compound at different concentrations. Records of these calibration can be maintained in several ways:

1. The calibration data can be kept with analytical sample date.

2. A log book can be prepared for each instrument which contains all calibration data.

Method 1 provides response factor information, etc., directly with analytical data so that the data can be readily processed and verified. Also, the raw data package is completed as a unit.

Method 2 provides an on-going record of calibration undertaken for a specific instrument; however, to process and verify the analytical data, the log must be used in conjunction with the raw data.

For operational calibration of instrumentation used for this project, calibration data will be included with the raw analytical data and maintained in project files.

7.4 - Analytical Methods

The analytical procedures for the parameters associated with this project will be from the "New York State Department of Environmental Conservation Analytical Services Protocol, September 1989 12/91 Revisions" (see Appendix C).

7.5 - Laboratory Data Processing and Reporting

7.5.1 - Review of Data Processing

The following is a discussion of the method to be used for reviewing (checking) data processing. At least 20% of all data shall be checked in this manner. If, during the checking process, errors are determined, checking shall be completely (100%) performed for the data set.

The analyst performing the data processing shall give an analyst, independent of the work, the data package. The package shall include, as appropriate, raw data, data sheets, strip charts, computer input/output, calculations, sources for input parameters such as response factors, etc.

The independent analyst (checker) shall review the data for:

1. Appropriateness of equations used.

2. Correctness of numerical input.

3. Numerical correctness of all calculations. This should be done by reperforming numerical computations.

The checking process must be thorough enough to validate that the results are correct. If the checker disagrees with any part of the computations, the checker shall mark through the number with a single line and place the revised number above it.

Any changes made by the checker shall be back-checked by the originator. If the originator agrees with the change, no action is necessary. If the originator disagrees, the originator and checker must resolve the difference so they agree with the result presented.

7.5.2 - Data Reduction

Laboratory data reduction and analysis for organic analyses involves relating a "peak area" to the mass of a constituent. This is accomplished by digital computers. The computer hardware and software is designed to allow the analyst to create libraries or files of calibration standards, and then compare raw sample data against these libraries to produce a report which contains the identification and qualification of constituents present in the sample. The computer-reduced data are manually checked by the analysts.

Inorganic analyses are performed with instruments of varying electronic sophistication, but in all instances, data reduction and analysis involves essentially the generation of a standard calibration curve, and then comparing the instrument readout against the calibration curve to obtain a "Quantity" of constituent. The concentration is then manually calculated. The calculated results are manually entered into the computer system.

For laboratory reporting, the results of the inorganic analyses are entered in a computer and the report is printed. The organic analyses are typed. All reports list the date the sample was received, date collected and the date reported.

7.5.3 - Data Reporting

The following are applicable to data presentation:

1. The final presentation shall be checked in accordance with data verification requirements and approved by the Laboratory QA Manager.

2. Data presentation will include:

   a) Sample identification number used by H2M Labs, Inc. and/or the sample identification provided to the laboratory, if different than identification used in the laboratory.

   b) Chemical parameters analyzed, reported values, and units of measurements.

   c) Detection limit of the analytical procedure, if the reported value is less than the detection limit (see Appendix C for CLP detection limits).

   d) Data for a chemical parameter are reported with consistent significant figures for all samples.

   e) Results of quality control sample analysis, if appropriate.

   f) Footnotes referenced to specific data, if required to explain reported values.

The format for reporting will follow that the NYSDEC Contract Laboratory Program (CLP).

The laboratory QA officer will provide the Project Manager with a QA summary sheet including a narrative of data rejection or acceptance.

7.5.4 - Review of Data Reporting

Review of data reports is required to verify that information reported by H2M Labs, Inc. corresponds with processed analytical results. Review is only required of the data as it is presented for issuance. Intermediate steps performed after the processed data are checked to prepare the data report (such as data summarizes) do not require validation.

After the draft data report is prepared (generally in tabular form), the reported results should be checked against the reviewed processed data so that transcription errors do not occur. The checking process follows:

1. Using the draft report, all data entries are checked. The checker is not required to be independent of the work because only the transcription from the reviewed data to the data report is being checked.

2. The draft data report should be checked so that the items cited for data presentation are complete and correct. Corrected entries are marked through with a single line and the correct entry provided. The reviewer will indicate that corrections have been made in the report by placing a second check mark by the correction after comparing the change with the revised copy. The checker shall sign and date every page of the data report in ink.

3. Use of the draft data report results in a check-print which should be maintained as a record to demonstrate the review.

4. If data printouts, such as chromatographs or GC/MS data processing, are included in the data report, review is not required for the data report, review is not required for the data printout.

5. If computer output is used directly as the data report without further transcription, only the input requires review.

After checking of the data report is complete, it is given to the Laboratory QA Manager or her designated representative for final review. This step is not intended for verifying the reported data. This review is intended to determine that the report meets project requirements. The data report is approved for issue by the Laboratory QA Manager.

7.5.5 - Documentation, Data Reduction and Reporting Field Data

All information pertinent to any field activities will be recorded in bound, waterproof field books. Duplicates of all notes will be prepared each night and kept in a secure place away from the site. Proper documentation will consist of all field personnel maintaining detailed records of all work accomplished including:

(1) data and time of work events

(2) purpose of work

(3) names and addresses of people relevant to the project

(4) description of all methods

(5) description of all samples

(6) number and size of samples

(7) description of sampling point

(8) date and time of collection of sample

(9) sample collector's name

(10) reference to site map and/or photograph

(11) field observations

(12) any field measurements with portable instruments.

Each sample collected in the field will be labeled using waterproof ink. Each bottle will be labeled with a number of location, parameter to be analyzed, sampling time and date. The field hydrogeologist will be responsible for ensuring that hydrogeological data are properly recorded.

The data reporting scheme and key individuals who will handle the data are as follows:

(1) data collection by the field hydrogeologist

(2) data reduction, also be the field hydrogeologist

(3) data review by the Project Manager

(4) data validation by independent qualified validator

(5) data usability by the quality assurance officer

(6) Final data interpretation by project manager

8.0 - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

The overall QA/QC plan objective is to produce data at the highest quality level to provide direct support for the feasibility study. All sampling activities used directly to support the RI will use Level IV Data Quality Objectives. These activities include groundwater sampling and soil/sediment sampling (see Table 8.1 for summary of QA/QC for sampling).

Specifically, all data will be gathered or developed using procedures appropriate for the intended use. Standard procedures are used so that known and acceptable levels of accuracy, precision, representatives, completeness, and comparability are maintained for each data set. Descriptions of these criteria are presented in the following subsections.

8.1 - Field QA/QC

In order to ensure that data collected in the field is consistent and accurate, forms will be utilized for repetitive data collection, such as depth to water in wells, well locations, etc. These field forms include Well Logging, Field Sampling and Water Level Data Records.

The accuracy of the data collected will be checked by using an additional degree of definition than the minimum wherever possible. For example, if two distances are needed to locate a well, three will be used so that if one distance is inaccurate, the well can still be located and the field measurements can be re-taken. For measurements where this is not possible (i.e., depth to water), measurements will be taken and recorded three times.

Blanks and duplicate samples will be used to verify the quality of the field sampling results. A brief description of these samples follows.

8.1.1 - Blank Samples

A field equipment blank will be used to determine the effectiveness of the decontamination of the sampling devices (i.e., bailers and/or split-spoon samplers). Analyte free water will be poured into the sampling device and then transferred to sample containers before use in sampling. Sampling bailers will be dedicated to each well, however, these equipment blanks will be used to ensure proper laboratory cleaning.

The analyte free water used as blanks (for both field and trip blanks) will depend upon the type of analysis. Distilled and deionized water will be used as blanks for the inorganic analysis. For organic analysis, the blanks will be HPLC grade water.

8.1.2 - Duplicate Samples

One blind duplicate sample will be prepared during soil sampling. Site-specific Matrix spikes (MS) and MS duplicates (MSDs) will be collected and submitted to the laboratory as separate samples. One MS/MSD will be collected for every 20 samples, per matrix.

8.1.3 - Field Records

All information pertinent to any field activities will be recorded in bound, waterproof field books. Duplicates of all notes will be prepared and kept in a secure place away from the site. Proper documentation will consist of all field personnel maintaining records of all work accomplished including the items listed below:

- date and time of work events
- purpose of work
- description of methods

- description of samples
- number and size of samples
- description of sampling point
- date and time of collection of sample
- sample collector's name
- field observations
- any field measurements with portable instruments

Each sample collected in the field will be labeled using waterproof ink. Each bottle will be labeled with a number, location, parameter to be analyzed, sampling time and date. Packaging, shipping and chain-of-custody requirements for the samples shall be in accordance with National Enforcement Investigation Center (NEIC) procedures.

8.2 - Preparation and Preservation of Sample Containers

The scope of this project necessitates that several types of sampling containers will be used. Sample containers will be provided by H2M Labs, Inc. Each sample container will be provided with a label for sample identification purposes. The amount of information on the label will include a sample identification number, time, date and initials of the sample collector. All sample containers will be accompanied by a full chain-of-custody.

All sample containers will be thoroughly cleaned prior to sampling. Appropriate sample preservatives will be pre-added in the bottles. Procedures vary according to the type of analysis to be performed. Individual procedures are outlined below. It is lab practice to pre-preserve sample containers in order to minimize potential contaminants in the field and to reduce unnecessary sample handling in the field (see Table 7.2.1.1 and 7.2.2.1 for description of sample analysis methods, holding time and preservation procedures).

8.3 - Decontamination

8.3.1 - Decontamination Zone

The decontamination zone will be located at the southern end of the property. The driller will prepare a decontamination station whose perimeter is diked to prevent ground contamination from wash waters running out of the area. All drilling equipment shall be decontaminated in this zone.

Wash waters from equipment (i.e., split-spoons, pumps, etc.) requiring decontamination will be contained and stored in 55 gallon drums pending laboratory analyses.

8.3.2 - Decontamination Procedures

All field equipment, with the exception of drilling equipment, split-spoons, dedicated polythylene bailers, hoses, pumps, well casings, well screenings and personnel protective equipment, shall be decontaminated for field use according to the following procedures:

- Non-phosphate detergent and tap water wash.

- Tap water rinse.

- Distilled/deionized water rinse.

- 10% nitric acid rinse.**

- Methanol rinse.

cooler. If samples are shipped directly to the laboratory, the chain-of-custody forms will be kept in possession of the person delivering the samples.

For samples shipped by commercial carrier, the chain-of-custody form will be sealed in a watertight envelope, placed in the shipping container, and the shipping container sealed prior to being given to the carrier. The waybill will serve as an extension of the chain-of-custody record between the final field person and receipt in the laboratory.

Whenever samples are split with a facility or government agency, a separate chain-of-custody record will be prepared for those samples and marked to indicate with whom the samples were split.

8.6 - Laboratory Sample Custody

H2M Labs, Inc. has standard operating procedures for documenting receipt, tracking and compilation of sample data. Sample custody related to sampling procedures and sample transfer are described below.

1) Shipping or Pickup of Cooler By Client

   (a) Cooler packed at H2M after contact with client.

   (b) Cooler wrapped with evidence tape.

   (c) Chain-of-Custody form filled out by H2M personnel.

   (d) Client supplied with evidence tape to seal cooler prior to shipment back to the laboratory.

2) Delivery of Cooler to H2M

   (a) Samplers check for any external damage (such as leaking).

   (b) The outside of the cooler is checked with a Geiger counter.

   (c) Samplers sign for cooler from shipper.

3) Final Steps

   (a) Raw data stored on file.

The samples will be stored at the proper temperature and not longer than the required holding time before analysis. It is the responsibility of the laboratory to properly dispose of samples beyond the holding period.

8.7 - Data Validation

Data validation will be performed by Ms. Judy Harry of Laboratory Validation Services. Data review starts with an analyst, independent of the data acquisition and processing, reviewing and confirming that data processing has been correctly performed. It continues through verifying that the reported analytical results correspond to the data required and processed. The data validation report will present the critical points with respect to compliance with data holding times, detection limits, and quantification values. All validation procedures and reports will conform to NYSDEC approved methods.

8.8 - Quality Assurance Officer and Data Usability

The QAO for the project is Mr. Gerald A. Granzen (see Appendix B for Mr. Granzen's resume). Mr. Granzen will be responsible for:

A) Informing the NYSDEC Division of Hazardous Waste Remediation (DHWR) Bureau of Technical Services (BTS) of the frequency in which he will be present on site during implementation of the FSP.

B) Submitting his field check list prior to sampling.

C) Submitting a field audit report for each field check to NYSDEC (DHWR, BTS).

D) Reviewing laboratory results for the soil/sediment and groundwater samples pertaining to the site from a data usability standpoint. EPA's "Laboratory Data Validation, Functional Guidelines for Evaluating Organics Analyses" and EPA's "SOP No. HW-2, Evaluation of Metals Data for the Contract Laboratory Program (CLP)," will be used to determine data usability. Based upon the evaluation, the QAO will determine whether all data are usable. The QAO will determine which data should be considered as estimated and flagged with J D. The QAO will submit a Data Usability Report to NYSDEC after each round of data and prior to the development of the final RI report.

E. Filling out and signing of the Quality Assurance Officer's (QAO) signature page (see following page).

F. Notifying the NYSDEC - QAO prior to the deviation from any accepted protocols contained in the final RI Work Plan (this document).

QUALITY ASSURANCE OFFICER (QAO)
SIGNATURE PAGE

I, Gerald Granzen, hereby certify that I am an employee of Holzmacher, McLendon, Murrell, P.C. and that I have acted in conjunction with the project manager to develop this site specific Quality assurance/Quality control (QA/QC) plan. As an employee of Holzmacher, McLendon & Murrell, P.C. (H2M) and independent of H2M Labs, Inc.

I understand that I shall derive my responsibility and authority from a source other than the project manager and have the authority to override the project manager's decision in areas where QA/QC elements may be compromised.

I certify that my education and experience fulfill the minimum requirements of the New York State Department of Environmental Conservation as indicated on my resume (see Appendix B).

I have audited H2M Labs, Inc. and have determined that it is a NYSDOH-ELAP-CLP certified laboratory qualified to provide the analytical services as outlined in this RI Work Plan.

I agree to assist the project manager in the development of the field sampling program (FSP) and anlytical portion of the QA/QC Plan, interface with the data validator and develop a project specific data usability report.

Gerald Granzen
Signature of QAO

Gerald Granzen
Print Name

9-9-97
Date

9.0 FISH AND WILDLIFE IMPACT ASSESSMENT PLAN

9.1 - Objective

This Fish and Wildlife Impact Assessment Plan is intended to evaluate fish and wildlife concerns associated with the selected and alternative remediation methods of the Böwe Systec, Inc. site. The work plan is presented in a phased approach in order to lead to an efficient ecological evaluation of the site (and the surroundings) and to evaluate the potential impacts on fish and wildlife resources.

Analysis of the impact of the potential contaminant pathway and site remediation in the ecology begins with an inventory and report of identifiable fish and wildlife resources that may be affected by site-related contaminants. If a descernable pathway of contaminant migration and exposure to significant fish and wildlife resources can be identified, detailed analysis would follow. If no significant resources or potential pathways are identifiable, impact on resources may be minimal. Demonstration of minimal impact may eliminate the need for further analysis and the remainder of the phased scope under this plan.

Coordination and consultation with regulatory and non-regulatory fish and wildlife authorities, including the stsaff of the Inactive Hazardous Waste Evaluation Unit and the NYSDEC Division of Fish and Wildlife are provided for under this proposed work plan.

9.2 - General Ecology

The landscape of the area surrounding and including the 200 Frank Road property has changed drastically over the past 50 years. Extensive housing developments, shopping centers, industrial complexes and office parks now dominate and blanket areas where once deciduous oak forests and then vast acreage of potato and other crop farms once flourished. Rapid urbanization has created isolated fragments of the natural forest replacing it with typical track housing developments and the associated wildlife, opportunistic and adaptable to the introduced ornamental vegetation and the severely fragmented nature of the undisturbed open space. The proximity of the fragmented wooded open space to extensive residential areas and high speed roadways limits the occurrence of significant wildlife populations. Associated with the remnant stands of oak, birch, cherry and maple are songbirds, which are the most common wildlife throughout the area. Back yards that have trees, shrubs, and evergreens are generally attractive to a variety of birds. English sparrows, grackles, red-wing black birds, mocking birds, cardinals, house finches, starlings, morning doves, and pigeons are the dominant species.

Isolated and distant areas of open land include several recreational ball fields and golf courses to the north, east and south and the Wantagh State Parkway right-of-way to the west. Typical wildlife which may be attracted to these areas include bobwhite quail, meadow vole, meadowlark, field sparrow, cottontail rabbit, raccoon, opossum, red fox, as well as those mentioned earlier above.

9.3 - Scope of Work

9.3.1 - Phase I - Baseline Information

Task 1 - Site Maps

A topographic map will be prepared for the site and a two mile radius around the project site, demonstrating all NYSDEC juridical designations including but limited to Critical Environmental Areas, Freshwater Wetlands, and Significant Habitats. In addition, a cover type map will be prepared demonstrating dominant vegetative cover on site and in a 0.5 mile radius from the boundary of the project site. Habitats will be preliminary designated by analyzing areal photography and subsequently field verified for accuracy and refinement.

Task 2 - The Description of Fish and Wildlife Resource, Field Investigations and Reports

Habitats and vegetative fragments identified as significant resources will be inventoried by walking line transects across the habitat. A compass heading perpendicular to a base line will be established and sample circular plots with a radius of approximately 40 feet would be sampled at intervals along the transect. Inventories will be conducted until no new plant species are observed. Dominant plant species will be noted for each vegetative unit and each unit would be categorized in accordance with the food, nesting and cover resources provided by the dominant vegetation.

Fauna will be identified by visual observations including direct siting or by observation of browse markings, scat, nests, tracts, or dens. In addition, fauna as well as flora identified in the field will be supplemented by literature file searches and communication with NYSDEC, USF&W Service and local wildlife experts. Special Concern, Threatened or Endangered animal and plant species will be specifically targeted in the inventory and listed if appropriate.

Habitats will be qualitatively assessed for ecological value to wildlife in terms of food, nesting, den, and cover resources, and to humans in terms of hunting, recreation, scientific study and wildlife observation.

Observations of stress potentially related to site contaminants will be noted and described as to its effect on the biota.

Potential fish and wildlife regulatory criteria applicable to remediation (if warranted) will be identified in the R.I. including permit and buffer requirements.

9.3.2 - Phase II - Contaminant-Specific Impact Analysis

H2M will conduct a pathway analysis to determine the potential and feasibility of routes of contaminants migration into the biota. Contaminants of concern, contaminant source, potential pathway, likelihood of exposure and exposure frequency will be analyzed as it relates to likely receptors in the biota.

9.3.3 - Phase III - Criteria-Specific Analysis

If it is concluded that a pathway for fish and wildlife impacts exists, criteria-specific analysis and analysis of toxicological effects will be determined pursuant to "Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites" (NYSDEC DF&W 1991).

9.3.4 - Phase IV - Ecological Effects of Remedial Alternatives, Implementation and Monitoring

Analysis of the proposed remedial action as well as alternatives, will be performed as to its effect on indicator species identified as significant in phases I, II and III. Effects related to contaminants and non-contaminant impacts of remediation will be determined including clearing, grading, excavating, construction or laydown for construction. Natural resource, regulatory setbacks and/or constraints will be discussed as they effect remediation alternatives. All alternatives including the proposed remediation will be compared to baseline conditions established at the beginning of the remedial investigation. This section will conclude with an assessment of the overall risk of the alternative remedial actions to the productivity of fish and wildlife resources. Positive and negative effects will be compared for all remedial alternatives.

After implementation of the selected alternative, fish and wildlife resources will be monitored periodically for the duration of the remediation.

10.0 - BASELINE HEALTH RISK ASSESSMENT (HRA) PLAN

A baseline HRA evaluation will be conducted and will follow 5 basic steps as recommended in the Superfund Public Health Evaluation Manual (EPA 540/1-86/060, 1986). These are: (1) select indicator chemicals at the site; (2) assess exposure concentrations and compare to ARARs (applicable or relevant and appropriate requirements); (3) estimate human intakes; (4) assess toxicity; and (5) characterize risks.

In Step 1, the indicator chemicals are selected and are based on toxicity, site concentration and environmental mobility. This involves identifying the chemicals present at the site, determining representative concentrations from site monitoring data, calculating indicator scores based on maximum and representative concentrations and route specific toxicity data, and finally selecting indicator chemicals based on indicator scores and physical/chemical property data. The chosen indicator chemical represents the most prevalent, toxic, mobile and persistent chemicals at the site.

In Step 2, the exposure point concentration is estimated using actual conditions at the site, thus reflecting both background and site-specific contamination. First, potential human exposure pathways are identified, exposure point concentrations of indicator chemicals are estimated using environmental monitoring and appropriate models, and then the projected concentrations are compared to ARARs. If there are ARARs for all indicators, then the baseline evaluation is considered complete. A community well survey will be performed for the area downgradient of the site in order to identify potential receptors of groundwater. The survey will be performed for an area up to 1/2 mile downgradient of the site. Should any private wells be identified, H2M will collect samples and test them for the same parameters as detected at Böwe.

The public Health Evaluation Manual also recommends a second procedure. This is to estimate exposure point concentrations for water using "background" chemical concentrations. Background conditions are based on "natural" conditions instead of anthropogenic conditions.

Step 3 is the estimation of chemical intakes. This involves adjusting standard intake assumptions for site-specific factors; if appropriate, combining adjusted assumptions with projected chemical concentrations to estimate intakes (i.e., chronic and subchronic daily intakes across exposure routes, as appropriate.

Step 4 is the toxicity assessment. On this step the critical toxicity values from EPA approved sources are identified, and toxicity values are developed for additional chemicals, if necessary. The toxicity values are for sub-chronic and chronic acceptable intake rates.

Step 5 is the risk characterization step. All estimated intakes for non-carcinogens are compared to reference levels. For carcinogens, estimated intakes with upper bound carcinogenic potency factors are combined in order to calculate risk.

Figure 10.1 is a flow chart which outlines the steps to be undertaken for the baseline Health Risk Evaluation.

11.0 - GENERIC OUTLINE OF RI REPORT

EXECUTIVE SUMMARY

1. INTRODUCTION
   - 1.1 Purpose of Report
   - 1.2 Site Background
     - 1.2.1 Site Description
     - 1.2.2 Site History
     - 1.2.3 Previous Investigations
   - 1.3 Report Organization

2. STUDY AREA INVESTIGATION
   - 2.1 Surface Features (topographic mapping, etc) (natural and manmade features)
   - 2.2 Contaminant Source Investigations
   - 2.3 Hydrogeological Investigations
   - 2.4 Soil Investigations
   - 2.5 Groundwater Investigations
   - 2.6 Human Population Surveys
   - 2.7 Water Supply Surveys
   - 2.8 Ecological Investigations

3. PHYSICAL CHARACTERISTICS OF THE STUDY AREA
   - 3.1 Surface Features
   - 3.2 Surface Water Hydrology
   - 3.3 Geology

3.4 Soils

3.5 Hydrogeology

3.6 Demography and Land Use

3.7 Ecology

4. NATURE AND EXTENT OF CONTAMINATION

4.1 Sources

4.2 Soils

4.3 Groundwater

4.4 Biota

5. QA/QC, DATA VALIDATION, AND DATA USABILIY

5.1 QA/QC

5.2 Data Validation

5.3 Data Usability

6. CONTAMINANT FATE AND TRANSPORT

6.1 Potential Routes of Migration (i.e., air, groundwater, etc.)

6.2 Contaminant Persistence

6.3 Contaminant Migration

7. BASELINE HEALTH RISK ASSESSMENT

7.1 Public Health Evaluation

7.1.1 Exposure Assessment

7.1.2 Toxicity Assessment

7.1.3 Risk Characterization

7.2 Environmental Assessment

APPENDICES

12.0 - HEALTH AND SAFETY PLAN (HASP)

The primary health and safety concerns at the Böwe Systec, Inc. site are: inhalation or dermal-contact exposure to hazardous materials and physical hazards.

1. Inhalation: Ambient air will be monitored using an OVA or HNu during any ground breaking activities. All work will be performed in Level D. Level C (air-purifying respirators) will be considered if ambient air concentrations of VOCs exceed appropriate guidelines.

2. Dermal Contact: Synthetic gloves with low permeability to liquids and regular Tyvek suits will be used by all field staff in contact with on-site soil or water.

3. Physical Hazards: Hard hats and steel-toed safety boots will be mandatory during excavation or drilling activities. Safety glasses will be used during equipment decontamination. Air monitoring using an OVA or HNu will be used during drilling activities.

Personnel will adhere to corporate health and safety guidelines during field activities.

A Health and Safety Plan (HASP) has been developed for the implementation of the work plan by H2M personnel (see Appendix D for HASP). This HASP establishes a protocol for protecting field personnel and the public from incidents that may arise while performing field activities at the Böwe Systec, Inc. site. This plan establishes personnel protection standards, mandatory operation procedures, and provides for contingencies that may arise while field work is being conducted at the site. All H2M field crews and all subcontractors will be provided a copy of the HASP. In addition, all subcontractors must provide their own

HASP or provide written acceptance of the H2M HASP. Any visitors will be required to abide by the procedures outlined in the HASP.

Should contractors wish to follow their own HASP, it must include safety guidelines, contingency plans, a hospital route map and emergency telephone numbers. The HASP must adhere to Federal OSHA and New York State Department of Labor hazardous materials requirements for hazard communication and health and safety, and address measures to protect nearby residents.

13.0 - CITIZEN PARTICIPATION PLAN (CPP)

13.1 - Introduction

The following Citizen Participation Plan (CPP), affecting the investigation and remediation of the Bōwe Systec, Inc. inactive hazardous waste disposal site (NYSDEC identification number 1-30-048 listed in the Registry as the Bowe Systems and Machinery site), has been prepared in order to provide a clear set of opportunities and procedures for citizens to receive information about and provide input to the remedial investigations and activities which will take place at this site. The plan seeks to assure an open process for the interested and possibly affected public. This includes public officials at all levels, citizen interest groups, commercial interests, individuals in the area of the site and the media. These parties need to be a part of the decision-making process for this site, and to be informed about on-site activities.

The site is located in an area of light industrial activity, and has not been a focus of particular citizen concern. The plan presented here briefly describes the site history and condition as it is now known, as well as currently proposed remedial investigation activities. It also identifies community officials, groups and individuals who may be affected by or have interest in these investigations, and identifies locations where these parties can obtain additional information about the remedial program for this site. Specific opportunities for public and community input into the decision-making process are indicated. The CPP is a working document. It can be adjusted to accomodate major changes either in public attitude or in the nature and scope of technical activities at the site.

13.2 - Site Background and History

13.2.1 - Site Description and Operation

The property located at 200 Frank Road in Hicksville, in the Town of Oyster Bay, New York is shown in Figure 2.1.1. Bõwe Systec, Inc. (Bowe) purchased the property in the early 1980s. The previous property owner was reported as Dyna Magnetic Devices. Information available at the Nassau County Department of Health (NCDH) identifies Dyna Magnetic as a user of trichloroethylene (TCE) on the order of 200 gallons per year.

The property is 2.098 acres in size and contains a one story masonry building that is 25,000 square feet (as shown in Figure 2.1.2). The building was vacant when Bõwe purchased it. During Bõwe's occupancy, an office area encompassed 5,700 square feet of the building, with the remainder of the building being used for either warehousing or assembly/testing/rebuilding of dry cleaning machines.

American Permac (Permac), a dry cleaning equipment importer, previously shared the building with Bõwe. Besides importing, Permac did some assembly, testing and rebuilding of dry cleaning machines on the premises. To accomplish this testing, tetrachloroethylene (PCE) was used and was contained in a 300 gallon above ground tank centered along the south wall of the building. In October 1990, this tank was removed and PCE was sold to dry cleaners in the area.

During the testing of dry cleaning machines, municipally supplied non-contact cooling water was used to cool the PCE, which was continuously reused in the testing process. The non-contact cooling water was then discharged to a floor drain that emptied into a drywell system that extended into the outside rear portion of the property. Under normal operation, no cross-contamination between PCE and non-contact cooling water was possible. The former location of the floor drain and drywell system is indicated on the site plan (Figure 2.1.2).

On or about October 1, 1990, a release of tetrachloroethene (PCE) occurred into the on-site leaching pool system at the facility. This spill was subsequently reported to the Spill Response Unit of New York State Department of Environmental Conservation (NYSDEC) Region I on February 22, 1991, whereupon it was referred to NYSDEC's Division of Hazardous Waste Remediation. In March 1991, Böwe conducted an Interim Remedial Measure (IRM). This entailed excavating and removing PCE-contaminated sub-soils from the leaching pool system. Based on the analysis of soil and groundwater quality at the site, the site was listed in the New York State Registry of Inactive Hazardous Waste Disposal sites on October 31, 1991.

Other chemical usage on-site was minor and consisted of very low quantities of paints, thinners, solvents and oils. Table 2.1.1 itemizes the limited chemical inventory and amounts historically used. Böwe has vacated the property which is currently only used for limited storage of printed of paper (forms). Its current operation therefore does not require the use of any chemicals.

13.2.2 - Regional Groundwater Quality

The geographic area surrounding the 200 Frank Road property has been identified by NCDH as a contaminated aquifer segment in a report entitled "Investigation of Contaminated Aquifer Segments, Nassau County, New York, June 1986". Records are available on numerous releases of volatile organic compounds in the West Hicksville area. As a result, this area has been extensively studied by NCDH and areas of volatile organic contamination were delineated in the report cited above. The groundwater underlying this area is documented as being impacted primarily by 1,1,1-trichloroethane, in excess of 5,000 ug/l (or parts per billion). Based upon groundwater analytical data generated by NCDH, significant organic contamination has migrated into the Magothy Aquifer, up to at least 265 feet deep. The primary organic contaminant present within the Magothy is Trichloroethylene (TCE).

13.2.3 - Previous Site Investigations and Remediation

In 1990, environmental assessments and sampling indicated elevated concentrations of PCE in groundwater at four (4) monitoring wells (MW Nos. 1-4) installed on site. Also, elevated concentrations of volatile organics were detected in the soils within several drywells and at the unpaved area located outside the paint spray booth door (to the southwest of the building). Analytical testing for metals indicated elevated levels of copper and zinc only at one drywell. Analytical results for drywell Nos. 4, 5, 6 and 7 indicated that volatile organic compounds were not present above detection levels at a depth of two to four feet below the bottom of the drywells. A recommendation was made to conduct site remediation to remove the source of volatile organic contamination present at drywell Nos. 1, 2 and 3 (see Figure 2.1.2).

Site remediation consisting of the excavation and removal of impacted soils surrounding drywells 1, 2 and 3 was performed under the oversight of the New York State Department of Environmental Conservation (NYSDEC). This remediation program was conducted to the satisfaction of NYSDEC and documented in a report dated April 17, 1991. The connection between drywell no. 1 and the floor drain inside the building was removed. Following the remedial effort, additional monitoring wells (MW nos. 5, 6, & 7) were installed, downgradient of the remediated drywells, to provide supplemental monitoring of groundwater quality.

In June and July of 1992, H2M performed a site screening investigation (SSI) at the site. The objective of the (SSI) was to provide an overview of the existing conditions at the site by tentative identification of source areas and, to a limited degree, the extent of contamination. An additional objective was to provide data for the development of Interim Remedial Measures (IRMs) for the site. In order to accomplish this objective, four main areas of concern were investigated. These areas included: Area 1 (drywells 1, 2, and 3); Area 2 (drywell 8); Area 3 (stressed vegetation along southwest corner of building); and Area 4 (septic system). Drywells 4, 6, and 7 were also investigated, although past studies indicated little to no contamination at these locations. In addition, groundwater samples were collected from existing and temporary wells (that were installed during the SSI). Groundwater elevations were also measured in order to define the direction of groundwater flow and potential direction of contaminant transport (see Appendix A for SSI report).

The data collected during the SSI, provided a timely assessment of potential future remedial efforts.

Based on the scope of work executed for the SSI, H2M concluded the following:

- Evidence of PCE contamination in drywell DW-8 indicates this area on site to be a potential source of groundwater contamination. The soil samples collected at 10'-12' (bottom of drywell) and 23'-25' both exhibited elevated VOC concentrations by the PID. Laboratory analysis of the sample from 10'-12' indicates that elevated levels of PCE, identifying DW-8 as a potential source area.

- Soil samples collected from Drywells DW-1, DW-2, DW-3, DW-4, DW-6 and DW-7 do not provide evidence of VOC contamination. These results support past investigations and remedial efforts.

- The shallow soils in the grassy area (near the former spray booth), have apparently been impacted by VOCs (within a limited area). This area may be a source of VOC contaminants to the groundwater since laboratory analysis of soil samples SB-1 (2'-4') and SB-2 (2'-4') indicated elevated levels of PCE.

- The results of the three (3) sanitary system samples indicate no source of PCE. However, in sample LP-2, VOCs were detected that are commonly found in sanitary waste streams. The presence of dichlorobenzenes could indicate evidence of aromatic toilet discs usually placed in restroom facilities. The absence of these VOCs in the groundwater indicates that the extent is limited.

- The groundwater flow direction indicates a localized influence from the recharge basin, located southwest of the site. Typically, a local groundwater mound results from groundwater recharging from a basin. The regional groundwater flow was measured to be south/southeast and may slightly fluctuate with changes in precipitation and amount of recharge over the area.

- Based on the groundwater flow direction, the groundwater sampling points selected for this SSI provided downgradient coverage of the areas of concern on site. The groundwater sampling results indicate a VOC plume (primarily PCE) at the property boundary to the south. This is evidenced by the concentrations of VOCs detected at the most downgradient wells (MW-6, T-1, and T-2). Concentrations of PCE detected in the groundwater are similar to past results (1991). However, the presence of other VOCs indicates the breakdown of PCE by natural degradation over time. The highest concentration of PCE in the groundwater was detected at MW-6, which is generally downgradient of both the grassy area (Area 3) and drywell DW-8.

Based on the findings of this SSI, H2M provided the following recommendations:

- If acceptable by NYSDEC, register and abandon/remove fuel oil UST, independent of the RI.

- If acceptable by NYSDEC, retain a licensed hauler to pump and clean (wash) out the entire sanitary system (septic tank and 2 leaching pools) independent of the RI. Material removed from the sanitary system should be disposed of at a licensed facility to accept such waste.

- Implement the RI Work Plan to collect additional data for deep soils and contact NYSDEC to discuss an Interim Remedial Measure (IRM) at the former spray booth area and DW-8. The IRM should be the excavation and disposal of shallow soils (5' depth). Once sufficient data has been obtained for deep soils, contact NYSDEC to discuss the possibility of additional IRMs for remediation (if necessary).

- Implement the RI Work Plan to collect additional data and evaluate alternatives for remediation of groundwater in order to capture contaminant groundwater on site. Once sufficient data has been obtained, contact NYSDEC to discuss alternatives to conduct an IRM for groundwater remediation (if necessary). Alternatives may include: no action; pump and treat with recovery wells and air stripper; pump and treat with carbon adsorption; or air sparging.

- Investigate the drainage patterns of the site area and determine the potential for the recharge basin to act as a source.

- Wells presently on site should be tested for hydraulic connection to the aquifer. Wells MW-1 through MW-4 may not provide accurate monitoring points due to inadequate surface sealing. H2M will propose redrilling and/or repair to wells as necessary during the RI and upon approval by NYSDEC.

Since the SSI was completed and submitted to NYSDEC, the UST has been removed, the sanitary system has been cleaned and an IRM work plan has been submitted for the shallow soils at the former spray booth area and DW-8.

13.3 - Project Description

13.3.1 - Objectives of the Remedial Investigation

Bŏwe has agreed to enter into and carry out the elements of an Order on Consent with the NYSDEC in order to further characterize site conditions and determine if the site poses a significant threat to public health or the environment for which further action is required. Bŏwe has retained Holzmacher, McLendon & Murrell, P.C. (H2M) to conduct a remedial investigation (RI) with the following specific objectives:

1) To provide sufficient data on the site so that areas either previously identified or suspected as potential source areas of contamination are either confirmed or are determined to be below regulatory levels of concern.

2) To determine, if source areas are found to be present, the nature, type, physical extent and migratory path of contamination, in order to develop and implement appropriate remedial measures.

3) To document areas found to be free of contamination, or which have been previously remediated.

13.3.2 - Description of Proposed Remedial Investigation Activities

The remedial investigation (RI) will primarily focus on three areas of suspected sources of volatile organic contamination: drywells; stressed vegetation area; and the septic system. Borings will be used to field screen and collect soil samples for analysis. Monitoring wells will be installed to determine groundwater quality conditions. A new upgradient well is proposed west of monitoring well MW-1. One new downgradient well will be installed to the east of MW-3. Two additional downgradient wells may be located off site along TEC Street as determined necessary (following initial groundwater sampling).

Groundwater samples will be collected following installation of the wells and will be analyzed for the target compound list volatile organic compounds (TCL VOCs), TCL semi-VOCs, TCL pesticides and PCBs, and TCL metals.

As part of the field investigations, a health and safety program for air monitoring will be conducted to test for airborne organic vapors. Since contamination has been detected in the soil and groundwater, the program will apply the use of a photoionization detector (PID) or flame ionization detector (FID). Details regarding the health and safety program for field investigations are presented in Appendix D.

13.4 - Preliminary Contact List of Potentially Affected/Interested Public

1) Federal Elected Officials

Senator Daniel P. Moynihan (212) 661-5150
733 Third Avenue
New York, NY 10017
(State office)

Senator Alfonse M. D'Amato (212) 947-7393
7 Penn Plaza, Suite 600
New York, NY 10001
(State office)

Congressman Norman F. Lent (516) 223-1616
2280 Grand Avenue
Baldwin, NY 11510
(District office)

2) State Elected Officials

Governor Mario Cuomo (518) 474-8418
State Capitol Executive Chamber
Executive Chamber
Albany, NY 12224

State Senator Ralph Marino (518) 455 2392
State Capitol, Room 330 CAP
Albany, NY 12247

Assemblyman Frederick E. Parola, Jr. (516) 731-3434
3700 Hempstead Turnpike
Levittown, NY 11756

3) County and Town Officials

County Executive Thomas S. Gulotta
1 West Street
Mineola, NY 11501
(516) 535-3131

Nassau County Department of Health
Donald H. Myott, P.E.
240 Old Country Road
Mineola, NY 11501
(516) 535-3410

Town Supervisor Lewis Yevoli
Town of Oyster Bay
54 Audrey Avenue
Oyster Bay, NY 11771
(516) 922-5800

Councilman Tom Clark
Town of Oyster Bay
Town Hall
54 Audry Avenue
Oyster Bay, NY 11771
(516) 922-5800

4) Media

John W. Garger, Editor
Hicksville Illustrated News
Long Island Community Newspapers
135 Liberty Avenue
Mineola, NY 11501
(516) 747-8282

Robert L. Morgan, Publisher
Mid Island Times: Levitton Times
81 E. Barclay Street
Hicksville, NY 11801
(516) 931-0012

Newsday
235 Pinelawn Road
Melville, NY 11747

5) Public Interest and Community Organizations

Mr. David M. Staton, President
Duffy Park Civic Association
c/o 349 W. Nicholai
Hicksville, NY 11801
(516) 822-2380

Ivan Czipott, President
Hicksville Chamber of Commerce
252 Old Country Road
Hicksville, NY 11801
(516) 731-7170

Mr. Joseph Aversano
Hicksville Terrace Civic Association
50 Cornell Lane
Hicksville, NY 11801

Ms. Eleanor Draycott
Coalition of Hicksville Civice Associations
12 Jolan Avenue
Hicksville, NY 11801

Ms. Margaret Kelly
West Green Civic Association
93 Lantern Road
Hicksville, NY 11801

Mrs. Rosella Maggio
Hicksville Gardens Civic Association
650 Field Avenue
Hicksville, NY 11801

Mr. Thomas McGovern
Giese Park Civic Association
10 Brooks Street
Hicksville, NY 11801

Northwest Civic Association
95 Kuhl Avenue
Hicksville, NY 11801

Mr. Harry Single
Midland Civic Association
20 Jolan Avenue
Hicksville, NY 11801

Ms. Joyce Wagner
Twin Lawns Civic Association
44 Twin Lawns Avenue
Hicksville, NY 11801

Long Island Citizens Advisory Committee on Hazardous Waste
c/o NYSDEC, Dr. Joshua Epstein
SUNY - Building 40
Stony Brook, NY 11790

6) Area Residents and Businesses (list in development)

Properties Contiguous to the site and downgradient to Old Country Road (north side) including any residences on Henrietta Street, Frank Avenue, Tec Street, Benjamin Street (west side), Timkers Place, Chance and Evers Streets.

7) Other

Mr. Salvator Mugavero
Superintendent of Schools
Hicksville Union Free School District
Hicksville, NY 11801

Postmaster
Hicksville Post Office
Hicksville, NY 11801

Patrick Seaulon, Chief
Hicksville Fire Department
20 East Marie Street
Hicksville, NY 11801

8) New York State Department of Environmental Conservation and Department of Health Contacts

Joshua Epstein
Citizen Participation Specialist
Region 1, NYSDEC
Building 40, SUNY Campus
Stony Brook, NY 11790-2356
(516) 751-4078

Jamie Ascher, Project Manger
Region 1, NYSDEC
Building 40, SUNY Campus
Stony Brook, NY 11790-2356
(516) 751-4078

Louis P. Oliva, Esq., Senior Attorney
NYSDEC, Division of Environmental Enforcement
202 Mamaroneck Avenue
Room 304
White Plains, NY 10601
(914) 761-3575

Maureen Reynolds
New York State Department of Health
Bureau of Environmental Exposure Investigation
Room 205, 2 University Place
Albany, NY 12203
1(800) 458-1158 (x310)

Nina Knapp
New York State Department of Health
Health Liason Program
Room 240, 2 University Place
Albany, NY 12203
1(800) 458-1158 (x402)

SUGGESTED DOCUMENT REPOSITORY

1) Hicksville Public Library
169 Jerusalem Avenue
Hicksville, NY 11801-4999
(516) 931-1417

Hours of Operation:

Monday through Friday	10:00 AM to 9:00 PM
Saturday	10:00 AM to 5:00 PM
Sunday	Closed

2) Region I - NYSDEC
Hazardous Waste Remediation Unit
SUNY Campus, Building 40
Stony Brook, NY 11790-2356
(516) 751-4078
Hours of Operation 8:30 a.m. - 4:45 p.m.

13.5 - Description of Citizen Participation Activities for

the Remedial Investigation Phase of the Remedial Program

Table 13.5.2.1 illustrates the activities to be carried out as part of the Citizen Participation Plan for the Böwe site. Böwe will be responsible for implementing the plan under the oversight of NYSDEC.

A copy of the draft final remedial investigation (RI) work plan will be placed in the document repositories. A notice to the identified media and a public notice detailing the availability of the plan and summarizing the contents will be mailed to the preliminary contact list. This mailing will include information about the document repositories, the name and address of the citizen participation coordinator at H2M, as well as the NYSDEC Citizen Participation Specialist, Project Manager and NYS Department of Health contact, and will request information and comments from the public. A fact sheet on the site and information on the regulations and procedures which govern the investigation and remedial process will be included in this mailing. Individuals or groups who respond to this mailing expressing interest in the site, will be added to the contact list.

When field activities have been carried out, an informal meeting will be held to discuss the project status, the work completed compared to the requirements of the work plan and the established schedule, and summarizing the progress of the investigation. If the program continues to a full RI/FS, or in any case, before any final remedial program is selected, the following Citizen Participation activities will take place: A fact-sheet, explaining the remedial alternatives considered and the reasons for one being preferred, will be distributed to the public contact list. A legal notice, doing the same, will be placed in a paper of general circulation (i.e., Newsday), while a fact-sheet or press notice will be distributed to the local weeklies. Through these means, the public will also be noticed at least 15 days in advance of a public meeting, to present any proposed remedial action plan (or it's equivalent in this case). It will also be notified of a public comment period consisting of 30 days, and of the relevant documents being placed into the information repositories. A transcript of any such meeting will be prepared, and will be placed into the information repositories. A responsiveness summary will be prepared and will be placed into the repositories.

13.6 - Glossary of Key Terms and Major Program Elements

13.6.1 Key Terms

AQUIFER: A geologic formation that is sufficiently permeable to conduct groundwater and to yield significant quantities of water to wells and springs.

CITIZEN PARTICIPATION: A process to inform and involve the interested/affected public in the decision-making process during the investigation and remediation of sites. The process helps to assure that the best decisions are made from an environmental, human health, economic, social and political perspective.

CITIZEN PARTICIPATION PLAN: A document that describes the site-specific citizen participation activities that will occur in order to complement remedial activities. It also provides site background and the rationale for the selected citizen participation program for the site.

FIGURE 3.3.2

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
OUNDWATER ELEVATION MAP
JUNE 23, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

DW-2 DRYWELL

MW-2 MONITORING WELL

MW-3 NOT INCLUDED IN CONTOURING

EXISTING GROUNDWATER CONTOUR

ESTIMATED GROUNDWATER CONTOUR

0 50

SCALE: 1" = 50'

HITECTS · PLANNERS · SCIENTISTS · SURVEYORS

TOTOWA, N.J.

BOWE6-23.DWG

BOWE 91-02 GP

CITIZEN PARTICIPATION SPECIALIST: An NYSDEC staff member within the Division of Hazardous Waste who provides guidance, evaluation and assistance to the project manager in carrying out the site-specific Citizen Participation Plan.

CONTACT LIST: Names, addresses, and telephone numbers of individuals, groups, organizations and media interested and/or affected by a particular site in the remedial program. It is used to inform and involve the interested/affected public.

DOCUMENT REPOSITORY: Typically a regional NYSDEC office and/or public building, such as a library, at which documents related to site remedial and citizen participation activities are available for public review.

FACT SHEET: A written discussion of a site's remedial process, or some part of it, prepared for the public and written in easily understandable language. A sheet may be prepared for the general public or a particular sector. Its uses may include discussion of an element of the remedial program, opportunities for public involvement, availability of a report or other information, or announcement of a public meeting. It may be mailed to all or part of the interested public, distributed at meetings or during sampling efforts, or sent when requested.

NYSDEC PROJECT MANAGER: A NYSDEC staff member, usually an engineer, geologist, or hydrogeologist within the Division of Hazardous Waste Remediation who is responsible for the day to day administration and ultimate disposition of one or more hazardous waste sites. The project manager works with the Office of Public Affairs as well as fiscal and legal staff to accomplish site-related goals and objectives.

PUBLIC MEETING: A scheduled gathering of the NYSDEC staff and the public to give and receive information, ask questions and discuss concerns. A public meeting may take many forms and could be a large group meeting or a workshop.

PUBLIC NOTICE: A written informational technique used to inform the public of an important upcoming activity or phase in a site's remedial program. Some public notices are formal and meet legal requirements, such as those published in a local newspaper of general circulation. Others are informal notices, which may be made through telephone calls to key citizen leaders or through targeted mailings.

RESPONSIVENESS SUMMARY: A formal or informal written or verbal summary and response to public questions and comments. It is usually prepared during or after important elements in site's remedial program. The responsiveness summary may list and respond to each question or summarize and respond to questions in categories.

13.6.2 Major Program Elements

(Note: The following eight definitions represent major elements of the remedial process. They are presented in the order in which they occur, rather than in alphabetical order, to provide a context to aid in their definition)

SITE PLACED ON REGISTRY OF INACTIVE HAZARDOUS WASTE SITES:

Each inactive site known or suspected of containing hazardous wastes must be included in the Registry. Therefore all sites which state or county environmental or public health agencies identify as known or suspected to have received hazardous waste should be listed in the Registry as they are identified. Whenever possible, the NYSDEC carries out an initial evaluation of the site before listing.

PHASE I SITE INVESTIGATION: An investigation that includes preliminary characterizations of hazardous substances present at a site, identifies pathways by which contaminants may be migrating away from the original area of disposal, identifies resources or populations that may be affected by site contamination, and researches waste disposal practices and potentially responsible parties. The investigation therefore involves research of records from all agencies known to be involved with a site and interviews with site owners, employees, and local residents to gather pertinent information about a site. Information gathered is summarized in a Phase I report.

After a Phase I investigation, the NYSDEC may choose to initiate an emergency response, to nominate the site for the National Priorities List (NPL) or, where additional information is needed to determine site significance, to conduct a Phase II site investigation.

PHASE II SITE INVESTIGATION: An order by the NYSDEC when the results from a Phase I investigation are insufficient for properly classifying a site. Information gathered is summarized in a Phase II report and is used to arrive at a final hazard ranking score to classify the site. A Phase II investigation is not sufficiently detailed, however, to determine the full extent of the contamination, evaluate remedial alternatives, or prepare a conceptual design for construction.

REMEDIAL INVESTIGATION (RI): A process to determine the existence, nature and extent of contamination through data collection and analysis. The process may include sampling, monitoring, and other information-gathering techniques which are used to determine the necessity for, and proposed extent of, a remedial program for the site.

FEASIBILITY STUDY: A process for developing, evaluating and selecting remedial actions. Data gathered during the remedial investigation are used to: define the objectives of the site remedial program and broadly develop remedial action alternatives; perform an initial screening of alternatives; and perform a detailed analysis of a limited number of alternatives which remain after the initial screening stage.

REMEDIAL DESIGN: Once a remedial action has been selected, technical drawings and specification for remedial construction at a site are developed in accordance with the final RI/FS report. Design documents are used to bid and construct the chosen remedial actions. Remedial design is prepared by consulting engineers with experience in inactive hazardous waste site remediation.

CONSTRUCTION: The selection and supervision of contractors who work to carry out the designed remedial alternative. Construction may be a straightforward as excavation of contaminated soil with disposal at a permitted hazardous waste facility. One the other hand, it may involve drum sampling and identification, complete encapsulation, leachate collection, storage and treatment, groundwater management, or other technologies. **MONITORING/MAINTENANCE:** Denotes post-closure activities to ensure continued effectiveness of remedial actions. Typical monitoring/maintenance activities include quarterly inspection by an engineering technician, collection of groundwater or surface water samples, water quality analysis, and other indices of possible site contamination.

CONSENT ORDER: A legal, enforceable, negotiated agreement between NYSDEC and responsible parties where the latter agrees to undertake or pay for the costs of an investigation and/or cleanup of a site. The order includes a description of the remedial actions to be undertaken at the site and the schedule for implementation.

DELISTING: Removal of a site from the state Registry based on study which shows the site does not contain hazardous waste or levels of hazardous wastes that pose a significant threat to public health or the environment.

POTENTIALLY RESPONSIBLE PARTY-LEAD SITE: A site at which those legally liable have accepted responsibility for the investigation and/or the development and implementation of its remedial program. Potentially Responsible Parties (PRPs) may be current owners, past and present site operators, or those who generated waste placed at the site. Remedial programs developed and implemented by PRPs generally result from an enforcement action taken by the state. PRPs usually incur the costs associated with the remedial program.

RANKING SYSTEM: The United States Environmental Protection Agency uses a Hazard Ranking System (HRS) to assign numerical scores to each inactive hazardous waste site. The scores express the relative risk or danger from the site.

RESPONSIBLE PARTIES: Those individuals or groups responsible for, or contributing to, the contamination of a hazardous waste site.

STATE LEAD SITE: An inactive hazardous waste site at which the NYSDEC has responsibility for investigating problems at the site and for developing and implementing the site's remedial program.

TABLES

H2M GROUP

TABLE 2.1.1
BÖWE SYSTEC, INC. PREVIOUS CHEMICAL INVENTORY AND TYPICAL QUANTITIES HICKSVILLE, NEW YORK
1/4 55 GAL. DRUM PERC SLUDGE, THINNER, ETC.
20 GAL. "OPYSAT FX" ANTI-FOAM
7 GAL. URATHANE PAINT PART A (PAINT SUPPLIES
6 GAL. ACRYLIC LACQUER (PAINT SUPPLIES)
1 GAL. AC REDUCER (PAINT SUPPLIES)
10 GAL. LACQUER THINNER (PAINT SUPPLIES)
4 QTS. TEXTURE ADDITIVE (PAINT SUPPLIES)
5 GAL. "DRY TOUCH" RUST PREVENTATIVE (OIL)
5 GAL. MILES "CUMULUS 75" OIL
2 1/2 GAL. CUTTING OIL
1 GAL. GREASE
1 GA. INDUSTRIAL DETERGENT
30 GAL. DRY SIZING (FOR DRY CLEANING)
1/4 55 GAL. DRUM ESO "ESSTIC 150"
1/2 55 GAL. DRUM UNKNOWN (DEGREASER)
1/5 55 GAL. DRUM UNKNOWN (DEGREASER)

TABLE 3.4.1

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

EXISTING HICKSVILLE WATER DISTRICT SUPPLY WELLS WITHIN A 3-MILE RADIUS DOWNGRADIENT OF BÖWE SYSTEC, INC. LOCATION

WELL NO.	NYSDEC NO.	LOCATION	DEPTH (FEET)	AUTHORIZED CAPACITY (GPM)
2-2	N-5336	Newbridge Road	545	1,200
3-2	N-8525	Jerusalem Avenue	505	1,400
4-2	N-8526	Newbridge Road	600	1,400
5-2	N-7561	Stewart Avenue	550	1,400
5-3	N-3212	Stewart Avenue	610	1,400
8-1	N-6192	Dean Street	637	1,400
8-3	N-9180	Dean Street	635	1,400
9-1	N-8778	Alicia Street	500	1,400
9-2	N-8779	Alicia Street	585	1,400
9-3	N-10208	Alicia Street	649	1,750

WELLS HELD IN RESERVE BY THE DISTRICT

8-2*	N-6193	Dean Street	477	1,400

NOTES:

All wells screened in Magothy formation

* This well is of marginal water quality.

TABLE 5.5.1.1

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

SUMMARY OF SAMPLING

SAMPLE ID #	*NO. OF SAMPLES*	*TYPES OF SAMPLES (MATRIX)*	*DEPTH (FEET)*	*ANALYTICAL PARAMETERS*	*PID ANALYSIS*
TASK 1 - SAMPLING OF DRYWELL SYSTEM					
DW-4	2	Soil	0-2; 7-9; 15-17; 27-29; 39-41	TCL VOCs, TCL semi-VOCs, TCL metals	Yes
DW-5	2	Soil	0-2; 7-9; 15-17; 27-29; 39-41	TCL VOCs, TCL semi-VOCs, TCL metals	Yes
DW-6	2	Soil	0-2; 7-9; 15-17; 27-29; 39-41	TCL VOCs, TCL semi-VOCs, TCL metals	Yes
DW-7	2	Soil	0-2; 7-9; 15-17; 27-29; 39-41	TCL VOCs, TCL semi-VOCs, TCL metals	Yes
DW-8	2	Soil	7-9; 15-17; 27-29; 39-41	TCL VOCs, TCL semi-VOCs, TCL metals	Yes

NOTE: The depth of the samples is presented as feet below the dry well bottom surface or equivalent. Split spoon soil samples will be screened with a PID and the sample from each boring recorded with the highest reading will be tested by the laboratory for TCL VOCs, TCL semi-VOCs and TCL metals. If no PID readings are recorded, the shallowest soil sample will be tested by the laboratory. The depth of the deepest soil sample will be determined in the field after 2 consecutive samples exhibit no PID response. In the event that no PID responses are recorded for any samples within the boring, drilling will continue to a depth of 17 feet below the bottom of the pool. The deepest soil sample from each boring will be tested by the laboratory for TCL VOCs, TCL semi-VOCs and TCL metals. The one soil sample out of the 10 collected during this task recorded with the highest PID reading will also be tested for TCL pesticides and PCBs.

TABLE 5.5.1.1 (CONT'D.)

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

SUMMARY OF SAMPLING

SAMPLE ID #	NO. OF SAMPLES	TYPES OF SAMPLES (MATRIX)	DEPTH (FEET)	ANALYTICAL PARAMETERS	PID ANALYSIS
TASK 2 - BORINGS AND SOIL SAMPLING AT UNPAVED AREA OUTSIDE FORMER SPRAY BOOTH					
SB-1	2 (or none)	Soil	10-12; 17-19; 29 31; 41 43	TCL VOCs (and possibly TCL semi VOCs and metals)	Yes
SB-2	2 (or none)	Soil	10-12; 17-19; 29 31; 41-43	TCL VOCs (and possibly TCL semi-VOCs and metals)	Yes
SB-3*	1	Soil	0-2	TCL metals only	Yes

NOTE: The depth of the samples is presented as depth from grade. The sampling for this task is dependent on the results of confirmatory sampling during the IRM. Should this task be implemented, split spoon soil samples will be screened with a PID and the sample from each boring recorded with the highest reading will be tested by the laboratory for TCL VOCs and other parameters as detected in the confirmatory samples from the IRM. In the event that no PID response is recorded during boring, the shallowest soil sample will be analyzed and the boring will be advanced to a maximum depth of 19 feet. The deepest soil sample from each boring will be tested for TCL VOCs and other parameters as detected in the shallower sample.

* Sample SB-3 is a background soil sample.

SAMPLE ID #	NO. OF SAMPLES	TYPES OF SAMPLES (MATRIX)	DEPTH (FEET)	ANALYTICAL PARAMETERS	PID ANALYSIS
TASK 3 - SAMPLING OF SEPTIC SYSTEM					
LP-1	1	Sediment	1-2	TCL VOCs, TCL semi-VOCs and TCL metals	Yes
LP-2	1	Sediment	1-2	TCL VOCs, TCL semi VOCs and TCL metals	Yes

NOTE: Depth of samples is presented as feet below leaching pool bottom surface.

TABLE 5.5.1.1 (CONT'D.)

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

SUMMARY OF SAMPLING

SAMPLE ID #	NO. OF SAMPLES	TYPES OF SAMPLES (MATRIX)	DEPTH (FEET)	ANALYTICAL PARAMETERS	PID ANALYSIS
TASK 4 - GROUNDWATER AND AQUIFER INVESTIGATION					
MW-1	1-2	Groundwater	50-60	TCL VOCs, TCL semi VOCs, TCL pesticides and PCBs, TCL metals	Yes
MW-3	1-2	Groundwater	50-60	TCL VOCs, TCL semi VOCs, TCL pesticides and PCBs, TCL metals	Yes
MW-5	1-2	Groundwater	50-60	TCL VOCs, TCL semi-VOCs, TCL pesticides and PCBs, TCL metals	Yes
MW-6	1-2	Groundwater	50-60	TCL VOCs, TCL semi VOCs, TCL pesticides and PCBs, TCL metals	Yes
MW-8	1-2	Groundwater	50-60	TCL VOCs, TCL semi-VOCs, TCL pesticides and PCBs, TCL metals	Yes
MW-9	1-2	Groundwater	50-60	TCL VOCs, TCL semi-VOCs, TCL pesticides and PCBs, TCL metals	Yes
OFF-SITE WELLS					
MW-10	0-1	Groundwater	50-60	TCL VOCs (and possibly TCL semi-VOCs, TCL pesticides and PCBs, TCL metals)	Yes
MW-11	0-1	Groundwater	50 60	TCL VOCs (and possibly TCL semi VOCs, TCL pesticides and PCBs, TCL metals)	Yes

NOTE: The number of samples for each well is dependent on the first round results. Should a second round of samples be collected, the analytical parameters may be reduced to include TCL VOCs only.

TABLE 7.2.1.1

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

SOIL SAMPLE*

ANALYSIS METHODS, HOLDING TIMES, PRESERVATION AND CONTAINER PROCEDURES

PARAMETER	METHOD	HOLDING TIME	PRESERVATION	CONTAINER-IZATION
TCL Pesticides and PCBs	NYSDEC Method 91-3	5 days after VTSR until extraction; 40 days for analysis	Cool to 4°C	8-oz. amber glass
TCL Metals Mercury	Method 91-200.7 CLP-M Method 91-200.7 CLP-M	6 months 26 days	Cool to 4°C Cool to 4°C	8-oz. amber glass 8-oz. amber glass
TCL Semi-Volatiles	NYSDEC Method 91-2	5 days after VTSR until extraction; 40 days for analysis	Cool to 4°C	8-oz. amber glass
TCL Volatiles	NYSDEC Method 91-1 (and possibly NYSDEC Method 91-4 as required)	7 days	Cool to 4°C	8 oz. amber glass

* See Appendix C for CLP bottle chart and contract required quantification limits.

TABLE 7.2.2.1

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

GROUNDWATER SAMPLES*

ANALYSIS METHODS, HOLDING TIMES, PRESERVATION AND CONTAINER PROCEDURES

PARAMETER	METHOD	HOLDING TIME	PRESERVATION	CONTAINER-IZATION
TCL Pesticides and PCBs	NYSDEC Method 91-3	5 days after VTSR until extraction; 40 days for analysis	Cool to 4°C bottle	1-qt. amber glass
TCL Metals Mercury	Method 200.7 CLP-M Method 200.7 CLP-M	6 months 26 days	Field filter; cool to 4°C; HNO_3 to pH <2 Cool to 4°C; HNO_3 to pH <2	1,000 ml round plastic
TCL Semi-Volatiles	NYSDEC Method 91-2	5 days after VTSR until extraction; 40 days for analysis	Cool to 4°C	1-qt. amber glass bottle
TCL Volatiles	NYSDEC Method 91-1 (and possibly NYSDEC Method 91-4 as required)	7 days	Cool to 4°C	40 ml vial with teflon lined cap

* See Appendix C for CLP bottle chart and contract required quantification limits.

TABLE 8.1

BÖWE SYSTEC, INC.

HICKSVILLE, NEW YORK

SUMMARY OF QA/QC FOR SAMPLING

TASK	MATRIX	NO. OF SAMPLES	PARAMETERS
1. Sampling of dry well system	Soil	9	TCL VOCs, TCL semi-VOCs, TCL metals
	Soil	1	TCL VOCs, TCL semi-VOCs, TCL metals, TCL pesticides/PCBs
QA/QC			
MS/MSD	Soil	1	TCL VOCs, TCL semi-VOCs, TCL metals
Trip blank	Aqueous	1	TCL VOCs only
Field blank	Aqueous	1	TCL VOCs, TCL semi-VOCs, TCL metals
Duplicate	Soil	1	TCL VOCs, TCL semi-VOCs, TCL metals
2. Borings and soil sampling at unpaved area outside former spray booth	Soil	0-4	TCL VOCs, TCL semi-VOCs, TCL metals (possibly none, some or all parameters depending on IRM confirmatory sample results)
QA/QC			
Background	Soil	1	TCL metals only
Trip blank	Aqueous	0-1	TCL VOCs only
Field blank	Aqueous	0-1	Same as samples collected the day of sampling
3. Sampling of septic system	Sediment	2	TCL VOCs, TCL semi-VOCs, TCL metals
QA/QC			
Trip blank	Aqueous	1	TCL VOCs only
Field blank	Aqueous	1	TCL VOCs, TCL semi-VOCs, TCL metals
4. Groundwater and aquifer investigation	Aqueous	6-14	TCL VOCs, TCL semi-VOCs, TCL metals, TCL pesticides/PCBs
QA/QC			
MS/MSD	Aqueous	1	TCL VOCs, TCL semi-VOCs, TCL metals, TCL pesticides/PCBs
Trip blank	Aqueous	1	TCL VOCs only
Field blank	Aqueous	1	TCL VOCs, TCL semi-VOCs, TCL metals, TCL pesticides/PCBs
Duplicate	Aqueous	1	TCL VOCs, TCL semi-VOCs, TCL metals, TCL pesticides/PCBs

TABLE 13.5.2.1

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK

SPECIFIC CITIZEN PARTICIPATION ACTIVITIES			
	FINAL DRAFT RI WORK PLAN	FINAL RI WORK PLAN	FINAL DRAFT RI REPORT
Copy placed in document repositories	X	X	X
Public notice mailing to contact list	X	X	X
Fact Sheet distribution	X		X
Mailing of activities summary			X
Public comment period (30 days)			X
Transcript Responsiveness Summary			X

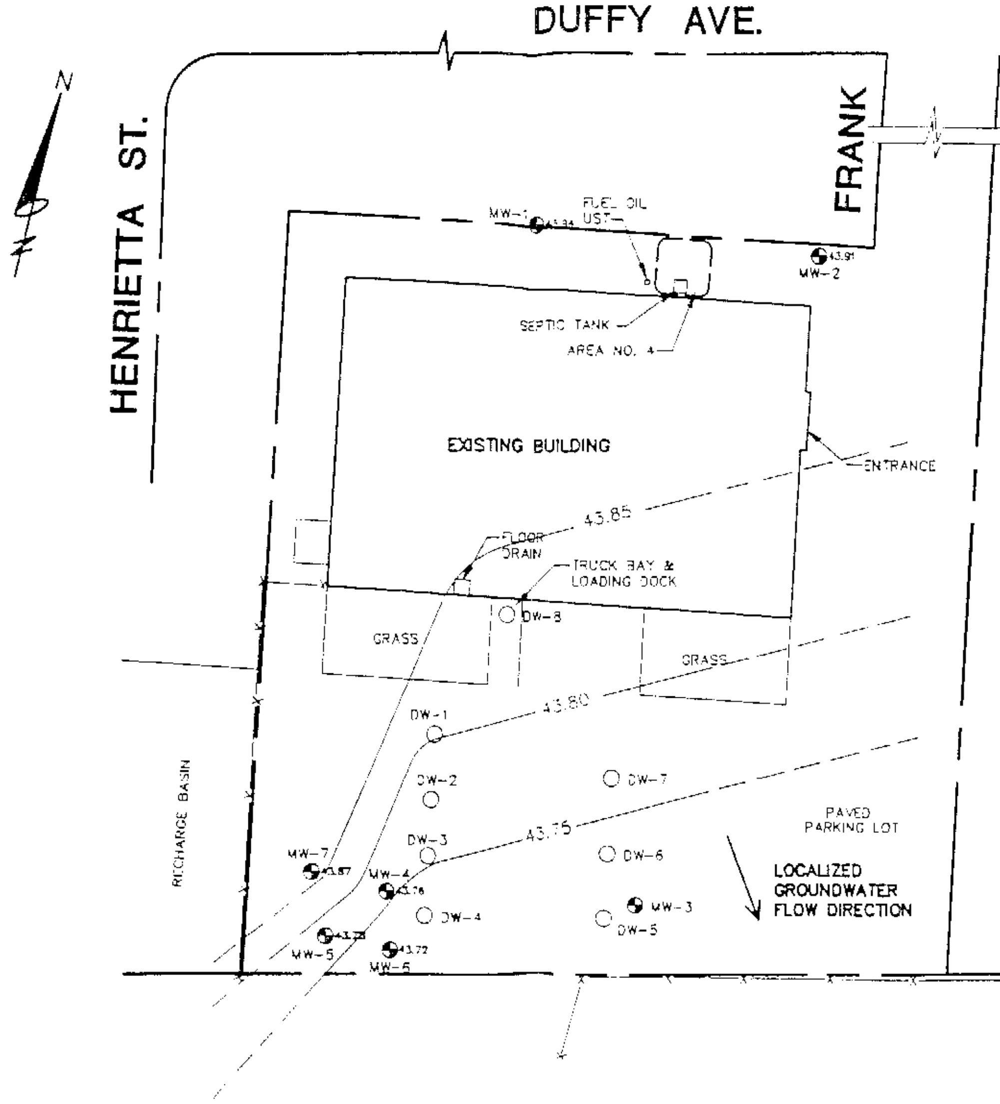


FIGURE 3.3.2

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
GROUNDWATER ELEVATION MAP
JUNE 23, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

DW-2 DRYWELL
MW-2 MONITORING WELL
MW-3 NOT INCLUDED IN CONTOURING
EXISTING GROUNDWATER CONTOUR
ESTIMATED GROUNDWATER CONTOUR

0 50
SCALE: 1" = 50'

H2MGROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

BOWE8-23.DWG
BOWE 91-02 GP

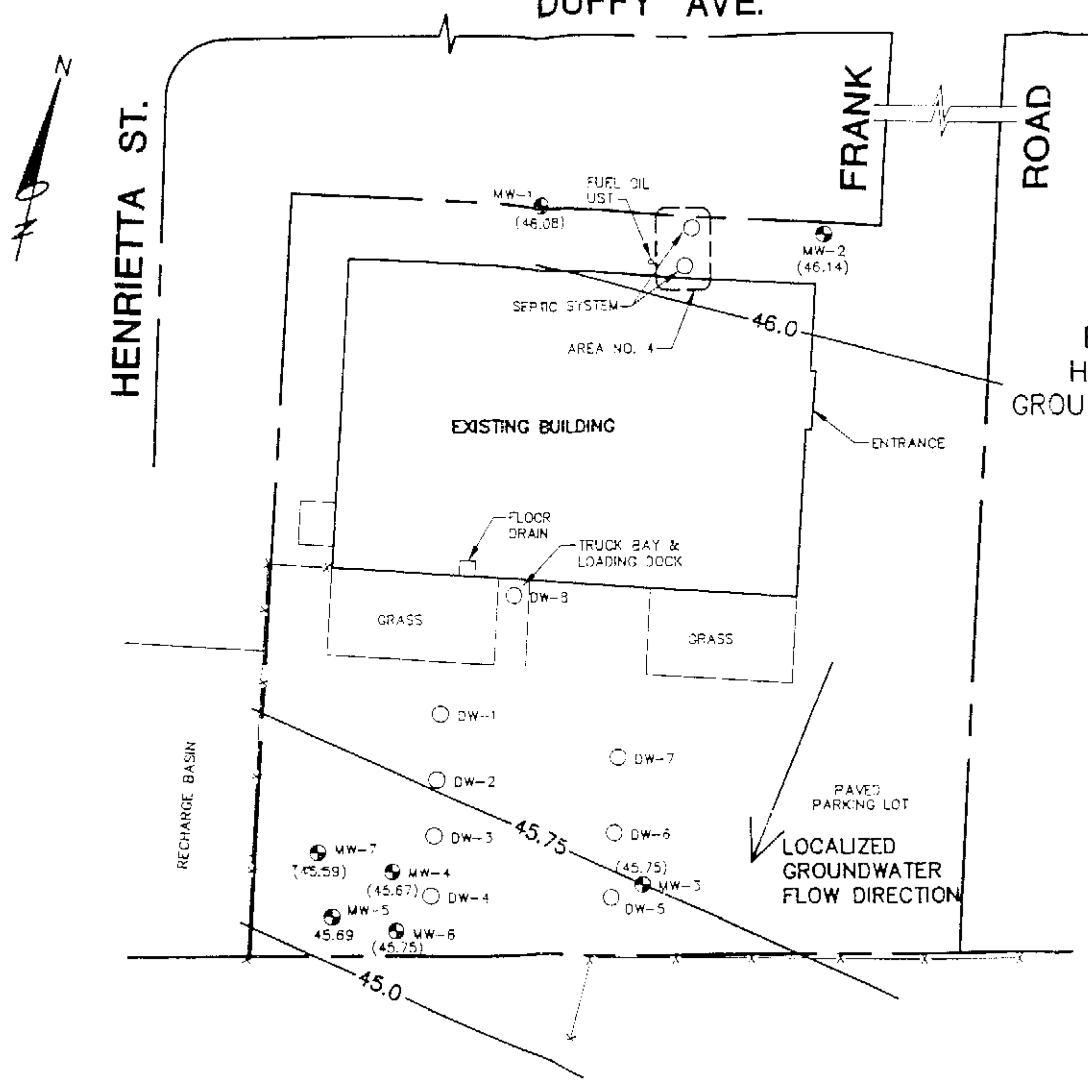


FIGURE 3.3.1

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
GROUNDWATER ELEVATION MAP
JANUARY 14, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

- DW-2 DRYWELL
- MW-2 MONITORING WELL
- CI = 0.25
- (45.25) NOT INCLUDED IN CONTOURING

0 50
SCALE: 1" = 50'

H2MGROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

BOWE 91-02 GP

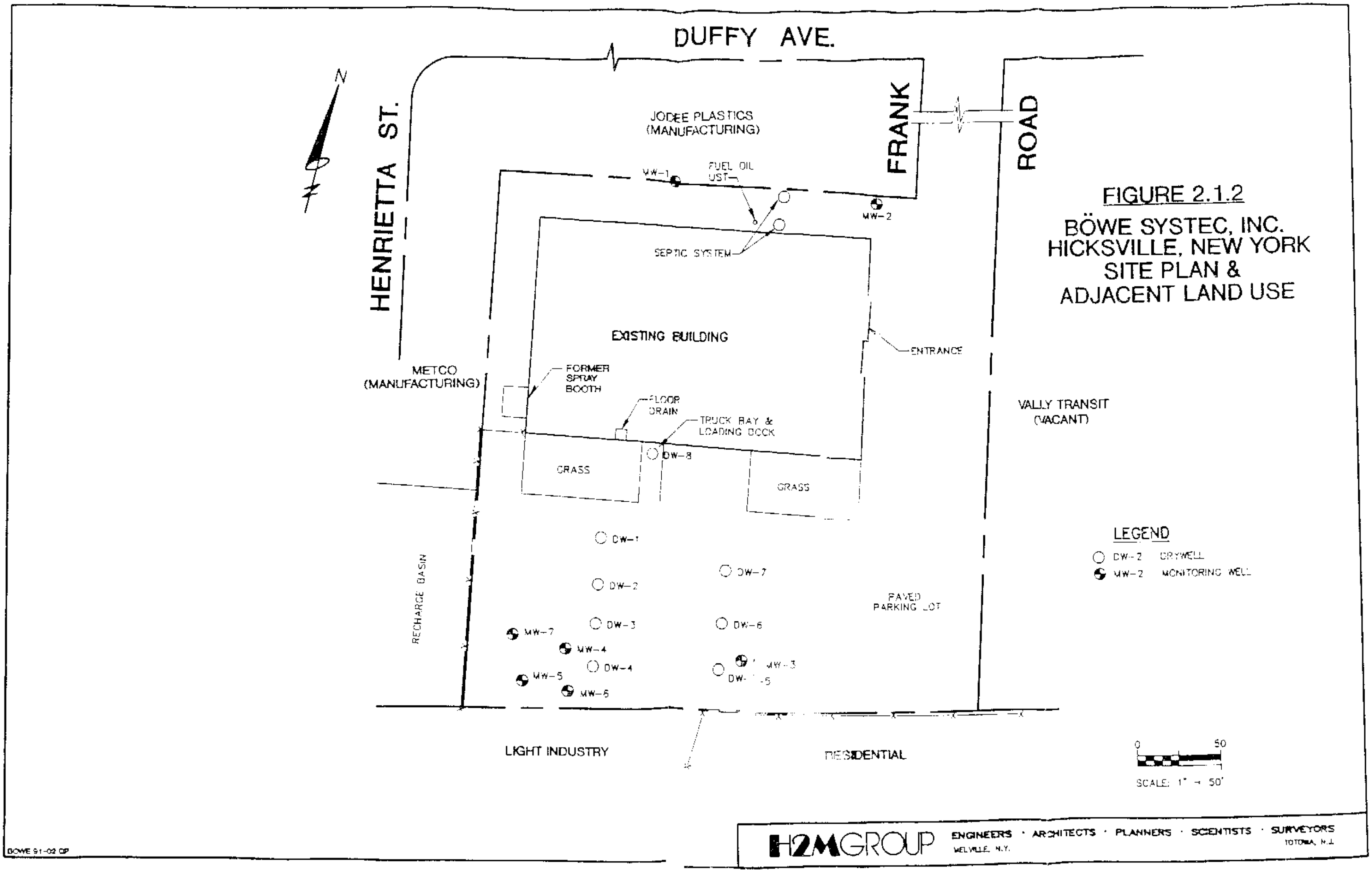
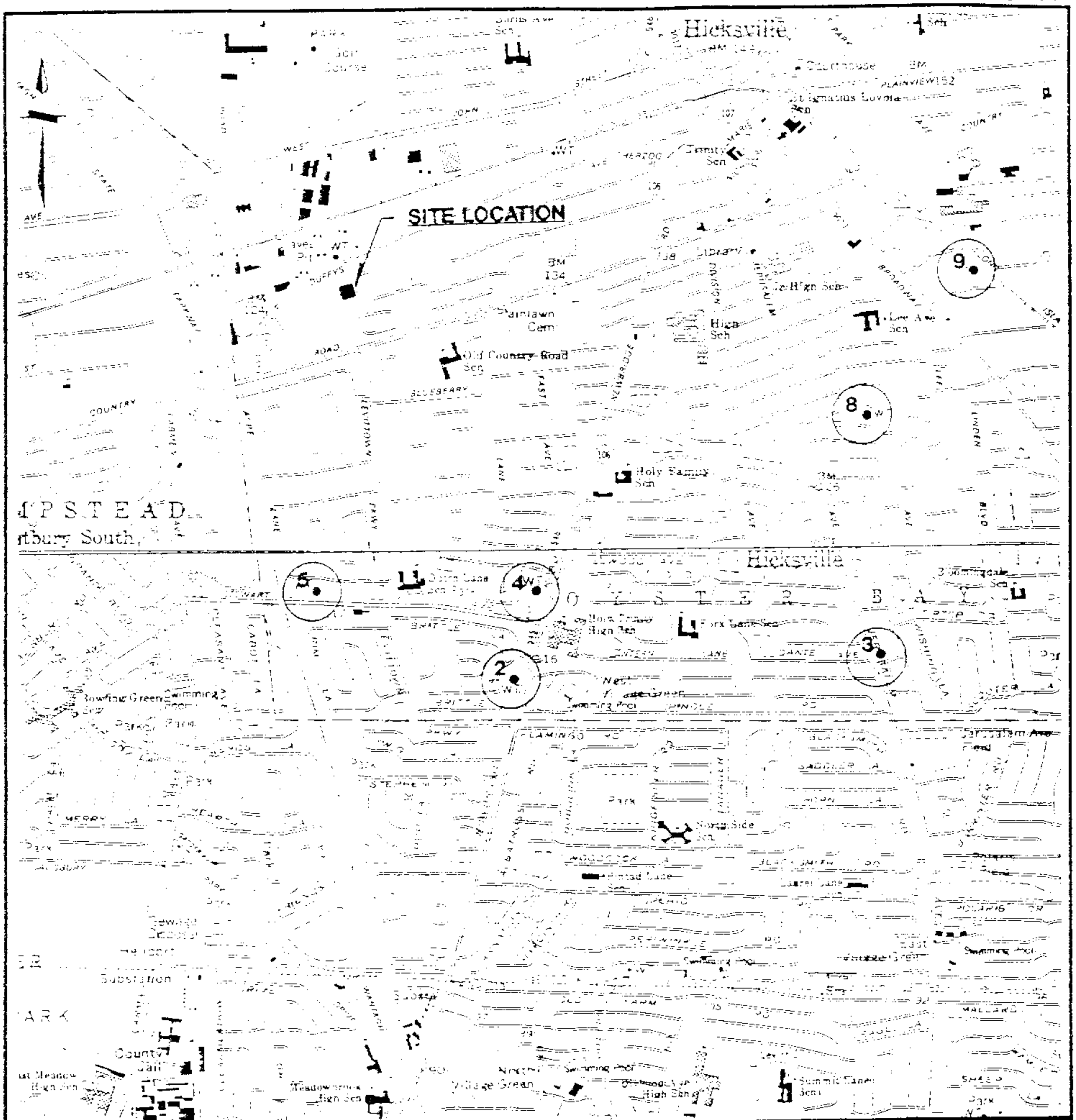


FIGURE 2.1.2
BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
SITE PLAN &
ADJACENT LAND USE

FIGURE 3.4.1



LOCATION OF PUBLIC SUPPLY WELLS WITHIN 3 MILE RADIUS DOWN GRADIENT OF BÖWE SYSTEC INC.

SCALE: 1" = 2000'

LEGEND

2 ● HICKSVILLE WATER DISTRICT PUMPING STATION LOCATIONS & ID NUMBERS

BOWE 91-02 OP

H2MGROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS

MELVILLE, N.Y. TOTOWA, N.J.

BOWE 91-02 OP

FIGURE 4.1.1
MILESTONE CHART FOR RI
BÖWE SYSTEC, INC.

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

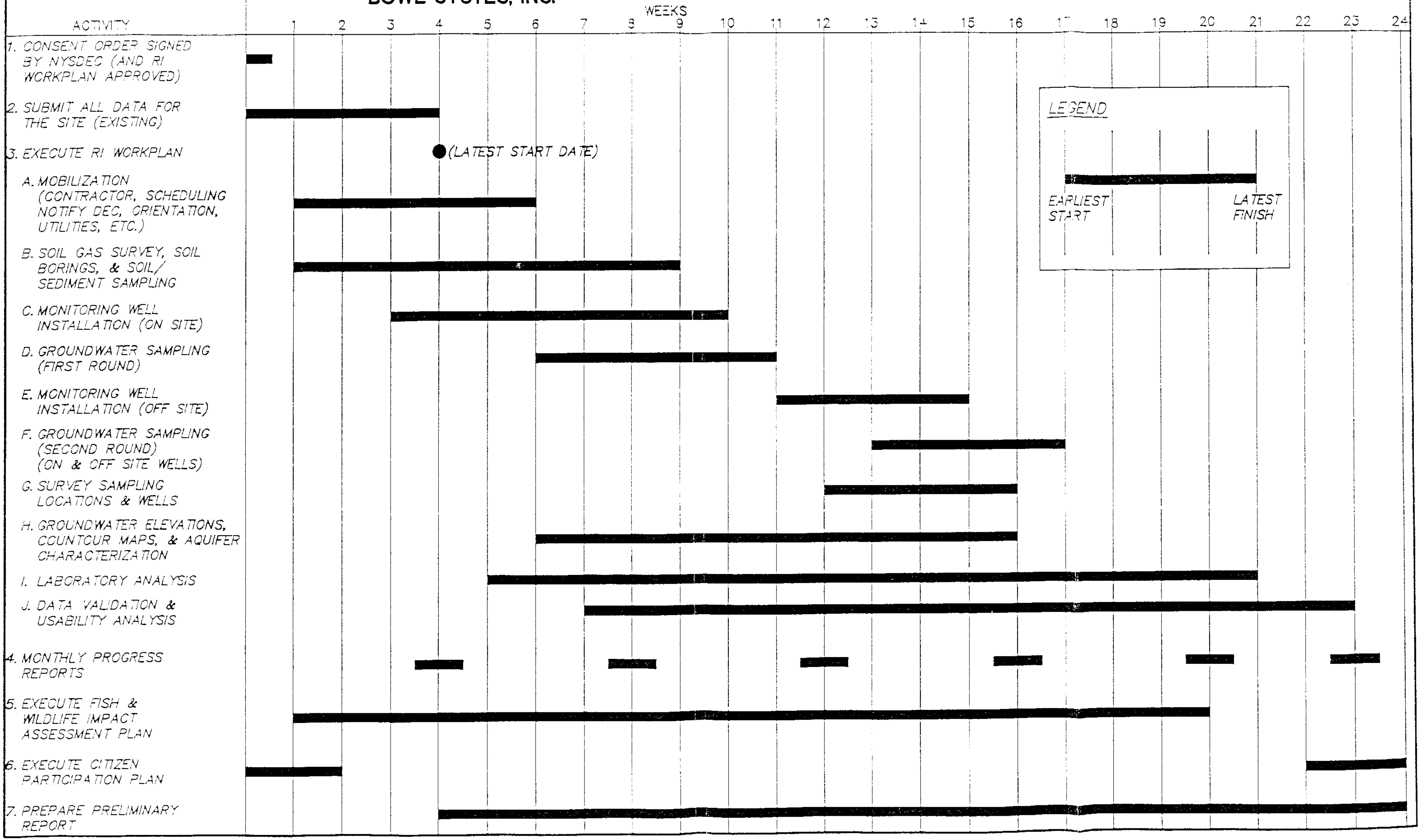
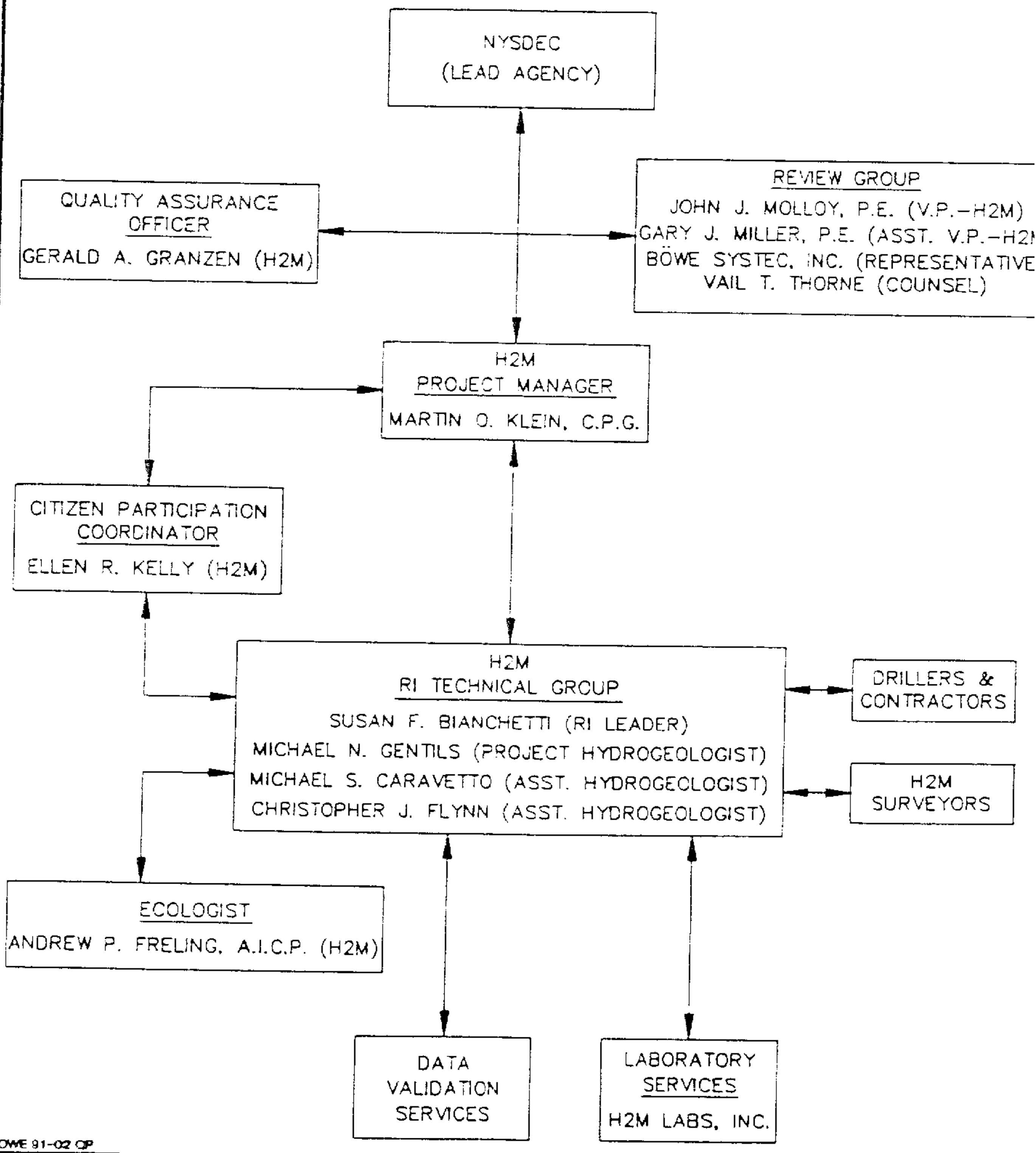
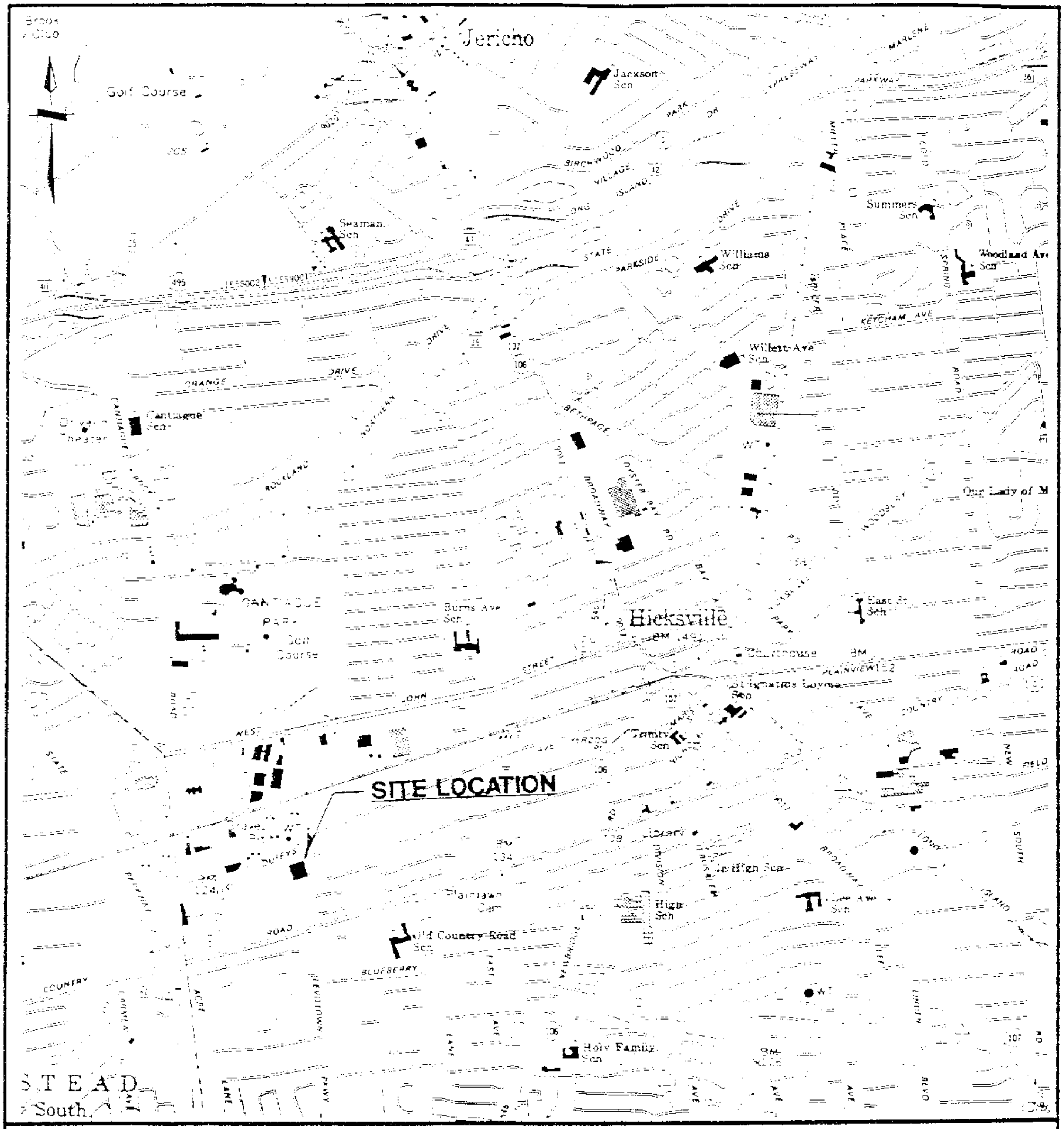


FIGURE 4.2.1

PROJECT MANAGEMENT CHART FOR BÖWE SYSTEC, INC. RI



BOWE 91-02 QP



LOCATION MAP

SCALE: 1" = 2000'

BÖWE SYSTEC, INC.
200 FRANK ROAD
HICKSVILLE, NEW YORK

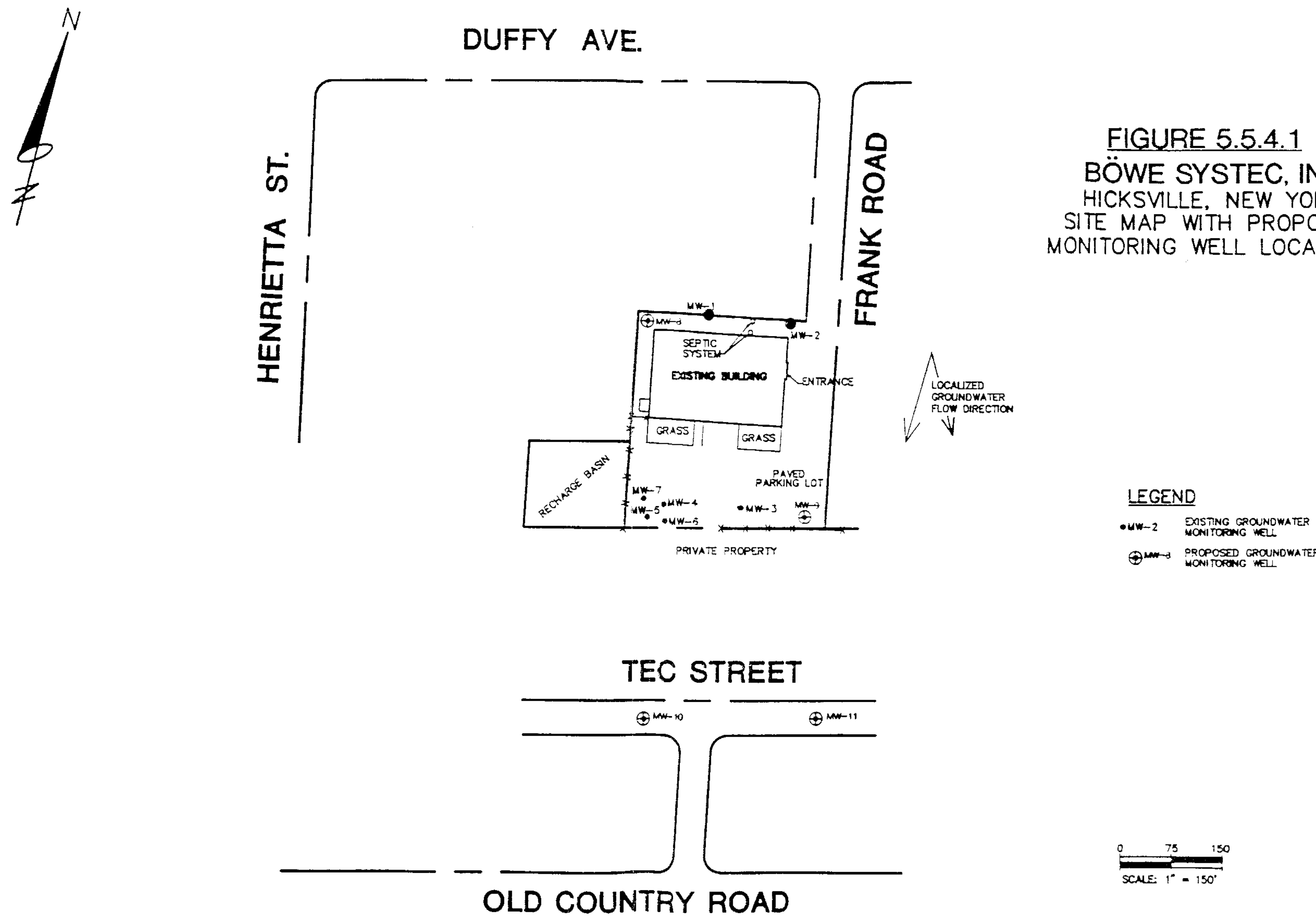
BOWE 91-02 QP

H2MGROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS

MELVILLE, N.Y. TOTOWA, N.J.

FIGURE 5.5.4.1

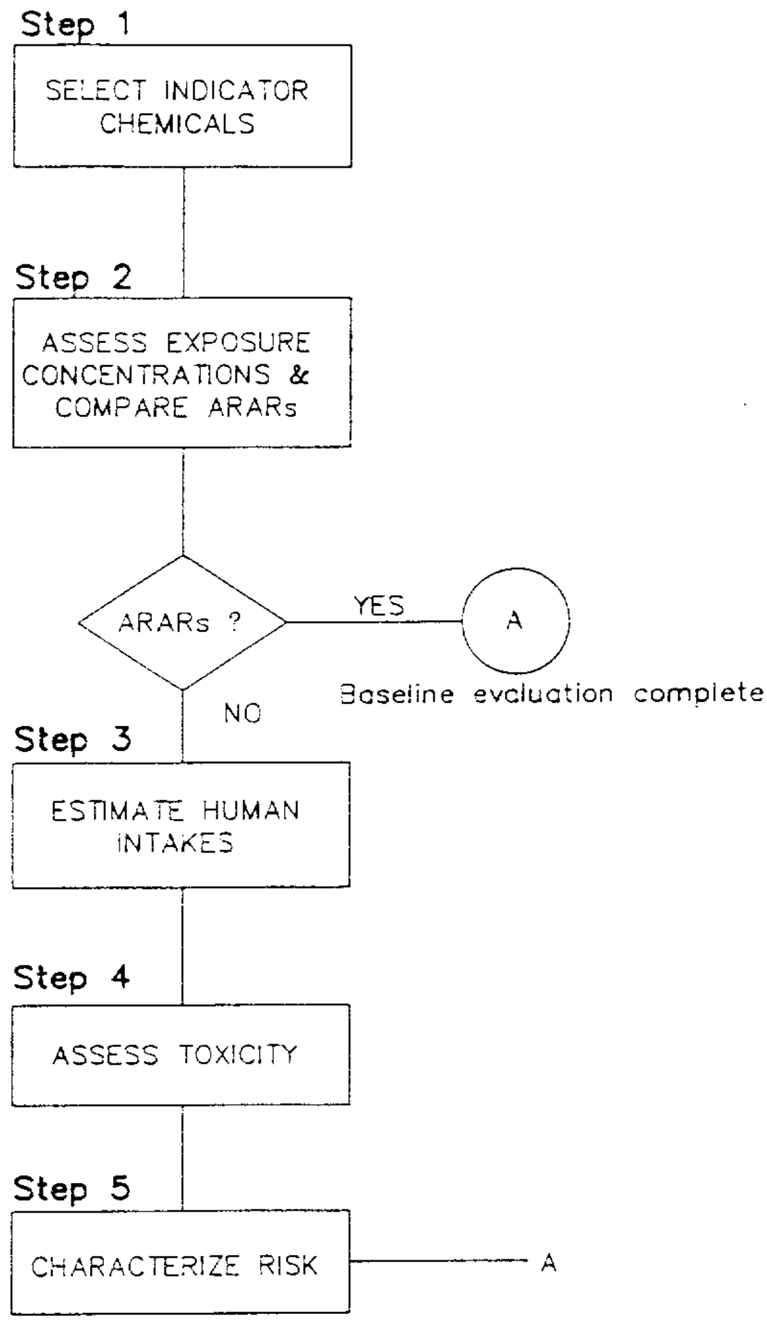
BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
SITE MAP WITH PROPOSED
MONITORING WELL LOCATIONS



H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

BOWE 91-02 GP

FLOWCHART OF THE PUBLIC HEALTH EVALUATION PROCESS



BOWES9101 FLOWCHT.DWG

APPENDIX A

PREVIOUS SITE INVESTIGATIONS AND REMEDIATION

H2M GROUP

Soil Mechanics Drilling Corp. (February 1990)

cc - file
5/1/90

SUBSOIL INVESTIGATIONS

SOIL MECHANICS DRILLING CORP.

3770 MERRICK ROAD · SEAFORD, L. I., NEW YORK 11783 · (516) 221-2333

February 13, 1990

BOWE SYSTEMS & MACHINERY
200 Frank Road
Hicksville, New York 11801

RE: 200 Frank Road
Hicksville, New York

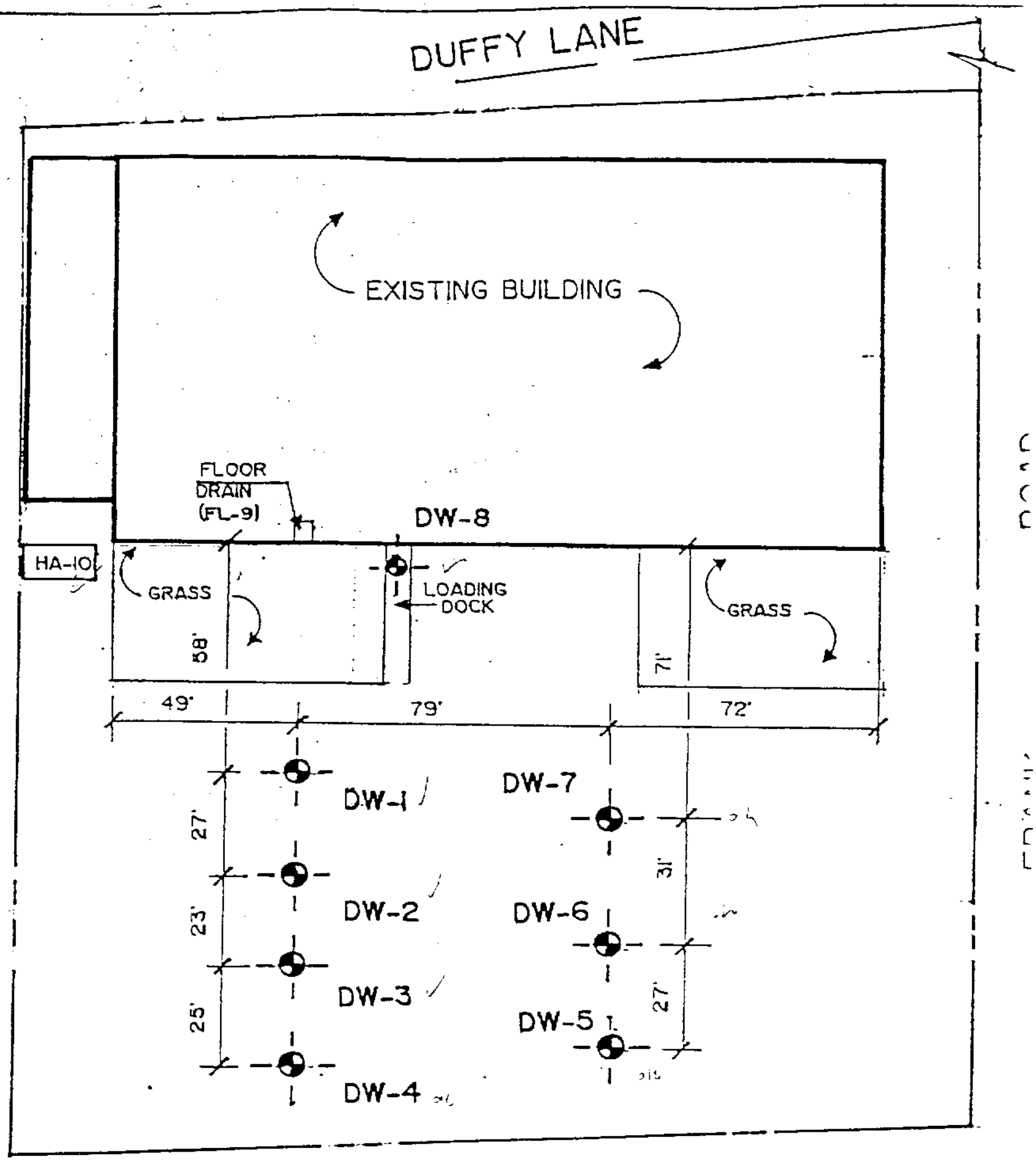
Att: Mr. Bernhard Preisser

Gentlemen:

Presented herein are the preliminary findings of the supplementary investigation conducted at the above referenced location. As part of this investigation grab samples were collected from each drywell location, DW-1 through DW-8, and surface location HA-10 (see Plate #1). No sample was collected from location FL-9 (internal floor drain) as there was no aqueous or sludge fraction available. The results of laboratory analysis are presented in the attachment accompanying this report (see Plates #2 & #3).

Test borings were drilled into the subsoil beneath the sludge material in each drywell location (DW-1 - DW-8). Subsoil samples were collected at continuous two-foot intervals to depths ranging from eight to twelve (8-12) feet below the bottom of the drywell, i.e., top of sludge material. Each sample was screened in the field, using a Foxboro Century 128 GC organic vapor analyzer, for

(Continued)



SOIL MECHANICS DRILLING CORP.
SUBSOIL INVESTIGATIONS
3770 MERRICK ROAD ○ SEAFORD, N.Y. ○ 516 221-23

DRAIN LOCATION PLAN

HICKSVILLE, NEW YORK

PLATE # 1

SCALE: 1"=40'	DATE: FEBRUARY 13, 1990	DRAWING NO. 89S8

SUMMARY OF LABORATORY RESULTS

SLUDGE SAMPLES - VOLATILE ORGANICS

HICKSVILLE, NEW YORK

PLATE #2

	DW-1	DW-2	DW-3	DW-4	DW-5
Vinyl Chloride	<5000	17	<5	<5	<5
Methylene Chloride	<10000	19	<10	<10	<10
1,2 Dichloroethene	<10000	850	1500	<10	<10
Trichloroethylene	<5000	<5	3500	<5	<5
Tetrachloroethene	2400000	140	10000	87	7
Toluene	<10000	<10	80	12	34
m Xylene	<10000	<10	85	<10	<10
o+p Xylene	<20000	<20	60	<20	<20

Results in ug/Kg

<u>SUMMARY OF LABORATORY RESULTS</u>

<u>SLUDGE SAMPLES - VOLATILE ORGAINCS</u>

<u>HICKSVILLE, NEW YORK</u>

<u>PLATE #2 - CONTINUED</u>

	DW-6	DW-7	DW-8	HA-10
Vinyl Chloride	<5	<5	<5	<100
Methyl Chloride	<10	<10	<10	<200
1,2 Dichloroethene	<10	<10	<10	14000
Trichloroethylene	<5	<5	<5	1800
Tetrachloroethene	24	24	2600	300000
Toluene	32	<10	<10	<200
m Xylene	<10	<10	<10	<200
o+p Xylene	<20	<20	<20	<400

Results in ug/Kg

SUMMARY OF LABORATORY RESULTS

SLUDGE SAMPLES - METALS

HICKSVILLE, NEW YORK
PLATE #3

	DW-1	DW-1*	DW-8	HA-10
Antimony	<0.10	<0.01	<0.10	0.08
Arsenic	1.9	<0.005	5.3	5.6
Beryllium	0.21	<0.001	0.11	0.20
Cadmium	4.4	0.076	1.1	0.32
Chromium	700	0.15	13	10
Copper	1300	6.2	60	50
Lead	380	0.10	100	45
Mercury	0.69	<0.001	0.007	0.19
Nickel	1400	0.50	16	75
Selenium	3.4	0.017	0.098	0.35
Silver	1.8	<0.01	0.95	0.60
Thallium	<0.05	<0.005	<0.05	0.07
Zinc	2000	32	220	78

Results in mg/Kg

*E P Toxicity

SOIL MECHAI CS DRILLING CORP
3770 MERRICK ROAD · SEAFORD, L.I., NEW YORK 11793 · (516) 221-23

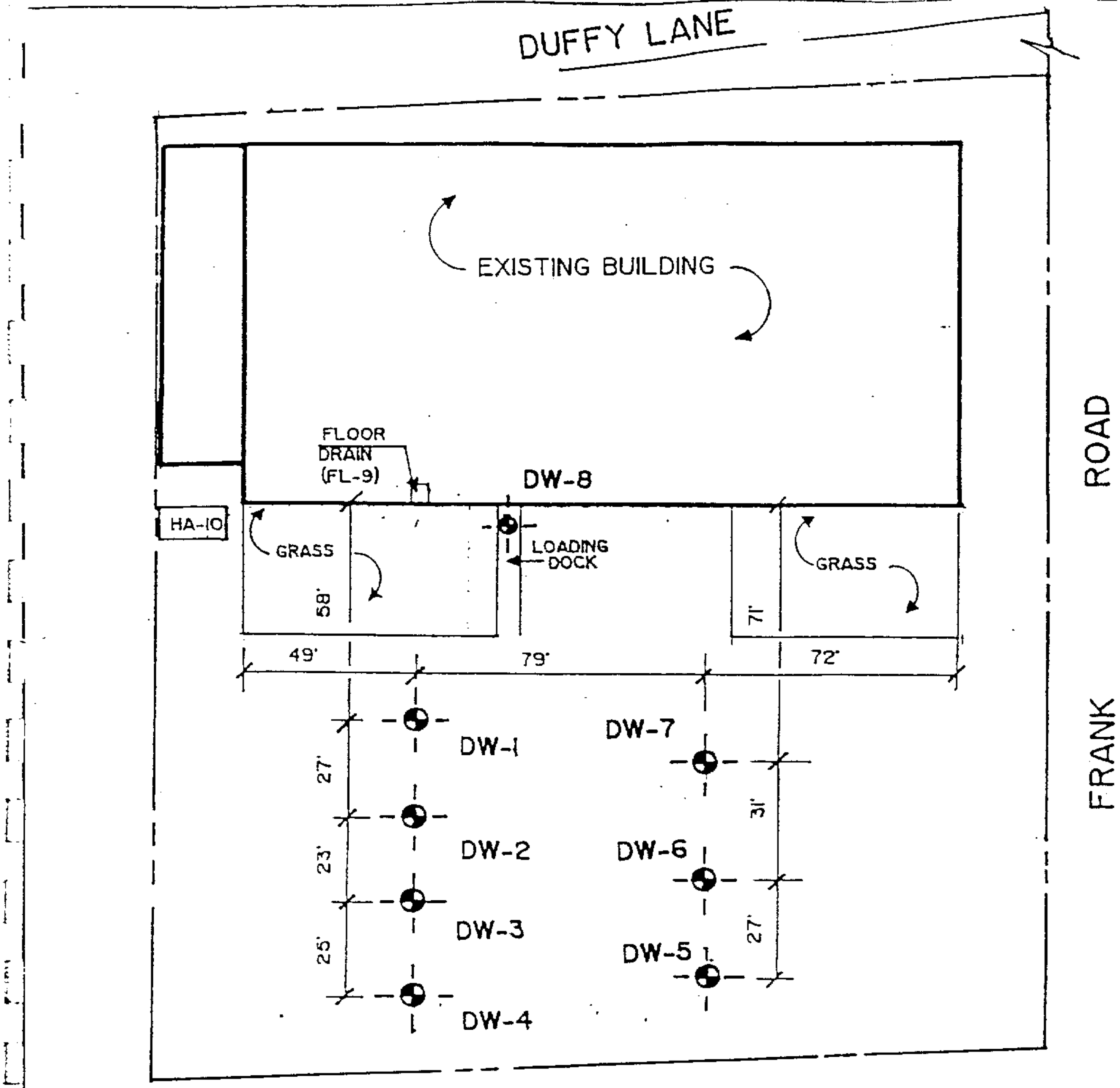
February 13, 1990

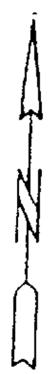
BOWE SYSTEMS & MACHINERY
200 Frank Road
Hicksville, New York 11801

RE: 200 Frank Road
Hicksville, New York

the presence of organic vapor (Note: as a survey instrument, the OVA does not provide quantitative measurements of specific chemical parameters). One soil sample from each test boring was selected for laboratory analysis based on OVA readings and subject to the discretion of the field technician. The results of field screening are presented in the attachment. The laboratory results pertaining to the test borings were not yet available during the preparation of this interim report. They will be submitted as soon as they are made available.

All the samples were collected by qualified Soil Mechanics' technicians in accordance with proper decontamination and sampling protocol. The samples were delivered to Ecotest Laboratories, (New York State certified), in accordance with appropriate chain of custody procedures, for laboratory analysis. The analytical parameters included thirteen (13) priority pollutant metals (samples DW-1, DW-8, and HA-10), E P toxicity (extraction procedure) for priority pollutant metals (sample DW-1), and volatile organics (all samples).



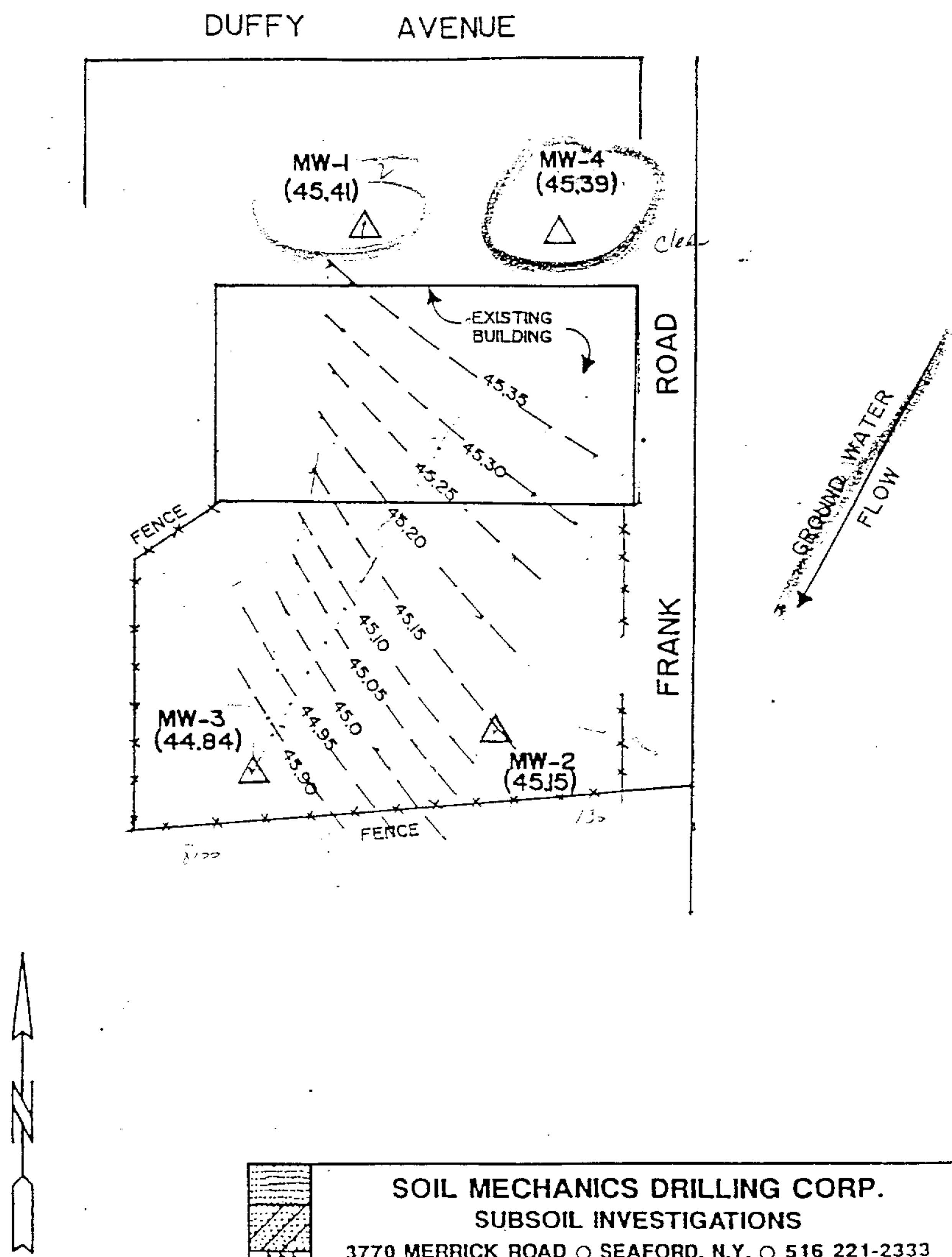


SOIL MECHANICS DRILLING CORP.
SUBSOIL INVESTIGATIONS
3770 MERRICK ROAD ○ SEAFORD, N.Y. ○ 516 221-2333

DRAIN LOCATION PLAN

HICKSVILLE, NEW YORK.

SCALE 1" = 40' | DATE: FEBRUARY 13, 1990 | DRAWING NO. 895806



SOIL MECHANICS DRILLING CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD ○ SEAFORD, N.Y. ○ 516 221-2333

MONITORING LOCATION PLAN AND

GROUND WATER CONTOUR MAP.

HICKSVILLE, NEW YORK.

PLATE # 4

SCALE: N.T.S. DATE: FEBRUARY 13, 1990 DRAWING NO. 89S806

SUBSOIL
INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB #   89-806A

JOB LOCATION: HICKSVILLE, NY

DATE OF BORINGS: 2-5-90

DATE OF TESTING: 2-5-90

INSTRUMENT:
- [x] FOXBORO CENTURY OVA 128 GC
- [ ] HNU PHOTO-IONIZER P I - 101/1 L7
- [ ] ______

BORING # DW-1

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0 - 2'	0 - 1000	950
2	2 - 4'	0 - 1000	940
3 *	4 - 6'	0 - 1000	850
4	6 - 8'	0 - 1000	220
5	8 - 10'	0 - 1000	130
6	10 - 12'	0 - 100	25

ND = NOT DETECTED
* LABORATORY ANALYSIS

INSPECTOR C. NEHRIG

SUBSOIL
INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L.I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB # 89-806A

JOB LOCATION: HICKSVILLE, N.Y.

DATE OF BORINGS: 2-5-90

DATE OF TESTING: 2-5-90

INSTRUMENT:
- [x] FOXBORO CENTURY OVA 128 GC
- [ ] HNU PHOTO-IONIZER P I - 101/I L7
- [ ] ______________________

BORING # DW-2

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0 - 2'	0 - 100	95
2 *	2 - 4'	0 - 10	9
3	4 - 6'	0 - 10	3
4	6 - 8'	0 - 10	N D

ND - NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C. NEHRIG

SUBSOIL
NVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB #: 89-806A

JOB LOCATION: HICKSVILLE, NY

DATE OF BORINGS: 2-5-90

DATE OF TESTING: 2-5-90

INSTRUMENT:
- [X] FOXBORO CENTURY OVA 128 GC
- [ ] HNU PHOTO-IONIZER P I - 101/1 L7
- [ ] ______________________

BORING # DW-3

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0 - 2'	0 - 1000	725 (S)
2	2 - 4	0 - 100	95
* 3	4 - 6	0 - 100	25 *
4	6 - 8	0 - 10	6
5	8 - 10	0 - 10	ND

ND = NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C. NEHRIG

SUBSOIL
INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L.I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB # 89-806A

JOB LOCATION: HICKSVILLE, NEW YORK

DATE OF BORINGS: 2 - 1-90

DATE OF TESTING: 2 - 1-90

INSTRUMENT: ☒ FOXBORO CENTURY OVA 128 GC
☐ HNU PHOTO-IONIZER P I - 101/I I.7
☐ ______

BORING # DW-4

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0-2	0-10	9 (S)
* 2	2-4	0-10	4 *
3	4-6	0-10	ND
4	6-8	0-10	ND

ND = NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C. NEHRIG

SUBSOIL
INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB # 89-806A

JOB LOCATION: HICKSVILLE, N.Y.

DATE OF BORINGS: 2-1-90

DATE OF TESTING: 2-1-90

INSTRUMENT: [X] FOXBORO CENTURY OVA 128 GC
[ ] HNU PHOTO-IONIZER P I - 101/I L7
[ ] ______

BORING # DW-5

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0-2	0-10	5 (S)
* 2	2-4	0-10	ND*
3	4-6	0-10	ND
4	6-8	0-10	ND

ND - NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C. NEHRIG

SUBSOIL INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB #89-806A

JOB LOCATION: HICKSVILLE, N.Y.

DATE OF BORINGS: 2-1-90

DATE OF TESTING: 2-1-90

INSTRUMENT: ☒ FOXBORO CENTURY OVA 128 GC
☐ HNU PHOTO-IONIZER P I - 101/I I.7
☐ ____________

BORING # DW -6

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0-2	0-100	65 (S)
*2	2-4	0-10	4 *
3	4-6	0-10	ND
4	6-8	0-10	ND

ND = NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR G. NEHRIG

SUBSOIL
NVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.,
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB # 89-806A

JOB LOCATION: HICKSVILLE, NY

DATE OF BORINGS: 2-1-90

DATE OF TESTING: 2-1-90

INSTRUMENT:
☒ FOXBORO CENTURY OVA 128 GC
☐ HNU PHOTO-IONIZER P I - 101/I L7
☐ ______________________

BORING # DW-7

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0-2	0-10	3 (S)
*2	2-4	0-10	ND *
3	4-6	0-10	ND
4	6-8	0-10	ND

ND = NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C NEHRIG

SUBSOIL
INVESTIGATIONS

SOIL MECHANICS
3770 MERRICK ROAD · SEAFORD, L. I.
NEW YORK 11783 · (516) 221-2333

HEAD SPACE ORGANIC VAPOR ANALYSIS

JOB # 89-806A

JOB LOCATION: HICKSVILLE, NY

DATE OF BORINGS: 2-5-90

DATE OF TESTING: 2-5-90

INSTRUMENT:
- [x] FOXBORO CENTURY OVA 128 GC
- [ ] HNU PHOTO-IONIZER P I - 101/I L7
- [ ] ______

BORING # DW-8

SAMPLE #	DEPTH (FT.)	DETECTION RANGE	DETECTED CONCENTRATION (PPM)
1	0-2	0-1000	650
*2	2-4	0-1000	450 *
3	4-6	0-100	25
4	6-8	0-10	5

ND = NOT DETECTED
*LABORATORY ANALYSIS

INSPECTOR C NEHRIG

SOIL MI CHANICS DRILLI G CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-5-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-1

SURFACE ELEVATION:

GROUND WATER OBSERVATION

DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0-6	BLOWS PER 6" ON SAMPLER 6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	2	3		Gray Silty Sludge (ML)		
		2	5				
	2	6	8		Brown Gravelly Sand (SP)		
		9	11				
5	3	5	8				
		11	13				
	4	11	10		Tan Gravelly Sand (SP)		
		10	12				
	5	8	10				
10		11	14				
	6	16	19				
		16	20				
					END 12'		
15							
20							
25							
30							
35							
40							

89-906A

SOIL ME CHANICS DRILLI G CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L.I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-5-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-2

SURFACE ELEVATION:

GROUND WATER OBSERVATION DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0-6	6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	3	3		Black Silty Sludge (ML)		
		3	8				
	2	12	15		Tan/Brown Gravelly Sand (SP)		
		13	12				
	3	7	9		Tan Gravelly Sand (SP)		
5		12	13				
	4	11	11				
		14	13				
					END 8'		
10							
15							
20							
25							
30							
35							
40							

JOB No. ... 0063

SOIL ME CHANICS DRILLI G CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-1-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-3

SURFACE ELEVATION:

GROUND WATER OBSERVATION

DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6 ON SAMPLER 0-6	BLOWS PER 6 ON SAMPLER 6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	3	2		Black Sandy Sludge (SM)		
		2	3				
	2	4	6				
		9	10		Brown Gravelly Sand (SP)		
5	3	8	12				
		9	15				
	4	13	13		Tan Gravelly Sand Trace Silt (SP)		
		15	15				
	5	6	8				
		8	9				
10					END 10'		
15							
20							
25							
30							
35							
40							

SOIL ME CHANICS DRILLING CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-1-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-4

SURFACE ELEVATION:

GROUND WATER OBSERVATION

DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0-6	BLOWS PER 6" ON SAMPLER 6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	3	2		Gray/Black Silty Sludge (ML)		
		2	6				
	2	6	8		Tan Gravelly Sand (SP)		
		9	10				
5	3	5	7				
		10	10				
	4	10	12				
		14	18				
					END 8'		
10							
15							
20							
25							
30							
35							
40							

JOB No. 89-3061

SOIL M .CHANICS DRILL IG CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-1-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-5

SURFACE ELEVATION:

GROUND WATER OBSERVATION DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0 – 6	6 – 12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	3	4		Black Silty Sludge (ML)		
		9	12				
	2	12	15		Brown Gravelly Sand (SP)		
		24	22				
	3	16	18		Tan Gravelly Sand (SP)		
5		18	20				
	4	22	26				
		23	26				
					END 8'		
10							
15							
20							
25							
30							
35							
40							

SOIL MI CHANICS DRILLI G CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-1-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-6

SURFACE ELEVATION:

GROUND DATE	WATER TIME	OBSERVATION DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0-6	6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	1	2		Black Sandy Sludge (ML)		
		2	3				
	2	5	5		Gray/Brown Gravelly Sand Trace Silt (SP)		
		6	11				
5	3	5	8				
		9	14		Tan Gravelly Sand (SP)		
	4	15	13				
		12	15				
					END 8'		
10							
15							
20							
25							
30							
35							
40							

SOIL MECHANICS DRILLING CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD · SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-1-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-7

SURFACE ELEVATION:

GROUND WATER OBSERVATION

DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0-6	BLOWS PER 6" ON SAMPLER 6-12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	4	3		Brown/Gray Silty Sludge (ML)		
		3	5				
	2	7	9		Brown Gravelly Sand (SP)		
		10	11				
5	3	6	9		Tan Gravelly Sand (SP)		
		12	13				
	4	15	14				
		13	19				
					END 8'		
10							
15							
20							
25							
30							
35							
40							

SOIL ME[illegible]HANICS DRILLI[illegible] CORP.

SUBSOIL INVESTIGATIONS

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783

JOB LOCATION: HICKSVILLE

DATE: 2-3-90

DRILLER:

INSPECTOR:

ENGINEER:

TYPE RIG:

BORING # DW-8

SURFACE ELEVATION:

GROUND WATER OBSERVATION DATE	TIME	DEPTH

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER 0 – 6	BLOWS PER 6" ON SAMPLER 6 – 12	CASING BLOWS PER FT.	DESCRIPTION	SYMBOL	REMARKS
0	1	5	6		Black Sandy Sludge (SM)		
		22	30				
	2	35	100+		Tan Silty Gravelly Sand (SP)		
		REFUSAL					
5	3	11	22		Tan Gravelly Sand (SP)		
		24	21				
	4	17	23				
		25	24				
10					END 8'		
15							
20							
25							
30							
35							
40							

SOIL MECHANICS

3770 MERRICK ROAD · SEAFORD, L.I., NEW YORK 11783 · (516) 221-2333

CHAIN OF CUSTODY

LABORATORY: ECOTEST LABS

PROJECT NAME: HICKSVILLE

PROJECT NO. 89-806 A

SAMPLE I.D. NUMBER	DATE	TIME	COMP.	GRAB.	MATRIX	SAMPLE LOCATION	NUMBER OF CONTAINERS	PP METALS	LEAD	TPHC	CYANIDE	VOA + KETONES	BTX	PCB	PEST.	HERB.	A/E	B/N	OTHER *	ADDITIONAL REQUIREMENTS
DW-1	1-29-90	905		/	WATER	Drywell #1	1	/				/							/	* ETOX EX for PPMETALS
DW-2	〃	922		/	〃	Drywell #2	1					/								
DW-3	〃	930		/	〃	Drywell #3	1					/								
DW-4	〃	940		/	〃	Drywell #4	1					/								
DW-5	〃	955		/	〃	Drywell #5	1					/								
DW-6	〃	1025		/	〃	Drywell #6	1					/								
DW-7	〃	1035		/	〃	Drywell #7	1					/								
DW-8	〃	1045		/	〃	Drywell #8	1	/				/								
IIA-10	〃	11B		/	〃	Auto # IIA-10	1	/				/								

RELINQUISHED BY (SIGNATURE)	DATE/TIME	AGENT OF:	REC'D. BY (SIGNATURE)	DATE/TIME	AGENT:
PRINTED NAME			PRNT. NME.		
REL. BY (SIG.)	DATE/TIME	AGENT OF:	REC'D. BY (SIGN.)	DATE/TIME	AGENT:
PRNT. NME.			PRNT. NME.		
REL. BY (SIG.)	DATE/TIME 1/29/90 1545	RECEIVED FOR LAB BY: ES	DATE/TIME 1/29/90 1545	REMARKS: INV # 2718 ET	
PRNT. NME. CHARLES NEHRIG		PRNT. NME. E. STAVROULAKIS			
SAMPLER (SIGNATURE)		SAMPLER NAME (PRINT) CHARLES NEHRIG			

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/5 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-5, 955

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<10
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10
12 Dichloroethene	ug/Kg	<10
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<10
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<10
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<10
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	7

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	34
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20
Acetone	ug/Kg	<100
Methyl Ethyl Ketone	ug/Kg	<100
methylisobutylketone	ug/Kg	<100

cc:

REMARKS:

DIRECTOR

rn= 1278 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/6 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-6, 1025

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5	Chlorobenzene	ug/Kg	<5
Bromomethane	ug/Kg	<5	13 Dichlorobenzene	ug/Kg	<10
Dichlordifluomethane	ug/Kg	<5	12 Dichlorobenzene	ug/Kg	<10
Vinyl Chloride	ug/Kg	<5	14 Dichlorobenzene	ug/Kg	<10
Chloroethane	ug/Kg	<5	Benzene	ug/Kg	<5
Methylene Chloride	ug/Kg	<10	Toluene	ug/Kg	32
Trichlorofluomethane	ug/Kg	<10	Ethyl Benzene	ug/Kg	<5
11 Dichloroethene	ug/Kg	<10	m Xylene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10	o+p Xylene	ug/Kg	<20
12 Dichloroethene	ug/Kg	<10	Acetone	ug/Kg	<100
Chloroform	ug/Kg	<5	Methyl Ethyl Ketone	ug/Kg	<100
12 Dichloroethane	ug/Kg	<10	methylisobutylketone	ug/Kg	<100
111 Trichloroethane	ug/Kg	<5			
Carbon Tetrachloride	ug/Kg	<5			
Bromodichloromethane	ug/Kg	<5			
12 Dichloropropane	ug/Kg	<10			
t 13 Dichloropropene	ug/Kg	<10			
Trichloroethylene	ug/Kg	<5			
Chlorodibromomethane	ug/Kg	<5			
112 Trichloroethane	ug/Kg	<10			
c 13 Dichloropropene	ug/Kg	<10			
2chloroethvinylether	ug/Kg	<10			
Bromoform	ug/Kg	<10			
1122Tetrachloroethan	ug/Kg	<10			
Tetrachloroethene	ug/Kg	24			

cc:

REMARKS:

DIRECTOR ______ [signature]

rn= 1280 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/7 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-7, 1035

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5	Chlorobenzene	ug/Kg	<5
Bromomethane	ug/Kg	<5	13 Dichlorobenzene	ug/Kg	<10
Dichlordifluomethane	ug/Kg	<5	12 Dichlorobenzene	ug/Kg	<10
Vinyl Chloride	ug/Kg	<5	14 Dichlorobenzene	ug/Kg	<10
Chloroethane	ug/Kg	<5	Benzene	ug/Kg	<5
Methylene Chloride	ug/Kg	<10	Toluene	ug/Kg	<10
Trichlorofluomethane	ug/Kg	<10	Ethyl Benzene	ug/Kg	<5
11 Dichloroethene	ug/Kg	<10	m Xylene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10	o+p Xylene	ug/Kg	<20
12 Dichloroethene	ug/Kg	<10	Acetone	ug/Kg	<100
Chloroform	ug/Kg	<5	Methyl Ethyl Ketone	ug/Kg	<100
12 Dichloroethane	ug/Kg	<10	methylisobutylketone	ug/Kg	<100
111 Trichloroethane	ug/Kg	<5			
Carbon Tetrachloride	ug/Kg	<5			
Bromodichloromethane	ug/Kg	<5			
12 Dichloropropane	ug/Kg	<10			
t 13 Dichloropropene	ug/Kg	<10			
Trichloroethylene	ug/Kg	<5			
Chlorodibromomethane	ug/Kg	<5			
112 Trichloroethane	ug/Kg	<10			
c 13 Dichloropropene	ug/Kg	<10			
2chloroethvinylether	ug/Kg	<10			
Bromoform	ug/Kg	<10			
1122Tetrachloroethan	ug/Kg	<10			
Tetrachloroethene	ug/Kg	24			

cc:

REMARKS:

DIRECTOR

rn= 1282 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/8 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-8, 1045

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Antimony as Sb	mg/Kg	<0.10	
Arsenic as As	mg/Kg	5.3	
Beryllium as Be	mg/Kg	0.11	
Cadmium as Cd	mg/Kg	1.1	
Chromium as Cr	mg/Kg	13	
Copper as Cu	mg/Kg	60	
Lead as Pb	mg/Kg	100	
Mercury as Hg	mg/Kg	0.007	
Nickel as Ni	mg/Kg	16	
Selenium as Se	mg/Kg	0.098	
Silver as Ag	mg/Kg	0.95	
Thallium as Tl	mg/Kg	<0.05	
Zinc as Zn	mg/Kg	220	

cc:

REMARKS:

DIRECTOR

rn= 1283 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/8 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-8, 1045

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<10
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10
12 Dichloroethene	ug/Kg	<10
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<10
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<10
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<10
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	2600

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20
Acetone	ug/Kg	<100
Methyl Ethyl Ketone	ug/Kg	<100
methylisobutylketone	ug/Kg	<100

cc:

REMARKS:

DIRECTOR ____________

rn= 1284 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/9 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, HA-10, 1115

ANALYTICAL PARAMETERS ANALYTICAL PARAMETERS

Antimony as Sb	mg/Kg	0.08
Arsenic as As	mg/Kg	5.6
Beryllium as Be	mg/Kg	0.20
Cadmium as Cd	mg/Kg	0.32
Chromium as Cr	mg/Kg	10
Copper as Cu	mg/Kg	50
Lead as Pb	mg/Kg	45
Mercury as Hg	mg/Kg	0.19
Nickel as Ni	mg/Kg	75
Selenium as Se	mg/Kg	0.35
Silver as Ag	mg/Kg	0.60
Thallium as Tl	mg/Kg	0.07
Zinc as Zn	mg/Kg	78

cc:

REMARKS:

DIRECTOR ____________________

rn= 1285 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/9 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, HA-10, 1115

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<100
Bromomethane	ug/Kg	<100
Dichlordifluomethane	ug/Kg	<100
Vinyl Chloride	ug/Kg	<100
Chloroethane	ug/Kg	<100
Methylene Chloride	ug/Kg	<200
Trichlorofluomethane	ug/Kg	<200
11 Dichloroethene	ug/Kg	<200
11 Dichloroethane	ug/Kg	<200
12 Dichloroethene	ug/Kg	14000
Chloroform	ug/Kg	<100
12 Dichloroethane	ug/Kg	<200
111 Trichloroethane	ug/Kg	<100
Carbon Tetrachloride	ug/Kg	<100
Bromodichloromethane	ug/Kg	<100
12 Dichloropropane	ug/Kg	<200
t 13 Dichloropropene	ug/Kg	<200
Trichloroethylene	ug/Kg	1800
Chlorodibromomethane	ug/Kg	<100
112 Trichloroethane	ug/Kg	<200
c 13 Dichloropropene	ug/Kg	<200
2chloroethvinylether	ug/Kg	<200
Bromoform	ug/Kg	<200
1122Tetrachloroethan	ug/Kg	<200
Tetrachloroethene	ug/Kg	300000

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<100
13 Dichlorobenzene	ug/Kg	<200
12 Dichlorobenzene	ug/Kg	<200
14 Dichlorobenzene	ug/Kg	<200
Benzene	ug/Kg	<100
Toluene	ug/Kg	<200
Ethyl Benzene	ug/Kg	<100
m Xylene	ug/Kg	<200
o+p Xylene	ug/Kg	<400
Acetone	ug/Kg	<2000
Methyl Ethyl Ketone	ug/Kg	<2000
methylisobutylketone	ug/Kg	<2000

cc:

REMARKS:

DIRECTOR ____________

rn= 1286 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/1 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-1, 905

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Antimony as Sb	mg/Kg	<0.10	
Arsenic as As	mg/Kg	1.9	
Beryllium as Be	mg/Kg	0.21	
Cadmium as Cd	mg/Kg	4.4	
Chromium as Cr	mg/Kg	700	
Copper as Cu	mg/Kg	1300	
Lead as Pb	mg/Kg	380	
Mercury as Hg	mg/Kg	0.69	
Nickel as Ni	mg/Kg	1400	
Selenium as Se	mg/Kg	3.4	
Silver as Ag	mg/Kg	1.8	
Thallium as Tl	mg/Kg	<0.05	
Zinc as Zn	mg/Kg	2000	

cc:

REMARKS:

DIRECTOR ____________________

rn= 1268 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO.C900306/1 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-1, 905

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5000
Bromomethane	ug/Kg	<5000
Dichlordifluomethane	ug/Kg	<5000
Vinyl Chloride	ug/Kg	<5000
Chloroethane	ug/Kg	<5000
Methylene Chloride	ug/Kg	<10000
Trichlorofluomethane	ug/Kg	<10000
11 Dichloroethene	ug/Kg	<10000
11 Dichloroethane	ug/Kg	<10000
12 Dichloroethene	ug/Kg	<10000
Chloroform	ug/Kg	<5000
12 Dichloroethane	ug/Kg	<10000
111 Trichloroethane	ug/Kg	<5000
Carbon Tetrachloride	ug/Kg	<5000
Bromodichloromethane	ug/Kg	<5000
12 Dichloropropane	ug/Kg	<10000
t 13 Dichloropropene	ug/Kg	<10000
Trichloroethylene	ug/Kg	<5000
Chlorodibromomethane	ug/Kg	<5000
112 Trichloroethane	ug/Kg	<10000
c 13 Dichloropropene	ug/Kg	<10000
2chloroethvinylether	ug/Kg	<10000
Bromoform	ug/Kg	<10000
1122Tetrachloroethan	ug/Kg	<10000
Tetrachloroethene	ug/Kg	2400000

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5000
13 Dichlorobenzene	ug/Kg	<10000
12 Dichlorobenzene	ug/Kg	<10000
14 Dichlorobenzene	ug/Kg	<10000
Benzene	ug/Kg	<5000
Toluene	ug/Kg	<10000
Ethyl Benzene	ug/Kg	<5000
m Xylene	ug/Kg	<10000
o+p Xylene	ug/Kg	<20000
Acetone	ug/Kg	<100000
Methyl Ethyl Ketone	ug/Kg	<100000
methylisobutylketone	ug/Kg	<100000

cc:

REMARKS:

DIRECTOR ________

rn= 1269 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/1 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A (eptox)
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-1, 905

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS
Antimony as Sb	mg/L*	<0.01	
Arsenic as As	mg/L*	<0.005	
Beryllium as Be	mg/L*	<0.001	
Cadmium as Cd	mg/L*	0.076	
Chromium as Cr	mg/L*	0.15	
Copper as Cu	mg/L*	6.2	
Lead as Pb	mg/L*	0.10	
Mercury as Hg	mg/L*	<0.001	
Nickel as Ni	mg/L*	0.50	
Selenium as Se	mg/L*	0.017	
Silver as Ag	mg/L*	<0.01	
Thallium as Tl	mg/L*	<0.005	
Zinc as Zn	mg/L*	32	

cc:

REMARKS: * Analysis performed on EP Extract according to USEPA EP Toxicity procedure (40 CFR Part 261-Appen. II).

DIRECTOR

rn= 1270 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/2 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-2, 927

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	17
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	19
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10
12 Dichloroethene	ug/Kg	850
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<10
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<10
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<10
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	140

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20
Acetone	ug/Kg	<100
Methyl Ethyl Ketone	ug/Kg	<100
methylisobutylketone	ug/Kg	<100

cc:

REMARKS:

DIRECTOR ____________

cn= 1272 NYSDOH ID# 10320

EcoTest LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/3 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-3, 930

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<10
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10
12 Dichloroethene	ug/Kg	1500
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<10
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<10
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	3500
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<10
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	10000

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	80
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	85
o+p Xylene	ug/Kg	60
Acetone	ug/Kg	<100
Methyl Ethyl Ketone	ug/Kg	<100
methylisobutylketone	ug/Kg	<100

cc:

REMARKS:

DIRECTOR ______________________

rn= 1274 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900306/4 02/06/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2718

SOURCE OF SAMPLE: Hicksville, Project #89-806A
- COLLECTED BY: Client DATE COL'D:01/29/90 RECEIVED:01/29/90

SAMPLE: Soil sample, sludge, DW-4, 940

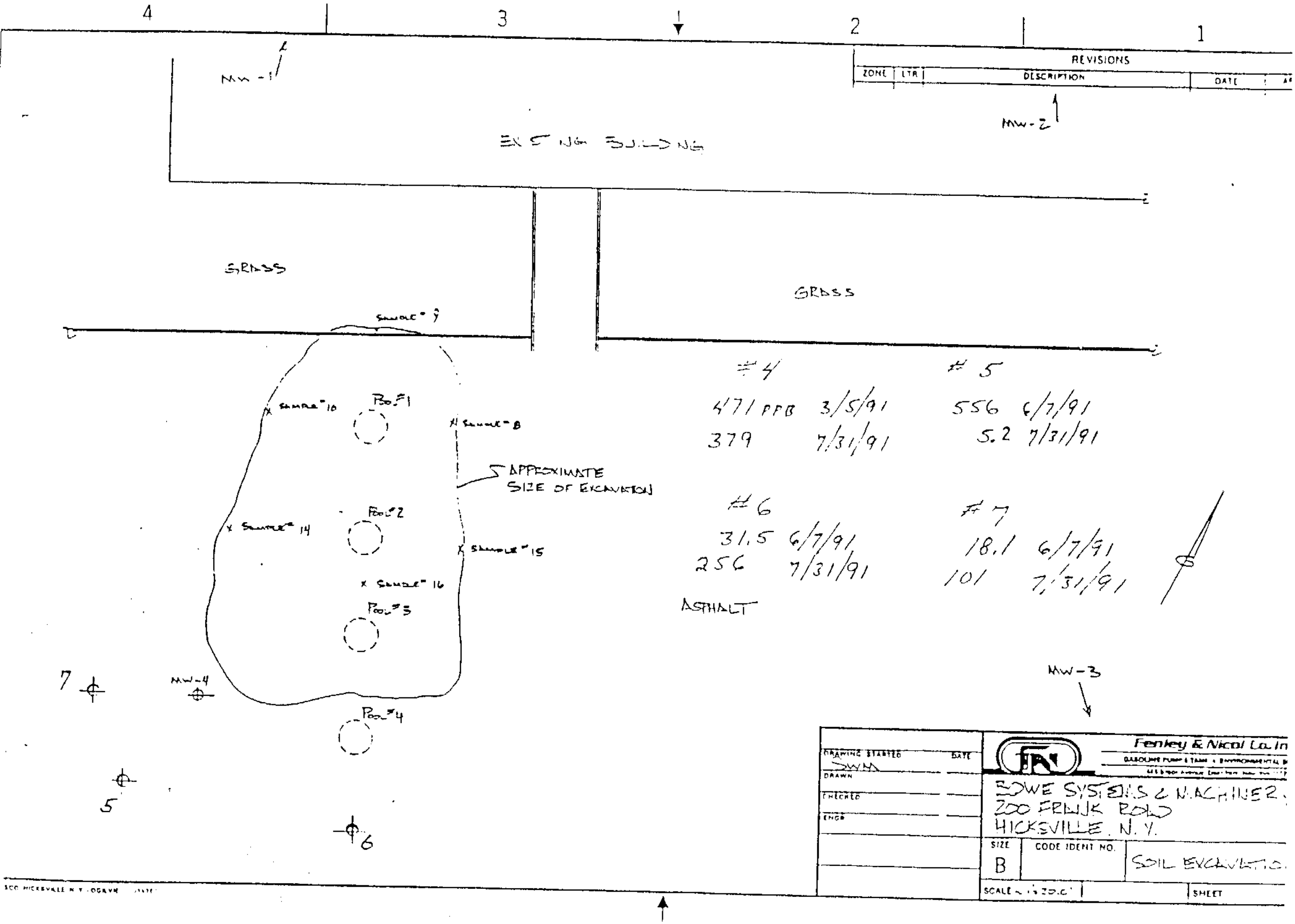
ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5	Chlorobenzene	ug/Kg	<5
Bromomethane	ug/Kg	<5	13 Dichlorobenzene	ug/Kg	<10
Dichlordifluomethane	ug/Kg	<5	12 Dichlorobenzene	ug/Kg	<10
Vinyl Chloride	ug/Kg	<5	14 Dichlorobenzene	ug/Kg	<10
Chloroethane	ug/Kg	<5	Benzene	ug/Kg	<5
Methylene Chloride	ug/Kg	<10	Toluene	ug/Kg	12
Trichlorofluomethane	ug/Kg	<10	Ethyl Benzene	ug/Kg	<5
11 Dichloroethene	ug/Kg	<10	m Xylene	ug/Kg	<10
11 Dichloroethane	ug/Kg	<10	o+p Xylene	ug/Kg	<20
12 Dichloroethene	ug/Kg	<10	Acetone	ug/Kg	<100
Chloroform	ug/Kg	<5	Methyl Ethyl Ketone	ug/Kg	<100
12 Dichloroethane	ug/Kg	<10	methylisobutylketone	ug/Kg	<100
111 Trichloroethane	ug/Kg	<5			
Carbon Tetrachloride	ug/Kg	<5			
Bromodichloromethane	ug/Kg	<5			
12 Dichloropropane	ug/Kg	<10			
t 13 Dichloropropene	ug/Kg	<10			
Trichloroethylene	ug/Kg	<5			
Chlorodibromomethane	ug/Kg	<5			
112 Trichloroethane	ug/Kg	<10			
c 13 Dichloropropene	ug/Kg	<10			
2chloroethvinylether	ug/Kg	<10			
Bromoform	ug/Kg	<10			
1122Tetrachloroethan	ug/Kg	<10			
Tetrachloroethene	ug/Kg	87			

cc:

REMARKS:

DIRECTOR

rn= 1276 NYSDOH ID# 10320



4
3
2
1
REVISIONS
ZONE
LTR
DESCRIPTION
DATE
MW-1
MW-2
EXISTING BUILDING
GRASS
GRASS
SAMPLE #9
SAMPLE #10
POOL #1
SAMPLE #8
APPROXIMATE SIZE OF EXCAVATION
POOL #2
SAMPLE #14
SAMPLE #15
SAMPLE #16
POOL #3
POOL #4
MW-4
7
5
6
#4
471 PPB 3/5/91
379 7/31/91
#5
556 6/7/91
5.2 7/31/91
#6
31.5 6/7/91
256 7/31/91
#7
18.1 6/7/91
101 7/31/91
ASPHALT
MW-3
DRAWING STARTED
DATE
SWM
DRAWN
CHECKED
ENGR
Fenley & Nicol Co. Inc
BOWE SYSTEMS & MACHINERY
200 FRANK ROAD
HICKSVILLE, N.Y.
SIZE
B
CODE IDENT NO.
SOIL EXCAVATION
SCALE
SHEET

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516)467-8477
AFTER 5 P.M. (516)567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/05/91 Analyzed 3/05/91 Report 3/11/91

Sampling Point

1. Sample #1 - Soil Sample #1 (Dry Well 1 at 4' deep)
2. Sample #2 - Well #3
3. Sample #3 - Well #4 SOIL MECHANICS
4. Sample #4 - Well #2
5. Sample #5 - Well #1

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	< 1.0	0.57	471	0.06	0.37

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69798

pm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

June 10, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

Date: Collected 6/7/91 Analyzed 6/7/91 Report 6/10/91

Sampling Point

1. Bowe Systems, 200 Frank Street, Hicksville, NY - FN-5
2. Bowe Systems, 200 Frank Street, Hicksville, NY - FN-6
3. Bowe Systems, 200 Frank Street, Hicksville, NY - FN-7
4.
5.

Parameters		1	2	3	4	5
Tetrachloroethylene	ug/l	556	31.5	18.1		

Job No. 60523

Purchase Order No. 39926

Lab Number 71783

JOHN PEDNEAULT
Lab Director

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516)467-6477
AFTER 5 P.M. (516)567-5679

August 2, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bove Systems
200 Frank Road, Hicksville, NY

Date: Collected 7/31/91 Analyzed 7/31-8/2/91 Report 8/2/91

Sampling Point

1. Well #4
2. Well #5
3. Well #6
4. Well #7
5.

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	379	5.2	256	101	

JOHN PEDNEAULT
Lab Director

Lab Number 73206

jm

SUMMARY OF LABORATORY ANALYSIS

TEST BORING SAMPLES

HICKSVILLE, NEW YORK

PLATE #1

	DW-1/S-3	DW-2/S-2	DW-3/S-3	DW-4/S-2	DW-5/S-2	DW-6/S-2	DW-7/S-2	DW-8/S-2
Depth (ft)	4-6	2-4	4-6	2-4	2-4	2-4	2-4	2-4
1 2 Dichloroethene	<250	<50	6	<5	<5	<5	<5	<5000
Trichloroethylene	<250	<50	5	<5	<5	<5	<5	<5000
Tetrachloroethene	150,000	1200	220	<5	<5	<5	<5	6,000,000

Results in ug/Kg

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900398/1 02/21/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2724

SOURCE OF SAMPLE: Hicksville, Project #89-8067
COLLECTED BY: Client DATE COL'D:02/05/90 RECEIVED:02/05/90

SAMPLE: Soil Sample, DW-1/S-3, 4-6', 820

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<250
Bromomethane	ug/Kg	<250
Dichlordifluomethane	ug/Kg	<250
Vinyl Chloride	ug/Kg	<250
Chloroethane	ug/Kg	<250
Methylene Chloride	ug/Kg	<250
Trichlorofluomethane	ug/Kg	<500
11 Dichloroethene	ug/Kg	<250
11 Dichloroethane	ug/Kg	<250
12 Dichloroethene	ug/Kg	<250
Chloroform	ug/Kg	<250
12 Dichloroethane	ug/Kg	<250
111 Trichloroethane	ug/Kg	<250
Carbon Tetrachloride	ug/Kg	<250
Bromodichloromethane	ug/Kg	<250
12 Dichloropropane	ug/Kg	<250
t 13 Dichloropropene	ug/Kg	<500
Trichloroethylene	ug/Kg	<250
Chlorodibromomethane	ug/Kg	<250
112 Trichloroethane	ug/Kg	<500
c 13 Dichloropropene	ug/Kg	<500
2chloroethvinylether	ug/Kg	<500
Bromoform	ug/Kg	<250
1122Tetrachloroethan	ug/Kg	<500
Tetrachloroethene	ug/Kg	150000

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<250
13 Dichlorobenzene	ug/Kg	<250
12 Dichlorobenzene	ug/Kg	<250
14 Dichlorobenzene	ug/Kg	<250
Benzene	ug/Kg	<250
Toluene	ug/Kg	<500
Ethyl Benzene	ug/Kg	<250
m Xylene	ug/Kg	<500
o+p Xylene	ug/Kg	<1000

cc:

REMARKS:

DIRECTOR Thomas R Sletta

rn= 1736 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900398/2 02/21/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2724

SOURCE OF SAMPLE: Hicksville, Project #89-8067
COLLECTED BY: Client DATE COL'D:02/05/90 RECEIVED:02/05/90

SAMPLE: Soil Sample, DW-2/S-2, 2-4', 849

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<50
Bromomethane	ug/Kg	<50
Dichlordifluomethane	ug/Kg	<50
Vinyl Chloride	ug/Kg	<50
Chloroethane	ug/Kg	<50
Methylene Chloride	ug/Kg	<50
Trichlorofluomethane	ug/Kg	<100
11 Dichloroethene	ug/Kg	<50
11 Dichloroethane	ug/Kg	<50
12 Dichloroethene	ug/Kg	<50
Chloroform	ug/Kg	<50
12 Dichloroethane	ug/Kg	<50
111 Trichloroethane	ug/Kg	<50
Carbon Tetrachloride	ug/Kg	<50
Bromodichloromethane	ug/Kg	<50
12 Dichloropropane	ug/Kg	<50
t 13 Dichloropropene	ug/Kg	<100
Trichloroethylene	ug/Kg	<50
Chlorodibromomethane	ug/Kg	<50
112 Trichloroethane	ug/Kg	<100
c 13 Dichloropropene	ug/Kg	<100
2chloroethvinylether	ug/Kg	<100
Bromoform	ug/Kg	<50
1122Tetrachloroethan	ug/Kg	<100
Tetrachloroethene	ug/Kg	1200

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<50
13 Dichlorobenzene	ug/Kg	<50
12 Dichlorobenzene	ug/Kg	<50
14 Dichlorobenzene	ug/Kg	<50
Benzene	ug/Kg	<50
Toluene	ug/Kg	<100
Ethyl Benzene	ug/Kg	<50
m Xylene	ug/Kg	<100
o+p Xylene	ug/Kg	<200

cc:

REMARKS:

DIRECTOR Thomas P. [signature]

rn= 1737 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900376/5 02/20/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2721

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:02/01/90 RECEIVED:02/02/90

SAMPLE: Soil Sample, DW-3S-3, 1400, 4-6'

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<5
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<5
11 Dichloroethane	ug/Kg	<5
12 Dichloroethene	ug/Kg	6
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<5
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<5
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<5
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	220

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20

cc:

REMARKS:

DIRECTOR ____________________

rn= 1681 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900376/1 02/20/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2721

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:02/01/90 RECEIVED:02/02/90

SAMPLE: Soil Sample, DW-4S-2, 845, 2-4'

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<5
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<5
11 Dichloroethane	ug/Kg	<5
12 Dichloroethene	ug/Kg	<5
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<5
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<5
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<5
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	<5

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20

cc:

REMARKS:

DIRECTOR

rn= 1577 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900376/2 02/20/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2721

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:02/01/90 RECEIVED:02/02/90

SAMPLE: Soil Sample, DW-5S-2, 1100, 2-4'

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<5
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<5
11 Dichloroethane	ug/Kg	<5
12 Dichloroethene	ug/Kg	<5
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<5
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<5
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<5
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	<5

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20

cc:

REMARKS:

DIRECTOR ____________________

rn= 1678 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900376/3 02/20/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2721

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:02/01/90 RECEIVED:02/02/90

SAMPLE: Soil Sample, DW-6S-2, 1145, 2-4'

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<5
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<5
11 Dichloroethane	ug/Kg	<5
12 Dichloroethene	ug/Kg	<5
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<5
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<5
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<5
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	<5

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20

cc:

REMARKS:

DIRECTOR

rn= 1679 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C900376/4 02/20/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2721

SOURCE OF SAMPLE: Hicksville, Project #89-806A
COLLECTED BY: Client DATE COL'D:02/01/90 RECEIVED:02/02/90

SAMPLE: Soil Sample, DW-7S-2, 1308, 2-4'

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5
Bromomethane	ug/Kg	<5
Dichlordifluomethane	ug/Kg	<5
Vinyl Chloride	ug/Kg	<5
Chloroethane	ug/Kg	<5
Methylene Chloride	ug/Kg	<5
Trichlorofluomethane	ug/Kg	<10
11 Dichloroethene	ug/Kg	<5
11 Dichloroethane	ug/Kg	<5
12 Dichloroethene	ug/Kg	<5
Chloroform	ug/Kg	<5
12 Dichloroethane	ug/Kg	<5
111 Trichloroethane	ug/Kg	<5
Carbon Tetrachloride	ug/Kg	<5
Bromodichloromethane	ug/Kg	<5
12 Dichloropropane	ug/Kg	<5
t 13 Dichloropropene	ug/Kg	<10
Trichloroethylene	ug/Kg	<5
Chlorodibromomethane	ug/Kg	<5
112 Trichloroethane	ug/Kg	<10
c 13 Dichloropropene	ug/Kg	<10
2chloroethvinylether	ug/Kg	<10
Bromoform	ug/Kg	<5
1122Tetrachloroethan	ug/Kg	<10
Tetrachloroethene	ug/Kg	<5

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5
13 Dichlorobenzene	ug/Kg	<10
12 Dichlorobenzene	ug/Kg	<10
14 Dichlorobenzene	ug/Kg	<10
Benzene	ug/Kg	<5
Toluene	ug/Kg	<10
Ethyl Benzene	ug/Kg	<5
m Xylene	ug/Kg	<10
o+p Xylene	ug/Kg	<20

cc:

REMARKS:

DIRECTOR ____________

rn= 1680 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO.C900398/3 02/21/90

Soil Mechanics
3770 Merrick Road
Seaford, NY 11783
ATTN: Robert Cardinale PO #2724

SOURCE OF SAMPLE: Hicksville, Project #89-8067
COLLECTED BY: Client DATE COL'D:02/05/90 RECEIVED:02/05/90

SAMPLE: Soil Sample, DW-8/S-2, 2-4', 1000

ANALYTICAL PARAMETERS		
Chloromethane	ug/Kg	<5000
Bromomethane	ug/Kg	<5000
Dichlordifluomethane	ug/Kg	<5000
Vinyl Chloride	ug/Kg	<5000
Chloroethane	ug/Kg	<5000
Methylene Chloride	ug/Kg	<5000
Trichlorofluomethane	ug/Kg	<10000
11 Dichloroethene	ug/Kg	<5000
11 Dichloroethane	ug/Kg	<5000
12 Dichloroethene	ug/Kg	<5000
Chloroform	ug/Kg	<5000
12 Dichloroethane	ug/Kg	<5000
111 Trichloroethane	ug/Kg	<5000
Carbon Tetrachloride	ug/Kg	<5000
Bromodichloromethane	ug/Kg	<5000
12 Dichloropropane	ug/Kg	<5000
t 13 Dichloropropene	ug/Kg	<10000
Trichloroethylene	ug/Kg	<5000
Chlorodibromomethane	ug/Kg	<5000
112 Trichloroethane	ug/Kg	<10000
c 13 Dichloropropene	ug/Kg	<10000
2chloroethvinylether	ug/Kg	<10000
Bromoform	ug/Kg	<5000
1122Tetrachloroethan	ug/Kg	<10000
Tetrachloroethene	ug/Kg	6000000

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/Kg	<5000
13 Dichlorobenzene	ug/Kg	<5000
12 Dichlorobenzene	ug/Kg	<5000
14 Dichlorobenzene	ug/Kg	<5000
Benzene	ug/Kg	<5000
Toluene	ug/Kg	<10000
Ethyl Benzene	ug/Kg	<5000
m Xylene	ug/Kg	<10000
o+p Xylene	ug/Kg	<20000

cc:

REMARKS:

DIRECTOR ______

rn= 1738 NYSDOH ID# 10320

SOIL MECHANICS

3770 MERRICK ROAD · SEAFORD, L.I., NEW YORK 11783 · (516) 221-2333

CHAIN OF CUSTODY

LABORATORY: ECOTEST LABS

PROJECT NAME: HICKSVILLE

PROJECT NO. 89 8066A

SAMPLE I.D. NUMBER	DATE	TIME	COMP.	GRAB	MATRIX	SAMPLE LOCATION	NUMBER OF CONTAINERS	P.P METALS	LEAD	TPHC	CYANIDE	VOA	BTX	PCB	PEST.	HERB.	A/E	B/N	OTHER	ADDITIONAL REQUIREMENTS
DW-4S2	2-1-90	8:45		/	SOIL	DW-4 (S-2 2'-4')	1				/									
DW-5S2		11:00		/	SOIL	DW-5 (S-2 2'-4')	1				/									
DW-6S2		11:45		/	SOIL	DW-6 (S-2 2'-4')	1				/									
DW-7S2		13:08		/	SOIL	DW-7 (S-2 2'-4')	1				/									
DW-3S2		14:00		/	SOIL	DW-3 (S-2 4'-6')	1				/									

RELINQUISHED BY (SIGNATURE) | DATE/TIME | AGENT OF: | REC'D. BY (SIGNATURE) | DATE/TIME | AGENT:

PRINTED NAME | PRNT. NME.

REL. BY (SIG.) | DATE/TIME | AGENT OF: | REC'D. BY (SIGN.) | DATE/TIME | AGENT:

PRNT. NME. | PRNT. NME.

REL. BY (SIG.) [signature] | DATE/TIME 2-2-90 14:15 | RECEIVED FOR LAB BY: [signature] | DATE/TIME 2-2-90 14:15 | REMARKS: INV # 2721 ET

PRNT. NME. CHARLES NEHRIG | PRNT. NME. Tom Freutlein

SAMPLER (SIGNATURE) [signature] | SAMPLER NAME (PRINT) CHARLES NEHRIG

SOIL MECHANICS

3770 MERRICK ROAD · SEAFORD, L.I., NEW YORK 11783 · (516) 221-2333

CHAIN OF CUSTODY

LABORATORY: ECOTEST LABS

PROJECT NAME: HICKSVILLE

PROJECT NO. 89 806A

SAMPLE I.D. NUMBER	DATE	TIME	COMP.	GRAB.	MATRIX	SAMPLE LOCATION	NUMBER OF CONTAINERS	P.P METALS	LEAD	TPHC	CYANIDE	VOA	BTX	PCB	PEST.	HERB.	A/E	B/N	OTHER	ADDITIONAL REQUIREMENTS
DW-1S3	2-5-90	8:30		/	SOIL	DW-1 (S3 4'-6')	1					/								
DW-2S2	2-5-90	9:40		/	SOIL	DW-2 (S2 2'-4')	1					/								
DW-8S2	2-5-90	10:00		/	SOIL	DW-8 (S2 2'-4')	1					/								

RELINQUISHED BY (SIGNATURE)	DATE/TIME	AGENT OF:	REC'D. BY (SIGNATURE)	DATE/TIME	AGENT:
PRINTED NAME			PRNT. NME.		
REL. BY (SIG)	DATE/TIME	AGENT OF:	REC'D. BY (SIGN)	DATE/TIME	AGENT:
PRNT. NME.			PRNT. NME.		
REL. BY (SIG)	DATE/TIME 2-5-90 16:20	RECEIVED FOR LAB BY:	DATE/TIME 2-5-90 16:20	REMARKS: INV# 2724 ET	
PRNT. NME. CHARLES NEHRIH		PRNT. NME. E. STAVROULAKIS			
SAMPLER (SIGNATURE)		SAMPLER NAME (PRINT) CHARLES NEHRIH			

H2M GROUP

Fenley & Nicol Co., Inc. (April 17, 1991)

Fenley & Nicol
Co. Inc.
445 Brook Avenue, Deer Park, New York 11729 (516) 586-4900 • (718) 204-4993 Gasoline Pump & Tank • Environmental Services

SOIL EXCAVATION REPORT

AT

BOWE SYSTEMS & MACHINERY
200 FRANK ROAD
HICKSVILLE, NEW YORK

PREPARED FOR: BOWE SYSTEMS & MACHINERY

200 Frank Avenue

Hicksville, New York

PREPARED BY: FENLEY & NICOL CO., INC.

445 Brook Avenue

Deer Park, New York 11729

(516) 586-4900

PREPARED ON: April 17, 1991

INTRODUCTION

Fenley & Nicol Co., Inc. was retained by Bowe Systems & Machinery of 200 Frank Avenue, Hicksville, N.Y. to review historical information and previously collected data on possible soil contamination caused by the activities at this site. Fenley & Nicol's objectives were to confirm the findings in the Environmental Site Assessment Report prepared by Soil Mechanics Drilling Corp. dated January, 1990, and supplemental investigations. Fenley & Nicol's recommendations included additional soil borings to delineate the horizontal and vertical extent of the contamination and to develop a work plan to perform the necessary soil removal and disposal to satisfy the NYS-DEC.

WORK PERFORMED

Fenley & Nicol (F&N) drilled eight soil borings near the west group of four interconnected leaching pools to confirm the findings in the Environmental Site Assessment Report and to determine the extent of the soil remediation work plan. The locations and depths of the borings were based on the location and total depths of the leaching pools.

Soil cuttings were collected by a geologist on site and screened using a Photovac portable field gas chromatograph targeting tetrachloroethylene. Health and safety air monitoring at the drill rig was also performed using the field gas chromatograph. The workers were able to maintain OSHA level D protection during the drilling and sampling of the borings. The results of the borings and soil head space analysis indicated elevated levels of tetrachloroethylene in the soils around leaching pools #1, #2 and #3 (see site sketch) to a depth of approximately 20 feet and a horizontal distance of approximately 12 feet from each leaching pool.

A work plan in the form of a bid package was prepared describing the scope of work required to remediate the contaminated soil. The method of soil remediation preferred by Bowe was to excavate and dispose of all contaminated soils associated with the discharge from the leaching pools. After acceptance of the scope of work and the bid package by Bowe, Fenley & Nicol contacted the New York State Department of Environmental Conservation Hazardous Waste Remediation Division and the Nassau County Department of Health Services to review the work plan and provide guidance.

The soil excavation commenced on March 4, 1991, with the removal of the surface asphalt. Based on the Soil Mechanics reports and F&N's soil borings, the soils from grade to a depth of five feet were considered to be clean, laboratory analysis confirmed this. The soil was stock pilled on plastic for future use as backfill material. On March 5, 1991, soil excavation continued with a NYS-DEC Hazardous Waste Remediation Division representative present to observe the soil removal handling and sample location and collection procedures.

Fenley & Nicol contracted Pedneault Associates of Bohemia, N.Y. to provide a mobile laboratory and chemist to analyze the excavation samples on site for immediate determination of contamination levels. The soils were segregated into contaminated (>1.0 ppb) and non-contaminated (<1.0 ppb) piles on plastic for disposal or use as backfill material.

Soil samples were collected approximately every 4 feet (depth of each pool ring) and analyzed. Excavation continued in depth until the analysis indicated <1.0 ppb tetrachloroethylene or until NYS-DEC approval to backfill. With the end point samples meeting NYS-DEC approval, side wall samples were collected from the excavations at the depth of greatest concentration of tetrachloroethylene penetraction to insure complete horizontal soil removal.

The excavation of all contaminated soils was completed on March 7, 1991. The excavation was backfilled using available materials on site, with additional clean fill material delivered to the site as needed. The leaching pools were steam cleaned, reinstalled and connected for service. New asphalt returned the site to original condition.

The stock pilled contaminated soil was sampled and tested for TCLP Volatiles, TCLP Semi-volatiles, TCLP Pesticides/Herbicides, EP Toxicity for heavy metals and PCB's for landfill disposal facility approval. Approximately 450 tons of soil was manifested to Athens Hocking Landfill in Ohio.

LABORATORY RESULTS

The laboratory results of all the samples collected is tabulated below. The locations of the leaching pools are indicated on the site sketch.

Leaching Pool #1		Leaching Pool #2		Leaching Pool #3	
Depth (ft.)	Tetrachloroethylene (ppb)	Depth (ft.)	Tetrachloroethylene (ppb)	Depth (ft.)	Tetrachloroethylene (ppb)
4	<1.0	4	<1.0	4	<1.0
8	1.11				
12	0.95	12	0.29		
16	6.96	17	2.67	17	0.18
20	11.23	20	0.73		
25	6.43	20	0.73		
29	5.00				
East	0.78	East	<1.0		
West	0.02	West	0.03		
North	0.06	South	0.37		

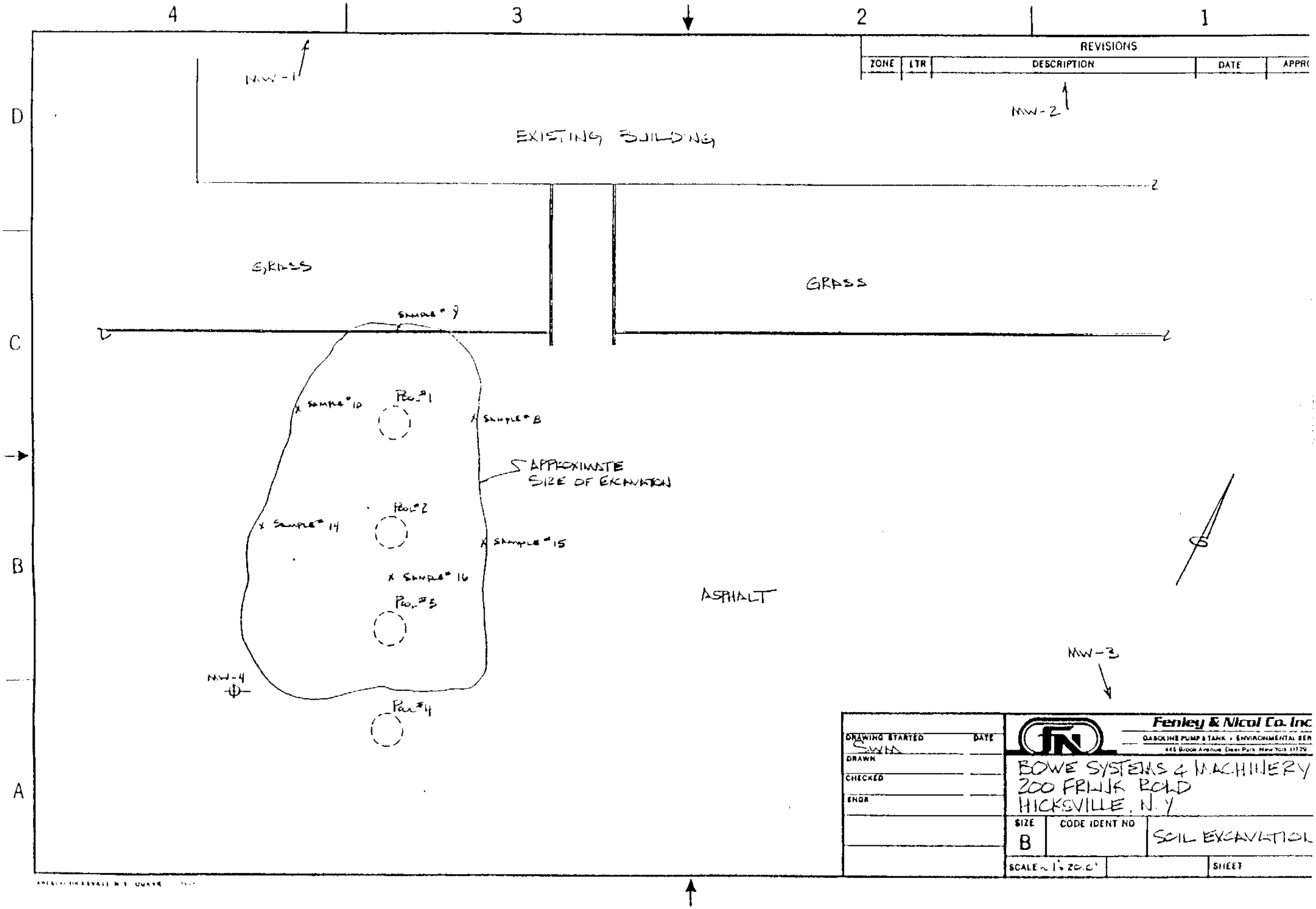
During the soil excavation and in addition to the scope of work, Pedneault Associates sampled and analyzed the groundwater collected from four existing monitoring wells installed by Soil Mechanics Drilling Corp. as part of the site assessment. The results of this testing is listed below:

Well #	Tetrachloroethylene (ppb)
1	0.37
2	0.06
3	0.57
4	471

CONCLUSION

The soil excavation project performed at this site has removed all contaminated soil in the vicinity of the leaching pools per NYS-DEC requirements. This was demonstrated through the use of an on-site certified mobile laboratory collecting and analyzing end point samples. The width and total depth of the excavation was approved by the NYS-DEC representative who was present during the excavation and approved the backfilling and restoration of the site.

The sampling and analysis of the groundwater has indicated elevated levels above 1.0 ppb tetrachloroethylene in well #4, located down gradient from the leaching pools. Detectable levels below 1.0 ppb were indicated in wells #1 through #3. Since well #4 is the most down gradient well from the source of the contamination, Fenley & Nicol recommends the installation of additional groundwater monitoring wells down gradient of well #4. A complete proposal with specifications and work plan will be prepared under a separate cover.



4
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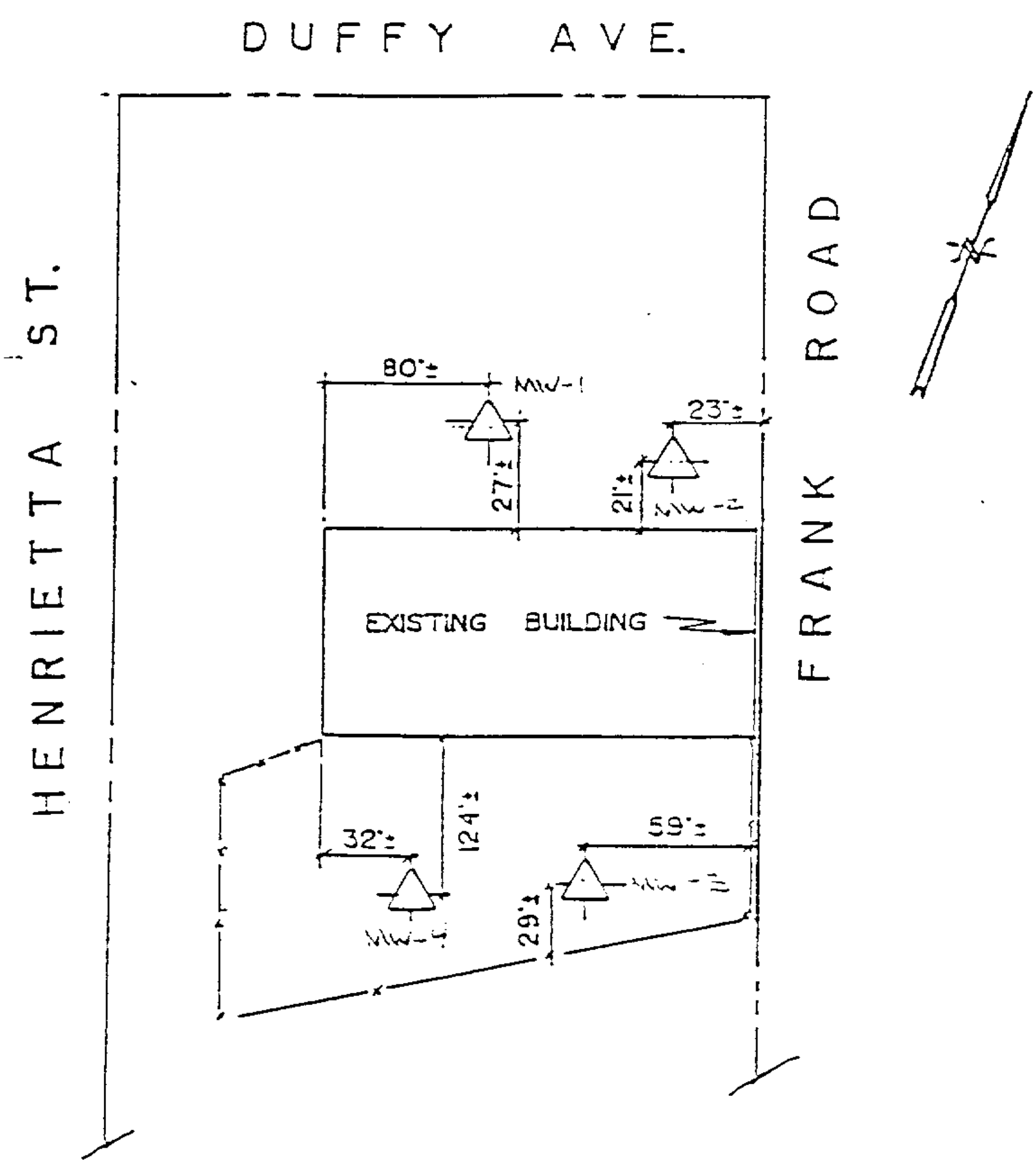
REVISIONS
ZONE
LTR
DESCRIPTION
DATE
APPR
MW-1
MW-2
MW-3
MW-4
EXISTING BUILDING
GRASS
GRASS
ASPHALT
SAMPLE # 9
SAMPLE # 10
SAMPLE # 8
SAMPLE # 14
SAMPLE # 15
SAMPLE # 16
POOL # 1
POOL # 2
POOL # 3
POOL # 4
APPROXIMATE SIZE OF EXCAVATION
DRAWING STARTED
DATE
DRAWN
CHECKED
ENGR
Fenley & Nicol Co. Inc
BOWE SYSTEMS & MACHINERY
200 FRANK ROAD
HICKSVILLE, N.Y.
SIZE
B
CODE IDENT NO
SOIL EXCAVATION
SCALE ~ 1" = 20.0'
SHEET



SOIL MECHANICS DRILLING CORP.
subsoil investigations
3770 MERRICK ROAD · SEAFORD, NEW YORK 11783 · 516 221-

MONITORING WELL LOCATION PLAN
DUFFY AVE.
HICKSVILLE, NEW YORK

SCALE: N.T.S.	DRAWING DATE: JANUARY 4 1990	DRAWING NUMBER

LABORATORY DATA

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/05/91 Analyzed 3/05/91 Report 3/11/91

Sampling Point

1. Sample #1 - Soil Sample #1 (Dry Well 1 at 4' deep)
2. Sample #2 - Well #3
3. Sample #3 - Well #4
4. Sample #4 - Well #2
5. Sample #5 - Well #1

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	< 1.0	0.57	471	0.06	0.37

P.O.# E-38597

Lab Number 69798

JOHN PEDNEAULT
Lab Director

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1815 NINTH AVENUE P.O. BOX 205 BOHEMIA, N.Y. 11716 (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/05/91 Analyzed 3/05/91 Report 3/11/91

Sampling Point

1. Sample #6 - Soil Sample #2 (Dry Well 1 at 8' deep)
2. Sample #7 - Soil Sample #3 (Dry Well 1 at 12' deep)
3.
4.
5.

Parameters		1	2	3	4	5
Tetrachloroethulene	ppb	1.11	0.95			

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69798

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/06/91 Analyzed 3/06/91 Report 3/11/91

Sampling Point

1. Sample #8 - Soil Sample #4 (Dry Well 1 at 16' deep)
2. Sample #9 - Soil Sample #5 (Dry Well 1 at 20' deep)
3. Sample #10 - Soil Sample #6 (Dry Well 1 at 25' deep)
4. Sample #11 - Soil Sample #7 (Dry Well 1 at 29' deep)
5. Sample #12 - Soil Sample #8 (East Dry Well 1 at 20' deep)

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	6.96	11.23	6.43	5.00	0.78

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69793

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/06/91 Analyzed 3/06/91 Report 3/11/91

Sampling Point

1. Sample #13 - Soil Sample #9 (North Dry Well 1 at 20' deep)
2. Sample #14 - Soil Sample #10 (West Dry Well 1 at 20' deep)
3. Sample #15 - Soil Sample #11 (Dry Well 2 at 13' deep)
4.
5.

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	0.06	0.02	0.29		

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69798

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/07/91 Analyzed 3/07/91 Report 3/11/91

Sampling Point

1. Sample #16 - Soil Sample #12 (Dry Well 2 at 17' deep)
2. Sample #17 - Soil Sample #13 (Dry Well 2 at 20' deep)
3. Sample #18 - Soil Sample #14 (West Dry Well 2 at 20' deep)
4. Sample #19 - Soil Sample #15 (East Dry Well 2 at 20' deep)
5. Sample #20 - Soil Sample #16 (South Dry Well 2 at 20' deep)

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	2.67	0.73	0.03	<1.0	0.37

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 59798

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 11, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

RE: Bowe Systems
200 Frank Road
Hicksville, NY

Date: Collected 3/07/91 Analyzed 3/07/91 Report 3/11/91

Sampling Point

1. Sample #21 - Soil Sample #17 (Dry Well 3 at 16' deep)
2.
3.
4.
5.

Parameters		1	2	3	4	5
Tetrachloroethylene	ppb	0.18				

P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69798

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 6, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

Date: Collected 3/5/91 Analyzed 3/5-3/6/91 Report 3/6/91

Sampling Point

1. Bowe Systems, 200 Frank Road, Hicksville, NY (soil) - EP Toxicity
2.
3.
4.
5.

Parameters		1	2	3	4	5
Silver	mg/ℓ	< 0.0005				
Arsenic	mg/ℓ	< 0.0005				
Lead	mg/ℓ	< 0.0005				
Cadmium	mg/ℓ	0.0001				
Chromium	mg/ℓ	< 0.02				
Mercury	mg/ℓ	< 0.0005				
Selenium	mg/ℓ	< 0.001				
Barium	mg/ℓ	< 0.1				
Flash Point	°C	> 100°				
	°F	> 212°				

Job No. 53575
P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69674

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES

1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477

AFTER 5 P.M. (516) 567-5579

March 6, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, NY 11729

Date: Collected 3/5/91 **Analyzed** 3/5-3/6/91 **Report** 3/6/91

Sampling Point

1. Bowe Systems, 200 Frank Road, Hicksville, NY (soil)
2.
3.
4.
5.

Parameters		1	2	3	4	5
PCBs						
1016	ug/kg	< 1.0				
1221	ug/kg	< 1.0				
1232	ug/kg	< 1.0				
1242	ug/kg	< 1.0				
1248	ug/kg	< 1.0				
1254	ug/kg	< 1.0				
1260	ug/kg	< 1.0				

Job No. 53575
P.O.# E-38597

JOHN PEDNEAULT
Lab Director

Lab Number 69674

jm

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 13, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, New York 11729

Date: Collected ...3/7/91......... Analyzed ..3/7-3/13/91..... Report ..3/13/91.........

Sampling Point

1. Bowe Systems - 200 Frank Road, Hicksville, New York - TCLP Extraction
2.
3.
4.
5.

CONTAMINANT		Regulatory Level (mg/ℓ)	1	2	3	4	5
Acetone	mg/ℓ	NA	<0.01				
Benzene	mg/ℓ	0.5	<0.01				
n-Butylalcohol	mg/ℓ	NA	<0.01				
Carbon disulfide	mg/ℓ	NA	<0.01				
Carbon tetrachloride	mg/ℓ	0.5	<0.01				
Chlorobenzene	mg/ℓ	100.0	<0.01				
Chloroform	mg/ℓ	6.0	<0.01				
1,2-Dichloroethane	mg/ℓ	0.5	<0.01				
1,1-Dichloroethylene	mg/ℓ	0.7	<0.01				
Ethyl acetate	mg/ℓ	NA	<0.01				
Ethyl benzene	mg/ℓ	NA	<0.01				
Ethyl ether	mg/ℓ	NA	<0.01				
Isobutanol	mg/ℓ	NA	<0.01				
Methanol	mg/ℓ	NA	<0.01				
Methylene chloride	mg/ℓ	NA	<0.01				

NA = Not Available
P.O. #E-58597
Job #53575

T.C.L.P. Volatile Analytes

Lab Number 69738
mcs

JOHN PEDNEAULT
Lab Director

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 PM (516) 587-5579

March 13, 1991

TO: Fenley and Nicol Comapany, Inc.
445 Brook Avenue
Deer Park, New York 11729

Date: Collected 3/7/91 Analyzed 3/7-3/13/91 Report 3/13/91

Sampling Point

1. Bowe Systems - 200 Frank Road, Hicksville, New York - TCLP Extraction
2.
3.
4.
5.

CONTAMINANT		Regulatory Level (mg/ℓ)	1	2	3	4	5
Methyl ethyl ketone	mg/ℓ	200.0	<0.01				
Methyl isobutyl ketone	mg/ℓ	NA	<0.01				
Tetrachloroethylene	mg/ℓ	0.7	<0.01				
Toluene	mg/ℓ	NA	<0.01				
1,1,1-Trichloroethane	mg/ℓ	NA	<0.01				
Trichloroethylene	mg/ℓ	0.5	<0.01				
Trichlorofluoromethane	mg/ℓ	NA	<0.01				
1,1,2-Trichloro-1,2,2-trifluoroethane		NA	<0.01				
Vinyl chloride	mg/ℓ	0.2	<0.01				
Xylene	mg/ℓ	NA	<0.01				

NA = Not Available
P.O. #E-38597
Job #55575

T.C.L.P. Volatile Analytes

Lab Number 69738
mcs

JOHN PEDNEAULT
Lab Director

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 13, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, New York 11729

Date: Collected 3/7/91 Analyzed 3/7-3/13/91 Report 3/13/91

Sampling Point

1. Bowe Systems - 200 Frank Road, Hicksville, New York - TCLP Extraction
2.
3.
4.
5.

CONTAMINANT		Regulatory Level (mg/ℓ)	1	2	3	4	5
Total Cresol	mg/ℓ	200.0	<0.01				
1,4-Dichlorobenzene	mg/ℓ	7.5	<0.01				
2,4-Dinitrotoluene	mg/ℓ	0.13	<0.01				
Hexachlorobenzene	mg/ℓ	0.13	<0.01				
Hexachloro-1,3-butadiene	mg/ℓ	0.5	<0.01				
Hexachloroethane	mg/ℓ	3.0	<0.01				
Nitrobenzene	mg/ℓ	2.0	<0.01				
Pentachlorophenol	mg/ℓ	100.0	<0.01				
Pyridine	mg/ℓ	5.0	<0.01				
2,4,5-Trichlorophenol	mg/ℓ	400.0	<0.01				
2,4,6-Trichlorophenol	mg/ℓ	2.0	<0.01				

P.O. #E-38597
Job #53575

T.C.L.P. Semi-Volatile Analytes

Lab Number 69738
mcs

JOHN PEDNEAULT
Lab Director

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

March 13, 1991

TO: Fenley and Nicol Company, Inc.
445 Brook Avenue
Deer Park, New York 11729

Date: Collected 3/7/91 Analyzed 3/7-3/13/91 Report 3/13/91

Sampling Point

1. Bowe Systems - 200 Frank Road, Hicksville, New York - TCLP Extraction
2.
3.
4.
5.

CONTAMINANT		Regulatory Level (mg/ℓ)	1	2	3	4	5
Chlordane	mg/ℓ	0.03	<0.001				
Endrin	mg/ℓ	0.02	<0.001				
Heptachlor	mg/ℓ	0.008	<0.001				
Heptachlor epoxide	mg/ℓ	0.008	<0.001				
Lindane	mg/ℓ	0.4	<0.001				
Methoxychlor	mg/ℓ	10.0	<0.001				
Toxaphene	mg/ℓ	0.5	<0.001				
2,4-D	mg/ℓ	10.0	<0.001				
2,4,5-TP (Silvex)	mg/ℓ	1.0	<0.001				

P.O. #E-38597
Job #53575

T.C.L.P. Pesticide/Herbicide Analytes

Lab Number 69733
mCS

JOHN PEDNEAULT
Lab Director

WASTE MANIFEST

CUSTOMER HAULER

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. Nº 5133

GENERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR

GENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK

2.

3.

GENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION 3-18-91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

GENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE
2. ITEM TYPE BOWES
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CHECK ONE (✓) CUBIC YARDS N/A TONS 77.07 OTHER
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

TRANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

TRANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

TRANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

DISPOSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

GENERATOR NAME — DOCUMENT NO. A.H. — No 6461

: JIMMY BYRNE NYS DEC 1A-206

GENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK 11542
2.
3.

GENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME
2. PHONE NUMBER — Area Code ( ) - TITLE
3. DATE SHIPPED FROM SERVICE LOCATION 3/18/91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

GENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES

1. ITEM TYPE
2. ITEM TYPE BOWE SYSTEM
3. ITEM TYPE 200 FRANK ROAD
4. ITEM TYPE HICKSVILLE, NY
5. QUANTITY — CHECK ONE (✓) CUBIC YARDS NA TONS 28.42 OTHER
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

TRANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

TRANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE
2. PHONE NUMBER — Area code (516) - 671-7799 TITLE OWNER
3. DATE OF THE LOAD PICKUP 3/18/91
4. TIME OF THE LOAD PICKUP
5. GENERATOR SERVICE LOCATION A.M. P.M.
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE [signature]

TRANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY 3/20/91
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE [signature]
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

DISPOSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE 3/20/91
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME [handwritten]
4. INSPECTOR SIGNATURE [signature]
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES ✓ NO
6. REJECTED LOAD — YES NO ✓
IF YES PLEASE REMARK

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS ACCEPTED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.
TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.
DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. № 6459

JOB # 91-13

NERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206

ENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK 11542

2.

3.

ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME ______ TITLE ______

2. PHONE NUMBER — Area Code ( ) -

3. DATE SHIPPED FROM SERVICE LOCATION 3/11/91

4. TIME SHIPPED FROM SERVICE LOCATION ______ A.M. ______ P.M. ______

5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE BOWES SYSTEM

2. ITEM TYPE 200 FRANK RD,

3. ITEM TYPE HICKSVILLE, NY

4. ITEM TYPE

5. QUANTITY — CUBIC YARDS N/A TONS 29.16 OTHER ______

CHECK ONE (✓)

6. SHIPPED IN CONTAINER TYPE TRAILER ID NO. ______

ANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE

2. 7 CARLISLE DRIVE

3. OLD BROOKVILLE, N.Y. 11545

4.

ANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER

2. PHONE NUMBER — Area code (516) - 671-7799

3. DATE OF THE LOAD PICKUP 3/11/91

4. TIME OF THE LOAD PICKUP ______ A.M. ______ P.M. ______

5. GENERATOR SERVICE LOCATION

6. DRIVER'S NAME

7. DRIVER'S SIGNATURE

ANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY 3/11/91

2. TIME OF THE DELIVERY ______ A.M. ______ P.M. ______

3. DRIVER'S NAME

4. DRIVER'S SIGNATURE

5. DELIVERY IN CONTAINER TYPE TRAILER ID NO. ______

6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES ✓ NO ______

POSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE 3/11/91

2. TIME OF DELIVERY ______ A.M. ______ P.M. ______

3. A.H. SUPERVISOR INSPECTOR NAME

4. INSPECTOR SIGNATURE

5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES ✓ NO ______

6. REJECTED LOAD — YES ______ NO ✓

IF YES PLEASE REMARK

IERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper dition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS PROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the rator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

DOCUMENT NO. A.H. № 6458

JOB #91-13

[GEN]ERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206

[G]ENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK 11542
2.
3.

[G]ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME ______ TITLE ______
2. PHONE NUMBER — Area Code ( ) -
3. DATE SHIPPED FROM SERVICE LOCATION 3/1?/91
4. TIME SHIPPED FROM SERVICE LOCATION ______ A.M. ______ P.M.
5. GENERATOR SIGNATURE

[G]ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.
1. ITEM TYPE BOWES SYSTEM
2. ITEM TYPE 200 FRANK RD.
3. ITEM TYPE HICKSVILLE, NY
4. ITEM TYPE
5. QUANTITY — CHECK ONE (✓) CUBIC YARDS N/A TONS 34.11 OTHER ______
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO. ______

[TRA]NSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

[T]RANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP 3/1?/91
4. TIME OF THE LOAD PICKUP ______ A.M. ______ P.M.
5. GENERATOR SERVICE LOCATION 55
6. DRIVER'S NAME H. Davis
7. DRIVER'S SIGNATURE H. Davis

[TRA]NSPORTER DELIVERY SCHEDULE
1. DATE OF THE DELIVERY 3/1?/91
2. TIME OF THE DELIVERY ______ A.M. ______ P.M.
3. DRIVER'S NAME H. Davis
4. DRIVER'S SIGNATURE H. Davis
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO. ______
5. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES ✓ NO ______

[DIS]POSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE 3/1?/91
2. TIME OF DELIVERY ______ A.M. ______ P.M.
3. A.H. SUPERVISOR INSPECTOR NAME [illegible]
4. INSPECTOR SIGNATURE [illegible]
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES ✓ NO ______
6. REJECTED LOAD — YES ______ NO ✓

IF YES PLEASE REMARK ______

[GE]NERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper [con]dition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS [AP]PROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing [is] true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the [ge]nerator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. № 5139

ERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWEE

ENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK

2.

3.

ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME JIMMY BYRNE TITLE OWNER

2. PHONE NUMBER — Area Code (516) - 671-7799

3. DATE SHIPPED FROM SERVICE LOCATION 7-18-[illegible]

4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.

5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE

2. ITEM TYPE BOWEE [illegible]

3. ITEM TYPE FRANK ROAD

4. ITEM TYPE HICKSVILLE, NEW YORK

5. QUANTITY — CUBIC YARDS TONS OTHER

CHECK ONE (✓) N/A 22.9[illegible]

6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

ANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE

2. 7 CARLISLE DRIVE

3. OLD BROOKVILLE, N.Y. 11545

4.

RANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER

2. PHONE NUMBER — Area code (516) - 671-7799

3. DATE OF THE LOAD PICKUP

4. TIME OF THE LOAD PICKUP A.M. P.M.

5. GENERATOR SERVICE LOCATION

6. DRIVER'S NAME

7. DRIVER'S SIGNATURE [illegible]

ANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY

2. TIME OF THE DELIVERY A.M. P.M.

3. DRIVER'S NAME [illegible]

4. DRIVER'S SIGNATURE [illegible]

5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.

6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

POSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE

2. TIME OF DELIVERY A.M. P.M.

3. A.H. SUPERVISOR INSPECTOR NAME

4. INSPECTOR SIGNATURE

5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES ✓ NO

6. REJECTED LOAD — YES NO ✓

IF YES PLEASE REMARK

ENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. №? 5138

IERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWES

ENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK

2.

3.

ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME JIMMY BYRNE TITLE OWNER

2. PHONE NUMBER — Area Code (516) - 671-7799

3. DATE SHIPPED FROM SERVICE LOCATION 7-18-91

4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.

5. GENERATOR SIGNATURE

IENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE

2. ITEM TYPE BOWES
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK

5. QUANTITY — CUBIC YARDS N/A TONS 40.79 OTHER

CHECK ONE (✓)

6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

ANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

RANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER

2. PHONE NUMBER — Area code (516) - 671-7799

3. DATE OF THE LOAD PICKUP

4. TIME OF THE LOAD PICKUP A.M. P.M.

5. GENERATOR SERVICE LOCATION

6. DRIVER'S NAME

7. DRIVER'S SIGNATURE

ANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY

2. TIME OF THE DELIVERY A.M. P.M.

3. DRIVER'S NAME

4. DRIVER'S SIGNATURE

5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.

6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

SPOSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE

2. TIME OF DELIVERY A.M. P.M.

3. A.H. SUPERVISOR INSPECTOR NAME

4. INSPECTOR SIGNATURE

5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO

6. REJECTED LOAD — YES NO

IF YES PLEASE REMARK

ENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper ondition for transportation according to the applicable regulations of the Department of Transportation, U.S.E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the nerator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. № 5137

GENERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - ROWES

GENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

GENERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION [illegible]
4. TIME SHIPPED FROM SERVICE LOCATION ____ A.M. ____ P.M.
5. GENERATOR SIGNATURE

GENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.
1. ITEM TYPE
2. ITEM TYPE ROWES
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CHECK ONE (✓) CUBIC YARDS N/A TONS 20.17 OTHER
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

TRANSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

TRANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP ____ A.M. ____ P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME [illegible]
7. DRIVER'S SIGNATURE [illegible]

TRANSPORTER DELIVERY SCHEDULE
1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY ____ A.M. ____ P.M.
3. DRIVER'S NAME [illegible]
4. DRIVER'S SIGNATURE [illegible]
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES ____ NO ____

DISPOSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE [illegible]
2. TIME OF DELIVERY ____ A.M. ____ P.M.
3. A.H. SUPERVISOR INSPECTOR NAME [illegible]
4. INSPECTOR SIGNATURE [illegible]
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES ____ NO ____
6. REJECTED LOAD — YES ____ NO ____
IF YES PLEASE REMARK

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.
TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.
DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. №. 5136

ERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR OWNER

ENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION 3-13-91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE
2. ITEM TYPE BOWES [illegible]
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CUBIC YARDS N/A TONS 26.67 OTHER

CHECK ONE (✓)

6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

NSPORTER NAME AND ADDRESS

1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

ANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME [illegible]
7. DRIVER'S SIGNATURE [illegible]

NSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME [illegible]
4. DRIVER'S SIGNATURE [illegible]
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

POSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE [illegible]
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE [illegible]
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO

IF YES PLEASE REMARK

NERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper dition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.P. THE WASTE DESCRIBED ABOVE WAS PPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the erator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

DOCUMENT NO. A.H. № 5135

ERATOR NAME

1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWES

ENERATOR ADDRESS — FOR THE SERVICE LOCATION

1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

ENERATOR CONTACT SUPERVISOR — SERVICE LOCATION

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION 7-16-91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.

1. ITEM TYPE
2. ITEM TYPE BOWES SYC
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CUBIC YARDS TONS 38.66 OTHER
CHECK ONE (✓)
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

ANSPORTER NAME AND ADDRESS

1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

RANSPORTER CONTACT SUPERVISOR

1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

ANSPORTER DELIVERY SCHEDULE

1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

SPOSAL FACILITY — A.H. LANDFILL

1. DELIVERY RECEIVED DATE
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

ENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S.E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the nerator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. Nº 5134

GENERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWES

GENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

GENERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION 3-18-91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

GENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.
1. ITEM TYPE
2. ITEM TYPE BOWES
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CHECK ONE (✓) CUBIC YARDS N/A TONS 38.17 OTHER
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

TRANSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

TRANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

TRANSPORTER DELIVERY SCHEDULE
1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

DISPOSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE 3-19-91
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.P. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS
GENERATOR'S COPY — Mailed from A.H. Inc. after disposal process, and with the monthly billing.
TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.
DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. № 5132

ERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWES

ENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 55 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

IERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION 3-18-91
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.
1. ITEM TYPE
2. ITEM TYPE BOWES
3. ITEM TYPE FRANK ROAD
4. ITEM TYPE HICKSVILLE, NEW YORK
5. QUANTITY — CUBIC YARDS TONS OTHER
CHECK ONE (✓) 39.84
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

NSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

RANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

ANSPORTER DELIVERY SCHEDULE
1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

SPOSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

ENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the nerator's expense.

INSTRUCTIONS

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TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

DOCUMENT NO. A.H. № 5131

ERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206 GENERATOR

GENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

GENERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

GENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES
1. ITEM TYPE
2. ITEM TYPE
3. ITEM TYPE
4. ITEM TYPE NEW YORK
5. QUANTITY — CUBIC YARDS N/A TONS 38.93 OTHER
CHECK ONE (✓)
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

TRANSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

TRANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

TRANSPORTER DELIVERY SCHEDULE
DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES ✓ NO

DISPOSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing is true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the generator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.

TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.

DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

PLEASE TYPE OR PRINT CLEARLY USING A BALLPOINT PEN — PRESS HARD

DOCUMENT NO. A.H. № 5130

ERATOR NAME
1. JIMMY BYRNE NYS DEC 1A-206 (TRANSPORTER) GENERATOR - BOWES

ENERATOR ADDRESS — FOR THE SERVICE LOCATION
1. 65 GLEN COVE AVENUE GLEN COVE, NEW YORK
2.
3.

ERATOR CONTACT SUPERVISOR — SERVICE LOCATION
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area Code (516) - 671-7799
3. DATE SHIPPED FROM SERVICE LOCATION
4. TIME SHIPPED FROM SERVICE LOCATION A.M. P.M.
5. GENERATOR SIGNATURE

ENERATOR IDENTIFICATION OF WASTE TYPE OR TYPES.
1. ITEM TYPE BOWES
2. ITEM TYPE FRANK ROAD
3. ITEM TYPE HICKSVILLE, NEW YORK
4. ITEM TYPE
5. QUANTITY — CUBIC YARDS TONS 29.67 OTHER
CHECK ONE (✓)
6. SHIPPED IN CONTAINER TYPE TRAILER ID NO.

NSPORTER NAME AND ADDRESS
1. JIMMY BYRNE
2. 7 CARLISLE DRIVE
3. OLD BROOKVILLE, N.Y. 11545
4.

ANSPORTER CONTACT SUPERVISOR
1. NAME JIMMY BYRNE TITLE OWNER
2. PHONE NUMBER — Area code (516) - 671-7799
3. DATE OF THE LOAD PICKUP
4. TIME OF THE LOAD PICKUP A.M. P.M.
5. GENERATOR SERVICE LOCATION
6. DRIVER'S NAME
7. DRIVER'S SIGNATURE

NSPORTER DELIVERY SCHEDULE
1. DATE OF THE DELIVERY
2. TIME OF THE DELIVERY A.M. P.M.
3. DRIVER'S NAME
4. DRIVER'S SIGNATURE
5. DELIVERY IN CONTAINER TYPE TRAILER ID NO.
6. IDENTIFICATION OF WASTE MUST BE THE SAME AS GENERATOR IDENTIFICATION YES NO

ISPOSAL FACILITY — A.H. LANDFILL
1. DELIVERY RECEIVED DATE
2. TIME OF DELIVERY A.M. P.M.
3. A.H. SUPERVISOR INSPECTOR NAME
4. INSPECTOR SIGNATURE
5. THE LOAD WAS RECEIVED AS STATED BY THE GENERATOR YES NO
6. REJECTED LOAD — YES NO
IF YES PLEASE REMARK

NERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. E.P.A. and the Ohio O.E.R. THE WASTE DESCRIBED ABOVE WAS APPROVED FOR DISPOSAL AT A.H. LANDFILL, BASED ON THE AGREEMENT BETWEEN BOTH THE GENERATOR AND THE DISPOSAL FACILITY. I certify that the foregoing true and correct to the best of my knowledge. If the waste shipment is not as stated I accept the RETURN of the COMPLETE LOAD to the generator's service location, at the nerator's expense.

INSTRUCTIONS

GENERATOR'S COPY — Mailed from A.H., Inc. after disposal process, and with the monthly billing.
TRANSPORTER'S COPY — Given to the transporter driver when shipment is inspected and unloaded.
DISPOSAL FACILITY — Filed in customer - generator master file.

(1) Disposal Facility Copy (2) Generator's Copy (3) Transporter's Copy

H2M GROUP

H2M Group (August 1992)

H2M GROUP
Holzmacher, McLendon & Murrell, P.C. • H2M Associates, Inc.
H2M Construction Management, Inc. • H2M Labs, Inc.

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575 Broad Hollow Road, Melville, NY 11747-5076
(516) 756-8000 • Fax: (516) 694-4122

August 10, 1992

Mr. Jamie Ascher
Engineering Geologist
New York State Department of Environmental Conservation
Building 40-SUNY
Stony Brook, New York 11790-2356

RE: Site Screening Investigation
Bowe Systec, Inc. Site
200 Frank Road, Hicksville, New York
NYSDEC site No. 1-30-048

Dear Mr. Ascher:

As per our conversation on Friday, July 24, 1992, enclosed herewith please find two (2) copies of the above-referenced report. After you have completed your review of the enclosed, please contact me so that we can discuss the implementation of the recommendations therein.

Thank you in advance for your prompt attention regarding this matter. Should you have any questions please feel free to call either myself at 756-8000 (Ext. 480) or Mr. Gary J. Miller (Ext. 520).

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.

Martin O. Klein, C.P.G.
Groundwater Resources/Hydrogeology
Section Supervisor
MOK/cdr
Enclosures
cc: Mr. Richard Reilly
Mr. William Mahoney
Vail T. Thorne, Esq.
Mr. Stanley Rosenthal

SITE SCREENING INVESTIGATION
BOWE SYSTEM AND MACHINE
(BÖWE SYSTEC, INC.)

I INTRODUCTION

The Bowe System and Machine property is located at 200 Frank Road in Hicksville, New York as shown in Figure 1. The property is 2.098 acres in size and contains a one story masonry building. The building was vacant when Bowe purchased the property in the early 1980s. The previous property owner was reported as Dyna Magnetic Devices which reportedly used trichloroethylene (TCE) in their operations.

American Permac, a dry cleaning equipment importer, shared the building with Bowe. As part of Permac's operations, they assembled, tested and rebuilt dry cleaning equipment. Tetrachloroethylene (PCE) was utilized during the testing operations. The PCE was stored in a 300 gallon above ground tank centered along the south wall of the building. In October 1990, this tank was removed and the PCE was sold to dry cleaners in the area. The dry cleaning equipment part of Bowe relocated to Texas in 1990.

Currently, the site is vacant, except for limited operations conducted by Bowe System which is in the paper handling business.

In October 1991, the New York State Department of Environmental Conservation (NYSDEC) designated the Bowe site as a Class 2 Inactive Hazardous Waste Disposal Site (DEC# 130048) due to volatile organic contamination.

II PREVIOUS INVESTIGATIONS

In January 1990, an environmental site assessment was conducted by Soil Mechanics Drilling Corporation. The results of this investigation indicated elevated concentrations of PCE in the groundwater. A supplemental investigation by Soil Mechanicas in February 1990, indicated elevated concentrations of volatile organics in drywell nos. 1, 2, 3, and 8 in addition to the unpaved area outside the paint spray booth door, to the southwest of the building.

Site remediation consisting of the excavation and removal of impacted soils surrounding drywells 1, 2, and 3 was performed under the oversight of NYSDEC. The connection between drywell no. 1 and the floor drain inside the building was removed. Additional monitoring wells were installed, downgradient of the remediated drywells, to provide supplemental monitoring of groundwater quality.

III OBJECTIVE

The objective of this Site Screening Investigation (SSI) was to provide an overview of the existing conditions at the site by tentative identification of source areas and, to a limited degree, the extent of contamination. An additional objective was to provide data for the development of Interim Remedial Measures (IRMs) for the site. In order to accomplish this objective, four main areas of concern were investigated. These areas included: Area 1 (drywells 1, 2, and 3); Area 2 (drywell 8); Area 3 (stressed vegetation along southwest corner of building); and Area 4 (septic system). Drywells 4, 6, and 7 were also investigated, although past studies indicated little to no contamination at these locations. In addition, groundwater samples were collected from temporary wells that were installed during the SSI. Groundwater elevations were also measured in order to define the direction of groundwater flow and potential direction of contaminant transport.

The tasks completed during the SSI were not conducted under the pending Order on Consent that is to be issued for this site and, therefore, may not be acceptable to the NYSDEC as part of the required Remedial Investigation (RI). However, the data collected during this SSI provided a timely assessment of potential future remedial efforts.

Subsurface Investigation at Drywells 1 Through 3, (Area 1) 4, 6, 7 and 8 (Area 2)

Four (4) soil borings were executed in Areas 1 and 2 (see Figure 2) to estimate the degree of volatile organic compound (VOC) contamination present within the upper 25 feet of soil and to determine the potential for drywells 1, 2, 3, and 8 to act as a source of VOC contamination to the groundwater.

This was accomplished by drilling to a depth of 25' below grade. A soil sample was taken at the bottom of each drywell and at the 23' to 25' interval. Each sample was screened with a photoionization detector (PID) yielding results in estimated parts per million (ppm). One sample from each boring with the highest PID reading was submitted for laboratory analysis (EPA Method 8010 and 8020). In the case of identical PID readings being found in the same soil borings, the shallowest of the two samples was taken.

The borings, labeled DW-1/T-3, DW-2, DW-3, and DW-8, respectively, were drilled by Aquifer Drilling and Testing, Inc. (ADT). The augers, the bit, and the split spoons were steam cleaned between each use and the split spoons were then washed with an alconox/distilled-deionized solution and rinsed with distilled-deionized water to further ensure the integrity of all the samples. For a review of the field results, please refer to the Hydrogeologist's Logs in Appendix A.

The samples submitted from the soil borings executed through dry wells 1, 2, 3, and 8 were labelled DW-1/T-3 (16'-18', 30'-32', and 40'-42'), DW-2 (14'-16'), DW-3 (23'-25'), and DW-8 (10'-12'). In addition, shallow soil samples were collected from the bottom of DW-4, DW-6 and DW-7. Drywell DW-5 was not accessible. Soil samples from DW-4, DW-6 and DW-7 were screened with the PID for total VOCs and the results recorded. PID results did not indicate high VOC concentrations and therefore no soil samples from these three (3) drywells (4, 6 and 7) were submitted for analysis.

Soil Sampling & Screening at Area 4 (Sanitary System)

The septic system (Area 4 on Figure 2) was screened and sampled to confirm and identify possible sources of VOC contamination to groundwater. Bottom samples from the two leaching pools (LP-1 and LP-2) and the septic tank were collected by using a dredge which was decontaminated between uses with an alconox/distilled-deionized water wash and a distilled-deionized water rinse. The samples were submitted to the lab for EPA Methods 8010 and 8020.

Soil Gas Survey and Soil Sampling at Area 3 (Grassy Area)

A soil gas survey at Area 3 was conducted to identify potential contamination within the area of the former spray booth (see Figure 3).

Twenty-three locations were surveyed for estimated VOC concentrations in soil. This was accomplished by creating a small 1/4" size hole extending 2.5' below grade, inserting a length of dedicated Teflon tubing into the hole, and monitoring the air escaping through the tube with a PID. The PID was calibrated on a daily basis prior to field activities.

Areas recorded with elevated VOCs were delineated. Background readings ranged from 0.2 to 0.4 ppm. Two (2) of the 23 locations were further targeted for split spoon sampling and for VOC analysis as per EPA Method 8010 and 8020.

The results of the soil gas survey ranged from 0.2 to greater than 50.0 ppm. The areas exhibiting the highest readings were located in the north-eastern section of the survey area. Based upon these results, soil borings were conducted to a depth of 10 feet at soil gas points 6 (SB-2) and 8 (SB-1). A split spoon sample was collected from 2 to 4 feet and 8 to 10 feet below grade at each location and screened with the PID.

The two samples submitted for analysis were SB-1 (2'-4') and SB-2 (2'-4') due to the PID results and the presence of volatile organics as registered in the first 2.5' of soil in the soil gas survey.

Groundwater Flow Direction and Sampling

On June 23 and 24, 1992, groundwater elevation measurements were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7 to ascertain and confirm the direction of groundwater flow present at the site. Based upon the groundwater flow direction, three (3) temporary monitoring wells were installed to aid in gathering contaminant levels in groundwater in conjunction with the sampling of four (4) existing wells on site.

Based upon the two (2) rounds of groundwater elevation data, groundwater flow direction was observed to be south/southeast at the site. Monitoring well MW-3 was damaged and therefore was excluded from the groundwater contour calculations (please refer to the groundwater contour maps labelled Figures 4 and 5).

On June 24, 1992, groundwater samples were collected from monitoring wells MW-1, MW-3, MW-6, MW-7, and the temporary monitoring wells T-1, T-2, and T-3. The pre-existing wells were purged of three to five well volumes of groundwater with a submersible pump and sampled with a dedicated bailer. The pump was decontaminated with an alconox/distilled-deionized water solution and rinsed with distilled-deionized water. The temporary wells were drilled with a 3 1/4" ID auger and cuttings were screened with a PID. The cuttings exhibited readings equal to or less than background levels. The wells were sampled with a dedicated bailer and then backfilled with the drill cuttings. A field blank was also prepared during groundwater sampling. All samples were submitted to the laboratory for VOC analysis as per EPA Method 601/602 and xylene.

IV SAMPLING RESULTS

The results of the SSI are shown in Tables 1 and 2. The original analytical sheets are attached as Appendix B. All the soil samples were analyzed for volatile organics using EPA Methods 8010 and 8020 (gas chromatography). A total of six (6) soil samples were collected and lab tested from four (4) of the on site drywells. Drywell nos. 1, 2, and 3 were remediated back in 1990. The results of the soil samples from these drywells indicate that the remediation was successfully completed and that the drywells are no longer acting as a source of VOC contamination. Samples were collected from depths of 16'-18', 30'-32', and 40'-42' in DW-1/T-3; 14'-16' in DW-2; and 23'-25' in DW-3. None of the parameters analyzed were above the detection limit of the laboratory. A soil sample was collected at a depth of 10'-12' in DW-8, located in the truck bay near the loading dock. PCE was detected at 81 ug/kg at this location.

Three (3) sludge samples were collected from the septic system located along the northern portion of the building. One (1) sample was collected from the septic tank and two (2) samples from the associated leaching pools. Of the volatile organics analyzed, none were above the detection limit in either the septic tank or in leaching pool LP-1. In leaching pool LP-2, the following contaminants were detected: m-dichlorobenzene (480 ug/kg); p-dichlorobenzene (1100 ug/kg); o-dichlorobenzene (220 ug/kg); and 1,3-xylene (180 ug/kg).

A soil gas survey was conducted in Area 3, located along the southwest portion of the building. The results of this survey indicated three (3) readings above background. These readings were located along the northern portion of Area 3. Based on these results, two (2) soil samples were collected, one (1) desginated SB-1 and the other, SB-2. Both samples were collected at a depth of 2'-4'. The results indicate elevated levels of PCE at both locations. The results for SB-1 were 2,300 ug/kg and for SB-2, 910 ug/kg.

Groundwater samples were collected from four (4) existing monitoring wells, MW-1, MW-3, MW-6, MW-7, and from three (3) temporary wells, T-1, T-2, and T-3. Monitoring well MW-1 was designated the background well. The samples were analyzed for VOCs using EPA Method 601 and 602. The results, listed in Table 2, indicated evidence of contamination in MW-3, MW-6, MW-7, T-1, T-2, and T-3. The background well, MW-1, did not show evidence of contamination.

The predominant contaminant detected in the groundwater was PCE at levels ranging from 19 ug/l in MW-3 to 430 ug/l in MW-6. Additional concentrations were detected in T-3 (20 ug/l), T-1 (45 ug/l), T-2 (110 ug/l) and MW-7 (130 ug/l). Other organics detected included 1,1-dichloroethane (MW-7, T-1, and T-3), trichloroethene (MW-6, MW-7, T-1, and T-3), 1,1,1-trichloroethane (T-1), and cis-1,2,-dichloroethene (T-3).

V CONCLUSIONS

Based on the scope of work executed for this SSI, we provide the following conclusions:

- Evidence of PCE contamination in drywell DW-8 indicates this area on site to be a potential source of groundwater contamination. The soil samples collected at 10'-12' (bottom of drywell) and 23'-25' both exhibited elevated VOC concentrations by the PID. Laboratory analysis of the sample from 10'-12' indicates elevated levels of PCE, identifying DW-8 as a potential source area.

- Soil samples collected from Drywells DW-1, DW-2, DW-3, DW-4, DW-6, and DW-7 do not provide evidence of VOC contamination. These results support past investigations and remedial efforts.

- The shallow soils in the grassy area (near the spray booth), have apparently been impacted by VOCs (within a limited area). This area may be a source of VOC contaminants to the groundwater since laboratory analysis of soil samples SB-1 (2'-4') and SB-2 (2'-4') indicated elevated levels of PCE.

- The results of the three (3) sanitary system samples indicate no source of PCE. However, in sample LP-2 VOCs were detected that are commonly found in sanitary waste streams. The presence of dichlorobenzenes could indicate evidence of aromatic toilet discs usually placed in restroom facilities. The absence of these VOCs in the groundwater indicates that the extent is limited.

- The groundwater flow direction indicates a localized influence from the recharge basin, located southwest of the site. Typically, a local groundwater mound results from groundwater recharging from a basin. The regional groundwater flow was measured to be south/southeast and may slightly fluctuate with changes in precipitation and amount of recharge over the area.

- Based on the groundwater flow direction, the groundwater sampling points selected for this SSI provided downgradient coverage of the areas of concern on site. The groundwater sampling results indicate a VOC plume (primarily PCE) at the property boundary to the south. This is evidenced by the concentrations of VOCs detected at the most downgradient wells (MW-6, T-1, and T-2). Concentrations of PCE detected in the groundwater are similar to past results (1991). However, the presence of other VOCs indicates the breakdown of PCE by natural degradation over time. The highest concentration of PCE in the groundwater was detected at MW-6, which is generally downgradient of both the grassy area (Area 3) and drywell DW-8.

VI RECOMMENDATIONS

Based on the findings of this SSI, we provide the following recommendations:

- If acceptable by NYSDEC, register and abandon/remove fuel oil UST, independent of the RI.

- If acceptable by NYSDEC, retain a licensed hauler to pump and clean (wash) out the entire sanitary system (septic tank and 2 leaching pools) independent of the RI. Material removed from the sanitary system should be disposed of at a licensed facility to accept such waste.

- Implement the RI Work Plan to collect additional data for deep soils and contact NYSDEC to discuss an Interim Remedial Measure (IRM) at the former spray booth area and DW-8. The IRM should be the excavation and disposal of shallow soils (5' depth). Once sufficient data has been obtained for deep soils, contact NYSDEC to discuss the possibility of additional IRMs for remediation (if necessary).

- Implement the RI Work Plan to collect additional data and evaluate alternatives for remediation of groundwater in order to capture contaminated groundwater on site. Once sufficient data has been obtained, contact NYSDEC to discuss alternatives to conduct an IRM for groundwater remediation (if necessary). Alternatives may include: no action; pump and treat with recovery wells and air stripper; pump and treat with carbon adsorption; or air sparging.

- Investigate the drainage patterns of the site area and determine the potential for the recharge basin to act as a source.

TABLES

TABLE 1

VOLATILE ORGANIC COMPOUNDS
QUANTIFIED IN SOIL AT
BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK

COMPOUNDS	SB-1 (2'-4')	SB-2 (2'-4')	LP-1	LP-2	DW-8 (10'-12')
Tetrachloroethene	2300	910	ND	ND	81
M-Dichlorobenzene	ND	ND	ND	480	ND
P-Dichlorobenzene	ND	ND	ND	1100	ND
O-Dichlorobenzene	ND	ND	ND	220	ND
1,3-Xylene	ND	ND	ND	180	ND

Notes:

ND = Not detected
All readings in ug/kg

TABLE 2

VOLATILE ORGANIC IN GROUNDWATER AT
BÖWE SYSTEC, INC.
HICKSVILLE, NY

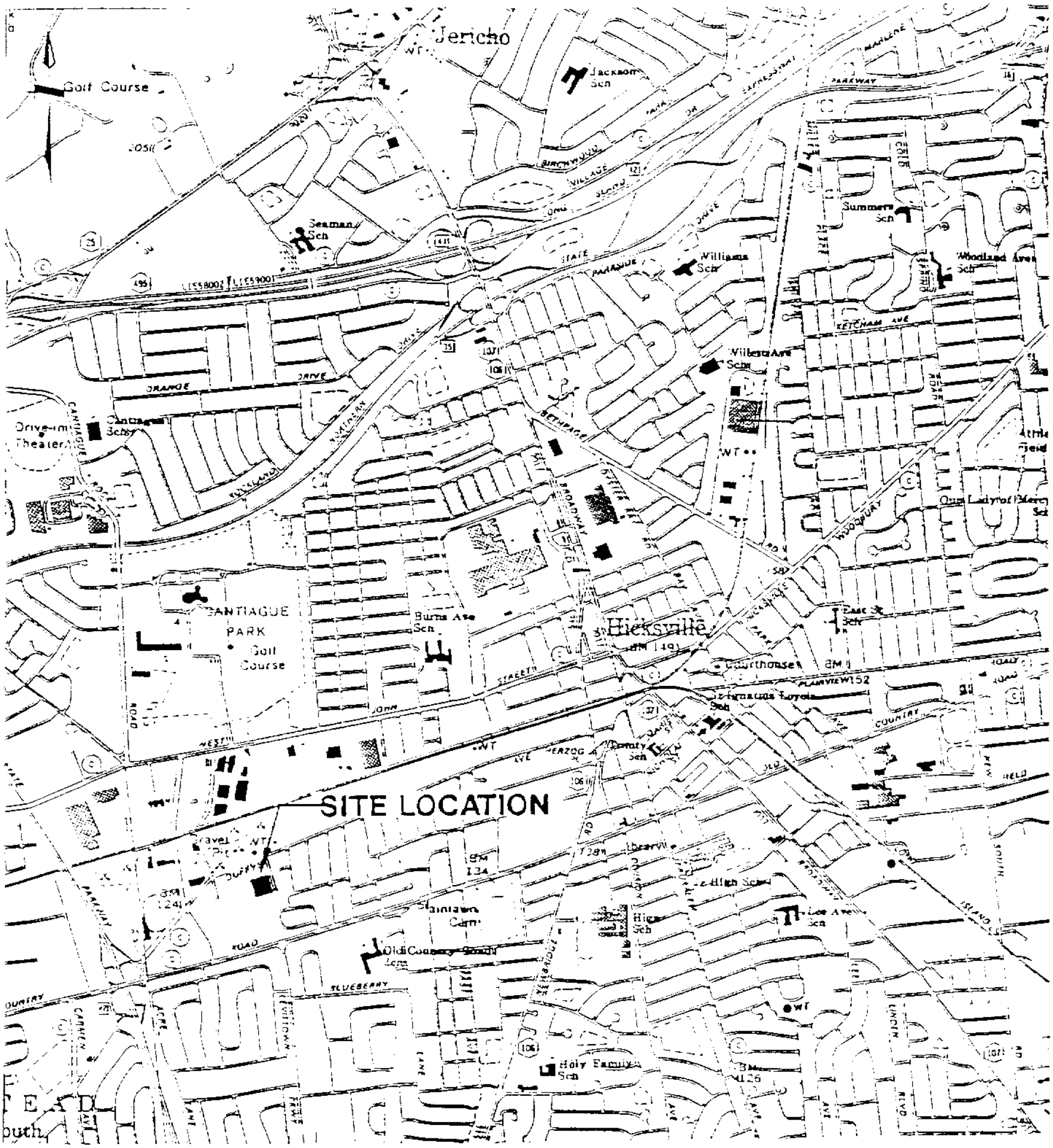
COMPOUND	T-1	T-2	T-3	MW-1	MW-3	MW-6	MW-7
1,1-Dichloroethane	4	ND	3	ND	ND	ND	3
1,1,1-Trichloroethane	3	ND	ND	ND	ND	ND	ND
Tetrachloroethene	45	110	270	ND	19	430	130
cis-1,2-Dichloroethene	ND	ND	3	ND	ND	ND	ND
Trichloroethene	23	ND	20	ND	ND	11	17

Notes:

ND = Not detected
All readings in ug/l
T-1 = Temporary well
MW-1 = Existing monitoring well

FIGURES

FIGURE 1



LOCATION MAP

SCALE 1" = 2000'

BOWE SYSTEM AND MACHINE
200 FRANK ROAD
HICKSVILLE, NEW YORK

DEC. 19, 1991

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

FIGURE 2

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
)IL SAMPLING LOCATIONS

LEGEND

DW-2	DRYWELL
MW-2	MONITORING WELL
ppb	PARTS PER BILLION
T-2	TEST WELL

0 50

SCALE: 1" = 50'

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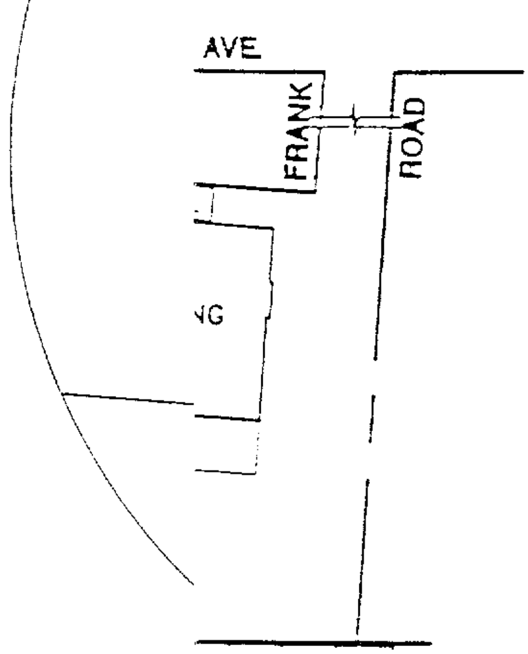
TOTOWA, N.J.

FIGURE 3
L GAS SURVEY FOR
OWE SYSTEC, INC.
200 FRANK ROAD
HICKSVILLE, NY



LOCATION
1
2
3
4
5
6
7
8
9
10
11

LEGEND

ALL PID READINGS IN EPPM

2 SOIL GAS SAMPLING POINT

6 SB-1 LOCATION OF SOIL BORING

VEGETATION

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TOTOWA, N...

BOWEDET.DWG

FIGURE 4

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
)UNDWATER ELEVATION MAP
JUNE 23, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

- DW-2 DRYWELL
- MW-2 MONITORING WELL
- MW-3 NOT INCLUDED IN CONTOURING
- EXISTING GROUNDWATER CONTOUR
- ESTIMATED GROUNDWATER CONTOUR

0 50

SCALE: 1" = 50'

BOWE5-23.DWG

)ITECTS · PLANNERS · SCIENTISTS · SURVEYORS

TOTOWA, N.J.

FIGURE 5

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
JNDWATER ELEVATION MAP
JUNE 24, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

DW-2 DRYWELL

MW-2 MONITORING WELL

MW-3 NOT INCLUDED IN CONTOURING

EXISTING GROUNDWATER CONTOUR

ESTIMATED GROUNDWATER CONTOUR

0 50

SCALE: 1" = 50'

BOWE6-23.DWG

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TOTOWA, N.J.

H2M GROUP

APPENDIX A

H2M GROUP

FIELD REPORT

LOCATION:	BOWE SYSTEMS AND MACHINERY 200 Frank Road Hicksville, NY	
DATE:	June 23, 1992	
WEATHER:	Clear and sunny	
H2M REPS:	Michael S. Caravetto Christopher J. Flynn Michael Gentils	Hydrogeologist Asst. Hydrogeologist H2M Field Manager
CONTACTS:	Steven Wolf Jim Bitic Richard Reilly	Driller, ADT Asst. Driller, ADT Bowe Representative

Soil borings were installed in drywell nos. 1, 2, 3 and 8 utilizing a hollow-stem auger. Prior to installation of the borings, the drywells were visually inspected to determine if they contained standing liquid. Drywell nos. 1, 2, 3 and 8 were dry and a boring was installed in each drywell. The borings were drilled to a depth of 25′ below mean grade. Split spoon samples were collected at two intervals, the bottom of the drywell and at a depth of 23′ to 25′ below mean grade. The split spoon samples were screened with a PID meter for total volatile organic compounds with the exception of methane. Based on the results of the PID, the soil sample with the highest equivalent parts per million (eppm) was submitted for analysis for USEPA Method 8010 and 8020.

The hollow-stem auger was steam cleaned between drywells to prevent cross contamination. The split spoon sampler was steam cleaned and washed with a deionized water/Alconox rinse for further decontamination.

The septic system, located along the north wall of the building, was visually inspected. The septic tank cover was removed and sludge/liquid was identified in the bottom of the tank. In addition, two leaching pools were also identified.

Depth to groundwater measurements were obtained from the seven existing on-site monitoring wells. It was noted that MW-3 appeared to have been damaged. The protective casing was not intact and it appeared that the PVC pipe had been damaged.

Certified Correct: ______________________ Date: 6/25/92
Michael S. Caravetto
Hydrogeologist

H2M GROUP

FIELD REPORT

LOCATION:	BOWE SYSTEMS AND MACHINERY 200 Frank Road Hicksville, New York	
DATE:	June 24, 1992	
WEATHER:	Rain	
H2M REPS:	Michael S. Caravetto Christopher J. Flynn	Hydrogeologist Asst. Hydrogeologist
CONTACTS:	Steven Wolf Jim Bitic Richard Reilly	Driller, ADT Asst. Driller, ADT Bowe Representative

Prior to the start-up of field activities, a second round of groundwater measurements was conducted to confirm the direction of groundwater flow. Based on the results, three temporary groundwater monitoring wells (T-1, T-2 and T-3) were installed using a 3 1/4" ID hollow stem auger. The wells were drilled to groundwater, located at a depth of approximately 54 feet. The augers were steam cleaned between wells to prevent cross contamination. During drilling, the drill cuttings were screened with a PID for total volatile organic compounds with the exception of methane. No readings above background were recorded. Following collection of the groundwater sample the boring was backfilled with the drill cuttings.

The grab groundwater samples were collected following installation of a temporary PVC screen and riser. Since this was a grab sample no well purging was conducted. The sample was collected using a disposable polyethylene bailer which was discarded after sample collection from the well. Field parameters were collected from the groundwater samples and the visual charecteristics of the sample were noted. The groundwater samples were submitted for VOC analysis using USEPA Method 601/602 plus xylene.

During installation of temporary well T-3, split spoon samples were collected and screened with the PID. Two samples, at depths of 30' to 32' and 40'to 42', showed slightly elevated readings of

1.0 eppm and 0.6 eppm, respectively. These samples were submitted for VOC analysis using USEPA method 8010 and 8020.

Groundwater samples were collected from MW-1, MW-3, MW-6 and MW-7. Prior to collection, the wells were purged of three volumes of water as per NYSDEC protocol. The pump used to purge the wells was decontaminated by steam cleaning and with an alconox/deionized water solution and rinsed with both deionized and distilled water. The samples, in addition to a field blank, were submitted for VOC analysis using USEPA Method 601/602 plus xylenes.

Samples were also collected from the septic system and associated leaching pools. Bottom samples were collected using a dredge. This dredge was decontaminated as described for the groundwater pump. One sample each was collected from the septic tank, leaching pool one (LP-1) and leaching pool two (LP-2). The samples were submitted for VOC analysis using USEPA Method 8010 and 8020.

Drywell nos. 4, 6 and 7 were sampled with a dredge and screened for the presence of volatile organics using a PID. The values ranged from 0.2 to 0.4 eppm. Since these values are below background no samples were submitted for analysis. The dredge was decontaminated, as previously described, between drywells.

Certified Correct: ______________ Date: 6/26/92
Michael S. Caravetto
Hydrogeologist

PAGE 1 of 1	H2M GEOLOGIC LOG	JOB NO. 80WE 9201

Borehole Location: DW-1
Elevation: N/A Ref Point: N/A
Completion Depth: 25'
Logged by: msc Checked by:

Depth to Groundwater: Date: Time: Aquifer:

Sample Depth	Sampl No.	Blows 6"	Enu Res	Recov (in)	Sample Description	Lithology
16'-18'		7/8	1.2	6"	Medium yellow, gravelly, poorly	GW
		10/12	Back 1.0		sorted, medium to coarse	
					grained sand.	
23'-25'		11/7	1.0	3"	Medium yellow, gravelly, poorly	GW
		4/3	Back 1.0		sorted, medium to coarse	
					grained sand.	

SIGNATURE: DATE:

PAGE 1 of 1	HEM GEOLOGIC LOG	JOB NO. 80wE 9201

Borehole Location: DW-2 Completion Depth: 25'
Elevation: N/A Ref Point: N/A Logged by: msc Checked by:

Depth to Groundwater: Date: Time: Aquifer:

Sample Depth	Sampl No.	Blows 6"	Env Res	Recov (in)	Sample Description	Lithology
14'-16'		7/7	0.8	6"	Medium yellow, gravelly, poorly	GW
		7/12	Back 0.8		sorted, medium to coarse	
					grained sand.	
23'-25'		12/11	0.8	1'	Medium yellow, gravelly,	GW
		15/16	Back 0.8		poorly sorted, medium to	
					coarse grained sand	

SIGNATURE: DATE:

PAGE 1 of 1 HEM GEOLOGIC LOG JOB NO. 80WE9201

Borehole Location: DW-3 Completion Depth: 25'
Elevation: N/A Ref Point: N/A Logged by: msc Checked by:

Depth to Groundwater: Date: Time: Aquifer:

Sample Depth	Sampl No.	Blows 6"	Enu Res	Recov (in)	Sample Description	Lithology
17'-19'		10/12	0.8	4"	First 1/4" asphalt. Dark	GW
		11/16	Back 0.6		yellow, gravelly, poorly sorted,	
					medium to coarse grained	
					sand. Sample is moist.	
23'-25'		17/21	0.9	1'	Medium yellow, gravelly,	GW
		23/19	Back 0.6		poorly sorted, coarse to	
					medium grained sand. Moist.	

SIGNATURE: DATE:

PAGE 1 of 1 — ERM GEOLOGIC LOG — JOB NO. BowE 92C1

Borehole Location: DW-8
Elevation: N/A Ref Point: N/A
Completion Depth: 25'
Logged by: msc Checked by: ____

Depth to Groundwater: ____ Date: ______ Time: ____ Aquifer: ______

Sample Depth	Sampl No.	Blows 6"	Enu Res	Recov (in)	Sample Description	Lithology
10'-12'		30 total	4.2	1.0'	Dark Brown, gravelly, poorly sorted medium to coarse grained sand. Moist.	
23' to 25'		50 total	1.0	6"	Medium Yellow, gravelly, poorly sorted medium to coarse grained sand. Moist.	

SIGNATURE:

DATE:

PAGE 1 of 1 HLM GEOLOGIC LOG JOB NO. BowE 9201

Borehole Location: SB-2 Completion Depth: 10'
Elevation: N/A Ref Point: N/A Logged by: CJE Checked by:

Depth to Groundwater: Date: Time: Aquifer:

Sample Depth	Sampl No.	Blows 6"	Enu Res	Recov (in)	Sample Description	Lithology
2'-4'		15/15	0.2		loam, medium coarse,	SW
		10/8	background 0.2		light brown sand and	
					gravel, trace silt	
8'-10'		8/8	0.2		medium coarse, light	SW
		11/13	background 0.2		brown sand and gravel,	
					trace silt	

SIGNATURE: DATE:

PAGE / of /   HDM GEOLOGIC LOG   JOB NO. BowE 92C1

Borehole Location: SB-1	Completion Depth: 10'
Elevation: N/A Ref Point: N/A	Logged by: CJF Checked by:

Depth to Groundwater: ____ Date: 6/23/92 Time: ____ Aquifer: ____

Sample Depth	Sampl No.	Blows 6"	Enu Res	Recov (in)	Sample Description	Lithology
2'-4'		6/6	0.2		loam, medium coarse,	SW
		8/3	background 0.2		light brown sand and	
					gravel, trace silt	
8'-10'		15/21	0.2		medium coarse, light	SW
		23/24	background 0.2		brown sand and gravel,	
					trace silt	

SIGNATURE: DATE:

FIELD REPORT

BOWE SYSTEMS - Site investigation field notes
6/23 and 6/24/92 CJF

1) Soil Gas Survey: 23 soil gas readings taken in Area 3 (see attached grid).

Date of Survey: 6/23/92

Readings: (background/real-time)

Location	Readings (ppm)
1	0.2/0.8
2	0.2/1.4
3	0.2/1.0
4	0.2/0.2
5	0.2/1.0
6	0.2/>20.0 * soil boring taken
7	0.2/>20.0
8	0.2/20 - >50 * soil boring taken
9	0.2/1.0
9A	0.2/18.0
10	0.2/0.6
11	0.2/1.2
12	0.2/0.2
13	0.6/0.8
14	0.2/0.8
15	0.2/2.1
16	0.2/1.0
17	0.4/0.4
18	0.2/0.4
19	0.2/0.6
20	0.2/1.4
21	0.2/1.0
22	0.2/0.2

2) Soil Borings: Collected in vicinity of 2 highest soil gas readings. Borings drilled at location 8 (SB-1) and location 6 (SB-2). Soil borings conducted on 6/23/92.

SB-1: Collected at soil gas location 8. First 1-2 feet were hand augered. Slight solvent odor noted. Split spoon samples collected at intervals of 2-4' and 8-10'. PID reading of 0.2 ppm (at or near background) in 2-4' split spoon samples but >20 on auger. Split spoon samples collected at 8-10' showed PID reading of 0.2 ppm. 2-4' split spoon sample submitted for analysis. See attached drill log.

SB-2: Collected at soil gas location #6. Split spoon samples were collected at intervals of 2-4' and 8-10'. PID readings on both samples were 0.2 ppm (at or near background). Split spoon sample collected at 2-4' submitted for analysis. Split spoon sample collected at 8-10' had slight odor. See attached drill log.

3) Sanitary System: Samples collected from septic tank, L.P. 1 (first leaching pool), and a second leaching pool (L.P. 2). Septic tank and L.P.1 samples submitted for analysis.

Septic tank: Appears to have been backfilled and abandoned in place. No odor evident.

L.P. 1: Some sand, mostly dark sediment & sludge. No odor evident. Pool contained liquid. Oily sheen noticeable.

L.P. 2: Pool had liquid, bottom sediments consisted of dark sludge. Head space analysis showed 18 ppm on PID. No odor evident.

4) Monitoring Wells

MW#7 depth to water: 54.30'
depth to bottom: 62.0'

pH: 6.0 Conductivity: 160 Temperature 18.1° C

MW#6 depth to water: 54.32'
depth to bottom: 66.5'

pH: 6.1 Conductivity: 120 Temperature 17.8° C

MW#3 damaged (cover & casing)
depth to botom: 67.65'

pH: 6.01 Conductivity: 130 Temperatorure 18.1° C

---

*MW#1 damaged (cover)
depth to water: 55.04'
depth to bottom: 60.25'

pH: 6.1 Conductivity 290 Temperature: 18.2° C

---

* Purge water appeared olive-green and sheen was evident. Pump had grout on it when it was pulled out of monitoring well.

Additional Information

A) Weather conditions: 6/23/92 (clear, light breeze, dry, temperatures in mid 70s) 6/24/92 (rainy, damp, humid, cloudy, temperatures in 70s, partial clearing later in day).

B) Drilling Company: Aquifer Drilling and Testing, Inc. (ADT)

C) Persons present

Richard Reilly - Bowe System (6/23 only)
Chris Flynn -H2M
Mike Caravetto - H2M
Mike Gentils - H2M (6/23 only)
Leonard Rexrode - ADT (6/23 only)
Steve - Driller - ADT
Pete - Helper - ADT

Respectfully submitted by,

Christopher A. Flynn

Christopher Flynn

7/2/92

H2M GROUP

APPENDIX B

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220630

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... BLANK

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: FIELD BLANK
REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<1	1,4-XYLENE	<1
CHLOROMETHANE	<1	1,2-XYLENE	<1
VINYL CHLORIDE	<1		
BROMOMETHANE	<1		
CHLOROETHANE	<1		
FLUOROTRICHLOROMETHANE	<1		
1,1-DICHLOROETHENE	<1		
METHYLENE CHLORIDE	<1		
TRANS-1,2-DICHLOROETHENE	<1		
1,1-DICHLOROETHANE	<1		
CIS-1,2-DICHLOROETHENE	<1		
CHLOROFORM	<1		
1,1,1-TRICHLOROETHANE	<1		
CARBON TETRACHLORIDE	<1		
1,2-DICHLOROETHANE	<1		
TRICHLOROETHENE	<1		
1,2-DICHLOROPROPANE	<1		
BROMODICHLOROMETHANE	<1		
TRANS-1,3-DICHLOROPROPENE	<1		
CIS-1,3-DICHLOROPROPENE	<1		
1,1,2-TRICHLOROETHANE	<1		
TETRACHLOROETHENE	<1		
CHLORODIBROMOMETHANE	<1		
CHLOROBENZENE	<1		
BROMOFORM	<1		
1,1,2,2-TETRACHLOROETHANE	<1		
M-DICHLOROBENZENE	<1		
P-DICHLOROBENZENE	<1		
O-DICHLOROBENZENE	<1		
BENZENE	<1		
TOLUENE	<1		
ETHYLBENZENE	<1		
1,3-XYLENE	<1		

COPIES TO:

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220705

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-3(30'-32')
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	98.2 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220705

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-3(30'-32')

REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220706

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-3(40'-42')
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	97.7 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley Meaux
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220706

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-3(40'-42')

REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

COPIES TO: SFB/MCK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Feasco
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220707

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: LP-1
REMARKS:

PARAMETER (S)	RESULTS	UNITS
TOTAL SOLIDS	19.0	%

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220707

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: LP-1

REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<200	1,4-XYLENE	<200
CHLOROMETHANE	<200	1,2-XYLENE	<200
VINYL CHLORIDE	<200		
BROMOMETHANE	<200		
CHLOROETHANE	<200		
FLUOROTRICHLOROMETHANE	<200		
1,1-DICHLOROETHENE	<200		
METHYLENE CHLORIDE	<200		
TRANS-1,2-DICHLOROETHENE	<200		
1,1-DICHLOROETHANE	<200		
CIS-1,2-DICHLOROETHENE	<200		
CHLOROFORM	<200		
1,1,1-TRICHLOROETHANE	<200		
CARBON TETRACHLORIDE	<200		
1,2-DICHLOROETHANE	<200		
TRICHLOROETHENE	<200		
1,2-DICHLOROPROPANE	<200		
BROMODICHLOROMETHANE	<200		
TRANS-1,3-DICHLOROPROPENE	<200		
CIS-1,3-DICHLOROPROPENE	<200		
1,1,2-TRICHLOROETHANE	<200		
TETRACHLOROETHENE	<200		
CHLORODIBROMOMETHANE	<200		
CHLOROBENZENE	<200		
BROMOFORM	<200		
1,1,2,2-TETRACHLOROETHANE	<200		
M-DICHLOROBENZENE	<200		
P-DICHLOROBENZENE	<200		
O-DICHLOROBENZENE	<200		
BENZENE	<200		
TOLUENE	<200		
ETHYLBENZENE	<200		
1,3-XYLENE	<200		

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley [signature]
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220708

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SEPTIC TANK
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	75.5 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley [illegible]
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220708

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
ROUTINE
METHOD....

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SEPTIC TANK

REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley [signature]
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220625

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-2(14'-16')

REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	96.0 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley [signature]
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220625

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-2(14'-16')
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220626

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-3(23'-25')
REMARKS:

PARAMETER (S)	RESULTS	UNITS
TOTAL SOLIDS	96.4	%

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220626

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-3(23'-25')
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

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DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

DATE ISSUED 06/29/92

Stanley [illegible]
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LAB NO: 9220627

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-8(10'-12')
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	91.3 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley Masaren
LABORATORY DIRECTOR

ORIGINAL

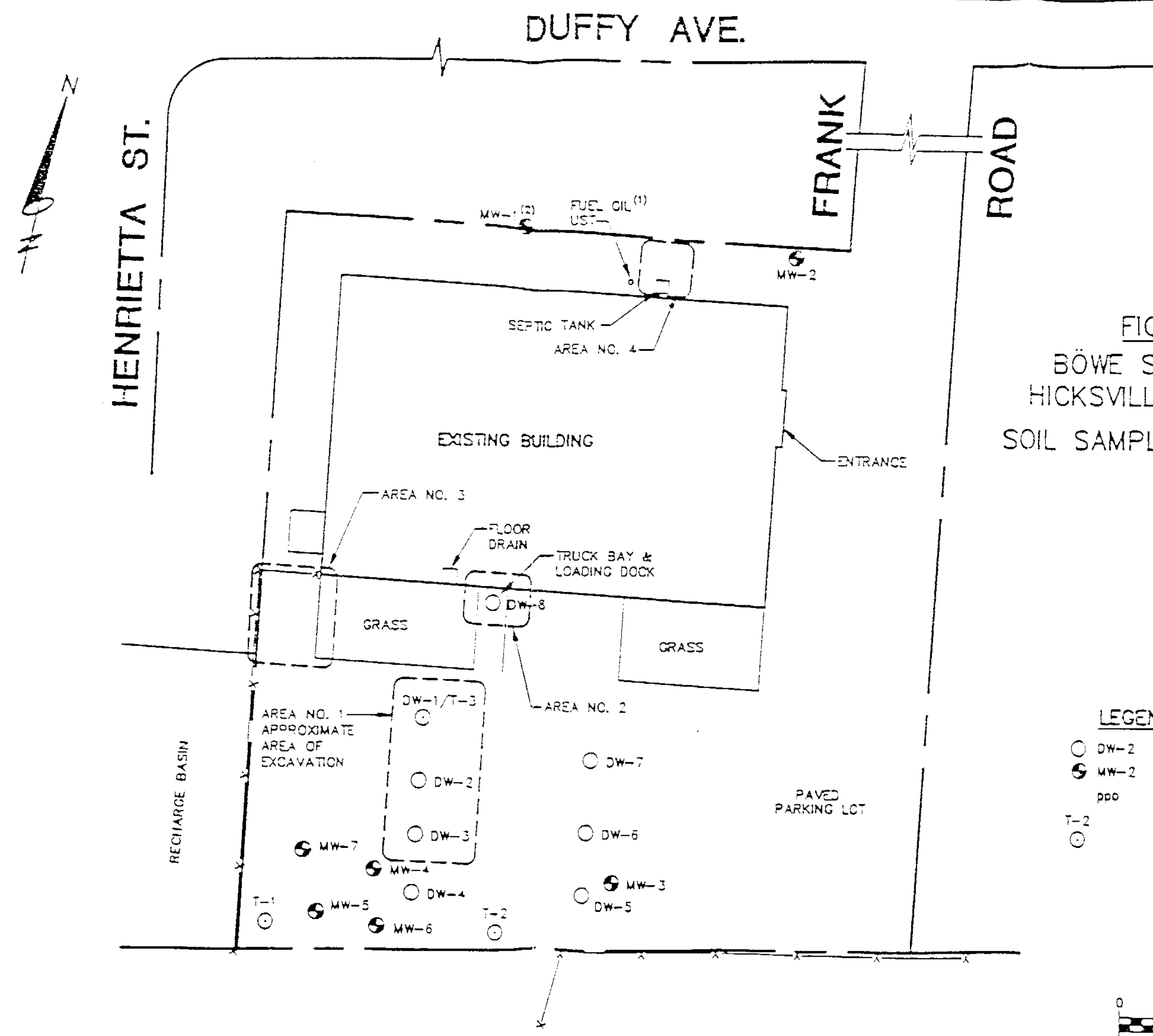


FIGURE 2
BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
SOIL SAMPLING LOCATIONS

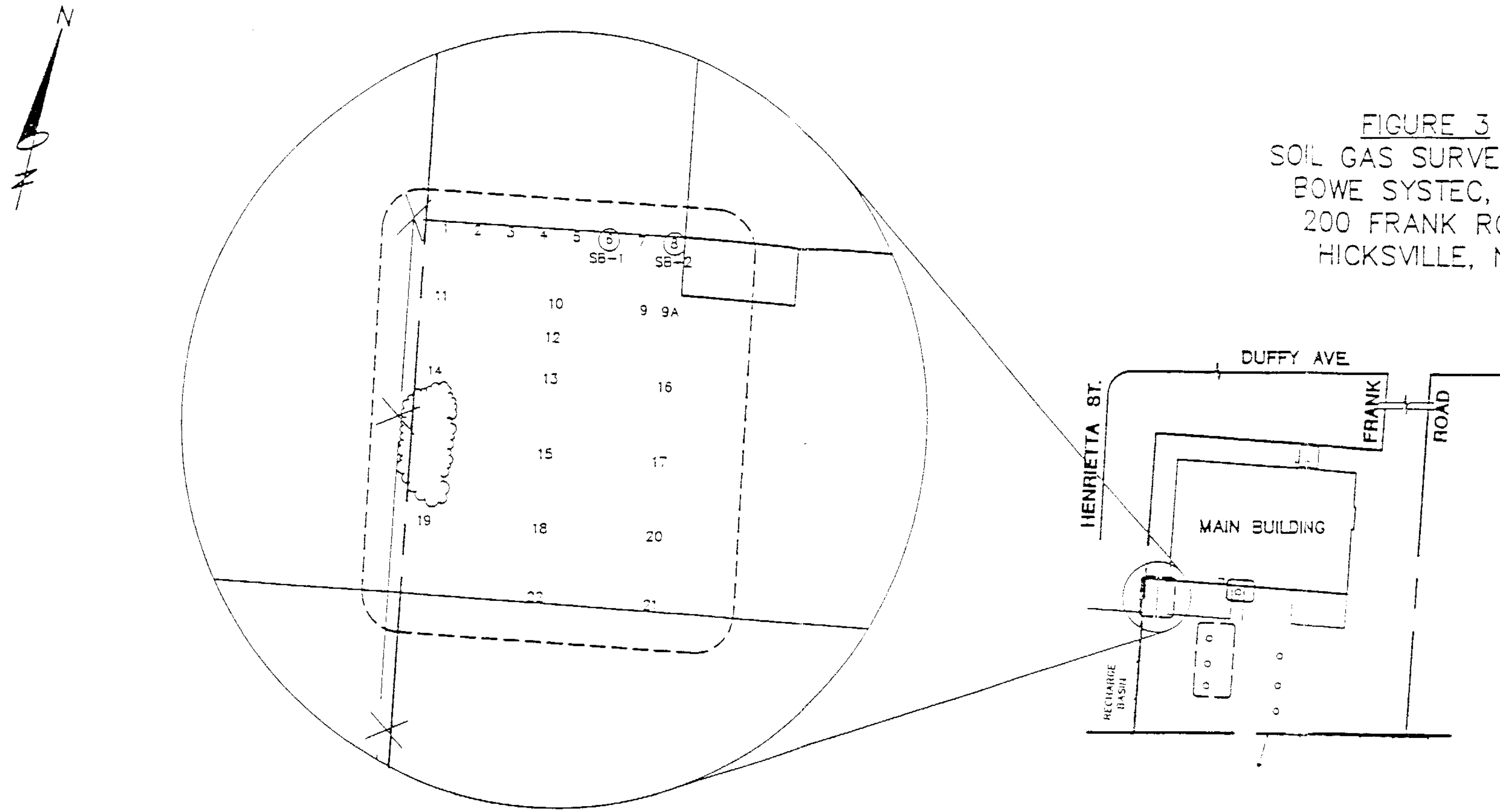
LEGEND

- DW-2 DRYWELL
- MW-2 MONITORING WELL
- ppb PARTS PER BILLION
- T-2 TEST WELL

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

FIGURE 3

SOIL GAS SURVEY FOR
BOWE SYSTEC, INC.
200 FRANK ROAD
HICKSVILLE, NY



LOCATION	PID READINGS
1	0.8
2	1.4
3	1.0
4	0.2
5	1.0
6	>20.0
7	>20.0
8	>50.0
9	1.0
10	0.5
11	1.2

LOCATION	PID READINGS
9A	18.0
12	10.2
13	0.8
14	0.8
15	2.1
16	1.0
17	0.4
18	0.4
19	0.5
20	1.4
21	1.0
22	0.2

LEGEND

ALL PID READINGS IN EPPM

2 SOIL GAS SAMPLING POINT

6 SB-1 LOCATION OF SOIL BORING

VEGETATION

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

BOWEDET.DWG

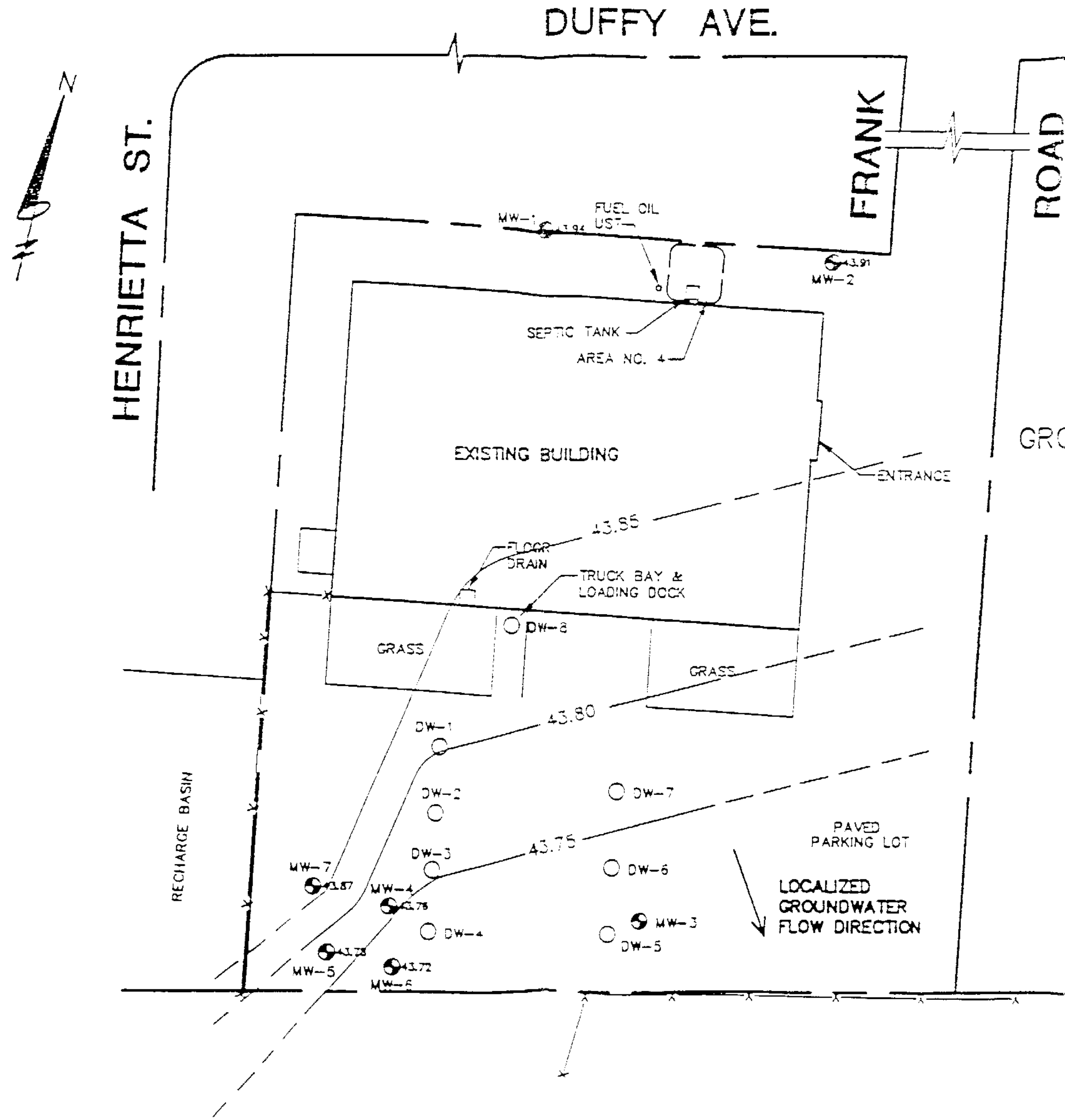


FIGURE 4

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
GROUNDWATER ELEVATION MAP
JUNE 23, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

- DW-2 DRYWELL
- MW-2 MONITORING WELL
- MW-3 NOT INCLUDED IN CONTOURING
- EXISTING GROUNDWATER CONTOUR
- ESTIMATED GROUNDWATER CONTOUR

0 50
SCALE: 1" = 50'

H2MGROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. TOTOWA, N.J.

BOWE5-23.DWG

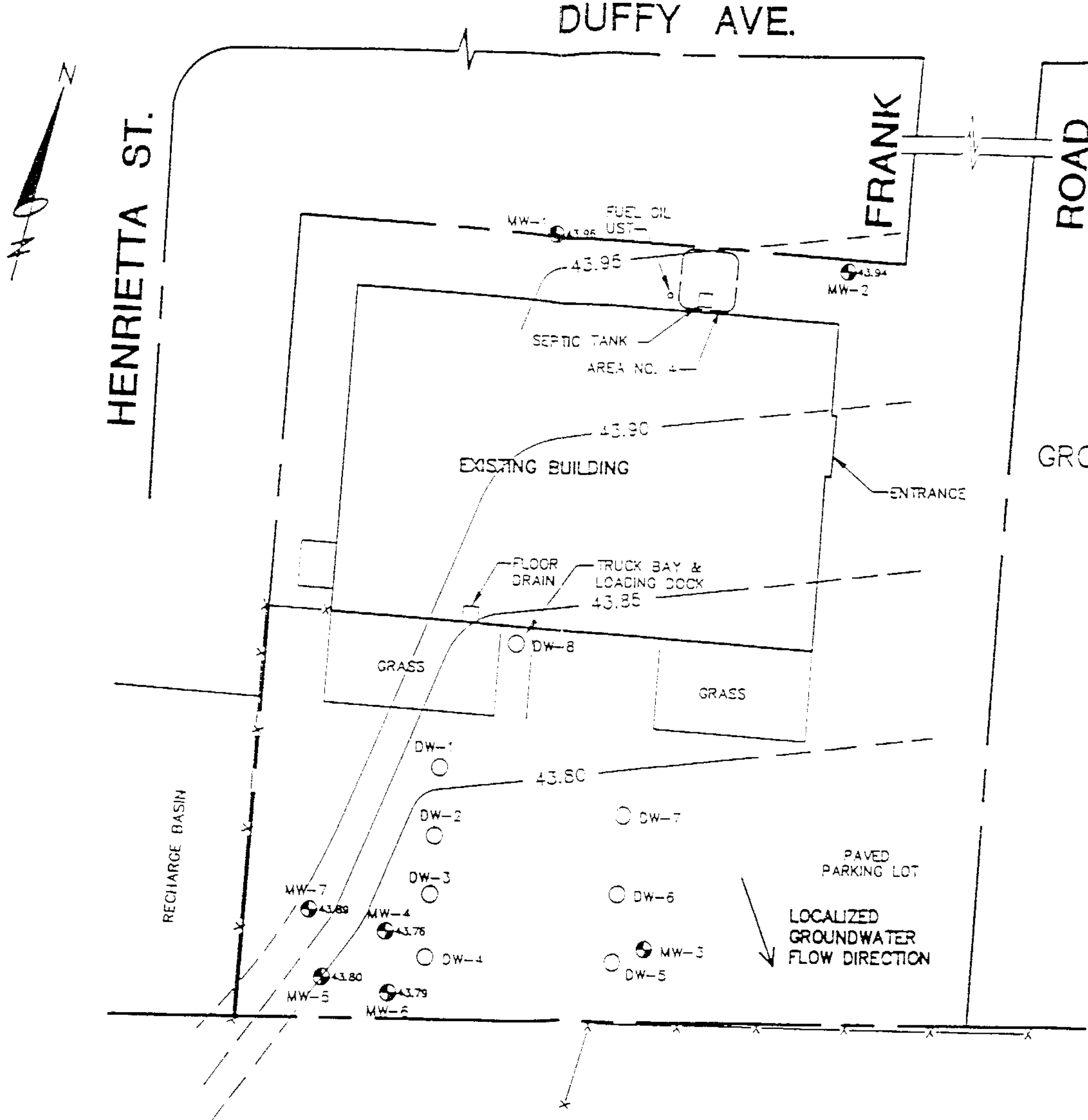


FIGURE 5

BÖWE SYSTEC, INC.
HICKSVILLE, NEW YORK
GROUNDWATER ELEVATION MAP
JUNE 24, 1992

WELL	REFERENCE ELEVATION
1	98.97
2	99.60
3	98.17
4	97.72
5	98.31
6	98.61
7	98.17

LEGEND

- DW-2 DRYWELL
- MW-2 MONITORING WELL
- MW-3 NOT INCLUDED IN CONTOURING
- EXISTING GROUNDWATER CONTOUR
- ESTIMATED GROUNDWATER CONTOUR

0 50
SCALE: 1" = 50'

BOWE6-23.DWG

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
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LAB NO: 9220627

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-8(10'-12')
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	81		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

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DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley [signature]
LABORATORY DIRECTOR

ORIGINAL

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(516)694-3040 FAX:(516)694-4122

LAB NO: 9220628

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SB-1(2'-4')
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	91.1 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley [illegible]
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LAB NO: 9220628

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SB-1(2'-4')

REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	2300		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

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DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley [signature]
LABORATORY DIRECTOR

ORIGINAL

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575 Broad Hollow Road, Melville, N.Y. 11747
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LAB NO: 9220629

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SB-2(2'-4')
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	95.0 %

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

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LAB NO: 9220629

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: SB-2(2'-4')
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	910		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

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DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Isaacson
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LAB NO: 9220698

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-1

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	4		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	23		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	45		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Jeason
LABORATORY DIRECTOR

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LAB NO: 9220699

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-2

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	<3		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	<3		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	110		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Isaacson
LABORATORY DIRECTOR

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LAB NO: 9220700

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: T-3

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	3		
CIS-1,2-DICHLOROETHENE	3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	20		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	270		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

COPIES TO: SFB/MOK

DATE ISSUED 06/29/92

DATE RUN....... 06/25/92
DATE REPORTED.. 06/26/92

Stanley Kasner
LABORATORY DIRECTOR

ORIGINAL

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LAB NO: 9220701

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: MW-7

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	3		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	17		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	130		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220702

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: MW-6

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	<3		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	11		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	430		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220703

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: MW-3

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	<3		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	<3		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	19		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.

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(516)694-3040 FAX:(516)694-4122

LAB NO: 9220704

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... GROUND WATER
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: MW-1

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<3	1,4-XYLENE	<3
CHLOROMETHANE	<3	1,2-XYLENE	<3
VINYL CHLORIDE	<3		
BROMOMETHANE	<3		
CHLOROETHANE	<3		
FLUOROTRICHLOROMETHANE	<3		
1,1-DICHLOROETHENE	<3		
METHYLENE CHLORIDE	<3		
TRANS-1,2-DICHLOROETHENE	<3		
1,1-DICHLOROETHANE	<3		
CIS-1,2-DICHLOROETHENE	<3		
CHLOROFORM	<3		
1,1,1-TRICHLOROETHANE	<3		
CARBON TETRACHLORIDE	<3		
1,2-DICHLOROETHANE	<3		
TRICHLOROETHENE	<3		
1,2-DICHLOROPROPANE	<3		
BROMODICHLOROMETHANE	<3		
TRANS-1,3-DICHLOROPROPENE	<3		
CIS-1,3-DICHLOROPROPENE	<3		
1,1,2-TRICHLOROETHANE	<3		
TETRACHLOROETHENE	<3		
CHLORODIBROMOMETHANE	<3		
CHLOROBENZENE	<3		
BROMOFORM	<3		
1,1,2,2-TETRACHLOROETHANE	<3		
M-DICHLOROBENZENE	<3		
P-DICHLOROBENZENE	<3		
O-DICHLOROBENZENE	<3		
BENZENE	<3		
TOLUENE	<3		
ETHYLBENZENE	<3		
1,3-XYLENE	<3		

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575 Broad Hollow Road, Melville, N.Y. 11747
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LAB NO: 9220709

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... BLANK
ROUTINE

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/24/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: FIELD BLANK

REMARKS:

VOL. ORGANICS(601/602 & XYLENES) - (ug/l)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<1	1,4-XYLENE	<1
CHLOROMETHANE	<1	1,2-XYLENE	<1
VINYL CHLORIDE	<1		
BROMOMETHANE	<1		
CHLOROETHANE	<1		
FLUOROTRICHLOROMETHANE	<1		
1,1-DICHLOROETHENE	<1		
METHYLENE CHLORIDE	<1		
TRANS-1,2-DICHLOROETHENE	<1		
1,1-DICHLOROETHANE	<1		
CIS-1,2-DICHLOROETHENE	<1		
CHLOROFORM	<1		
1,1,1-TRICHLOROETHANE	<1		
CARBON TETRACHLORIDE	<1		
1,2-DICHLOROETHANE	<1		
TRICHLOROETHENE	<1		
1,2-DICHLOROPROPANE	<1		
BROMODICHLOROMETHANE	<1		
TRANS-1,3-DICHLOROPROPENE	<1		
CIS-1,3-DICHLOROPROPENE	<1		
1,1,2-TRICHLOROETHANE	<1		
TETRACHLOROETHENE	<1		
CHLORODIBROMOMETHANE	<1		
CHLOROBENZENE	<1		
BROMOFORM	<1		
1,1,2,2-TETRACHLOROETHANE	<1		
M-DICHLOROBENZENE	<1		
P-DICHLOROBENZENE	<1		
O-DICHLOROBENZENE	<1		
BENZENE	<1		
TOLUENE	<1		
ETHYLBENZENE	<1		
1,3-XYLENE	<1		

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H2M LABS, INC. 575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9220732

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/25/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-1(16'-18')
REMARKS:

PARAMETER (S)	RESULTS	UNITS
TOTAL SOLIDS	97.9	%

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Stanley ...
LABORATORY DIRECTOR

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LAB NO: 9220732

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SOIL
ROUTINE
METHOD....

DATE COLLECTED. 06/23/92
DATE RECEIVED.. 06/25/92
COLLECTED BY... MSC03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: DW-1(16'-18')
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/kg)

PARAMETER (S)	RESULT	PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<50	1,4-XYLENE	<50
CHLOROMETHANE	<50	1,2-XYLENE	<50
VINYL CHLORIDE	<50		
BROMOMETHANE	<50		
CHLOROETHANE	<50		
FLUOROTRICHLOROMETHANE	<50		
1,1-DICHLOROETHENE	<50		
METHYLENE CHLORIDE	<50		
TRANS-1,2-DICHLOROETHENE	<50		
1,1-DICHLOROETHANE	<50		
CIS-1,2-DICHLOROETHENE	<50		
CHLOROFORM	<50		
1,1,1-TRICHLOROETHANE	<50		
CARBON TETRACHLORIDE	<50		
1,2-DICHLOROETHANE	<50		
TRICHLOROETHENE	<50		
1,2-DICHLOROPROPANE	<50		
BROMODICHLOROMETHANE	<50		
TRANS-1,3-DICHLOROPROPENE	<50		
CIS-1,3-DICHLOROPROPENE	<50		
1,1,2-TRICHLOROETHANE	<50		
TETRACHLOROETHENE	<50		
CHLORODIBROMOMETHANE	<50		
CHLOROBENZENE	<50		
BROMOFORM	<50		
1,1,2,2-TETRACHLOROETHANE	<50		
M-DICHLOROBENZENE	<50		
P-DICHLOROBENZENE	<50		
O-DICHLOROBENZENE	<50		
BENZENE	<50		
TOLUENE	<50		
ETHYLBENZENE	<50		
1,3-XYLENE	<50		

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Stanley Isaacson
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9221207

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
SPECIAL
METHOD.... GRAB

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/30/92
COLLECTED BY... CJF03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: LP-2
CESSPOOL
REMARKS:

PARAMETER (S)	RESULTS UNITS
TOTAL SOLIDS	23.6 %

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DATE ISSUED 07/02/92

Stanley Rasmussen
LABORATORY DIRECTOR

ORIGINAL

H2M LABS, INC.
575 Broad Hollow Road, Melville, N.Y. 11747
(516)694-3040 FAX:(516)694-4122

LAB NO: 9221207

BOWE SYSTEM & MACHINE INC.
RICHARD REILLY
200 FRANK RD.
HICKSVILLE, NY 11803

TYPE...... SLUDGE
SPECIAL
METHOD.... GRAB

DATE COLLECTED. 06/24/92
DATE RECEIVED.. 06/30/92
COLLECTED BY... CJF03
PROJECT NO..... BOWE9201

POINT NO:
LOCATION: LP-2
CESSPOOL
REMARKS:

VOLATILE ORGANIC COMPOUNDS - (ug/l)

PARAMETER (S)	RESULT
DICHLORODIFLUOROMETHANE	<150
CHLOROMETHANE	<150
VINYL CHLORIDE	<150
BROMOMETHANE	<150
CHLOROETHANE	<150
FLUOROTRICHLOROMETHANE	<150
1,1-DICHLOROETHENE	<150
METHYLENE CHLORIDE	<150
TRANS-1,2-DICHLOROETHENE	<150
1,1-DICHLOROETHANE	<150
CIS-1,2-DICHLOROETHENE	<150
CHLOROFORM	<150
1,1,1-TRICHLOROETHANE	<150
CARBON TETRACHLORIDE	<150
1,2-DICHLOROETHANE	<150
TRICHLOROETHENE	<150
1,2-DICHLOROPROPANE	<150
BROMODICHLOROMETHANE	<150
TRANS-1,3-DICHLOROPROPENE	<150
CIS-1,3-DICHLOROPROPENE	<150
1,1,2-TRICHLOROETHANE	<150
TETRACHLOROETHENE	<150
CHLORODIBROMOMETHANE	<150
CHLOROBENZENE	<150
BROMOFORM	<150
1,1,2,2-TETRACHLOROETHANE	<150
M-DICHLOROBENZENE	480
P-DICHLOROBENZENE	1100
O-DICHLOROBENZENE	220
BENZENE	<150
TOLUENE	<150
ETHYLBENZENE	<150
/ 1,3-XYLENE	180
\ 1,4-XYLENE	-
1,2-XYLENE	<150

/ REPORTED VALUE
\ REPRESENTS TOTAL

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DATE REPORTED.. 07/01/92

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LABORATORY DIRECTOR

ORIGINAL

APPENDIX B

RESUMES OF H2M'S KEY PERSONNEL

JOHN J. MOLLOY, P.E.

President and Chief Executive Officer: H2M Labs, Inc.
Vice President: Holzmacher, McLendon & Murrell, P.C.; H2M Associates, Inc.

EXPERIENCE: **H2M GROUP**
(1974 - Present)

As President and Chief Executive Officer of H2M Labs, Inc., the environmental analytical laboratory, Mr. Molloy is responsible for all facets of management including planning and development; budgeting; marketing and sales; and quality control/quality assurance. Upon assuming its direction in the late 1970's, Mr. Molloy has been the key principal responsible for its growth and development.

As Vice President of Holzmacher, McLendon & Murrell, P.C., Mr. Molloy directs environmental engineering. His experience includes all phases of project engineering and management including feasibility studies, pilot studies, cost estimating, design, construction and startup. These disciplines have been provided to government and industrial clients covering most facets of environmental engineering - air pollution, water and wastewater, and solid and hazardous waste.

Mr. Molloy began his professional career as a project engineer in the chemical process industry. He also served as an air pollution control engineer for the City of New York where he was involved in the testing and evaluation of air emissions for industrial processes.

Since joining H2M in 1974, Mr. Molloy has participated in and managed hundreds of projects related to water quality protection, supply, treatment and system development; industrial wastewater treatment; hazardous and solid waste management; and site evaluation and remediation.

He was also the project manager for a major Long Island water project (in excess of 5 million gpd) to remove organics by air stripping. This was one of the first such treatment systems in the region, operational in the Spring of 1985.

Mr. Molloy applied the same treatment expertise to additional air-stripping systems for treatment of contaminated public supply wells for others experiencing contamination with volatile organics. Systems capable of handling in excess of 10 million gpd are currently in operation.

Mr. Molloy has been responsible for the assessment of numerous industrial sites. The extent and severity of site contamination has been assessed both privately and with regulatory agency review. These assessments have been for sites throughout the eastern region of the United States and have included all phases of investigation, including soil borings and analysis, groundwater monitoring well installation, sampling and analysis, and remediation. Project scope has included efforts ranging from Phase I real estate liability assessments through formal remedial investigation/feasibility studies.

Mr. Molloy directed the efforts of H2M in a hazardous waste assessment which resulted in the need to contract with a remediation contractor and manage a complex cleanup. This project required a sampling program (Level "B" protection) and an expedited determination of hazardous waste characteristics; the development of a work plan, health and safety plan, and contract documents for remediation of a hazardous waste site. Efforts included interfacing with contractors on removal and securing of waste drums, contaminated liquids and contaminated soils. Field work was Level "C" with Level "B" available on-site. Waste materials were characterized for offsite approved disposal.

EDUCATION:	B.E., Chemical Engineering Manhattan College
REGISTRATIONS/ CERTIFICATIONS:	Licensed Professional Engineer-New York Director, Environmental Laboratory-New York, New Jersey Connecticut, Massachusetts, Pennsylvania and Delaware Certified Health And Safety Operations at Hazardous Waste Sites (OSHA)
OFFICES:	Chairman, 1989-1992 New York State Association of Approved Environmental Laboratories Director, 1989-1992 Huntington Township Chamber of Commerce Member, 1989-1992 Town of Hempstead Business Council
MEMBERSHIPS:	American Institute of Chemical Engineers American Water Works Association Long Island Water Conference National Asbestos Council National Society of Professional Engineers New York State Society of Professional Engineers Water Pollution Control Federation

PROFESSIONAL PAPERS:

Molloy, John J. and John E. Osborn. *Hazardous Waste, Soil & Groundwater Contamination: The Law, Strategies and Technology Solutions for the 1990s.* National Asbestos Council, Pittsburgh, Pennsylvania, April 1991.

Molloy, John J. *Industrial Property Transactions: Protecting Yourself Against the Liabilities.* Institute for International Research Environmental Compliance Conference, Chicago, Illinois, October 1990.

Molloy, John J. *Industrial Property Transactions.* New York Water Pollution Control Association, Inc., New York, New York, January 1990.

Molloy, John J. *Air Stripping for Organics.* American Water Works Association, Toronto, Canada, April 1985.

GARY J. MILLER, P.E.

Assistant Vice President
Department Head: Environmental Engineering Division

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1980 - Present)

Mr. Miller has over 15 years experience in the field of environmental engineering covering a broad range of projects including solid and hazardous waste management, water and wastewater treatment, air pollution control, hazardous material storage, groundwater investigations and site remediation. As head of H2M's Environmental Engineering Division, Mr. Miller oversees and provides technical direction on major environmental projects.

Mr. Miller's experience at H2M includes all aspects of project engineering and management including engineering studies, economic analyses, treatability studies, design, construction and startup. He has been responsible for projects ranging from landfill leachate collection and methane venting systems for municipal clients to wastewater treatment, air pollution control and hazardous waste management for private industrial clients. He also has extensive experience inspecting and auditing industry for environmental compliance. He has worked closely with a spectrum of industries including petrochemical, pharmaceutical, food processing, printing, metal finishing and plating, printing circuit board and electronics, semiconductor, communications and commercial waste treatment. He is a specialist in assisting industrial clients with RCRA and other regulatory compliance programs including the storage and handling of hazardous materials.

Mr. Miller has directed numerous site investigations utilizing a variety of techniques including soil gas surveys, geophysical surveys, soil boring, monitoring wells and groundwater modeling to assess environmental impacts and implement effective remediation programs. Site investigation projects have ranged from Phase I and II environmental assessments as part of property transactions to remedial investigations/feasibility studies at state and federal Superfund sites.

Selected experience as a project manager includes:

- Preparation of engineering reports, design plans and specifications for upgrade of a 60,000 gpd industrial wastewater treatment system at a Long Island metal finishing facility.

- Study of wastewater collection, treatment and disposal facilities for the New York City Transit Authority. The project involved inspections and sampling of fueling, washing, maintenance, repair and painting facilities at 20 bus depots of varying sizes and age located throughout the five boroughs of New York City.

- Preparation and design plans and specifications for bulk chemical storage facilities at Pall Corporation's East Hills manufacturing facility. Design elements included indoor and outdoor bulk storage tanks, containerized storage, gas cylinder storage, spill containment systems and chemical distribution and inventory control systems.

- Preparation of RCRA permit application, including personnel training program, waste analysis plan, contingency plan and closure plan for a waste solvent reclamation facility. The application was approved and a permit issued by the United States Environmental Protection Agency.

- Hazardous waste lagoon closure at a northern New Jersey manufacturing facility. The project involved developing a New Jersey Department of Environmental Protection and Energy approved closure plan, technical specifications and bid documents, and directing the closure of five lagoons containing over 250,000 gallons of hazardous wastes.

- Phase II site investigation at a Suffolk County, New York metal plating facility. Conducted under an order-on-consent, the investigation included an evaluation of suspected source areas, a groundwater monitoring program and preparation of the site's HRS score.

- Remedial investigation at an automobile parts manufacturing facility in Queens County, New York. The project involves development of work plans, including HASP, field sampling and quality assurance/quality control, and the installation of soil boring and monitoring wells to assess the nature and extent of site contamination.

- Remedial design studies at a major NPL Superfund site in Massachusetts. As part of a multi-consultant remedial design team, H2M developed and implemented a field testing program to measure gaseous emissions from a specific source area. H2M also developed and implemented a groundwater treatability study assessing oxidation and air stripping as the primary unit treatment operation.

- Preparation of design plans, technical specifications and bid documents for a soil vapor extraction system designed as the final phase of an ongoing remediation program at the site of a former manufacturing facility.

Prior to joining H2M, Mr. Miller was an operations manager involved in the mechanical and electrical checkout and startup of multiple hearth furnaces, waste heat boilers, wet scrubbers and sludge handling equipment. He was also responsible for operations training, performance, emissions and acceptance tests and served as construction superintendent responsible for coordination and supervision of all subcontractors and vendors in the construction of Nichols Herreshoff multiple hearth carbon regeneration, lime reclacining and sludge incinerators.

<u>EDUCATION:</u>	B.S., Engineering Technology/Civil-Environmental Virginia Polytechnic Institute and State University A.S., Mechanical Technology City University of New York, Queensborough Community College
<u>REGISTRATIONS/ CERTIFICATIONS</u>:	Licensed Professional Engineer-New York Certified USEPA Asbestos Abatement Management Planner Certified USEPA Asbestos Abatement Inspector Certified Hazardous Materials Manager - Master Level Certified Health and Safety Operations at Hazardous Waste Sites (OSHA)
<u>MEMBERSHIPS</u>:	Air and Waste Management Association Hazardous Waste Action Coalition Institute of Hazardous Materials Management Water Pollution Control Federation

<u>PROFESSIONAL PAPERS</u>:

Miller, Gary J. *Closure of Industrial Facilities Containing Hazardous Wastes*. New York Water Pollution Control Association, Winter Meeting, January 1989.

MARTIN O. KLEIN, C.P.G.

Section Supervisor: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1992 - Present)

Mr. Klein is a Certified Professional Geologist with over eight years experience in the field of geology, hydrogeology, ground and surface water quality analysis, groundwater flow and contaminant transport modeling, solid and hazardous waste management, and environmental assessment. His experience includes project management of Phase I and Phase II hydrogeologic investigations, Remedial Investigations/Feasibility Studies and landfill investigations on both federal and state regulated sites. His experience specifically relates to CERCLA/SARA, RCRA and SEQRA. Mr. Klein has provided technical support services for legal counsel through research, investigation and testimony.

Prior to joining H2M, Mr. Klein was Department Manager of Hydrogeology at Fanning, Phillips and Molnar from 1985 to 1992. His project management and supervision experience includes:

- NYSDEC 6 NYCRR Park 360 Closure Plans for the Town of Mamakating (Mamakating Landfill) and the Town of East Hampton (Springs-Fireplace Road and Montauk Landfills); Town Hydrogeologist for both.
- Superfund site investigations - Grucci Pyrotechnic, Phase I investigation of Class 2a state Superfund site after explosion at Bellport facility; City of Glen Cove, geohydrologic review of groundwater system and contaminants for litigation; SJ&J Service Stations, RI/FS for Class 2 federal and state Superfund site in Farmingdale, New York.
- NYC Transit Authority - Environmental investigations, groundwater modeling, pumping tests and well design for sites in the five boroughs of New York.
- City of Elizabeth - Environmental evaluation of proposed widening of New Jersey Turnpike.
- Urban Development Corporation - Geohydrologic investigation of proposed domed stadium site in Flushing, New York, including wells installation, groundwater mapping, sampling, and pump test analysis for aquifer characterization.
- Nassau County Tax Assessor's Office - File searches for environmental compliance for numerous Nassau County sites.
- Metex Corporation - Bedrock groundwater investigations, rock core analysis and geophysical survey for ECRA compliance in Edison, New Jersey.
- Envirofil - Environmental compliance investigations and assessments, including radioactivity sampling, of potential liability for numerous landfill acquisitions in Illinois, Pennsylvania and Michigan.
- Village of Lake Success - Investigation and evaluation of proposed downzoning on quantity and quality of groundwater, site-specific groundwater-nitrogen budget models for present and proposed land use.
- Automatic Connector, Inc. - Remedial investigation, magnetometer survey and pumping tests for nature and extent of contaminants at Hauppauge, New York facility.
- Irwin Measuring Tool Company - Groundwater well design, installation and monitoring at Patchogue site, review and evaluation of a major TSDF for compliance with NYSDEC hazardous waste regulations.
- Mill-Max - Soil and soil gas investigation and evaluation for UST and leak detection system for RCRA compliance, Oyster Bay, New York.
- Realco Management - Radon testing of sites for property acquisition.

- Lee Tungston/Union Carbide - Feasibility study of metal (radioactive) resale as alternative to remediation.
- Anorad Corporation - Remedial investigation through OVA/GC survey on soil vapor and soil/groundwater sampling at Hauppauge, New York facility.
- Shorewood Packaging Corporation - Phase I, Phase II and RCRA investigations on New York, Connecticut, Georgia and Alabama sites.
- New York Institute of Technology - Phase II Investigation at Westbury, New York facility, including soil sampling for determination of hazardous waste release.

Additional Phase I and/or Phase II investigation project experience includes: Town of Islip; Trump Organization; Parr Organization; HUB Truck Rental; Cibro Southshore Terminal; N. Racanelli Associates; Polemini Enterprises; Philips International; Realco Management; Cika Construction; Nardy Pontiac Honda; Dorne & Margolin; Garden City Shopping Associates; Twomey, Latham, Shea & Kelley; Rosenman & Colin; D'Amato, Forchelli, Libert, Schartz, Mineo & Carlino; Whiteman & Osterman; Goldstein & Rubinto, P.C.; Sidley & Austin; Webster & Scheffield; and Alston & Bird.

EDUCATION:

M.S., Hydrogeology
Adelphi University
B.S., Geology
State University of New York at Cortland

SPECIALIZED COURSES:

Analysis and Design of Aquifer Tests
Geostatistical and Sampling Analysis
Introduction to Groundwater Geochemistry
Management Environmental Risks in Real Estate Transactions
New Jersey Environmental Laws and Regulations
Management of Contaminated Groundwater and Aquifer Restoration
Natural Resource Damages Claims and Litigation
Risk Assessment for Groundwater Scientists
Strategies for Responding to Superfund Liability

CERTIFICATIONS:

Certified Professional Geologist
Certified Health and Safety Operations at Hazardous Waste Sites (OSHA)

MEMBERSHIPS:

American Institute of Professional Geologists, #8188
American Association of Petroleum Geologists
Geological Society of America
Long Island Geologists
Mortgage Bankers Association
National Water Well Association
New York Pollution Control Association
Society of American Military Engineers

PROFESSIONAL PAPERS

Klein, Martin O., Stanley Pierce, and Charlotte Biblow. "NRD Claims Set to Become Big Problem for Industry." *Hazardous Waste and Toxic Torts Law & Strategy,* May 1992, Volume 7, Number 12.

Klein, Martin O., Stanley Pierce, and Charlotte Biblow. "How to Avoid or Defend Against NRD Claims." *Hazardous Waste and Toxic Torts Law & Strategy,* June 1992, Volume 8, Number 1.

GERALD A. GRANZEN

Quality Assurance Officer
Section Supervisor: Industrial Services and Hazardous Waste Management

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1987 - Present)

Mr. Granzen is responsible for review of QA/QC plans and sample data summary packages, field work, work plan and sampling plan development, and report preparation associated with environmental and hydrogeologic investigations including industrial/commercial site assessments, groundwater contamination investigations, and remedial investigation/feasibility studies (RI/FS) for hazardous waste sites. In addition, Mr. Granzen is responsible for preparation of engineering reports, design plans, and various regulatory permits for facilities to store, treat and dispose of industrial waste and/or hazardous waste. In addition to site audits and investigations, he is experienced in assisting industrial clients comply with federal, state and local regulations concerning spill protection and prevention, air emissions, wastewater discharge, and hazardous waste management.

Currently, Mr. Granzen is involved with projects addressing hazardous materials storage and handling, hazardous waste management, air emissions, wastewater discharge, environmental site assessments, and soil/groundwater contamination problems.

Mr. Granzen's prior experience was with a consulting firm specializing in fossil fuel combustion. His responsibilities included air emission source compliance testing, computer modeling using FORTRAN, utility boiler performance research, gaseous emissions reduction research, data reduction, and product evaluations.

EDUCATION:
- M.B.A., Candidate
  Adelphi University
- M.S., Chemical Engineering
  Manhattan College
- B.A., Chemistry
  State University of New York at Plattsburgh

REGISTRATIONS/ CERTIFICATIONS:
- Engineer in Training-New York
- Certified Health and Safety Operations at Hazardous Waste Sites (OSHA)
- Certified USEPA Asbestos Abatement Management Planner
- Certified USEPA Asbestos Abatement Inspector

MEMBERSHIPS: American Chemical Society

SUSAN F. BIANCHETTI

Senior Hydrogeologist: Groundwater Resources/Hydrogeology

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1990 - Present)

Ms. Bianchetti has over nine years experience in the field of hydrogeology, solid and hazardous waste management, and environmental assessments. As a senior hydrogeologist, she serves as project manager on numerous projects involving multi-media investigations, including a remedial investigation/feasibility (RI/FS) at a federal Superfund site, and hazardous waste remediation. Ms. Bianchetti's past projects have included groundwater and soils investigations at private, industrial and commercial properties, hazardous waste investigations at government-owned facilities, development of closure plans for former ash and coal storage facilities and development of remedial measures for hazardous waste facilities. Current projects include:

- Completion of an extensive RI/FS for a federal Superfund site, inclusive of lengthy negotiations with New York State Department of Environmental Conservation (NYSDEC) and United States Environmental Protection Agency.

- Development of a groundwater monitoring network for a major on-shore fuel storage facility.

- Design of a hydrogeologic investigations for an industrial complex involved in litigation as a result of contaminated public supply wells.

- Ongoing hydrogeological investigations at state-owned facilities, conducted under the regulatory supervision of NYSDEC to determine the impact of long term storage of ash and coal. In addition, continuing negotiations with NYSDEC regarding proposed closure of these facilities.

Prior to joining H2M, Ms. Bianchetti was a project manager/senior hydrogeologist. She was Project Manager for a RI/FS at a local municipality's federal Superfund site and a project manager for a number of groundwater and soil investigations for both private and commercial clients. In addition, Ms. Bianchetti's extensive background has included the preparation of both environmental impacts statements and environmental site assessments for numerous properties throughout the northeast.

EDUCATION: M.S., Geochemistry
State University of New York at Stony Brook
B.S., Geology
Boston College

SPECIALIZED COURSES: Groundwater Pollution and Hydrogeology Short Course
Hydrogeology and Groundwater Management

CERTIFICATIONS: Certified Health and Safety Operations at Hazardous Waste Sites (OSHA)

MEMBERSHIPS: American Water Works Association
Association of Groundwater Scientists and Engineers
Long Island Geologists
National Water Well Association

PROFESSIONAL PAPERS:

Bianchetti, Susan F. and Michael V. Tumulty, P.E. *Environmental Site Assessments*. The Association of the Bar of the City of New York, January 28, 1992.

ELLEN R. KELLY

Community Relations Specialist

EXPERIENCE: **H2M Group**
(1989 - Present)

Ms. Kelly has over 10 years of experience in the communication of environmental information. Her professional focus has been on business development for H2M Group, where she serves as Director of Marketing, responsible for supervising staff in the preparation and production of proposals, statements of qualification and presentations. She is also responsible for the firm's client communications and public relations activities, including the writing and editing of press releases, articles and informational materials on the environmental activities of H2M and its clients.

Ms. Kelly joined H2M in 1982 as Marketing Coordinator. Between 1982 and 1985 her primary responsibilities were in proposal production and editing. She prepared two entries for the New York State Consulting Engineers Council's Engineering Excellence Award competition, describing an H2M civil engineering project and the preparation by H2M of a major Long Island Draft Environmental Impact Statement. Both of these projects won statewide awards.

From 1985 to 1988, Ms. Kelly was Marketing Manager of Hart Environmental Management Corp. As the senior marketing person in the company, she managed all communications programs and activities which included a nationwide public relations effort and the firm's technical seminar program. While at Hart, she was technical editor of the book, "*Underground Storage Tank Management: A Practical Guide*," published by Government Institutes, Inc., and also chaired the Exhibitor's Advisory Committee for the HAZTECH International Conferences. In 1989, Ms. Kelly rejoined H2M as Director of Marketing.

Prior to her engineering firm experience, Ms. Kelly worked as Public Relations Director for the Freeport Arts Council. Her work experience also includes serving as Research Associate for the National Commission on Urban Problems, and Assistant to the Director of Special Projects at the Federal Power Commission (now FERC). She served on the Senate staff of Paul H. Douglas of Illinois and served as personal assistant to former Senator Douglas at the conclusion of his tenure as Chairman of the National Commission on Urban Problems.

Ms. Kelly's community involvements include service as an elected member of the Freeport School District Board of Education (1979 - 1982) and a member of the Board of Directors of the Day Care Council of Nassau County. She is currently Vice Chairman of the Route 110 Action Environmental Task Force, and is a member of the Long Island Arts Council at Freeport Board of Directors.

EDUCATION:

M.A., Government
Georgetown University
B.A., History
Rosary College

MEMBERSHIPS:

Environmental Law Institute
Society of American Military Engineers
Water Environment Federation
National Association of Environmental Communicators

ANDREW P. FRELENG, AICP

Chief Planner: Environmental Planning and Community Development

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1985 - Present)

Mr. Freleng is responsible for project management and preparation of professional land use documents such as Environmental Impact Statements, Environmental Assessment Forms, site plan review reports, site development feasibility studies, zoning\planning studies and community development grant applications. In addition, Mr. Freleng is responsible for the management and preparation of environmental permit applications including federal coastal zone applications, state and local freshwater and tidal wetland permits and U.S. Army Corp of Engineer Permits. He conducts field inventory and analysis of terrestrial and wetland vegetative, zoological, and soil ecosystem components.

As Chief Planner, Mr. Freleng is an integral part of the community development and planning projects. He is responsible for the management of data synthesis and analysis on a wide range of city and regional planning studies. Mr. Freleng is experienced in land use analysis, transportation, demography, community development, zoning analysis, waterfront and open space planning. He specializes in impacts of human settlements on the natural and urban environment based upon the history of the planning profession and planning thought, along with the store of knowledge assembled for city and regional planning.

Selected project management experience at H2M includes:

- New York City Public Development Corporation (NYCPDC): Site investigation for property owned and leased by NYCPDC at Paerdegat Basin, Brooklyn, New York, involved wetland mapping for the New York State Department of Environmental Conservation jurisdictional determination, boundary and topographic survey, historical records search and site assessment.

- Long Island Lighting Company (LILCO): DEIS for 220MW combustion turbine facility located west of Shoreham Nuclear Power Station, Brookhaven, involved organizational coordination between H2M and LILCO. Major issues in DEIS were air quality, PSD review, BACT determination, petroleum storage, noise, traffic, aesthetics, water supply, water quality.

- Suffolk County Water Authority: DEIS and SEQR documentation for the renovation of a 40,000 square foot building to include laboratory, office and warehouse space. Issues included impacts to Pine Barrens, groundwater resources, traffic, land use, zoning, preservation of natural resources.

- New York City Department of Environmental Protection: Wetland field delineation and impact analysis of an extensive stormwater drainage project for New York City. Involved monitoring of water levels during dewatering, mitigation and revegetation plans for impacted areas.

- Splish Splash at Adventureland: DEIS for a water theme park located on a 27-acre parcel in the Town of Riverhead, New York. Issues involved critical aquifers, Pine Barrens, Wild, Scenic & Recreational Rivers, traffic, noise, aesthetics.

Prior to H2M, Mr. Freleng was an assistant planner at Interscience Research Associates, Inc., a Southampton, Long Island-based environmental planning and development consulting firm. He prepared subdivision and site plans, environmental impact statements and the associated field work and permit applications. For the Town of Southampton Planning Department in Southampton, New York, he worked under the Town Planner on the Southampton Town Master Plan Update. This included extensive existing land use analysis, data management and graphic representation.

Mr. Freleng has been a Natural Science educator for the Suffolk County Organization for the Promotion of Education (Scope). Acting as a Resident Naturalist on Shelter Island and in Southold Town, he conducted classroom and field lectures and demonstrations regarding the elements of the natural environment and their inter-relationships.

EDUCATION:

Masters Candidate in Environmental Management
Long Island University/C.W. Post Center
B.S., Environmental Science/Biology
Southampton College of Long Island University

CERTIFICATIONS:

American Institute of Certified Planners

OFFICES:

Adjunct Assistant Professor, 1990 - 1993
New York Institute of Technology
Director of Long Island Section, 1990 - 1994
American Planning Association
Executive Committee-New York Metropolitan Chapter, 1990 - 1994
American Planning Association
Steering Committee-Long Island Section, 1988 to Present
American Planning Association
Acting President-C.W. Post Student Chapter, 1986
National Association of Environmental Professionals

MEMBERSHIPS:

American Institute of Certified Planners
American Planning Association
National Association of Environmental Professionals
Natural History Society
New York Land Institute

MICHAEL N. GENTILS

Senior Hydrogeologist: Groundwater Resources/Hydrogeology
Field Operations Manager

EXPERIENCE: **H2M/Holzmacher, McLendon & Murrell, P.C.**
(1988 - Present)

Mr. Gentils has more than five years of experience in the fields of hydrogeology, solid and hazardous waste management, and assessment of groundwater. He serves as a senior hydrogeologist, focusing on groundwater contamination studies and remedial activities. His project experience includes numerous comprehensive groundwater contaminant investigations, conductance of remedial investigations/feasibility studies, underground storage tank removal programs and soil and groundwater remediation. Current projects include:

- Comprehensive hydrogeologic investigation and remediation program at a facility on the North Fork of Long Island. The investigation included the installation of 18 monitoring wells and a recovery and drawdown pumping test which determined the aquifer characteristics. An on-site aeration unit and an air stripping tower were installed to remove volatile organics. Ongoing remediation program, inclusive of providing compliance documentation to the New York State Department of Environmental Conservation, is currently being implemented.
- Hydrogeologic investigation concluding into industrial site remediation program in Newburgh, New York. Preparation of a work plan; health and safety plan; field supervision of excavation and soil removal inclusive of drumming of the waste; coordination of the disposal of the waste with approved landfills; verification sampling; report preparation and documentation of remediation efforts.
- Removal of leaking underground storage tanks containing gasoline and fuel oil; conductance of floating and dissolved product monitoring, delineation of plume, petitioning of closure of site.
- Conductance of on- and off-site hydrogeologic investigation to delineate volatile organic plume, evaluation and remediation of on-site source areas of contamination, implementation of a soil venting system to treat contaminated unsaturated zone, closure of remedial activities with associated monitoring of groundwater conditions.

As field manager, Mr. Gentils' project experience includes: remedial investigation to delineate a groundwater contaminant plume at an inactive hazardous waste site in Binghamton, NY; closure investigation at numerous psychiatric facilities to determine the impact of long term storage of coal and ash; tidal hydraulic study in Jamaica Bay to quantify the efforts of leachate from a nearby landfill; and conducting of NYCRR Part 360 monitoring program at numerous municipal landfills in New York.

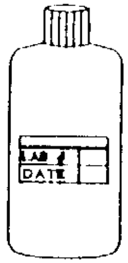
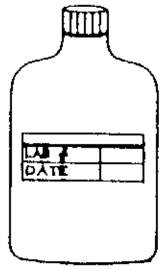
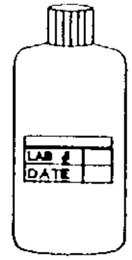
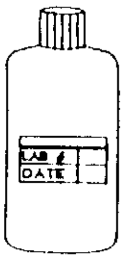
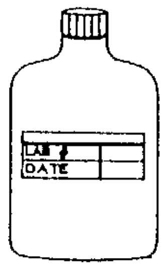
Prior to joining H2M, Mr. Gentils was a professional geologist/hydrogeologist for a firm engaged in USEPA enforcement-related investigations conducted at potential hazardous waste sites. He supervised field operations at these sites following USEPA protocols and developed Hazard Ranking System scores and site assessment reports for these sites.

EDUCATION:	B.S., Geology Adelphi University
SPECIALIZED COURSES:	Ground Water and Vadose Zone Hazardous Materials Handling and Sampling Monitoring and Sampling Technology Remediation Alternatives for Contaminated Sediments
CERTIFICATIONS:	Certified Health and Safety Operations at Hazardous Waste Sites (OSHA)
MEMBERSHIPS:	Association of Groundwater Scientists & Engineers Long Island Geologists National Water Well Association
HONORS/AWARDS:	H2M Group Employee Excellence Award, 1991

APPENDIX C

LABORATORY CLP BOTTLE, CHART AND DETECTION LIMITS

CLP BOTTLE CHART

Soil Analysis	TCL Metals	BN/AE/Pesticide/PCB	Wet Chemistry Inorganic
			
H 8 oz. amber glass jar	EP 1000 ml. round plastic with 1:1 HNO_3	C 1 Quart amber glass bottle Unpreserved	E Unpreserved 1 Quart round plastic
Cyanide	Volatile Organics	Hydrocarbons	
			
ECN NaOH Pellets 1 Quart round plastic	D Unpreserved 40 ml. vial with Septa Cap	CP 1 Quart Amber Glass Bottle with H_2SO_4	

Superfund Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL)

	Volatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
1.	Chloromethane	74-87-3	10	10	1200	(50)
2.	Bromomethane	74-83-9	10	10	1200	(50)
3.	Vinyl chloride	75-01-4	10	10	1200	(50)
4.	Chloroethane	75-00-3	10	10	1200	(50)
5.	Methylene chloride	75-09-2	10	10	1200	(50)
6.	Acetone	67-64-1	10	10	1200	(50)
7.	Carbon Disulfide	75-15-0	10	10	1200	(50)
8.	1,1-Dichloroethylene	75-35-4	10	10	1200	(50)
9.	1,1-Dichloroethane	75-35-3	10	10	1200	(50)
10.	1,2-Dichloroethylene(total)	540-59-0	10	10	1200	(50)
11.	Chloroform	67-66-3	10	10	1200	(50)
12.	1,2-Dichloroethane	107-06-2	10	10	1200	(50)
13.	2-Butanone	78-93-3	10	10	1200	(50)
14.	1,1,1-Trichloroethane	71-55-6	10	10	1200	(50)
15.	Carbon tetrachloride	56-23-5	10	10	1200	(50)
16.	Bromodichloromethane	75-27-4	10	10	1200	(50)
17.	1,2-Dichloropropane	78-87-5	10	10	1200	(50)
18.	cis-1,3-Dichloropropene	10061-01-5	10	10	1200	(50)
19.	Trichloroethene	79-01-6	10	10	1200	(50)
20.	Dibromochloromethane	124-48-1	10	10	1200	(50)
21.	1,1,2-Trichloroethane	79-00-5	10	10	1200	(50)
22.	Benzene	71-43-2	10	10	1200	(50)
23.	trans-1,3-Dichloropropene	10061-02-6	10	10	1200	(50)
24.	Bromoform	75-25-2	10	10	1200	(50)
25.	4-Methyl-2-pentanone	108-10-1	10	10	1200	(50)
26.	2-Hexanone	591-78-6	10	10	1200	(50)
27.	Tetrachloroethene	127-18-4	10	10	1200	(50)
28.	Toluene	108-88-3	10	10	1200	(50)
29.	1,1,2,2-Tetrachloroethane	79-34-5	10	10	1200	(50)
30.	Chlorobenzene	108-90-7	10	10	1200	(50)
31.	Ethyl Benzene	100-41-4	10	10	1200	(50)
32.	Styrene	100-42-5	10	10	1200	(50)
33.	Total Xylenes	1330-20-7	10	10	1200	(50)

* Quantitation Limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, as required by the protocol, will be higher.

Note that the CRQL values listed on the preceding page may not be those specified in previous Analytical Services Protocols. These values are set at concentrations in the sample equivalent to the concentration of the lowest calibration standard specified in Exhibit D, Part II. Lower quantitation limits may be achievable for water samples by employing the methods in Exhibit D, Part X for Low Concentration Water for Organic Analyses.

VOLATILES

Water Samples

A 5 mL volume of water is purged with an inert gas at ambient temperature. The volatiles are trapped on solid sorbents, and desorbed directly onto the GC/MS. For a sample with compound X at the CRQL of 10 µg/L:

(10 µg/L) (5 mL) (10^{-3} L/mL) = 50 x 10^{-3} ug = 50 ng on the GC column

Low Level Soil/Sediment Samples

A 5 g aliquot of the soil/sediment sample is added to a volume of water in a purge tube, heated, and purged with an inert gas. The volatiles are trapped, and later desorbed directly onto the GC/MS. For a sample with compound X at the CRQL of 10 µg/Kg:

(10 µg/Kg) (5 g) (10^{-3} Kg/g) = 50 x 10^{-3} µg = 50 ng on the GC column

Medium Level Soil/Sediment Samples

A 4 g aliquot of soil/sediment is extracted with 10 mL of methanol, and filtered through glass wool. Only 1 mL of the methanol extract is taken for screening and analysis. Based on the results of a GC/FID screen, an aliquot of the methanol extract is added to 5 mL of reagent water and purged at ambient temperature. The largest aliquot of extract considered in Exhibit D, Part III is 100 uL. For a sample with compound X at the CRQL of 1200 µg/Kg:

(1200 µg/Kg) (4 g) (10^{-3} Kg/g) = 4800 x 10^{-3} µg = 4800 ng

This material is contained in the 10 mL methanol extract:

(4800 ng) / 10 mL = 480 ng/mL

Of which, 100 µL are purged from the reagent water.

(480 ng/mL) (100 µL) (10^{-3} mL/µL) = 480 x 10^{-1} ng = 50 ng on the GC column

Note that for both low and medium soil/sediment samples, while it may affect the purging efficiency, the volume of reagent water used in the purging process does not affect the calculations.

Superfund Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL)*

	Semivolatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
34.	Phenol	108-95-2	10	330	10,000	(20)
35.	bis(2-Chloroethyl) ether	111-44-4	10	330	10,000	(20)
36.	2-Chlorophenol	95-57-8	10	330	10,000	(20)
37.	1,3-Dichlorobenzene	541-73-1	10	330	10,000	(20)
38.	1,4-Dichlorobenzene	106-46-7	10	330	10,000	(20)
39.	1,2-Dichlorobenzene	95-50-1	10	330	10,000	(20)
40.	2-Methylphenol	95-48-7	10	330	10,000	(20)
41.	2,2'-oxybis(1-Chloro-propane) #	108-60-1	10	330	10,000	(20)
42.	4-Methylphenol	106-44-5	10	330	10,000	(20)
43.	N-Nitroso-di-n-propylamine*	621-64-7	10	330	10,000	(20)
44.	Hexachloroethane	67-72-1	10	330	10,000	(20)
45.	Nitrobenzene	98-95-3	10	330	10,000	(20)
46.	Isophorone	78-59-1	10	330	10,000	(20)
47.	2-Nitrophenol	88-75-5	10	330	10,000	(20)
48.	2,4-Dimethylphenol	105-67-9	10	330	10,000	(20)
49.	bis(2-Chloroethoxy) methane	111-91-1	10	330	10,000	(20)
50.	2,4-Dichlorophenol	120-83-2	10	330	10,000	(20)
51.	1,2,4-Trichlorobenzene	120-82-1	10	330	10,000	(20)
52.	Naphthalene	91-20-3	10	330	10,000	(20)
53.	4-Chloroaniline	106-47-8	10	330	10,000	(20)
54.	Hexachlorobutadiene	87-68-3	10	330	10,000	(20)
55.	4-Chloro-3-methylphenol	59-50-7	10	330	10,000	(20)
56.	2-Methylnaphthalene	91-57-6	10	330	10,000	(20)
57.	Hexachlorocyclopentadiene	77-47-4	10	330	10,000	(20)
58.	2,4,6-Trichlorophenol	88-06-2	10	330	10,000	(20)
59.	2,4,5-Trichlorophenol	95-95-4	25	800	25,000	(50)
60.	2-Chloronaphthalene	91-58-7	10	330	10,000	(20)
61.	2-Nitroaniline	88-74-4	25	800	25,000	(50)
62.	Dimethyl phthalate	131-11-3	10	330	10,000	(20)
63.	Acenaphthylene	208-96-8	10	330	10,000	(20)
64.	2,6-Dinitrotoluene	606-20-2	10	330	10,000	(20)
65.	3-Nitroaniline	99-09-2	25	800	25,000	(50)
66.	Acenaphthene	83-32-9	10	330	10,000	(20)

\# Previously known by the name bis(2-Chloroisopropyl) ether

Superfund Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL)

	Semivolatiles	CAS Number	Quantitation Limits* Water µg/L	Low Soil µg/Kg	Med Soil µg/Kg	On Column (ng)
67.	2,4-Dinitrophenol	51-28-5	25	800	25,000	(50)
68.	4-Nitrophenol	100-02-7	25	800	25,000	(50)
69.	Dibenzofuran	132-64-9	10	330	10,000	(20)
70.	2,4-Dinitrotoluene	121-14-2	10	330	10,000	(20)
71.	Diethylphthalate	84-66-2	10	330	10,000	(20)
72.	4-Chlorophenyl phenyl ether	7005-72-3	10	330	10,000	(20)
73.	Fluorene	86-73-7	10	330	10,000	(20)
74.	4-Nitroaniline	100-01-6	25	800	25,000	(50)
75.	4,6-Dinitro-2-methylphenol	534-52-1	25	800	25,000	(50)
76.	N-nitrosodiphenylamine	86-30-6	10	330	10,000	(20)
77.	4-Bromophenyl phenyl ether	101-55-3	10	330	10,000	(20)
78.	Hexachlorobenzene	118-74-1	10	330	10,000	(20)
79.	Pentachlorophenol	87-86-5	25	800	25,000	(50)
80.	Phenanthrene	85-01-8	10	330	10,000	(20)
81.	Anthracene	120-12-7	10	330	10,000	(20)
82	Carbazole	86-74-8	10	330	10,000	(20)
83.	Di-n-butyl phthalate	84-74-2	10	330	10,000	(20)
84.	Fluoranthene	206-44-0	10	330	10,000	(20)
85.	Pyrene	129-00-0	10	330	10,000	(20)
86.	Butyl benzyl phthalate	85-68-7	10	330	10,000	(20)
87.	3,3'-Dichlorobenzidine	91-94-1	10	330	10,000	(20)
88.	Benz(a)anthracene	56-55-3	10	330	10,000	(20)
89.	Chrysene	218-01-9	10	330	10,000	(20)
90.	bis(2-Ethylhexyl)phthalate	117-81-7	10	330	10,000	(20)
91.	Di-n-octyl phthalate	117-84-0	10	330	10,000	(20)
92.	Benzo(b)fluoranthene	205-99-2	10	330	10,000	(20)
93.	Benzo(k)fluoranthene	207-08-9	10	330	10,000	(20)
94.	Benzo(a)pyrene	50-32-8	10	330	10,000	(20)
95.	Indeno(1,2,3-cd)pyrene	193-39-5	10	330	10,000	(20)
96.	Dibenz(a,h)anthracene	53-70-3	10	330	10,000	(20)
97.	Benzo(g,h,i)perylene	191-24-2	10	330	10,000	(20)

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the Laboratory for soil/sediment, calculated on dry weight basis as required by the Protocol, will be higher.

SEMIVOLATILES

Water Samples

A 1 L volume of water is extracted in a continuous liquid-liquid extractor with methylene chloride at a pH of approximately 2. This extract is reduced in volume to 1.0 mL, and a 2 µL volume is injected onto the GC/MS for analysis. For a sample with compound X at the CRQL of 10 µg/L:

(10 µg/L) (1 L) = 10 µg in the original extract

When the extract is concentrated, this .material is contained in the 1 mL concentrated extract, of which 2 µL are injected into the instrument:

(10 µg/mL) (2 µL) (10^{-3} mL/µL) = 20 x 10^{-3} µg = 20 ng on the GC column

Low Soil Samples

A 30 g soil sample is extracted three times with methylene chloride/acetone at ambient pH, by sonication or Soxhlet. The extract is reduced in volume to 1.0 mL, and a 2 µL volume is injected onto the GC/MS for analysis. For a sample with compound X at the CRQL of 330 µg/Kg:

(330 µg/Kg) (30 g) (10^{-3} Kg/g) = 9900 x 10^{-3} µg = 9.9 µg

When the sample extract is to be subjected to Gel Permeation Chromatography (required) to remove high molecular weight interferences, the volume of the extract is initially reduced to 10 mL. This 10 mL is put through the GPC column, and only 5 mL are collected off the GPC. That 5 mL volume is reduced to 0.5 mL prior to analysis. Therefore:

(9.9 µg/10 mL) (5 mL) = 4.95 µg

This material is contained in the 0.5 mL extract, of which 2 µL are injected into the instrument:

(4.95 µg/0.5 mL) (2 µL) (10^{-3} mL/µL) = (1.98 x 10^{-2} µg) 20 ng on the GC column

Medium Soil Samples

A 1 g soil sample is extracted once with 10 mL of methylene chloride/acetone, which is filtered through glass wool to remove particles of soil. The filtered extract is then subjected to GPC clean up, and only 5 mL of extract are collected after GPC. This extract is reduced in volume to 0.5 mL, of which 2 µL are injected onto the GC/MS. For a sample with compound X at the CRQL of 10,000 µg/Kg:

(10,000 µg/Kg) (1 g) (10^{-3} Kg/g) = 10 µg

(continued)

Semivolatiles, Medium Soil, continued -

This material is contained in the 10 mL extract, of which only 5 mL are collected after GPC:

(10 μg) (5 mL/10 mL) = 5 ug

The volume of this extract is reduced to 0.5 mL, of which 2 μL are injected into the instrument:

(5 μg/0.5 mL) (2 μL) (10^{-3} mL/μL) = 20 x 10^{-3} ug = 20 ng on the GC column

Eight semivolatile compounds are calibrated using only a four point initial calibration, with the lowest standard at 50 ng. Therefore, the CRQL values for these eight compounds are 2.5 times higher for all matrices and levels.

Superfund Target Compound List (TCL) and Contract Required Quantitation Limits (CRQL)*

	Pesticides/Aroclors	CAS Number	Quantitation Limits* Water µg/L	Soil µg/Kg	On Column (ng)
98.	alpha-BHC	319-84-6	0.05	1.7	5
99.	beta-BHC	319-85-7	0.05	1.7	5
100.	delta-BHC	319-86-8	0.05	1.7	5
101.	gamma-BHC (Lindane)	58-89-9	0.05	1.7	5
102.	Heptachlor	76-44-8	0.05	1.7	5
103.	Aldrin	309-00-2	0.05	1.7	5
104.	Heptachlor epoxide	1024-57-3	0.05	1.7	5
105.	Endosulfan I	959-98-8	0.05	1.7	5
106.	Dieldrin	60-57-1	0.10	3.3	10
107.	4,4'-DDE	72-55-9	0.10	3.3	10
108.	Endrin	72-20-8	0.10	3.3	10
109.	Endosulfan II	33213-65-9	0.10	3.3	10
110.	4,4'-DDD	72-54-8	0.10	3.3	10
111.	Endosulfan sulfate	1031-07-8	0.10	3.3	10
112.	4,4'-DDT	50-29-3	0.10	3.3	10
113.	Methoxychlor	72-43-5	0.50	17.0	50
114.	Endrin ketone	53494-70-5	0.10	3.3	10
115.	Endrin aldehyde	7421-36-3	0.10	3.3	10
116.	alpha-Chlordane	5103-71-9	0.05	1.7	5
117.	gamma-Chlordane	5103-74-2	0.05	1.7	5
118.	Toxaphene	8001-35-2	5.0	170.0	500
119.	AROCLOR-1016	12674-11-2	1.0	33.0	100
120.	AROCLOR-1221	11104-28-2	1.0	67.0	200
121.	AROCLOR-1232	11141-16-5	1.0	33.0	100
122.	AROCLOR-1242	53469-21-9	1.0	33.0	100
123.	AROCLOR-1248	12672-29-6	1.0	33.0	100
124.	AROCLOR-1254	11097-69-1	1.0	33.0	100
125.	AROCLOR-1260	11096-82-5	1.0	33.0	100

* Quantitation Limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the Laboratory for soil/sediment, calculate on dry weight basis, as required by the Protocol, will be higher.

Water Samples

A 1 L volume of water is extracted three times with methylene chloride or by a continuous liquid-liquid extractor. This extract is reduced in volume to approximately 3 - 5 mL, and diluted up to 10.0 mL with clean solvent. When Gel Permeation Chromatography is performed, only 5 of the 10 mL of extract are collected after GPC.

Regardless of whether GPC is performed, either 1.0 or 2.0 mL of the 10.0 mL of the original extracts are taken through the remaining clean up steps (Florisil and sulfur removal). The volume taken through Florisil cleanup and the final volume of the extract after the clean up steps depends on the requirements of the autosampler. If the autosampler can handle 1.0 mL final extract volumes, this is the volume taken through Florisil and the final volume. If the autosampler cannot reliably handle 1.0 mL volumes, the volume is 2.0 mL. When using an autosampler, the injection volume may be 1.0 or 2.0 μL. Manual injections must use a 2.0 μL injection volume.

For a sample with compound X at the CRQL of 0.05 μg/L and an autosampler requiring a 1.0 mL volume:

(0.05 μg/L) (1 L) = 0.05 μg in the original extract

This material is contained in the 10.0 mL of extract:

(0.05 μg)/ (10.0 mL) = 0.005 μg/mL

Of which, only 1.0 mL is carried through the remaining clean up steps. For a final extract volume of 1.0 mL and a 1 μL injection volume:

(0.005 μg/L) (1 μL) (10^{-3} mL/μL) = 5 x 10^{-6} μg = 5 pg on the GC column

Soil Samples

There is no differentiation between the preparation of low and medium soil samples in this method for the analysis of pesticides/Aroclors. A 30 g soil sample is extracted three times with methylene chloride/acetone by sonication or Soxhlet extraction. The extract is reduced in volume to 10.0 mL and subjected to Gel Permeation Chromatography. After GPC, only 5.0 mL of extract are collected. However, as with the water sample described above, either 1.0 or 2.0 mL of that extract are subjected to the other clean up steps, so no loss of sensitivity results from the use of GPC. From this point on, the soil sample extract is handled in the same fashion as the extract of a water sample. For a sample with compound X at the CRQL of 1.7 μg/Kg:

(1.7 μg/Kg) (30 g) (10^{-3} Kg/g) = 51 x 10^{-3} μg = 51 ng in the original extract

This material is contained in the 10.0 mL of extract:

(51 ng)/10 mL = 5.1 ng/mL
(continued)

of which, only 1.0 or 2.0 mL are carried through the remaining cleanup steps For a final extract volume of 1.0 mL and a 1 µL injection volume:

$(5.1 \text{ ng/mL})(1\ \mu\text{L})(10^{-3} \text{ mL}/\mu\text{L}) = 5.1 \times 10^{-3} \text{ ng} = 5 \text{ pg}$ on the GC column.

For either water or soil samples, if the autosampler used requires a 2.0 mL final volume, the concentration in the 10.0 mL of extract above remains the same.

Using a 2 µL injection volume, twice the total number of picograms are injected onto the GC column. However, because the injection volume must be the same for samples and standards, twice as much material is injected onto the column during calibration, and thus the amount of compound X injected from the sample extract is equivalent to the amount of compound X injected from the calibration standard, regardless of injection volume.

If a single injection is used for two GC columns attached to a single injection part, it may be necessary to use an injection volume greater than 2 µL.

SECTION II

SUPERFUND-CLP INORGANICS

Superfund Target Compound List (TCL) and Contract Required Quantitation Limit

Parameter	Contract Required Quantitation Level (µg/L)
1. Aluminum	200
2. Antimony	60
3. Arsenic	10
4. Barium	200
5. Beryllium	5
6. Cadmium	5
7. Calcium	5000
8. Chromium	10
9. Cobalt	50
10. Copper	25
11. Iron	100
12. Lead	3
13. Magnesium	5000
14. Manganese	15
15. Mercury	0.2
16. Nickel	40
17. Potassium	5000
18. Selenium	5
19. Silver	10
20. Sodium	5000
21. Thallium	10
22. Vanadium	50
23. Zinc	20
24. Cyanide	10

1: Any analytical method specified in Exhibit D, CLP-Inorganics may be utilized as long as the documented instrument or method detection limits meet the Contract Required Quantitation Level (CRQL) requirements. Higher quantitation levels may only be used in the following circumstance:

If the sample concentration exceeds five times the quantitation limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the Contract Required Quantitation Limit. This is illustrated in the example below:

For lead:
Method in use = ICP
Instrument Detection Limit (IDL) = 40
Sample concentration = 220
Contract Required Quantitation Level (CRQL) = 3

The value of 220 may be reported even though instrument detection limit is greater than Contract Required Quantitation Limit. The instrument or method detection limit must be documented as described in Exhibit E.

2: These CRQLs are the instrument detection limits obtained in pure water that must be met using the procedure in Exhibit E. The quantitation limits for samples may be considerably higher depending on the sample matrix.

H2M GEOLOGIC LOG JOB NO.____________

WELL DATA: Hole Diam:_____ TD:______ Screen Setting:_______ Slot:________
Casing Diam:____ Length:_____ Well Status:____________________

Borehole Location:________________
Contractor:____________________
Driller:_______________________
Elevation:_____ Ref Point:_______

Completion Depth: ____________
Date Started: _______ Finished: _______
Weather: ______________________
Logged by: __________ Checked by: _____

Type of Rig: Truck ___ Trailer Mounted ___ Tripod ___ Other ____
Drilling Method: _______________ Bit type: ________
Sampler Hammer Weight: _______ (lbs).
Average Hammer Fall (inches): ______________

Depth to Groundwater: ____ Date: ________ Time: ____ Aquifer:____________

Sample Depth	Sampl No.	Blows 6"	Hnu Res	Recov (in)	Sample Description	Lithology

SIGNATURE: DATE:

GROUNDWATER SAMPLING RECORD SHEET

SITE:	DATE:	TIME:
JOB#:	SAMPLERS:	
WEATHER:		
SAMPLE LOCATION:	MEASURING PT:	
DEPTH TO WATER:	WELL DEPTH:	
STATIC WATER LEVEL:	STATIC VOLUME:	
MIN. VOLUME TO BE REMOVED:		
EVACUATION TECHNIQUE:	SUBM. PUMP ☐	CENT. PUMP ☐
	BLADDER PUMP ☐	BAILER ☐
DEPTH TO PUMP INTAKE:	RECOVERY RATE:	
FLOW RATE (gpm):		
TIME PUMPED:		
TOTAL VOLUME PURGED:		
SAMPLE CHARACTERISTICS:		
FIELD PARAMETERS:		
TEMP: °C	CONDUCTIVITY: us	
pH:	Eh: mv	
HEX. CHROME: ppm	TURBIDITY: NTU	
REMARKS:		
	SIGNATURE:	

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS
MELVILLE, N.Y. RIVERHEAD, N.Y. FAIRFIELD, N.J.

H2M LABS, INC.

Environmental and Industrial Analytical Laboratory
575 Broad Hollow Road, Melville, N.Y. 11747-5076
(516) 694-3040
FAX: 516-694-4122

PROJ. NO.	PROJECT NAME					TOTAL NO. OF CONTAINERS										REMARKS
SAMPLERS: (Signature)																
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION											

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks	

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ANALYTICAL SERVICES PROTOCOL

SEPTEMBER 1989

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VOLUME 1

ANALYTICAL SERVICES PROTOCOL

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H2M GROUP

APPENDIX D

HEALTH AND SAFETY PLAN (HASP)

REMEDIAL INVESTIGATION HEALTH & SAFETY PLAN

FOR

BOWE SYSTEM AND MACHINE (BÖWE SYSTEC, INC.)

200 FRANK ROAD

HICKSVILLE, NEW YORK

SEPTEMBER 1992

H2M GROUP

REMEDIAL INVESTIGATION HEALTH AND SAFETY PLAN FOR BOWE SYSTEM AND MACHINE (BÖWE SYSTEC, INC.) 200 FRANK ROAD

HICKSVILLE, NEW YORK

SEPTEMBER 1992

H2M GROUP

REMEDIAL INVESTIGATION
HEALTH AND SAFETY PLAN
FOR
BOWE SYSTEM AND MACHINE
(BÖWE SYSTEC, INC.)
200 FRANK ROAD

HICKSVILLE, NEW YORK

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REMEDIAL INVESTIGATION
HEALTH AND SAFETY PLAN
FOR
BOWE SYSTEM AND MACHINE
(BOWE SYSTEC, INC.)

September 1992

1.0 - PURPOSE

The purpose of this Health and Safety Plan (HASP) is to establish a protocol for protecting H2M field personnel from incidents that may arise while performing field activities during the remedial investigation or other activities (i.e., IRM) to be conducted at the Bowe System and Machine (Bowe Systec) facility, located at 200 Frank Road in Hicksville, New York. This plan has been prepared in accordance with the United States Environmental Protection Agency (USEPA) document, "Emergency and Remedial Response Division's "Standard Operating Safety Guides", November 1984. This plan establishes personnel protection standards, mandatory operations procedures, and provides contingencies for situations that may arise while field work is being conducted at the site. All H2M field personnel will be required to abide by these procedures. Personnel responding to environmental episodes involving chemical substances may encounter conditions that are unsafe or potentially unsafe. In addition to the potential risks associated with the physical, chemical, biological and toxicological properties of the material(s) which may be encountered, other types of hazards (e.g., electricity, water, temperature, heavy equipment, falling objects, loss of balance, tripping, etc.) can have an adverse effect on the health and safety of personnel. It is important that personnel protective equipment and safety requirements be appropriate to protect against potential and/or known hazards. Protective equipment will be selected based on the type(s), concentration(s), and routes of personnel exposure from substances at a site. In situations where the type of materials and possibilities of contact are unknown or the potential hazards are not clearly identifiable, a more subjective determination will be made of the personnel protective equipment required for initial safety.

Adherence to this HASP will minimize the possibility that personnel at the site or the surrounding community will be injured or exposed to site-related contaminants during remedial investigation activities.

2.0 SITE CONDITIONS

A remedial investigation will be conducted at the property to determine the need for remediation. The property has been classified as a Class 2 Inactive Hazardous Waste Site by the New York State Department of Environmental Conservation (NYSDEC) due to past releases of volatile organic compounds at the site. The remedial investigation will consist of the drilling of soil borings and monitoring wells as well as the testing of drywells and septic system. Drilling and sampling procedures can subject field personnel to come into contact with identified contaminants. The routes of potential exposure include inhalation, and adsorption. At the work site, the most probable route of exposure, if any, is via the inhalation of volatile organic contaminants, from contaminated soils or sludges (see Appendix A for Hazardous Substances Data Sheets).

3.0 PERSONNEL SAFETY

Personnel involved in field operations must often make complex decisions regarding safety. To make these decisions correctly requires more than elementary knowledge. For example, selecting the most effective personnel protective equipment requires not only expertise in the technical areas of respirators, protective clothing, air monitoring, physical stress, etc., but also experience and professional judgment. Only competent, qualified personnel will perform field operations and have the technical judgment to evaluate a particular incident and determine the appropriate safety requirements. These individuals, through a combination of professional education, on-the-job experience, specialized training and continual study, have the expertise to make sound decisions. All subcontractors will be required to provide a HASP for this project. Subcontractors may wish to adopt H2M's HASP and may do so upon completion of the site worker health and safety statement form (Appendix B).

3.1 Education and Training

All personnel involved in field work will be trained to carry out their designated field operations. Training will be provided in the use of all equipment, including respiratory protective apparatus and protective clothing; safety practices and procedures; general safety requirements; first aid; and hazardous recognition and evaluation. Each individual involved with the field work must provide documentation of training, as per 29 CFR 1910.120(E)(2).

3.2 - Health and Safety Manager

The Health and Safety Manager shall be responsible for overall implementation and coordination of the Health and Safety Program for H2M field personnel at the site. Responsibilities include providing adequate manpower, materials, equipment, and time needed to safely accomplish the tasks under the RI. The Health and Safety Manager is also responsible for taking appropriate corrective actions when unsafe acts or practices arise.

3.3 - Site Safety Officer

A designated individual will perform the function of the H2M Site Safety Officer. As a minimum, this individual will be responsible for:

1. Conducting an initial site safety meeting for H2M field personnel.

2. Assuring that all personnel protective equipment is available and properly utilized by all H2M field personnel at the site.

3. Assuring that all H2M personnel are familiar with standard operating safety procedures and additional instructions contained in the Health and Safety Plan.

4. Assuring that all H2M personnel are aware of the hazards associated with the field operations.

5. Inspecting the site for hazards before field operations.

6. Determining personal protection levels including clothing and equipment for H2M personnel and periodic inspection of protective clothing and equipment.

7. Monitoring of site conditions prior to initiation of field activities, and at various intervals during on-going operations as deemed necessary for any changes in site hazard conditions. (Monitoring parameters include, but are not limited to, volatile organic contaminant levels in the atmosphere, chemical hazard information and weather conditions).

8. Executing decontamination procedures.

9. Monitoring the work parties for signs of stress such as cold exposure, heat stress or fatigue.

10. Prepare reports pertaining to incidents resulting in physical injuries or exposure to hazardous materials.

4.0 - LEVELS OF PROTECTION

Anyone entering a hazardous waste site must be protected against potential hazards. The purpose of the personal protection clothing and equipment is to minimize exposure to hazards while working on site. Careful selection and use of adequate personal protective equipment (PPE) should protect the respiratory system, skin, eyes, face, hands, feet, head, body and hearing.

The appropriate level of protection is determined prior to the initial entry on site based on available information and preliminary monitoring of the site. Subsequent information may warrant changes in the original level selected. Appropriate equipment to protect personnel against exposure to known or anticipated chemical hazards has been divided into four categories according to the degree of protection afforded.

4.1 - Level A Protection

The highest degree of protection is used in a Level A situation. It should be worn when the highest available level of respiratory, skin and eye protection is needed. This level of protection is placed in effect when there is no historic information about the site and it is assumed that the worst possible conditions exist. A confined space, and/or oxygen deficient atmosphere (less than 20.9% oxygen) also classifies as a Level A situation.

4.1.1 - Personal Protective Equipment

a. Pressure demand, self-contained breathing apparatus, approved by the Occupational Safety and Health Administration (OSHA) and National Institute of Occupational Safety and Health (NIOSH).

b. Fully encapsulating chemical-resistant suit.

c. Coveralls*.

d. Long cotton underwear*.

e. Gloves (outer), chemical-resistant.

f. Gloves (inner), chemical-resistant.

g. Boots, chemical-resistant, steel toe and shank. (Depending on suit construction, worn over or under suit boot.)

h. Hard hat* (under suit).

i. Disposable protective suit, gloves and boots* (worn over fully-encapsulating suit).

j. Two-way radio communications (intrinsically safe).

*Optional

4.1.2 - Criteria for Selection

Meeting any of the criteria listed below warrants use of Level A protection:

a. The chemical substance(s) has been identified and requires the highest level of protection for skin, eyes and the respiratory system based on:

   (1) Measured (or potential for) high concentrations-of atmospheric vapors, gases, or particulates; or

   (2) Site operations and work functions involving high potential for splash, immersion, or exposure to unexpected vapors, gases, or particulates.

b. Extremely hazardous substances are known or suspected to be present and skin contact is possible.

c. The potential exists for contact with substances that destroy skin.

d. Operations must be conducted in confined, poorly ventilated areas until the absence of hazards requiring Level A protection is demonstrated.

e. An oxygen deficient atmosphere where the oxygen level is less than 20.9 percent (%) by volume as measured with an oxygen meter.

f. Total atmospheric readings on photoionization detector indicate readings above 500 parts per million (ppm) of calibration gas equivalents (cge) of unidentified substances.

4.1.3 - Limiting Criteria

a. Fully encapsulating suit material must be compatible with the substances involved.

4.1.4 - Minimum Decontamination Procedure

Station 1: Segregated equipment drop.

Station 2: Outer garment, boots and gloves wash and rinse.

Station 3: Outer boot and glove removal.

Station 4: Tank change.

Station 5: Boots, gloves and outer garment removal.

Station 6: SCBA removal.

Station 7: Field wash.

4.2 - Level B Protection

4.2.1 - Personal Protective Equipment

a. Pressure-demand, self-contained breathing apparatus-(OSHA/NIOSH approved).

b. Chemical-resistant clothing (coveralls and long-sleeved jacket; coveralls, hooded, one or two-piece chemical-splash suit; disposable chemical-resistant coveralls).

c. Coveralls.*

d. Gloves (outer), chemical-resistant.

e. Gloves (inner), chemical-resistant.

f. Boots (outer), chemical-resistant, steel toe and shank.

g. Boots (outer), chemical resistant (disposable*).

h. Hard hat (face shield*).

i. Two-way radio communications (intrinsically safe).

*Optional

4.2.2 - Criteria for Selection

Meeting any one of these criteria warrants use of Level B protection:

a. The type(s) and atmospheric concentration(s) of toxic substances have been identified and require the highest level of respiratory protection, but a lower level of skin and eye protection than is required with Level A. These would be atmospheres:

(1) With concentrations immediately danger to life and health (IDLH); or

(2) Exceeding limits of protection afforded by a full-face, air-purifying mask; or

(3) Containing substances for which air-purifying canisters do not exist or have low removal efficiency; and/or

(4) Containing substances requiring air-supplied equipment, but substances and/ or concentrations do not represent a serious skin hazard.

b. The atmosphere contains less than 20.9 percent oxygen.

c. Site operations make it highly unlikely that the small, unprotected area of the head or neck will be contacted by splashes of extremely hazardous substances.

d. Total atmospheric concentrations in the breathing zone of unidentified vapors or gases range from 50 ppm to 500 ppm (calibration gas equivalence units) on monitoring instruments, and vapors are not suspected of containing high levels of chemicals toxic to skin.

4.2.3 - Limiting Criteria

a. Use only when the vapor or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through skin contact.

b. Use only when it is highly unlikely that the work being done will generate high concentrations of vapors, gases, or particulates or splashes of material that will affect exposed skin.

4.2.4 - Minimum Decontamination Procedures

Station 1: Equipment drop.

Station 2: Outer garment, boots and gloves wash and rinse.

Station 3: Outer boot and glove removal.

Station 4: Tank change.

Station 5: Boot, gloves and outer glove removal.

Station 6: SCBA removal.

Station 7: Field wash.

4.3 - Level C Protection

4.3.1 - Personal Protective Equipment

a. Full-face, air purifying, canister-equipped respirator (Mine Safety and Health Administration (MSHA) and National Institute of Occupational Safety and Health (NIOSH) approved).

b. Chemical-resistant clothing (coveralls; hooded, two-piece chemical splash suits; chemical-resistant hood and apron; disposable chemical-resistant coveralls).

c. Coveralls.*

d. Gloves (outer), chemical-resistant.

e. Gloves (inner), chemical-resistant.

f. Boots (outer), chemical-resistant, steel toe and shank.*

g. Boots (outer), chemical-resistant (disposable*).

h. Hard hat (face shield*).

i. Escape mask*.

j. Two-way radio communications (intrinsically safe).

*Optional

4.3.2 - Criteria for Selection

Meeting all of these criteria permits use of Level C Protection:

a. Measured air concentrations of identified substances will be reduced by the respirator to, at or below the substance's exposure limit, and the concentration is within the service limit of the canister.

b. Atmospheric contaminant concentrations do not exceed IDLH levels.

c. Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect the small area of skin left unprotected by chemical-resistant clothing.

d. Job functions have been determined not to require self-contained breathing apparatus.

e. Total vapor readings register between 5 ppm (cge) and 50 ppm (cge) above background on instruments.

f. Air will be monitored periodically.

g. Cartridges are available and are approved by NIOSH and MSHA for the specific chemical(s) encountered.

4.3.3 - Limiting Criteria

a. Atmospheric concentration of chemicals must not exceed IDLH levels.

b. The atmosphere must contain at least 20.9 percent oxygen.

c. Must have sufficient information available regarding specific compounds, and their concentrations, likely to be encountered.

4.3.4 - Minimum Decontamination Procedures

Station 1: Equipment drop.

Station 2: Outer boot and glove removal.

Station 3: Canister or mask change.

Station 4: Boots, gloves and outer garment removal.

Station 5: Face piece removal.

Station 6: Field wash.

4.4 - Level D Protection

Level D protection has been selected for H2M personnel for this project. Should conditions change, re-evaluation of personnel protection will be conducted.

4.4.1 - Personal Protective Equipment

a. Coveralls.

b. Gloves*.

c. Boots/shoes, leather or chemical-resistant, steel toe and shank.

d. Boots (outer), chemical/resistant (disposable)*.

e. Safety glasses or chemical splash goggles*.

f. Hard hat (face shield*).

g. Escape mask*.

*Optional

4.4.2 - Criteria for Selection

Meeting any of these criteria allows use of Level D protection:

a. No hazardous air pollutants have been measured.

b. Work functions preclude splashes, immersion, or potential for unexpected inhalation of any chemicals.

c. Extensive information on suspected hazards/risks are known.

4.4.3 Limiting Criteria

a. The atmosphere must contain at least 20.9 percent oxygen.

4.4.4 Minimum Decontamination Procedure

Station 1: Equipment drop.

Station 2: Hand and face wash.

4.5 - Duration of Work Period

The anticipated duration of the work period will be established prior to daily activities. Work will only be performed during daylight hours. Other factors that limit work period length include:

a. Air supply consumption (SCBA assisted work);

b. Suit/ensemble, air purifying chemical cart-ridge, permeation and penetration by chemical contaminants; and

c. Ambient temperature and weather conditions.

5.0 DETERMINATION OF THE SITE-SPECIAL LEVEL OF HAZARD

Based upon information obatined from past groundwater and soil sampling results, and the examination of the hazardous substance data sheets (Appendix A) for the contaminants alleged or reported at the Frank Road property, it has been determined that the appropriate level of protection for the site is Level D, the minimal level of protection.

Categories of personnel protection required depend on the degree of hazard and probability of exposure by a route entry into the body. For this site, the most probable potential route entry is via inhalation of gases and of airborne particulates released from soils and/or standing liquids. Other potential routes of exposure include ingestion of contaminated particulates resulting from handling of contaminated soils, however, given the site conditions, these routes of exposure pose less of a concern. The site-specific chemical contaminants of concern are volatile organic compounds, specifically tetrachloroethylene and associated breakdown products.

The determination of Level D protection is based on the fact that field work will be performed in open, well-ventilated areas and that the potential for accidents and injuries due to obstructions caused by and/or magnified by the use of level A, B, or C protection (i.e., slip/trip hazards) is greater than the potential for problems associated with exposure from contaminants using level D protection. Level C protection, with the appropriate organic vapor cartridges, can be implemented if air quality monitoring indicates that airborne organic compounds may pose a health threat.

A PID or FID will be used to monitor air quality throughout the RI during the course of field work. Additional air monitoring may be necessary if off-site work is required (see the protocol outlined in the Community Air Monitoring Plan attached as Appendix C). If necessary based upon field PID readings, the work zone will be evacuated and consideration will be given of upgrading the level of protection. An upgrade to the appropriate level of protection for field personnel will be required before re-entering the work zone if hazardous conditions persist.

In addition to potential chemical hazards, there also exists potentially greater physical hazards associated with the field operations. Due to the nature of the field operations, heavy equipment including drill rigs will be used. Therefore, all personnel should always be aware of truck movements and drilling operations. All work must be performed in strict accordance with OSHA regulations pertaining. In addition, hard hats must be worn at all times.

6.0 DESIGNATED WORK ZONES

Work zones will be determined prior to the commencement of a specific work activity. An area large enough to encompass the activity will be delienated as the work zone. Only qualified field personnel involved in the field activity with the proper personal protective equipment will be allowed into the designated work zones. Within the work zone ambient air quality will be periodically monitored using an PID or FID to determine any changes from background air quality. If subsequent measurements suggest a significant change in air quality, the work area will be immediately evacuated. An upgrade to the appropriate level of protection for field personnel will be required before re-entering the work zone. All off-site zones will be clearly marked and roped or fenced off to ensure that the public is kept at a safe distance from the drilling activities that cause physical injury or that potentially could release contaminants into the air.

7.0 DECONTAMINATION STATIONS

The decontamination station will be a fixed location to be used for the cleaning of all heavy equipment, vehicles, tools and supplies used in the field activities as well as for personnel decontamination for the duration of the on-site field operations.

All drilling equipment (rigs, augers, etc.) will be steam cleaned between each soil boring and well installation. Decontamination of the drilling equipment will be conducted at the location of the installed boring/well, prior to moving to the next drilling location.

8.0 SITE ACCESS CONTROL

Vehicular access to the site location is readily attainable with prior notice. The drill rig and all field equipment will be secured on-site.

9.0 - PERSONAL HYGIENE

The following personal hygiene rules must be followed while performing work at the site:

1. Eating, drinking, chewing gum or tobacco, smoking, or any other practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work area.

2. Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking, or any other activities.

3. Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.

4. No excessive facial hair (i.e., beards), which interferes with a satisfactory fit of the mask-to-face seal, is allowed on personnel required to wear respiratory protective equipment.

5. Contact with contaminated or suspected contaminated surfaces will be avoided. Whenever possible, walking through puddles, mud and other discolored surfaces; kneeling on ground; leaning, sitting, or placing equipment on drums, containers, vehicles, or the ground will be avoided.

6. Medicine and alcohol can increase the effects from exposure to toxic chemicals. Prescribed drugs will not be taken by personnel on site where the potential for absorption, inhalation, or ingestion of toxic substances exists unless specifically approved by a qualified physician. Alcoholic beverage intake will be prohibited during all on-site field operations.

10.0 CONTINGENCY PLAN

This sub-section shall serve as the RI contingency plan. It has been developed to identify precautionary measures, possible emergency conditions, and emergency procedures. The plan shall be implemented by the Site Safety Officer.

10.1 - Emergency Medical Care and Treatment

This section addresses emergency medical care and treatment of field personnel, resulting from possible exposures to toxic substances and injuries due to accidents. The following items will be included in emergency care provisions:

a. Name, address and telephone number of the nearest medical treatment facility will be conspicuously posted. Directions for locating the facility, plus the travel time, will be readily available (see Appendix B).

b. Names and telephone numbers of ambulance service, police and fire departments, and procedures for obtaining these services will be conspicuously posted (Appendix B).

c. Procedure for prompt notification of the H2M Site Safety Manager.

d. Emergency eyewash fountains and first aid equipment will be readily available on site and located in an area known to all personnel.

e. Specific procedure for handling personnel with excessive exposure to chemicals or contaminated soil.

f. Readily available fire extinguisher (ABC) dry chemical.

10.2 - Off-Site Emergency Medical Care

The Site Safety Officer shall pre-arrange for access to emergency medical care services at a convenient and readily accessible medical facility and establish emergency routes. The Site Safety Officer shall establish emergency communications with emergency response services.

10.3 - Personnel Accidents

Bodily injuries which occur as a result of an accident during the operation at the site will be handled in the following manner:

a. First aid equipment will be available on site for minor injuries. If the injuries are not considered minor, proceed to the next step.

b. The local first aid squad rescue unit, a paramedic unit, the local hospital and the Site Safety Officer shall be notified of the nature of the emergency.

c. The injured employee shall be transported by the local emergency vehicle to the local hospital.

d. A written report shall be prepared by the Site Safety Officer detailing the events and actions taken during the emergency within 24 hours of the accident.

10.4 - Personnel Exposure

In the event that any personnel is splashed or otherwise excessively contaminated by chemicals, the following procedure will be undertaken:

a. Disposable clothing contaminated with observable amounts of chemical residue is to be removed and replaced immediately.

b. In the event of direct skin contact in Level D, the affected area is to be washed immediately with soap and water.

c. The Site Safety Officer or other individuals who hold a current first aid certificate will determine the immediate course of action to be undertaken. This may involve using the first aid kit and/or eyewash or call for ng decreases natural body ventilation. One or more of the following will help reduce heat stress:

10.4.1 - Weather

Adverse weather conditions is an important consideration in planning and conducting site operations. Hot or cold weather can cause physical discomfort, loss of efficiency, and personal injury. Of particular importance is heat stress resulting when protective clothing decreases natural body ventilation. One or more of the following will help reduce heat stress:

a. Provide plenty of liquids. To replace body fluids (water and electrolytes) lost because of sweating, use a 0.1 percent salt water solution, more heavily salted foods or commercial mixes. The commercial mixes may be preferable for those employees on a low sodium diet.

b. Provide cooling devices to aid natural body ventilation. These devices, however, add weight, and their use should be balanced against worker efficiency. Long cotton underwear help absorb moisture and protect the skin from direct contact with heat absorbing protective clothing. It should be the minimum undergarment worn.

c. Install mobile showers and/or hose down facilities to reduce body temperature and cool protective clothing.

d. In extremely hot weather, conduct non-emergency response operations in the early morning or evening.

e. Ensure that adequate shelter is available to protect personnel against heat, cold, rain, snow, etc.

f. In hot weather, rotate shifts of workers wearing impervious clothing.

10.4.2 - Heat Stress

If field operations are conducted in the warm summer months, heat related fatigue will be closely monitored. Monitoring of personnel wearing impervious clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. Frequency of monitoring should increase as the ambient temperature increases or as slow recovery rates are indicated. When temperatures exceeds 85 degrees Fahrenheit, workers should be monitored for heat stress after every work period. The following screening mechanism will be used to monitor for heat stress:

> Heart rate (HR) will be periodically measured by the radial pulse for 30 second during a resting period. The HR should not exceed 110 beats per minute. If the HR is higher, the next work period should be shortened by 33 percent. If the pulse rate is 100 beats per minute at the beginning of the next rest period, the following work cycle should be shortened by 33 percent.

Heat-related illnesses range from heat fatigue to heat stroke, the most serious. Heat stroke requires prompt treatment to prevent irreversible damage or death. Protective clothing may have to be cut off. Less serious forms of heat stress require prompt attention or they may lead to a heat stroke. Unless the victim is obviously contaminated, decontamination should be omitted or minimized and treatment begun immediately.

Heat-related problems can be categorized into:

<u>Heat Rash</u>: Caused by continuous exposure to hot and humid air and aggravated by chafing clothes. Decreases ability to tolerate heat as well as being a nuisance.

<u>Heat Cramps</u> Caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen.

<u>Heat Exhaustion</u> Caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.

<u>Heat Stroke</u>: The most severe form of heat stress. The body must be cooled immediately to prevent severe injury and/or death. Signs and symptoms are: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Some of the symptoms of heat stress are: hot dry skin, fever, nausea, cramps, red or spotted skin, confusion, lightheadedness, delirium, rapid pulse, convulsions and unconsciousness.

For workers suffering from heat stroke, the following actions should be taken:

1. Remove the victim to a cool area
2. Loosen clothing
3. Thoroughly soak the victim in cool water or apply cold compresses
4. Make sure someone has called for medical assistance.

10.4.3 - Cold Stress

If field operations are conducted in the cold winter months, cold stress will be monitored. Two factors influence the development of a cold injury: ambient temperature and the velocity of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. For instance, 10 deg.F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at -18 deg,..

As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus, the body cools suddenly when chemical-protective equipment is removed if the clothing underneath is perspiration soaked.

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of damage. Frostbite of the extremities can be categorized into:

Frost Nip or Incipient Frostbite. Characterized by suddenly blanching or whitening of skin.

Superficial Frostbite. Skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.

Deep Frostbite. Tissues are cold, pale and solid; extremely serious injury.

Hypothermia. Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperatures. Its symptoms are usually exhibited in five stages: (1) shivering; (2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body to less than 95 | F; (3) unconsciousness, glassy stare, slow pulse and slow respiratory rate; (4) freezing of the extremities; and finally, (5) death.

10.5 - Fire

The telephone number to the local fire department will be posted along with other emergency numbers conspicuously on-site at all times.

In the event of a fire occurring at the site, the following actions will be undertaken by the Site Safety Officer and the designated fire control personnel:

a. Evacuate all unnecessary personnel from the area of the fire and site, if necessary.

b. Contact the local fire and police departments informing them of the fire and any injuries if they have occurred.

c. Contact the local hospital of the possibility of fire victims.

d. Contact the Site Safety Officer and the H2M Site Manager.

11.0 - SUMMARY

The Health and Safety Plan establishes practices and procedures to be followed so that the welfare and safety of workers is protected. Adherence to this HASP will minimize the possibility that personnel at the site or the surrounding community will be injured or exposed to site-related contaminants during remedial investigation activities.
It is important that personal equipment and safety requirements be appropriate to protect against the potential or known hazards at a site. Protective equipment will be based upon the type(s), concentration(s), and routes of personal exposure from substances at the site, as well as the potential for hazards due to heavy equipment use, vision impairment, weather, etc.. All site operation planning incorporates an analysis of the hazards involved and procedures for preventing or minimizing the risk to personnel. The following summarizes the rules which must be obeyed:

a. The Health and Safety Plan will be made available to all H2M personnel doing field work on site. All personnel must sign this plan, indicating they have read and understood its terms.

b. All H2M personnel will be familiar with standard operating safety procedures and additional instructions contained in the Health and Safety Plan.

c. All H2M personnel going on site will be adequately trained and thoroughly briefed on anticipated hazards, equipment to be worn, safety practices to be followed, emergency procedures and communications.

d. Any required respiratory protective devices and clothing will be worn by all personnel going into work areas.

e. Prior to commencement of work activities, notification to local police, fire and potential rescue personnel will be made.

H2M GROUP

APPENDIX A

HAZARDOUS SUBSTANCE DATA SHEETS

HAZARDOUS SUBSTANCE DATA SHEET

Name of Substance: Tetrachloroethene

List the references used:

a. EPA-1985 c. Niosh

b. d. Allied Fisher

Physical/Chemical Property - Source:

	a.	b.	c.	d.
State			Colorless Liquid w/chloroform odor	Colorless Liquid w/chloroform like odor
SG/Dens.	1.63			1.6
BP	121°C		250°F	250°F (121°C)
MP	-22.7°C		- 8°F	-8°F (-22°C)
VP	14mm Hg@20°C		14mm	15mm Hg @ 20°C
V.Dens.				5.8
FP			Not Combustible	Nonflammable
LEL				
UEL				
Autoig.				
Odor Thres.				
Solub.	150-200mg/l	H_2O @ 20°C	0.015%	0.04% in water Soluble in alcohol & benzene
Other			MW = 166 IP:9.32ev	Odor threshold 50 ppm

Tetrachloroethane

I. Hazardous Characteristics - Indicate degree of hazard

Toxicity:

Osha (air)

670 mg/m^3 TWA

1,340 mg/m^3 ceiling level

2,010 mg/m^3 for 5 min every 3 hr. peak level.

Niosh: (air)

335 mg/m^3 TWA

670 mg/m^3 15 min. ceiling level.

ACGIH: 50 ppm TWA

200 ppm STEL

Flammability:

Negligible fire hazard under normal conditions

May react with some metals to produce explosion hazard.

Corrosiveness:

Reactivity: Incompatibilities:

Lithium shavings - forms explosive mixture

Barium shavings-forms explosive mixture

Aluminum powder - explosive reaction on heating

Dinitrogen tetroxide - forms explosive compounds

Metals (finely dispersed)-explosive reaction

Sodium Hydroxide-possible explosive reaction

Beryllium powder-flash or spark on heavy impact

Excess Hydrogen-in presence of reduced nickel catalyst produces total decomposition to hydrogen chloride and carbon.

Nitric Acid (conc.) violent reaction.

Other Information:

Decomposes in UV-light, above 150°C or in fire to toxic phosgene, corrosive hydrogenchloride and flammable carbon monoxide.

Effect of weather (rain, temperature):

Is there sufficient data for evaluation?

HAZARDOUS SUBSTANCE DATA SHEET

Name of Substance: Trichloroethylene (TCE)

List the references used:

a. Sax

b. Merck

c. Niosh Guide

d.

Physical/Chemical Property - Source:

	a.	b	c	d
State	Colorless liquid	Nonflam. mobile liq.	colorless liquid	
SG/Dens.	1.45560	1.4649		
BP	87.1°C	87.5°C	188°F	
MP	-73°C	-84.8°	-123°F	
VP	100mm @ 32°C		58mm	
V. Dens.	4.53	4.53	—	
FP	none		none	
LEL	12.5%		11%	
UEL	90%		41%	
Autoig.	770°F		—	
Odor Thr.			—	
Solub.			0.1%	
Other				

I. Hazardous Characteristics - Indicate degree of hazard

Toxicity:

TLV - TWA 50 ppm
STEL 200 ppm
IDLH Carcinogen
Inhalation of high concentrations causes narcosis and anesthesia. Prolonged inhalation at moderate concentration may cause headache and drowsiness.

Target Organs: Resp. system, heart, liver, kidneys, CNS, skin

Flammability:

low flammability when exposed to heat or flame.
May burn mildly if applied in high concentrations to a strong flame.

Corrosiveness:

Reactivity:

Reactive with barium, lithium, sodium, magnesium, titanium, aluminum when acidic.
Incompatible with strong caustics

Other Information:

II. Personnel Protection

Respirator selection:

Any detectable concentration - SCBA with full face piece pressure demand or other positive pressure or supplied air-purifying respirator

Toxicity:

Suspected Carcinogen

Warning properties:

Cartridge efficiencies:

Other recommendations:

Protective clothing for repeated prolonged contact
Wash immediately when skin becomes wet

HAZARDOUS SUBSTANCE DATA SHEET

Name of Substance: 1,2-Dichloroethylene

List the references used:

a. Niosh Guide
b.
c.
d.

Physical/Chemical Property - Source:

	a	b	c	d
State				
SG/Dens.				
BP	113 to 140 °F			
MP	56 to 115 °F			
VP				
V. Dens.				
FP	36 to 39 °F			
LEL	9.7%			
UEL	12.8%			
Autoig.				
Odor Thr.				
Solub.	0.35 to 0.63% in H_2O			
Other				

Mol. Wt. 97

1,2 Dichloroethylene

I. Hazardous Characteristics - Indicate degree of hazard

Toxicity:

Ihld: 4,000 ppm

Tlv: 200 ppm (790 mg/m^3)

Flammability:

Corrosiveness:

Reactivity:

Incompatible with strong oxidizers.

Other Information:

Effect of weather (rain, temperature):

Is there sufficient data for evaluation?

Colorless liquid with an ether-like, slightly acrid odor, like chloroform.
*Eye irritant.

Dichoroethylene

II. Personnel Protection

Respirator selection:

Toxicity:

Warning properties:

Cartridge efficiencies:

Other recommendations:

OSHA:

up to 1,000 ppm	-	Powered air-purifying resp. with organic vapor cartridges
	-	Chemical cartridge respirator with organic vapor cartridges
4,000 ppm	-	Supplied air respirator, continuous flow mode
	-	SCBA, full face piece
	-	Supplied air respirator with full face

Exposure through (ingestion, contact, inhalation)

- eye irritant, affects respiratory system, causes central nervous system depression.

H2M GROUP

APPENDIX B

SITE WORKER HEALTH AND SAFETY STATEMENT
AND
EMERGENCY INFORMATION

H2M GROUP

SITE WORKER
HEALTH AND SAFETY STATEMENT FORM

I have read the health and Safety Plan (HASP) for the Remedial Investigation at the Böwe Systec, Inc. Site and I have reviewed and understand the potential hazards and the precautions/contingencies of each potential hazard.

I agree to abide by the stipulations of this HASP and further agree to hold H2M Group harmless from, and indemnify against, any accidents which may occur as a result of activities in the Site regardless of whether or not there were covered in the HASP.

Name: ______________________________ Representing: ______________________________
Print

______________________________ Date: ______________________________
Sign

Name: ______________________________ Representing: ______________________________
Print

______________________________ Date: ______________________________
Sign

Name: ______________________________ Representing: ______________________________
Print

______________________________ Date: ______________________________
Sign

Name: ______________________________ Representing: ______________________________
Print

______________________________ Date: ______________________________
Sign

H2M GROUP

EMERGENCY TELEPHONE NUMBERS

HOSPITAL

Nassau County Medical Center
(516) 542-0123

POLICE DEPARTMENT
911

FIRE DEPARTMENT
931-0026 or 911

POISON CONTROL CENTER
542-2323

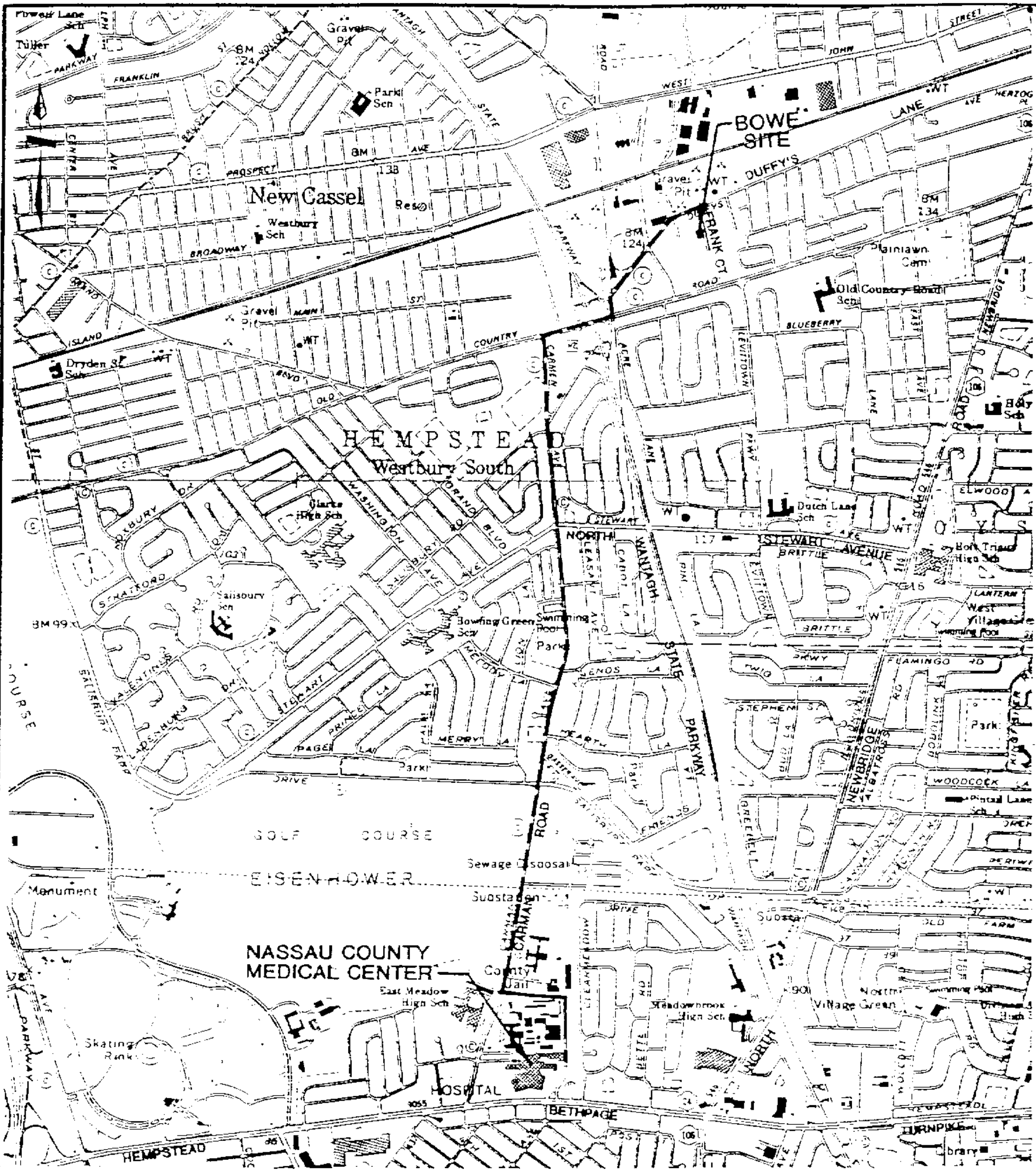
AMBULANCE
Call Local Police or Operator

H2M Group
(516) 756-8000

PROJECT MANAGER	Martin O. Klein, C.P.G. (Ext 480)
HEALTH & SAFETY OFFICER	Gary J. Miller, P.E. (Ext. 620)
SAMPLING OPERATION MANAGER	Michael N. Gentils (Ext. 412)

BÖWE SYSTEC, INC.
(516) 621-3374

CONTACT:	Richard Reilly



EMERGENCY ROUTE TO HOSPITAL

SCALE: 1" = 2000'

DECEMBER 12, 1991

BOWE-91-02 DEC 12 1991

H2M GROUP ENGINEERS · ARCHITECTS · PLANNERS · SCIENTISTS · SURVEYORS

MELVILLE, N.Y. TOTOWA, N.J.

H2M GROUP

APPENDIX C

COMMUNITY AIR MONITORING PLAN

Community Air Monitoring Plan

Real-time air monitoring for volatile compounds and particulate levels at the perimeter of the exclusion zone is necessary.

The plan must include the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the exclusion zone daily at 2 hour intervals. If total organic vapor levels exceed 5 ppm above background, drilling/excavation activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

- Particulates should be continuously monitored downwind of the exclusion zone with a portable particulate monitor that would have an alarm set at 150 $\mu g/m^3$. If downwind particulate levels, integrated over a period of 15 minutes, exceed 150 $\mu g/m^3$, than particulate levels upwind of the survey or work site would be measured. If the downwind particulate level is more than 100 $\mu g/m^3$ greater than the upwind particulate level, then drilling/excavation activities must be stopped and corrective action taken. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the Exclusion Zone, drilling/excavation activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, drilling/excavation activities can resume but more frequent intervals of monitoring, as directed by the Safety Officer, must be conducted. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the Exclusion Zone, drilling/excavation activities can resume provided:

- the organic vapor level 200 ft. downwind of the Exclusion Zone or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background, and

- more frequent intervals of monitoring, as directed by the Safety Officer, are conducted.

If the organic vapor level is above 25 ppm at the perimeter of the Exclusion Zone work activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the Survey Site or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the Exclusion Zone, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If either of the following criteria are exceeded in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be implemented:

- Organic vapor levels approaching 5 ppm above background for a period of more than 30 minutes.
- Organic vapor levels greater than 10 ppm above background for any time period.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.
2. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.
3. All Emergency contacts will go into effect as appropriate.

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