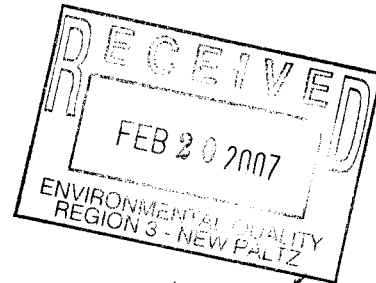




G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS



February 15, 2007

Ramanand Pergadia
Regional Hazardous Waste Remediation
New York State Department of Environmental Conservation, Region 3
Division of Environmental Remediation
21 South Putt Corners Road
New Paltz, NY 12261

Janet
2/22/07

Subject: Preliminary Site Assessment and Interim Remedial Measures Work Plan
101 Westmoreland Avenue
White Plains, New York
Order on Consent Index No. D3-0504-06-09
Site Code No. 360095
GCE Project No. 05-003-00

Dear Mr. Pergadia:

Enclosed please find the Preliminary Site Assessment Work Plan prepared by G. C. Environmental, Inc. (GCE) for the subject property on behalf of Automobile Club of New York, Inc., the Respondent, for your review and comments.

If you have any questions concerning this project, please feel free to call me at (914) 674-4346, ext 111.

Very truly yours,

Gregory A. Collins

Gregory A. Collins
President

Enclosures

cc: Director, Bureau of Environmental Exposure Investigation, NYSDOH
Michael J. Lesser, Esq, NYSDEC
Marta Genovese, Esq., James T. Clifford, John E. Byrnes, Automobile Club of New York, Inc.
Louis Evans, Esq., Nixon Peabody LLP



G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS



**PRELIMINARY SITE ASSESSMENT AND
INTERIM REMEDIAL MEASURES
WORK PLAN**

OF

**101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK
ORDER ON CONSENT NO. D3-0504-06-09
SITE CODE NO. 360095**

PREPARED FOR:

**NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION 3
DIVISION OF ENVIRONMENTAL REMEDIATION
21 SOUTH PUTT CORNERS ROAD
NEW PALTZ, NEW YORK 12561**

**ON BEHALF OF
AUTIMOBILE CLUB OF NEW YORK, INC.**

DATE ISSUED: FEBRUARY 15, 2007

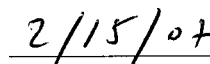
GCE PROJECT NUMBER: 05-003-00

The Preliminary Site Assessment and Interim Remedial Measures Work Plan described herein was prepared by and/or under the supervision of the undersigned, of G. C. Environmental, Inc. (GCE). The plan was prepared in accordance with New York State Department of Environmental Conservation (DEC) Draft DER-10 Technical Guidance for Site Investigation and Remediation dated December 2002, DEC Sampling Guidance and Protocols dated September 1992 and Proposal/Work Order Number 04425, and is subject to the Consulting Services Agreement signed prior to initiation of the assessment.

Prepared By:

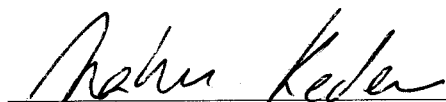


Val Gatallin, C.P.G.
Environmental Scientist

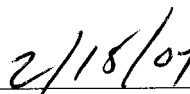


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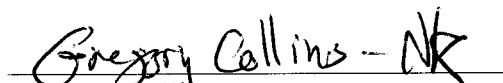
Report Reviewed and Approved By:



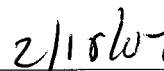
Nahum Kedem, P.G.
Vice President



Date



Gregory Collins
President



Date

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1.0 INTRODUCTION AND PURPOSE

G.C. Environmental, Inc. (GCE) has prepared this Preliminary Site Assessment (PSA) and Interim Remedial Measures (IRM) Work Plan (WP) pursuant to the Consent Order for the property entered between Automobile Club of New York and the New York State Department of Environmental Conservation (DEC). The Work Plan outlines the investigation that will take place at the property located at 101 Westmoreland Avenue, White Plains, New York (the Site). This PSA and IRM Work Plan has been prepared in accordance with DER-10 Technical Guidance for Site Investigation and Remediation dated December 2002 and DEC Sampling Guidance and Protocols dated September 1992.

2.0 BACKGROUND INFORMATION

2.1 Site Location and Description

The Site is located at 101 Westmoreland Avenue in the City of White Plains, Westchester County, New York, on the northwest side of Westmoreland Avenue, approximately 100 feet to the west of the T-shaped intersection formed by Westmoreland Avenue and Home Place and is occupied by RJT, an Automobile Club of New York approved auto-repair shop.

The Site consists of an approximately 9,000-square-foot rectangular-shaped parcel of land. The on-site facility consists of an office space, restrooms and a storage closet located in the southern portion of the building, an automobile exterior detailing area in the western portion of the building, with the remainder of the building utilized as an automobile repair area. The remainder of the Site consists of an asphalt-paved parking area located on the northeastern portion of the Site and gravel-paved parking area located on the western portion of the Site.

Please refer to Figures 1 and 2 for Site Locus Map and Site Plan, respectively.

2.2. Physical Site Characterization

2.2.1 Site Topography

According to the US Geological Survey (USGS) Topographic Map of White Plains, New York Quadrangle, US Geological Survey (USGS), dated 1967, photorevised 1979, the Site's elevation is approximately 210 feet above mean sea level. Topographically, the Site is essentially level with no abrupt changes in elevation. The topography in the vicinity of the Site slopes gently to the northwest towards the Bronx River located approximately 700 feet to the northwest of the Site. Please refer to Fig. 3 for the USGS Topographic Map.

approximately 500 feet to the northwest of the Site, which is designated as Riverine, Upper Perennial, Unconsolidated Bottom, Permanent (R3UBH). According to the DEC Freshwater Wetlands Map for White Plains, Westchester County, New York Quadrangle, effective 1987, the nearest designated wetlands is a low-lying area located approximately 8,500 feet to the north-northeast of the Site, which is designated as "W-9".

2.3 Previous Environmental Reports

GCE's Phase I Environmental Site Assessment, prepared for Automobile Club of New York and dated February 4, 2005 (Phase I Report) revealed the following recognized environmental conditions:

- GCE's visual inspection of the Site revealed the presence of one (1) 550-gallon No. 2 fuel oil underground storage tank (UST) and one (1) 550-gallon waste oil UST located beneath the eastern portion of the on-site building. The fill port and vent pipe associated with the 550-gallon No. 2 fuel oil UST are located along the northeast side of the building and the fill port associated with the 550-gallon waste oil UST is located in the northeastern portion of the building. No leaks and/or spills associated with either UST and/or the associated fill ports and vent pipe were observed. According to Mr. Ray Tartaglione, with R.J.T. Motorists Services, Inc., a tenant at the Site, these two (2) USTs are of single-wall construction and they were installed in 2001, when one (1) waste oil UST and one (1) No. 2 fuel oil UST were removed. According to Mr. Tartaglione, contaminated soil was encountered during tank removal activities. All soil was excavated and removed. Based on its description, these removed USTs may have environmentally impacted the Site.

According to the Environmental Data Resources, Inc. (EDR) report, the Site is listed as a NY Spills Information Database (SPILLS) and UST site:

*Automobile Club of New York
101 Westmoreland Ave
White Plains, NY*

This SPILLS case occurred on June 2, 2001 when there was a suspected tank failure with a 550-gallon No. 2 fuel oil UST and 250-gallon waste oil UST. This SPILLS case was last reported as "Tanks have been removed and excavation is underway at site." According to Mr. Tartaglione, these two tanks were removed, all contaminated soil was removed and two (2) new USTs were installed. There is one (1) "in-service" 550-gallon used oil UST and one (1) 550-gallon No. 1, 2 or 4 fuel oil UST listed for this site.

Furthermore, GCE's visual inspection of the Site revealed one groundwater monitoring well located in the gravel-paved land on the northwestern portion of the Site. The Westchester County Department of Health (WCDH) requested the installation of this groundwater monitoring well in 2002 after soil contamination was discovered during the removal of the two (2) 550-gallon USTs containing fuel oil and waste oil in 2001. Upon the groundwater monitoring well installation and initial sampling, additional groundwater samples were collected on a quarterly basis for a period of one (1) year. Between January 2002 and January 2003, GCE conducted five rounds of groundwater monitoring at the Site. Laboratory analytical results of the last round indicate that concentrations of several volatile organic compounds (VOCs), namely 1,1-dichloroethene (15 microgram per liter (ug/l), 1,1-dichloroethane (7.5 ug/l), 1,1,1-trichloroethane (140 ug/l) and 1,2,4-trimethylbenzene (6.3 ug/l) were detected above the DEC Water Quality Standards for Groundwater (Groundwater Standards) of 5 ug/l for all of the detected compounds.

- According to the 1930 Sanborn Fire Insurance map provided by EDR, there was a gasoline tank located on the southern portion of the Site which is currently occupied by the asphalt-paved parking area. No further information regarding this gasoline tank was provided to GCE. It is possible that this gasoline tank was removed during the construction of the existing building circa 1944. However, potential leaks and/or spills associated with this gasoline tank may have environmentally impacted the Site.
- According to Mr. Tartaglione, there was one (1) dry well located in the northeast portion of the on-site building. This dry well is currently filled and covered with a concrete slab. Mr. Tartaglione is unaware of when this dry well was closed. No further information regarding this dry well was provided to GCE. However, potential petroleum products entering this dry well may have environmentally impacted the Site.
- GCE's visual inspection of the immediate surrounding area revealed the presence of several fill port and vent pipes, most likely associated with petroleum and/or chemical storage tanks, located along Westmoreland Avenue hydraulically up/cross-gradient of the Site. Based on their location, it is possible that these potential petroleum and /or chemical storage tanks may have environmentally impacted the Site.
- GCE's visual inspection of the surrounding area revealed the presence of Bearing & Motive Specialties, Inc., which is the closest hydraulically up-gradient site with operations that would typically utilize chlorinated solvents, and automotive service and commercial establishments located

in the immediate vicinity of the Site. Based on the nature of these establishments, it is likely that they utilize and/or generate petroleum and/or hazardous materials/wastes. Potential leaks and/or spills of petroleum products and/or hazardous materials/wastes at these off-site properties may have environmentally impacted groundwater below the Site.

In 2006, GCE performed an Additional Subsurface Investigation at the subject Site, which consisted of installation of seven (7) soil borings and two (2) groundwater monitoring wells and subsequent well survey, groundwater level measurement, and groundwater sampling. The Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005 included the following findings:

- Soil and groundwater below the Site are contaminated with two types of contamination: petroleum hydrocarbons and chlorinated hydrocarbons (chlorinated solvents).
- Subsurface soil samples were collected from soil borings B-1 through B-6 continuously using disposable polyethylene sample liners until groundwater was encountered. Soil boring B-7 was advanced directly to groundwater. No soil samples were collected from this boring since soil samples have already been collected from boring B-1, which was immediately adjacent to boring B-7. Petroleum hydrocarbons in the soil were detected in soil borings B-1 and B-5 located on the central portion of the Site, in the area of the removed 550-gallon USTs formerly storing No. 2 fuel oil and waste oil. Concentrations of BTEX totaling 17,900 ug/kg (0'-2' below grade) and 4,121 ug/kg (15'-17' below grade) were detected in soil borings B-1 and B-5, respectively. No evidence of petroleum contamination in the form of free product was observed. Petroleum hydrocarbons in groundwater were also found only in the area of the removed USTs. Concentrations of BTEX totaling 41.1 ug/l in boring B-5 and 19.3 ug/l in boring B-7 were detected in groundwater samples. The petroleum plume is limited and is moving very slowly in the northwestern direction, along the general direction of groundwater flow. The data indicate an on-site source of petroleum contamination, most likely the former leaking waste oil underground tank located near soil boring B-5. As a result of natural bioattenuation, the petroleum hydrocarbons are biodegrading and concentrations in groundwater are decreasing with time.

Please refer to Figure 2 for the previous soil sample locations.

- Chlorinated hydrocarbons and solvents present at the Site included tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA) and their isomers. With the exception of soil

boring B-1 located in the area of the historical dry well, where the concentration of total chlorinated solvents was 348,200 ug/kg (0'-2'), and soil boring B-5 (20'-22'), where the concentrations of total chlorinated solvents was 11,802 ug/kg, these compounds are either not detected in any of the soil borings, or detected far below their detection limits. However, groundwater sampling results indicated that PCE, TCE and DCE contamination was present throughout the Site and off-site with higher concentrations (160-195 ug/l) located along the northwestern (down-gradient) and southeastern (up-gradient) boundaries of the Site. Minimal concentrations or no contamination is present in the groundwater samples collected from the central portion of the Site, where the hydrocarbon plume is present.

The source of the chlorinated solvents in groundwater is unknown. However, the distribution pattern of the contaminants indicates a strong potential for an off-site up-gradient source(s) impacting groundwater at the subject site from extended releases of chlorinated solvents into the soil and groundwater from off-site.

In the central portion of the Site, in the area of removed USTs, groundwater is most likely under anaerobic conditions. Under anaerobic conditions, the natural bioattenuation (reductive dechlorination process) typically leads to a reduction of PCE, TCE and DCE.

Please refer to Tables 2 and 3 for the summaries of compounds found in soil and groundwater samples collected during previous investigations.

3.0 WORK PLAN SCOPE

3.1 Objectives

The main objectives of this PSA are:

- Further delineate the extent of contaminants in soil and groundwater at the Site;
- Identify the sources of contamination and the migration pathways on or through soil and groundwater;
- Abandon in-place the 550-gallon waste oil UST present at the Site (this task will be performed under the jurisdiction of Westchester County Health Department and City of White Plains Building Department and will not be indicated in the PSA report);
- Collect and evaluate all data necessary to evaluate further remedial action
such as?

if requested by the DEC.

3.2 Soil Borings

In order to further delineate the horizontal and vertical extent of soil contamination, GCE proposes to advance several soil borings via the Geoprobe drilling method at the Site as follows:

One (1) soil boring will be advanced in the likely center of the historical dry well and four (4) soil borings will be advanced 5 feet away from the boring in the middle of the historical dry well and 90 degree from each other. All borings will be extended to the depth of groundwater. Soil samples from the borings will be collected at 5-foot intervals and field screened for the presence of total volatile organic compounds (VOCs) using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes. *see 192*

In the event that soil exhibiting elevated levels of total VOCs, *via the PID readings* olfactory or visual evidence of contamination is encountered in any of the outer four (4) soil borings, an additional soil boring(s) will be advanced 5 feet away and inline with the impacted soil boring(s) and the central boring. The same procedure will be followed for all of the impacted soil borings until no impacted soil is encountered. The additional soil boring(s) will extend to the same depth and will include the same sampling intervals as the first five (5) soil borings. Impacted soil will be defined as soil samples exhibiting PID field screening levels of above 20 parts per million (ppm) and visual and olfactory evidence of contamination. *to 800 ~26-29' deep*

Laboratory obtained glassware will be used for the soil samples and will consist of the following:

- Volatile Organic Compounds (VOCs) – one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;

The soil samples will be placed into two (2) glass containers equipped with teflon-lined caps. Air in the head space of the one (1) container will be allowed to develop. The head space will be field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards.

Two (2) non-impacted soil samples with the highest PID field screening levels but below 20ppm, from each non-impacted soil boring, will be submitted to the laboratory for analysis.

One (1) impacted soil sample with the highest PID reading from each impacted boring, but only below 15 feet deep, will be analyzed for the presence of

additional compounds which may be required for soil remediation design, such as: nitrate, sulfate, iron, manganese and methane.

The soil samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory. All soil samples will be analyzed for the presence of VOCs using EPA Method 8260.

The DEC has the right to split or duplicate the samples. All field work including boring locations, sample locations and depth are subject to field conditions and may be modified in the field using GCE's best judgment.

3.3 Waste Oil Tank Abandonment

In order to properly abandon in-place the 550-gallon waste oil UST located at the Site, GCE will advance four (4) soil borings immediately adjacent to the UST. Soil borings will be advanced via the Geoprobe drilling method. Soil borings will be advanced to a depth of approximately 2 feet below the UST's invert. One (1) soil sample from each boring representing the two (2) feet immediately below the UST's invert will be collected continuously and field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes.

Laboratory obtained glassware will be used for the soil samples and will consist of the following:

- Volatile Organic Compounds (VOCs) – one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;
- Semi-Volatile Base Neutrals Organic Compounds (B/N) and 8 RCRA Metals – one (1) 8-ounce glass jar equipped with teflon-lined cap per sample.

One (1) soil sample from each soil boring, as described above, will be submitted to the laboratory for analysis. In the event that no soil contamination is found in any of the soil samples, the waste oil UST will undergo a tightness test, and, if the tank passes such test, the tank will be abandoned in-place.

If soil contamination is found in any of the soil borings, GCE will prepare alternative work plan.

All work associated with tank abandonment including soil sampling, tank testing and abandonment, reporting and additional work if warranted, will be conducted under the jurisdiction and supervision of both, the Westchester County Department of Health (WCDH) and the City of White Plains Building

Department. QA/QC procedures for waste oil UST soil sampling will be conducted in accordance with the WCDH requirements.

The scope of work for the UST abandonment in-place has been approved by the WCDH.

3.4 Soil Vapor Intrusion Investigation

In accordance with the DEC Program Policy (DER-13 / Strategy For Evaluating Soil Vapor Intrusion at Remedial Sites in New York, dated October 18, 2006), all contaminated sites in New York State, especially sites contaminated with chlorinated volatile organic compounds, should be evaluated to determine whether these sites have the potential for exposures related to soil vapor intrusion, which is described as the migration of volatile chemicals (in vapor form) from the subsurface into overlying or adjacent buildings. This Preliminary Site Assessment Work Plan describes the Soil Vapor Probe installation and Soil Vapor Sampling techniques.

3.4.1 Soil Vapor Probe Installation

The selection of the soil vapor probe locations was based on previously identified areas of environmental concern, the accessibility of the Site, on-site conditions and the locations of public underground utilities. A total of eleven (11) soil vapor probes are proposed to be installed at the Site under this Preliminary Site Assessment Work Plan. Five (5) soil vapor probes will be installed along the interior perimeter of the garage (probes VP-1, VP-2, VP-3, VP-4 and VP-5) and two (2) probes (VP-6 and VP-7) will be installed in the central portion of the garage, down-gradient of the existing dry well and fuel oil tank. Please refer to the Figure 2A for the Site Plan and location of proposed soil vapor probes. These soil vapor probes will be installed as permanent sub-slab vapor probes. A 1-inch diameter hole into the concrete floor will be drilled using electric rotary hammer drill and masonry bit. Inert polyethylene tubing of the appropriate size (1/8 to 1/4 inch diameter) and of laboratory or food grade quality will be installed into the hole. The tubing will not extend further than 2 inches into the sub-slab material. The implant will be sealed to the surface with non-VOC-containing and non-shrinking cement and plugged. A protective eight (8)-inch diameter flush-mounted protective watertight manholes will be set around the top of each probe tubing and grouted in place to the top of bentonite to minimize infiltration of water or outdoor air, as well as to prevent accidental damage.

To investigate the influence of contaminated groundwater on soil vapor and to characterize the vertical profile of contamination, four (4) soil vapor probes are proposed to be installed on the Site near the location of monitoring wells MW-6 (VP-8), MW-5 (VP-9), MW-4 (VP-10) and

MW-2 (VP-11). These soil vapor probes will be installed at a depth of approximately 25 feet (2 to 3 feet above groundwater table using the Geoprobe drilling method. Implants, or one (1)-foot long stainless steel screens will be fitted with inert polyethylene tubing of the appropriate size (1/8 to 1/4 inch diameter) and of laboratory or food grade quality to the surface and plugged. Clean silica filter sand No. 2 will be placed in the annulus of the borehole to create a sampling zone, to a depth of approximately two (2) feet above the probe screen. A three (3)-foot thick bentonite seal will be installed above the sand filter pack to prevent outdoor air infiltration. The remainder of the borehole will be backfilled with clean material. A protective eight (8)-inch diameter flush-mounted protective watertight manholes will be set around the top of each probe tubing and grouted in place to the top of bentonite to minimize infiltration of water or outdoor air, as well as to prevent accidental damage.

3.4.2 Soil Vapor Sampling

Soil vapor sampling will be conducted after the IRM activities are completed. The newly installed soil vapor probes will be allowed to stabilize and equilibrate with subsurface conditions for approximately 48 hours prior to sampling. Soil vapor samples will be collected in the same manner at all locations to minimize possible discrepancies. To ensure stagnant or ambient air is removed from the sampling system and to assure samples collected are representative of subsurface conditions, a one to three implant volumes (the volume of the sample probe and tube) will be purged prior to collecting the samples. Flow rates for both purging and collecting will not exceed 0.2 liter per minute to minimize outdoor air infiltration during sampling. A tracer gas (butane) will be used when collecting soil vapor samples to verify that adequate sampling techniques are being implemented (i.e. to verify infiltration of outdoor air is not occurring).

One (1) soil vapor sample will be collected from each newly installed soil vapor probe. Laboratory obtained samplers will be used for the soil vapor samples and will consist of the following:

- Volatile Organic Compounds (VOCs) – one (1) 6-liter SUMMA canister with settable flow controller.

Please refer to Table 1 for the Summary of Proposed Sampling.

All soil vapor samples will be logged and transferred under a chain-of-custody protocol to a New York State Air and Emissions ELAP-approved laboratory for analysis of VOCs using EPA Method TO-15.

3.5 Groundwater Investigation

3.5.1 Monitoring Well Installation

The selection of the monitoring well locations was based on previously identified areas of environmental concern, the accessibility of the Site, on-site conditions and the locations of public underground utilities.

A total of six (6) additional groundwater monitoring wells (MW-4 through MW-9) are planned to be installed on the Site as follows: MW-4 will be installed to the northwest and as close as possible to the historical dry well. MW-5 will be installed to the west and hydraulically down-gradient of the removed USTs, MW-6 will be installed along the north wall and inside of the on-site structure, and MW-7 through MW-9 will be installed along the western border of the Site in order to fully delineate the groundwater contamination plume.

Please refer to Figure 2 – Site Plan for proposed monitoring well locations.

The proposed groundwater monitoring wells will be installed using the Geoprobe drilling method with a 4-inch inner diameter hollow-stem augers. The monitoring wells will be constructed of Schedule 40, 2.0-inch diameter PVC riser pipe, attached with threaded joints to schedule 40, 2.0-inch diameter, 0.020-inch slotted PVC well screen. A 15-foot screen section will be placed at each well, extending 10 feet below groundwater. Clean silica filter sand No. 2 will be placed in the annulus of the borehole to minimize the amount of fine sediment entering the well, to a depth of approximately two (2) feet above the well screen. A two-foot thick bentonite seal will be installed above the sand filter pack to prevent the infiltration of surface water into the well. Bentonite/cement grout will be placed from the top of the bentonite seal to approximately one (1) foot below ground surface. The monitoring wells will be fitted with eight (8)-inch diameter flush-mounted protective watertight manholes set to prevent tampering and provide protection from the surface water runoff.

Upon installation, the monitoring wells will be developed using a submersible pump until the groundwater appears to be free of sediments. The newly installed wells will be allowed to stabilize and equilibrate with the aquifer for approximately two weeks.

3.5.2 Monitoring Well Survey and Groundwater Level Measurement

Approximately two (2) weeks subsequent to installation, GCE will conduct a survey and groundwater level measurements of all the existing

and newly installed monitoring wells. The monitoring well casing rim elevations will be surveyed to the nearest 0.01-foot.

Depth to groundwater and free product, if detected, will be measured using a Solinst oil/water interface probe equipped with a fiberglass measuring tape. The same probe and measuring tape will be used for all measurements. All of the groundwater level measurements will be taken from an etch mark at the top of the PVC casing of each well.

3.5.3 Groundwater Sampling

Groundwater samples will be collected from the existing and all newly installed monitoring wells. Laboratory obtained glassware will be used for the groundwater and free product samples and will consist of the following:

- Volatile Organic Compounds (VOCs) – two (2) 40-ml glass vials preserved with hydrochloric acid and equipped with a teflon-lined cap.

All groundwater samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory for analysis of VOCs using EPA Method 8260.

The DEC has the right to split or duplicate the samples.

Additionally, a Horiba U-22XD water quality multiparameter system (with flow-through-cell) will be used to monitor water quality parameters during purging: electrical conductivity, dissolved oxygen, pH, salinity, total dissolved solids, oxidation-reduction potential, turbidity and temperature. Three of these water quality parameters (dissolved oxygen, pH and oxidation-reduction potential) also will be used to evaluate the natural attenuation of the contaminants in groundwater.

3.6 Waste Management

The following wastes will be generated as part of this Investigation: 1) excavated soil; 2) drilling-generated soil cuttings; 3) well development and purge water; and 4) disposable sampling equipment.

3.6.1 Excavated Soil

All excavated soil will be placed on two (2) layers of 10-mil polyethylene sheeting. At the end of each day, the soil pile will be covered by two (2) layers of 10-mil polyethylene sheeting. After soil excavation is completed, pre-disposal soil sampling will be performed. Collected pre-

disposal soil samples will be analyzed for RCRA Waste Characterization and disposal facility requirements.

3.6.2 Soil Cuttings

Soil cuttings from soil borings completed during this investigation will be placed in labeled and sealed, DOT-approved 55-gallon drums. The drums will be stored temporarily in an existing containment area until appropriate disposal is identified.

3.6.3 Groundwater and Decontamination Water

Purge water removed from the monitoring wells and decontamination water generated during all sampling activities will be transferred into labeled and sealed, DOT-approved 55-gallon drums and stored on-site until groundwater samples are analyzed. Based on the sampling results, the drummed wastewater will be disposed of in accordance with all applicable regulations.

3.6.4 Disposable Sampling Equipment

Incidental waste generated during sampling activities may include latex gloves, disposable bailers, spent respirator cartridges, plastic sheeting, paper towels and similar expended and discarded field supplies. These materials also will be temporarily stored in a 55-gallon drum in the containment area and will be disposed of in accordance with all applicable regulations.

4.0 QUALITY ASSURANCE PROJECT PLAN

This section provides information on the Site-specific quality assurance project plan (QAPP). The goal of this plan is to achieve data quality objectives (DQO) for this project. The laboratory analytical procedures will conform to the DEC Analytical Services Protocol (ASP), as applicable. The laboratory deliverables (ASP-A or ASP-B) will be determined at a later time by the DEC project manager.

GCE will utilize EcoTest Laboratories, Inc. (EcoTest) of North Babylon, New York, as an analytical laboratory for the activities outlined in the PSA Work Plan. EcoTest is an independent testing laboratory which was founded in 1977. Since its inception, EcoTest strives to produce the most accurate and precise analytical results possible. Their data is used by the clients who must comply with federal, state and local regulations such as SPDES, NPDES, RCRA and SDWA. *they are ELAP ✓*

In order to achieve these goals, EcoTest implements the following procedures:

- Adequately staffed and equipped laboratory facility;
- Successful participation in the proficiency testing program operated by the New York State Department of Health Environmental Laboratory Approval Program or another accredited provider;
- Successful implementation of a NELAC complaint quality system;
- Successful biennial assessments by the New York State Environmental Laboratory Approval Program, or Primary Accrediting Authority;
- Laboratory test results that are supported by quality control data and documented laboratory testing procedures.

GAPP?

Please refer to Appendix D for Quality Manual and Certifications.

4.1 Groundwater Sampling

Prior to sampling, the standing water volume will be calculated by using the depth to groundwater and total depth of the well. Three to five standing volumes of water will be purged from the monitoring wells prior to sampling in order to evacuate the water that has stagnated and/or thermally stratified in the well casing. Additionally, pH, temperature and specific conductance should be stabilize to +/- 10% over at least 3 successive well volumes and the turbidity readings is desired to stabilize at a value below 50 Nephelometric Turbidity Units (NTU). The wells will be purged using a submersible pump. When the calculated quantity of water will be purged from each well, a water sample will be obtained using a dedicated disposable bailer.

The sampling procedure used by GCE will utilize a bottom-fill check valve and double-check valve (in deep wells) disposable bailer. The bailer, made of polyethylene, will be slowly lowered into the well by hand. Once in position, the attached cord will be pulled to set the check valve and the bailer will be then retrieved.

which
wells-
no diphs
mixed

4.1.1 Field QA/QC Samples

Field QC samples will be ~~served~~ as a control and check mechanism to monitor the consistency of sampling methods and the influence of off-site factors on environmental samples.

Trip Blanks

Trip blanks will be prepared by laboratory with deionized laboratory grade water and one (1) blank will accompany all sample shipments to the laboratory. The water used will be from the same source as that used for the laboratory method blank. The trip blank will be handled and transported in the same manner as the samples collected which it will accompany. Trip blanks will be analyzed for VOCs using EPA Method 8260 to identify the presence of cross-contamination as a result of sample

shipment, e.g. contaminated from the air, shipping containers, or from other items coming into contact with the sample bottles.

Field Blanks

Field blanks indicate if sampling equipment decontamination procedures are performed adequately between adjacent sampling locations. One (1) field blank will be collected during groundwater sampling. Field blank will be collected by filling a clean bailer with laboratory water in the field, and transferring this water into appropriate sample containers preserved in the same manner as other samples. The water used for the field blank will be from the same source as that used for the laboratory method blank. The field blank will be analyzed for VOCs using EPA Method 8260.

Duplicate Samples

In addition to replicate analyses performed in the laboratory, field duplicates also serve as a measure for precision. Duplicate samples will be collected at a frequency of 10 percent of all samples collected (two (2) groundwater samples). Duplicates will be obtained by collecting two (2) successive samples from the same location, when a volume of the sample matrix is thoroughly mixed, placed in separate containers, and identified as different samples. Duplicate samples will be analyzed for VOCs using EPA Method 8260.

should be
"mix"
bleeding
add VOC

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

MS/MSD samples will be used to assess influences or interferences caused by the physical or chemical properties of the sample itself. MS/MSD data will be reviewed in combination with other QC monitoring data to determine matrix effects. The samples for the MS/MSD analyses will be collected from a sampling location that is believed to exhibit low-level contamination. A sample from an area of low-level contamination is needed because the objective of MS/MSD analyses is to determine the presence of matrix interferences, which can best be achieved with low level of contaminations. In accordance with the ASP protocol, MS/MSD samples will be collected at a frequency of two (2) samples for each 20 samples collected for VOC 8260 with a minimum of two (2) samples.

Please refer to the attached table [^]for the Summary of Proposed Sampling.

4.2 Soil Sampling

Soil samples will be collected using disposable plastic scoops and will be transferred into the appropriate sampling containers.

4.2.1 Field QA/QC Samples

Field QC samples will be served as a control and check mechanism to monitor the consistency of sampling methods and the influence of off-site factors on environmental samples.

Trip Blanks

Trip blanks will be prepared by laboratory with deionized laboratory grade water and one (1) blank will accompany all sample shipments to the laboratory. The water used will be from the same source as that used for the laboratory method blank. The trip blank will be handled and transported in the same manner as the samples collected which it will accompany. Trip blanks will be analyzed for VOCs using EPA Method 8260 to identify the presence of cross-contamination as a result of sample shipment, e.g. contaminated from the air, shipping containers, or from other items coming into contact with the sample bottles.

Duplicate Samples

In addition to replicate analyses performed in the laboratory, field duplicates also serve as a measure for precision. Duplicate samples will be collected at a frequency of 10 percent of all samples collected (two (2) soil samples). Duplicates will be obtained by collecting two (2) successive samples from the same location, when a volume of the sample matrix is thoroughly mixed, placed in separate containers, and identified as different samples. Duplicate samples will be analyzed for VOCs using EPA Method 8260.

not for
VOCs
split core

Please refer to the attached table for the Summary of Proposed Sampling.

4.3 Sample Handling and Documentation

The samples will be transferred into sample containers which will be packed and shipped back to the laboratory in a laboratory-supplied cooler with sufficient ice packs to maintain the sample temperature at 4°C at all times during shipping to the laboratory. Chain-of-custody protocols will be maintained from sample collection to delivery to the laboratory. Field information will be recorded in field report and sampling log sheets. Full documentation will be made as to the location and depth of all samples collected. Each sample will be labeled with GCE's project number, the sample location and depth interval, the date and time, the initials of the sampler and the requested analysis. Samples will be delivered to the analytical laboratory as soon as possible after collection.

Samples of free product, if present, will be placed in a separate cooler that does not contain any other samples.

4.4 Soil Vapor Sampling

Extreme care will be taken during all aspects of sample collection to ensure that sampling error is minimized and high quality data are obtained. The sampling team members will avoid actions (e.g. fueling vehicles, using permanent marking pens, and wearing freshly dry-cleaned clothing or personal fragrances), which can cause sample interference in the field. Appropriate QA/QC protocols will be followed for sample collection and laboratory analysis.

4.4.1 Field QA/QC Samples

Field QA/QC samples will be collected, stored, transported and analyzed in a manner consistent with site samples. The following QC samples will be collected to support the sampling activity:

Duplicate Samples

Duplicate samples will be collected at a frequency of 10 percent of all samples collected (one (1) soil vapor sample). Duplicate samples will be collected in separate sample containers, at the same location and depth and immediately after the original sample. Duplicate samples will be analyzed for VOCs using EPA Method TO-15.

Background Air Samples

Background air samples will be collected to characterize site-specific background outdoor and indoor air conditions. These samples will be collected concurrently with and in the same manner as soil vapor samples. They will be used in the evaluation of soil vapor results (i.e., to identify potential outdoor and indoor air interferences associated with the infiltration of outdoor and indoor air into the sampling apparatus while the soil vapor sample was collected). One (1) outdoor and one (1) indoor air sample will be collected from representative locations at the Site. The outdoor and indoor air samples will be analyzed for VOCs using EPA Method TO-15.

Trip blanks will not be collected, because it is not possible to mimic round-trip shipping conditions with a single trip blank since sample canisters are shipped from the lab under vacuum pressure and returned to the lab at or close to ambient pressure.

Please refer to Table 1 for the Summary of Proposed Sampling.

4.5 Monitoring Well Installation

All drilling equipment utilized in well advancement will be steam cleaned prior to initial use. All metal parts will be cleaned using mechanical and chemical cleaning procedures which will consist of brushing and sweeping off loose dirt followed by detergent washing and potable water rinsing. During the advancement of the boreholes, soil cuttings will be collected into DOT-approved 55-gallon steel drums and labeled accordingly. No oil, grease or any petroleum products will be used to lubricate rods. Care will be taken to insure that no oil, grease or other lubricant will be leaking from the drill rig and entering the borehole.

The PVC riser pipes and screens will be transported to the Site and stored, prior to their installation, in their original polyethylene shipping sleeves. To prevent possible contamination of the wells by VOCs, no glue, tape or other solvent containing materials will be used to join pipe sections together.

5.0 FIELD SAMPLING PLAN - IRM related

5.1 Soil Sampling —

Soil samples from the dry well excavation will be obtained via a backhoe. Soil samples from dry well excavation will be collected at 3-foot vertical intervals from each sidewall and from the bottom of the excavation. Soil samples will be field screened using a PID. Each soil sample shall be assigned its unique identification number and each sample shall be logged-in into project documentation. Due to the heterogeneous nature of the soil, a large number of soil samples may be required and no composite soil samples will be collected. All soil samples will be visually classified by the on-site geologist.

includes IRM
sampling
- set up D

b/c we
mix for
VOCs

In the event that suspected hot spots (as determined by PID readings, visual, olfactory or a combination of which) are encountered, such area shall be characterized (location, size) via a combination of extensive soil sampling, field screening and visual observations. Soil samples in the area of hot spots will be conducted at least every foot in vertically and horizontally.

Based on the previously obtained information, it is safe to assume that soil contamination in the area of the dry well may impact groundwater at the Site. Therefore, in addition to "hot spot" samples, at least two (2) post-excavation soil samples will be collected from the lowest point of the dry well removal excavation and at least one (1) post-excavation soil sample will be collected from each sidewall the excavation, at a depth representing 2/3 of the total excavation.

& analyzed for VOCs & SVOCs

5.2 Groundwater Sampling

Groundwater samples will be collected from each groundwater monitoring well. Groundwater sampling procedures were described in section 3.3 of this plan.

Nahum Kedem, P.G. will be data validation expert. Mr. Kedem has over seventeen years of experience in environmental, geotechnical and civil engineering and consulting. His experience includes management and technical performance of environmental and geotechnical consulting services including subsurface investigations, site assessments, remedial investigations and design, petroleum storage tank management, compliance, closure and design and National Environmental Policy Act (NEPA) surveys. He has participated in, managed, and prepared proposals, protocols, specifications, and reports for hundreds of projects in the areas of Phase I and II Environmental Site Assessment (ESA); remedial investigation/feasibility study for soil and groundwater remediation; geophysical investigation; site assessment, management, closure, compliance, upgrading and new system design for petroleum storage tank sites and NEPA surveys. His experience also includes civil engineering design, project management, supervision and inspection of all phases of industrial, commercial and residential construction.

6.0 HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan (HSP) was prepared for proposed Remedial Investigation at the Site and is presented in Appendix A. Companies providing services for this project on a subcontracted basis will be responsible for developing and implementing their own HSP.

7.0 SCHEDULING, REPORTING AND NOTIFICATIONS

Upon final approval of the PSA Report, a CD-ROM containing the PSA Report in American Standard Code for Information Interchange (~~ASCII~~) format, will be submitted to the DEC. *use pdf*

GCE will commence the soil investigation within three (3) weeks of receipt of the approved PSA workplan. The IRM schedule is included in Appendix D – IRM Plan. GCE will commence installation of the proposed groundwater monitoring wells within three (3) weeks of completion of the IRM.

GCE will commence quarterly monitoring of all of the on-site wells after three months after initial groundwater sampling. All collected groundwater samples will be analyzed for the presence of VOCs using EPA method 8260.

Upon completion of the activities described in the PSA and IRM Work Plan, GCE will prepare a PSA and IRM Report that will include all data generated and all other information obtained during the PSA and IRM, provide all of the assessments and

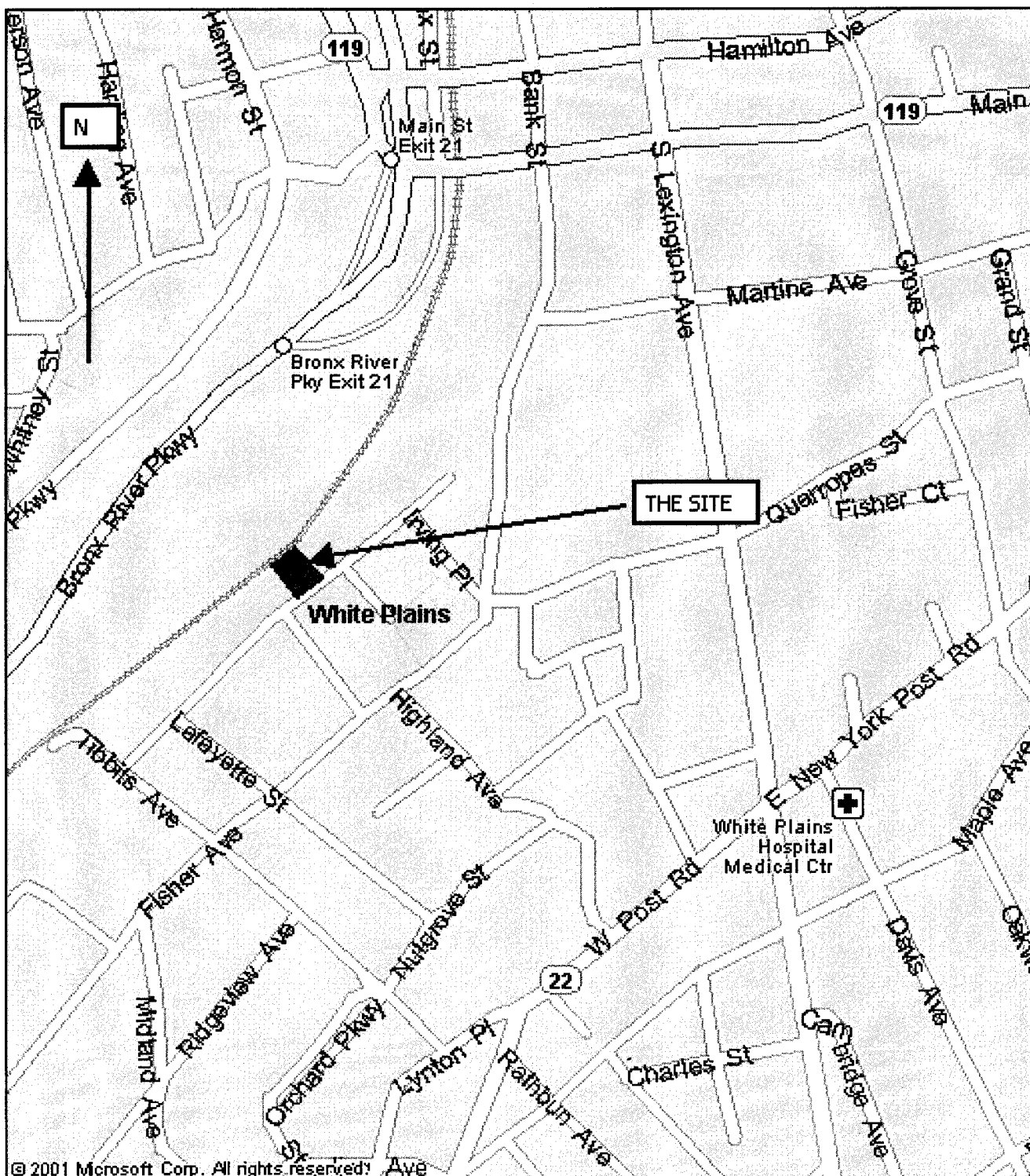
*per sec 3.4.2
SVI done after
IRM done*

evaluations as identified in the applicable documents, identify all additional data that must be collected and include a certification that all investigation activities were performed in full compliance with the approved PSA and Work Plan.

GCE will provide the DEC with monthly progress reports in accordance with the requirements as outlined in the Order on Consent issued for the Site.

GCE will provide DEC with at least 10 working days advance notice of any field activities to be conducted in accordance with this Work Plan.

GCE will provide DEC at least 7 working days advance notice of any project-related meetings and inspection, and final inspection and meeting.



NOTE: DRAWING NOT TO SCALE. ALL LOCATIONS ARE APPROXIMATE. DRAWING INTENDED FOR USE WITH THIS GCE PSA VP ONLY.



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PRELIMINARY SITE ASSESSMENT

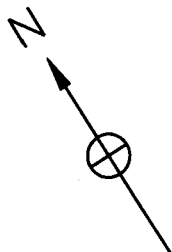
101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 1
SITE LOCUS
MAP

39 WESTMORELAND AVENUE



PROPERTY LINE (TYP)

15'

ASPHALT-PAVED AREA

GATES (TYP)

FILL PORT AND VENT PIPE (TYP)

550-GALLON WASTE OIL UST

550-GALLON NO.2 FUEL OIL

CLOSED DRY WELL

GENERAL GW FLOW DIRECTION

EXTERIOR AUTO
DETAILING
AREA

ONE (1)-STORY
AUTOMOTIVE
REPAIR SHOP

OFFICE AREA

GRAVEL-PAVED
PARKING AREA

SIDEWALK

WESTMORELAND AVENUE

183 — GROUNDWATER CONTOURS (FEET)

100 — CHLORINATED SOLVENTS ISOPLETHS (ug/L)

10 — BTEX ISOPLETHS (ug/L)

B-12 ● PROPOSED NEW SOIL BORINGS

B-2 ● SOIL BORINGS ADVANCED IN 2005

MW-8 ● PROPOSED NEW MONITORING WELLS

MW-1 ● EXISTING MONITORING WELLS

RESTROOM

STORAGE CLOSET

WESTCHESTER A.R.C.

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WHITE PLAINS, NEW YORK 10606

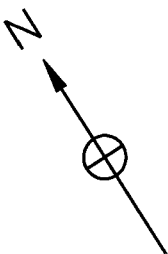
GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 2
SITE PLAN
WITH PROPOSED
MONITORING
WELL LOCATIONS

39 WESTMORELAND AVENUE

PROPERTY LINE (TYP)



15'

ASPHALT-PAVED AREA

GATES (TYP)

FILL PORT AND
VENT PIPE (TYP)

550-GALLON
WASTE OIL UST

GENERAL GW FLOW DIRECTION

EXTERIOR
AUTO
DETAILING
AREA

ONE (1)-STORY
AUTOMOTIVE
REPAIR SHOP

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PARKING AREA

SIDEWALK

WESTMORELAND AVENUE

183 — GROUNDWATER CONTOURS (FEET)
100 — CHLORINATED SOLVENTS ISOPLETHS (ug/L)
10 — BTEX ISOPLETHS (ug/L)

RESTROOM

STORAGE CLOSET

VP-1 • SUBSLAB SOIL VAPOR PROBES
VP-11 • SOIL VAPOR PROBES ABOVE GROUNDWATER
B-2 • SOIL BORINGS ADVANCED IN 2005

MW-1 • EXISTING MONITORING WELLS

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WHITE PLAINS, NEW YORK 10606

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FIGURE 2A
SITE PLAN
WITH PROPOSED
SOIL VAPOR
PROBE LOCATIONS



WHITE PLAINS, NEW YORK
7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
USGS 1967, PHOTOREVISED 1979



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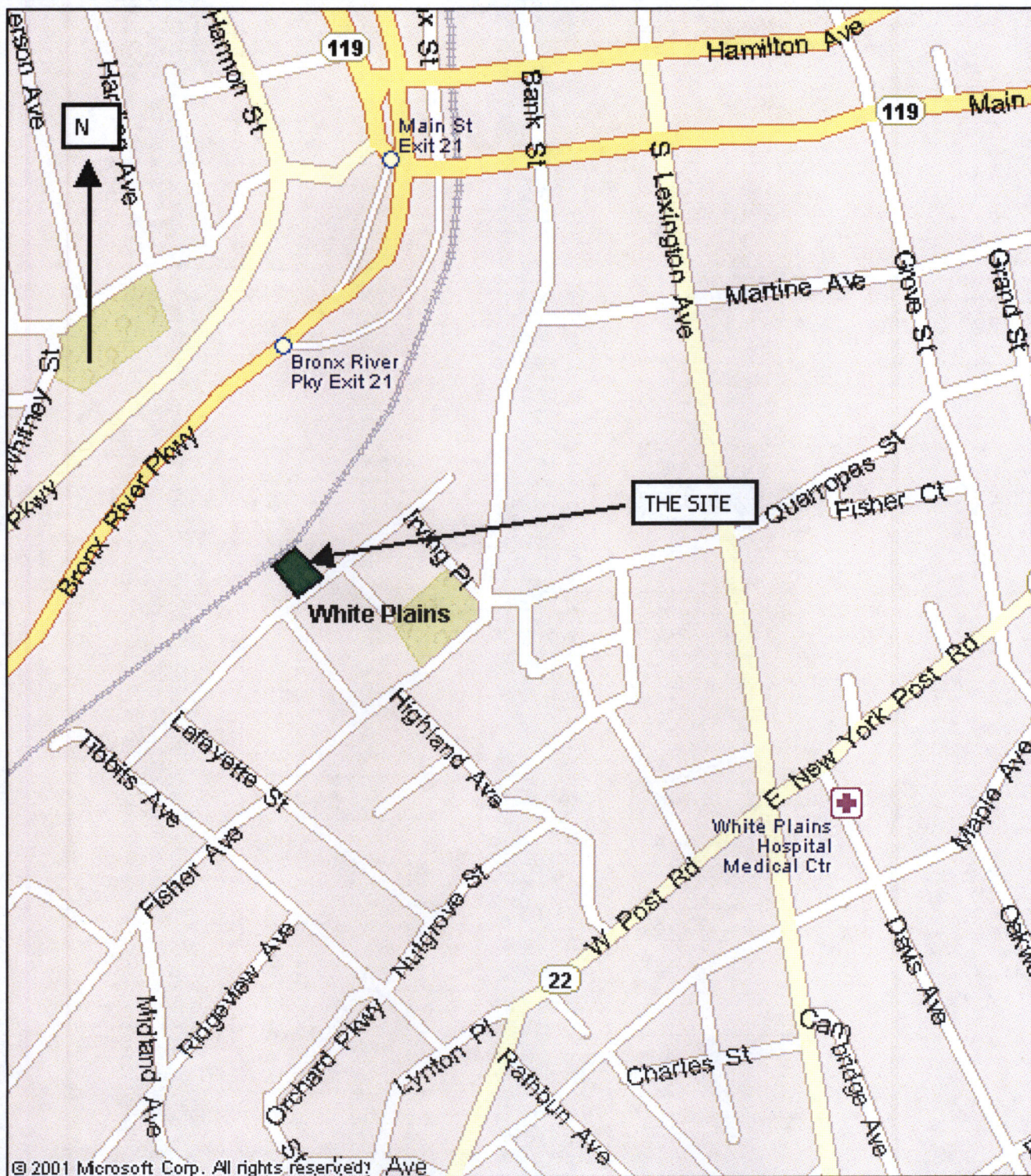
PRELIMINARY SITE ASSESSMENT

101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 3
USGS
TOPOGRAPHIC
MAP



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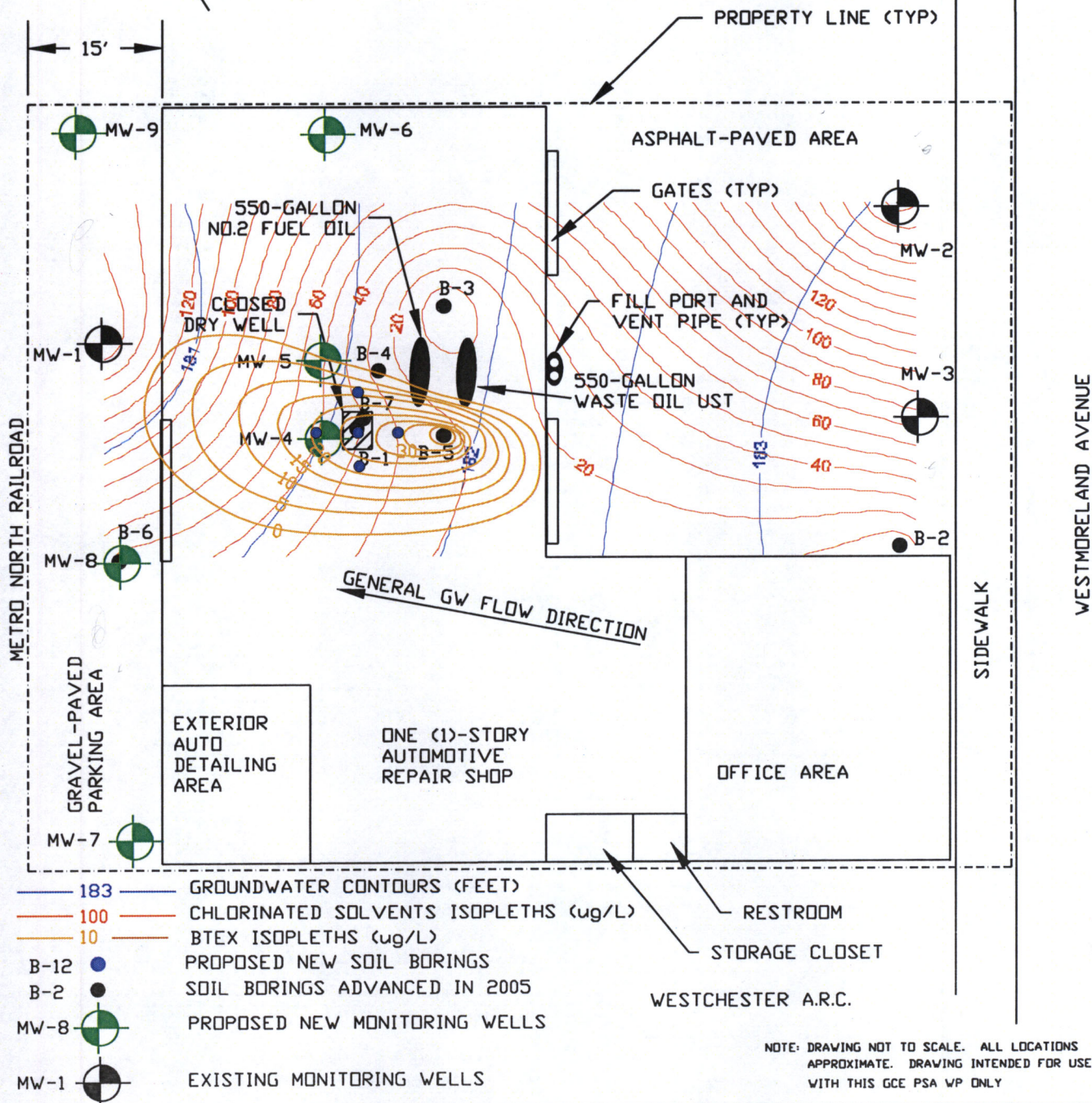
101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 1
SITE LOCUS
MAP

39 WESTMORELAND AVENUE



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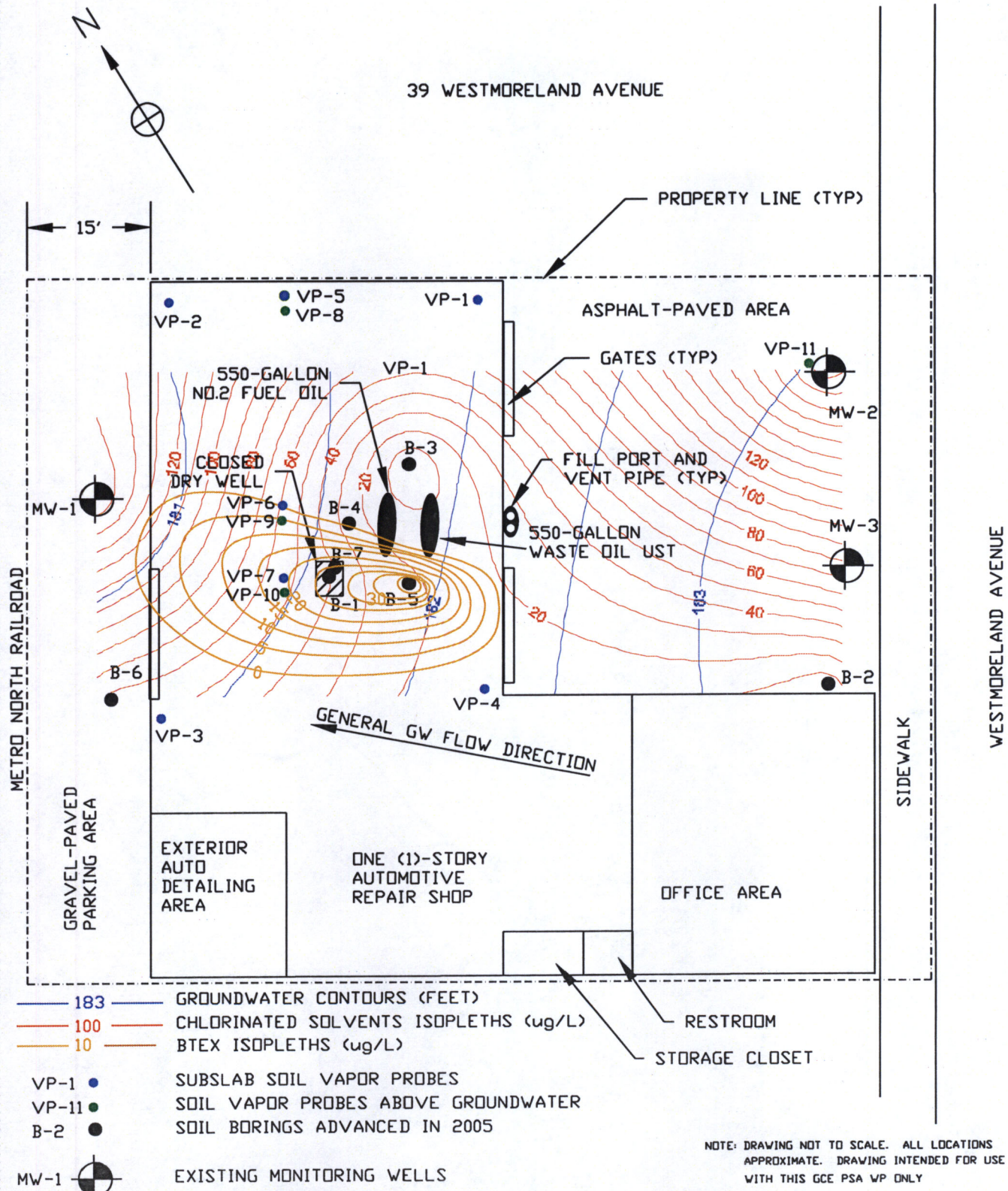
GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 2

SITE PLAN
WITH PROPOSED
MONITORING
WELL LOCATIONS

39 WESTMORELAND AVENUE



- 183 — GROUNDWATER CONTOURS (FEET)
- 100 — CHLORINATED SOLVENTS ISOPLETHS (ug/L)
- 10 — BTEX ISOPLETHS (ug/L)
- VP-1 ● SUBSLAB SOIL VAPOR PROBES
- VP-11 ● SOIL VAPOR PROBES ABOVE GROUNDWATER
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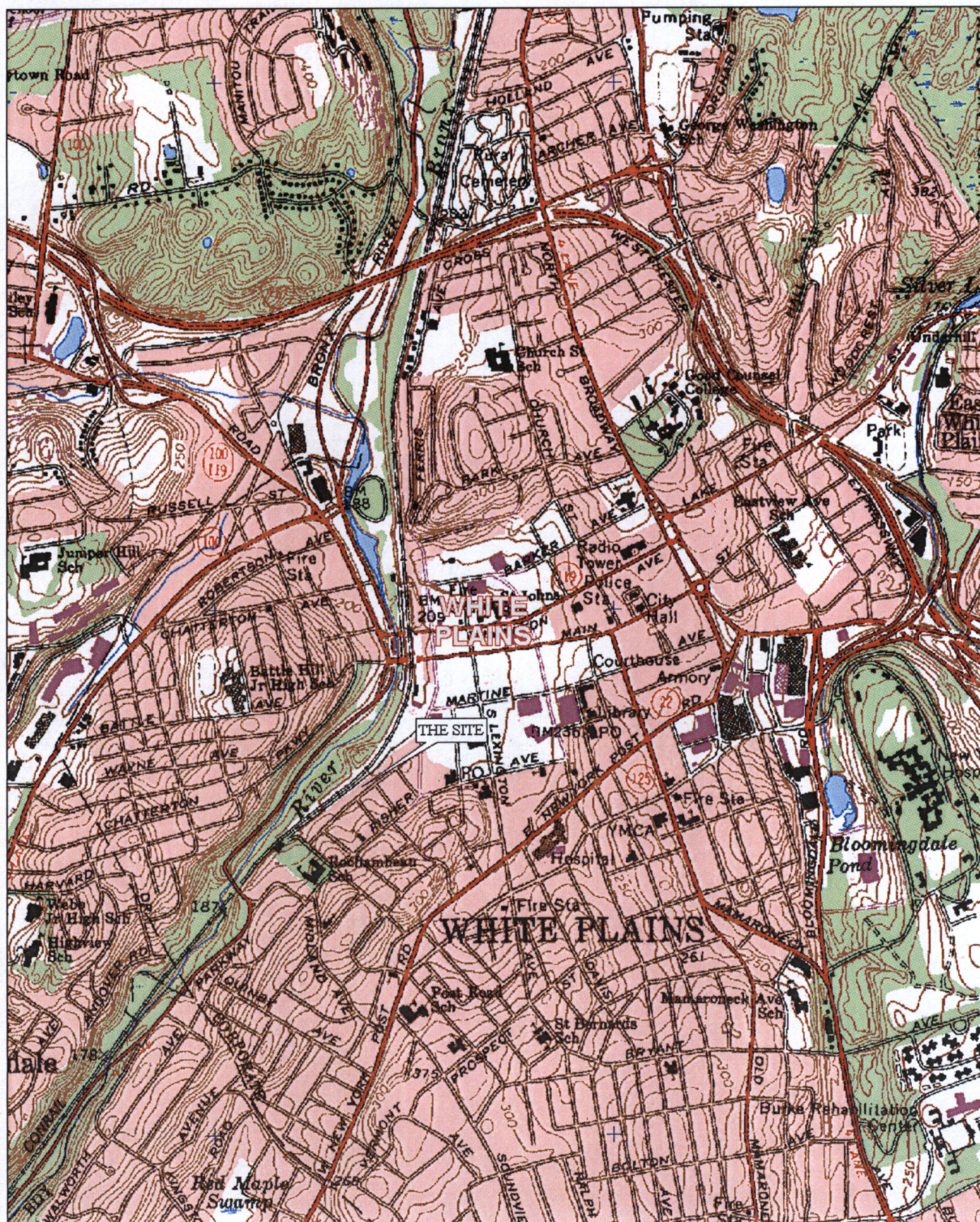
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101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 2A
SITE PLAN
WITH PROPOSED
SOIL VAPOR
PROBE LOCATIONS



WHITE PLAINS, NEW YORK
7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
USGS 1967, PHOTOREVISED 1979



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GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 3
USGS
TOPOGRAPHIC
MAP



G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

**HEALTH AND SAFETY PLAN
FOR
PRELIMINARY SITE ASSESSMENT
AND
INTERIM REMEDIAL MEASURES WORK PLAN**

AT

**101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606**

DATE ISSUED: FEBRUARY 15, 2007

GCE PROJECT NUMBER: 05-003-00

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APPENDICES

- A Chemical Descriptions
- B G. C. Environmental, Inc. Forms
 - Daily Tailgate Safety Meeting Form*
 - Site Safety Checklist*
 - Air Monitoring Form*
- C Hospital Location Map

1.0 GENERAL

G. C. Environmental, Inc. (GCE) has prepared this Health and Safety Plan (HSP) for use during the Preliminary Site Assessment (PSA) activities at the property located at 101 Westmoreland Avenue, White Plains, New York 10606 (the Site). All work conducted at the Site including but not limited to soil excavation, soil boring drilling and monitoring well installation, will be in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, particularly those in 29 Code of Federal Regulations (CFR), and other applicable federal, state, and local laws, regulations, and statutes. A copy of this HSP will be kept at the Site during scheduled field activities.

This HSP addresses the potential hazards associated with planned drilling field activities at the Site. It presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the course of work. In the event of conflicting requirements, the procedures or practices that provide the highest degree of personnel protection will be implemented. If work plan specifications change or if Site conditions encountered during the course of the work are found to differ substantially from those anticipated, the Corporate Director of Health and Safety must be informed immediately upon discovery, and appropriate changes will be made to this HSP.

It is the Project Manager's responsibility to ensure that health and safety procedures are enforced at the Site. Project personnel, including subcontractors, shall receive a copy of this HSP for review and sign the form to indicate acceptance before on-site project activities begin.

GCE's health and safety programs and procedures, including medical monitoring, respiratory protection, injury and illness prevention, hazard communication, and personal protective equipment (PPE), are documented in the GCE Corporate Health and Safety Manual. These health and safety procedures are incorporated herein by reference, and GCE employees will adhere to the procedures specified in the manual.

When specified in contract documents, this HSP may cover the activities of contractors. However, this HSP may not address hazards associated with tasks and equipment that are specialties of the contractor (e.g., operation of a drill rig). Contractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, and procedures.

GCE is responsible for the safety of its employees and subcontractors under its control, but assumes no responsibility for the activities of other contractors or their subcontractors who may be working concurrently at the general project location. GCE will use a reasonable degree of care when marking potentially hazardous areas within its project work site and restricting access as appropriate. GCE will not be responsible for others outside its control who disregard such marked hazards or restricted access. This HSP has been prepared specifically for this project and is intended to address health and safety issues solely with respect to GCE's work. All references, therefore, to the Site, the work, activities, site personnel, workers, persons, or subcontractors in this HSP are with respect to GCE work only.

what about 1201
soil excavation
act.?

*

all
should be
GCE
subs

+ their subs

2.0 SITE DESCRIPTION AND BACKGROUND

The Site is located in the City of White Plains, Westchester County, New York, on the northwest side of Westmoreland Avenue, approximately 100 feet to the west of the T-shaped intersection formed by Westmoreland Avenue and Home Place and is occupied by RJT, an Automobile Club of New York approved auto-repair shop.

The Site consists of an approximately 9,000-square-foot rectangular-shaped parcel of land. The on-site facility consists of an office space, restrooms and a storage closet located in the southern portion of the building, an automobile exterior detailing area in the western portion of the building, with the remainder of the building utilized as an automobile repair area. The remainder of the Site consists of an asphalt-paved parking area located on the northeastern portion of the Site and gravel-paved parking area located on the western portion of the Site. In addition, there is groundwater monitoring well located in the gravel-paved land on the northwestern portion of the Site. Please refer to section 1.2.2 for additional information regarding this well. (UW-1)

Please refer to Figures 1 and 2 for Site Locus Map and Site Plan, respectively.

In 2006, GCE performed an Additional Subsurface Investigation at the subject Site, which consisted of installation of seven (7) soil borings and two (2) groundwater monitoring wells and subsequent well survey, groundwater level measurement, and groundwater sampling. The Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005 included the following findings:

- Soil and groundwater below the Site are contaminated with two types of contamination: petroleum hydrocarbons and chlorinated hydrocarbons (chlorinated solvents).
- Subsurface soil samples were collected from soil borings B-1 through B-6 continuously using disposable polyethylene sample liners until groundwater was encountered. Soil boring B-7 was advanced directly to groundwater. No soil samples were collected from this boring since soil samples have already been collected from boring B-1, which was immediately adjacent to boring B-7. Petroleum hydrocarbons in the soil were detected in soil borings B-1 and B-5 located on the central portion of the Site, in the area of the removed 550-gallon USTs formerly storing No. 2 fuel oil and waste oil. Concentrations of BTEX totaling 17,900 ug/kg (0'-2' below grade) and 4,121 ug/kg (15'-17' below grade) were detected in soil borings B-1 and B-5, respectively. No evidence of petroleum contamination in the form of free product was observed. Petroleum hydrocarbons in groundwater were also found only in the area of the removed USTs. Concentrations of BTEX totaling 41.1 ug/l in boring B-5 and 19.3 ug/l in boring B-7 were detected in groundwater samples. The petroleum plume is limited and is moving very slowly in the northwestern direction, along the general direction of groundwater flow. The data indicate an on-site source of petroleum contamination, most likely the former leaking waste oil underground tank located

near soil boring B-5. As a result of natural bioattenuation, the petroleum hydrocarbons are biodegrading and concentrations in groundwater are decreasing with time.

- Chlorinated hydrocarbons and solvents present at the Site included tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA) and their isomers. With the exception of soil boring B-1 located in the area of the historical dry well, when the concentration of total chlorinated solvents was 348,200 ug/kg (0'-2'), these compounds are either not detected in any of the soil borings, or detected far below their detection limits. However, groundwater sampling results indicated that PCE, TCE and DCE contamination was present throughout the Site and off-site with higher concentrations (160-195 ug/l) located along the northwestern (down-gradient) and southeastern (up-gradient) boundaries of the Site. Minimal concentrations or no contamination is present in the groundwater samples collected from the central portion of the Site, where the hydrocarbon plume is present.

-all other soil samples are deep enough 15-17' or 25-30' deeper

The source of the chlorinated solvents in groundwater is unknown. However, the distribution pattern of the contaminants indicates a strong potential for an off-site up-gradient source(s) impacting groundwater at the subject site from extended releases of chlorinated solvents into the soil and groundwater from off-site.

1,1,1 TCA seems to be coming from off-site source

no- 2 likely sources dry well (3 off-site source (TCA))

In the central portion of the Site, in the area of removed USTs, groundwater is most likely under anaerobic conditions. Under anaerobic conditions, the natural bioattenuation (reductive dechlorination process) typically leads to a reduction of PCE, TCE and DCE.

3.0 PLANNED SITE ACTIVITIES

Scheduled work will consist of the following activities:

- As part of the IRM, GCE will excavate contaminated soil in the area of the historical dry well. All excavated soil will be stockpiled and covered by 2 layers of 10-mil polyethylene sheeting in the area to be determined by the Site operator. GCE will be responsible for adherence to all applicable OSHA standards;
- Once all excavation is completed, GCE will collect composite pre-disposal soil samples and arrange for their analysis for variety of parameters in accordance with the disposal facility requirements which will include hazardous characterization. Upon receipt of the excavated soil laboratory results, GCE will review the results and submit the same to the licensed disposal facility. Upon acceptance by the disposal facility, GCE will assist the Site owner with coordination for proper soil transportation and off-site disposal at the Soil Safe, Inc., soil recycling facility located in Salem, New Jersey, which is licensed to receive contaminated non-hazardous waste;

- The drilling contractor will conduct soil borings and monitoring well installation. GCE will oversee all drilling activities at the Site. The drilling contractor and GCE shall be responsible for adherence to all applicable OSHA standards for the portion of the work that is performed by the each party;
- Once all drilling is completed, GCE will coordinate for proper soil cuttings and development water transportation and off-site disposal;
- Approximately two weeks after monitoring well installation, GCE will conduct a survey and groundwater level measurements and collecting groundwater samples.

4.0 KEY PROJECT PERSONNEL AND RESPONSIBILITIES

Project Manager	Val Gatallin
Site Safety Officer	Igor Goldstein
Corporate Director of Health and Safety	Gregory Collins

The responsibilities of key project personnel are outlined below.

4.1 Project Manager

The Project Manager has the ultimate responsibility for the health and safety of GCE personnel at the Site. The Project Manager is responsible for:

- ensuring that project personnel review and understand the requirements of this HSP
- keeping the Corporate Director of Health and Safety informed of project developments
- keeping on-site personnel, including subcontractors, informed of the expected hazards and appropriate protective measures at the Site
- providing resources necessary for maintaining a safe and healthy work environment for GCE personnel

4.2 Corporate Director of Health and Safety

The Corporate Director of Health and Safety is responsible for the review, interpretation, and modification of this HSP. Modifications to this HSP that may result in less stringent precautions cannot be undertaken by the Project Manager or Site Safety Officer (SSO) without the approval of the Corporate Director of Health and Safety. In addition, he has the following responsibilities:

- advising the Project Manager and SSO on matters relating to health and safety on this project
- recommending appropriate safeguards and procedures
- modifying this HSP, when necessary
- approving changes in health and safety procedures employed at the Site

4.3 Site Safety Officer

The SSO is responsible for enforcing the requirements of this HSP once site work begins. The SSO has the authority to immediately correct situations where noncompliance with this HSP is noted and to immediately stop work in cases where an immediate danger to site workers or the environment is perceived. Responsibilities of the SSO also include:

- obtaining and distributing personal protective equipment (PPE) and air monitoring equipment necessary for this project
- limiting access at the Site to authorized personnel
- communicating unusual or unforeseen conditions at the Site to the Project Manager
- supervising and monitoring the safety performance of site personnel to evaluate the effectiveness of health and safety procedures and correct deficiencies
- conducting daily tailgate safety meetings before each day's activities begin
- conducting a site safety inspection prior to the commencement of each day's field activities

4.4 Contractor and Subcontractor Personnel

Contractor and subcontractor personnel are expected to comply with the minimum requirements specified in this HSP. Failure to do so may result in the removal of the contractor/subcontractor or any of the contractor's/subcontractor's workers from the Site. Contractor/subcontractors may employ health and safety procedures that afford them a greater measure of personal protection than those specified in this plan so long as they are do not pose additional hazards to themselves, the environment, or others working in the area.

5.0 HAZARD OF KNOWN OR EXPECTED CHEMICALS OF CONCERN

Previous investigations revealed the following main chemicals of concern that are present in the soil and groundwater:

Contaminant	TLV/IDLH (PPM)	Known Highest Concentration	
		Soil (ug/kg)	Groundwater (ug/l)
Tetrachloroethene	50/NA	180,000	21
Trichloroethene	50/NA	1,900	2
Cis-1,2-Dichloroethene	200/4,000	7,800	15
Vinyl chloride	5/NA	n/d	n/d

TLV= Threshold Limit Value, IDLH= Immediate Dangerous to Life and Health

1,1,1 TCA (gw only)

n/d

270

n/d = not detected

Exposure pathways of concern for chemical compounds that may be present at the Site are inhalation of airborne contaminants, digestion and direct skin contact with contaminated materials. Wearing protective equipment and following decontamination procedures listed in Section 9 can minimize dermal contact. To minimize inhalation hazards, dust control measures will be implemented, where necessary, and action levels will be observed during scheduled activities. Wearing respirator and following decontamination procedures can minimize digestion hazards. Site-specific action levels are presented in Section 10. Chemical descriptions of chemicals of concern, including health effects and exposure limits, are located in Appendix A.

On-site worker exposure to airborne contaminants will be monitored during intrusive site activities. A calibrated photoionization detector (PID) will be used to monitor changes in exposure to volatile organic compounds (VOCs). Personnel will perform routine monitoring during site operations to evaluate concentrations of VOCs in employee breathing zones. If VOCs are detected above predetermined action levels specified in Section 10, the procedures found in Section 7 of this HSP will be followed.

In accordance with the Hazard Communication standard, material safety data sheets (MSDSs) will be maintained on site for chemical products used by GCE personnel at the Site. In addition, containers will be clearly labeled in English to indicate their contents and appropriate hazard warnings.

6.0 PHYSICAL HAZARDS

The following potential health and safety hazards may be encountered during scheduled activities at the Site:

- slips, trips, and falls
- heavy equipment
- heat stress
- noise
- excavations
- underground and overhead utilities
- container handling
- confined space entry
- fire/explosion

6.1 General Safe Work Practices

- Workers will thoroughly clean their hands, faces, and other potentially contaminated areas before smoking, eating, or leaving the Site.
- Respiratory devices may not be worn with beards or long sideburns, or under other conditions that prevent a proper seal.
- Accidents and/or injuries associated with work at the Site will be immediately reported to the SSO. If necessary, an incident report will be initiated by the SSO.
- Periodic safety briefings will be held to discuss current site conditions, field tasks being performed, planned modifications, and work concerns.
- Site conditions may include uneven, unstable, or slippery work surfaces. Substantial care and personal observation is required on the part of each employee to prevent injuries from slips, trips, and falls.
- Workers will maintain good housekeeping practices during field activities to maintain a safe working environment. The work site will be kept free of debris, waste, and trash.
- The “buddy system” will be used whenever appropriate.
- To prevent head injury, ANSI-approved hard hats will be worn at all times while the worker is in an area where overhead obstructions or falling objects may be encountered.
- To prevent eye injuries, workers must wear ANSI-approved safety glasses during field activities.

6.2 Heavy Equipment

Equipment, including drill rigs, or other heavy machinery, will be operated in compliance with the manufacturer's instructions, specifications, and limitations, as well as any applicable regulations. The operator is responsible for inspecting the equipment daily to verify that it is functioning properly and safely.

Operation of equipment at the Site for the activities outlined in Section 3 poses potential physical hazards. The following precautions should be observed whenever heavy equipment is in use:

- PPE, including steel-toed boots, safety glasses, and hard hats, must be worn.
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of intent.
- Traffic safety vests are required for personnel working near mobile heavy equipment or near high traffic areas.
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge.
- Nonessential personnel will be kept out of the work area.

6.3 Heat Stress

Adverse climate conditions, primarily heat, are important considerations in planning and conducting site operations. Heat-related illnesses range from heat fatigue to heat stroke, with heat stroke being the most serious condition. The effects of ambient temperature can cause physical discomfort, loss of efficiency, and personal injury, and can increase the probability of accidents. In particular, protective clothing that decreases the body's ventilation can be an important factor leading to heat-related illnesses.

To reduce the possibility of heat-related illness, workers should drink plenty of fluids and establish a work schedule that will provide sufficient rest periods for cooling down. Personnel shall maintain an adequate supply of non-caffeinated drinking fluids on site for personal hydration. Workers should be aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These are summarized in the table below.

Condition	Signs	Symptoms	Response
Heat Rash or Prickly Heat	Red rash on skin.	Intense itching and inflammation.	Increase fluid intake and observe affected worker.
Heat Cramps	Heavy sweating, lack of muscle coordination.	Muscle spasms, and pain in hands, feet, or abdomen.	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.
Heat Exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordination; fainting.	Weakness, headache, dizziness, nausea.	Remove worker to a cool, shady area. Administer fluids and allow worker to rest until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.
Heat Stroke	Red, hot, dry skin; disorientation; unconsciousness	Lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse.	Immediately contact emergency medical services by dialing 911. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim by administering small amounts of cool water (if conscious), loosening clothing, and placing cool compresses at locations where major arteries occur close to the body's surface (neck, underarms, and groin areas). Carefully follow instructions given by emergency medical services until help arrives.

6.4 Noise

Noise may result primarily from the operation of drill rigs and mechanical equipment. The use of heavy equipment may generate noise above the OSHA permissible exposure limit for noise of 90 dBA for an 8-hour time-weighted average. Workers will wear appropriate hearing protection when operating or

working near heavy equipment. If loud noise is present or normal conversation becomes difficult, hearing protection in the form of ear plugs, or equivalent, will be required.

6.5 Excavations

A competent person who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them, will be present during excavation activities.

The atmosphere will be tested in excavations greater than 4 feet in depth where oxygen deficiency or toxic or flammable gases are likely to be present before employees are permitted to enter and begin work. The atmosphere should be ventilated and re-tested until flammable gas concentrations less than 20 percent of the lower explosive limit (LEL) are obtained. Worker entry will not be allowed if the oxygen concentration is less than 19.5 percent.

Workers will not enter excavations greater than 4 feet in depth without appropriate protective systems such as benching, sloping, or shoring. Side slopes will not be steeper than 1:1 without a written report from a qualified civil or geotechnical engineer. Excavations will be constructed in accordance with the OSHA Excavation Safety Standard, 29 CFR 1926, Subpart P.

The competent person will inspect excavations daily. If there is evidence that a cave-in or slide is possible, work will cease until the necessary safeguards have been taken. Excavated material will be placed far enough from the edge of the excavation (a minimum of 2 feet) so that it does not fall back into the opening. At the end of each day's activities, open excavations will be clearly marked and secured to prevent nearby workers or unauthorized personnel from entering them. Remote sampling techniques will be the preferred method of sample collection in excavations.

6.6 Underground and Overhead Utilities

The locations of underground pipes, electrical conductors, fuel lines, and water and sewer lines must be determined before soil intrusive work is performed. Lines must be de-energized, blocked out, or blinded where feasible. Equipment with articulated upright booms or masts shall not be permitted to pass within 20 feet of an overhead utility line while the boom is in the upright position.

6.7 Materials and Equipment Handling Procedures

The movement and handling of equipment and materials on the Site pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper

personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be utilized to assist in the movement of equipment and materials. Workers will not attempt to move heavy objects by themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

6.8 Fire/Explosion

Site workers should have an increased awareness concerning fire and explosion hazards whenever working with or near flammable materials, especially when performing any activity that may generate sparks, flame, or other source of ignition. Intrinsically safe equipment is required when working in or near environments with the potential for an explosive atmosphere. The SSO will verify facility requirements for a "hot work" permit before activities that may serve as a source of ignition are conducted.

Flammable materials will be kept away from sources of ignition. In the event of fire, work will cease, the area will be evacuated, and the local fire response team will be notified immediately. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. A fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the Site.

7.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to protect employees from hazards and potential hazards they are likely to encounter during site activities. The amount and type of PPE used will be based on the nature of the hazard encountered or anticipated. Respiratory protection will be utilized when an airborne hazard has been identified using real-time air monitoring devices, or as a precautionary measure in areas designated by the Corporate Director of Health and Safety or SSO.

Dermal protection, primarily in the form of chemical-resistant gloves and coveralls, will be worn whenever contact with chemically affected materials (e.g., soil, groundwater, sludge) is anticipated, without regard to the level of respiratory protection required.

GCE personnel will be provided with appropriate personal safety equipment and protective clothing. The SSO is to inform each worker about necessary protection and must provide proper training in the use of the safety equipment. The required PPE to be worn is described below.

7.1 Conditions Requiring Level C Protection

In general, site activities will commence in Level C PPE unless otherwise specified, or if the SSO determines on site that a higher level of PPE is required. Air monitoring will be routinely conducted using real-time air monitoring devices to determine if upgrading to Level B PPE is necessary. Level C PPE will be permitted as long as air monitoring data indicate that airborne concentrations of chemicals of concern are maintained below the site-specific action levels defined in Section 10.

It is important to note that dermal protection is required whenever contact with chemically affected soils or groundwater is anticipated. The following equipment is specified as the minimum PPE required to conduct activities at the Site:

- NIOSH/MSHA-approved half-face air-purifying respirator (APR) equipped with filter cartridges as specified in Section 10.0;
- chemical-resistant clothing (e.g., Tyvek, polycoated Tyvek, or Saranex coveralls) when contact with chemically affected soils or groundwater is anticipated;
- outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event);
- safety shoes/boots with protective overboots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated;
- ANSI-approved safety glasses
- ANSI-approved hard hat

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, workers in the affected area(s) will upgrade to NIOSH/MSHA-approved full-face APRs in lieu of half-face APRs and safety glasses.

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, activities must cease, and personnel must evacuate the Exclusion Zone (see Section 9). The Project Manager and Corporate Director of Health and Safety will be contacted immediately.

8.0 SAFETY PROCEDURES

Procedures must be followed to maintain site control so that persons who may be unaware of site conditions are not exposed to hazards. The work area will be barricaded by tape, warning signs, or other appropriate means. Pertinent equipment or machinery will be secured and stored safely.

Access inside the specified work area will be limited to authorized personnel. Only GCE employees and designated contractor or subcontractors personnel, as well as designated employees of the client, will be admitted to the work site. Only those workers possessing evidence of the required current 40-hour OSHA health and safety training (or current 8-hour refresher) and physician's authorization to conduct hazardous waste activities will be permitted in the work area designated as the Exclusion Zone. The SSO will be responsible for requiring that workers wear proper personal protective clothing. Personnel entering the work area will sign the signature page of this HSP, indicating they have read and accepted the health and safety practices outlined in this plan.

Real-time air monitoring devices will be used to analyze for airborne contaminant concentrations every 30 minutes in the workers' breathing zones while workers are in the Exclusion Zone. If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. The equipment will be calibrated daily, and the results will be recorded on GCE's Air Monitoring form or project log book. The results of air monitoring will be recorded on a GCE Air Monitoring Form or project log book and will be retained in the project files following completion of field activities. A copy of the Air Monitoring Form is located in Appendix B.

A daily morning briefing to cover safety procedures and contingency plans in the event of an emergency is to be included with a discussion of the day's activities. These daily meetings will be recorded on GCE Daily Tailgate Safety Meeting Forms. A debriefing to cover the activities is to be held upon completion of the work. A copy of the Daily Tailgate Safety Meeting Form is included in Appendix B.

The SSO will conduct a safety inspection of the work site before each day's activities begin to verify compliance with the requirements of the HSP. Results of the first day's inspection will be documented on a GCE Site Safety Checklist. A copy of the checklist is included in Appendix B.

Minimum emergency equipment maintained on site will include a fully charged 20-pound ABC dry chemical fire extinguisher, an adequately stocked first aid kit, and an emergency eyewash station.

Personnel entering the designated Exclusion Zone should exit at the same location. There must be an alternate exit established for emergency situations. In all instances, worker safety will take precedence over decontamination procedures. If decontamination of personnel is necessary, exiting the Site will include the decontamination procedures described below.

9.0 WORK ZONES AND DECONTAMINATION PROCEDURES

In some instances it may be necessary to define established work zones: an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. Work zones may be established based on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and applicability of work zones will be determined for each area based on the nature of job activity and hazards present. Within these zones, prescribed operations will occur using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to determine a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

Despite protective procedures, personnel may come in contact with potentially hazardous compounds while performing work tasks. If so, decontamination needs to take place using an Alconox or TSP wash, followed by a rinse with clean water. Standard decontamination procedures for level C are as follows:

- equipment drop;
- boot cover and outer glove wash and rinse;
- boot cover and outer glove removal;
- suit wash and rinse;
- suit removal;
- safety boot wash and rinse;
- inner glove wash and rinse;
- respirator removal;
- inner glove removal;
- field wash of hands and face

Workers should employ only applicable steps in accordance with level of PPE worn and extent of contamination present. The SSO shall maintain adequate quantities of clean water to be used for personal decontamination (i.e., field wash of hands and face) whenever a suitable washing facility is not located in the immediate vicinity of the work area. Disposable items will be disposed of in an appropriate container. Wash and rinse

water generated from decontamination activities will be handled and disposed of properly. Nondisposable items may need to be sanitized before reuse. Each Site worker is responsible for the maintenance, decontamination, and sanitizing of their own PPE.

Used equipment may be decontaminated as follows:

- An Alconox or TSP and water solution will be used to wash the equipment.
- The equipment will then be rinsed with clean water.

Each person must follow these procedures to reduce the potential for transferring chemically affected materials off site.

10.0 ACTION LEVELS

The following action levels were developed for exposure monitoring with real-time air monitoring instruments. The air monitoring data will determine required PPE levels at the Site during scheduled intrusive activities. The action levels are based on sustained readings indicated by a Thermo Environmental Instruments Inc. Model 580B portable Photo-Ionization Detector (PID) with a 10.6 e.V. lamp, calibrated for isobutylene standards. Air monitoring will be performed and recorded at up to 30-minute intervals. If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. If during this time, sustained measurements are observed, the following actions will be instituted, and the Project Manager and Director of Health and Safety will be notified. For purposes of this HSP, sustained readings are defined as the average airborne concentration maintained for a period of 5 minutes.

Activity	Action Level	Level of Respiratory Protection
Soil Drilling	6 to 50 ppm	Level C: Half-face air-purifying respirator fitted with organic vapor filter cartridges.
	51 to 100 ppm	Level C: Full-face air-purifying respirator fitted with organic vapor filter cartridges.
	> 100 ppm	Cease operations and evacuate work area. Contact Corporate Director of Health and Safety and Project Manager immediately.

11.0 CONTINGENCY PROCEDURES

In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient). Communication signals, such as hand signals, must be established where communication equipment is not feasible or in areas of loud noise.

It is the SSO's duty to evaluate the seriousness of the situation and to notify appropriate authorities. Section 12 of this plan contains emergency telephone numbers as well as directions to the hospital. Nearby telephone access must be identified and available to communicate with local authorities. If a nearby telephone is not available, a cellular telephone will be maintained on site during work activities.

Personnel should dial 911 in the event of an emergency.

11.1 Injury/Illness

If an exposure or injury occurs, work will be temporarily halted until an assessment can be made of whether it is safe to continue work. The SSO, in consultation with the Corporate Director of Health and Safety, will make the decision regarding the safety of continuing work. The SSO will conduct an investigation to determine the cause of the incident and steps to be taken to prevent recurrence.

In the event of an injury, the extent and nature of the victim's injuries will be assessed and first aid will be rendered as appropriate. If necessary, the individual may be transported to the nearby medical center. The mode of transportation and the eventual destination will be based on the nature and extent of the injury. A hospital route map is presented in Appendix C. In the event of a life-threatening emergency, the injured person will be given immediate first aid and emergency medical services will be contacted by dialing 911. The individual rendering first aid will follow directions given by emergency medical personnel via telephone. A person certified in first aid/CPR techniques will be present during field activities.

11.2 Fire

In the event of fire, personnel should contact the local fire department immediately by dialing 911. When representatives of the fire department arrive, the SSO, or designated representative, will advise the commanding officer of the location, nature, and identification of hazardous materials on site. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so.

11.3 Underground Utilities

In the event that an underground conduit is damaged during drilling, mechanized equipment will immediately be shut off until the nature of the piping can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility will be contacted.

11.4 Evacuation

The SSO will designate evacuation routes and refuge areas to be used in the event of an emergency. Site personnel will stay upwind from vapors or smoke and up-gradient from spills. If workers are in an Exclusion or Contamination Reduction Zone at the start of an emergency, they should exit through the established decontamination areas whenever possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove contaminated clothing there or, if possible, leave it near the Exclusion Zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SSO, or designated representative, will count and identify Site personnel to verify that all have been evacuated safely.

12.0 EMERGENCY CONTACTS

Ambulance:	911
Police:	911
Fire Department:	911
Hospital:	911
National Response Center:	(800) 424-8802
Poison Control Center:	(800) 876-4766
TOXLINE:	(301) 496-1131
CHEMTREC:	(800) 424-9300
G. C. Environmental, Inc. Director of Health and Safety:	(914) 674-4346, ext. 105
G. C. Environmental, Inc., Ardsley, NY	(914) 674-4346
White Plains Hospital Medical Center: 41 East Post Road White Plains, NY 10601	(914) 681-0600

DIRECTIONS TO HOSPITAL:

Take Irving Place to the east for approximately 0.3 miles and turn right to S. Lexington for another 0.2 miles to the White Plains Hospital Medical Center.
A hospital location map is presented in Appendix C.

13.0 G. C. ENVIRONMENTAL, INC. APPROVALS

This HSP has been prepared for the following project:

PRELIMINARY SITE ASSESSMENT
101 WESTMORELAND AVENUE, WHITE PLAINS, NEW YORK 10606

G. C. Environmental, Inc. Project Number: 05-003-00

This HSP has been reviewed and approved by the following G. C. Environmental, Inc. personnel:

Val Gatallin
Project Manager



Date 2/15/07

Igor Goldstein
Site Safety Officer

Date

Gregory Collins
Corporate Director of Health and Safety

Date

APPENDIX A

CHEMICAL DESCRIPTIONS

1. TETRACHLOROETHENE

General Description - Tetrachloroethene, also called perchloroethene, is a clear colorless volatile liquid having an ether-like odor. It is used as a dry cleaning solvent, a vapor degreasing solvent, drying agent for metals and for the manufacture of other chemicals. It is a non-combustible, insoluble in water and its vapors are heavier than air.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause difficult breathing, or loss of consciousness. LIQUID: Irritating to skin and eyes. Harmful if swallowed.

Fire/Explosion Hazards – Not flammable. Poisonous gases are produced when heated. Toxic, irritating gases may be generated in fires.

Fire Fighting – Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty).

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

2. TRICHLOROETHENE

General Description - Trichloroethene, is a clear colorless volatile liquid having a chloroform-like odor. It is used as a solvent, fumigant, in the manufacture of other chemicals, as an agricultural fumigant, and for many other uses. It is heavier than water and is slightly soluble in water. It is a non-combustible.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause nausea, vomiting, difficult breathing, or loss of consciousness. LIQUID: Irritating to skin and eyes. If swallowed, will cause nausea, vomiting, difficult breathing, or loss of consciousness.

Fire/Explosion Hazards – Combustible. Poisonous gases may be produced in fire. Produces irritating and toxic products when heated to decomposition temperatures.

Fire Fighting – Extinguish fire using agent suitable for type of surrounding fire (material itself does not burn or burns with difficulty).

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention

immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

3. CIS-1,2-DICHLOROETHENE

General Description – Liquid; colorless; sweet pleasant odor. Sinks in water. Flammable, irritating vapor is produced.

Health Hazards – VAPOR: If inhaled, will cause dizziness, nausea, vomiting, or difficult breathing. LIQUID: Harmful if swallowed.

Fire/Explosion Hazards – Flammable. Poisonous gases may be produced in fire. Containers may explode in fire. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Phosgene and hydrogen chloride fumes may form in fires. Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.

Fire Fighting – Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.

First Aid – If this chemical comes in contact with eyes, immediately wash the eyes with large amount of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. If this chemical comes in contact with skin, promptly wash the contaminated skin with soap and water. If this chemical penetrates through the clothing, promptly remove the clothing and wash the skin with soap and water. Get medical attention promptly. If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing is stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible. If this chemical has been swallowed, get medical attention immediately.

4. VINYL CHLORIDE

General Description – Vinyl chloride is a colorless gas with a sweet odor. It is used to make plastics and adhesives, and to make other chemicals. It is shipped as a liquefied gas under its vapor pressure. Contact with the liquid can cause frostbite. It is easily ignited. Its vapors are heavier than air and a flame can flash back to the source of leak very easily. This leak may be either a liquid or vapor leak. It can asphyxiate by the displacement of air. Under fire conditions the cylinders or tank cars may violently rupture and rocket. Prolonged exposure of the cylinders or tank cars to heat or fire may cause the material to polymerize with possible container rupture.

This material is a cancer suspect agent on long term exposure to low concentrations. However, this effect has not been demonstrated for single exposures to high concentrations of the material.

Health Hazards – VAPOR: Irritating to eyes, nose and throat. If inhaled, will cause dizziness, or difficult breathing.

Fire/Explosion Hazards – Flammable. Poisonous gases is produced in fire. Flashback along vapor trail may occur. May explode if ignited in an enclosed area. Forms highly toxic combustion products such as hydrogen chloride, phosgene, and carbon monoxide.

Fire Fighting – Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.

First Aid –If a person breathes in large amount of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

5. FREE PRODUCT

General Description – Free product discovered in the central portion of the Site, is represented by Mop Oil. Mop Oil is a brown Light Non-Aqueous Phase Liquid (LNAPL) with specific wintergreen fragrance. It is lighter than water and floats on its surface.

Health Hazards – ACUTE: Inhalation- Respiratory irritation, central nervous system depression. Skin – irritation. Eye – irritation. Ingestion – aspiration hazard, central nervous system depression, convulsion, loss of consciousness, pneumonitis. CHRONIC: Skin - dermatitis.

Fire/Explosion Hazards – Flammable. May form combustible mixtures with air when heated.

Fire Fighting – Water stream may spread fire. Use water spray only to cool containers exposed to fire. If spill or leak has not ignited, use water spray to disperse vapors.

First Aid – Eyes – immediately flush with water for 15 minutes, occasionally lifting upper/lower lids. Seek prompt medical attention. Ingestion – call a physical immediately. Only induce vomiting at the instruction of a physician. Skin – remove contaminated clothing. Wash skin with soap and water. Get prompt medical attention. Inhale – remove to fresh air. If breathing has stopped, perform artificial respiration.

APPENDIX B

G.C. Environmental, Inc. Form

AIR MONITORING FORM

page of

Date _____ GCE Project No. _____

Project Name _____ Type of Activities _____

Type of PID/FID _____ Serial No. _____

Initial Calibration Reading _____ End-of-Use Calibration Check _____

Calibration Standard/Concentration _____

Mini-RAM Serial No. _____ Zeroed in Z-Bag? ☐ Yes ☐ No

Time	Activity/Location	PID/FID (ppm)	Mini-RAM (mg/m ³)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Name (print) _____ Signature _____

SITE SAFETY CHECKLIST

Project Name _____ GCE Project No. _____

Project Activities _____

	YES	NO	N/A
<i>Written Health and Safety Plan (HSP) is on site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Addenda to the HSP are documented on site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Information in the HSP matches conditions and activities at the site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>HSP has been read and signed by all site personnel, including visitors</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Daily tailgate safety meetings have been held and documented</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Site personnel have appropriate training and medical clearance</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Air monitoring is performed and documented as described in the HSP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Air monitoring equipment has been calibrated daily</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Site zones are set up and observed where appropriate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Access to the work area limited to authorized personnel</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Decontamination procedures are followed and match the requirements of the HSP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Decontamination stations (including hand/face wash) are set up and used</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Personal protective equipment used matches HSP requirements</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Hearing protection used where appropriate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Respirators are properly cleaned and stored</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Trenches and excavations are in compliance with federal, state, and local safety requirements before worker entry</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Spoils are placed no closer than 2 feet from the edge of an excavation</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Emergency and first aid equipment is on site as described in the HSP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Drinking water is readily available</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Accessible phone is readily available for emergency use</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Proper drum and material handling techniques are used</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Drums and waste containers are labeled appropriately</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Extension cords are grounded and protected from water and vehicle traffic</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Ground-fault circuit interrupters (GFCI) are used with electrical equipment</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Tools and equipment are in good working order</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Lighting is adequate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Compressed gas cylinders are upright and secured</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

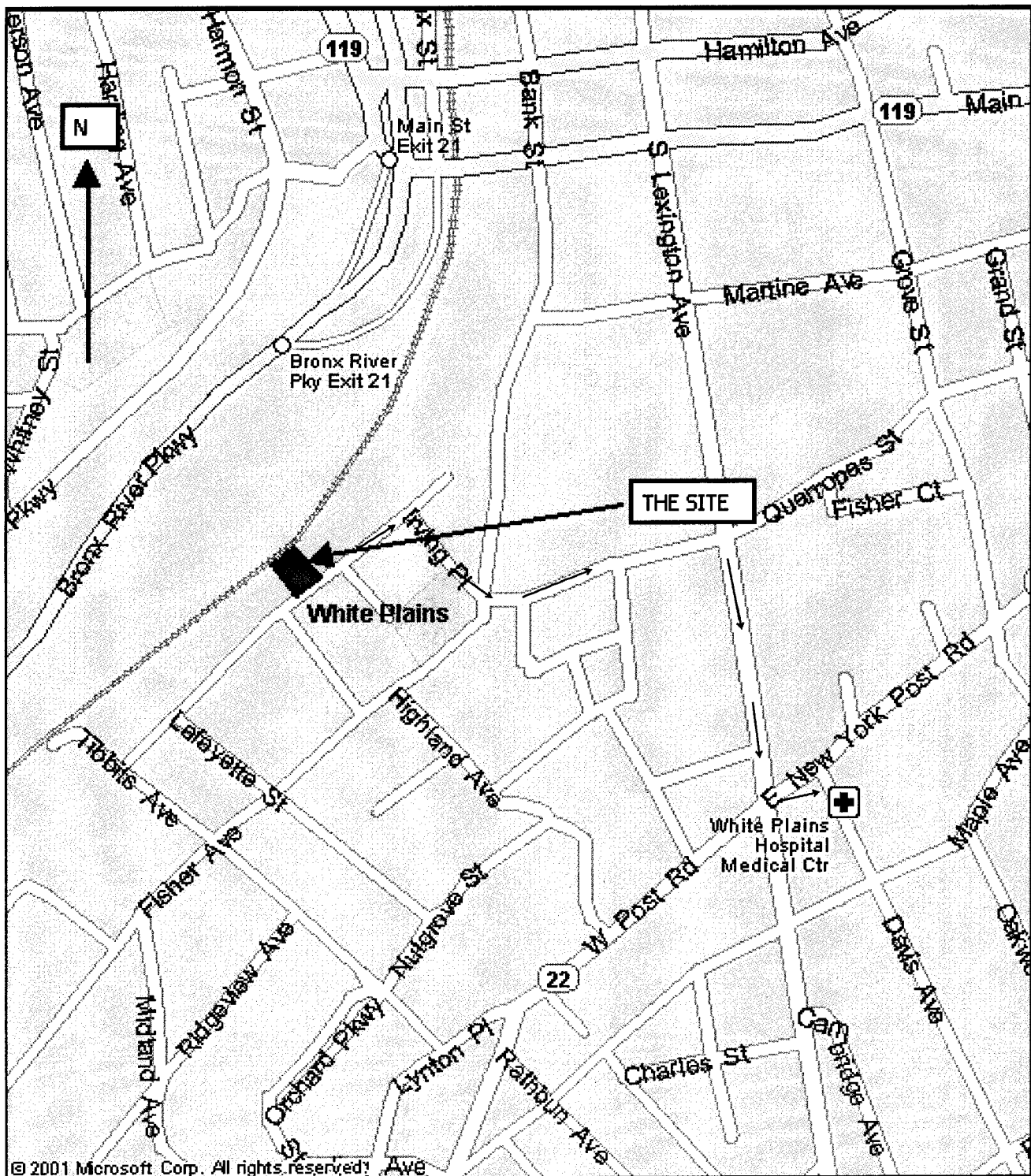
Notes (All "no" answers must be addressed and corrected immediately. Note additional health and safety observations here)

Conducted By: _____ Signature: _____ Date: _____

Signature

APPENDIX C

HOSPITAL ROUTE MAP



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NOTE: DRAWING NOT TO SCALE. ALL LOCATIONS ARE APPROXIMATE. DRAWING INTENDED FOR USE WITH THIS GCE ASI REPORT ONLY.



G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

410 SAW MILL RIVER ROAD
ARDSLEY, NEW YORK 10502

Tel: (914) 674-4346
Fax: (914) 674-4348

PRELIMINARY SITE ASSESSMENT

101 WESTMORELAND AVENUE
WHITE PLAINS, NEW YORK 10606

GCE PROJECT NO: 05-003-00

DWG. TITLE:

FIGURE 1

HOSPITAL
LOCATION
MAP



G. C. ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS

**QUALIFICATION AND EXPERIENCE
FOR
ENVIRONMENTAL SITE ASSESSMENT
AND
SITE REMEDIATION**

February 15, 2007

**G. C. ENVIRONMENTAL, INC.
410 SAW MILL RIVER ROAD
ARDSLEY, NY 10502
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SECTION 2 ENVIRONMENTAL SITE ASSESSMENT

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- 2.2 CAPABILITIES FOR PHASE II INVESTIGATION**

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Friday, February 16, 2007

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TEL: (914) 674-4346, FAX:(914) 674-4348

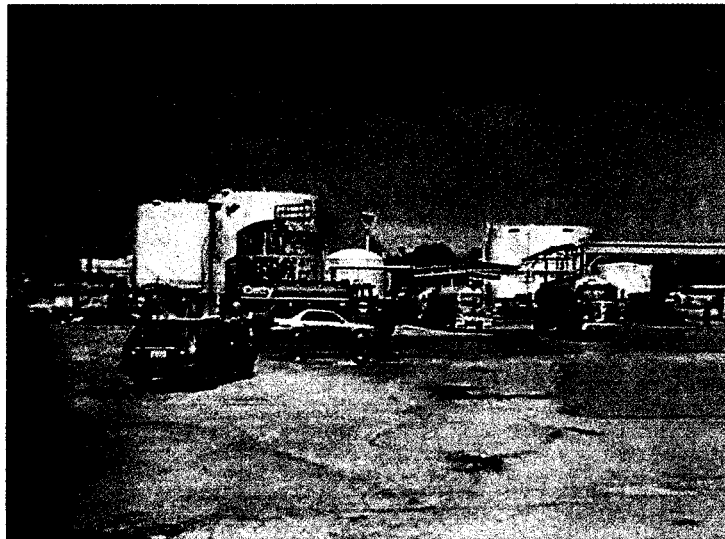
1.1 COMPANY PROFILE

Founded in 1989, G. C. Environmental, Inc. is a fast growing environmental consulting and engineering firm providing services to clients throughout the northeast.

G. C. Environmental provides comprehensive consulting and engineering services in the following areas: Phase I Environmental Site Assessments for residential, commercial and industrial properties, Phase II Investigations, Remedial Investigations, Feasibility Studies, Remedial Design, Petroleum Storage Tank (underground and aboveground) Management, Assessment and Design, Environmental Compliance and Pollution Prevention.

G. C. Environmental's staff are highly trained and experienced, with advanced degrees in science and engineering and the latest training required to meet today's fast evolving environment.

At G. C. Environmental, we continually grow and develop to meet the requirements of both, our clients and the stringent regulatory environment. We provide diligent, cost-effective solutions to meet our clients needs.



Friday, February 16, 2007

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1.2 PROFILE OF SERVICES

ENVIRONMENTAL SITE ASSESSMENT

Phase I Environmental Site Assessment

Phase II Investigation

Geoprobe Drilling

Geophysical Investigation

Asbestos Survey

Lead-based Paint Survey

Potable Water Testing

Radon Testing

Risk Assessment

NEPA Land Use Screening

SITE REMEDIATION

Remedial Investigation

Feasibility Study

Pilot Testing

Remedial Design

Remedial Implementation

Remedial Oversight

Operation and Maintenance

Performance Monitoring

Hazardous Waste Management

Disposal Evaluation

Dredging and Solidification Studies

PETROLEUM STORAGE

UST/AST Compliance

TANK MANAGEMENT

Tank Closure

Closure Assessment

Complete UST/AST System Design

Spill Prevention

Tank Testing

Tank Installation, Upgrade and Repair

Friday, February 16, 2007

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1.3 INSURANCE CERTIFICATES

Friday, February 16, 2007

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

8/16/2006

PRODUCER

BREITSTONE & COMPANY LTD
PO Box 388
Cedarhurst, NY 11516
(516) 569-2550

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: **American International Specialty Lines**
INSURER B: **The Hartford**
INSURER C:
INSURER D:
INSURER E:

INSURED

G.C. Environmental, Inc.
410 Saw Mill River Road
Ardsley, NY 10502

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

SR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		GENERAL LIABILITY	PROP 1354200	8/13/06	8/13/07	EACH OCCURRENCE
	<input checked="" type="checkbox"/>	COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)
	<input type="checkbox"/>	CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)
	<input checked="" type="checkbox"/>	Contractual				PERSONAL & ADV INJURY
		GEN'L AGGREGATE LIMIT APPLIES PER:				GENERAL AGGREGATE
	<input type="checkbox"/>	POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC				PRODUCTS - COMP/OP AGG
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)
	<input type="checkbox"/>	ANY AUTO				
	<input type="checkbox"/>	ALLOWED AUTOS				BODILY INJURY (Per person)
	<input type="checkbox"/>	SCHEDULED AUTOS				
	<input type="checkbox"/>	HIRED AUTOS				BODILY INJURY (Per accident)
		NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident)
	<input type="checkbox"/>					
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT
	<input type="checkbox"/>	ANY AUTO				OTHER THAN EA ACC AGG
A		EXCESS/UMBRELLA LIABILITY	PROU 0791141	8/13/06	8/13/07	EACH OCCURRENCE
	<input checked="" type="checkbox"/>	OCCUR <input checked="" type="checkbox"/> CLAIMS MADE				AGGREGATE
	<input type="checkbox"/>	DEDUCTIBLE				
		RETENTION \$				
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	12 WEC KR3180	8/13/06	8/13/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				E.L. EACH ACCIDENT
						E.L. DISEASE - EA EMPLOYEE
						E.L. DISEASE - POLICY LIMIT
A		OTHER	PROP 1354200	8/13/06	8/13/07	\$1,000,000/Occ. \$2,000,000/Agg.
		Professional Liability				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

CANCELLATION

EVIDENCE OF COVERAGE

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL **30** DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Leti Breitstone

Name and Address of Party to
Whom this Certificate is Issued

Name and Address of Insured

INSURANCE IN FORCE

G.C. Environmental
410 Saw Mill River Road
Ardsley, NY 10502

TYPE OF INSURANCE AND HAZARDS	POLICY FORMS	LIMITS OF LIABILITY			POLICY NUMBER	EXPIRATION DATE
Workmen's Compensation Employers' Liability	STANDARD	STATUTORY * \$ PER ACCIDENT (Employer's Liability only) *Applies only in following state(s):				
Automobile Liability <input type="checkbox"/> OWNED ONLY <input type="checkbox"/> NON-OWNED ONLY <input type="checkbox"/> HIRED ONLY <input checked="" type="checkbox"/> OWNED, NON-OWNED AND HIRED	<input type="checkbox"/> BASIC <input type="checkbox"/> COMPREHENSIVE <input type="checkbox"/> GARAGE <input type="checkbox"/>	Bodily Injury \$ \$ \$ 1,000,000 Bodily Injury and Property Damage (Single Limit) \$ \$	Each PERSON ACCIDENT OCCURRENCE EACH ACCIDENT EACH OCCURRENCE	Property Damage \$ \$ \$ \$ \$ \$	048 748 779	10/11/2007
General Liability <input type="checkbox"/> PREMISES—O.L.&T. <input type="checkbox"/> OPERATIONS—M.&C. <input type="checkbox"/> ELEVATOR <input type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS <input type="checkbox"/> PROTECTIVE (Independent Contractors) <input type="checkbox"/> Endorsed to cover contract between insured and	<input type="checkbox"/> SCHEDULE <input type="checkbox"/> COMPREHENSIVE <input type="checkbox"/> SPECIAL MULTI-PERIL <input type="checkbox"/>	Bodily Injury \$ \$ \$ \$ \$ \$ Bodily Injury and Property Damage (Single Limit) \$ \$ \$	Each PERSON ACCIDENT OCCURRENCE AGGREG. PROD. COMP. OPTNS. AGGREGATE OPERATIONS AGGREGATE PROTECTIVE AGGREGATE CONTRACTUAL EACH ACCIDENT EACH OCCURRENCE AGGREGATE	Property Damage \$ \$ \$ \$ \$ \$ \$		

The policies identified above by number are in force on the date indicated below. With respect to a number entered under policy number, the type of insurance shown at its left is in force, but only with respect to such of the hazards, and under such policy forms, for which an "X" is entered, subject, however, to all the terms of the policy having reference thereto. The limits of liability for such insurance are only as shown above. This Certificate of Insurance neither affirmatively nor negatively amends, extends, nor alters the coverage afforded by the policy or policies numbered in this Certificate.

In the event of reduction of coverage or cancellation of said policies, the Allstate Insurance Company will make all reasonable effort to send notice of such reduction or cancellation to the certificate holder at the address shown above.

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER.

January 25, 2007

Date.

By

Authorized Representative

G. C. ENVIRONMENTAL, INC.
410 SAW MILL RIVER ROAD
ARDSLEY, NY 10502
TEL: (914) 674-4346, FAX:(914) 674-4348

1.4 FINANCIAL REFERENCES

Bank of America
96A Allen Boulevard
East Farmingdale, NY 11735
Contact: Catherine Zagata
Tel: (631) 293-4551

Friday, February 16, 2007

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1.5 CLIENT REFERENCES

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JPMorgan Chase
Mail Code IL1-0956 - One Bank One Plaza
Chicago, NY 60670
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Maureen Hranek
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Tel: (973) 397-4830

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Mr. Alan Z. Richards, Esq.
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Melville, NY 11747
Tel: (631) 622-6616

February 16, 2007

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SECTION 2 ENVIRONMENTAL SITE ASSESSMENT

G. C. Environmental, Inc. provides professional environmental site assessment consulting services to both the public and private sectors. Over the last eight years, G. C. Environmental's staff has conducted various types of environmental site assessment "activities" at more than 1,000 sites. These site assessment activities have provided information that is used as a decision-making tool in real estate transactions, to evaluate release compliance issues associated with underground storage tanks (UST), in petroleum products/hazardous materials release investigations, and in subsurface contamination investigations at solid waste landfills. G. C. Environmental has assembled a team of highly qualified environmental professionals comprised of geologists, hydrogeologists, geochemists, environmental scientists, environmental engineers, chemists, risk assessment specialists, and industrial hygienists who specialize in the various facets of the environmental site assessments process.

Specific types of investigations conducted by G. C. Environmental when evaluating contamination conditions at a site include:

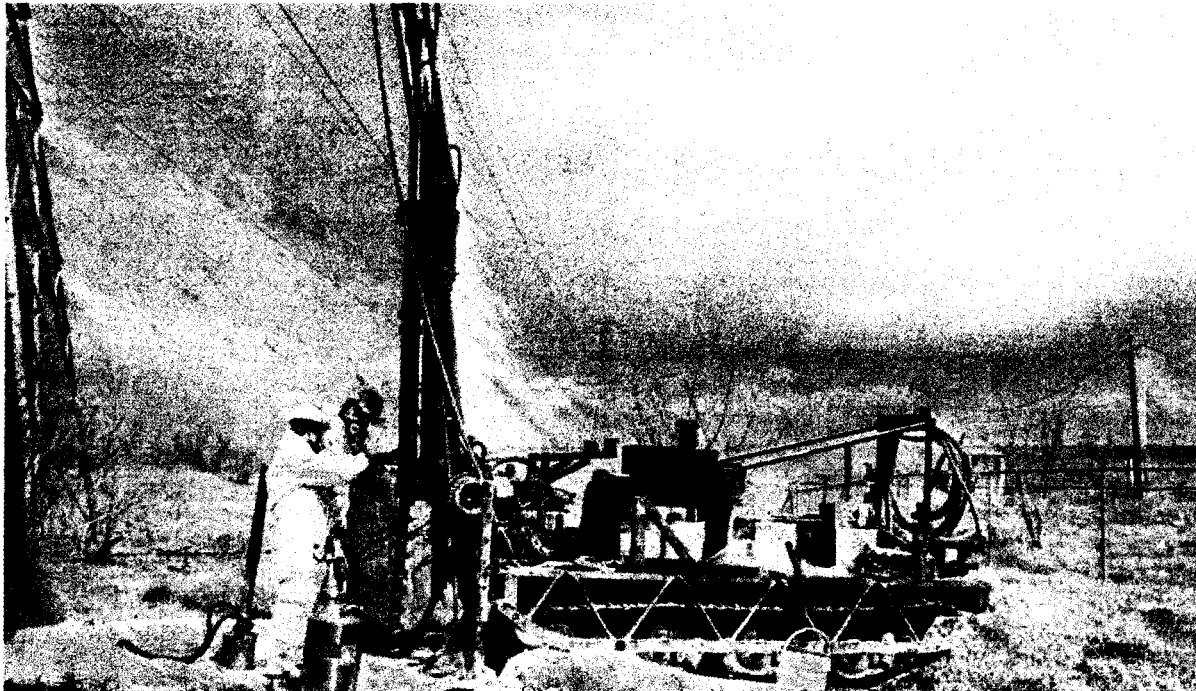
2.1 CAPABILITIES FOR PHASE I ENVIRONMENTAL SITE ASSESSMENT

Phase I Environmental Site Assessments include initial site inspection activities, review of site and area historical operations, and review of regulatory files to identify potential problem areas associated with a site.

Friday, February 16, 2007

2.2 CAPABILITIES FOR PHASE II INVESTIGATION

Phase II Investigations comprise subsurface sampling programs in target areas identified during the Phase I investigation to confirm the presence of suspected contamination. Field investigation techniques used can include a combination of soil gas surveys, geophysical methods, portable drive soil and groundwater investigative techniques or conventional soil boring/monitoring well programs.



SECTION 3 SITE REMEDIATION

G. C. Environmental, Inc. provides comprehensive soil and groundwater remedial services to a wide variety of clients. G. C. Environmental, Inc. has successfully closed numerous sites within a tight time frame by streamlining and overcoming bureaucratic inefficiencies. Site closures were accomplished rapidly and cost-effectively with minimal interruption with continuous normal site operations. Site remediation activities can vary from plume delineation to complete site cleanup. While in many cases plume delineation and monitoring are sufficient for site closure, some sites require remedial investigation, pilot testing and remedial implementation. Whichever is the case, G. C. Environmental, Inc. always weighs the actual potential risk to public health and the environment against cleanup cost. Often, physical site controls prove to be a cost-effective, yet acceptable means of corrective action. Site remediation is often associated with petroleum products releases hazardous materials releases and subsurface contamination at solid waste landfills. Our site remediation team of highly qualified environmental professionals is comprised of geologists, hydrogeologists, geochemists, environmental scientists, environmental engineers, electrical engineers, mechanical engineers, chemists, risk assessment specialists, industrial hygienists, and construction managers who specialize in the various facets of site remediation.

Site remediation activities can be divided into two major categories:

3.1 CAPABILITIES FOR REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

Remedial investigations focus on characterizing the source, release mechanism, nature and extent of affected areas and media (soils, groundwater, surface water, and air); evaluating fate and risk to potential receptors.

G. C. ENVIRONMENTAL, INC.
410 SAW MILL RIVER ROAD
ARDSLEY, NY 10502
TEL: (914) 674-4346, FAX:(914) 674-4348

Feasibility studies involve the evaluation of treatment options for short- and long-term effectiveness, cost, implementability, and regulatory and community acceptance. Once clients understand their options, they can choose the solution that best fits their needs.

3.2 CAPABILITIES FOR REMEDIAL DESIGN AND IMPLEMENTATION

Once the remedial investigation and feasibility study are completed, a bench scale or pilot testing can be conducted to collect data required for design and sizing of the remediation system. The most commonly used systems include activated carbon treatment, air stripping, air sparging, soil vapor extraction and bioremediation. As with all phases of the corrective action, we design cost-effective systems which require minimal maintenance while maintaining maximum efficiency. Once the design is completed, we provide either turnkey implementation or project procurement and management.



Friday, February 16, 2007

GREGORY COLLINS
PRESIDENT

QUALIFICATIONS OSHA 40-Hour Hazardous Waste Site Worker (OSHA)
 OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA)
 4-Hour General Hazard Awareness Certification Program (OSHA; DOT)
 4-Hour Basic Safety Training Certification Program (OSHA; DOT)
 Excavation and Trenching Standard, and Soils Evaluation and Identification
 (OSHA)
 Lead Inspector (EPA; DOT)

EDUCATION B.S., Real Estate and Finance, American University, Washington, D. C., 1988

PROFESSIONAL AFFILIATIONS

National Association of Power Engineers

Mr. Collins has twenty years of experience in environmental engineering and consulting. His experience includes management of environmental services including subsurface investigations, site assessments, soil and groundwater remedial investigation and design, and petroleum storage tank management, compliance, closure and design, fuel oil and natural gas boiler maintenance, repair and replacement. Mr. Collins began his professional career as a member of fuel oil storage tank removal crew and as a back hoe operator. In 1989, after completing his studies, he founded his own company G. C. Environmental, Inc., which has since been providing high-quality, cost-effective and timely environmental management services to business, industries and municipalities. The services vary from fuel oil storage tank management, to waste management and transportation, to environmental consulting and engineering. Mr. Collins has successfully coordinated the efforts of the company's staff members to ensure that all project objectives and deadlines are met. He has managed and prepared proposals, protocols, specifications, and reports for numerous projects in the areas of Phase I and II Environmental Site Assessment (ESA); remedial investigation/feasibility study for soil and groundwater remediation; site assessment, management, closure, compliance and upgrading and new system design for petroleum storage tank sites. His experience also includes oversight of oil and hazardous material spill cleanups, and site remediation.

REPRESENTATIVE PROJECT EXPERIENCE

BMW, Inwood, NY Managed all phases of a \$180,000 project which consisted of Phase I and II ESAs, soil and groundwater remediation, petroleum contaminated waste transport and disposal, and new dry well installation.

Numerous MACY's properties in Suffolk and Nassau Counties, and Staten Island, NY Managed fuel oil storage tank closure, assessment and replacement, and petroleum contaminated soil and groundwater investigation and remediation.

Alhambra Condominium, New York, NY Managed replacement of three fuel oil aboveground storage tanks of 230,000 gallons of total capacity and associated with these tanks petroleum contaminated soil remediation.

Hempstead Bus Terminal, Town of Hempstead, NY Managed removal of a 10,000-gallon fuel oil underground storage tank.

Various residential properties, New York, and Nassau and Suffolk Counties, NY Managed removal, repair and installation of over three thousand fuel oil storage tanks and associated petroleum contaminated soil and groundwater remediation.

Various commercial and industrial properties, New York, and Nassau and Suffolk Counties, NY Managed and provided report review for over thirty Phase I and II ESA and soil and groundwater remediation projects.

SEMINARS & COURSES

Train-The-Trainer Course in Instructional Techniques for Hazardous Waste Trainers,
New Environment, Inc., 1995

Environmental Investigator Course, NYU, New York, 1993

Tank Installer Training Course, NYS DEC, 1993

How To Install Underground Fuel Storage Tanks and Piping Course, Petcon, Inc., 1993

Contractor's Guide to UST Closure Course, Petcon, Inc., 1993

Advanced Course in Business, UCLA, California, 1990

Ezy-Check Leak Detector Operation Training Program, Horner Creative Products, Inc., 1991

Dualoy 3000/L Fiberglass Pipe Training Program, Ameron Corp., 1990

NAHUM KEDEM, P. G.
VICE PRESIDENT

QUALIFICATIONS Professional Geologist, State of Tennessee
State of New Jersey DEP BUST Subsurface Evaluator
OSHA 40-Hour Hazardous Waste Site Worker (OSHA)
OSHA 8-Hour Hazardous Waste Site Worker Annual Refresher (OSHA)
OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA)

EDUCATION M.S., Hydrogeology, City College of New York, New York, NY 1992
B.A., Geology, Hunter College, New York, NY 1989
Associate Degree, Civil Engineering, Ben Gurion University, Beer-Sheva,
Israel, 1984

Mr. Kedem has over seventeen years of experience in environmental, geotechnical and civil engineering and consulting. His experience includes management and technical performance of environmental and geotechnical consulting services including subsurface investigations, site assessments, remedial investigations and design, and petroleum storage tank management, compliance, closure and design. He has participated in, managed, and prepared proposals, protocols, specifications, and reports for hundreds of projects in the areas of Phase I and II Environmental Site Assessment (ESA); remedial investigation/feasibility study for soil and groundwater remediation; geophysical investigation; site assessment, management, closure, compliance and upgrading and new system design for petroleum storage tank sites. His experience also includes civil engineering design, project management, supervision and inspection of all phases of industrial, commercial and residential construction.

REPRESENTATIVE PROJECT EXPERIENCE

New York City Department of Design and Construction, New York, NY Managed a vehicle fueling tank system upgrade project for twenty-five sites with over forty underground storage tanks throughout New York City. The project included site investigation, compliance audits, replacement system design, closure assessment, subsurface investigation, and remediation.

Briar Hall Country Club, Briarcliff Manor, NY Managed and performed underground storage tank replacement, petroleum contaminated soil investigation and remediation and trichloroethane contaminated groundwater plum delineation within the local metamorphic fractured bedrock.

Former Alexander's Stores, New York, NY Managed and performed Phase I and II ESAs, underground storage tank closure, assessment, and remediation for numerous facilities within New York City.

UBS Asset Management, New York, NY Managed and provided report review for over thirty Phase I ESAs located throughout the country. The project, which was completed in thirty days, included comprehensive asbestos surveys, building condition surveys, and seismic surveys.

NAHUM KEDEM, P. G.
VICE PRESIDENT

The Chase Manhattan Bank, New York, NY Conducted, managed, and provided report review for over two hundred Phase I ESAs for residential and commercial properties located in the New York City metropolitan area, New Jersey and Connecticut.

General Greene Shopping Center, Springfield, NJ Managed and conducted Phase I and II ESA, remedial investigation and periodic monitoring for TCE contaminated groundwater behind the on-site dry cleaning facility.

Mobile Communications Companies Managed and provided report review for over one hundred Phase I and II ESAs for commercial properties located throughout New York State and New Jersey.

SEMINARS & COURSES

Environmental Regulations in New York, Institute of Business Law
Compliance with the TC Rule and Implementing the Toxicity Characteristic Leaching procedure (TCLP), USEPA

Amtrack Contractor Safety Course

Troxler Nuclear Gauge Course

Risk-Based Corrective Action process, ASTM

IGOR GOLDSTEIN
MANAGER,
ENGINEERING

QUALIFICATIONS OSHA 40-Hour Haz WOPER Course (OSHA)
 OSHA 8-Hour Haz WOPER Annual Refresher (OSHA)
 OSHA 8-Hour Hazardous Waste Site Supervisor (OSHA)
 Asbestos Project Monitor (EPA; AHERA; NYS-DOL)
 Asbestos Supervisor (EPA; AHERA; NYS-DOL)
 Asbestos Inspector (EPA; AHERA; NYS-DOL)

EDUCATION B.S., Heat Transfer Engineering, Institute of Technology, Kiev, USSR, 1984

Mr. Goldstein has over fifteen years of engineering and environmental consulting experience. His experience includes project management, technical performance and proposals preparation for Phase I and Phase II Environmental Site Assessments (ESAs), remedial investigations and design, and petroleum storage tank management, design, compliance and closure. He has participated in remedial investigation for soil and groundwater remediation; site assessment, management, closure, upgrading and new system design for petroleum storage tank sites. Mr. Goldstein has also participated in a field soil permeability and aquifer conductivity testing as part of a soil and ground water remedial investigation. His experience also includes performance of asbestos surveys, asbestos abatement project monitoring. Mr. Goldstein's experience also includes all phases of energy production at a thermo power plant.

REPRESENTATIVE PROJECT EXPERIENCE

New York City Department of Design and Construction, New York, NY Prepared design drawings for a multiside vehicle fueling tank system upgrade project throughout New York City. The project also included site investigation, compliance audits, subsurface investigation, remediation and free product recovery. He also oversaw all subcontractors' work on all phases of UST removal/installation, and drilling and monitoring well installation, interfaced with environmental laboratories and prepared reports.

Briar Hall Country Club, Briarcliff Manor, NY Supervised and performed underground storage tank replacement, contaminated soil remediation and contaminated groundwater plum delineation.

Kings Plaza Shopping Center, Brooklyn, NY Supervised underground storage tank system testing, prepared cost estimate for underground storage tank system closure, upgrade and replacement.

UBS Asset Management, New York, NY Supervised, provided report review and performed over fifteen Phase I ESAs for commercial properties located throughout the Eastern United States.

IGOR GOLDSTEIN
MANAGER,
ENGINEERING

The Chase Manhattan Bank, New York, NY Supervised, provided report review and performed over forty Phase I ESAs for residential and commercial properties located throughout the States of New York, New Jersey and Connecticut.

Mobile Communications Companies Supervised, provided report review and performed over hundred Phase I and II ESAs for commercial properties located throughout States of New York, New Jersey and Connecticut.

New York City Transit Authority, Brooklyn, NY Performed asbestos abatement project monitoring for fifteen properties.

Green Acres Shopping Center, Valley Stream, NY Performed asbestos survey, bid walk-through and asbestos abatement project monitoring for ten projects.

SEMINARS AND COURSES

Risk-Based Corrective Action process, ASTM

New York City Transit Authority Contractor Safety Course

Advanced Course in Environmental Engineering, NYANA

Advanced Technologies for Accelerated Natural Attenuation Course

VAL GATAULLIN, CPG
PROJECT MANAGER

EDUCATION

Certified Professional Geologist, American Institute of Professional Geologists
M.S., Geology and Environmental Science, Leningrad State University,
Leningrad, USSR, 1973

Mr. Gataullin has over thirty years of engineering, project management and hands-on performance of various environmental projects. His experience includes proposals preparation, technical evaluation and oversight of Environmental Site Assessments (ESAs), geotechnical and remedial investigations and designs. He has participated in geotechnical and remedial investigations for soil and groundwater remediation and has strong experience in remediation system design. Mr. Gataullin has also participated in a field soil permeability and aquifer conductivity testing as part of a soil and groundwater remedial investigation.

REPRESENTATIVE PROJECT EXPERIENCE

Various Commercial Properties in the State of New York Conducted several remedial subsurface investigations, participated in preparation of technical proposal, remediation plans and remedial system design. He also oversaw subcontractors' work on all phases of remedial investigation, drilling and monitoring well installation, communicated with environmental laboratories and vendors and prepared reports.

The Chase Manhattan Bank, New York, NY Performed numerous Phase I ESAs for residential and commercial properties located throughout the State of New York.

Mobile Communications Companies Performed numerous Phase I and II ESAs for commercial properties located throughout States of New York and New Jersey.

SEMINARS AND COURSES

Environmental Technology, Environmental Hydrogeology, Fate and Transport of Contaminants,
Subsurface Investigation Techniques, Remediation Techniques - Ohio State University, 2002-2004
OSHA 40-Hour Haz WOPER Course (OSHA) - Columbus State Community College, 2001



STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Certifies That

G.C. ENVIRONMENTAL INC.
410 SAW MILL RIVER RD
ARDSLEY, NY 10502

*Having duly met the requirements of the
Underground Storage Tank Certification Program*

N.J.S.A. 58:10A-24.1-8

Is hereby approved to perform the following services:

SUBSURFACE EVALUATION

US01098
CERTIFICATION NUMBER

07/31/2007
EXPIRATION DATE

Joseph J. Galante

ASSISTANT COMMISSIONER, DEPARTMENT
OF ENVIRONMENTAL PROTECTION

TO BE CONSPICUOUSLY DISPLAYED AT THE FACILITY

NEW YORK UNIVERSITY
SCHOOL OF CONTINUING EDUCATION
Real Estate Institute at The Midtown Center
11 West 42nd Street
New York, New York 10036
(212)790-1648

No. ENVINV-002

Gregory Collins

Has completed an Environmental Investigator Course on

May 13, 1993

Course topics covered include: Phase I Environmental Site Assessments, Asbestos, Lead, Radon, and PCB Inspection, Underground Storage Tank Assessment, Remediation Technologies and Environmental Regulations.

WARREN & PANZER ENGINEERS, P.C.

Robert Politzer

Robert Politzer
Assistant Director of Training

New Environment, Inc.

This is to certify that

Gregory A. Collins

has successfully completed
New Environment, Inc.'s

Train-The-Trainer Course

in Instructional Techniques
for Hazardous Waste Trainers

February 3, 1995

Date

Brookfield, OH

Location



President, New Environment, Inc.

Pete Hunkus

Instructor

New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed 40 hours of
Health & Safety Training
In accordance with 29CFR 1910.120

November 12, 1993

Date

W. Babylon, NY

Location

Timothy S. Smith
President, New Environment, Inc.

3697

Student ID Number

New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed NEI's
GENERAL HAZARD AWARENESS

[29CFR1910.1200]

[29CFR1910.120(q)]

[DOT HM-126F]

4-HOUR CERTIFICATION PROGRAM

January 30, 1995

Date

Brookfield, OH

Location

.4 CEU's

3697

Student ID Number



President, New Environment, Inc.

New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed NEI's

BASIC SAFETY TRAINING

[29CFR1910.120(q)]

[DOT HM-126F]

4-HOUR CERTIFICATION PROGRAM

January 30, 1995

Date


Brookfield, OH

Location

.4 CEU's

3697

Student ID Number


President, New Environment, Inc.

New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed NEI's
HAZARDOUS WASTE WORKER
[29CFR1910.120(g)(3)(I)]
40-HOUR CERTIFICATION PROGRAM

February 2, 1995

Date

Brookfield, OH

Location

3.2 CEU's

3697

Student ID Number



President, New Environment, Inc.

New Environment, Inc.

This is to certify that

Gregory A. Collins

has satisfactorily completed NEI's
HAZARDOUS WASTE SUPERVISOR
[29CFR1910.120(e)(4)]
8-HOUR CERTIFICATION PROGRAM

February 3, 1995

Date

Brookfield, OH

Location

.8 CEU's

3697

Student ID Number


President, New Environment, Inc.

NEW YORK UNIVERSITY'S SCHOOL OF CONTINUING EDUCATION
Real Estate Institute at The Midtown Center
11 West 42nd Street
New York, New York 10036
(212) 790-1649

No. LI - 035

Gregory Collins

Has completed a

A Lead Inspector's Course in accordance with HUD and EPA Guidelines

on

March 25, 1993

and has passed a written examination.
with a score of 82 %

Course topics covered include: History of Lead Use, Physical Characteristics, Protective Equipment, Work Practices, Health Effects, Regulations, Legal Aspects, Inspecting for Lead Paint and Lead in Water.

WARREN & PANZER ENGINEERS, P.C.

William A. Loch

William A. Loch

Deputy Director of Training



Gregory Collins

of

A.N.S. Welding Corp.

HAS RECEIVED TRAINING IN

THE OSHA EXCAVATION AND TRENCHING STANDARD

AND

SOILS EVALUATION AND IDENTIFICATION

ON THE 20th DAY OF JUNE, 1990

Long Island, New York



Jeffrey J. Zogg
Managing Director
General Building Contractors
of NYS/AGC

A.J. Castelbuono
Executive Director
New York State Chapter, AGC

National Association of **Electrical** Engineers OF THE UNITED STATES OF AMERICA

Presents To

GREG COLLINS

This

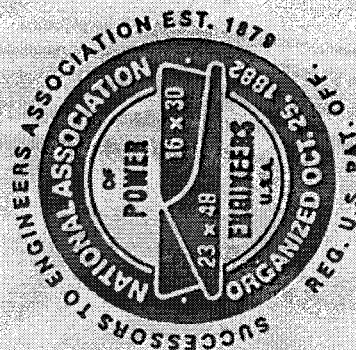
Certificate of Appreciation

For Outstanding Service to This Association

Date April 14, 1994

Robert Guyer
New York #68

PRESIDENT





State of Tennessee
Department of Commerce and Insurance

Be it Known that:

Nahum Kedem

*Has satisfied all requirements set forth by Public Chapter
553 the Geologist Registration Act of 1988*

Therefore is duly authorized and registered as a

Professional Geologist *in the State of.*
Tennessee. Registrant is subject to all applicable laws.

Carol Peeples Cook
Assistant Commissioner

TN3960
Registration No.



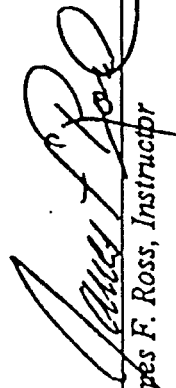
CERTIFICATE OF COMPLETION

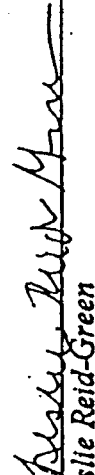
This certifies that


NAHUM KEDEM

has successfully met the requirements of
29 CFR 1910.120 (e)(4)
OSHA Supervisor's Specialized Training
at LEVINE-FRICKE-RECON INC.

April 15, 1997


James F. Ross, Instructor


Leslie Reid-Green


Joanne Jaeger-Scully, P.E., C.I.H., Vice President

Certificate of Completion

This is to certify that

Wahum Kedem

has successfully completed a
40-HOUR HAZARDOUS WASTE SITE WORKER
training program as required by OSHA 29 CFR 1910.120 (e)(2)

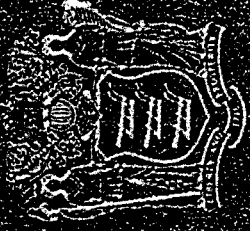
Charles A. Ludwig
Charles A Ludwig
PRESIDENT

7-31-92

Date

INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
1143 ST. GEORGES AVENUE
RAHWAY, NJ 07065

**DEPARTMENT OF
ENVIRONMENTAL PROTECTION**



**STATE OF
NEW JERSEY**

Hereby Certifies the Goodstanding of:

NAHUM KEDEM

SSN:

License No. 0012075

Reg No.

0012075

AS A LICENSED:

SUBSURFACE

Expires: 07/31/08

Document#: 050754350

CERTIFICATE OF COMPLETION

This certifies that

Nat Kedem

has successfully completed the

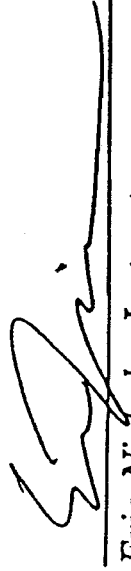
LEVINE•FRICKE•RECON INC.

Course on

Risk Based Corrective Action

(In Accordance with ASTM Standard E1739-95)

January 10, 1997


Eric Nichols, Instructor


Joanne J. Scully, PE, CQH, Vice President

Cook College

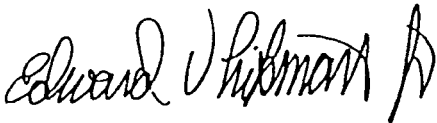
Continuing Professional Education

THIS CERTIFICATE IS AWARDED TO

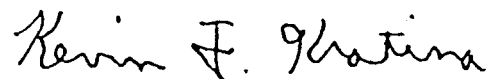
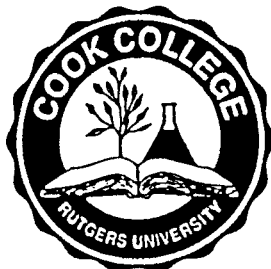
Nahum Kedem

FOR THE COMPLETION OF
Technical and Regulatory Training
in
UNDERGROUND STORAGE TANKS

March 12, 1996
0.65 CEUs



Edward V. Lipman, Jr.
Director
Continuing Professional Education



Kevin F. Kratina, Chief
Bureau of Underground Storage Tanks
NJ Department of Environmental Protection

This course satisfies the requirements of P.L. 1991, C.123, for attendance at a "department-approved training course on the department's rules & regulations concerning underground storage tanks."

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

NAHUM KEDEM

of

CONVERSE CONSULTANTS EAST

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

1. Principles and practices of radiation protection.
2. Leak testing procedures.
3. Mathematics and calculations basic to the use and measurement of radioactivity.
4. Biological effects of radiation.
5. Radioactivity measurement standardization and monitoring techniques and instruments.
6. Accident and incident procedures.
7. Procedures for nuclear gauge storage and transportation.
8. General safety precautions.

Gauge Operation

1. Instrument theory.
2. Operating procedures.
3. Maintenance.
4. Field application.
5. Gauge calibration.

CERTIFICATE #: 054313

7/14/92

DATE

Philip Palilla
PHILIP PALILLA

INSTRUCTOR

WILLIAM F. TROXLER

PRESIDENT

CERTIFICATE OF COMPLETION

This certifies that

Igor Golshteyn

has successfully met the requirements of

29 CFR 1910.120 (e)(4)

OSHA Supervisor's Specialized Training

at LEVINE-FRICKE-RECON INC.

November 13, 1996.

James F. Ross
James F. Ross, Instructor

Richard F. Toro

Richard F. Toro, CIH, Executive Vice President

Leslie Reid-Green
Leslie Reid-Green

CERTIFICATE OF COMPLETION

This certifies that

Igor Golshteyn

has successfully completed the

LEVINE•FRICKE•RECON INC.

Course on

Risk Based Corrective Action

(In Accordance with ASTM Standard E1739-95)

January 10, 1997

Eric Nichols

Eric Nichols, Instructor

Joanne J. Scully
Joanne J. Scully (PE, CIH, Vice President)



New Jersey / New York Hazardous Materials Worker Training Center

(Partially supported by the National Institute of Environmental Health Sciences)

This is to certify that

Igor Golshteyn

Certificate #: UMD 101445

has successfully completed the course entitled

Health and Safety for Hazardous Waste Site Investigation Personnel

40 Hours

(4.0 CEU's for 40 contact hours)

conducted by the

Division of Consumer Health Education

Department of Environmental and Community Medicine

University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School



Andrew L. Gosh
Center Director

February 7-11, 1994

Date

Training Renewal Date: February 11, 1995

John M. Mabul
Course Director

CERTIFICATE OF TRAINING

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN
070-80-3796

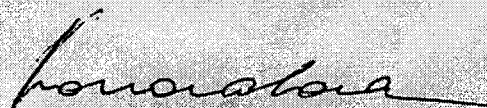
has successfully completed the course entitled
ASBESTOS INVESTIGATOR
ASBESTOS INSPECTOR

and passed the examination.

Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION
NEW YORK STATE DEPT. OF HEALTH

and, for purposes of accreditation, EPA-AHERA under 40 CFR 763



Course Coordinator

7/21/93-7/23/93

Date of Course Completion

EPA 7/23/94; NYC 7/23/95; NYS BIRTH MONTH

Course Expiration Dates



Course Director

NYC93234INV/INS-3

Certificate Number



ASBESTOS TRAINING INSTITUTE, INC.

47 W. 13th Street
New York, NY 10011
Tel: 212-206-7019

CERTIFICATE OF TRAINING

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN
070-80-3796


has successfully completed the course entitled

AIR SAMPLING TECHNICIAN

and passed the examination.

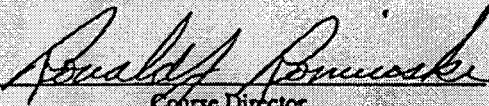
Approved by

NEW YORK STATE DEPT. OF HEALTH


Course Coordinator

5/4/93-5/5/93

Date of Course Completion

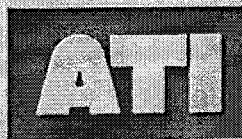

Course Director

NYC93148AST-2

Certificate Number

BIRTH MONTH

Course Expiration Dates



ASBESTOS TRAINING INSTITUTE, INC.

47 W. 13th Street
New York, NY 10011
Tel: 212-206-7019

CERTIFICATE OF TRAINING

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN
070-80-3796

has successfully completed the course entitled

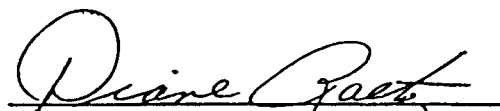
ASBESTOS HANDLER SUPERVISOR
ASBESTOS CONTRACTOR/SUPERVISOR

and passed the examination.

Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION
NEW YORK STATE DEPT. OF HEALTH
and, for purposes of accreditation, EPA-AHERA under 40 CFR 763


Course Coordinator


Course Director

5/10/93-5/14/93

NYC93157S-3

Date of Course Completion

Certificate Number

EPA 5/14/94; NYC 5/14/95; NYS BIRTH MONTH

Course Expiration Dates



ASBESTOS TRAINING INSTITUTE, INC.

47 W. 13th Street
New York, NY 10011
Tel: 212-206-7019

CERTIFICATE OF TRAINING

ASBESTOS TRAINING INSTITUTE INC.

This is to certify that

IGOR GOLSHTEYN
070-80-3796

has successfully completed the course entitled

ASBESTOS HANDLER
ASBESTOS WORKER

and passed the examination.

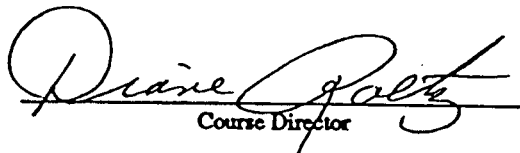
Approved by

NEW YORK CITY DEPT. OF ENVIRONMENTAL PROTECTION
NEW YORK STATE DEPT. OF HEALTH

and, for purposes of accreditation, EPA-AHERA under 40 CFR 763



Course Coordinator



Course Director

5/10/93-5/13/93

Date of Course Completion

NYC93156H-3

Certificate Number

EPA 5/13/94; NYC 5/13/95; NYS BIRTH MONTH

Course Expiration Dates



ASBESTOS TRAINING INSTITUTE, INC.

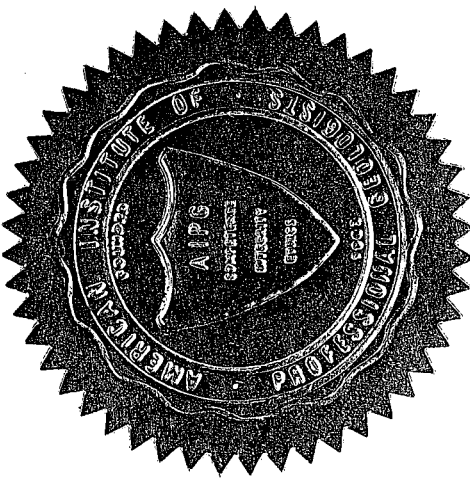
47 W. 13th Street
New York, NY 10011
Tel: 212-206-7019

American Institute of Professional Geologists

hereby affirms that

Valery Gataullin

having provided satisfactory evidence of the education, professional experience, personal integrity and adherence to applicable professional and ethical standards required by the Bylaws of this Institute, is qualified and authorized, as and while a Member in good standing, to use the title



Certified Professional Geologist

In testimony whereof, witness the signatures of the President and Secretary under seal of this Institute the 14th day of May, 2005.

Robert G. Font, President

David M. Abbott, Jr., Secretary

Certificate Number CPG-10893

377 Sheffield Ave. • North Babylon, N.Y. 11703 • (631) 422-5777 • Fax (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LABORATORY QUALITY MANUAL	Doc. No. 1	Rev. No. 4
	Date: 04/01/2005	Page 1 of 35

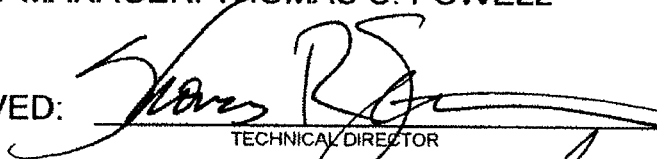
ELAP Laboratory ID# 10320

LABORATORY QUALITY MANUAL

TECHNICAL DIRECTOR: THOMAS R. TREUTLEIN

QUALITY MANAGER: THOMAS U. POWELL

APPROVED:


TECHNICAL DIRECTOR

DATE: 4-1-05

APPROVED:


QUALITY MANAGER

DATE: 4-1-05

NOTE: This manual is based on New York State Department of Health, Environmental Laboratory Approval Program (NYSDOH ELAP) template.

377 Sheffield Ave. • North Babylon, N.Y. 11703 • (631) 422-5777 • Fax (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

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REVISION RECORD

Rev NO	DATE REVISED	Responsible Person	CHANGES		
			Reason	Sec	Description of Change
1	04/17/00	Tom Powell	Initial Release	All	Initial Release
2	0501/00	Tom Powell	Lab Inspection	5	Record of Initials of all staff
				10	Copy of Chain of Custody Form
				12	List of Equipment
				22	-Statement that Client will be advised of subcontracting of labwork in writing -Statement that reports will be numbered sequentially indicating on each page the total number of pages in report .
				23	-Description of LIMS -Description of electronic record archiving system. -Hardcopy data and record storage systems including lab analyst notebook storage.
3	09/06/00	Tom Powell	Rec'd ELAP Inspection Report	p.1	Distribution list moved to QA officer's file
				3	Organization Chart revised
				5 F.	Record of initials moved to QA officer's file
				11	Revised equipment list
				21	Expanded section on ethics training

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4	04/01/05	Tom Powell	Incor- porate NELAP Ch.5, 2002	All	Record Retention moved to Document Control Section; New information for Reports Section , expanded Corrective action , new section for confidentiality and proprietary rights. Added Quality System and Preventive Action sections. Renamed New Work to Review of Requests, Tenders, and Contracts. Renamed and expanded Testing Discrepancies to Control of Nonconforming Testing. Renamed and expanded ethics training to data integrity. Organization chart moved to Appendix. Editorial changes to Job Descriptions. Expanded Document Control to include annual review. Editorial changes to Lab Environment. Updated internal audit & managerial review requirements.
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- ANNUAL REVIEW (PERFORMED IF DOCUMENT HAS NOT BEEN REVISED IN THE PAST 12 MONTHS)

_____ Signature	_____ Title	_____ Date
_____ Signature	_____ Title	_____ Date
_____ Signature (Responsible Person in Revision Record)	_____ Title	_____ Date

- TRAINING AND DISTRIBUTION OF QUALITY MANUAL RECORD - See Appendix E
- RECORD OF INITIALS OF ALL STAFF –
This documentation is on file with Quality Manager and will be distributed as needed to each department separately from laboratory quality document.

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APPENDICES:

Appendix A - Code of Ethics

Appendix B - Organization Chart

Appendix C - Sample Holding Times, Containers and Preservatives

Appendix D - Certificates of Approval, New York State DOH ELAP

Appendix E - Quality Manual Training & Distribution Record

Appendix F - List of Equipment

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1. QUALITY POLICY

EcoTest Laboratories, Inc. is an independent, environmental testing laboratory which was founded in 1977. The company was founded by and is owned and co-directed by Thomas Powell and Thomas Treutlein.

Our main goal at EcoTest Laboratories is to produce the most accurate and precise analytical results possible, as quickly as possible. The data must be technically defensible for clients who must comply with Federal and state and local regulations such as SPDES, NPDES, RCRA, and SDWA.

Our efforts are concentrated on analytical chemistry and microbiology with a minimum of interpretive and consulting work. Because of the importance of our work to our clients in health, legal, economic, and other matters, we have instituted a comprehensive Quality Assurance/Quality Control (QA/QC) program. The standard operating procedures described herein were designed by our staff to incorporate all those aspects needed for a good QA/QC program and in conformance with the NELAC standard adopted by the New York State Environmental Laboratory Approval Program (NYSELAP). This includes the following:

- Adequately staffed and equipped laboratory facility,
- Successful participation in the proficiency testing program operated by the New York State DOH Environmental Laboratory Approval Program or another accredited provider,
- Successful implementation of a NELAC compliant quality system,
- Annual internal audits with management review,
- Successful biennial assessments by the New York State Environmental Laboratory Approval Program, or Primary Accrediting Authority,

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- Timely reporting of laboratory test results to the regulating authorities/clients,
- Laboratory test results that are supported by quality control data and documented laboratory testing procedures.

The quality policy is communicated to employees during the training of new hires. It is understood, implemented, and maintained by employees at all levels. This is documented by management through the employee evaluation process, the training procedure, the internal audit process, and the document control process. The technical director shall ensure that the lab's policies and objectives for quality of testing services are documented in the Quality Manual. The technical director shall assure that the Quality Manual is communicated to, understood, and implemented by all personnel concerned. Documentation includes signed statements in each analyst's training file.

2. ACCREDITED TEST METHODS -

SEE APPENDIX C:

"CERTIFICATES OF APPROVAL - New York STATE DEPT. OF HEALTH, ENVIRONMENTAL LABORATORY APPROVAL PROGRAM."

METHOD REFERENCES

CONTROLLED COPIES PRINTED ON WHITE PAPER WITH BLUE ECOTEST LOGO AT TOP
OF PAGE

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"Standard Methods for the Examination of Water and Wastewater",
14th - 20th editions, APHA.

"Methods of Chemical Analysis of Water and Wastes", EPA 600/4-
79-020, March 1979 and March 1983 rev.

"Methods for Benzidine, Chlorinated Organic Compounds,
Pentachlorophenol and Pesticides in Water and Wastewater", EPA,
Sept. 1978.

"Test Methods for Evaluating Solid Waste: Physical/Chemical
Methods", 3rd Edition, 1986, and Final Update III.

"NIOSH Manual of Analytical Methods", U.S. National Institute for
Occupational Safety and Health, 2nd, 3rd and 4th editions (1994).

"Methods for the Determination of Organic Compounds in Drinking
Water", EPA 600/4-88-039, 12/88 - rev. 7/91.

"Methods for the Determination of Organic Compounds in Drinking
Water - Supplement 1", EPA 600-4-90-020, 7/90.

"Methods for the Determination of Organic Compounds in Drinking
Water - Supplement 2", EPA 600-R-92-129, 8/92.

"Analytical Handbook, Laboratory of Organic Analytical Chemistry",
Wadsworth Center for Laboratories and Research, NYS Dept. of
Health, Including frequent updates.

"Methods for Determination of Toxic Organic Compounds in Air",
William T. Winberry & Norma T. Murphy, EPA, 1990.

"Analytical Services Protocol", 2000 Edition, Lawrence Bailey ed.,
New York State Dept. of Environmental Conservation.

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3. QUALITY SYSTEM

The quality system defined in the quality manual applies to all personnel who perform activities affecting quality. All employees are responsible for the quality system. The individual documents define specific employee responsibilities.

Through a formal documented system of planned activities, the quality system meets the requirements of ISO guide 17025, NELAC Chapter 5, July 2002 and the New York State Department of Health, Environmental Laboratory Approval Program (NYSDOH ELAP). The quality manual is maintained current and up-to-date by the Quality Manager to reflect changes to the system. The laboratory defines its policy for each applicable standard element in the quality manual. For each element, as appropriate, the laboratory has documented procedures that further describe how the specific policy objectives and goals are met. The quality manual references these documented procedures. Where applicable, work instructions are referenced in the documented procedures and the quality manual.

Quality procedures and instructions are implemented as written. The procedures explain how the laboratory implements the standard requirements in accordance with its quality policy. They are revised, as necessary, to reflect the actual objectives, flow of tasks and staff responsibilities.

Work instructions are maintained in the laboratory methods manual. They specify the equipment and fixtures required, the resources and skills, what tests and verifications will be performed to measure process and product quality, the records and written documentation used by personnel and standards of acceptability. Work instructions are approved by the affected managerial staff and are maintained in the document control system.

3.1 DOCUMENT STRUCTURE

Level 1	Quality Manual
Level 2	Quality Procedures
Level 3	Work Instructions and Test Procedures
Level 4	Quality Records

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4. JOB DESCRIPTIONS OF STAFF

A. Technical Director-

Has overall responsibility for the technical operation of the lab. The technical director is also responsible for arranging and overseeing all support services including instrument service contracts, subcontracting sample analyses, and physical maintenance of the laboratory. The technical director also interacts with regulatory officials from outside the lab such as those performing audits and inspections of the lab.

Is responsible for providing supervision to all laboratory personnel to ensure adherence to lab documented procedures. When the director is not present in the lab, an employee who is familiar with the calibration and test procedures, the objective of the calibration or test, and the assessment of results, will be appointed by the director to supervise.

Shall certify that personnel with appropriate educational and/or technical background perform all tests for which the lab is accredited.

Shall ensure that the lab's policies and objectives for quality of testing services are documented in the Quality Manual. The Technical Director shall assure that the Quality Manual is communicated to, understood, and implemented by all personnel concerned. Documentation includes signed statements in each analyst's training file.

B. Quality Manager -

Has responsibility for the quality system and its implementation. The Quality Manager is one of the partners of EcoTest and has direct access to the Technical Director who is the other partner.

Serves as the focal point for QA/QC and be responsible for the oversight and/or review of quality control data.

Has functions independent from laboratory operations for which they have

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quality assurance oversight.

Must be able to evaluate objectively and perform assessments without outside influence.

Has documented training and/or experience in QA/QC procedures and knowledgeable in the quality system as defined under NELAC.

Has a general knowledge of the analytical test methods for which data review is performed.

Arranges for or conducts internal audits of the technical operations for designated departments annually.

Shall discuss deficiencies in the quality system with Technical Director and department supervisor(s) and monitor corrective action.

C. Department Supervisors-

There are laboratory supervisors assigned to different areas of the lab: Inorganics (Metals & Wet Chemical Analysis), Volatile Organics Analysis, Semi-Volatile Organics Analysis by GCMS, Semi-Volatile Organics by GC(ECD & FID) and Microbiology. The duties of lab supervisors include:

Training of technicians in general laboratory procedures, analytical methods and quality control procedures.

Communicating with Technical Director and Quality Manager and analysts to insure that analysis is carried out properly.

Resolving any problems involving analytical procedures that may arise. Problems that cannot be resolved at this level are brought to the attention of the Technical Director or Quality Manager for further attempts at resolution.

D. Sample Manager- Duties include:

Receipt of samples and Chain of Custody forms and any

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other documentation such as shipping records.

Recording type and condition of sample containers, preservatives used, condition of custody seal if used.

Checking of sample tags and/or labels against Chain of Custody forms for agreement and recording of discrepancies.

Logging-in of samples consisting of recording pertinent information in logbook and filing of associated documentation such as Chain of Custody forms.

Distribution of sample bottles to appropriate storage shelves or refrigerators.

Removal of completed samples to special storage room where inactive samples are held pending disposal. At appropriate time, sample manager oversees disposal of samples.

E. Laboratory Technicians - Duties Include:

Perform analysis and report results of samples.

Be responsible for complying with all quality requirements that pertain to the analysis performed.

Assist supervisors, quality manager and technical director in the training of other technicians.

5. DOCUMENT CONTROL

All operating procedures, manuals including this quality manual, and documents, are subject to document control. Distribution of controlled documents is limited to those indicated on the document distribution list. Controlled documents are indicated by the blue EcoTest logo at the top of each page. Uncontrolled copies are indicated by black logo. The Quality

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Assurance Officer controls the paper used to produce controlled copies.

The purpose of the document control system is to ensure that only the most recent revisions are available to the appropriate personnel, revisions are timely, and receive the required approvals. All internal regulatory documentation, standard operating procedures, work instructions, service manuals, and product instructions are under document control. The Quality Assurance Officer is responsible for the document control system and keeps a master list of the location of all documents and their current revision. The Technical Director and the Quality Manager approve all newly released documents and revised documents. Any employee can request a change to a document. Where necessary, obsolete documents may be retained for legal reasons or for knowledge preservation. The Quality Manager stores retained obsolete documents. Each page of documents produced by the laboratory will contain the effective date, revision number, Document number, and Document title. Controlled documents will have an approval signature page, a revision (change record) history page, and a distribution list.

All SOPs and internal controlled documents are reviewed once per year. If a document is revised during the year the revision record in the document shall demonstrate review. If a document has not been revised during the year, the review record shall be the signature of the person responsible for the document and the date of the review. Amendment of documents is not allowed pending formal re-issue.

All data, including original observations, calculations and derived data, calibration records, QC records, and copies of the test reports, resulting from the analyses of samples are recorded and kept for five years (ten years for potable water samples) to allow historical reconstruction of the final result.

6. TRACEABILITY OF MEASUREMENTS

Verification and/or validation of equipment, such as, balances, thermometers, and spectrophotometers, shall be performed with National Institute of Standards and Technology (NIST) traceable standards.

Calibration certificates must indicate NIST Traceability along with

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measurement results and the associated uncertainty and/or a statement of compliance with an identified metrological specification, such as tolerance.

Reference standards, such as Class S weights and NIST traceable thermometers, are used for calibration only and shall be calibrated by an organization that can provide traceability to NIST.

Traceability to national standards of measurement is not applicable to the BOD, pH, and Fecal Coliform tests, therefore, the EcoTest Lab's participation in the NIST accredited New York State ELAP proficiency testing program or other NELAC accredited proficiency testing program provides satisfactory evidence of correlation of results.

Volumetric glassware, if not serialized and calibrated by the manufacturer or Class A, is checked quarterly in-house using a documented gravimetric technique.

7. REVIEW OF ALL REQUESTS, TENDERS AND CONTRACTS

All new work is initiated by the Technical Director who delegates responsibilities for the new work according to available resources. Staff meets prior to initiation of new work in order to determine if appropriate facilities and resources are available. The plan for any new testing shall be reviewed and approved by the Technical Director before commencing such work.

The review shall document that facilities and resources are organized to efficiently perform the work, including subcontracted work. The record of contract review includes pertinent discussions with the client regarding their requirements and results submitted during the contract period. For routine reviews of ongoing work a date and a signature of the laboratory official responsible for the contract is sufficient. For any new testing requirements, the designated official shall ensure that standard operating procedures and demonstration of capability to perform those tests prior to reporting results are available. The SOP(s) shall be under document control and a

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Demonstration of Capability statement(s) shall be on file. Copies are held in the contract review file.

If the review uncovers any potential conflicts, deficiencies, inappropriate accreditation status, and/or inability to perform the work, the laboratory shall notify the client. In cases where differences exist between the request/tender and contract they shall be resolved prior to starting work.

Clients are notified immediately in situations where the laboratory cannot conform to the contract and if there is a change in laboratory accreditation status.

8. CALIBRATION/VERIFICATION OF TEST PROCEDURES.

A. Calibration and/or verification procedures are designed to ensure that the data will be of known quality and be appropriate for a given regulation or decision. Details of instrument calibration and/or test verification procedures including calibration range, standardizations, calculations and acceptance criteria are included or referenced in each test method SOP.

B. Sufficient raw data are retained to reconstruct the calibration used to calculate the sample result.

C. All calibrations are verified with a second source standard which is traceable to a national standard, when available.

D. Calibration standards include a concentration at or below the regulatory/decision level but above the laboratory's detection limit.

E. Results of samples must be within the calibration range (bracketed by standards) or the results must be flagged as having less certainty.

F. No data associated with a calibration that is out-of-control will be reported.

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G. Method Detection Limits (MDL): The MDL has been determined by the laboratory and documented for each analyte where spiking solutions are available. MDL can be determined by the procedure presented in 40 CFR Part 136, Appendix B. All sample processing steps of the analytical method are included in the determination of MDL. The standard deviation of the analysis of seven portions of spiked reagent water is calculated. The spiked reagent water is at an estimated concentration between the actual MDL and 5 times the actual MDL. The MDL is the product of 3.14 times the calculated standard deviation. The MDL should be about one fifth of the practical and routinely achievable detection level that can be reported with relatively good certainty that any reported value is reliable. Detection limits for BOD and TSS is defined by the method. MDLs are included in the Methods Manual for each method.

9. SAMPLE HANDLING

A. Sample Acceptance Policy - When EcoTest is required to collect samples, designated employees, trained as sample collectors are utilized. Collection is performed using approved plastic or glass containers of sufficient volume containing the necessary preservatives and chlorine neutralizing agents. Microbiological samples are collected in sterile containers. Samples that have not been properly stored during transport to the laboratory shall not be accepted or data must be flagged and client's permission must be obtained. Containers that are found at receipt to be compromised, either cracked or leaking, will not be accepted. Each sample container will be uniquely identified using a durable (water-resistant) label. The source (job name or location), site ID, along with the collection date, and time will be used to mark the samples submitted. Samples that require holding at 4 °C and which are hand delivered to the laboratory immediately after collection must be transported on ice in order to demonstrate that the chilling process has begun. The sample acceptance policy is available to the sample collectors. If any samples do not meet any requirements of the acceptance policy, the samples are not accepted for testing and resampling is requested unless client agrees to exception and data is flagged.

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Obtaining sample aliquots from a submitted sample as part of the test method is carried out using procedures as written in each method SOP. Appropriate techniques to obtain representative subsamples are employed and documented in the method SOP.

The samples must be submitted to the laboratory with records of field ID, location, date and time of collection, collector's name, preservation, sample type, and remarks. Complete preservation and handling instructions are furnished to the sample collectors.

Summary of Sampling and Handling Requirements: copies of tables from New York State ELAP Manual are included as APPENDIX D.

B. Sample Receipt Protocol - Upon receipt, the condition of the samples, including all items specified in the sample acceptance policy, are checked and recorded. Samples with a temperature of just above freezing to 6°C is acceptable if 4°C is specified. Samples that have not had time to cool are acceptable if they arrive on ice and cooling has begun. Dechlorinated samples are acceptable if the chemical test yields no free chlorine detected. Acid-preserved samples are acceptable if test with pH paper or pH meter yields a result of <2. All exceptions to the sample receipt protocol are fully documented. Sample records are linked to the sample ID and include all required information specified by the sample acceptance policy.

C. Procedures for handling submitted samples. Samples are stored according to conditions specified in each test SOP. The laboratory has documented procedures and appropriate facilities to avoid deterioration, contamination, or damage to samples during storage, handling, preparation, and testing. Storage conditions are maintained, monitored, and recorded.

Additional procedures for handling submitted samples:

1). Obtaining sample aliquots from a submitted sample as part of the test method is carried out using procedures as written in each method SOP. Appropriate techniques to obtain representative subsamples are employed.

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2). Each sample container will be uniquely identified using a durable label. For this laboratory, the field code or site ID along with the collection date will be used to mark the samples submitted.

3). The sample acceptance policy is documented and available to the sample collectors. If any samples do not meet any requirements of the acceptance policy, the data is flagged in an unambiguous manner clearly defining the nature and substance of the variation.

4). The sample receipt protocol is documented. The condition of the sample, including any abnormalities or departures from standard-condition as prescribed in the relevant test method, is recorded. Chain-of-Custody forms are employed whenever practicable.

5). Receipt of all samples is recorded in a permanent chronological record, or logbook. The logbook contains project name, date and time of laboratory receipt, laboratory ID, initials of recorder.

6). Sample records which are also available and linked to the sample ID include all required information specified by the sample acceptance policy.

7). Samples are stored according to conditions specified in each test SOP. The laboratory has documented procedures and appropriate facilities to avoid deterioration, contamination, or damage to samples during storage, handling, preparation, and testing. Storage conditions are maintained, monitored, and recorded where necessary.

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D. Copy of Chain of Custody Form:

[illegible]

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10. PROCEDURES FOR CALIBRATION, VERIFICATION, AND MAINTENANCE OF EQUIPMENT

NOTE: SEE APPENDIX F FOR LIST OF EQUIPMENT.

A. Calibration and testing occur only within the laboratory, designed, built and maintained as laboratory space. The laboratory space is maintained and monitored by the staff to the specifications required for laboratory space. The specification for temperature is (70°F +/- 3°F); for humidity (45% RH +/- 5%); and for voltage (120V +/- 2%). Electronic balances are located away from drafts and doorways and mounted on stone top counters in areas where their use could be effected by vibrations. . Neighboring test areas of incompatible activities are effectively separated. Specific work areas are defined and access is controlled. (Only authorized laboratory personnel and escorted signed-in visitors may enter the work area.) Good housekeeping measures are employed to avoid the possibility of contamination. (Smoking is prohibited in the laboratory.)

B. All equipment and reference materials required for the accredited tests are available in the laboratory. Records are maintained for all equipment, reference measurement materials, and services used by the laboratory.

C. Reference materials traceable to national standards of measurement or to national standard reference materials are stored away from heavy use areas or major equipment that may effect the proper operation of the materials. Certificates of Traceability are available for the reference thermometer and the Class S weights. The reference materials are used only for calibration to maintain the validity of performance.

D. Equipment is maintained, inspected, and cleaned according to the written Equipment Maintenance Procedures. Any defective item of equipment is clearly marked and taken out of service until it has been shown to perform satisfactorily.

E. Each item of equipment or reference material is labeled to show its calibration status.

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F. Equipment and reference material records include:

- 1) name of item of equipment or reference material
- 2) manufacturer, identification, serial number
- 3) date received and placed in service
- 4) current location
- 5) condition when received
- 6) copy of manufacturer's instructions or manuals
- 7) dates and results of calibrations/verifications and date of next calibration/verification
- 8) details of maintenance carried out to date and planned for the future
- 9) history of any damage, malfunction, modification, or repair

G. Support equipment calibrations are verified annually using NIST traceable references over the range of use. Balances, ovens, refrigerators, freezers, incubators, and water baths are checked with NIST traceable references (where possible) daily and recorded. Additional monitoring as prescribed by the test method SOP is recorded. Mechanical volumetric dispensing devices are checked for accuracy quarterly and recorded. Autoclave cycles of chemical tests (digestions) are recorded by use of chemical indicators or temperature recorder and pressure gauge. The sterilization temperature, cycle time, and pressure of each autoclave run for biological tests are recorded. Monthly use of spore strips demonstrate sterilization. Autoclave tape is only used to indicate that each batch has been exposed to the sterilization process.

H. Service of equipment is performed by qualified service organizations. All records and certificates from service calls are retained.

11. PROFICIENCY TESTING PARTICIPATION, INTERLABORATORY COMPARISONS, USE OF REFERENCE MATERIALS

A. The laboratory reports its participation in an accredited proficiency testing program for each category of ELAP approval semi-annually.

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ELAP PT studies may be used. The results are used to evaluate the ability of the laboratory to produce accurate data. Proficiency test reports along with all raw data necessary to reconstruct the analyses are retained at the laboratory. The laboratory does not participate in interlaboratory comparisons unless required by the method.

- B. The laboratory purchases external reference samples. All reference samples are certified. The laboratory retains the manufacturer's Certificate of Analysis.

12. INTERNAL QUALITY CONTROL PROCEDURES

The data acquired from quality control (QC) procedures are used to estimate the quality of analytical data, to determine the need for corrective action, and to interpret results after corrective actions are implemented. Each method standard operating procedure (SOP) includes detailed QC procedures and QC limits. QC limits are generated where no method limits exist. QC limits for laboratory control samples (LCS) and matrix spikes (MS) are based on the historical mean recovery plus or minus three standard deviations units. Duplicate limits for precision range from zero to 3.27 times the mean of the historical differences or relative percent differences. (In cases where historical data is not available, interim QC limits will be used until 20 data points are available to calculate QC limits. Interim QC limits for LCS and MS will be 80% - 120% recovery. Interim QC limits for duplicates will be 20% relative percent difference.)

All quality control measures are assessed and evaluated on an on-going basis. EcoTest chooses to present results of LCS and Matrix Spikes on control charts for on-going and trend evaluation. Results of Laboratory Duplicate analyses are also presented control charts for on-going evaluation. Analytical data generated with QC samples that fall within prescribed acceptance limits indicate the test method was in control. Data

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generated with QC samples that fall outside QC limits indicate the test method was out of control. These data are considered suspect and the corresponding samples are reanalyzed or reported with qualifiers if reanalysis is not possible.

Method Blanks are performed at a frequency of one per batch of twenty or fewer samples for all analytes with the exception of analytes such as pH where blanks are not applicable. The results are used to determine batch acceptance. When blanks exceed the method SOP limits, the source of the contamination is investigated and measures are taken to correct, minimize and eliminate the problem.

Laboratory Control Samples (LCS), also referred to as Reference Samples, are performed at a frequency of one per batch of twenty or fewer samples for all analytes. The results are used to determine batch acceptance.

Matrix spikes are performed at a frequency of one per twenty samples for all analytes with the exception of analytes such as pH and Total Suspended Solids where matrix spikes are not applicable. The results are used to determine the existence of matrix effects in the spike sample. A matrix effect is indicated if the LCS data are within QC limits but the matrix spike data exceed QC limits.

Laboratory duplicates are performed at a frequency of one per twenty samples for all analytes. Duplicates are a measure of precision. If a duplicate result falls outside QC limits the original sample and the duplicate sample data is regarded as unreliable.

13. CONTROL OF NON-CONFORMING ENVIRONMENTAL TESTING

Specific Corrective action protocols for handling out-of-control QC are in each method SOP of the Methods Manual. In addition, general procedures

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are followed to determine when departures from quality control have occurred. Provision is made for such deviations and documentation is determined by the Corrective Action Procedure. Because of the sampling schedule and the time frame of the analysis it is not always possible to repeat the analysis if all quality control measures are not found acceptable. Therefore, if a quality control measure is found to be out-of-control, and the data is to be reported, all samples associated with the failed quality control measure are reported with the appropriate data qualifier.

14. CORRECTIVE ACTION PROCEDURE

Corrective action is the process of identifying, recommending, approving, and implementing measures to counter unacceptable departures from policies and procedures or out of control QC performance which can affect data quality.

Deficiencies cited in the external assessment (ELAP inspection), internal quality audit, complaints, and managerial review are documented. Records shall be available to show that the root cause(s) of the deficiencies are investigated, including the results of the investigation. Records shall be available to document the intended corrective action. Records shall be available to show that the implemented corrective action is monitored for effectiveness. The Quality Manager maintains these records. The Technical Director will ensure that the corrective actions are discharged within the agreed upon time frame. When nonconformances and departures from SOPs cause doubt about the laboratory's operations the affected areas are promptly audited.

Method SOPs provide QC acceptance criteria and specific protocols for corrective actions. Any QC measure result that falls outside of acceptance limits requires corrective action. When testing discrepancies are detected

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such as out-of-control QC, the analyst will follow the specific protocol for corrective action as stated in the method SOP located in the Methods Manual. In addition, any discrepancies are documented in the Corrective Action Log maintained in the laboratory. The discrepancy will be identified, and the sample data associated with the discrepancy will be flagged. The Quality Manager will recommend corrective actions to be initiated by the analyst and ensure implementation and documentation of the corrective action. Each corrective action log entry is reviewed, signed, and dated by the Quality Manager and the Technical Director. Corrective actions are performed prior to the reporting of the effected data.

15. EXCEPTIONALLY PERMITTED DEPARTURES FROM DOCUMENTED POLICIES AND PROCEDURES OR FROM STANDARD SPECIFICATIONS.

The Technical Director has responsibility for ensuring the lab's policies and procedures are adhered to. Arrangements for known and controlled departures from documented policies and procedures are allowed. Planned departures do not require audits, however, the departure will be fully documented and included the reason for the departure, the effected SOP(s), the intended results of the departure and the actual results. If the data reported to the client is effected adversely, it will be notified in writing. The Quality Manager or Technical Director must approve the departures. The procedures used to document any specific departure is the same as the corrective action procedure.

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16. PREVENTIVE ACTION

Preventive action is the pro-active process to identify opportunities for improvement rather than a reaction to the identification of problems or complaints.

All employees have the authority to recommend preventive action. Recommendations are made to the Quality Manager if warranted, the Quality Manager develops an action plan to develop, implement and monitor the action. The plan must include controls that will enable objective evaluation of it's suitability. The preventive action is audited under the direction of the Quality Manager.

17. COMPLAINTS

All complaints about the laboratory's activities received from clients or other parties will be documented in a complaint file maintained in the laboratory. The file will contain the date and name of the person receiving the complaint, a description of the complaint, source of the complaint, the resolution, and any written material accompanying the complaint.

The Quality Manager investigates complaints and promptly audits all areas of activity and responsibility involved. The written results of the investigation including actions taken by the laboratory are reviewed by the Technical Director. The results of the investigation are signed and dated by the Technical Director and the Quality Manager.

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18. INTERNAL AUDIT AND DATA REVIEW

A. Data Review - All data, including original observations, calculations and derived data, calibration records, QC records, and a copy of the test report, resulting from the analyses of samples are recorded and kept for five years (ten years for public water supplies) to allow historical reconstruction of the final result. All results are reviewed and evaluated by a second analyst or the Quality Manager before it is reported. Errors detected in the review process are referred to the analyst for corrective action. The Quality Manager assures that all errors found in the review process are documented along with the corrective action.

Each calendar quarter, the Quality Manager or his designee shall audit 5% or 5 data packages, whichever is more. The purpose of the review is to verify that all data integrity requirements are met.

B. Internal Quality System Audits - The Quality Manager will arrange for an internal quality system review annually. The audit will be carried out by trained personnel who are independent (if possible) of the activity being audited. The Quality Manager will review the requirements of the ELAP manual against laboratory operations, and laboratory operations against the laboratory Quality Manual and SOPS. The results of the audits will be documented in writing. Where audit findings cast doubt on the validity or correctness of the data, the lab will take immediate corrective action. Any corrective actions will be documented. The Technical Director will ensure that the corrective-actions are discharged within the agreed-upon time frame. Any client whose work was possibly adversely affected shall be notified in writing. Documented reviews are performed with respect to any evidence of inappropriate actions or vulnerabilities related to data integrity. Allegations are confidentially investigated. All investigations that result in findings of inappropriate activity are documented and shall include any disciplinary actions involved, corrective actions taken, and all appropriate notifications to clients. Documentation is maintained for five years.

C. Managerial Review - The Laboratory Director shall review the laboratory

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quality system and its testing and calibration activities annually to introduce any necessary changes or improvements. The review will be take into account the outcome of recent internal audits, assessments by external bodies (NYSDOH-ELAP, EcoTest's primary accrediting authority, NYS DEC, USEPA or clients), the results of interlaboratory comparisons, the results of ELAP proficiency tests, any changes in the volume and type of work undertaken, feedback from clients or regulatory agencies and corrective and preventive actions. The findings and any corrective actions from this review will be documented.

19. TRAINING AND REVIEW OF PERSONNEL QUALIFICATIONS

Laboratory management reviews an applicant's level of qualification, experience, and skills against the laboratory's job description requirements before assigning an employee to the laboratory. Each analyst has adequate experience and education to demonstrate specific knowledge of their function and a general knowledge of laboratory operations, test methods, QC procedures, and records management.

New hires will be required to have earned a minimum of an associates degree in a scientific field. In order to perform a test that is new to the employee there must be a training period in which the trainee works with an experienced technician or supervisor until the trainer is satisfied that the trainee is able to perform the test with limited supervision. The trainee is required to take notes while being trained and to carefully read the SOP for the method. The training period will vary depending on the complexity of the test and it is the responsibility of the trainer to continue to assist the trainee and decide when he/she can perform the test independently.

The Technical Director or Quality Manager will keep the following personnel records:

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A. The laboratory will maintain a training, file which contains:

1. A statement from each employee that they have read, understood, and are using the latest version of the laboratory Quality Manual and SOPS. The statement will be signed and dated.
2. A statement from each employee that they have read, acknowledged and understood their personal ethical and legal responsibilities including the potential punishments and penalties for improper, unethical or illegal actions. The statement will be signed and dated.
3. A Demonstration of Capability (DOC) for each employee for each accredited method.
4. Documentation of any training courses, seminars, and/or workshops
5. Documentation of each employee's continued proficiency to perform each test method by one of the following annually:
 - i. acceptable performance of a blind sample (single blind to the analyst) for each accredited method;
 - ii. another Demonstration of Capability;
 - iii at least four consecutive Laboratory Control Samples with acceptable levels of precision and accuracy;
 - iv. if i - iv cannot be performed, analysis of authentic samples that have been analyzed by another trained analyst with statistically indistinguishable results.

B. Demonstration of Capability (DOC) - A DOC must be performed prior to using any test method, and any time there is a change in instrument type, personnel, or method. The procedure will follow ELAP Certification Manual Item 233, and the DOC Certificate included therein is completed for each analyst for each accredited method. EcoTest Labs, through QC charting,

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has historical data adequately demonstrating analysts' capability to meet the laboratory-generated acceptance criteria. Where the analyst has demonstrated capability through analysis and QC charting, of Laboratory Control Samples with acceptable results, the procedure for demonstrating continued proficiency to perform the test method (above) will be used for the DOC Certification Statement.

20. DATA INTEGRITY & ETHICS

Data Integrity/Ethics training shall occur for each employee required to perform laboratory testing either at the initial hiring orientation or within two weeks after assignment to laboratory functions. Annual training is also required for all employees. Training may be conducted in-house or externally. A record of training and a signed attestation by the trained employee shall be placed in the employee's training file.

Topics covered are documented in writing and provided to all trainees. Key topics covered are the organizational mission and its relationship to the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring and data integrity procedure documentation. Trainees are required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious consequences including immediate termination, or civil/criminal prosecution.

The initial and annual refresher data integrity training shall have a signature attendance sheet that demonstrates all staff have participated and understand their obligation related to data integrity/ethics. Specific examples of breaches of ethical behavior should be discussed including improper data manipulations, adjustments of instrument time clocks, and

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inappropriate changes in concentrations of standards. Data integrity training requires emphasis on the importance of proper written narration on the part of the analyst with respect to those cases where analytical data may be useful, but are in one sense or another partially deficient.

Senior managers/department heads acknowledge their support of these procedures by upholding the spirit and intent of the laboratory's data integrity procedures and effectively implement the specific requirements of the procedures. See Appendix A.

21. REPORTING ANALYTICAL RESULTS

The results of each test carried out by the laboratory are reported accurately, clearly, unambiguously, and objectively. Final reports to clients will have each page numbered sequentially indicating total number of pages in report on each page. Client will always be notified in writing, in advance of any lab work subcontracted. Subcontractors will be NY State ELAP approved if analytes are subject to approval. As a minimum, the NYS ELAP ID number of the subcontractor will be listed on the report.

The following information will be included on all reports:

- 1.) Title – "Analytical Parameters".
- 2.) Name and address of laboratory, and location where the test was carried out if different from the address of the laboratory and phone number with name of contact person for questions;
- 3.) Unique identification of report and each page, including the total number of pages;
- 4.) Name and address of client, where appropriate and project name, if applicable
- 5.) Description and unambiguous identification of the tested sample including the client identification code;
- 6.) Identification of results derived from any sample that did not meet

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sample acceptance requirements, such as, improper container, holding time, or temperature;

7.) Date of receipt of sample, date and time of sample collection, date(s) of performance test, and time of sample preparation and/or analysis if the required holding time for either activity is less than or equal to 72 hours.

8.) Identification of test method used, or unambiguous description of any non-standard method used;

9.) If the laboratory collected the sample, reference to the sampling procedure;

10.) Any deviations from (such as failed QC), additions to or exclusions from the test method (such as environmental conditions), and any non-standard conditions that may have affected the quality of the results, including the use and definitions of data qualifiers;

11.) Measurements, examinations and derived results, supported by tables, graphs, sketches and photographs as appropriate, and any failures identified; reporting units on a wet or dry basis;

12.) When required a statement of the estimated uncertainty of the result (NOTE: this NELAP requirement is for radiochemistry only and therefore does not apply to EcoTest reports of analysis);

13.) A signature and title, or an equivalent electronic identification of the person(s) accepting responsibility for the content of the of the report, and date of issue;

14.) Clear indication of data provided by outside sources, such as subcontracted laboratories, clients etc; and,

15.) Clear identification of numerical results with values outside of quantitation limits.

Subcontracted laboratories are identified by name and/or accreditation number on the report.

If errors are detected in the report, a subsequent revised report will be issued. The updated report will be titled "Corrected Report. If changes are made that are requested by client after initial report is issued that do not involve errors, the report will be indicated as an "Amended Report".

If the laboratory discovers equipment used to derive results in any report casts doubt on the validity of the result it shall notify the client(s) in writing.

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The laboratory shall, where clients require transmission of test results by telephone, telex, facsimile or other electronic or electromagnetic means, follow documented procedures that ensure that the above requirements are met and that confidentiality is preserved.

22. CONFIDENTIALITY AND PROPRIETARY RIGHTS

Reports of laboratory analysis will only be released to the named contact person on the sample submittal form or job contract. Proprietary information, if provided by the client, will be protected as Confidential Business Information in accordance with Title 40, Code of Federal Regulations, Part 2, Subpart B.

23. LABORATORY DATA SYSTEMS AND STORAGE & RETRIEVAL OF DATA AND RECORDS

A. Laboratory Information Management System (LIMS) consists of a Unix based multiuser system utilizing Filepro data base software. The system was designed by our staff to fulfill our particular needs. This system handles sample log-in and generation of final reports. Analysts enter final results for all testing into this system. The system tracks samples and worksheets are generated daily to inform analysts of all uncompleted analysis. This network is not linked to any other computer system in the lab and is therefore isolated from outside viruses or other corruption. Analysts must have password to log onto system. Access by analysts is limited to current and previous year. Results are currently available on the system back to and including 1986 to selected personnel. Backups of different levels are made daily, weekly and monthly. Copies of complete backups are stored in the lab office and offsite by selected personnel. A second network of computers links all GC/MS instruments and certain GCs. This system is used to transfer data for reporting, archiving, and QC reporting. Only analysts using the instruments have passwords for system

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B. Electronic record archiving system for lab reports consists of storage of complete backup tapes both in office and offsite. System currently contains all reports from inception of system in 1986 to present. Electronic data from instruments such as GC/MS and GC is copied to CD ROM disks and archived in lab. ICP raw data from all runs is stored on the instrument's hard drive and on a second hard drive in another computer.

C. Hardcopy data and record storage systems are maintained for all paper records going back at least five years for all records except public drinking water which must be kept for at least ten years. These records are stored in designated storage areas in marked boxes in the lab and in a 40 foot storage container between buildings one and two in a fenced area. A detailed description for location of records is kept in office by QC manager.

D. Lab analyst notebook storage system consists of a filing system of individual analysts' notebooks filed by analyst's name and chronologically. These are stored in the lab. Analysts are instructed not to remove their analytical notebooks from the lab at any time. QC officer has list of individuals who perform tests historically.

24. REFERENCES

1. Standard Methods for the Examination of Water and Wastewater, 18th, 19th, & 20th eds., APHA.
2. National Environmental Laboratory Accreditation Conference, Constitution Bylaws, and Standards, Approved July 2002, Chapter 5, Quality Systems.
3. New York State Environmental Laboratory Approval Program, Certification Manual

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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



Expires 12:01 AM April 01, 2007

Issued April 01, 2006

Revised October 31, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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

MR. THOMAS TREUTLEIN
ECOTEST LABORATORIES INC
377 SHEFFIELD AVENUE
NORTH BABYLON, NY 11703

NY Lab Id No: 10320
EPA Lab Code: NY00038

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER*

All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B

Amines

1,4-Phenylenediamine	EPA 8270C
1-Naphthylamine	EPA 8270C
2-Naphthylamine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
5-Nitro-o-toluidine	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C
Propionitrile	EPA 8260B
Pyridine	EPA 8260B

Amines

Pyridine	EPA 8270C
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Bacteriology

Coliform, fecal	SM 18-20 9221E
Coliform, Total	SM 18-20 9221B
Standard Plate Count	SM 18 9215B

Benzidines

3,3'-Dichlorobenzidine	EPA 625
3,3'-Dimethylbenzidine	EPA 8270C
Benzidine	EPA 625

Carbamate Pesticides

Aldicarb	EPA 8318
Aldicarb Sulfone	EPA 8318
Carbofuran	EPA 8318

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 608
	EPA 8081A
4,4'-DDE	EPA 608
	EPA 8081A
4,4'-DDT	EPA 608
	EPA 8081A
Aldrin	EPA 608

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Chlorinated Hydrocarbon Pesticides

Aldrin	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A
Chlordane Total	EPA 608
	EPA 8081A
delta-BHC	EPA 608
	EPA 8081A
Dieldrin	EPA 608
	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608
	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A
Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Endrin Ketone	EPA 8081A

Chlorinated Hydrocarbon Pesticides

gamma-Chlordane	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608
	EPA 8081A
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 608
	EPA 8081A
Mirex	SM 18-20 6630B
Toxaphene	EPA 608
	EPA 8081A

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270C
1-Chloronaphthalene	EPA 8270C
2-Chloronaphthalene	EPA 625
	EPA 8270C
Hexachlorobenzene	EPA 625
	EPA 8270C
Hexachlorobutadiene	EPA 625
	EPA 8270C

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All approved analytes are listed below:

Chlorinated Hydrocarbons

Hexachlorocyclopentadiene

EPA 625

Hexachloroethane

EPA 8270C

Hexachloropropene

EPA 625

Pentachlorobenzene

EPA 8270C

Chlorophenoxy Acid Pesticides

4,5-T

EPA 8270C

4,5-TP (Silvex)

EPA 1978, p.115

D

EPA 8151A

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EPA 1978, p.115

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EPA 8151A

seb

SM 18-20 6640B

nd

EPA 1978, p.115

Chemical Oxygen Demand

EPA 8151A

aceous BOD

SM 18-20 6640B

EPA 8151A

EPA 1978, p.115

EPA 8151A

EPA 8151A

EPA 405.1

SM 18-20 5210B

Demand

Chemical Oxygen Demand

EPA 410.4

Fuel Oxygenates

Ethanol

EPA 8015 B

Methyl tert-butyl ether

EPA 8260B

EPA 8021B

EPA 8260B

EPA 8015 B

EPA 8260B

t-Butyl alcohol

Haloethers

4-Bromophenylphenyl ether

EPA 625

4-Chlorophenylphenyl ether

EPA 8270C

EPA 625

EPA 8270C

EPA 625

EPA 8270C

EPA 625

EPA 8270C

EPA 625

EPA 8270C

Bis (2-chloroisopropyl) ether

Bis(2-chloroethoxy)methane

Bis(2-chloroethyl)ether

Microextractables

1,2-Dibromo-3-chloropropane

EPA 8011

1,2-Dibromoethane

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verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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



Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 31, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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

MR. THOMAS TREUTLEIN
ECOTEST LABORATORIES INC
377 SHEFFIELD AVENUE
NORTH BABYLON, NY 11703

NY Lab Id No: 10320
EPA Lab Code: NY00038

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:*

Mineral		Nitrosoamines	
Acidity	EPA 305.1	N-Nitrosodimethylamine	EPA 8270C
Alkalinity	SM 18-20 2320B	N-Nitrosodi-n-butylamine	EPA 8270C
Calcium Hardness	EPA 200.7	N-Nitrosodi-n-propylamine	EPA 625
Chloride	SM 18-20 4500-Cl B		EPA 8270C
Fluoride, Total	SM 18-20 4500-F C	N-Nitrosodiphenylamine	EPA 625
Hardness, Total	EPA 200.7		EPA 8270C
Sulfate (as SO ₄)	EPA 375.4	N-nitrosopiperidine	EPA 8270C
		N-Nitrosopyrrolidine	EPA 8270C
Nitroaromatics and Isophorone		Nutrient	
1,3,5-Trinitrobenzene	EPA 8270C	Ammonia (as N)	EPA 350.2
1,3-Dinitrobenzene	EPA 8270C		EPA 350.3
1,4-Naphthoquinone	EPA 8270C	Kjeldahl Nitrogen, Total	EPA 351.3
2,4-Dinitrotoluene	EPA 625	Nitrate (as N)	EPA 353.2
	EPA 8270C	Nitrite (as N)	EPA 354.1
2,6-Dinitrotoluene	EPA 625	Orthophosphate (as P)	EPA 365.3
	EPA 8270C	Phosphorus, Total	EPA 365.2
Isophorone	EPA 625		EPA 365.3
	EPA 8270C	Organophosphate Pesticides	
Nitrobenzene	EPA 625	Azinphos methyl	EPA 8270C
	EPA 8270C	Demeton-O	EPA 8270C
Nitrosoamines		Demeton-S	EPA 8270C
N-Nitrosodiethylamine	EPA 8270C	Diazinon	EPA 8270C
N-Nitrosodimethylamine	EPA 625		

Serial No.: 31091

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Organophosphate Pesticides

Dimethoate	EPA 8270C
Disulfoton	EPA 8270C
Famphur	EPA 8270C
Malathion	EPA 8270C
Parathion ethyl	EPA 8270C
Parathion methyl	EPA 8270C
Phorate	EPA 8270C

Phthalate Esters

Benzyl butyl phthalate	EPA 625
	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270C
Diethyl phthalate	EPA 625
	EPA 8270C
Dimethyl phthalate	EPA 625
	EPA 8270C
Di-n-butyl phthalate	EPA 625
	EPA 8270C
Di-n-octyl phthalate	EPA 625
	EPA 8270C

Polychlorinated Biphenyls

PCB-1016	EPA 608
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Polychlorinated Biphenyls

PCB-1016	EPA 8082
	EPA 8270C
PCB-1221	EPA 608
	EPA 8082
	EPA 8270C
PCB-1232	EPA 608
	EPA 8082
	EPA 8270C
PCB-1242	EPA 608
	EPA 8082
	EPA 8270C
PCB-1248	EPA 608
	EPA 8082
	EPA 8270C
PCB-1254	EPA 608
	EPA 8082
	EPA 8270C
PCB-1260	EPA 608
	EPA 8082
	EPA 8270C

Polynuclear Aromatics

3-Methylcholanthrene	EPA 8270C
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C

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Polynuclear Aromatics

Acenaphthene	EPA 625
	EPA 8270C
Acenaphthylene	EPA 625
	EPA 8270C
Anthracene	EPA 625
	EPA 8270C
Benzo(a)anthracene	EPA 625
	EPA 8270C
Benzo(a)pyrene	EPA 625
	EPA 8270C
Benzo(b)fluoranthene	EPA 625
	EPA 8270C
Benzo(ghi)perylene	EPA 625
	EPA 8270C
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
Chrysene	EPA 625
	EPA 8270C
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270C
Fluoranthene	EPA 625
	EPA 8270C
Fluorene	EPA 625

Polynuclear Aromatics

Fluorene	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270C
Naphthalene	EPA 625
	EPA 8270C
Phenanthrene	EPA 625
	EPA 8270C
Pyrene	EPA 625
	EPA 8270C

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270C
2,4,5-Trichlorophenol	EPA 625
	EPA 8270C
2,4,6-Trichlorophenol	EPA 625
	EPA 8270C
2,4-Dichlorophenol	EPA 625
	EPA 8270C
2,4-Dimethylphenol	EPA 625
	EPA 8270C
2,4-Dinitrophenol	EPA 625
	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 625

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Priority Pollutant Phenols

2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 625
	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 625
	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 625
	EPA 8270C
Cresols, Total	EPA 8270C
Pentachlorophenol	EPA 625
	EPA 8270C
Phenol	EPA 625
	EPA 8270C

Purgeable Aromatics

1,2-Dichlorobenzene	EPA 8260B
	EPA 8270C
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,4-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Aromatics

1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B

Chlorobenzene

EPA 602
EPA 624
EPA 8021B

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All approved analytes are listed below:*

Purgeable Aromatics

Chlorobenzene	EPA 8260B
	SM 20 6200C
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 8021B
	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Halocarbons

1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8021B
	EPA 8260B
1,2,3-Trichloropropane	EPA 8021B
	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B

Purgeable Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8021B
	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

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Purgeable Halocarbons

1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromodichloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8021B

Purgeable Halocarbons

Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624
	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624

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Purgeable Halocarbons

Dibromochloromethane	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B

Purgeable Halocarbons

Trichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl iodide	EPA 8260B
o-Toluidine	EPA 8260B

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Purgeable Organics

Vinyl acetate EPA 8260B

Residue

Solids, Total EPA 160.3

Solids, Total Dissolved EPA 160.1

Solids, Total Suspended EPA 160.2

Semi-Volatile Organics

2-Methylnaphthalene EPA 8270C

4-Amino biphenyl EPA 8270C

Acetophenone EPA 8270C

Benzoic Acid EPA 8270C

Benzyl alcohol EPA 8270C

Dibenzofuran EPA 8270C

Ethyl methanesulfonate EPA 8270C

Isosafrole EPA 8270C

Methyl methanesulfonate EPA 8270C

O,O,O-Triethyl phosphorothioate EPA 8270C

p-Dimethylaminoazobenzene EPA 8270C

Phenacetin EPA 8270C

Safrole EPA 8270C

Wastewater Metals I

Barium, Total EPA 3010A

EPA 6010B

Cadmium, Total EPA 200.7

EPA 200.9

EPA 3005A

EPA 3010A

EPA 6010B

EPA 7131A

Calcium, Total EPA 200.7

EPA 3005A

EPA 3010A

EPA 6010B

Chromium, Total EPA 200.7

EPA 200.9

EPA 218.1

EPA 3005A

EPA 3010A

EPA 3020A

EPA 6010B

EPA 7190

Copper, Total EPA 200.7

EPA 220.1

EPA 3005A

Wastewater Metals I

Barium, Total EPA 200.7

EPA 3005A

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Wastewater Metals I

Copper, Total	EPA 3010A
	EPA 6010B
Iron, Total	EPA 200.7
	EPA 236.1
	EPA 3005A
	EPA 3010A
	EPA 6010B
Lead, Total	EPA 200.7
	EPA 239.1
	EPA 239.2
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 7420
	EPA 7421
Magnesium, Total	EPA 200.7
	EPA 242.1
	EPA 3005A
	EPA 3010A
	EPA 6010B
Manganese, Total	EPA 200.7
	EPA 3005A

Wastewater Metals I

Manganese, Total	EPA 3010A
	EPA 6010B
	SM 18-20 3111B
Nickel, Total	EPA 200.7
	EPA 249.1
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 7520
Potassium, Total	EPA 200.7
	EPA 258.1
	EPA 3005A
	EPA 3010A
	EPA 6010B
Silver, Total	EPA 200.7
	EPA 3005A
	EPA 6010B
	EPA 7760A
	SM 18-19 3113B
Sodium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A

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Wastewater Metals I

Sodium, Total EPA 6010B
SM 18-20 3111B
Strontium, Total EPA 6010B

Wastewater Metals II

Aluminum, Total EPA 200.7
EPA 3005A
EPA 3010A
EPA 6010B
Antimony, Total EPA 200.7
EPA 200.9
EPA 3005A
EPA 6010B
EPA 7041
Arsenic, Total EPA 200.7
EPA 200.9
EPA 3005A
EPA 3010A
EPA 6010B
Beryllium, Total EPA 200.7
EPA 200.9
EPA 3005A
EPA 3010A
EPA 3020A

Wastewater Metals II

Beryllium, Total EPA 6010B
Chromium VI EPA 7196A
SM 18-19 3500-Cr D
Mercury, Total EPA 245.2
EPA 7470A
Selenium, Total EPA 200.7
EPA 200.9
EPA 270.2
EPA 3005A
EPA 3010A
EPA 6010B
EPA 7740
Vanadium, Total EPA 200.7
EPA 6010B
Zinc, Total EPA 200.7
EPA 6010B
SM 18-20 3111B

Wastewater Metals III

Cobalt, Total EPA 200.7
EPA 6010B
Gold, Total EPA 231.1
Molybdenum, Total EPA 200.7
EPA 6010B

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Wastewater Metals III

Palladium, Total	EPA 253.2
	EPA 255.2
Thallium, Total	EPA 200.7
	EPA 200.9
	EPA 3005A
	EPA 3010A
	EPA 3020A
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B

Wastewater Miscellaneous

Phenols	EPA 420.1
Silica, Dissolved	EPA 200.7
	EPA 6010B
Specific Conductance	EPA 120.1
	SM 18-20 2510B
Sulfide (as S)	EPA 376.2
	EPA 9030B
Surfactant (MBAS)	EPA 425.1
Temperature	EPA 170.1
Total Recoverable Petroleum Hydrocarb	EPA 418.1

Wastewater Miscellaneous

Boron, Total	EPA 200.7
	EPA 6010B
Bromide	EPA 320.1
Color	SM 18-20 2120B
Cyanide, Total	EPA 335.3
	EPA 9012A
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A
	EPA 413.1
Organic Carbon, Total	EPA 415.1

Serial No.: 31091

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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



Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 31, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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

MR. THOMAS TREUTLEIN
ECOTEST LABORATORIES INC
377 SHEFFIELD AVENUE
NORTH BABYLON, NY 11703

NY Lab Id No: 10320
EPA Lab Code: NY00038

*is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:*

Acrylates

Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B

Amines

1,2-Diphenylhydrazine	EPA 8270C
1,4-Phenylenediamine	EPA 8270C
1-Naphthylamine	EPA 8270C
2-Naphthylamine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
5-Nitro-o-toluidine	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C

Benzidines

3,3'-Dichlorobenzidine	EPA 8270C
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Benzidines

3,3'-Dimethylbenzidine	EPA 8270C
Benzidine	EPA 8270C

Carbamate Pesticides

Aldicarb	EPA 8318
Aldicarb Sulfone	EPA 8318
Carbofuran	EPA 8318

Characteristic Testing

Corrosivity	EPA 1110
E.P. Toxicity	EPA 1310
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270C

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Chlorinated Hydrocarbon Pesticides

delta-BHC	EPA 8081A
Diallate	EPA 8270C
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Pentachloronitrobenzene	EPA 8270C
Toxaphene	EPA 8081A

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8270C
2-Chloronaphthalene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C

Chlorinated Hydrocarbons

Hexachloroethane	EPA 8270C
Hexachlorophene	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
MCP	EPA 8151A

Haloethers

4-Bromophenylphenyl ether	EPA 8270C
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C

Metals I

Barium, Total	EPA 6010B
Cadmium, Total	EPA 6010B
Calcium, Total	EPA 6010B

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Metals I

Chromium, Total	EPA 6010B
Copper, Total	EPA 6010B EPA 7210
Iron, Total	EPA 6010B EPA 7380
Lead, Total	EPA 6010B
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B EPA 7460
Nickel, Total	EPA 6010B
Potassium, Total	EPA 6010B EPA 7610
Silver, Total	EPA 6010B EPA 7760A
Sodium, Total	EPA 6010B EPA 7770

Metals II

Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
Arsenic, Total	EPA 6010B
Beryllium, Total	EPA 6010B
Chromium VI	EPA 7196A
Lithium, Total	EPA 6010B

Metals II

Mercury, Total	EPA 7471A
Seelenium, Total	EPA 6010B EPA 7740
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B EPA 7950

Metals III

Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Silica, Dissolved	EPA 6010B
Thallium, Total	EPA 6010B EPA 7841
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B

Minerals

Chloride	EPA 9253
Fluoride, Total	EPA 9214
Sulfate (as SO ₄)	EPA 9038

Miscellaneous

Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B EPA 9045C

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Miscellaneous

Lead in Dust Wipes	EPA 6010B
Lead in Paint	SM 18-20 3111B
	SM 18-20 3120B
Oil & Grease Total Recoverable	EPA 9070
	EPA 9071
Phenols	EPA 9065
Specific Conductance	EPA 9050
Sulfide (as S)	EPA 9030B

Nitroaromatics and Isophorone

1,4-Naphthquinone	EPA 8270C
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
4-Dimethylaminoazobenzene	EPA 8270C
Isophorone	EPA 8270C
Nitrobenzene	EPA 8270C
Pyridine	EPA 8270C

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C

Nitrosoamines

N-nitrosomorpholine	EPA 8270C
N-nitrosopiperidine	EPA 8270C
N-Nitrosopyrrolidine	EPA 8270C

Organophosphate Pesticides

Azinphos methyl	EPA 8270C
Coumaphos	EPA 8270C
Demeton-O	EPA 8270C
Demeton-S	EPA 8270C
Diazinon	EPA 8270C
Dichlorvos	EPA 8270C
Dimethoate	EPA 8270C
Disulfoton	EPA 8270C
EPN	EPA 8270C
Famphur	EPA 8270C
Fensulfothion	EPA 8270C
Fenthion	EPA 8270C
Malathion	EPA 8270C
Mevinphos	EPA 8270C
NALED	EPA 8270C
Parathion ethyl	EPA 8270C
Parathion methyl	EPA 8270C
Phorate	EPA 8270C
Sulfotepp	EPA 8270C

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Organophosphate Pesticides

Thionazin EPA 8270C

Phthalate Esters

Benzyl butyl phthalate EPA 8270C
Diethyl phthalate EPA 8270C
Dimethyl phthalate EPA 8270C
Di-n-butyl phthalate EPA 8270C
Di-n-octyl phthalate EPA 8270C

Polychlorinated Biphenyls

PCB-1016 EPA 8082
EPA 8270C
PCB-1221 EPA 8082
EPA 8270C
PCB-1232 EPA 8082
EPA 8270C
PCB-1242 EPA 8082
EPA 8270C
PCB-1248 EPA 8082
EPA 8270C
PCB-1254 EPA 8082
EPA 8270C
PCB-1260 EPA 8082
EPA 8270C

Polynuclear Aromatic Hydrocarbons

3-Methylcholanthrene EPA 8270C
7,12-Dimethylbenzyl (a) anthracene EPA 8270C
Acenaphthene EPA 8270C
Acenaphthylene EPA 8270C
Anthracene EPA 8270C
Benzo(a)anthracene EPA 8270C
Benzo(a)pyrene EPA 8270C
Benzo(b)fluoranthene EPA 8270C
Benzo(ghi)perylene EPA 8270C
Benzo(k)fluoranthene EPA 8270C
Chrysene EPA 8270C
Dibenzo(a,h)anthracene EPA 8270C
Fluoranthene EPA 8270C
Fluorene EPA 8270C
Indeno(1,2,3-cd)pyrene EPA 8270C
Naphthalene EPA 8270C
Phenanthrene EPA 8270C
Pyrene EPA 8270C

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol EPA 8270C
2,4,5-Trichlorophenol EPA 8270C
2,4,6-Trichlorophenol EPA 8270C
2,4-Dichlorophenol EPA 8270C

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All approved analytes are listed below:

Priority Pollutant Phenols

2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Nitrophenol	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA 8260B
1,2-Dichlorobenzene	EPA 8021B
	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8021B
	EPA 8260B
1,4-Dichlorobenzene	EPA 8021B
	EPA 8260B
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B

Purgeable Aromatics

Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8260B
n-Butylbenzene	EPA 8260B
n-Propylbenzene	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8260B
sec-Butylbenzene	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B

Purgeable Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8021B

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:*

Purgeable Halocarbons

1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 8021B
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8021B
	EPA 8260B

Purgeable Halocarbons

Bromoform	EPA 8021B
	EPA 8260B
Bromomethane	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 8021B
	EPA 8260B
Chloroethane	EPA 8021B
	EPA 8260B
Chloroform	EPA 8021B
	EPA 8260B
Chloromethane	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 8021B
	EPA 8260B

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Purgeable Halocarbons

Tetrachloroethene	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 8021B
	EPA 8260B

Purgeable Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Ethyl Acetate	EPA 8260B
Ethylene Glycol	EPA 8015 B
Isobutyl alcohol	EPA 8260B
Methyl tert-butyl ether	EPA 8260B

Purgeable Organics

o-Toluidine	EPA 8270C
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B

Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Isosafrole	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C
Phenacetin	EPA 8270C
Safrole	EPA 8270C

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:*

Metals I

Lead, Total EPA 7420

Metals II

Antimony, Total EPA 7041

Arsenic, Total EPA 7060A

Phthalate Esters

Bis(2-ethylhexyl) phthalate EPA 8270C

Purgeable Organics

4-Methyl-2-Pentanone EPA 8260B

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WADSWORTH CENTER

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Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised July 26, 2006

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NY Lab Id No: 10320
EPA Lab Code: NY00038

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Bacteriology

e. Coli	Colilert
	SM 18-20 9221B

Wastewater Metals I

Cadmium, Total	EPA 3020A
Strontium, Total	EPA 200.7

Wastewater Miscellaneous

Total Recoverable Petroleum Hydrocarb EPA 1664A

Serial No.: 30644

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NY Lab Id No: 10320
EPA Lab Code: NY00038

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All approved analytes are listed below:*

Chlorinated Hydrocarbon Pesticides

4,4'-DDT	NIOSH 2, VOL. 3 S274
Aldrin	NIOSH 4, VOL. 1 5502
Chlordane Total	NYS DOH APC-34
Dieldrin	NIOSH 2, VOL. 3 S283
	NYS DOH APC-34
Endrin	NIOSH 2, VOL. 6 S284
Heptachlor	NIOSH 2, VOL. 5 S287
Lindane	NIOSH 4, VOL. 1 5502
Toxaphene	NIOSH 2, VOL. 2 S67

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA TO-15
	NIOSH 2, VOL. 2 S133
	NIOSH 5517
Hexachlorobutadiene	EPA TO-15
	NIOSH 2, VOL. 5 307
	NIOSH 2543
Hexachloroethane	EPA TO-15
	NIOSH 1003
	NIOSH 2, VOL. 2 S101

Metals I

Lead, Total	EPA 200.7
	EPA 239.1

Metals II

Beryllium, Total	40 CFR 61 1984 Method 104
	NIOSH 7300
Mercury, Total	EPA 245.2

Metals III

Chromium, Total	NIOSH 7300
-----------------	------------

Mineral

Fluoride, Total	EPA 340.2
Nitrate (as N)	EPA 353.2
Sulfate (as SO ₄)	EPA 375.4

Polychlorinated Biphenyls

PCB-1016	EPA, 1980
	NIOSH 5503
	NYS DOH 311-1
PCB-1221	EPA, 1980
	NIOSH 5503
	NYS DOH 311-1
PCB-1232	EPA, 1980
	NIOSH 5503
	NYS DOH 311-1
PCB-1242	EPA, 1980
	NIOSH 5503
	NYS DOH 311-1

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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



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Issued April 01, 2006
Revised April 13, 2006

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

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ECOTEST LABORATORIES INC
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Polychlorinated Biphenyls

PCB-1248	EPA, 1980 NIOSH 5503 NYS DOH 311-1
PCB-1254	EPA, 1980 NIOSH 5503 NYS DOH 311-1
PCB-1260	EPA, 1980 NIOSH 5503 NYS DOH 311-1

Purgeable Aromatics

1,2-Dichlorobenzene	EPA TO-14A EPA TO-15 NIOSH 1003 NIOSH 2, VOL.3 S135
1,3,5-Trimethylbenzene	EPA TO-14A EPA TO-15
1,3-Dichlorobenzene	EPA TO-14A
1,4-Dichlorobenzene	EPA TO-14A EPA TO-15 NIOSH 1003 NIOSH 2, VOL. 3 S281

Polynuclear Aromatics

Benzo(a)pyrene	EPA TO-14A NIOSH 5515
Naphthalene	EPA TO-14A EPA TO-15 NIOSH 1501

Benzene

Chlorobenzene

Priority Pollutant Phenols

2-Chlorophenol	EPA 625
Pentachlorophenol	EPA 625
Phenol	EPA 625

Ethyl benzene

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA TO-14A EPA TO-15
------------------------	-------------------------

EPA TO-14A
EPA TO-15
NIOSH 1501
NIOSH 2, VOL. 1 127
EPA TO-14A
EPA TO-15
NIOSH 1003
NIOSH 2, VOL. 2 S133
EPA TO-14A
EPA TO-15
NIOSH 1501
NIOSH 2, VOL 2 S29

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Purgeable Aromatics

Styrene	EPA TO-14A
	EPA TO-15
Toluene	EPA TO-14A
	EPA TO-15
	NIOSH 1501
	NIOSH 2, VOL. 1 127
Total Xylenes	EPA TO-14A
	EPA TO-15
	NIOSH 1501
	NIOSH 2, VOL. 1 127

Purgeable Halocarbons

1,1-Dichloroethane	NIOSH 1003
	NIOSH 2, VOL. 2 S123
	EPA TO-14A
	EPA TO-15
1,1-Dichloroethene	NIOSH 1003
	NIOSH 2, VOL. 2 S110
	EPA TO-14A
	EPA TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-14A
	EPA TO-15
	EPA TO-14A
	EPA TO-15
1,2-Dichloroethane	NIOSH 1003
	NIOSH 2, VOL. 2 S123
	EPA TO-14A
	EPA TO-15

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-14A
	EPA TO-15
	NIOSH 1019
	NIOSH 2, VOL. 2 S124
1,1,2-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1-Dichloroethane	EPA TO-14A
	EPA TO-15

1,2-Dichloropropane	EPA TO-14A
	EPA TO-15
	NIOSH 1003
	NIOSH 2, VOL. 6 321
Bromodichloromethane	EPA TO-14A
	EPA TO-15
Bromoform	EPA TO-15
	EPA TO-14A
Bromomethane	EPA TO-15
	EPA TO-14A
Carbon tetrachloride	EPA TO-14A
	EPA TO-15

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Purgeable Halocarbons

Carbon tetrachloride	NIOSH 1003
	NIOSH 2, VOL. 1 127
Chloroethane	EPA TO-14A
	EPA TO-15
Chloroform	EPA TO-14A
	EPA TO-15
	NIOSH 1003
	NIOSH 2, VOL. 1 127
Chloromethane	EPA TO-14A
	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
Dichlorodifluoromethane	EPA TO-14A
	EPA TO-15
Methylene chloride	EPA TO-14A
	EPA TO-15
	NIOSH 1003
	NIOSH 2, VOL. 1 127
Tetrachloroethene	EPA TO-14A
	EPA TO-15
	NIOSH 1003
	NIOSH 2, VOL. 1 127
trans-1,2-Dichloroethene	EPA TO-14A

Purgeable Halocarbons

trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-14A
	EPA TO-15
Trichloroethene	EPA TO-14A
	EPA TO-15
Trichlorofluoromethane	EPA TO-14A
	EPA TO-15
Vinyl bromide	EPA TO-15
Vinyl chloride	40 CFR, PART 61 1984 APP. B METH 1
	EPA TO-14A
	EPA TO-15
	NIOSH 1007

Volatile Chlorinated Organics

Benzyl chloride	EPA TO-14A
	EPA TO-15
Epichlorohydrin	EPA TO-15

Volatile Organics

1,3-Butadiene	EPA TO-14A
	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15

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Volatile Organics

Hexane	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
Vinyl acetate	EPA TO-15

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ENVIRONMENTAL ANALYSES POTABLE WATER
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D. W. Methylcarbamate Pesticides

3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1

Disinfection By-products

Bromochloroacetic acid	EPA 552.2
Dibromoacetic acid	EPA 552.2
Dichloroacetic acid	EPA 552.2
Monobromoacetic acid	EPA 552.2
Monochloroacetic acid	EPA 552.2
Trichloroacetic acid	EPA 552.2

Drinking Water Bacteriology

Coliform, Total	SM 18-20 9221B
	SM 18-20 9221D
	SM 18-20 9223
Standard Plate Count	SimPlate
	SM 18 9215B

Drinking Water Chlorinated Acids

2,4,5-TP (Silvex)	EPA 515.1
2,4-D	EPA 515.1
Dalapon	EPA 515.1
Dicamba	EPA 515.1
Dinoseb	EPA 515.1
Pentachlorophenol	EPA 515.1
Picloram	EPA 515.1

Drinking Water Metals I

Arsenic, Total	EPA 200.7
	EPA 200.9
Barium, Total	EPA 200.7
Cadmium, Total	EPA 200.7
	EPA 200.9
Chromium, Total	EPA 200.7
	SM 18-19 3113B
Copper, Total	EPA 200.7
	SM 18-20 3111B
Iron, Total	EPA 200.7
	SM 18-20 3111B
Lead, Total	EPA 200.9
Manganese, Total	EPA 200.7
	SM 18-20 3111B
Mercury, Total	EPA 245.1

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ENVIRONMENTAL ANALYSES POTABLE WATER

All approved analytes are listed below:

Drinking Water Metals I

Selenium, Total	EPA 200.9
Silver, Total	EPA 200.7
	SM 18-19 3113B
Zinc, Total	EPA 200.7
	SM 18-20 3111B

Drinking Water Metals II

Aluminum, Total	EPA 200.7
Antimony, Total	EPA 200.9
Beryllium, Total	EPA 200.7
Molybdenum, Total	EPA 200.7
Nickel, Total	EPA 200.7
Thallium, Total	EPA 200.9
Vanadium, Total	EPA 200.7

Drinking Water Metals III

Boron, Total	EPA 200.7
Calcium, Total	EPA 200.7
Magnesium, Total	EPA 200.7
	SM 18-20 3111B
Potassium, Total	EPA 200.7
	SM 18-20 3111B
Sodium, Total	EPA 200.7
	SM 18-20 3111B

Drinking Water Miscellaneous

Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Butachlor	EPA 507
Di (2-ethylhexyl) adipate	EPA 525.2
Glyphosate	EPA 547
Hexachlorobenzene	EPA 508
Hexachlorocyclopentadiene	EPA 525.2
Methyl tert-butyl ether	EPA 502.2/ SEE ITEM 198.5
	EPA 524.2
Odor	EPA 140.1
Organic Carbon, Total	EPA 415.1
Propachlor	EPA 508

Drinking Water Non-Metals

Alkalinity	SM 18-20 2320B
Calcium Hardness	EPA 200.7
Chloride	SM 18-20 4500-Cl B
Color	SM 18-20 2120B
Corrosivity	SM 18-19 2330
Cyanide, Free	EPA 335.4
Cyanide, Total	EPA 335.4
Fluoride, Total	SM 18-20 4500-F C
Hydrogen Ion (pH)	EPA 150.1
Nitrate (as N)	EPA 353.2

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Drinking Water Non-Metals

Nitrite (as N)	SM 18-20 4500-NO2 B
Orthophosphate (as P)	SM 18-20 4500-P E
Silica, Dissolved	EPA 200.7
Solids, Total Dissolved	SM 18-20 2540C
Specific Conductance	SM 18-20 2510B
Sulfate (as SO4)	EPA 375.4

Drinking Water Organohalide Pesticides

Alachlor	EPA 507
Aldrin	EPA 508
Atrazine	EPA 507
Chlordane Total	EPA 508
Dieldrin	EPA 508
Endrin	EPA 508
Heptachlor	EPA 508
Heptachlor epoxide	EPA 508
Lindane	EPA 508
Methoxychlor	EPA 508
Metolachlor	EPA 507
Metribuzin	EPA 507
Simazine	EPA 507
Toxaphene	EPA 508

Drinking Water Trihalomethanes

Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2

Microextractibles

1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1

Polychlorinated Biphenyls

PCB Screen	EPA 508
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Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,2-Dichlorobenzene	EPA 502.2
	EPA 524.2
1,3,5-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,3-Dichlorobenzene	EPA 502.2
	EPA 524.2

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Volatile Aromatics

1,4-Dichlorobenzene	EPA 502.2
	EPA 524.2
2-Chlorotoluene	EPA 502.2
	EPA 524.2
4-Chlorotoluene	EPA 502.2
	EPA 524.2
Benzene	EPA 502.2
	EPA 524.2
Bromobenzene	EPA 502.2
	EPA 524.2
Chlorobenzene	EPA 502.2
	EPA 524.2
Ethyl benzene	EPA 502.2
	EPA 524.2
Hexachlorobutadiene	EPA 502.2
	EPA 524.2
Isopropylbenzene	EPA 502.2
	EPA 524.2
n-Butylbenzene	EPA 502.2
	EPA 524.2
n-Propylbenzene	EPA 502.2
	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 502.2

Volatile Aromatics

p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 502.2
	EPA 524.2
Styrene	EPA 502.2
	EPA 524.2
tert-Butylbenzene	EPA 502.2
	EPA 524.2
Toluene	EPA 502.2
	EPA 524.2
Total Xylenes	EPA 502.2
	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,1-Trichloroethane	EPA 502.2
	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,2-Trichloroethane	EPA 502.2
	EPA 524.2
1,1-Dichloroethane	EPA 502.2
	EPA 524.2
1,1-Dichloroethene	EPA 502.2

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Volatile Halocarbons

1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 502.2
	EPA 524.2
1,2,3-Trichloropropane	EPA 502.2
	EPA 524.2
1,2-Dichloroethane	EPA 502.2
	EPA 524.2
1,2-Dichloropropane	EPA 502.2
	EPA 524.2
1,3-Dichloropropane	EPA 502.2
	EPA 524.2
2,2-Dichloropropane	EPA 502.2
	EPA 524.2
Bromochloromethane	EPA 502.2
	EPA 524.2
Bromomethane	EPA 502.2
	EPA 524.2
Carbon tetrachloride	EPA 502.2
	EPA 524.2
Chloroethane	EPA 502.2
	EPA 524.2
Chloromethane	EPA 502.2
	EPA 524.2

Volatile Halocarbons

cis-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
cis-1,3-Dichloropropene	EPA 502.2
	EPA 524.2
Dibromomethane	EPA 502.2
	EPA 524.2
Dichlorodifluoromethane	EPA 502.2
	EPA 524.2
Methylene chloride	EPA 502.2
	EPA 524.2
Tetrachloroethene	EPA 502.2
	EPA 524.2
trans-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
trans-1,3-Dichloropropene	EPA 502.2
	EPA 524.2
Trichloroethene	EPA 502.2
	EPA 524.2
Trichlorofluoromethane	EPA 502.2
	EPA 524.2
Vinyl chloride	EPA 502.2
	EPA 524.2

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APPENDIX D

INTERIM REMEDIAL MEASURES (IRM) PLAN

1. The Additional Subsurface Investigation report prepared by GCE for the Site dated December 6, 2005 revealed the following:

- Chlorinated hydrocarbons or solvents present at the Site include tetrachloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA) and their isomers. With the exception of soil boring B-1 located in the area of former dry well, these compounds are either not detected in the soil borings, or detected far below their detection limits. Detailed information supporting the extent of the IRM is included in the Preliminary Site Assessment (PSA) Work Plan.

4 1/2 TCA
around in
ground, likely
around site
source

2. The IRM will begin within 4 weeks after completion of the contaminated soil delineation component of the PSA. A summary of the results of the contaminated soil delineation along with the laboratory report and a sketch depicting the limits of the excavation, will be submitted to the DEC for review prior to commencement of the IRM. GCE will receive DEC's approval within 7 days of DEC's receipt of the above. The dry well remediation activities will be completed within approximately one (1) week and the site restoration will be completed within approximately 1 week after completion of the soil excavation.

- DEC - best
efforts

3. The concrete floor slab will be removed within an area that will allow for excavation of the contaminated soil. Upon floor slab removal, the contaminated soil will be excavated to a depth that is established during the subsurface investigation performed as a part of PSA but not to any depth which might potentially undermine the integrity of the on-site structure and otherwise within the Site's constraints. Soil samples will be field screened for the presence of total volatile organic compounds (VOCs) using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards. The excavation will be terminated when the desired depth is achieved and soil exhibiting no elevated levels of total VOCs, olfactory or visual evidence of contamination is encountered. The soil samples will be visually classified and logged by the GCE's on-site geologist for soil characterization purposes. Laboratory obtained glassware will be used for the soil samples and will consist of the following:

to the extent
possible

soil samples
will be
discussed
Aug

- Volatile Organic Compounds (VOCs) – one (1) 4-ounce glass jar equipped with teflon-lined cap per sample;

based on what PID w/ lab confirm

The soil samples will be placed into two (2) glass containers equipped with teflon-lined caps. Air in the head space of the one (1) container will be allowed to develop. The head space will be field screened for the presence of total VOCs using a Thermo Environmental Instruments Inc. Model 580B portable PID with a 10.6 e.V. lamp, calibrated for isobutylene standards.

no headspace
in other
cont.

once soil/gw sample done, define extent of IRM soil removal

Soil samples from the contaminated soil excavation will be collected at 3-foot vertical intervals from each sidewall and from the bottom of the excavation. Soil samples will be field screened using a PID. Each soil sample will be assigned its unique identification number and will be logged into project documentation. Due to the heterogeneous nature of the soil, a large number of soil samples may be required and no composite soil samples will be collected. All soil samples will be visually classified by the on-site geologist.

see p. 18
same text

At least two (2) post-excavation soil samples will be collected from the lowest point of the excavation bottom and at least one (1) post-excavation soil sample (a total of at least 4 samples) will be collected from each sidewall of the excavation, at a depth representing 2/3 of the total excavation depth. All samples will be collected from evenly distributed intervals.

The soil samples will be logged and transferred under a chain-of-custody protocol to a New York State ELAP-approved laboratory. All soil samples will be analyzed for the presence of VOCs using EPA Method 8260.

All excavated soil will be placed on and securely covered by 2 layers of 10-mil polyethylene sheeting on the south portion of the Site. The excavated soil will be disposed of based on the laboratory results of pre-disposal soil samples. The pre-disposal soil samples will be analyzed in accordance with the disposal facility requirements and RCRA hazardous characteristic.

what disp. fac.?

4. The contaminated soil pile will be lightly sprayed with water. Issues of health effects of dust impact will be handled by using personal protective equipment as outlined in the Health and Safety Plan provided in the PSA. Odor and organic vapor control and monitoring procedures will be implemented as described in the Health and Safety Plan provided in the PSA. In the event that the odor or organic vapor monitoring indicate the need for control measures, GCE will ventilate the work area using a fan or blower system equipped with carbon filters prior to air discharge to the atmosphere.

During the site restoration, GCE will adhere to the following:

Excavation Backfilling

- a. GCE will utilize Coarse Aggregate Type A1: Crushed Stone or Crushed Gravel: Angular crushed washed stone; free of shale, clay, friable material and debris; graded in accordance with ANSI/ASTM C136, ASTM D2487; within the following limits: 3 % maximum passing #8 sieve
 1. Minimum Size: 1/8 inch
 2. Maximum Size: 1/2 inch
- b. All fill material will be inspected prior to its placement.
- c. Backfill will be systematically placed to allow maximum time for natural settlement. Backfill material will be compacted in continuous layers not exceeding 6 inches. No frozen backfill material will be placed.

- d. Backfilled material will be properly compacted.
- e. GCE will employ a placement method that does not disturb or damage structures of other items against which material is backfilled.

Concrete Floor Restoration

- a. GCE will restore the floor slab to meet existing conditions using Class A 3,500 psi concrete, buff color Portland cement, exposed aggregate finish.
- b. GCE will moisten base to minimize absorption of water from fresh concrete and place 1 layer of 6-mil polyethylene sheeting on top of subgrade prior to concrete placement.
- c. GCE will provide bonding material to the edge of the existing concrete prior to concrete pouring.
- d. GCE will pour concrete continuously between predetermined construction joints if any. GCE will not break or interrupt successive pours such that cold joint occur.
- e. The exposed concrete surface will be maintained continuously hydrated for a maximum of 7 days from pouring.
- f. The area will remain closed and heated for the duration of the required curing.

Upon completion of site restoration activities, GCE will prepare a site sketch detailing size of the soil excavation, backfill placement and concrete floor restoration. The site sketch will be based on the field measurements which will be taken during on-site investigation and remediation activities.

- 5. A Health and Safety Plan is included in the PSA Work Plan. Due to the limited size of the excavation, no community air monitoring will be required. However, no individuals will be allowed at the Site who are not participating in the IRM work (other than representatives of DEC or other regulatory agencies) and in the event that odors or organic vapors will be encountered, such odor/vapors will be evacuated to the atmosphere as described in section 4 above.
- 6. Since no remedial structures and/or equipment will be installed and/or removed from the Site, no contingency plan for their dismantling is required.
- 7. Since the Site has a "P" status, no citizen participation plan is required.
- 8. Since no on-site treatment system will be installed, no OM&M Plan is required.

*no, lower to the
center*

9. Due to the nature of the proposed remedial activities, no institutional controls will be implemented at the Site.

Approved by,



Reza Sharif, P.E.

Table 1
Summary of Proposed Sampling

Matrix		Number of Boring	VOC (8260)	SVOC (8270)	8 RCRA Metals	VOC (TO-15)	* Nitrate (353.2)	* Iron & Manganese (6010)	* Sulfate (375.4)	* Methane (RSK-175)
Waste Oil UST	Soil Boring	B-8	1	1	1					
		B-9	1	1	1					
		B-10	1	1	1					
		B-11	1	1	1					
Dry Well	Soil Boring *	B-12	2				1	1	1	1
		B-13	2				1	1	1	1
		B-14	2				1	1	1	1
		B-15	2				1	1	1	1
		B-16	2				1	1	1	1
	Soil Excavation	Bottom	2							
		Sidewall	4							
Garage	Soil Vapor	Blanks *	Trip Blanks	1						
			Duplicates	2						
		VP-1				1				
		VP-2				1				
		VP-3				1				
		VP-4				1				
		VP-5				1				
		VP-6				1				
		VP-7				1				
		VP-8				1				
		VP-9				1				
		VP-10				1				
		VP-11				1				
		Duplicates				1				
		Indoor air				1				
		Outdoor air				1				
Whole Property	Ground Water	MW-1	1				1	1	1	1
		MW-2	1				1	1	1	1
		MW-3	1				1	1	1	1
		MW-4	1				1	1	1	1
		MW-5	1				1	1	1	1
		MW-6	1				1	1	1	1
		MW-7	1				1	1	1	1
		MW-8	1				1	1	1	1
		MW-9	1				1	1	1	1
		Trip blanks	1							
		Field blanks	1							
		Duplicates	2							
		MS/MSD samples	2				2	2	2	
		Total samples	43 *	0	0	14	* 16	* 16	* 16	* 14

* - Estimated (could be less/more)

Table 2
Summary of Detected Compounds in Soil Samples (Previous Investigation)
101 Westmoreland Avenue, White Plains, NY
GCE Project No. 05-003-00

Parameter	TAGM-Recommended soil Cleanup Objectives (ug/Kg)	Concentrations (ug/Kg)							
		B-1 S-1A 0-2'	B-2 S-6 25-27'	B-3 S-5 20-22'	B-4 S-6 25-27'	B-5 S-4 15-17'	B-5 S-5 20-22'	B-5 S-6 25-27'	B-6 S-5 20-22'
VOC	Acetone	200	7	10	11	26	26		
	Benzene	60							
	2-Butanone	300				11			
	2-Chlorotoluene	n/s	1,700						
	cis-1,2-Dichloroethene (DCE)	200	7,800						
	1,2-Dichloroethane (DCA)	100	600						
	1,2-Dichlorobenzene	7900	150,000						
	1,4-Dichlorobenzene	8500	3,900						
	Ethylbenzene	5,500	1,400						
	Isopropylbenzene	2,300	320						
	Methylene chloride	100	2,300	5			2		
	m/p-Xylenes	1,200	6,400			1,800	2		
	n-Propylbenzene	3,700	1,200						
	n-Butylbenzene	10,000	1,100			2,400			
	o-Xylene	600	4,200			2,300	54		
	p-Isopropyltoluene	10,000	1,400			8,200	190		
	sec-Butylbenzene	10,000	660			2,800			
	1,3,5-Trimethylbenzene	3,300	4,600			6,900	39		
	1,2,4-Trimethylbenzene	10,000	14,000			16,000			
	Trichloroethene (TCE)	700	1,900			2			
	Tetrachloroethene (PCE)	1,400	180,000	3		1,000	11,000		
	Tert butyl alcohol (TBA)	n/s					27	6	
	Toluene	1,500	5,900			21	2		
	Vinyl chloride (VC)	200							
	Naphthalene	13,000	6,100			26,000	17		
	Total VOCs	395,480	14	10	11	67,460	11,359	6	0
	Total Chlorinated Solvents	348,200	8	0	0	1,002	11,002	0	0
	Total BTEX	17,900	0	0	0	4,121	58	0	0

n/s	No standards
	Compounds were analyzed, but were non-detected or detected below their detection limit.
11,000	Compounds were detected above the TAGM Recommended Soil Cleanup Objectives.

Plot of
SW

1600

1600

2400

3600

470

1300

700

12,000

Table 3
Summary of Detected Compounds in Groundwater Samples (Previous Investigation)
101 Westmoreland Avenue, White Plains, NY
GCE Project No. 05-003-00

Parameter		New York Groundwater Quality Standards & Guidance values	Concentrations (ug/L)														
			MW-1 1/10/03	MW-1 WS-1 9/21/05	MW-1 WS-2 9/21/05	MW-2 WS-1 9/21/05	MW-3 WS-1 9/21/05	MW-3 WS-2 9/21/05	B-2 WS-1 06/8/05	B-3 WS-1 6/22/05	B-4 WS-1 6/22/05	B-5 WS-1 6/22/05	B-6 WS-1 9/21/05	B-7 WS-1 9/21/05	Trip Bl. T-1 9/21/05	Field Bl. F-1 9/21/05	
VOC	Acetone	50									11	21					
	Benzene	1															
	2-Butanone	n/s										7.6					
	Carbon disulfide	n/s														1.8	
	Chloroform	7		0.97	1.2							1.2					
	cis-1,2-Dichloroethene	5										2.5		15			
	1,1-Dichloroethene	5	51	18	15	12	4.8	5.1	1.3				4.6				
	1,1-Dichloroethane	5	20			4.5	5.9	5.7	2								
	1,2-Dichloroethane	0.6												2.4			
	Ethylbenzene	5										2.1					
	Isopropylbenzene	5					1.7	2				0.9					
	Methylene Chloride	5												14			
	Methyl-Tert-Butyl-Ether	50		0.56		0.75					1.6						
	m/p-Xylenes	5										17		2.3			
	n-Propylbenzene	5										1					
	o-Xylene	5										20		1.1			
	p-Isopropyltoluene	5										5.0					
	sec-Butylbenzene	5					1.4	1.3				1.2					
	Tert-butyl alcohol	50										11.0					
	Tert-butylbenzene	n/s					0.51										
	1,3,5-Trimethylbenzene	5										10		2.2			
	1,2,4-Trimethylbenzene	5										26		2.6			
	1,1,1-Trichloroethane	5	270	130	140	170	50	50		21			49				
	Trichloroethene (TCE)	5		1.9	1.8									1.8			
	Tetrachloroethene (PCE)	5	3	2.4	2.3	8.8	16	17	2.0	1.4	1.4	21	3.4	21			
	Toluene	5										2		16			
	Vinyl chloride	2															
	Naphthalene	10										54					
	Total VOCs			344	154	160	196	80	81	5	22	14	204	57	78	0	2
	Total Chlorinated Solvents			344	153	160	195	77	78	5	22	1	25	57	40	0	0
	Total BTEX			0	0	0	0	2	2	0	0	0	42	0	19	0	0
	pH				7.30		6.96	7.07									
T°C				14.95		14.90	14.69										
Conductivity (us/cm)				2,320		1,710	1,622										
Dissolved Oxygen (mg/L)				5.8		3.6	0.8										
ORP (mV)				220		231	216										
		n/s	No standards														
			Compounds were analyzed, but were non-detected or detected below their detection limit.														
		17	Compounds were detected above the New York Groundwater Quality Standards & Guidances values														