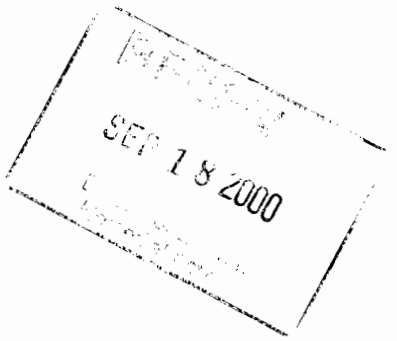
ANSON ENVIRONMENTAL LTD.

771 New York Avenue
Huntington, New York 11743
631-351-3555
Fax: 631-351-3615
www.AnsonLtd.com

Remedial Investigation/Feasibility Study Work Plan
Westbury Valet Dry Cleaners
Operable Unit 01-Soil and Groundwater On-Site

Westbury Valet Dry Cleaners
123 Post Avenue
Westbury, New York 11790



Site No. 1-30-088

Prepared for:
Tom Gibbons, Project Manager
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

Prepared by:
Anson Environmental Ltd.
771 New York Avenue
Huntington, New York 11743

Revised
August 30, 2000

"Your Environmental Partner"

Remedial Investigation/Feasibility Study Work Plan
Westbury Valet Dry Cleaners
Operable Unit 01- Soil and Groundwater On-Site
Table of Contents

SEP - 1 2000

Figures and Appendices

1.0 Introduction/Purpose of Remedial Investigation/Feasibility Study

This Remedial Investigation (RI/FS) for soil and groundwater sampling is being conducted by Westbury Valet Dry Cleaners (Westbury Cleaners), 123 Post Avenue, Westbury, Nassau County, New York with oversight by New York State Department of Environmental Conservation (NYSDEC). The implementation of this work plan is pursuant to an Order on Consent between Westbury Cleaners and the NYSDEC.

The Work Plan is for a RI/FS for Operable Unit 01, an on-site soil and groundwater. This work plan is divided into two phases:

Phase 1	Investigation near former floor drain and sanitary system locations
Phase 2	Installation of SVES and air sparging system for remediation of previously delineated soil and groundwater contamination

The objectives of this Work Plan are to determine the nature and extent of perchloroethene and its breakdown product contamination on-site as well as remediate soil and groundwater contamination on-site. The initial soil investigation will be concentrated in the areas previously identified near the floor drain and former sanitary system locations on east side of building.

2.0 Summary of Existing and Background Information

2.1 Site Location, Ownership and Access

The NYSDEC designated Inactive Hazardous Waste Disposal Site at Westbury Valet Dry Cleaners is located at 123 Post Avenue, Westbury, Nassau County, and New York. The site is approximately 0.2 acres in size. The designation on the New York State Registry of Inactive Hazardous Waste Disposal site listing is Site #1-30-088. Choe Realty LLC owns the property. The site and its proximate environs are shown on Figure 1.

2.2 Site Description

The property is rectangular in shape, 50 feet by 189 feet in size. There is a single story concrete block and masonry building on the site that is approximately 3,494 square feet in size. The building was built in 1949 and was renovated in 1954. It is built on a concrete slab and has no basement. It has been operated as a dry cleaner since the 1950s and is the only business in the building. It is connected to the municipal water and sewer systems.

The building is situated on the northern property boundary and is located twenty feet from the concrete wall/rail bed for the Long Island Rail Road on the south. A group of three commercial buildings are located to the north, including a chiropractor and a deli.

2.3 Background Information

2.3.1 Hydrogeology

The site is located near the southern perimeter of the Town of North Hempstead. The groundwater reservoir underlying the Town of North Hempstead is composed of unconsolidated local deposits of Holocene age, glacial deposits of Pleistocene Age, and coastal-plain deposits of continental and marine origin of the Late Cretaceous Age. The deposits consist of clay, silt, and bedrock. Weathered and crystalline bedrock of Low Paleozoic and/or Precambrian Age underlies the unconsolidated deposits and forms the virtually impermeable base of the groundwater reservoir.

From oldest (deepest) to youngest (shallowest) these sediments have been identified and divided into a series of hydrogeologic units: the Lloyd aquifer; the Raritan clay confining unit; the Magothy aquifer, and the Upper Glacial aquifer.

The Upper Glacial aquifer consists of late Pleistocene and Holocene age sand, gravel, silt, and clay deposits. The upper surface of the upper glacial deposits comprise present day land surface except in areas such as the Westbury site where they are overlain by recent Holocene deposits and/or fill materials. The water table at the site is found in this aquifer at a depth of approximately 35 feet below grade.

The southernmost part of the Town is underlain by highly permeable glacial outwash consisting of stratified sand and gravel and occasional thin clay beds. The deposits forming the Upper Glacial Aquifer range in thickness from 6 feet to more than 350 feet. The extreme variation in thickness results from the highly eroded surface upon which these materials were deposited and the irregularity of their upper surface that is the present land surface. The outwash deposits range in thickness from 14 feet to about 165 feet.

The Magothy Aquifer is the principal aquifer underlying the Town of North Hempstead. It consists mainly of lenticular bed of very fine to medium sand that are interbedded with beds of clay, sandy clay, silt and some sand and gravel. The aquifer reaches a maximum thickness in the southeast corner of the Town, where its thickness is about 530 feet.

2.3.2 Public Water Supply Wells

There are three public water supply wells that were identified in previous investigations as relate to the subject property. Wells numbered 101 and 7785 are located north of the subject site. Well 5654 is located downgradient and crossgradient of the site on Old Country Road west of Post Avenue. The following information is provided by USGS in conjunction with the NCDPW.

Well No.	Year Completed	Depth of well	Screen length	Aquifer
101 (well 6)	1970	341	61	Magothy
5654 (well 11)	1956	340	60	Magothy
7785 (well 7)	1965	404	70	Magothy

Water quality data have been secured from the Westbury Water District for the three wells covering quarterly sampling by H2M Labs for the last five years. Concentrations of individual volatile organic compounds have not exceeded the groundwater standards in the wells in question. This water quality data will be included in the reports. Figure 2 shows the locations of the three wells in relation to the subject site.

2.3.3 Previous Investigations

The following is a brief chronological summary of events that have occurred in connection with the site.

1949	Application for plumbing permit issued to John C. Leonardo
1957	Certificate of Occupancy issued for storage room as addition to dry cleaning business to Westbury Valet Co., Inc. John Leonardo, Vice President
1979-1980	Subject property connected to municipal sewer system

1987	Business purchased by Westbury Valet Dry Cleaners, Inc. (d/b/a Westbury Top Cleaners). Property purchased by Choe Realty Inc.
1996	Nassau County Department of Health (NCDH) identified floor drains for sampling and closure under USEPA UIC Class V Injection Well closure program. Anson Environmental Ltd. (AEL) sampled two floor drains. The sediment in the drains was determined to be contaminated with perchloroethene. AEL recommended delineation of the contamination.
1997	Apex Environmental conducted Phase I and II investigations of a downgradient parcel, located on the south side of the Long Island Rail Road tracks, at 117 Post Avenue. It was determined that perchloroethene and its breakdown products were present in the groundwater beneath this location. Apex Environmental determined the direction of groundwater to be southwesterly.
1998	The owner of the site was contacted again by the USEPA and NCDH to submit a plan and perform the UIC closure. AEL conducted further sampling of floor drain #2 in order to delineate the vertical extent of the contamination. In August, the two floor drains were cleaned out and endpoint samples collected. Based on these sample results, a work plan for further on-site investigation was submitted. In December 1998, the site was included in the NYS Registry of Inactive Hazardous Waste Sites.
1999	In March, three groundwater monitoring wells were installed on-site. The upgradient well, relocated to accommodate the denial of access by the property owner immediately adjacent to the north, was installed in the northeast corner of the site. Two groundwater monitoring wells were installed downgradient of the floor drain locations. The groundwater was sampled and it was confirmed that perchloroethene was present in all three wells at concentrations above the NYSDEC groundwater standards.

3.0 Scope of the On-Site Remedial Investigation and Interim Remedial Measures

3.1 Approach and Objectives

The initial objectives of the RI are to determine the nature, extent and sources of contamination that may be associated with perchloroethene (and its breakdown products) in the soils surrounding floor drain and former sanitary structures located on the eastern side in the front of the building. The installation of a soil vapor extraction system is recommended as an interim remedial measure for the site. On-site groundwater contamination delineation will be conducted as well.

3.2 Site Characterization

3.2.1 Field Investigations

The RI field investigations for the on-site work will include the following:

- Soil sampling
  - Headspace sampling
  - Discrete soil sample analysis by laboratory
- Groundwater sampling
  - Existing monitoring wells
  - Hydropunch for vertical delineation

3.2.2 Soil Sampling

The abandoned on-site sanitary system cesspool and leaching fields are finished below grade. Therefore, the structures must be located and uncovered prior to sampling. Soil borings will be installed using van-mounted Geoprobe equipment in the center of each structure. Additional samples will be collected near the three former sanitary pool locations. The samples will be collected in dedicated acetate liners at four-foot intervals from the depth of the bottom of the sanitary pools to the soil/water interface. The samples will be placed in containers and sealed for headspace screening in the field using a PID. Additional material from each sampling core will be placed into appropriate sampling containers for analysis by a laboratory for volatile organic compounds (EPA Method 8260) plus 10 Tentatively Identified Compounds (TICs). The specific field procedures are described in Section 7. The samples which exhibit the following characteristics will be submitted to the laboratory for analysis- the highest PID reading, the depth at which background concentration is achieved and the sample above the background sample.

Should contamination be identified using the PID at the full depth of the vadose zone, the sample immediately above the water table will be submitted for analysis. If there are no significant readings on the PID for three consecutive depths within one boring, the third (or deepest of the three) will be submitted for analysis. This will provide information as to the vertical extent of contamination and the quantity of material to be remediated.

Should contamination be identified within the structures of the former sanitary system, the sediment will be excavated, disposed of offsite and endpoint samples collected to confirm remediation.

3.2.3 Groundwater Sampling

In Phase 1, a round of sampling will be conducted of the three existing on-site groundwater monitoring wells, with depth to water measurements taken prior to sampling. The wells will be purged of three to five volumes of standing water using a Redi-Flo variable pump. The pump will be decontaminated between sampling locations for sample integrity. The purge water will be filtered through the existing on-site charcoal filter and discharged to the sewer, with the Nassau County Department of Public Works approval.

Vertical delineation of the on-site groundwater contamination will be achieved through the use of the Geoprobe technique. The Geoprobe will be driven to a depth of 80 feet and extracted with groundwater samples collected at 80 feet, 60 feet and 40 feet. These samples will be collected in three locations along the south side of the building. If more aggressive methods are required, the hydropunch method using hollow stem augers will be employed.

The samples will be collected, stored in coolers and transported to the laboratory for analysis for the presence of volatile organic compounds using Method 8260 plus 10 TICs. Trip and field blanks will be submitted as appropriate.

The detailed sampling procedures are outlined in Appendix 3, Section 5.

3.3 Land Survey

The surface elevations of the three monitoring wells have been determined by Welsh Engineering Associates, a NYS certified land survey and professional engineering firm. All elevations were measured within less than one tenth of a foot.

During this survey, the building, property lines and other major land features were surveyed with their locations identified on the survey. Please note that the building is constructed on the northern property line.

A drawing has been prepared using a scale of one-inch equals twenty feet. A copy of the survey is included in this report.

3.4 Laboratory Analysis

All soil and groundwater samples and quality control blanks collected will be kept in an ice-filled cooler and delivered to Upstate Laboratories, a New York State certified laboratory. Current certifications are included in the Quality Assurance/Quality Control Plan, Appendix 3.

Groundwater samples will be analyzed for volatile organic compounds. The soil samples from each boring location will be submitted for laboratory analysis for volatile organic compounds plus 10 TICs.

The information collected from the laboratory results and field screening will be used to determine the extent of any soil contamination on-site and the groundwater quality beneath the site.

3.5 Deliverables

The following reports will be prepared using the data gathered during the above described soil and groundwater sampling events.

3.5.1 Site History Report

The historical uses of the site will be described identifying building modifications, if any, and site changes. The operations on-site will be described. Previous environmental investigations will be summarized. The report on the current status of the facility and dry cleaning process operations will be included.

A survey of private wells and public water supply wells will be conducted with the Westbury Water District. The well survey will include historical water quality data for Wells # 101, 5654 and 7785. This data has been secured covering the period 1995-1999.

This report will be prepared as part of the final RI/FS report.

3.5.2 Remedial Investigation/Feasibility Study Report

The findings of the environmental investigation will be submitted within sixty (60) days of receipt of the validated laboratory data report. This report will include the equivalent of the Data Usability Summary Report (DUSR) that will be prepared by Environmental Standards, Inc. of Valley Forge, PA.

The Feasibility Study portion of the report will summarize the alternative technologies for remediation of soil and groundwater contaminated with volatile organic compounds.

3.6 On-Site Interim Remedial Measures

As soil contamination has been identified on the south side of the building and beneath the floor, an interim remedial measure of a soil vapor extraction and air sparging system will be designed and installed upon written concurrence from the NYSDEC. The system

design will be based upon the delineation of the vertical and horizontal extent of contamination.

3.6.1 Pilot Test and System Design

Prior to conducting the pilot test for the soil vapor extraction/air sparging system, a work plan will be submitted to the NYSDEC for approval. This plan will include the number, location and depth of the extraction, injection and observation wells as well as the data parameters for the test including length of test, equipment and schedule.

Prior to installation of the soil vapor extraction system, a pilot test will be performed to determine the radius of influence (ROI). An extraction well will be installed on the south side of the building with piezometers installed at specific distances from the extraction well.

Upon determination of the radius of influence, the number and location of the extraction wells will be identified. The configuration of extraction wells will be defined to ensure coverage of the horizontal and vertical delineation of the soil contamination. The blower size will be determined using the pilot test information, head loss equations and IDEX Environmental Blower Application Software.

In a likewise manner, prior to installation of the air sparging system, a pilot test will be performed to determine the radius of influence (ROI). An injection well will be installed on the south side of the building with piezometers installed at specific distances from that well.

Upon determination of the radius of influence, the number and location of the injection and extraction wells will be identified. The configuration of injection wells will be to define the horizontal and vertical delineation of the groundwater contamination on-site.

3.6.2 Soil Vapor Extraction/Air Sparging System

The soil vapor extraction/air sparging system will be installed to remediate the on-site soil and groundwater contamination as identified in the current and prior investigations. After the initial system startup pilot test, the type and quantity of exhaust treatment will be determined. If initial contaminant concentrations exceed Air Guide I levels, controls will be initiated to ensure that future such levels are at or below the Air Guide I criteria. Once influent concentrations reach de minimus levels, these controls will be removed. Whether or not the exhaust has to be treated, the exhaust stack will be installed up the side of the building, extending at least 6 feet above the building roofline.

After the installation and final testing of the SVE/AS system is completed, AEL will collect exhaust air samples on a monthly basis. The air samples will be delivered to a New York State certified laboratory for analysis for the presence of volatile organic compounds. An Operation and Maintenance Plan will be presented prior to full operation of the system.

The O & M Plan will include such topics as:
-System inspection
-Sample collection (effluent air)
-Reporting frequency

3.6.3 IRM Progress Reports

IRM/progress reports will be prepared monthly to demonstrate that the remediation system is operating in compliance with SCGs.

4.0 Project Management

4.1 Project Schedule and Key Milestones

Key milestones are identified in order to monitor work progress. Specific deadlines for completion of tasks and subtasks are established throughout the project schedule to ensure timely completion of work. The following list of milestones is proposed for this project:

Milestone	Description	Expected Date
1	Submission of Work Plan to NYSDEC	Draft-6/2000 Comments rec'd 7/15/00 2nd draft-8/2/00
2	Approval of Work Plan by NYSDEC	8/15/00
3	Implementation of on-site field investigation	8/30/00
4	Submission of pilot test work plan	9/15/00
5	Approval of pilot test work plan	9/22/00
6	Implementation of on-site IRM	9/30/00
7	Submission of RI/FS report to NYSDEC	11/30/00
8	Public Meeting-PRAP	2/28/01
9	ROD	3/30/01

4.2 Project Management, Organization and Key Technical Personnel

AEL will be the prime consultant responsible for the RI and the on-site IRM. Subcontractors will provide assistance in performing tasks identified in the work plan. The key AEL technical personnel will be:

Project Manager	John V. Soderberg, P.E.
Field Project Manager	Michael DeLuca
QA/QC Officer	Dean Anson II
Professional Engineer	John V. Soderberg, P.E.
Land Surveyor	William Welsh, P.E.,L.S.

Dean Anson II will act as the Quality Assurance Manager and will be responsible to ensure that the data collected is precise and valid. The QA Manager will make unannounced field visits to observe data collection procedures. The 8-hour Refresher training certificate will be included with the on-site HASP to demonstrate compliance with OSHA 29CFR1910.120.

The New York State licensed professional engineer on this project will be John V. Soderberg, P.E., License Number 49975.

The resumes of the key personnel are located in the Appendix.

5.0 Field Operations and Investigation Plan

5.1 Site Management Plan

5.1.1 Site Access and Security

Primary access to the property is via Post Avenue, Westbury. Access authorization for the NYSDEC will be granted following proper notification of AEL and Choe Realty, LLC.

5.1.2 Organization and Responsibilities

For the purpose of undertaking technical aspects of the Remedial Investigation, the following firms will assist in project implementation. Prior to commencing fieldwork, the qualifications of the subcontractors will be submitted to the NYSDEC for review and approval. These include:

Anson Environmental Ltd. – AEL will be the environmental consultants with prime responsibility for completion of the RI/FS, interim remedial measures and related reports.

Analytical Laboratory- Upstate Laboratories Inc., East Syracuse, New York (Laboratory ID # 10170)

Geoprobe Services – Zebra Environmental Corp., Lynbrook, New York (or other approved subcontractor)

Drilling Services – Miller Environmental Group, Calverton, New York (or other approved subcontractor)

5.1.3 Utility Mark out for Subsurface Investigation

After the locations for the proposed RI geoprobes and monitoring wells have been finalized, the necessary clearances for access, work, and utility mark outs will be obtained. Access and clearances to public property will be obtained by AEL. Access and clearances for private property will be obtained by the NYSDEC. Once the proposed sampling and well locations have been cleared for access, a utility mark out will be conducted.

Approximately two weeks before the commencement of off-site drilling activities, the proposed sampling and well locations will be marked on a site map. The utility companies will be provided with the proposed well locations and will be asked to provide mark outs within a 100-foot radius of the proposed locations. If no utilities are found, the locations will be marked as such. Before any sampling or drilling activities commence, the utility mark out will be field checked and, if any questions remain or planned sampling activities are close to utilities, a field meeting between the utility company and the AEL field geologist will be arranged to plan the required sampling activities accordingly.

5.2 Field Activity Plan

The following is a description of the field activities to be conducted at the Westbury Cleaners site. The NYSDEC may choose to collect split soil and/or groundwater samples at its own expense. Detailed descriptions of the sampling procedures are included in the Quality Assurance/Quality Control Plan in the Appendix 3.

5.2.1 Soil Sampling Plan

Soil sampling procedures are described above. During the sampling, the following information and steps will be accomplished.

1. Sample location will be noted in the field logbook and on the Location Sketch form.
2. Remove the laboratory cleaned sample bottle as provided by Upstate Laboratories. Using a waterproof pen, fill out the sample information record on the label and attach to the sample jar.
3. Drive the Geoprobe with the dedicated sampling tube to the desired depth.
4. Retrieve the soil probe, remove the sampling tube and field screen the sample with the PID for volatile organic compounds. Record measurement in logbook.

5. Remove soil from sampling tube using a decontaminated spoon or tongue depressor and place soil into an open sample bottle making certain that the bottle is tightly filled to the top. Tightly close the bottle cover and fill out the sample label.
6. Return sample bottle to cooler.
7. If reusable, decontaminate the sampling equipment.
8. All disposable personal protective equipment and disposal sampling equipment will be assumed to be non-hazardous and properly disposed of in normal garbage removed from the site.

5.2.2 Groundwater Sampling Plan

Groundwater sampling of the on-site and available off-site monitoring wells will be conducted. The basic protocol is described below.

1. Protective tarp will be placed around the groundwater monitoring well location.
2. The monitoring well will be opened and the depth to water measured.
3. The monitoring well will be purged of three to five volumes of standing water using a Redi-Flo variable pump or comparable submersible pump.
4. The groundwater samples will be collected using dedicated polyethylene bailers. The groundwater will be put into laboratory-cleaned 40-milliliter vials.
5. The labels on the vials will be completed and the vials will be placed in a cooler.
6. Collecting deionized water, which is poured through the decontaminated field tools, will be the field blank for each day of sampling.
7. A trip blank will be submitted with each cooler.

6.0 Citizens Participation Program

The New York State Department of Environmental Conservation, in coordination with Choe Realty, LLC and AEL, will have the prime responsibility for preparation and implementation of a community relations program for the site. Information will be provided to the public that may include written documents, drawings, charts, slides, and/or transparencies. Presentation of this material will be made available to the public at meetings to be held after the completion of the RI. This program will be conducted in compliance with 6 NYCRR Part 375, 375-1.5 Public Participation.

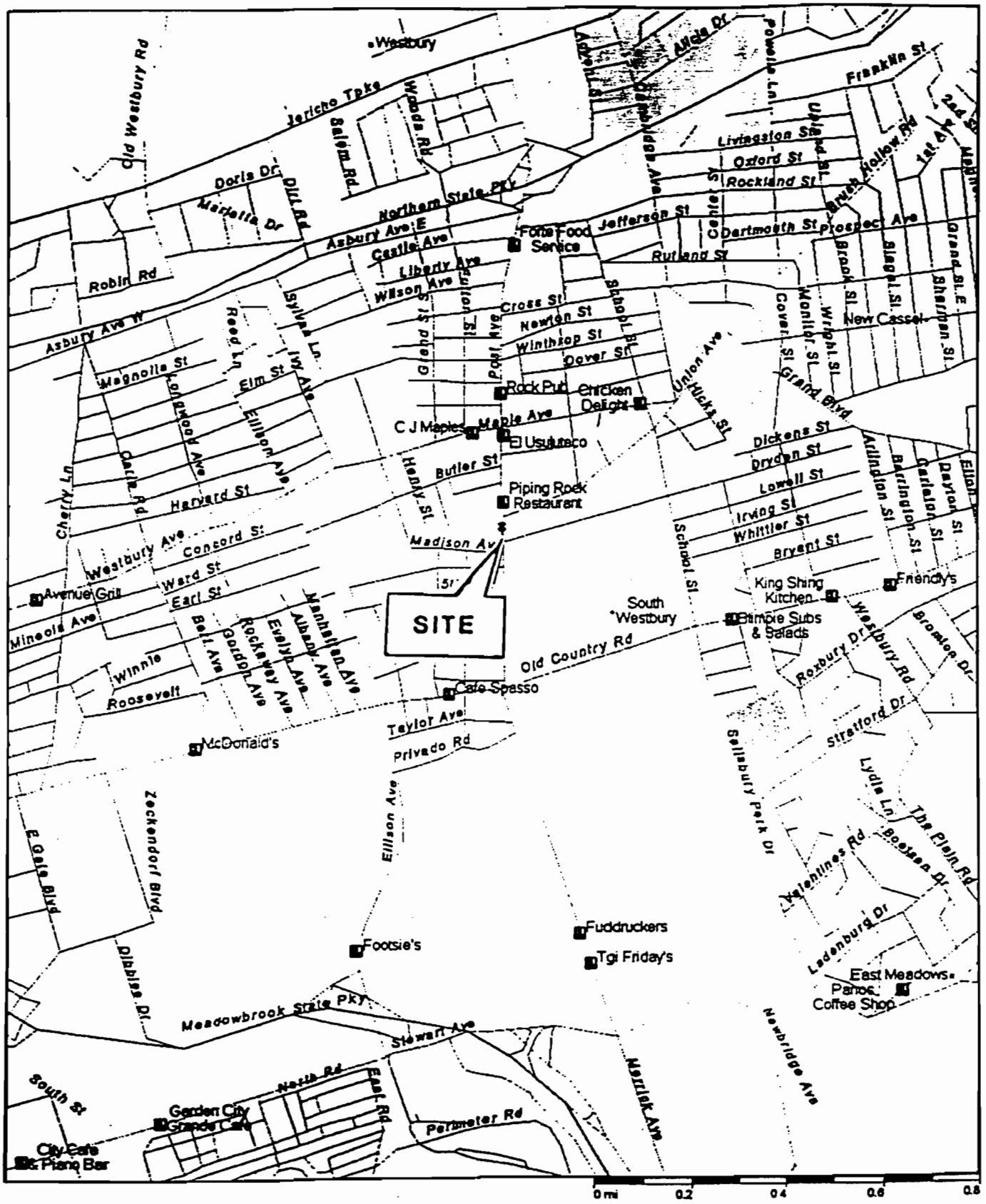
A detailed Citizens Participation Program is included in this work plan as Appendix 2.

7.0 Quality Assurance/Quality Control Plan

The Quality Assurance/Quality Control Plan is included in this work plan as Appendix 3.

8.0 Health and Safety Plan

The site health and safety plan is included in this work plan as Appendix 4.



StreetsPlus

Figure 1
Site Location

Westbury Cleaners
123 Post Avenue, Westbury, NY 11590

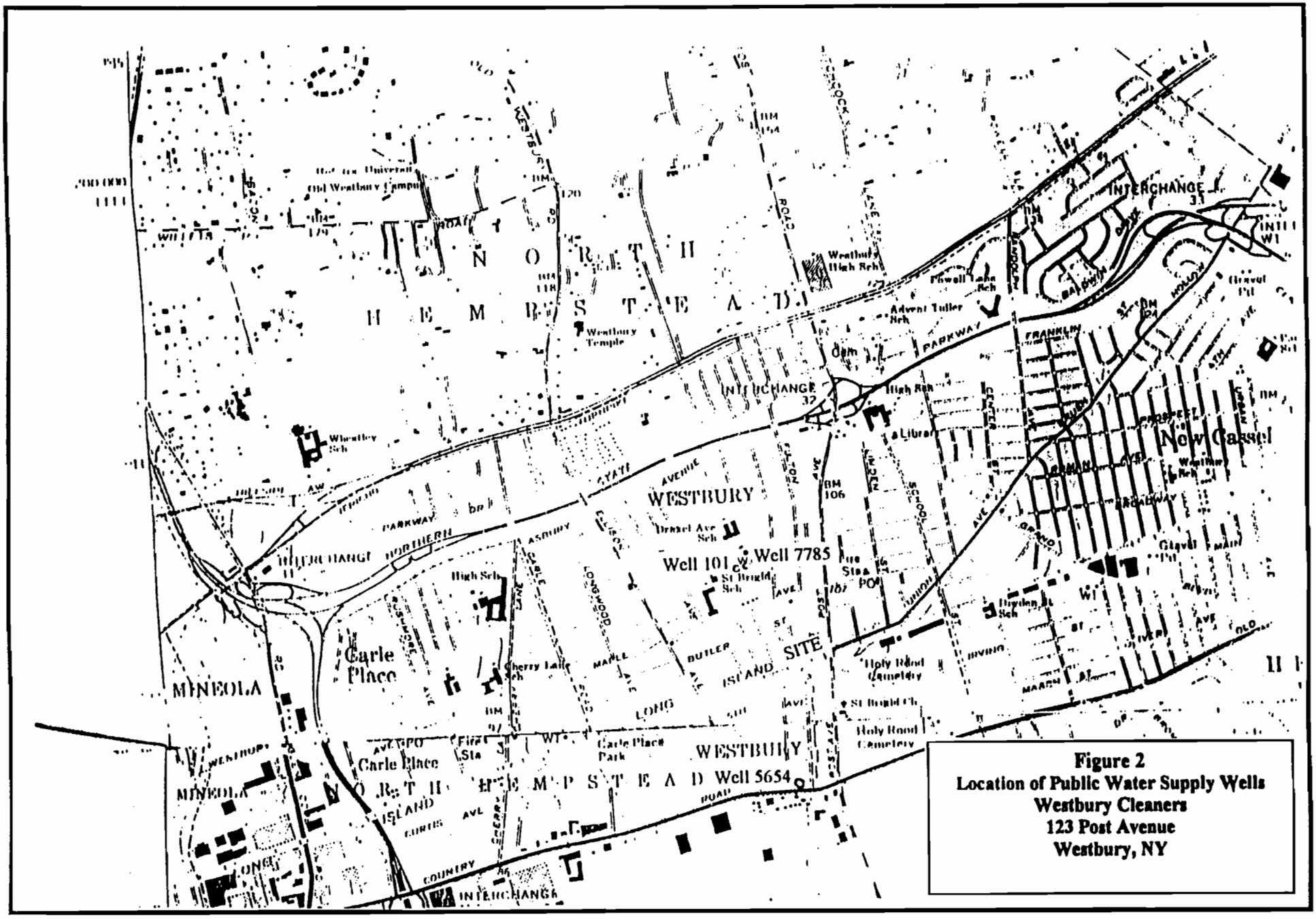


Figure 2
Location of Public Water Supply Wells
Westbury Cleaners
123 Post Avenue
Westbury, NY

APPENDIX 1

Resumes of Key Personnel

Dean Anson II
President and Supervising Scientist

Experience Summary:
Over 25 years of experience: President of Anson Environmental; Associate and Supervising Environmental Scientist at Storch Associates; Project Manager and Supervising Environmental Scientist at Gibbs & Hill, Inc. Directed and participated in RI/FS studies, site remediation, environmental impact statements, groundwater assessments, technical support for legal counsel, expert witness, negotiations with federal, state, and local regulatory agencies.

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

Key Projects:

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

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

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

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

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

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

Dean Anson II
President and Supervising Scientist (cont)

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

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

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

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

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

- Member of Suffolk County Bar Association Environmental Committee, and Long Island Association Environmental Committee, and Huntington Chamber of Commerce Environmental Committee

Anson Environmental has completed numerous projects assigning clients in complying with Federal, State, and County regulations regarding the handling, storage, and disposal of hazardous and non-hazardous materials. Our cost effective solutions are aimed at protecting the environment.

This often necessitates assessing groundwater quality and soil conditions to determine the extent of contamination and develop appropriate remediation plans.

CASE 1: In the Village of Lake Success, a single-walled fiberglass 4,000 gallon underground diesel storage tank ruptured.

Our role was:

- to direct removal of contaminated soil
- to install wells and monitor groundwater conditions
- to identify the extent of groundwater contamination
- to develop an engineering report identifying the reason for the tank failure
- to develop and implement a groundwater and soil remediation program.

CASE 2: A private school in Oyster Bay had underground gasoline and fuel oil tanks that leaked for a long time. There was contamination in the perched water table. Anson Environmental was responsible for:

- installation and periodic monitoring of groundwater monitoring wells
- potentiometric survey to define the extent of the perched water table

John V. Soderberg, P.E.
Project Manager

John Soderberg has served as Project Manager on numerous environmental projects over the past 30 years. He has managed investigations of air and groundwater contamination from petroleum and non-petroleum discharges. He has managed and participated in numerous remedial investigations and feasibility studies for inactive hazardous waste disposal sites in New York State. Mr. Soderberg is a New York State certified Professional Engineer and is licensed to practice law in New York State, as well as the United States District Court, Eastern and Southern Districts of New York.

Prior to joining Anson Environmental Ltd., Mr. Soderberg worked as an environmental engineer for the Suffolk County Department of Health Services. For four of the fifteen years at the Department, he was the Director of Environmental Enforcement Services.

Mr. Soderberg was a member of the environmental law team at Farrell Fritz for ten years.

Bayville Cleaners - Mr. Soderberg is the Project Manager for the groundwater investigation being performed at the Bayville Cleaners. Soil contamination was recently excavated.

Utility Manufacturing Company - Mr. Soderberg served as a Professional Engineer on the Utility Manufacturing Focused Remedial Investigation of the soils and groundwater onsite.

Tishcon Corporation RI/FS - Mr. Soderberg reviewed the RI/FS for the Inactive Hazardous Waste Disposal sites in the New Cassel Industrial Area.

Imperial Cleaners - Mr. Soderberg is the Professional Engineer responsible for designing the soil vapor extraction system and air sparging system to remediate the Imperial Cleaners site in Lake Success, New York.

John M. Tegins
Project Manager
Senior Environmental Engineer

Experience Summary:
Over 30 years experience: Project Manager and Environmental Engineer at Anson Environmental Ltd.; Project Manager, Engineering Manager, Group leader, Systems Engineer at AIL Systems Inc. Extensive experience in project management, prototype system design, development, field installation and testing.

Education
B.E.E Manhattan College, Riverdale, NY
Graduate certificate in Environmental Waste Management, SUNY - Stony Brook
Numerous graduate courses in systems engineering and computer design.
Certified in 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER).

Key Projects:

- Project Manager and engineer for the investigation and remediation of a 1,000 gallon leaking underground gasoline storage tank (LUST). The LUST, located on a federal government reservation, caused a building explosion. Directed the initial emergency cleanup of the LUST and the subsequent investigation to define the extent of the subsurface contamination plume. Designed a remediation system, including a stripping tower, for completing the cleanup of this spill site.

- Project Manager and engineer for a municipal garage site which contained a 1,000 gallon leaking underground gasoline storage tank. Directed the investigation to define the extent of the subsurface contamination plume. Designed a soil vapor extraction system (SVES) to cleanup the site. Managed the installation, testing, and operation of the SVES to remove contamination from the soil volume under the tank location. Interfaced with regulatory agencies and provided them with all the necessary documentation to petition for spill closure.

- Project Manager and on-site engineer during installation of deep soil borings to define the extent of solvent contamination at a large manufacturing facility. Designed and implemented the cleanup plan for the site. Coordinated site cleanup with regulatory agencies and subcontractors.

- Project Manager and on-site engineer to investigate and remediate a 6,000 gallon leaking underground gasoline storage tank located in New Jersey. Directed the installation of numerous soil borings at strategic locations to identify the extent of the fuel contamination. Interfaced with New Jersey regulatory agencies, researched local regulations, and provided information and cleanup recommendations to our client and his legal counsel.

- Project Manager to delist a large manufacturing location from the list of New York State Inactive Hazardous Waste Sites. On-site engineer during the installation of thirty soil borings and nine monitoring wells to support contamination plume definition. Conducted various investigations to determine the sources of the solvent contamination. Designed soil venting and bioremediation systems to cleanup the site.

John M. Tegins
Project Manager
Senior Environmental Engineer

- Managed and implemented the rapid cleanup of a heating oil spill at a large private residence. Coordinated the cleanup with NYSDEC and submitted necessary documentation to petition state for spill closure.

- Project Manager to cleanup the soil contamination caused by a 1,000 gallon leaking underground storage tank. Designed and installed an automatic product recovery system to collect spilled heating oil floating at the groundwater interface.

- Designed and installed a bioremediation system to complete the cleanup of the soil in the unsaturated zone above groundwater. Coordinated the cleanup plan with NYSDEC and submitted documentation to petition state for spill closure.

- Project Manager to delist an operating construction and demolition debris transfer station from the list of New York State Inactive Hazardous Waste Sites. Installed soil borings and monitoring wells at strategic locations to define solvent contamination sources and plume extent. Identified the facility operations which caused the contamination. Advised the station operator to modify his facility structure and transfer procedures. Cleanup was accomplished without the installation of any remediation system.

- Project Manager and on-site engineer during the installation of numerous groundwater monitoring wells and deep soil borings to define the extent of solvent contamination at a large manufacturing facility. Coordinated this investigation with local regulatory agencies and provided them with periodic reports and documentation.

- Project manager and on-site engineer during the installation of numerous soil borings and groundwater monitoring wells to define the extent of solvent and metals contamination at a large manufacturing facility, which is listed as a New York State Inactive Hazardous Waste Site. Provided documentation to support a petition to delist this site.

- Project Manager and on-site engineer to investigate the extent of contamination caused by 60 leaching chambers surrounding a large hospital complex. The investigation utilized the results of laboratory analyses of over 100 deep soil samples collected from 25 locations on the hospital property. Determined that the contamination plume required no immediate remediation and recommended a site maintenance and monitoring program.

- Project Manager and on-site engineer during the remediation of a 6,000 gallon fuel oil spill caused by an underground storage tank failure at a major bank facility. Cleanup of the spill simultaneously incorporated bioremediation and soil vapor extraction technologies. Prepared and submitted documentation to New York State which resulted in spill closure.

- Project Manager and on-site engineer during a focused remedial investigation and cleanup of a large industrial complex in Nassau County. Investigation required the laboratory analyses of soil samples collected from deep soil borings inside and adjacent to numerous drywells.

- Performed numerous Phase I and II Environmental Investigations for potential buyers of commercial and residential properties.

- Technical consultant on numerous company programs involving the installation a operation of groundwater and soil r systems.

Michael T. DeLuca
Environmental Scientist

Education:

B.S., Environmental Studies; University of California at Santa Barbara
OSHA Certification; 40-Hour Hazardous Waste Operations Emergency Response (HAZWOPER)
Certification; Asbestos Air Sampling Technician & Inspector
Certification; Respiratory Fitness Technician

Experience:

Enforcement Assistant; California Coastal Commission;
Respiratory Fit Technician; Safety and Environmental Solutions; 1998
Environmental Scientist; Anson Environmental Ltd.; 1999

Key Projects:

Numerit Project; Freeport, NY
Environmental Scientist
Installed and monitored progress of a Soil Vapor Extraction (SVE) system. Conducted groundwater and soil sampling analysis. Coordinated with New York State Department of Environmental Conservation (DEC) to remediate the site to state standards.

Kleiman Residence; Sands Point, NY
Project Manager
Conducted subsurface investigations of soil and groundwater. Determined groundwater flows and plume delineations. Recommended to install an outpost-monitoring well to mitigate contaminated soils. Monitored progress of the project and prepared monthly status reports in coordination with the New York State Department of Environmental Conservation (DEC). Environmental liaison between homeowner's insurance company and homeowner.

Avenue Z; Brooklyn, NY
Project Manager & Environmental Scientist
Installed Soil Vapor Extraction (SVE) and air sparging systems. Conducted subsurface investigations to monitor the progress of ongoing remediation.

Royce Cleaners; East Northport, NY

Project Manager

Installed Soil Vapor Extraction system (SVE) and conducted subsurface investigations of soil to monitor the progress of the SVE system. Prepared monthly status reports and reported findings to the Suffolk County Department of Health Services.

18 Andrews Drive; Massapequa, NY

Project Manager

Conducted subsurface investigations utilizing soil and groundwater sampling analysis and plume delineation. Provided cost estimates for subsurface remediation and completed work plans and remediation action plans. Installed Soil Vapor Extraction (SVE) system and removed contaminated soils. Monitored and prepared monthly status reports to the satisfaction of the New York State Department of Environmental Conservation (DEC). Environmental liaison between homeowner's insurance company and homeowner.

Citizens Participation Plan
Westbury Valet Dry Cleaners
Westbury, Nassau County
Site # 1-30-088

Table of Contents

1.0 Introduction to the Plan

The New York State Department of Environmental Conservation (NYSDEC) is committed to a citizen participation program as a part of its responsibilities for the inactive hazardous waste site remedial program. Citizen participation promotes public understanding of the Department's responsibilities, planning activities and remedial activities at inactive hazardous waste disposal sites. It provides an opportunity for the Department to learn from the public information that will enable it to develop a comprehensive remedial program protective of both public health and the environment.

2.0 Basic Site Information

The New York State Department of Environmental Conservation has classified Westbury Valet Dry Cleaners as a Class 2 Inactive Hazardous Waste Disposal Site with Site Identification #1-30-088.

2.1 Site Setting

The Westbury Valet Dry Cleaners site is located at 123 Post Avenue, Westbury, New York in a commercial district. The site is approximately 0.2 acres in size with one building located on the property. The balance of the property not covered by the footprint of the building is paved. The property is partially fenced. It is located immediately north of the Long Island Rail Road.

2.2 Site History

The concrete block and masonry building was built in 1949. Tax map records indicate that it was renovated in 1954. The facility has operated as a drycleaner since the 1950s. The ownership history is as follows:

1949 Application for plumbing permit issued to John Leonardo
1957 Certificate of Occupancy issued for storage room
1987 Business purchased by Westbury Valet Dry Cleaners (d/b/a Westbury Top Cleaners). Property purchased by Choe Realty Company.

2.3 Problems Identified at Site

The constituents of dry cleaning chemicals have been identified in the floor drains, surrounding soils and groundwater beneath the site. The former sanitary system locations will be investigated in the first phase of the associated Focused Remedial Investigation.

2.4 Map of Site

A map of the site is included in the appendix of the citizen participation plan.

3.0 Project Description

3.1 Overall Objectives of the Remedial Program

The objectives of the remedial program are described in the work plan associated with this document as follows:

(a) identification of sources of contamination,
(b) identification of appropriate remedial techniques, and
(c) implementation of said techniques.

4.0 Identification of Affected and/or Interested Public Contact List

This section of the citizen participation plan will include names, addresses and/or telephone numbers of individual and organizations. This contact list is used by the Department to inform and involve the interested/affected public. Interest in the site, stage of remediation and other factors guide how comprehensive the list becomes. It should be noted that as the investigation moves ahead, the interested/affected public is likely to change. The contact list and citizen participation strategy must be evaluated as the remedial program progresses through various stages. The Department will maintain the confidentiality of names and addresses where requested and appropriate.

4.1 Contact List

The following is a list of major categories of interested/affected public that will become the Department contact list:

4.1.1 Residents

a) residents adjacent to the site
b) owners of property adjacent to the site
c) owners of rights-of-way adjacent to the site

4.1.2 Local Officials, Committees and Boards

a) supervisor
b) town board members
c) town engineer/public works official
d) conservation advisory officials

4.1.3 County Officials, Boards and Organizations

a) Nassau County health department

4.1.4 Economic Interests

a) potentially responsible parties
b) water suppliers
c) real estate agencies
d) chambers of commerce

4.1.5 Civic/Environmental Organizations

a) local/regional citizens groups

b) Environmental and recreational groups
c) League of Women voters

4.1.6 Academic

a) School boards and officials

4.1.7 Local/Regional Media

a) newspapers (Newsday)
b) pennysaver
c) radio stations
d) television stations

4.1.8 State Officials and Organizations

a) State senators and members of the assembly
b) Department of Health
c) DEC staff

4.1.9 Federal Officials and Organizations

a) Members of the US Senate and House of Representatives

5.0 Identification of Department Contacts

This section identifies names, addresses and/or telephone numbers of the contacts within the NYSDEC.

DEC Project Manager
Tom Gibbons
Environmental Geologist 2
Remedial Section C, Bureau of Eastern Remedial Action
Division of Environmental Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010
(518) 457-7924

DEC Division of Environmental Enforcement
Alali Tamuno, Esq.
DEC Division of Environmental Enforcement
200 White Plains Road, 5th floor
Tarrytown, NY 10591-5805

DEC Regional Office
Walter Parish, PE
NYSDEC, Region 1
Building 40, SUNY
Stony Brook, NY 11790

(631) 444-0231

DEC Citizen Participation Specialist
Mark Lowery
NYSDEC, Region 1
Building 40, SUNY
Stony Brook, NY 11790
(631) 444-0350

DEC's toll-free number
1-800-342-9296

DOH's toll-free number
1-800-458-1158x27880 or 27530

DOH Contact
John Olm
New York State Department of Health
Bureau of Environmental Exposure Investigation
547 River Street, Room 300
Troy, NY 12180-2216
(518) 402-7880 or 1-800-458-1158x27880

Mark VanDeusen, Outreach Specialist
New York State Department of Health
547 River Street, Room 316
Troy, NY 12180-2216
(518) 402-7530 or 1-800-458-1158x27530

Nassau County Department of Health Contact
Michael Alarcon
Nassau County Department of Health
240 Old Country Road, 5th floor
Mineola, NY 11501
(516) 571-3314

6.0 Identification of Document Repository

This section indicates where documents related to the remedial activities at the Westbury Cleaners site would be available for review.

6.1 Location of Document Repository

The documents will be available at the DEC Regional Office in Building 40 at SUNY, Stony Brook. They will also be available at the Westbury Memorial Public Library at

445 Jefferson Street, Westbury, New York. The library is open during regular business hours, evenings and weekends.

Consideration will be given to mailing a "document availability notice" to the contact list to update the interested public about project documents that are available for their review.

6.2 Documents to be placed in Repository

The documents that should be placed in the repository, as they become available should include, but not be limited to the following:

a) Phase One and Phase Two reports
b) Request for proposals
c) Contract documents for the Interim Remedial Measures, if required
d) Consent Orders/Consent Judgment/Stipulations
e) Final draft work plans developed by PRP
f) Focused Remedial Investigation report
g) Quality Assurance/Quality Control Plans
h) Health and Safety Plans
i) Testing, sampling and monitoring data
j) All responsiveness summaries
k) Site-specific Citizen Participation Plan
l) All fact sheets, newsletters, etc.

7.0 Description of Citizen Participation Activities for each Major Element of the Remedial Program

This section describes the major elements of the remedial program and the citizen participation activities that are associated with each element. The DEC requires certain activities and provides guidance for additional optional activities in its Citizens Participation Plan Guidance Document. In conducting its citizens participation program at each site, the DEC affirms the value and importance of: ensuring that project documents are readily available for public review; providing sufficient notice to the public to review the documents and prepare for the meetings; and making sure that the information be available in its complete technical form with easily understandable summaries.

7.1 Site is Placed on List of Inactive Hazardous Waste Sites

The DEC will conduct the following activities:

a) Issue statewide press releases announcing the availability of the State's Site Registry.
b) Issue statewide press releases announcing the completion of the State's Quarterly Site Reports.
c) Make copies of the above referenced reports available to public.

7.2 During the Phase One Study

a) Develop a preliminary contact list.

b) Establish a project document repository at the appropriate DEC regional office.
c) Use contact list as appropriate.

7.3 Completion of Phase One Study

a) Place a minimum of one copy in the document repository upon approval by the NYSDEC.

7.4 During Phase Two Study

a) Place a minimum of one copy of the Phase Two workplan in the document repository prior to signing contract with Phase Two contractor upon approval of the NYSDEC.

7.5 Phase Two Report is Publicly Available

a) Place a minimum of one copy of the Phase Two study report in the document repository upon approval of the NYSDEC.
b) Distribute Phase Two Report to the Department's regional office, local officials, DOH and Site owners.
c) Announce Phase 2 Report availability to contact list.

7.6 Site Reclassification and/or Delisting

a) Continue annual notices through press releases of the availability of the Registry update.
b) Expand notification to additional press releases to announce availability of Quarterly Reports.

7.7 Evaluation of Proposal for IRM

a) Place a minimum of one copy of the request for proposal in the document repository upon approval of the NYSDEC.
b) Distribute IRM fact sheets.
c) Hold availability session or public meeting before implementation of IRM.

7.8 Contract Review

a) Analysis will be made of the number of copies of the major reports, summaries, etc. for citizen participation.

7.9 Issuance of Contract

a) Place a summary of the finalized contract in the document repository upon approval of the NYSDEC.

7.10 During the Development of the Scope of Work for IRM

a) Place a minimum of one copy of the final draft work plan for the IRM in the project's local document repository upon approval of the NYSDEC.
b) Make public notice of the availability of the final draft work plan for the FRI. Use contact list and include fact sheet summarizing work plan.

c) Place a minimum of one copy of the final work plan for the FRI in the project's document repository upon approval of the NYSDEC.

7.11 Report for the first phase of the FRI is publicly available

a) Place a minimum of one copy of the report for the first phase of the FRI in the project's local document repository upon approval of the NYSDEC.
b) Use contact list as appropriate to announce availability.

7.12 Final Draft RI/FS Report is Publicly Available

a) Place a minimum of one copy of the final draft report in the project's local document repository upon approval of the NYSDEC.
b) Publish a legal notice in a local newspaper of general circulation.
c) Mail public notice of the availability of the final draft of the FRI. Use contact list, including fact sheet.
d) Hold public meeting.
e) Provide transcript of public meeting. The transcript shall be made available for public inspection and copying in the office of the Department nearest the site and local document repository.
f) Provide a minimum of 30 days for submission of written comments about the final FRI report.
g) Prepare and mail a brief responsiveness summary. Use contact list.

7.13 Conceptual Design Complete

a) Place one copy of the conceptual design document in the project's local document repository upon approval of the NYSDEC.

7.14 Draft Design Essentially Complete

a) Place a minimum of one copy of the final draft design documents in the project's local document repository upon approval of the NYSDEC.

b) Place a minimum of one copy of the final design documents in the project's local document repository upon approval of the NYSDEC.

7.15 After construction contract is awarded

a) Place a minimum of one copy of the draft final plans and specifications, and health and safety plans in the project's local document repository upon approval of the NYSDEC.

b) When the final plans and specifications and health and safety plans for the remedial work are available, use contact lists.

7.16 During Construction

a) Before the construction starts, use the contact list as appropriate.

7.17 At Completion of Construction

a) At the completion of remedial construction, use the contact list as appropriate.

8.0 Glossary of Key Terms and Major Program Elements

This section will define, in easy to understand terms, the major elements of the site's remedial program, technical terms and citizens participation terms.

8.1 Definitions of Significant Elements and Terms of the Remedial Program

The first eight definitions represent major elements of the remedial process. They are presented in the order in which they occur, rather than 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 waste 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 Department carries out an initial evaluation at the site before listing.

Phase One Site Investigation – Preliminary characterizations of hazardous substances present at a site; estimates pathways by which pollutants might be migrating away from the original site of disposal; identifies population or resources which might be affected by pollutants from a site; observes how the disposal area was used or operated; and gathers information regarding who might be responsible for wastes at a site. Involves a search of records from all agencies known to be involved with a site, interviews with site owners, employees and local residents to gather pertinent information about a site. Information gathered is summarized in a Phase One report.

After a Phase One investigation, DEC may choose to initiate an emergency response; to nominate the site for the National Priorities List, or, where additional information is needed to determine site significance, to conduct further (Phase Two) Investigation.

Phase Two Investigation – Ordered by DEC when additional information is still needed after completion of Phase One to properly classify the site. A Phase Two investigation is not sufficiently detailed to determine the full extent of the contamination, to evaluate remedial alternatives, or to prepare a conceptual design for construction. Information

gathered is summarized in a Phase Two report and is used to arrive at a final hazard ranking score and to classify the site.

Remedial Investigation (RI)– A process to determine the nature and extent of contamination by collecting data and analyzing the site. It includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for, and proposed extend of, a remedial program for the site.

Feasibility Study (FS)- A process for developing, evaluating and selecting remedial action, using data gathered during the remedial investigation to: define the objectives of the remedial program for the site and broadly develop remedial action 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 specifications for remedial construction at a site were developed, as specified in the final FRI 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 disposal site remedial actions.

Construction – DEC selects contractors and supervises construction work to carry out the designed remedial alternative. Construction may be as straightforward as excavation of contaminated soil with disposal at a permitted hazardous waste facility. On the other hand, it may involve drum sampling and identification, complete encapsulation, leachate collection, storage and treatment, groundwater management, or other technologies. Construction costs may vary from several thousand dollars to many millions of dollars, depending on the size of the site, the soil, groundwater and other conditions and the nature of the waste.

Monitoring/Maintenance – Denotes post-closure activities to insure continued effectiveness of the remedial actions. Typical monitoring/maintenance activities include quarterly inspection by an engineering technician; measurement of level of water in monitoring wells; or collection of groundwater and surface water samples and analysis for factors showing the condition of water, presence of toxic substances, or other indicators of possible pollution from the site. Monitoring/maintenance may be required indefinitely at many sites.

Consent Order – A legal and enforceable negotiated agreement between the Department and responsible parties where responsible parties agree to undertake investigation and cleanup or pay for the costs of investigation and cleanup work at the site. The order includes a description of the remedial actions to be undertaken at the site and a schedule for implementation.

Contract-A legal document signed by a contractor and the Department to carry out specific site remediation activities.

Contractor- A person or firm hired to furnish materials or perform services, especially in construction projects.

Delisting-Removal of a site from the state Registry based on study that shows the site does not contain hazardous wastes.

Potentially Responsible Party Lead Site-An Inactive Hazardous Waste Disposal site at which those legally liable for the site has accepted responsibility for investigating problems at the site, and for developing and implementing the site's remedial program. PRP's include: those who owned the site during the time wastes were placed, current owners, past and present operators of the site; and those who generated the wastes placed at the site. Remedial programs developed and implemented by PRP's generally result from an enforcement action taken by the State and the costs of the remedial program are generally borne by the PRP.

8.2 Definitions of Commonly Used Citizen Participation Terms

This terms are written in easy to understand definitions in alphabetical order.

Availability Session-Scheduled gathering of the Department staff and public in a setting less formal than a public meeting. Encourages "one-to-one" discussions in which the public meets with Department staff on an individual or small group basis to discuss particular questions or concerns.

Citizen Participation-A process to inform and involve the interested/affected public in the decision-making process during identification, assessment and remediation of inactive hazardous waste sites. This process helps to assure that the best decisions are made from environmental, human health, economic, social and political perspectives.

Citizen Participation Plan-A document that describes the site-specific citizen participation activities that will take place to complement the "technical" (remedial) activities. It also provides site background and rationale for the selected citizen participation program for the site. A plan may be updated or altered as public interest or the technical aspects of the program change.

Citizen Participation Specialist-A Department staff member who provides guidance, evaluation, and assistance to help the Project Manager carry out his/her site-specific Citizen Participation program.

Contact List-Names, addresses, and/or telephone numbers of individuals, groups, organizations, and media interested and/or affected by a particular hazardous waste site which are compiled and updated by the Department. Interest in the site, stage of remediation and other factors guide how comprehensive the list becomes. Used to assist the Department to inform and involve the interested/affected public.

Document Repository-Typically a regional DEC office and/or public building such as a library, near a particular site, at which documents related to remedial and citizen participation activities at the site are available for review. Provides access to documents at times and a location convenient to the public. Environmental Management Councils

(EMCs), Conservation Advisory Committees (CACs) as well as active local groups often serve as supplemental document repositories.

Information Sheet-A written discussion of the site's remedial process, or some part of it, prepared by the Department for the public in easily understandable language. May be prepared for the "general" public or a particular segment. Uses may include, for example: 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. May be mailed to all or part of the interested public, distributed at meetings and availability sessions or sent on an "as requested" basis.

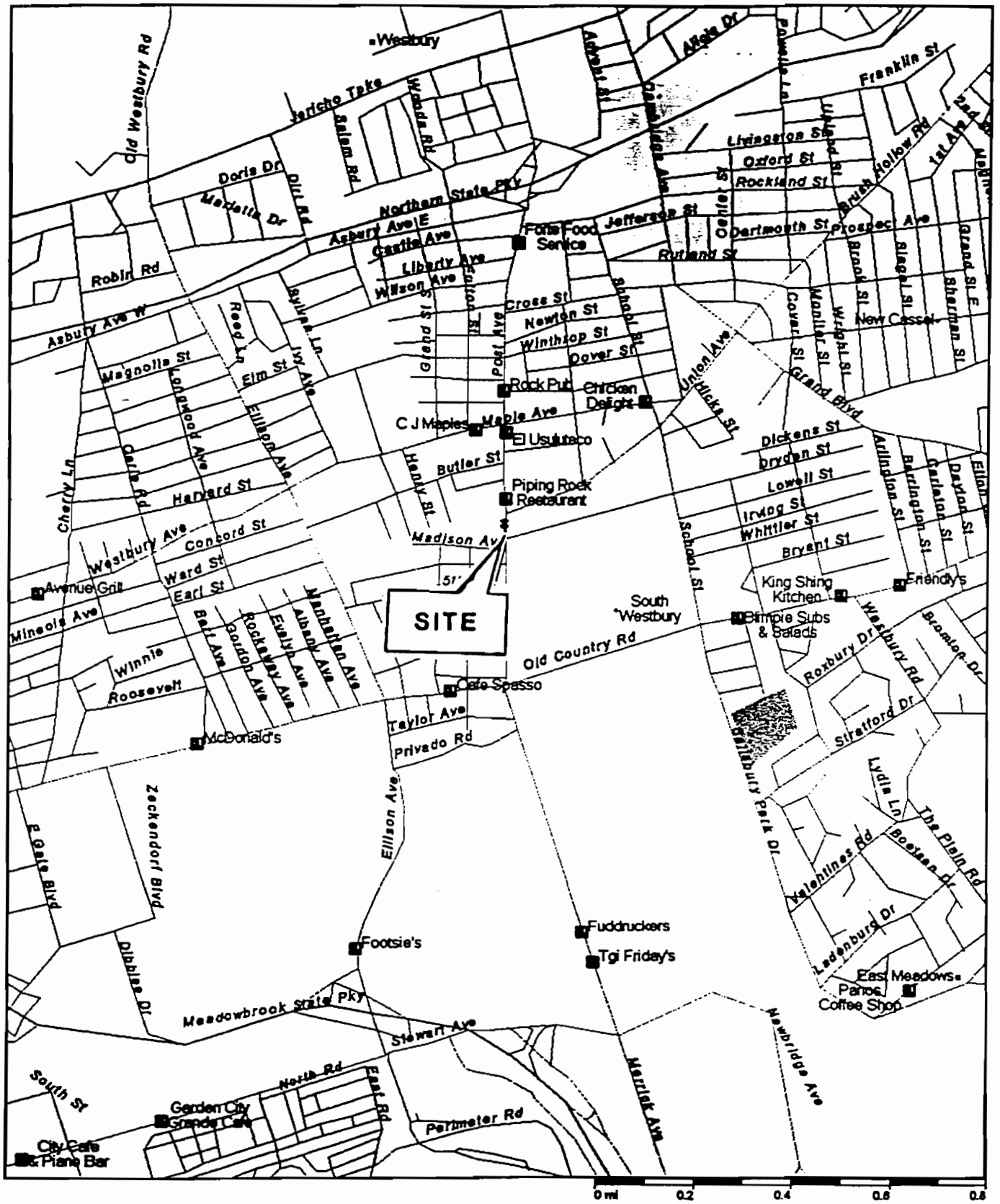
Project Manager-A Department staff member within the Division of Hazardous Waste remediation (usually an engineer, geologist or hydrogeologist) responsible for the day-to-day administration of activities, and ultimate disposition of, one or more hazardous waste sites. The Project Manager with the Office of Public Affairs as well as fiscal and legal staff to accomplish site-related goals and objectives.

Public-The universe of individuals, groups and organizations: a) affected (or potentially affected) by an inactive hazardous waste site and/or its remedial program; b) interested in the site and/or its remediation, c)-having information about the site and its history.

Public Meeting-A scheduled gathering of the Department staff and the public to give and receive information, ask questions and discuss concerns. May take one of the following forms: large-group meeting sponsored by another organization such as a Town Board or Department of Health; working group or workshop; tour of the hazardous waste site.

Public Notice-A written or verbal informational technique for telling people about an important part of a site remedial program coming up soon (examples: announcement that the report for the FRI is publicly available; a public meeting has been scheduled.)

The public notice may be formal and meet legal requirement (for example: what it must say, such as announcing beginning of a public comment period; where, when and how it is published.)



Microsoft
Streets Plus

Westbury Cleaners

123 Post Avenue, Westbury, NY 11590

APPENDIX 3

Quality Assurance/Quality Control Plan

Quality Assurance/Quality Control Plan
Westbury Valet Dry Cleaners
Site # 1-30-088

Table of Contents

1.0 Introduction

This Quality Assurance Project Plan (QAPP) has been prepared in conjunction with and to accompany the Westbury Valet Dry Cleaners Focused Remedial Investigation Work Plan for Site #1-30-088. It specifies quality assurance/quality control (QA/QC) measures, functional activities and policies that will be implemented in order to achieve the data quality objectives of this environmental investigation. This document was prepared to adhere to the U.S. Environmental Protection Agency's report entitled "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans"(EPA-600/4-83-004). A review of the New York State Department of Environmental Conservation (NYSDEC) memorandum "Guidance for Review of Work Plans and Quality Assurance Project Plans" was conducted to make sure that this Quality Assurance Project Plan (QAPP) includes and adequately address QA/QC issues so that QA approval will be received. Prior to deviations from the protocols set forth in this QAPP, the designated NYSDEC QA/QC officer will be notified.

2.0 Project Background and Description

2.1 Project Background

Westbury Valet Dry Cleaners is located at 123 Post Avenue, Westbury, Nassau County, NY. Subsurface contamination with perchloroethene and its breakdown products have been identified on site. Off-site investigation by Apex Environmental identified groundwater contamination to the southwest of the subject property. The associated workplan has been developed to delineate the contamination and conduct an interim remedial measure on site.

2.2 Project Description

The objectives of this Work Plan are to determine the nature of VOC contamination, if any, its vertical and horizontal extent in the soils on site and the quality of the groundwater beneath the site. The soil investigation will be concentrated in the vicinity of the floor drains and former sanitary system locations.

3.0 Project Organization and Responsibility

Dean Anson II of Anson Environmental Ltd. (AEL) will be responsible for ensuring the collection of valid data, in a precise and accurate manner, by personnel under his direction. The QA official will be responsible for conducting unannounced field visits to observe data collection procedures and for periodic review of data generated. The QA official will also be responsible for review of project deliverables.

John V. Soderberg, P.E. will be the Project Manager for the site. He will serve as Field Manager and will be responsible for coordination of field activities, technical supervision and execution of the field effort. Michael DeLuca will serve as Field Coordinator. Dean Anson will serve as Health and Safety Officer. In this capacity, his responsibilities will be implement the requirements of the Health and Safety Plan and ensure that all team members meet the training requirements for the project.

Upstate Laboratories of Syracuse, NY, or other qualified New York State certified laboratory would be responsible for performing the sample analyses.

Zebra Environmental Corp. of Lynbrook, NY or other qualified contractor will be responsible for providing the Geoprobe services.

Reports and findings of the Westbury Valet Dry Cleaners site investigation will be forwarded to the business owner and the NYSDEC.

The information gathered from the work briefly described above will be used to define the extent of contamination on site and identify remedial measures.

4.0 Data Usage and Data Quality Objectives

4.1 Data Usage

Data collected for this project will be used to further define the onsite contamination and implement the IRM designed for this site. The IRM will concentrate on eliminating the source(s) of contamination that exist on site.

4.2 Data Quality Objectives

It is the objective of this project to ensure that all measurements be made so that the results are representative, precise, accurate, complete and comparable. Procedures to meet this objective tin the field are included in Section 5 of this report. Within this section, sampling, decontamination, and field measurement procedures are described which will ensure the QA/QC of all data collected.

The above objectives apply to laboratory sample analysis as well. To meet these objectives, standard methods will be applied.

5.0 Sampling and Analytical Procedures and Protocol

This phase of the project, as fully described in the Work Plan, entails the collection of soil and groundwater samples. Soil samples will be procured using a split spoon sampler and/or acetate liners with Geoprobe rods. Groundwater samples will be collected using dedicated polyethylene bailers. A description of each sampling method to be used for the collection of samples is addressed in the following sections.

5.1 Soil Sampling/Manual Collection

Soil samples will be collected using Geoprobe sampling rods. The sampling will be conducted as follows:

(1) The clear acetate liner will be inserted into the large bore sampler and driven to a depth of 2-4 feet using the Geoprobe rig.

(2) The sampling rod will be removed from the boring and the sample will be removed intact within the acetate liner.

(3) The liner will be sliced open and the soil scanned immediately using the PID. The PID reading, soil composition, structure, consistency, color and soil condition will be recorded. The sample jars will be filled immediately with representative material and sealed to prevent evaporation of soil moisture. The samples will be stored on ice in a cooler. Labels will be affixed to the sample jars bearing the job number, date, time, initials of sampler, boring number, sample number, depth of penetration and length of recovery. The remaining soil will be placed in clean jars for headspace analysis.

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

Soil samples from each boring will be selected for analysis. The sediment sample from the drywell will be collected with a stainless steel hand auger, decontaminated between sampling events and handled in the same technique as outlined above.

After each soil sample bottle is filled, it will be appropriately labeled and put in an ice-filled cooler for delivery to the laboratory for analysis. Completed chain-of-custody form will accompany all samples. The sample information will be recorded in the hydrogeologist's field book. The quality assurance of field sampling and sample custody is included in Sections 5.5 and 6.0 respectively.

The soil samples will be analyzed by EPA Method 8260 for volatile organic compounds plus 10 tentatively identified compounds (TICs). Analytical procedures, calibration of equipment, calibration frequency and matrix specification detection limits corresponding to this method are included in the appendix. The purpose of this analysis is to determine if there are measurable quantities of those organic compounds in the soil, which have been known to be used on site in the past. These compounds are manmade and would not be expected to occur naturally in the soil.

Soil screening for this project will be performed with a PID calibrated to provide direct readings in the filed. Calibration procedures from the instrument's instruction manual are included in the appendix. Frequency of calibration is based upon manufacturer's recommendations.

5.2 Groundwater Samples

A round of groundwater samples will be collected from the four existing monitoring wells. All groundwater sampling will follow strict USEPA QA/QC protocols. Prior to sampling the wells, a 4-foot by 4-foot plastic sheet will be placed at the foot of each well. This will be the designated work zone for the sampling event. All sampling equipment will be placed on the sheet to minimize the possibility of contaminating sampling equipment from the surrounding surfaces. Upon opening the monitoring well, the PID will be used to screen for total volatile organic contaminants in the ambient atmosphere and in the headspace of the well. Any readings will be recorded and compared to ambient background readings. Ambient air sampling for this project will be performed with a PID calibrated to manufacturer's instructions.

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 0.01 foot in each monitoring well will be taken.

(2) To ensure a representative sample form the monitoring well, purging of the wells is required. The standing water will be purged from the top of the water column. In general, the groundwater standing in the well casing prior to 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 to five times the volume of standing water in the well will be purged from the well before taking the sample. If the monitoring well has a low yield, standing water will be evacuated until the well is dry and a sample will be collected upon recovery. Wells with high yield can be sampled immediately after evacuation. A dedicated polyethylene bailer will be used to collect the groundwater sample. Prior to the sampling event, sampling equipment shall be decontaminated as outlined in Section 5.8.2. All water removed during the evacuation process shall be placed in clearly labeled 55-gallon drums and stored on site pending analysis.

(4) Dedicated, laboratory-cleaned, polyethylene disposable bailers will be attached to dedicated polypropylene rope or nylon line. The sample will be collected from the screen zone. The first bailer volume shall be placed in a pre-cleaned glass jar and used to conduct analytical field tests such as temperature, pH and specific 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 balance of the samples will be collected in the following order: volatiles, semivolatiles and metals.

The groundwater samples shall be collected in laboratory-cleaned containers on the second bail. The first round of groundwater samples will be analyzed using EPA method

8260, following appropriate laboratory protocols for that method. The purpose of this analysis is to determine if there are measurable quantities of volatile organic compounds that have been known to be used on site in the groundwater.

One (1) trip and one (1) field blank QA/QC sample will accompany the groundwater sampling per sample day. A trip blank is used in order to determine if outside contamination has been introduced in the course of the transportation of the samples. The trip blank vials are filled in the laboratory using analyte-free distilled/deionized water and will accompany the glassware from the laboratory to the filed and back to the laboratory. The filed blank vial will be filled during the sampling by adding distilled/deionized water to one of the bailers and then filling the empty field blank vials from the bailer. The blank samples will be analyzed for the same parameters as the groundwater samples. Given the limited number of groundwater samples to be collected in this phase of the investigation, duplicate samples will not be collected.

Field tests will include temperature, pH, salinity, and specific conductivity and will be taken immediately upon collection. The pH probe will be field calibrated with a No. 7 buffer solution. The specific conductivity probe will be calibrated in air to zero. Complete calibration procedures are included in the copies of the instrument instruction manuals in the Appendix. A mercury thermometer will be used to measure temperature and will be visibly inspected. The above calibration procedures will be performed each day of groundwater sampling.

The well cap shall be secured and the above process repeated at each groundwater sampling location.

5.3 Preparation and Preservation of Sample Containers

Both soil and groundwater samples will be placed in a cooler provided with ice packs as soon as they are collected. All samples will be delivered the same day or shipped for overnight delivery.

The scope of the project necessitates that 40 milliliter vials and 4 ounce sampling containers be used. The laboratory will provide sample containers. Each sample container will be provided with a label for sample identification purposes. The amount of information will include identification number, time, date, and initials of sample collector. A full chain-of-custody as outlined by the USEPA will accompany all sample containers.

All sample containers will be thoroughly cleaned by the laboratory prior to sampling. The 40-milliliter vials will contain hydrochloric acid (HCl). The 4-ounce soil sampling jars will be not preserved.

5.4 Groundwater Level Monitoring

Groundwater levels will be obtained from the two existing monitoring wells and the newly installed monitoring wells. Water levels will be taken using an electronic water level indicator. The depth to water will be measure to the nearest 0.01 foot and referenced to the top of the well casing. After use in each monitoring well, the measuring device will be cleaned to prevent cross contamination between wells using decontamination procedures addressed in Section 5.9. A licensed land surveyor will survey the well casings in order to determine the direction of groundwater flow.

5.5 Field Sampling Quality Assurance

5.5.1 Field QA/QC

Blanks will be used to verify the quality of the field sampling results. A field blank will be used to determine the effectiveness of the decontamination of the sampling devices (i.e. bailers and split spoon samplers). Analyte free water will be poured into the device and then transferred to sample containers before use in sampling. Dedicated disposable polyethylene bailers will be used; however, these equipment blanks will be used to ensure that the manufacturer does not introduce contamination.

5.5.2 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 ringed binder. The binder will be stored in a secure place in the office of AEL. Proper documentation will consist of field personnel maintaining records of work accomplished including the items listed below:

-Date and time of work events
-Weather
-Purpose of work
-Description of methods
-Description of samples
-Number and size of samples
-Description of sampling
-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 or location, parameter to be analyzed, sampling time and date.

Data obtained from borings shall be recorded in the field notebook and shall include the following:

-name, location and job number
-date of boring

-boring number
-surface elevation (if available)
-sample number and depth
-method of advancing sampler, penetration and recovery lengths
-type and size of sampler
-PID reading during field screening
-description of soil
-thickness of layer
-depth to water
-type of equipment used
-size of casing, depth to well
-blow counts

5.6 Decontamination of Field Equipment

Proper decontamination protocols will be followed during field activities in order to minimize the possibility of introducing contaminants into non-contaminated areas of the site and to ensure that samples and data collected are representative of the actual conditions.

5.6.1 Equipment Requiring Decontamination

The field equipment and sampling devices that require decontamination include:

1. Drilling Equipment-paying particular attention to down-hole tools, back of the drilling rig and drilling rod racks.
2. Sampling Equipment-split spoons, trowels, pumps and hoses, stainless steel bailers, temporary well screen and casing, water level measuring device, etc.
3. Personnel Protective Equipment-respiratory protection and protective clothing.

5.6.2 Decontamination Procedures

The water level meter, sampling rods and miscellaneous tools will be decontaminated according to the following procedure:
-non-phosphate detergent and tap water wash
-tap water rinse
-distilled/deionized water rinse
-total air dry

Field decontamination for drilling equipment, split spoons, temporary well screening and casing, and other sampling equipment will consist of steam cleaning and/or 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 clean condition.

Field decontamination for pumps and hoses shall consist of manual scrubbing to remove foreign materials followed by a non-phosphate detergent scrub and flushing.

Field personnel protective equipment decontamination procedures shall consist of the minimum decontamination stations outlined in the Health and Safety Plan prepared for this project. The contractor 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 requiring decontamination will be contained and stored in 55-gallon drums pending laboratory analyses.

6.0 Sample Custody

The purpose of sample custody procedures is to document the history of sample containers and samples from the time of preparation of sample containers through sample collection and analysis. 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 in custody if:

1. it is in your actual possession; or
2. it is in your view, after being in your physical possession; or
3. it is in your physical possession and then you locked it up or sealed it to prevent tampering; or
4. It is in a designated secure place restricted to authorized personnel.

Each person involved with the samples will know chain of custody procedures. A discussion of the various stages of sample custody, transfer of custody and laboratory custody is presented below.

6.1 Environmental Sample Chain of Custody

The field sampler initiates the chain of custody procedure in the field and is the first to sign the form 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 labels shall be completed for each sample using waterproof ink 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 so as to indicate: project number, unique sample number, sample location, 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.

A sample chain of custody form is attached.

6.2 Transfer of Custody

A chain of custody record will accompany all samples. When transferring possession of samples, the individuals relinquishing and receiving will sign, date and note the time of the transfer. This record documents transfer of custody of samples whether from the sampler to another person or mobile laboratory or to a permanent 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 indication with whom the samples were split.

6.3 Laboratory Custody Procedures

The laboratory utilized will follow a minimum standard operating procedure for documenting receipt, tracking and sample preparation. A full explanation of laboratory procedures is included in the laboratory documentation in the appendix. Sample custody is described briefly below:

6.3.1 Sample Custody

1. Shipping or Pickup of Cooler by Client
   a. Cooler packed at lab after contact with client.
   b. Cooler wrapped with evidence tape.
   c. Chain of custody forms filled out by lab personnel.
   d. Client supplied with evidence tape to seal cooler prior to shipment back to laboratory.

2. Delivery of Cooler to Lab
   a. Samplers check for external damage (such as leaking).
   b. Lab signs for cooler from shipper.

3. Cooler Delivery to Sample Custodian
   a. Samplers place cooler in air lock to special process lab.
   b. Sample custodian or assistant removes cooler.

4. Opening of Cooler
   a. Check condition of external seal.
   b. Open cooler and check and record temperature.
   c. Remove chain of custody forms, fill out and sign.
   d. Check to see if any samples are broken or damaged
      1. If the samples are broken, note manner of disposal and contact client immediately.

5. Report Sent to Client
   a. Traveler's Way Bill
   b. Final Report

c. Log-out Sheet

6. Final Steps
   a. Raw data stored on file.

6.3.2 Sample Storage

Samples will be maintained in storage in the GC/MS laboratory in a locked refrigerator prior to sample preparation and analysis. The storage refrigerators will be maintained at 4 degrees Celsius. The samples will be stored no longer than the required holding time before analysis. It is the responsibility of the laboratory to properly dispose of samples beyond the holding period.

6.4 Field Notebook Chain of Custody

Dedicated field notebooks will be used for the duration of the project. These will be numbered and assigned to field personnel. A log of the notebook number, the personnel assigned to the notebook and the date and time signed out and signed in will be the responsibility of the field hydrogeologist. Sufficient number of notebooks will be provided.

All field notes during drilling data will be copied and stored in a ringed binder. Sample chain of custody forms will also be retained in the binder.

7.0 Calibration Procedures and Frequency

The in-field analytical instruments to be used in the site investigation include:

Photoionization Air Monitor (PID)
pH meter
Specific conductivity meter
Depth to water measuring tape.

The instruments will be calibrated in compliance with manufacturer's recommended schedule.

8.0 Documentation, Data Reduction, Validation and Reporting

8.1 Field and Technical Data Documentation

All information pertinent to any field activities will be recorded in bound, field books. Duplicates of all notes will be prepared each night and kept in a ring binder, at the AEL office. Proper documentation will consist of all field personnel maintaining detailed records of all work accomplished including:

1. date and time of work events
2. purpose of work

3. names and address 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 sit map and/or photographs
11. field observations
12. any field measurements with portable instruments

8.1.1 Field and Technical Reporting

During the performance of the project, field and technical data will be assembled and will be made available to those individuals who need the data. Data reported will be as follows:

1. data collected by the field manager
2. data will be reduced by the field manager
3. data will then by reviewed by the project manager

After the data in the field books are checked, the data will be reduced to tabular form and entered into data files. Objective data such as water table measurements will be compiled on a spreadsheet. Subjective data such as boring logs will be included as hard copies.

8.1.2 Field and Technical Data Validation

The two levels upon which the field and technical data will be validated will be:

Validated at the time of collection
After data reduction into tables and charts

Inconsistencies will be resolved by reviewing the original data or by discussing the inconsistencies with the field personnel or laboratory performing the analysis.

Where possible, peer review will be used to maximize consistency among field personnel.

8.2 Laboratory Data

8.2.1 Laboratory Data Documentation

A complete description of the Upstate Laboratories standard operating procedures is presented in the appendix.

8.2.3 Laboratory Data Reporting

Applicable data presentation and all laboratory reports will conform to full reporting standards including:

1. Laboratory data will be reviewed and approved by laboratory manager.
2. Data presentation will include:
   Sample identification numbers used by laboratory,
   Chemical parameters analyzed, report values, and units of measurement,
   Detection limits,
   Data for chemical parameters,
   Results of QA sample analysis, and
   Footnotes if required.

8.2.3 Laboratory Data Reduction

The laboratory data report must be in the NYSDEC Analytical Services Protocol (ASP) Category B deliverable package format. This level of reporting provides the necessary documentation to evaluate the usability of the data and the validity of the analytical reporting limits.

8.2.4 Laboratory Data Validation

Data validation procedures performed internally by Upstate Laboratories is based upon the following document as reference:

Technical Directive Document No. HQ-8410-01
"Functional Guidelines for Evaluation of Organic Analysis".

In addition, Environmental Standards of Valley Forge, PA will perform third party validation.

APPENDIX 1

Instrument Calibration Manuals

text - see p 5

2020 Photoionization Air Monitor

User's Manual

* 2020 needs 10 minute warm up before use.

PE PHOTOVAC

2020

Photoionization Air Monitor

User's Manual

Service -
888-732-4766

Photovac Repair Ctr.
MF 21
50 Danbury Rd.
Wilton Connecticut 06897

PE Photovac
330 Cochrane Drive
Markham, Ontario
L3R 8E5, Canada
Tel (905)477-8068
Fax (905)477-8220

The Perkin-Elmer Corporation
Photovac Monitoring Instruments
761 Main Avenue
Norwalk, Connecticut, 06859-0211
Tel (203)761-5330
Fax (203)761-2677

Photovac Europa
Sjaelsoe Allé 7 A
P.O. Box 79
DK-3450 Allerod
Denmark
Tel +45-48-100-400
Fax +45-48-100-401

Part No. 350001 Rev D

Isobutal Gas - 100ppm
part # MX350012

3. Detailed Operation

3.1. General Information

2020 must be calibrated in order to display concentration in ppm or mg/m³ units equivalent to the calibration gas. First, a supply of zero air which contains no ionizable gases or vapors, is used to set 2020's zero point. Then, calibration gas, containing a known concentration of a photoionizable gas or vapor, is used to set the sensitivity.

Occasionally clean ambient air will be suitable as zero air. Due to 2020's sensitivity, outdoor air is usually unsuitable for calibration. For best results, use a commercial source of zero grade air and a second regulator. Zero air should have not more than 0.1 ppm total hydrocarbons (THC).

If compound threshold limit values (TLVs) are exceeded, you should use a gas bag for sampling and calibration.

To determine the TLV of the compounds contained in the calibration gas, refer to the Material Safety Data Sheet (MSDS) supplied with your calibration gas cylinder.

If you will be using a gas bag for calibration, you should obtain the calibration kit (Part No. 390033). The calibration kit contains a regulator, a gas sampling bag and a gas bag adapter. See 3.3 for details of calibration using a gas bag.

Note: Disconnect 2020 from the AC adapter before beginning calibration.

3.2. Calibration Using the Flow-Match Regulator

3.2.1. Connecting the Flow-Match Regulator to the Cylinder

> **Warning:** Observe proper handling procedure for all gases! See Section 1.2.2.

1. Connect the regulator to the calibration gas cylinder.

   If you are using a portable tank of calibration gas (Part No. 350012), connect the regulator (Part No. 350006) directly to the tank.

2. When the regulator is connected properly, you can read the cylinder contents from the regulator gauge.

3. Connect the adapter tubing to the regulator.

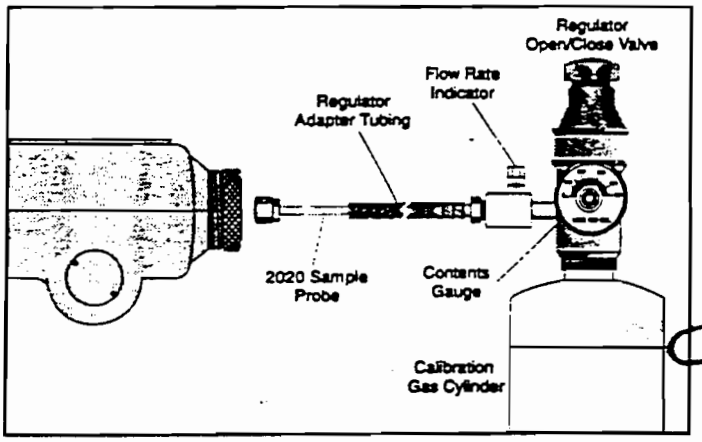


Figure 11 Flow-Match Regulator

3.2.2. Calibrating 2020 with the Flow-Match Regulator

1. Ensure the short sample probe is connected to the 2020 inlet. If you are using the long probe for sampling, then ensure the long probe is connected to 2020.

> **Note:** Ensure the sample probe is free of any contamination as this will effect the calibration

2. Press the ENTER key.
3. Select "Set", "Cal" and then "Mem".
4. Select the desired Cal Memory. 2020 has 15 Cal Memories and can be calibrated with 15 different span gases or response factors if required. Only one Cal Memory can be used at a time. Each Cal Memory stores a different response factor, zero point, sensitivity, and alarm levels.
5. Select "Chng" and then "User". Enter a name for the calibration memory.

Press the ENTER key and enter a response factor (RF). Refer to Appendix 8.7 for a list of Response Factors. If the compound is not listed in Appendix 8.7 or you are measuring gas mixtures, then enter a value of 1.0. The concentration detected by 2020 will be multiplied by the response factor before it is displayed and logged.

6. Press the ENTER key and enter an alarm level for STEL, TWA and PEAK.
7. Press ENTER and expose 2020 to a supply of zero air.
8. Select "Set", "Cal" and "Zero". Allow 2020 to set its zero point.
9. Select "Set", "Cal" and "Span". 2020 asks for the span gas concentration. Enter the known span gas concentration, without pressing the ENTER key to confirm it.
10. Insert the 2020 sample probe into the adapter tubing from the regulator. See Figure 11.
11. Ensure the calibration gas cylinder is upright and open the regulator by turning the valve counterclockwise. Open the regulator until the ball is 1/8" from its rest position.

Note: Do not set the flow rate too high.

12. Press the ENTER key. 2020 sets its sensitivity.
13. When the display reverts to the default display, 2020 is calibrated and ready for use.
14. Remove the adapter tubing from the inlet and close the regulator.

If you turn off 2020 in the middle of zeroing or spanning, the next time you turn it on it will display a Cal status. This indicates that you need to calibrate 2020.

Note: While the Cal status is active, all alarms are deactivated.

3.3. Calibration Using a Gas Bag

3.3.1. Preparing the Calibration Gas Bag and the Zero Air Bag

Use the calibration kit (Part No. 390033) as follows:

Warning: Observe proper handling techniques for all gases! See Section 1.2.2.

1. Connect the regulator to the calibration gas cylinder.

   If you are using a portable tank of calibration gas, connect the regulator (Part No. 600649) directly to the tank.

   If you are using a large cylinder of calibration gas, you must obtain a high purity regulator as specified in Section 1.4. Isobutylene in air is usually supplied with a standard CGA 590 cylinder valve outlet. Obtain a regulator with the matching fitting. Connect the regulator to the tank of calibration gas. Tighten the regulator onto the tank with a wrench. Do not over-tighten.

Note: Do not force the connection.

Do not use Teflon tape with CGA fittings. In general, these fittings are designed for metal to metal sealing.

Do not use adapters to connect one CGA fitting to another type of CGA fitting. If the regulator does not match the outlet on your calibration tank, contact your specialty gas supplier.

2. Attach the knurled nut on the gas bag adapter to the regulator. Finger-tighten the fitting.

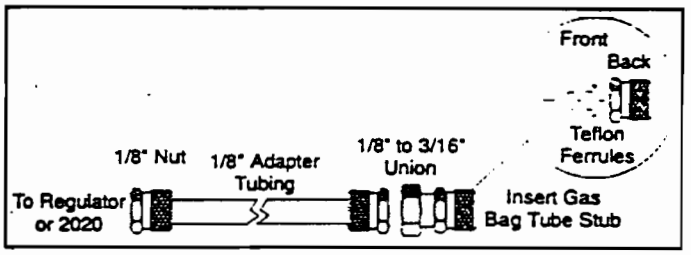


Figure 12 Gas Bag Adapter

3. Loosen the knurled nut on the reducing union of the gas bag adapter.

Note: Do not remove the nut from the union as the Teflon ferrules contained inside the nut may be lost. See Figure 12.

4. Insert the tube stub from the gas bag into the knurled nut. Tighten the knurled nut and ensure the tube stub is secure. If the gas bag is not secure, ensure you have inserted the tube stub far enough into the knurled nut. Do not over-tighten the fitting.

Note: Over-tightening the Teflon ferrules will result in damage to the ferrules!

5. The union should be connected to the gas bag adapter. If it is not, then tighten the nut on the adapter tube to the union.
6. Flush and fill the gas bag. See Appendix 8.6 for instructions.
7. Remove the knurled nut on the adapter tube from the regulator.
8. Repeat this procedure, if necessary, to prepare a bag of zero air.

Note: Do not use the same gas bag or gas bag adapter for the bag of zero air. You will contaminate the bag of zero air.

3.3.2. Calibrating 2020 with a Gas Bag

1. Disconnect the probe from the 2020.
2. Press the ENTER key.
3. Select "Set", "Cal" and then "Mem".

4. Select the desired Cal Memory. 2020 has 15 Cal Memories and can be calibrated with 15 different span gases or response factors if required. Only one Cal Memory can be used at a time. Each Cal Memory stores a different response factor, zero point, sensitivity, and alarm levels.
5. Select "Chng" and then "User". Enter a name for the calibration memory.
6. Press the ENTER key and enter a response factor.
7. Press the ENTER key and enter an alarm level for each mode.
8. Press the ENTER key and enter a response factor. Refer to Appendix 8.7 for a list of Response Factors.

   If the compound is not listed in Appendix 8.7 or you are measuring gas mixtures, then enter a value of 1.0. The concentration detected by 2020 will be multiplied by the response factor before it is displayed and logged.
9. Connect the supply of zero air. If you are using a gas bag with zero air, open the bag and connect the gas bag adapter to the inlet.
10. Select "Set", "Cal" and "Zero". The 2020 sets its zero point.
11. Select "Set", "Cal" and "Span". The 2020 asks for the span gas concentration. Enter the known span gas concentration, without pressing the ENTER key to confirm it.
12. Open the bag and then connect the gas bag adapter to the inlet. Press ENTER. 2020 sets its response factor.

Note: Readings may fluctuate slightly as the gas bag empties. Do not allow 2020 to evacuate the bag completely.

13. When the display reverts to the default display, 2020 is calibrated and ready for use. Remove the span gas bag from the inlet.

If 2020 is powered off in the middle of zeroing or spanning, it will power on displaying a Cal status. This indicates that you need to calibrate 2020. While the Cal status is active, all alarms are inactive.

3.4. Programming the Cal Memories

2020 has 15 Cal Memories and can be calibrated with 15 different span gases or response factors if desired. To program the Cal Memories:

1. If you will be calibrating directly from the portable cylinder, connect a flow-match regulator (Part No. 350006) to each tank. You must use a separate regulator for each compound to prevent cross contamination.

   If you are using gas bags, prepare the bags of calibration gas as outlined in Section 3.3. Use a different gas bag and gas bag adapter for each concentration and for each type of calibration gas. You can use the same gas bag to zero all the Cal Memories, however, you must refill the bag before zeroing each Cal Memory.

2. Select "Set", "Cal" and "Mem".

3. Select the desired Cal Memory (1 to 15) with the "Next" and "Prev" keys.

4. Press "Chng" to change the parameters of the Cal Memory. Select "User" or "Lib".

5. If you selected "User", enter the name, response factor and alarm levels.

6. If you entered "Lib", use the "Next" and "Prev" keys to select the required library. See Appendix 8.8 for a list of Library entries.

> **Note:** It does not matter which Cal Memory is selected or which response factor is entered, 2020's response is not specific to any one compound. The reading displayed represents the total concentration of all ionizable compounds in the sample.

7. Calibrate the instrument as described in Section 3.2.2 or 3.3.2. When the calibration is completed, the calibration information is automatically stored in the selected Cal Memory.

8. Repeat this procedure for each Cal Memory you need.

Whenever the instrument is calibrated, 2020 updates the selected Cal Memory only. Each Cal Memory must be calibrated at least once a day. Frequency of calibration will depend on ambient conditions and instrument response. If ambient conditions change or the response

has drifted, a calibration must be performed for each Cal Memory to ensure reliable operation.

3.5. Response Factors for Gases and Vapors

3.5.1. General Information

In situations where only a single pure compound is present in air, 2020 should be calibrated with a standard of that specific compound as span gas. 2020's 15 Cal Memories can be used to store calibration information for 15 different span gases.

The displayed reading will always be influenced by any other photoionizable compounds present in the air sample.

> Note: Even if 2020 has been calibrated with a specific compound, its response is not specific and the presence of another ionizable impurity may render the numerical result invalid.

It is often impractical to carry a range of different standards into the field. Approximate results can be obtained by calibrating 2020 with the recommended span gas and entering the appropriate response factor. The response factor is based on the ratio of the response of the specific compound to the response of the span gas. The response factor multiplies 2020's reading then displays and records it.

Appendix 8.7 provides response factors from which approximations can be made for guidance purposes. Data extrapolated from the use of response factors must be regarded as interim and approximate only. Appendix 8.7 should be used only for concentrations up to 500 ppm of the specific compound, as response factors change with concentration.

3.5.2. Using Response Factors

1. Select "Set", "Cal" and "Mem".
2. Select the desired Cal Memory (1 to 15) with the "Next" and "Prev" keys.
3. Press "Set", "Cal" and "Mem" and "Chng" to change the parameters of the Cal Memory. Select "User" or "Lib".
4. If you selected "User", enter the name, response factor and alarm levels.

5. If you entered "Lib", use the "Next" and "Prev" keys to select the required library. See Appendix 8.8 for a list of Library entries.

6. Calibrate 2020 with zero air and 100 ppm isobutylene as described in Section 3.2.2 or 3.3.2.

7. Expose 2020 to the sample. The displayed reading is the approximate concentration of the specific compound.

The response factors in Appendix 8.7 serve only as a guide to concentrations measured by 2020.

Results are expected to be accurate to within +/-10 ppm or +/-25% of the displayed result, whichever is greater. Accuracy of response factors to other gases and vapors may differ from those listed in Appendix 8.7.

3.6. Manual Operation

As part of manual operation, you setup 2020 to monitor various locations. Since each location may contain different compounds and concentration ranges you can program a Cal Memory and the associated response factor and alarm level for up to 15 different applications. In this way you can sample numerous locations without having to re-calibrate 2020 at each location.

Prepare a monitoring schedule for you application. Your schedule should contain a list of sites that must be monitored and the Cal Memory that must be used when monitoring the site. Also include any reference information that will help you define the site and the monitoring application. If you create your schedule using spreadsheet software, you can later download 2020 data to a computer and then copy it into the spreadsheet for further calculations.

Once you have programmed 2020, and prepared a list of sites to be monitored, you will move around to each location and manually log data at each site.

1. You must determine the number of calibration standards that will be required to perform manual monitoring for your application. Program and calibrate all the calibration memories that you need. See Section 3.2 and 3.4.

Note: It does not matter which Cal Memory is selected or which response factor is entered. 2020's response is not specific to any one compound. The reading displayed always represents the total concentration of all ionizable compounds in the sample.

2. Ensure the 2020 is in PEAK mode. To change the mode, press ENTER and select "Disp". Press "Mode" and select PEAK.

3. Switch to manual operation. Press ENTER and then "Log". Select "Mode". Use the "Next" and "Prev" keys to scroll through the list. When Manual is displayed press ENTER. When you switch between interval and manual operation, the datalogger will be cleared. Press "YES" to confirm your selection and clear the datalogger. If you do not want to lose your previously recorded data, press "NO", then print or save the data to disk before changing to manual operation. See Sections 2.7.3 and 4.2 for printing and saving logged data.

4. The instrument status will change to "Loc".

5. Select the required Cal Memory for this location. Press ENTER and select "Set", "Cal" and then "Mem". Use the "Next" and "Prev" keys to select the desired Cal Memory.

6. Press the ENTER key and locate the first site on your schedule. The middle soft key is used to advance to the next measurement when you are operating in manual mode. Press the "Next" key. If you are not using manual operation, the "Next" key is not shown.

7. The instrument status will change to "BkGd". A background measurement must be made. When you have an accurate background, press "Next". 2020 will record the displayed concentration when you press the "Next" key.

8. The instrument status will now be "Samp". Take a sample measurement. When you have an accurate sample, press "Next". 2020 will record the displayed concentration when you press the "Next" key.

9. The instrument status will again be "Loc". Go to the next site on your schedule.

When you have completed your monitoring you can download the contents of the datalogger to a computer and add the 2020 data to your spreadsheet.

If you change from manual operation to an averaging interval, you will lose the contents of the datalogger. Print or save the data to disk before changing the interval. See Sections 2.7.3 and 4.2 for printing and saving logged data.

3.7. Preparing for Field Operation

3.7.1. Field Check List

When using 2020 for field operation, the following items should be carried into the field to reduce or eliminate down time of the instrument.

If you are going to be in the field for a single 8-10 hour day, then you should include the following accessories:

- ❑ Spare battery pack (Part No. 350009)
- ❑ Spare UV lamp (Part No. 390011)
- ❑ 2020 multi-tool (Part No. 396012)
- ❑ Sample line (Part No. 390006)
- ❑ Calibration kit(s) (Part No. 390033)
- ❑ Calibration regulator (Part No. 350006)
- ❑ Tank(s) of calibration gas (Part No. 350012)
- ❑ Spare gas bag for zero air (Part No. 396017)
- ❑ Gas bag adapter for zero air (Part No. 396010)
- ❑ Supply of commercial zero air
- ❑ Spare inlet filters (Part No. 396015 or 396000)
- ❑ Dilution probe (Part No. 350013)
- ❑ Spare charcoal filters for the dilution probe (Part No. 395064 or 395067)
- ❑ Carrying case (Part No. 350010)
- ❑ User's manual (Part No. 350001)
- ❑ DC power cord (Part No. 350004)

Table 3 Check List for Field Operation

If you will be in the field for more than one day you should include the following additional items:

☐	AC adapter (Part No. 350001 or 396013)
☐	Printer (Part No. 380120)
☐	Cable kit (Part No. 350011)
☐	Computer and associated cables
☐	Serial to parallel converter (Part No. 380145)

Table 4 Additional Field Items

3.7.2. Operational Check List

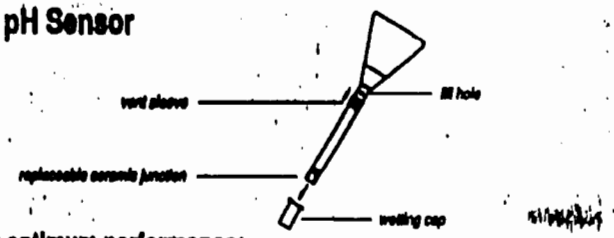
Before beginning field work, set up and calibrate 2020 for your particular application. Ensure the instrument is in working order before heading into the field:

1. Press the "Set" and "Clock" keys and ensure the correct time is entered. Press the ENTER key and ensure the correct date has been entered.
2. Ensure the battery pack is fully charged. If you are unsure about the status of the battery, replace the battery pack with one that is fully charged. See Section 1.5.
3. Program and calibrate all the Cal Memories you need. See Section 3.4. After calibration is complete, sample the calibration gas and the bag of zero air to ensure 2020 has been calibrated correctly.
4. Select the correct operating mode. See Section 2.8.2.
5. Reset the TWA accumulator, the STEL moving average and the MAX. See Section 2.5.
6. You may want to delete all entries from the datalogger to avoid confusion between different days' data and to avoid running out of space in the datalogger. See Section 2.7.2.

Sensor Information

for direct fitting and leaded pH, DO and Conductivity Sensors

• pH Sensor



For optimum performance:

1. Before use remove wetting cap from tip of sensor, and slide the vent sleeve to expose the fill hole.
2. Make sure that the fill solution is not more than 25 mm (1 inch) below the fill hole. Add KCl solution if necessary.
3. Gently tap the sensor to remove any air bubbles at the ceramic junction.
4. Condition the new sensor by soaking in pH 7 buffer for 2 hours. Prolonged soaking is not recommended.
5. Calibrate and measure samples as described in the M90 instructions. Allow sufficient time for the sensor to stabilize when measuring samples of different temperatures, or of low ionic strength. Manual endpointing is advised with these samples.
6. After use, check the level of fill solution, reposition the vent sleeve to cover the fill hole, and replace the wetting cap containing pH 7 buffer (if the sensor will not be used again for more than 2 days, we recommend using saturated KCl in the wetting cap).

Precautions and Limitations:

1. *Do not* wipe the sensor tip – blot dry with a lint-free tissue.
2. *Do not* use KCl saturated with AgCl as this may damage the reference element.
3. *Do not* leave the sensor in organic solvents, strong basic solutions, concentrated fluoride solutions, or hydrofluoric acid for extended periods. Measurements made in these solutions should be taken quickly and the sensor rinsed immediately with distilled water. After rinsing, soak in pH 7 buffer for 2 hours.
4. *Do not* measure solutions that exceed a temperature range of 0 – 100°C.

Maintenance and Troubleshooting:

Prolonged use and ageing may reduce performance i.e. slow response, low slope values, continuous drift or erratic readings. These may be caused by:

Air in junction – remove air bubbles by gentle tapping.

Excess KCl crystals – KCl crystals may build up and settle on the sensor tip, or the KCl may become discolored. Remove the old fill solution and use warm distilled water to dissolve the crystals. Remove water and refill using fresh KCl solution.

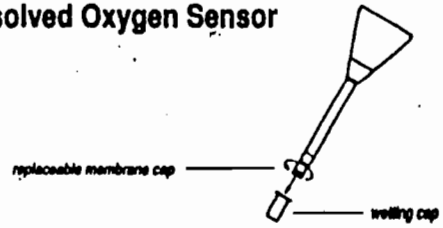
Blocked junction – KCl crystals can block the junction. To test for this, blot the tip dry and air dry for one hour. If no KCl crystals appear at the tip of the sensor the junction is blocked. Remove the ceramic junction using tweezers, and insert new junction (Cat. 477269). Tap gently to remove any air bubbles.

Contaminated pH bulb – i.e. protein/oil contamination.

Protein – soak the sensor in 10% pepsin solution adjusted to pH 2 with HCl for 30 minutes. Rinse with distilled water and soak in pH 7 buffer for 2 hours.

Oil – wash sensor tip with 50% water-acetone solution. *Do not* soak the sensor in acetone solution as this may cause the seals to deteriorate. Rinse with distilled water and soak in pH 7 buffer for 2 hours.

• Dissolved Oxygen Sensor



Installation:

DO membrane caps are fragile. Handle with care to prevent damage.

The sensor is shipped dry and must be filled before use. Unscrew the membrane cap from the sensor, if the silver/gold tip is tarnished clean carefully using electrode cleaning compound or silver polish, paying particular attention to the gold cathode. Rinse tip with DO electrolyte, and fill membrane cap, avoiding air bubbles. Hold the sensor vertically and gently screw the membrane cap onto the sensor, allowing surplus electrolyte to run out. Fit sensor to the meter and allow 1 hour minimum for polarization. Calibrate as described in M90 instructions.

For optimum performance:

1. Before use remove wetting cap from tip of sensor.
2. For immediate use the sensor should be kept connected to the meter. The sensor may be removed for up to 3 hours as a rechargeable battery in the sensor will maintain polarization. For extended storage remove the membrane cap and rinse with water, and clean the sensor tip. Store dry with the membrane cap loosely fitted. Do not fit wetting cap.
3. When making measurements the sample should be stirred at a constant speed i.e. approximately 20 cm/second (8 inches/second).
4. Allow sufficient time for the sensor to stabilize when measuring samples of different temperatures – in some cases this can be several minutes. Manual endpointing is advised with these samples. Make sure the sensor is immersed to a depth of at least 40 mm (1.5 inches) to cover the temperature sensing element.
5. After use replace wetting cap containing distilled water to prevent electrolyte from drying out.
6. Regular maintenance is important to ensure optimum performance. Replacement of membrane caps depends on usage - we recommend replacement every 2 to 4 weeks.

Maintenance and Troubleshooting:

If the sensor will not calibrate, or becomes sluggish or erratic:

1. The silver/gold sensor tip may become tarnished with time. For optimum performance clean tip and refill cap every 2 weeks as described in Installation.
2. The zero oxygen solution will absorb oxygen if left exposed to air and this will cause inaccurate calibration. Use fresh zero oxygen solution.
3. Make sure there are no air bubbles inside the membrane cap when filling with DO electrolyte. Check by looking up through the membrane from the bottom of the sensor.
4. Check the membrane for damage and replace with new cap (Cat. 473626) as necessary.

• Conductivity Sensor

For optimum performance:

1. Make sure the clear plastic shield is in place when measuring.
2. When measuring make sure the solution is above the cell chambe and below the vent hole.
3. To prevent carryover from high to low conductivity solutions rinse distilled water between measurements.
4. Make sure the cell chamber is bubble free when measuring. To re bubbles, immerse probe in the solution at an angle and then raise vertical position.
5. Allow sufficient time for the sensor to stabilize when measuring sa different temperatures. Manual endpointing is advised with these s
6. The sensor is not recommended for low ionic strength solutions (<
7. Clean the probe and shield with distilled water after use.

General Troubleshooting for all Sensors:

1. To verify meter is working check using the test plug.
2. If the sensor connector becomes damaged or wet the display may E4 when a sensor is connected.
3. If the temperature sensing element becomes damaged the temper display may read E1 when a sensor is connected.

Ordering Information:

Item	Ca
pH sensor	47
pH electrode fill solution, 3 x 5 mL	47
pH 7 buffer sachet (pack of 30)	47
pH 4 buffer sachet (pack of 30)	47
pH 10 buffer sachet (pack of 30)	47
pH multipack, pH 4, 7 and 10 (pack of 30 assorted sachets)	47
Buffer solution pH 4.00, 2 x 500 mL (red)	47
Buffer solution pH 7.00, 2 x 500 mL (yellow)	47
Buffer solution pH 10.01, 2 x 500 mL (blue)	47
Buffer rainbow pack, pH 4.00, 7.00 and 10.01 (2 x 500 mL of each)	47
Replaceable ceramic junctions (pH), pack of 3	47
DO sensor	47
DO electrolyte, 3 x 5 mL	47
Zero oxygen solution, 500 mL	47
DO membrane replacement kit, pack of 2	47
pO_2 electrode cleaning compound	47
Conductivity/TDS sensor	47
1413 µS conductivity standard, 500 mL	47
12.88 mS conductivity standard, 500 mL	47
Rinse solution sachet (pack of 30)	47

Corning Incorporated
Science Products Division
Corning, New York 14831
USA
Tel: 1-607-737-1867
Technical Information Center: 1-(800)-222-7748

Client:

Client Contact:

Phone #:

Site Location (city/state)

Sample Identification	Date	Time	Matrix	Grab or Comp.	# of Containers	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)

Special Turnaround Time _____ (Lab Notification Required)

Remarks

parameter and method	sample bottle:	type	size	pres.
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Sampled by: (Please Print)

Company:

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	Rec'd for Lab by: (Signature)

6034 Corporate Drive. Syracuse New York 13057
Phone 315 437 0255
Fax 315 437 1209

Syracuse	Albany	Binghamton	Orchard Park	Rochester	Watertown	Fair Lawn (NJ)
315 4370255	518 4593134	607 724 0475	716 649 2533	716 436 9070	315 4370255	201 703 1324

Standard Operating Procedure

Supplemental

Certification

Insurance

Miscellaneous

Certification

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Wadsworth Center The Governor Nelson A. Rockefeller Empire State Plaza P.O. Box 509 Albany, New York 12201-0509

Antonia C. Novello, M.D., M.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

MARCH 10, 2000

Dear Laboratory Director:

Please note that although your ELAP Certificate of Approval expires on 12:01 AM April 1, 2000, it is still valid until June 30, 2000, as per ELAP Certification Manual, No. 140, Page 13 of 42, dated 12/6/95, Part 55-2.4e NYCRR. "...during any extension or grace period permitted by this Subpart, a laboratory approval shall remain in force beyond the expiration date of the certificate of approval, unless such approval is specifically terminated or suspended in writing."

Further verification of your laboratory's approved ELAP status is available by calling the Program Office at (518) 485-5570.

Sincerely,

Linda L. Madlin
Administrative Assistant
Environmental Laboratory
Approval Program

LLM:da

NYSDOH - WADSWORTH CENTER - ELAP - PO BOX 509 - ALBANY NY 12201-0509
Phone: 518-485-5570 www.wadsworth.org/labcert Fax: 518-485-5568

NEW YORK STATE DEPARTMENT OF HEALTH

ANTONIA C. NOVELLO, M.D., M.P.H. Commissioner

Expires 12:01 AM April 1, 2000
ISSUED April 1, 1999
REVISED February 10, 2000

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

Lab ID No.: 10170

Director: MR. ANTHONY SCALA
Lab Name: UPSTATE LABORATORIES INC
Address : 6034 CORPORATE DRIVE
EAST SYRACUSE NY 13057

is hereby APPROVED as an Environmental Laboratory for the category

ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved subcategories and/or analytes are listed below:

Hydrocarbon Pesticides :
- [illegible]-DDD
- [illegible]'-DDE
- 4,4'-DDT
- alpha-BHC
- [illegible]rin
- [illegible]a-BHC
- [illegible]lptan
- Chlordane Total
- d[illegible]ta-BHC
- [illegible]hloran
- [illegible]ofol
- Dieldrin
- Endrin
- [illegible]osulfan I
- [illegible]osulfan II
- [illegible]ptachlor
- Heptachlor epoxide
- I[illegible]drin
- [illegible]hane
- [illegible]x
- [illegible]ethoxychlor
- PCNB
- [illegible]hane
- [illegible]hane
- [illegible]fluralin
- Toxaphene

Wastewater Miscellaneous :
- Bromide
- Boron, Total
- Cyanide, Total
- Color
- Corrosivity
- Phenols
- Oil & Grease Total Recoverable
- Hydrogen Ion (pH)
- Specific Conductance
- Silica, Dissolved
- Sulfide (as S)
- Surfactant (MBAS)
- Temperature
- Organic Carbon, Total

Polychlorinated Biphenyls :
- PCB-1221
- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260

Wastewater Metals III (ALL)
Wastewater Metals II (ALL)
Nitroaromatics and Isophorone (ALL)
Nutrient (ALL)
Phthalate Esters (ALL)
Purgeable Aromatics (ALL)
Residue (ALL)

Acrolein and Acrylonitrile (ALL)
Wastewater Bacteriology (ALL)
Benzidines (ALL)
Chlorophenoxy Acid Pesticides (ALL)
Chlorinated Hydrocarbons (ALL)
Demand (ALL)
Haloethers (ALL)
Wastewater Metals I (ALL)
Mineral (ALL)
Nitrosoamines (ALL)
Polynuclear Aromatics (ALL)
Priority Pollutant Phenols (ALL)
Purgeable Halocarbons (ALL)
TCLP Additional Compounds (ALL)

Serial No.: 106418

Wadsworth Center

Property of the New York State Department of Health. Valid only at the address shown.
Must be conspicuously posted. Valid certificate has a red serial number.

DOH-3317 (3/97)

NEW YORK STATE DEPARTMENT OF HEALTH

ANTONIA C. NOVELLO, M.D., M.P.H. Commissioner

Expires 12:01 AM April 1, 2000
ISSUED April 1, 1999
REVISED February 10, 2000

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

Lab ID No.: 10170

Director: MR. ANTHONY SCALA
Lab Name: UPSTATE LABORATORIES INC
Address : 6034 CORPORATE DRIVE
EAST SYRACUSE NY 13057

is hereby APPROVED as an Environmental Laboratory for the category

ENVIRONMENTAL ANALYSES/ POTABLE WATER

All approved subcategories and/or analytes are listed below:

nking Water Non-Metals :
Alkalinity
Calcium Hardness
Chloride
Cyanide
Color
Corrosivity
Fluoride, Total
Nitrite (as N)
Nitrate (as N)
Hydrogen Ion (pH)
Solids, Total Dissolved
Sulfate (as SO4)

Drinking Water Bacteriology (ALL)
Drinking Water Metals II (ALL)

Drinking Water Trihalomethane (ALL)
Volatile Aromatics (ALL)

Drinking Water Metals I (ALL)
Volatile Halocarbons (ALL)

Serial No.: 106419

Wadsworth Center

Property of the New York State Department of Health. Valid only at the address shown.
Must be conspicuously posted. Valid certificate has a red serial number.

DOH-3317 (3/97)

NEW YORK STATE DEPARTMENT OF HEALTH

ANTONIA C. NOVELLO, M.D., M.P.H. Commissioner

Expires 12:01 AM April 1, 2000
ISSUED April 1, 1999
REVISED February 10, 2000

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

Lab ID No.: 10170

Director: MR. ANTHONY SCALA
Lab Name: UPSTATE LABORATORIES INC
Address : 6034 CORPORATE DRIVE
EAST SYRACUSE NY 13057

is hereby APPROVED as an Environmental Laboratory for the category

ENVIRONMENTAL ANALYSES/AIR AND EMISSIONS

All approved subcategories and/or analytes are listed below:

llaneous Air :
rmaldehyde
Nitrogen Dioxide
Nitrogen Oxide
rticulates
ulfur Dioxide
Suspended Particulates

Chlorinated Hydrocarbons (ALL)
Metals II (ALL)
Priority Pollutant Phenols (ALL)
Surface Coating (ALL)

Fuels (ALL)
Mineral (ALL)
Purgeable Aromatics (ALL)

Metals I (ALL)
Polynuclear Aromatics (ALL)
Purgeable Halocarbons (ALL)

Serial No.: 106420

Wadsworth Center

Property of the New York State Department of Health. Valid only at the address shown.
Must be conspicuously posted. Valid certificate has a red serial number.

DOH-3317 (3/97)

NEW YORK STATE DEPARTMENT OF HEALTH

ANTONIA C. NOVELLO, M.D., M.P.H. Commissioner

Expires 12:01 AM April 1, 2000
ISSUED April 1, 1999
REVISED February 10, 2000

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

Lab ID No.: 10170

Director: MR. ANTHONY SCALA
Lab Name: UPSTATE LABORATORIES INC
Address : 6034 CORPORATE DRIVE
EAST SYRACUSE NY 13057

Is hereby APPROVED as an Environmental Laboratory for the category

ENVIRONMENTAL ANALYSES/SOLID AND HAZARDOUS WASTE

All approved subcategories and/or analytes are listed below:

racteristic Testing :
Corrosivity
Ignitability
Reactivity
TCLP
E.P. Toxicity

Miscellaneous :
Cyanide, Total
Lead in Dust Wipes
Lead in Paint
Hydrogen Ion (pH)
Sulfide (as S)

Acrolein and Acrylonitrile (ALL)
Chlorinated Hydrocarbons (ALL)
Metals I (ALL)
Nitroaromatics Isophorone (ALL)
Phthalate Esters (ALL)
Purgeable Aromatics (ALL)

Chlorophenoxy Acid Pesticides (ALL)
Haloethers (ALL)
Metals II (ALL)
Polynuclear Arom. Hydrocarbon (ALL)
Priority Pollutant Phenols (ALL)
Purgeable Halocarbons (ALL)

Serial No.: 106422

Wadsworth Center

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificate has a red serial number.

DOH-3317 (3/97)

NEW YORK STATE DEPARTMENT OF HEALTH

ANTONIA C. NOVELLO, M.D., M.P.H. Commissioner

Expires 12:01 AM April 1, 2000
ISSUED April 1, 1999
REVISED February 10, 2000

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

Lab ID No.: 10170

Director: MR. ANTHONY SCALA
Lab Name: UPSTATE LABORATORIES INC
Address : 6034 CORPORATE DRIVE
EAST SYRACUSE NY 13057

Is hereby APPROVED as an Environmental Laboratory for the category

CONTRACT LABORATORY PROTOCOL (CLP)

All approved subcategories and/or analytes are listed below:

norganics | CLP Semi-Volatile Organics | CLP Volatile Organics

Serial No.: 106421

Wadsworth Center

Property of the New York State Department of Health. Valid only at the address shown.
Must be conspicuously posted. Valid certificate has a red serial number.

DOH-3317 (3/97)

Insurance

RUSSELL BOND & CO., INC.
866 Ellicott Square Bldg. 295 Main Street
Buffalo, NY 14203-2595
Phone (716) 856-8220 * Fax (716) 856-0403

CONFIRMATION OF BINDING

No. B0800724

Previous No.
REN

Named Insured
X-PEDITE LABORATORIES INC
6034 CORPORATE DRIVE
E SYRACUSE NY 13057

(315) 422-8118
MARIE NOBLE

DOMINICK FALCONE AGY INC
901 LODI STREET
SYRACUSE NY 13210

Name of Insurer(s)	City & State	Best Rating
EVANSTON INSURANCE CO	EVANSTON, IL 60201	A VIII

Binder Effective: 06-24-98 to 08-23-98
Policy Effective: 06-24-98 to 06-24-99
12:01 A.M. Standard Time

		Premium
MISC E&O	$	3,250.00
BROKERAGE/FILING FEE	$	75.00
SURPLUS LINES TAX	$	117.00
STAMPING FEE	$	13.00
TOTAL CHARGED	$	3,455.00

Coverages, Terms & Conditions

POLICY TYPE:
-Miscellaneous E & O / Professional Liability
POLICY FORM:
-Claims Made
LIMIT:
-$1,000,000 each Claim
-$1,000,000 Aggregate
DEDUCTIBLE:
-$2,500 each Claim
RETROACTIVE DATE:
-Inception
CONTINUED ON NEXT PAGE

THIS IS NOT AN INSURANCE POLICY AND THE
(INSURERS)* HEREIN REFERRED TO
LICENSED BY THE STATE OF NEW YORK
BUT TO ITS SUPERVISION. THE INSURANCE
IN THE EVENT OF THE INSOLVENCY
OF, IS NOT PROTECTED
BY, THE POLICY
AND/OR
ANCE DEPARTMENT PERTAINING TO POLICY FORM.

CONDITIONS
The Insurer(s) bind the kind(s) of insurance stipulated above. This insurance is subject to the terms, conditions and limitations of the policy(ies) in current use by the Insurers.

Unless indicated otherwise this binder may be cancelled by the Insured by surrender of this binder or by written notice to the Insurer(s) stating when thereafter cancellation will be effective. This binder may be cancelled by the Insurer(s) by notice to the Insured in accordance with the policy conditions. This binder is cancelled when replaced by a policy. If this binder is not replaced by a policy, the Insurer(s) are entitled to charge a premium for the binder according to the rules and rates in use by the Insurer(s).

Date June 30, 1998

Authorized Representative
Contact: TONYA HOLLENBECK/DMP

APPENDIX 4

Health and Safety Plan

Health and Safety Plan
Westbury Valet Dry Cleaners
Site #1-30-088

Table of Contents

1.0 General Information

Described below are Anson Environmental Ltd.'s (AEL) project health and safety requirements, responsibilities, and procedures to protect workers during the RI/FS and IRM for the Westbury Cleaners site located in Westbury, Nassau County, New York.

The purpose of the RI/FS is to delineate the areas of on-site soil and groundwater contamination and install a soil vapor extraction system as an onsite interim remedial measure. This Health and Safety Plan is designed to protect on-site workers and to mitigate the potential of off-site releases. As part of this plan, access to the areas of concern and ambient air monitoring will be performed at the location of soil disturbance, downwind and at the site perimeter to minimize the potential for possible on-site and off-site exposure.

1.1 Requirements

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

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

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

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

1.2 Applicability

The protection of AEL's workers' and subcontractors' health and safety and the environment are major concerns during the RI/FS and IRM at the Westbury Cleaners property. Personnel must be protected from the risk of incurring illness or injury during the field investigation at the site. Since each and every safety hazard associated with the site cannot be anticipated, precautions will be taken to prevent illness or injury to workers during the project. Based on these considerations, this health and safety plan will be applicable for each phase of the RI/FS and IRM at this site as described in this work plan. The implementation of this plan will be based on the judgment of the Project managers as described below in the work plan.

2.0 Site Specific Information

The Westbury Cleaners site is a commercial building located in Westbury, New York. The principal areas of concern are the floor drains, former sanitary locations and groundwater conditions.

2.1 Hazard Characterization/Identification

The primary concern at the site is to protect the workers from contaminated subsurface soils and groundwater beneath the site. During this portion of the investigation, exposure to a potential source of contamination is limited. Ambient air monitoring will be performed during any soil disturbance procedures (soil borings) and any filed operations that warrant it. The health and safety officer and/or field project manager will discuss the chemical exposure for the site with all field personnel at the beginning of each workday.

Each day that field work is to be performed, AEL personnel and subcontractors will be made aware of the chemical compounds that may be present on site. The health and safety symptoms of exposure to those chemical compounds will be discussed. Workers on site the previous day will be interviewed to see if they experience any of the symptoms of exposure.

2.2 Potential Exposures

Potential exposure during the RI/FS and IRM will be considered on a daily basis during the investigation. Therefore, disposable gloves will be worn during any contact with any medium being sampled on the property.

2.3 Level of Protection

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

3.0 Site Personnel

The project will require the interaction of government agencies (NYSDEC), contractors, site facility operators and technical specialists. The project team will be composed of AEL and various subcontractors. The Health and Safety Plan will be implemented during all field operations performed on the property. The Field Operations Manager will be responsible for implementing safety precautions during all field activities/sampling phases.

3.1 General Work Practices

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

1. All personnel working on the site investigation team shall read the Health and Safety Plan. A copy of the Acknowledgement Form is provided at the last page of

this work plan.

2. No employee will be allowed in the active field investigation areas without the prior knowledge of the field project manager.
3. All personnel involved in the investigation at the site will notify the field operations manager of any unsafe conditions or activities.
4. Standard hygiene practices will be implemented such as no smoking, eating or drinking during site investigative work activities and require a thorough washing of hands and face prior to smoking, eating, or drinking. At all times, personnel should perform investigative activities from upwind directions.
5. Workers will avoid unnecessary contamination such as walking through, sitting on, leaning on, or kneeling in areas that are known or suspected to be hazardous.
6. All site personnel shall observe their partners for any signs of adverse effects associated with the work activity and will inform their partner of supervisor of any unusual signs or symptoms that they are experiencing themselves.

3.2 Orientation and Training

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

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

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

3.3 Monitoring Equipment

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

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

Organic vapor monitoring will be performed as outlined in the NYSDOH Community Air Monitoring Plan. If TOV Levels exceed 5 parts per million (ppm) above-established pre-work background levels, work activities will be halted and monitoring will continue under the provisions of the Vapor Emission Response Plan.

3.4 Injuries

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

4.0 Levels of Protection

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

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

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

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

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

Should ambient air monitoring during the study indicate a need for higher protection levels that those currently in use, implementation of the appropriate level or cessation of all activities, which are generating the excessive levels, shall be performed. The level at which initial work activities would be halted is concentrations which exceed 5 ppm above established pre-background levels.

In addition, protection and first aid will be provided for common health hazards associated with outdoor work such as poison ivy, insect bites and stings, and ticks. Since ticks are known disease vectors, affected persons are instructed to report tick bites to a physician. Poison ivy contact should be treated immediately. A medical kit for first aid will be available in the field. Any signs of rashes, inflammation, irritation, or burning sensation will be reported immediately.

5.0 Personal Protective Equipment

All employees at the site will be required to use appropriate equipment for protection against potential hazards at the site. Since Level D is anticipated for the field investigation, equipment listed under Level D in Section 4.0 will be required.

6.0 Emergency Information

6.1 Emergency Services and Notification

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

Emergency services for the Westbury Cleaners site include:

Nearest Emergency Medical Facility
Winthrop University Hospital
295 First Street
Mineola, NY 11501
Emergency Room: (516) 663-2211

Fire/emergency calls: (516) 334-7924

Police Department
Nassau County Police Department
Third Precinct

220 Hillside Avenue, Williston Park
Emergency calls: 911
Non-emergency calls: (516) 573-6300

Poison Control Center
General Area Number: (516) 542-2323

7.0 Community Air Monitoring Plan

Real-time air monitoring for volatile organic compounds and particulate levels at the perimeter of the work area are advisable. The plan includes the following parameters-volatile organic compounds will be monitored at the downwind perimeter of the work area on a continuous basis. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the Vapor Emissions Response Plan. All readings must be recorded and be available for State (DEC and DOH) personnel to review.

7.1 Vapor Emission Response Plan

If the ambient air concentrations of organic vapors exceed 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor levels decreased below the 5-ppm above background, activities can resume. If the organic vapor levels are greater than 5 ppm over background but are less than 25 ppm over background at the perimeter of the work area of half the distance the nearest residential or commercial structure, whichever is less, is below 5 ppm above background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that the vapor emissions do not impact the nearest residential or commercial structure.

7.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area of 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 a result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind of half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored with 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20-Foot Zone, then the Major Vapor Response Plan shall automatically be placed in effect if the organic vapor levels are approaching 5 ppm above background.

If the organic vapor levels are greater than 10 ppm above background in the 20-Foot Zone, the major vapor emission response plan shall be implemented immediately.

7.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- -All Emergency Response contacts as listed in Section 6 of the Health and Safety Plan will go into effect.
- -The local police authorities will be conducted immediately by the Safety Officer and advised of the situation
- -Frequent air monitoring will be conducted at 30-minute intervals with the 20-Foot Zone. If two successive reading below action levels are measured, air monitoring may be halted or modified by the safety officer.

APPENDIX 1

HASP Acknowledgement Form

Health and Safety Plan Meeting Acknowledgement Form

Date	Print Name	Signature	Social Security #

APPENDIX 2

Map of Hospital Location, Route and Written Directions

StreetsPlus

Route from Westbury Cleaners to Winthrop University Hospital

Written Directions to Winthrop University Hospital

From Westbury Cleaners site on Post Avenue, Westbury:

Take Post Avenue south to Old Country Road.
Make a right turn onto Old Country Road and proceed west.
Make a right turn onto Mineola Blvd and proceed north three blocks.
Make a left onto 2nd Street and proceed west directly into the hospital facility.

Winthrop University Hospital is located at the end of 2nd Street and the emergency entrance is clearly marked.