Work Plan for a
Site Characterization
Jack's Drycleaner Site (7-34-112)
Town of Brewerton, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by

EA Engineering, P.C. and Its Affiliate
EA Science and Technology
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Syracuse, New York 13211-2158
(315) 431-4610

November 2007
Revision: FINAL
EA Project No. 14368.15

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1 November 2007

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EA Engineering, P.C.

1 November 2007

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C. and its affiliate EA Science and Technology (EA), to perform a site characterization at the Jack's Drycleaner Site (NYSDEC Site No. 7-34-112). The site is located in the Village of Brewerton, Onondaga County, New York (Figure 1).

The Work Assignment will be conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-15). The initial step in the site characterization is preparation of this Work Plan, which describes the anticipated work activities. The elements of this Work Plan were prepared in accordance with the most recent and applicable guidelines and requirements of the NYSDEC and the New York State Department of Health (NYSDOH).

1.2 DESCRIPTION OF WORK TASKS

The following tasks will be completed as part of the site characterization:

- Task 1 – Work Plan Development
- Task 2 – Record Search and Report
- Task 3 – Field Activities
- Task 4 – Summary Report.

A brief summary of each activity is provided below, and further details of the field activities are provided in Section 3.

1.2.1 Work Plan Development (Task 1)

A site visit/scoping session was held at the Jack's Drycleaner Site, on 28 June 2007 in conjunction with the development of this Work Plan. Meeting attendees included representatives from the NYSDEC and EA. The site visit was performed in order to become familiar with the area and discuss proposed field work activities, which are presented in this Work Plan.

1.2.2 Record Search and Report (Task 2)

Prior to planning any field work in order to identify areas of concern and narrow the scope of activities a check of all Sanborn maps and other information resources (see DER-10, Appendix 3A) will be completed. Subsequent to the site visit, EA obtained and reviewed available historic and/or background information (documents, photographs, maps, etc.) located in the archives of the Village of Brewerton and Onondaga County, as well as the Subsurface Investigation Report of 9626 Brewerton Road (Nature's Way Environmental Consultants & Contractors, Inc.,

[Nature's Way] 2006) provided electronically by the NYSDEC. Information collected from the site visit and background review has been incorporated into this work plan.

1.2.3 Field Activities (Task 3)

Environmental sampling will consist of soil vapor, subsurface soil, and groundwater at various locations throughout the targeted area. The protocol for this effort will follow *NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York,* October 2006 and NYSDEC Division of Environmental Remediation *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, December 2002.

1.2.4 Summary Report (Task 4)

Field logbooks, soil boring logs, groundwater purge forms, and soil vapor monitoring forms will be used during all onsite work. A dedicated field logbook will be maintained by the Site Manager overseeing the site activities. In addition to the logbook, any and all original sampling forms and purge forms used during the field activities will be submitted to NYSDEC as part of the final report. Field and sampling procedures, including installation of the soil vapor monitoring points and monitoring wells, will be photo documented.

Upon completion of the field activities, a letter report will be prepared and submitted to NYSDEC that includes a summary of field and laboratory analytical data and presents the locations of field samples.

1.3 WORK PLAN ORGANIZATION

This Work Plan is organized into the following sections:

- Section 1: Provides the overall approach and specific activities that will be performed during the site characterization at the Jack's Drycleaner Site
- Section 2: Provides a brief site description and history
- Section 3: Describes the various field activities to be completed during the investigation
- Section 4: Provides the procedures for the storage and disposal of investigative derived waste generated during the site characterization.

The Project Management Work Plan for this Work Assignment (Schedule 2.11, Minority and Women-owned Business Enterprise utilization, Project Organization, and Schedule) will be provided as a separate deliverable.

The following two project-specific technical plans were developed for this site characterization and are included as Appendixes A and B:

- The specific procedures for the collection, analysis, and evaluation of data that will be legally and scientifically defensible are presented in the Quality Assurance Project Plan (QAPP) Addendum (Appendix A). Sample forms to be completed during performance of field activities are provided in the QAPP Addendum Attachments.

- The site-specific hazards and levels of protective measures to be implemented in order to protect the safety and health of field personnel are detailed in the site Health and Safety Plan (HASP) Addendum (Appendix B).

2. SITE BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The Jack's Drycleaner Site is an active dry-cleaning facility located at 9628 Brewerton Road, Brewerton, Onondaga County, New York. The site is approximately 0.17 acres and includes a one-story, slab-on-grade, 1,200 square foot building. The site lies within a predominately residential area with various commercial properties nearby. To the west, across Brewerton Road, lie two commercial structures. To the east is wooded and fallow land up to a residential subdivision. Located to the immediate north and south of the site are commercial properties (Figure 2).

2.2 GEOLOGY AND HYDROGEOLOGY

A review of the geologic map of New York, Finger Lakes Sheet published by the University of the State of New York, the State Education Department, dated 1970, indicates that the Jack's Drycleaner Site lies within the Clinton Group, which is Silurian in age, and consists of the Herkimer Sandstone; Kirkland Hematite (grayish-red, quartzose, calcareous, hematitic dolomite); Willowvale Shale (gray to greenish-gray fossiliferous shales); Westmoreland Hematite; Sauqoit Formation (sandstone, shale); and the Oneida Conglomerate.

According to the Natural Resources Conservation Service (NRCS) in Onondaga County, the site is underlain by the Collamer silt loam, 2-6 percent slopes. This soil is usually located within lake plains. This soil is described as being moderately well drained. It has formed from a parent material of silty and clayey glaciolacustrine deposits. The site is also underlain by the Madrid fine sandy loam, 2-8 percent slopes. This soil is usually located within drumlinoid ridges, hills, and till plains. This soil is described as being well drained. It has formed from a parent material of loamy till derived mainly from sandstone and limestone.

Based on documented soil borings from Nature's Way Environmental, conducted on 16 October 2006, the site is underlain by "silt and clay" with alternating layers of fine to coarse sand. Groundwater was encountered at a depth ranging from 8 to 9 feet below ground surface (bgs).

2.3 PREVIOUS INVESTIGATIONS

A subsurface investigation was conducted at the Jack's Drycleaners Site in October 2006 by Nature's Way, which indicated the presence of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in soil and groundwater at concentrations exceeding NYSDEC guidance values set forth in Technical and Administrative Guidance Memorandum (TAGM) 4046. Nature's Way was retained to excavate these areas. Excavation activities began on 27 November 2006 and were completed on 7 December 2006. Soil samples were collected and submitted to Environmental Laboratory Services (ELS) located in North Syracuse for VOC and SVOC analysis. During the excavation activities at the site, two 1,000-gal underground

storage tanks (USTs) were uncovered. It was assumed, based on the history of the site and laboratory reports, that these USTs were formerly utilized to store gasoline. Water was removed from the USTs prior to their excavation. Approximately 2,000 gal of petroleum impacted water were removed from the USTs and approximately another 5,000 gal of groundwater from de-watering activities at the excavation.

Although laboratory results indicated the presence of SVOCs and VOCs in a majority of the sidewall and bottom soil samples submitted, most of these samples were determined to be under the NYSDEC TAGM 4046 guidance values. NYSDEC TAGM 4046 guidance values were exceeded for SVOCs in sidewall soil samples S2 and Sidewall (West), in bottom soil samples TB1, Line1 and 2; VOCs in side wall soil samples S1-4, S7-12, TS2, and Sidewall (West); and in bottom soil samples Between Buildings Bottom, Line2, and TB1.

Approximately 1,144.72 tons of impacted soil was removed from the site and properly disposed of within the Ontario County Landfill located in Stanley, New York.

Nature's Way was also retained to facilitate the installation of five groundwater monitoring wells on 18-19 April 2007. The locations of these five groundwater monitoring wells were influenced by the previous limitations of the excavations that were conducted in 2006, residual petroleum contamination, assumed groundwater flow direction, and the location of onsite structures and utilities.

Soil samples obtained from the groundwater monitoring well installation process were submitted to ELS for VOC analysis. The presence of tetrachloroethene and trichloroethene were detected within the samples from MW-1 and MW-3. Only tetrachloroethene from the sample obtained from MW-1 exceeded NYSDEC guidance values.

Groundwater samples were collected from the five wells newly installed onsite on 27 April 2007. Elevated levels at concentrations exceeding NYSDEC Groundwater Standards of VOCs were indicated by laboratory results from all five monitoring well locations. Monitoring wells MW-1, MW-2, and MW-3 indicated elevated levels of tetrachloroethene and trichloroethene indicative of dry cleaner impact, and MW-4 and MW-5 indicated levels of VOCs more indicative of petroleum impact.

3. FIELD ACTIVITIES

This section provides the data types and data uses to be obtained during the field activities along with the number, types, and locations of samples. The field sampling procedures and protocols, as well as the quality assurance/quality control procedures, are provided in the QAPP Addendum (Appendix A).

3.1 ENVIRONMENTAL SAMPLING

EA will obtain soil vapor, subsurface soil, and groundwater samples during the investigation as follows:

- Up to five soil vapor sampling points will be installed using direct-push technologies at the five locations depicted on Figure 3 as determined by the NYSDEC in consultation with the NYSDOH. The soil vapor point will be installed to a typical building foundation (approximately 8 ft below ground surface [bgs]) or 1 ft above the corresponding water table or bedrock interface, which ever occurs first. One outdoor ambient air sample will be collected during the same 2-hour period as the soil vapor samples. This ambient air sample will represent outdoor air conditions for the entire sampling area.

- Four permanent 2-in. groundwater monitoring wells will be installed to top of bedrock, which is approximately 15 ft bgs. The monitoring wells will be constructed using a screen interval from the bottom of the borehole to the appropriate depth interval which intercepts the water table. The proposed screen size will be 10 slot (0.010 in), while the filter pack design will consist of Morie size #00. Groundwater samples will be collected using a peristaltic pump and dedicated polyethylene tubing or a disposable polyethylene bailer. At each well location, soil samples will be collected for visual classification and described according to the Unified Soil Classification System, and screened with a photoionization detector.

- Using existing site data, EA will locate and install two test pits at the site near the back of the structure as shown on Figure 3. EA anticipates the dimensions of the test pits to be 10-15 ft long, by 2 ft wide and to a depth of the local water table or a confining layer. Based on screening, up to two samples may be collected from the excavation and analyzed for VOCs. Excavated soil will remain onsite and utilized to backfill the test pits.

3.1.1 Temporary Soil Vapor Monitoring Points

Five temporary soil vapor probes will be installed using Geoprobe® macro-cores to approximately 8 ft bgs, approximately 1 ft above the water table interface (Figure 3). Soil vapor samples will be collected from the soil vapor probes using the procedures detailed in Section 3.1.2. Soil boring spoils will be assumed to be non-hazardous waste and reworked into the

surrounding ground surface unless a visible sheen or odor is evident in which case the spoils will be drummed and disposed of in accordance with Section 4.

The soil vapor samples will be analyzed by Air Toxics of Folsom, California an Environmental Laboratory Approval Program (ELAP) certified laboratory for VOCs using U.S. Environmental Protection Agency Method (EPA) TO-15 (Table 1). A minimum reporting limit of 1 microgram per cubic meter (ug/m^3) will be achieved for all VOC analytes.

3.1.2 Soil Vapor and Ambient Air Sampling Procedures

Soil vapor probe installations will be temporary. Soil implants or probes will be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures will be followed when implementing soil vapor sampling techniques:

- Implants will be installed using direct-push (Macro-Core) technology.

- Porous backfill material (e.g., glass beads or coarse sand) will be used to create a sampling zone from 1 to 2 ft long.

- Implants will be fitted with inert tubing (e.g. Teflon-type®) of the appropriate size (typically from 1/8-in. to 0.25-in. diameter) and of laboratory- or food-grade quality to the surface.

- Soil vapor probes will be sealed above the sampling zone with a granular bentonite slurry for a minimum distance of 3 ft to prevent outdoor air infiltration, and the remainder of the borehole will be backfilled with clean material.

- One ambient air sample will be collected during the same 2-hour period as the soil vapor samples. This ambient air sample will represent outdoor ambient air conditions for the entire sampling area. The ambient air samples will be collected in a laboratory batch-certified Summa canister, regulated for a 2-hour sample collection. A section of Teflon or Teflon-lined tubing that is identified as laboratory or food grade will be extended from the Summa canister to collect the ambient air sample from the breathing zone at approximately 3 to 5 ft above ground surface.

Soil vapor samples will be collected in the same manner at all locations to minimize possible discrepancies. The following procedures will be strictly adhered to when sampling soil vapor:

- At least 24 hours after the installation of permanent probes, and shortly after the installation of temporary probes, 2-3 implant volumes (i.e., the volume of the sample probe and tube) will be purged prior to collecting the samples to ensure that representative samples are collected.

- Flow rates for both purging and collecting will not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling.

- Samples will be collected, using conventional sampling methods, in an appropriate container, which meet the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation), and meet the requirements of the sampling and analytical methods (e.g., low flow rate; Summa® canisters, which are batch certified clean by the laboratory, using EPA Method TO-15). The sample duration for these samples will be 2 hours.

- Sample size depends on the volume required to achieve minimum reporting limit requirements.

- A tracer gas (e.g., helium) will be used at each location before collecting soil vapor samples to verify that adequate installation and sampling techniques are being implemented (i.e., to verify infiltration of outdoor air is not occurring). The area where the soil vapor probe intersects the ground surface is covered with a plastic pail. The air within the pail is then enriched with helium to approximately 100 percent. An air sampling pump (set at 0.2 L per minute) then purges approximately 2 L of air from the soil vapor probe into a tedlar bag. The tedlar bag is then purged using a MGD-2002 Helium/Hyrogen Leak Detector and the ppbRAE. Once verified, continued use of the tracer gas may be reconsidered.

When soil vapor samples are collected, the following actions will be taken to document local conditions during sampling that may influence interpretation of the results:

- Sample location will be noted, including the site, area streets, neighboring commercial or industrial facilities (with estimated distance to the site), outdoor ambient air sample locations (if applicable), and compass orientation (north).

- Weather conditions (e.g., precipitation, outdoor temperature, barometric pressure, wind speed, and direction) will be noted for the past 24-48 hours.

- Any pertinent observations will be recorded, such as odors and readings from field instrumentation.

The field sampling team will maintain a sample log sheet (Appendix B; Attachment I) summarizing the following:

- Sample identification
- Date and time of sample collection
- Sampling depth
- Identity of samplers

- Sampling methods and devices
- Purge volumes
- Volume of soil vapor extracted
- Canister and associated regulator identification
- Vacuum before and after samples collected
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone
- Chain-of-custody protocols and records used to track samples.

Upon completion of the sampling, the sample tubing will be removed and the temporary soil vapor probe location will be backfilled with bentonite and marked with a stake/flag that will be labeled with the proper sample identification and illustrated on the site map so it can be located by the surveyor. Borings performed in paved or concrete areas will be backfilled and refinished at the ground surface with concrete or cold patch.

3.1.3 Groundwater Monitoring Well Installation/Sampling

3.1.3.1 Well Installation

Four groundwater sampling wells will be installed to further delineate impact to groundwater (Figure 3). The monitoring wells will be installed using a hollow-stem auger drill rig. The borehole will be advanced to the top of bedrock, estimated to be at 15 ft bgs. At each well location, soil samples will be collected continuously for visual classification and described according to the Unified Soil Classification System and screened with a photoionization detector (PID). If visual or olfactory contamination or a high PID screening is observed in the soil samples from the monitoring well installation, a discrete VOC sample may be collected at the discretion of the NYSDEC representative. A 2-in. diameter monitoring well will be inserted into each open borehole. The monitoring wells will be constructed with a 10-ft- length of 0.010-in. slot screen and an appropriate length of Schedule 40 PVC riser to the ground surface. The screen filter pack will consist of Morie # 00 (or equivalent) sandpack and will be brought 2 ft above the top of the screen interval. The remaining area in the borehole will be backfilled with bentonite chips to ground surface. A 6-in. protective well flushmount will be completed on each well, and should have a concrete pad with dimensions of at least 2 ft x 2 ft x 6 in.

3.1.3.2 Well Development

The newly installed monitoring wells will be developed no sooner than 48 hours following installation. The wells will be developed using surging and pumping techniques. Well development will be considered complete when pH has stabilized and a turbidity of less than 50 nephelometric turbidity units (NTUs) has been achieved. If the turbidty does not achieve less than 50 NTU within the first 3-5 well volumes the project manager will be contacted to determine the appropriate actions.

3.1.3.3 Monitoring Well Sampling

In total, nine wells, including five existing monitoring wells and four newly installed monitoring wells will be included in the groundwater sampling program. Groundwater samples will be collected using low-flow sampling protocols.

Groundwater monitoring well sampling procedures will include water level measurements, well purging, field measurements, and sample collection at each monitoring well location. A copy of the purging and sampling log form used to record well purging, water quality measurements, and sampling flow rates is provided in Attachment I of the HASP. The objective of the groundwater sampling protocol is to obtain samples that are representative of the aquifer in the well vicinity so that analytical results reflect the composition of the groundwater as accurately as possible.

Rapid and significant changes can occur in groundwater samples upon exposure to sunlight, temperature, and pressure changes at ground surface. Therefore, groundwater sampling will be conducted in a manner that will minimize interaction of the sample and the surface environment. The equipment and protocol for collecting groundwater samples by each method are described below.

3.1.3.4 Purging and Sampling Equipment

Well purging will be performed and groundwater samples will be collected from the monitoring wells using a peristaltic pump. Equipment for sampling will include the following:

- Peristaltic pumps to be used for well purging
- Electronic water level measurement unit with accuracy of 0.01 ft
- Flow measurement device (containers graduated in milliliters) and stop watch
- Water quality meter (Horiba U-22 or similar) with flow-through cell (flushed with distilled water before use at each well) for field measurement of pH, specific conductance, temperature, Eh, and dissolved oxygen
- Turbidity meter
- PID instrument (MiniRAE or similar) to monitor vapor concentrations during purging and sampling as required by the HASP.

3.1.3.5 Groundwater Sampling Purge Method

During each groundwater sampling event, groundwater samples will be analyzed by an approved ELAP-certified laboratory for VOCs by EPA Method 8260B in accordance with NYSDEC Analytical Services Protocol during the sampling event. The following procedures will be used

for monitoring well groundwater sampling:

- Wear appropriate personal protective equipment as specified in the HASP and the HASP Addendum. In addition, samplers will use new sampling gloves for the collection of each sample.

- Unlock and remove the well cap.

- Obtain PID readings and record them in the field logbook.

- Measure the static water level in the well with an electronic water level indicator. The water level indicator will be washed with Alconox detergent and water, then rinsed with deionized water between individual wells to prevent cross-contamination. Decontamination fluids will be containerized.

- Calculate the volume of water in the well.

- Place polyethylene sheeting around the well casing to prevent contamination of sampling equipment in the event sampling equipment is dropped.

- Purge 3-5 well volumes of water from the well, using the method described below. Purged water will be containerized separately from decontamination fluids.

  — Pump with a peristaltic pump equipped with new polyethylene tubing dedicated to each well. Set intake at the surface level of the ground water and start pump, continue to lower the intake line ensuring that all standing water in the well has been purged.

- Allow field parameters of pH, reduction-oxidation potential (Eh), dissolved oxygen, specific conductivity, and temperature to stabilize before sampling. Purging will be complete if the following conditions are met:

  — Consecutive pH readings are ±0.1 pH units of each other
  — Consecutive turbidty ±10 percent
  — Consecutive measured specific conductance is ±3 percent of each other.

The flow rate during monitoring well purging will not exceed 250 milliliters per minute. If these parameters are not met after purging a volume equal to 3-5 times the volume of standing water in the well, the EA Project Manager will be contacted to determine the appropriate action(s).

- If the well goes dry before the required volumes are removed, the well may be sampled when it recovers (recovery period up to 24 hours).

- Collect the sample aliquot for VOC analysis at a flow rate not exceeding 250 milliliters

per minute.

- Obtain field measurement of pH, dissolved oxygen, temperature, and specific conductivity and record it on the purging and sampling form. The instruments will be decontaminated between wells to prevent cross-contamination.

- Place analytical samples in cooler and chill to 4°C. Samples will be shipped to the analytical laboratories within 24 hours.

- If a centrifugal or submersible pump is used, it will be decontaminated following the procedure in Section 3.2, and the polyethylene suction/discharge line will be properly discarded.

- Re-lock well cap.

- Fill out field logbook, sample log sheet, labels, custody seals, and chain-of-custody forms.

Groundwater samples will be placed in appropriate sample containers, sealed, and submitted to the laboratory for analysis. The samples will be labeled, handled, and packaged following the procedures described in Generic QAPP and QAPP Addendum. Quality assurance/quality control samples will be collected at the frequency detailed in the Generic QAPP, QAPP Addendum, and Table 1.

The groundwater sample will be collected using the procedures outlined in the QAPP Addendum (Appendix A). Groundwater samples will be analyzed by Chemtech Consulting Group, Inc, Mountainside, New Jersery, for VOC's by EPA Method 8260B in accordance with the NYSDEC Analytical Services Protocol.

Prior to the start of the groundwater sampling event, water levels will be collected from the entire monitoring well network to prepare a groundwater contour map and evaluate groundwater flow patterns. Water level measurements recorded and analytical results received will be included in the summary report.

3.1.4 Test Pit Installation

Exploratory test pits will be excavated for the purpose of characterizing the soil and obtaining subsurface soil samples from the site.

During excavation activities, soil samples will be classified and logged according to the Unified Soil Classification System. Field screening using a PID and field observations will be recorded during excavation. A field record of the test pit, classification, sampling intervals, PID readings, and other field observations will be recorded on the soil test pit log form shown in Appendix B. If suspect soil is encountered during test pit activities, one discrete sample or a composite soil

sample may be collected and submitted to the laboratory for VOC analysis by EPA Method 8260B.

3.1.5 Laboratory Analysis

Soil vapor samples will be analyzed by an ELAP-certified laboratory for VOC's using EPA Method TO-15 (Table 1). The analysis for soil vapor samples will achieve detection limits of 1 $\mu g/m^3$ for each compound. Groundwater and subsurface soil samples will be analyzed by an ELAP-certified laboratory for VOC's by EPA Method 8260B. The analysis for groundwater samples will achieve detection limits of 1 part per billion (ppb) for each compound.

3.2 DECONTAMINATION PROCEDURES

All non-dedicated equipment and tools used to collect samples for chemical analysis will be decontaminated prior to and between each sample interval using an Alconox rinse and potable water rinse. Additional cleaning of the equipment with steam may be needed under some circumstances. Decontamination fluids will be discharged to the ground surface unless a visible sheen or odor is detected either on the equipment or the fluids, at which point the decontamination water will be staged in an appropriate container and disposed of appropriately.

3.3 LABORATORY ANALYSIS AND REPORTING

It is anticipated that preliminary analytical results will be available within 2 weeks of receipt at the laboratory, and final results will be provided to the NYSDEC within the standard turnaround time (i.e., 30 days). All samples collected will be validated by a party independent of the laboratory that performed the analyses and the consultant that performed the field work. A usability analysis will be conducted by a qualified data validator and a Data Validation/Usability Report will be submitted to NYSDEC 30 days following the data validators data package receipt. Fifteen days after receiving the Data Usability Summary Report a Draft Summary Report will be submitted to the NYSDEC.

4. STORAGE AND DISPOSAL OF WASTE

EA is responsible for the proper storage, handling, and disposal of investigative derived waste; including personal protective equipment, and solids and liquids generated during the soil boring installation activities. All drummed materials will be clearly labeled with their contents and origin. All investigative derived waste will be managed in accordance with NYSDEC Department of Remediation TAGM 4032.

Accordingly, handling and disposal will be as follows:

- Liquids generated from contaminated equipment or a decontamination activity that exhibit visual staining, sheen, or discernable odors will be collected in drums or other containers at the point of generation. They will be stored in the staging area. A waste subcontractor will then remove the generated waste stream and dispose of them at an offsite location.

- Liquid generated during existing and temporary well sampling or a decontamination activity will be collected in drums or other containers at the point of generation.

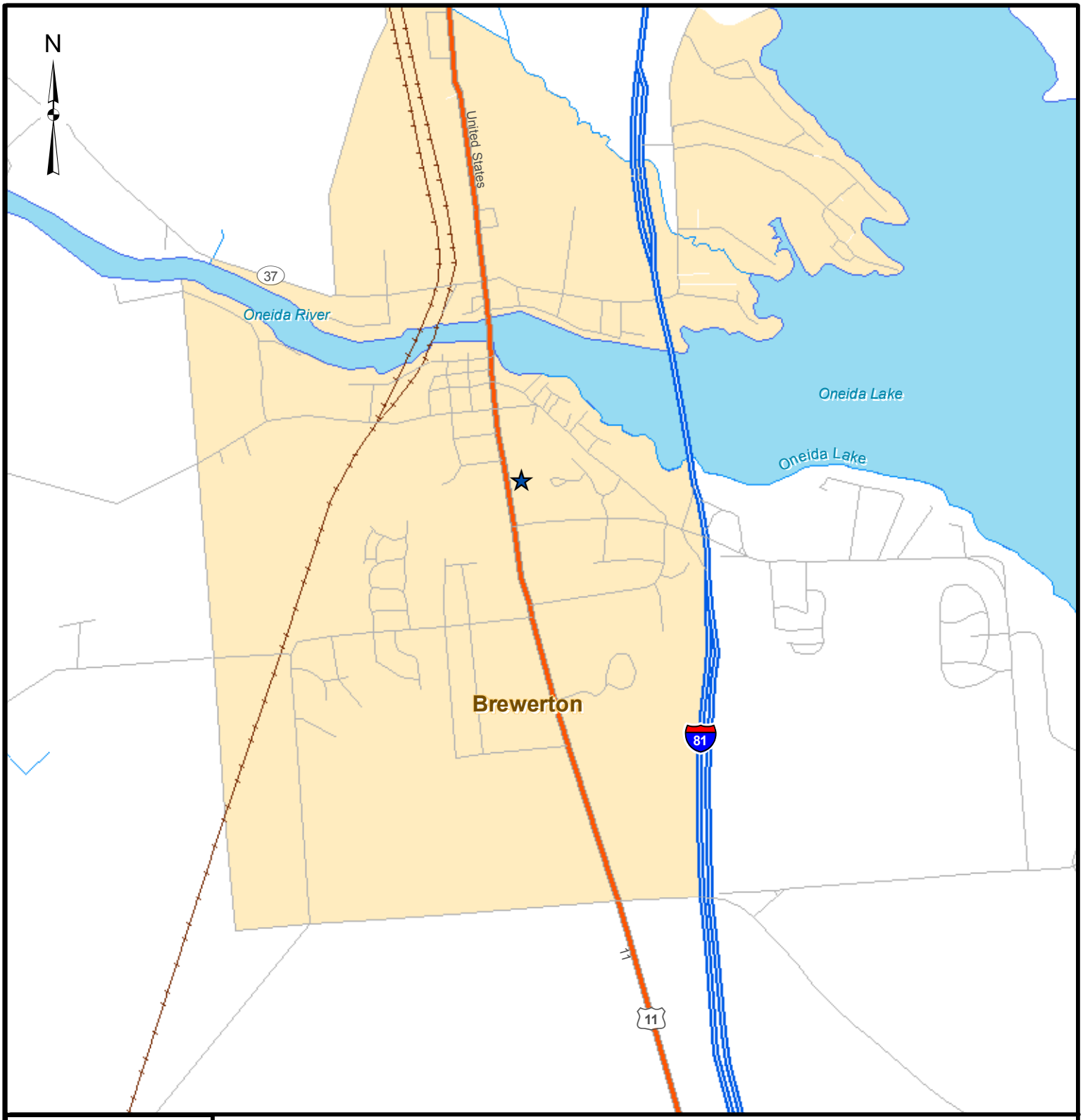
- Soil and rock spoils from drilling operations that do not exhibit visible staining, sheen, or discernable odors will be disposed of onsite.

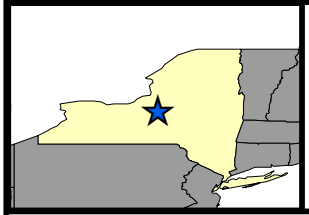
- Soil and rock spoils from drilling operations that exhibit visible staining, sheen or discernable odors will be staged onsite until an appropriate treatment/disposal procedure has been determined following completion of the feasibility study.

- Used protective clothing and equipment that is suspected to be contaminated with hazardous waste will be placed in plastic bags, packed in 55-gal ring-top drums, and transported to the drum staging area.

- Non-contaminated trash and debris will be placed in a trash dumpster and disposed of by a local garbage hauler.

- Non-contaminated protective clothing will be packed in plastic bags and placed in a trash dumpster for disposal by a local garbage hauler.





LEGEND

★ Site Location

Miles

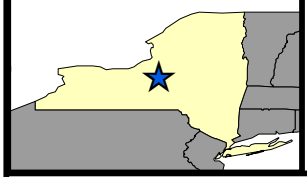
0 0.25 0.5 1

Source: ESRI Streetmaps 2005

JACK'S DRYCLEANERS SITE
BREWERTON, NEW YORK

FIGURE 1
Site Location Map

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
DWE	CJS	DCC	JAV	AS SHOWN	NOVEMBER 2007	14368.15	GIS/PROJECTS/ FIGURE1.MXD



Legend

Surrounding Properties

Jack's Dry Cleaners 9626 Route 11

Feet

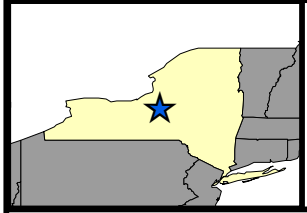
0 50 100 200

Source: USGS EROS 2005

JACK'S DRYCLEANERS SITE
SITE CHARACTERIZATION WORK PLAN
BREWERTON, NEW YORK

FIGURE 2
Site Area

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
DWE	CJS	CJS	JAV	AS SHOWN	NOVEMBER 2007	14368.15	GIS/PROJECTS/ FIGURE3.MXD



Legend

- Estimated Property Boundaries
- Proposed Test Pit Location
- Proposed Soil Vapor Point
- Existing
- Proposed

0 25 50 100 Feet

Source: USGS EROS 2005

JACK'S DRYCLEANERS SITE
SITE CHARACTERIZATION WORK PLAN
BREWERTON, NEW YORK

FIGURE 3
Proposed Sampling Locations

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
DWE	CJS	CJS	JAV	AS SHOWN	NOVEMBER 2007	14368.15	GIS/PROJECTS/ FIGURE3.MXD

TABLE 1 SITE CHARACTERIZATION ANALYTICAL PROGRAM

	Sample Matrix	VOC EPA Method 8260	VOC EPA Method TO-15
GROUNDWATER SAMPLING PROGRAM			
No. of Samples	Aqueous	9	---
Field Duplicate		1	---
Trip Blank (a)		1	---
MS/MSD		2	---
Total No. of Analyses		13	
SOIL SAMPLING PROGRAM			
No. of Samples	Soil	6	---
Field Duplicate		1	---
Rinsate Blank (b)		1	---
MS/MSD		2	---
Total No. of Analyses		10	---
SOIL VAPOR SAMPLING PROGRAM			
No. of Samples	Air	---	6[(c)]
Field Duplicate		---	1
Rinsate Blank (b)		---	---
MS/MSD		---	---
Total No. of Analyses		---	7

(a) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(b) One rinsate blank per day of sampling with a field device that requires field decontamination.
(c) One of the samples will be and outdoor ambient air sample.

NOTE: VOC = Volatile organic compound.
--- = No Sample Taken
MS/MSD = Matrix Spike/Matrix Spike Duplicate
Laboratory quality control samples will be collected at a rate of 1 per 20 samples, per matrix.

Appendix A

Quality Assurance Project Plan

Quality Assurance Project Plan Addendum
for a Site Characterization
Jack's Drycleaner Site (7-34-112)
Town of Brewerton, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by

EA Engineering, P.C., and Its Affiliate
EA Science and Technology
6712 Brooklawn Parkway, Suite 104
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(315) 431-4610

November 2007
Revision: FINAL
EA Project No. 14368.15

Quality Assurance Project Plan Addendum
for a Site Characterization
Jack's Drycleaner Site (7-34-112)
Town of Brewerton, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

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1 November 2007

Christopher J. Canonica, P.E., Program Manager — Date
EA Engineering, P.C.

1 November 2007

David Eck, P.E., Project Manager — Date
EA Engineering, P.C.

November 2007
Revision: FINAL
Project No.: 14368.15

CONTENTS

LIST OF TABLES

1. PURPOSE AND OBJECTIVES

1.1 PURPOSE

A Generic Quality Assurance Project Plan (QAPP) (EA 2006)[1] was developed for field activities performed under the New York State Department of Environmental Conservation (NYSDEC) Standby Contracts D004438 and D004441. This QAPP Addendum was prepared for the Work Plan associated with performance of the site characterization at the Jack's Drycleaners site, located in Brewerton, Onondaga County, New York (NYSDEC Site No. 7-34-112). The principal purpose of this QAPP Addendum is to supplement the Generic QAPP with site-specific procedures for the collection, analysis, and evaluation of data that will be legally and scientifically defensible.

1.2 QUALITY ASSURANCE PROJECT PLAN OBJECTIVES

This QAPP Addendum provides site-specific information and standard operating procedures applicable to all work performed at the site that is not included in the Generic QAPP. The information includes definitions and generic goals for data quality and required types and quantities of quality assurance/quality control (QA/QC) samples. The procedures address sampling and decontamination protocols; field documentation; sample handling, custody, and shipping; instrument calibration and maintenance; auditing; data reduction, validation, and reporting; corrective action requirements; and QA reporting. The Work Plan contains a site description and information on site field activities, such as sample locations, sampling procedures, analytical methods, and reporting limits.

1. EA Engineering, P.C. 2006. *Generic Quality Assurance Project Plan for Work Assignments under NYSDEC Contracts D004438 and D004441*. October.

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

While all personnel involved in an investigation and the generation of data are implicitly a part of the overall project management and QA/QC program, certain members of the Project Team have specifically designated responsibilities. Project personnel responsibilities are summarized below.

2.1 EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY

EA Engineering, P.C. and its Affiliate EA Science and Technology (EA) will provide oversight, coordination, health and safety, field support, and evaluation of analytical data. Field support will be provided during subsurface soil sampling. EA also will be responsible for evaluation of analytical test results, which will be submitted to NYSDEC. The EA staff involved in this project are as follows:

- ***Tom Porter, EA Project QA/QC Officer—***The QA/QC Officer will provide guidance on technical matters and review technical documents relating to the project. He will assess the effectiveness of the QA/QC program and recommend modifications when applicable. Additionally, the QA/QC Officer may delegate technical guidance to specially trained individuals under his direction.

- ***David Eck, P.E., EA Project Manager***—The Project Manager provides overall coordination and preparation of the project within EA. This includes coordination with NYSDEC and New York State Department of Health, budget control, subcontractor performance, implementation of the QAPP, and allocation of resources and staffing to implement both the QA/QC program and the site Health and Safety Plan.

- ***Scott L. Graham, P.G., EA Project QA/QC Coordinator—***The Project QA/QC Coordinator is responsible for project-specific supervision and monitoring of the QA/QC program. He will ensure that field personnel are familiar with and adhere to proper sampling procedures, field measurement techniques, sample identification, and chain-of-custody procedures. He will coordinate with the analytical laboratory for the receipt of samples and reporting of analytical results, and will recommend actions to correct deficiencies in the analytical protocol or sampling. Additionally, he will prepare QA/QC reports for management review.

- ***Joe Von Uderitz, EA Site Manager***—The Site Manager will serve as the onsite contact person for field investigations and tests. He will be responsible for coordinating the field activities including inspecting and replacing equipment, preparing daily and interim reports, scheduling sampling, and coordinating shipment and receipt of samples and containers.

The Program Health and Safety Officer is also an integral part of the project implementation team.

- ***Peter Garger, EA Program Health and Safety Officer***—The Program Health and Safety Officer will be responsible for the development, final technical review, and approval of the Health and Safety Plan. In addition, he will provide authorization, if warranted, to modify personal protective equipment requirements based on field conditions. He will also provide final review of all health and safety monitoring records and personal protective equipment changes to ensure compliance with the provisions of the Health and Safety Plan.

2.2 LABORATORY

Laboratory analyses for this project will be performed by Chemtech Consulting Group, in Mountainside, New Jersey and Air Toxic in Folsom, California under a subcontract agreement with EA. Nancy J. Potak, Inc. will have sample analysis and review responsibilities on this project. The laboratories will have their own provisions for conducting an internal QA/QC review of the data before they are released to EA. The laboratories' contract supervisors will contact EA's Project Manager with any sample discrepancies or data concerns.

Hardcopy and electronic data deliverable formatted QA/QC reports will be filed by the analytical laboratories when data are submitted to EA. Corrective actions will be reported to the EA Project Manager along with the QA/QC report (Section 9 of the Generic QAPP). The laboratories may be contacted directly by EA or NYSDEC personnel to discuss QA concerns. EA will act as laboratory coordinator on this project, and all correspondence from the laboratories will be coordinated with EA's Project Manager.

3. SAMPLING RATIONALE, DESIGNATION, AND CONTAINERS

3.1 SAMPLING RATIONALE

The sampling rationale presented for each planned field activity is detailed in the Work Plan for a Site Characterization (EA 2007a)[2]. The rationale and frequency of the QC samples collected is discussed in the Generic QAPP. The remedial investigation laboratory program, illustrated in Table 1, includes the number of samples for each sample location, as well as QA/QC samples. The frequency of QA/QC samples are expressed as a percentage of the total number of samples collected for that matrix. The Generic QAPP also includes analytical methods and reporting limits.

3.2 SAMPLE DESIGNATION

Field samples collected from the site will be assigned a unique sample tracking number. Sample designation will be an alpha-numeric code, which will identify each sample by the site identification, matrix sampled, location number, sequential sample number (or depth of top-of-sample interval for excavation soil samples), and date of collection. Each sampling location will be identified with a two-digit number. Sequential sample numbers at each location for samples will begin with 01 and increase accordingly. For soil borings, the top depth of the sample interval will be used as the sample number. The final portion of the sample tracking number will be the sample date.

The following terminology will be used for the sample identification:

- **Soil Gas Samples**
  — SITE ID[3]-SV-xx (for subsurface soil vapor samples)

- **Groundwater Samples**

  Monitoring Wells
  — SITE ID-GW-MW-XX

- **Soil Samples**
  — SITE ID-TP-01 through 02 (for test pit samples).

2. EA Engineering, P.C. 2007. Work Plan for a Site Characterization, Jack's Dry Cleaner Site (Site No.7-34-112), Brewerton, New York. November.
3. Site ID No. 7-34-112.

3.3 SAMPLE CONTAINERS

Table 2 outlines the types of sample containers and preservatives required for sample collection. Please note that liquid waste samples, which exhibit an oily characteristic, do not require acid preservation.

3.4 DATA QUALITY CONTROL OBJECTIVES

Data Quality Control Objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required to support decisions. DQOs are developed to achieve the level of data quality required for anticipated data use. DQOs are implemented so that, for each task, the data are legally and scientifically defensible. The development of DQOs for a specific site and measurement takes into account project needs; data uses, types, and needs; and data collection. These factors determine whether the quality and quantity of data are adequate for their end use. Sampling protocols have been developed, and sampling documentation and handling procedures have been identified to realize the required data quality.

DQOs are established prior to data collection and are not considered a separate deliverable. Rather, the DQO development process is integrated with the project planning process, and the results are incorporated into the QAPP for the site location. DQOs will be specified for each planned data collection activity. The DQO process results in an effective plan, which details the chosen sampling and analysis options, and the statements of confidence in decisions made during the corrective action process. Confidence statements are possible through the application of statistical techniques to the data.

3.5 FIELD INVESTIGATION DATA QUALITY OBJECTIVES

In order to permit calculation of precision and accuracy for the sampling media, blind field duplicate samples will be collected, analyzed, and evaluated.

Through the submission of field QC samples, the distinction can be made between laboratory problems, sampling technique considerations, sample matrix effects, and laboratory artifacts. To assure media sample quality, all sample collection will be performed in strict accordance with procedures set forth in this QAPP.

Precision will be calculated as relative percent difference if there are only two analytical points, and percent relative standard deviation if there are more than two analytical points. Blind field duplicate sample analyses will provide the means to assess precision.

Quality will be assured through the implementation of the structured and coherent QAPP, defining characterization, and pre-sampling location inventory. This QAPP has been designed so that the appropriate numbers of samples for each location of interest are obtained for analysis. While 100 percent quality is the goal, it must be recognized that unforeseen events may result in the generation of some data that may not be acceptable for use.

Currently published analytical methods have been identified for the analysis of the collected samples, so that the data generated remain comparable to any previous or future generated data. EA will use an analytical laboratory with a demonstrated proficiency in the analysis of similar samples using the referenced methods. In addition, samples will be collected using documented procedures to ensure consistency of effort and reproducibility, if necessary.

3.6 LABORATORY DATA QUALITY OBJECTIVES

The analytical laboratory will demonstrate analytical precision and accuracy by the analysis of various QC samples (i.e., laboratory duplicates, spike samples, matrix spike duplicates, and laboratory control samples). Precision, as well as instrument stability, also will be demonstrated by comparison of calibration response factors from the initial calibration to that of the continuing calibrations. Precision will be presented as relative percent difference, relative standard deviation, or percent difference, whichever is appropriate for the number and type of QC samples analyzed. Laboratory accuracy will be evaluated by the addition of surrogate and matrix spike compounds, and will be presented as percent recovery. Laboratory blanks also can be used to demonstrate the accuracy of the analyses and possible effects from laboratory artifact contamination.

4. ANALYTICAL LABORATORY

The data collected during this investigation will be forwarded to NYSDEC for review.

All soil vapor samples will be submitted to Air Toxic in Folsom, California. All groundwater and soil samples will be submitted to Chemtech Consulting Group Inc. in Mountainside, New Jersey. Both of the laboratories are New York State Department of Health Environmental Laboratory Approval Program-certified, meeting specifications for documentation, data reduction, and reporting.

5. ANALYTICAL TEST PARAMETERS

This QAPP Addendum will require the analysis of soil and groundwater samples using U.S. Environmental Protection Agency Method 8260B, for volatile organic compounds. Soil vapor samples will be analyzed using U.S. Environmental Protection Agency Method TO-15 for volatile organic compounds. Compound lists for each analytical method are included in the Generic QAPP.

6. ANALYTICAL DATA VALIDATION

The laboratories will review data prior to release from the laboratories. Objectives for review are in accordance with the QA/QC objectives stated in the Generic QAPP. The laboratories are required to evaluate their ability to meet these objectives. Outlying data will be flagged in accordance with laboratory standard operating procedures, and corrective action will be taken to rectify the problem.

In order to ensure the validity of analytical data generated by a project, it will be validated by Nancy J. Potak Inc. who is independent from the analysts and the project. The Generic QAPP addresses implementation of independent validation.

TABLE 1 SITE CHARACTERIZATION ANALYTICAL PROGRAM

	Sample Matrix	VOC EPA Method 8260	VOC EPA Method TO-15
GROUNDWATER SAMPLING PROGRAM			
No. of Samples	Aqueous	9	---
Field Duplicate		1	---
Trip Blank (a)		1	---
MS/MSD		2	---
Total No. of Analyses		13	
SOIL SAMPLING PROGRAM			
No. of Samples	Soil	6	---
Field Duplicate		1	---
Rinsate Blank (b)		1	---
MS/MSD		2	---
Total No. of Analyses		10	---
SOIL VAPOR SAMPLING PROGRAM			
No. of Samples	Air	---	6[(c)]
Field Duplicate		---	1
Rinsate Blank (b)		---	---
MS/MSD		---	---
Total No. of Analyses		---	7

(a) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(b) One rinsate blank per day of sampling with a field device that requires field decontamination.
(c) One of the samples will be and outdoor ambient air sample.

NOTE: VOC = Volatile organic compound.
--- = No Sample Taken
MS/MSD = Matrix Spike/Matrix Spike Duplicate
Laboratory quality control samples will be collected at a rate of 1 per 20 samples, per matrix.

TABLE 2 SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIMES

Parameter	Matrix	Container Type/Size	Sample Volume	Preservation	Maximum Holding Time from Verifiable Time of Sample Receipt
Target Compound List volatile organic compounds	Water	Two 40-mL glass vials with Teflon-lined Septa	80 mL	No headspace, cool 4°C HCl	7 days
Target Compound List volatile organic compounds	Soil	One 125-mL wide-mouth glass vial with Teflon-lined cap	125 mL	Minimize headspace, cool 4°C	7 days
TO-15	Soil Vapor	One 6-L Summa® Canister	6 L	None	30 days

Appendix B

Health and Safety Plan Addendum

Health and Safety Plan Addendum for a Site Characterization Jack's Drycleaner (7-34-112) Town of Brewerton, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
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November 2007
Revision: FINAL
EA Project No. 14368.15

Health and Safety Plan Addendum
for a Site Characterization
Jack's Drycleaner (7-34-112)
Town of Brewerton, New York

Prepared for

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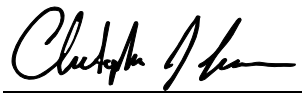

1 November 2007

Christopher J. Canonica, P.E., Program Manager
EA Engineering, P.C.

Date

1 November 2007

David Eck, P.E., Project Manager
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Date

November 2007
Revision: FINAL
EA Project No.: 14368.15

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1. INTRODUCTION

1.1 GENERAL

A Generic Health and Safety Plan (HASP) (EA 2006)[1] was developed for field activities performed under the New York State Department of Environmental Conservation (NYSDEC) Standby Contracts D004438 and D004441. This HASP Addendum is to supplement the Generic HASP with site-specific information to protect the health and safety of personnel while performing field activities to complete the Work Assignment for the Jack's Drycleaner Site (NYSDEC Site No. 7-34-112), Brewerton, Onondaga County, New York (Figure 1). This HASP Addendum describes the safety organization, procedures, and protective equipment that have been established based on an analysis of potential physical, chemical, and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential for accidents or injuries to occur. One copy of the Generic HASP and this HASP Addendum will be maintained for use during the scheduled field sampling effort. The copies will be made available for site use and employee review at all times.

This HASP Addendum addresses regulations and guidance practices set forth in the Occupational Safety and Health Administration (OSHA) Standards for Construction Industry, 29 Code of Federal Regulations (CFR) 1926, including 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response* and 29 CFR 1926.59, *Hazardous Communications*.

The following are provided as attachments:

- Attachment A: Worker Training and Physical Examination Record
- Attachment B: Health and Safety Plan Review Record
- Attachment C: Site Entry and Exit Log
- Attachment D: Accident Investigation Report
- Attachment E: Emergency Telephone Numbers and Hospital Directions
- Attachment F: Emergency Equipment Available Onsite
- Attachment G: Map to Hospital
- Attachment H: Personal Protective Equipment Activity Record
- Attachment I: Field Forms.

NOTE: This site-specific HASP Addendum should be left open to display Attachment E (Emergency Telephone Numbers and Hospital Directions) and made available to all site personnel in a conspicuous location for the duration of field activities in the event of an emergency.

1. EA Engineering, P.C. 2006. *Generic Health and Safety Plan for Work Assignments under NYSDEC Contracts D004438 and D004441*. June.

1.2 SITE LOCATION

The Jack's Drycleaner Site is an active dry-cleaning facility located at 9628 Brewerton Road, Brewerton, Onondaga County, New York. The site is approximately 0.17 acres and includes a one-story, slab-on-grade, 1,200 square foot building. The site lies within a predominately residential area with various commercial properties nearby. To the west, across Brewerton Road, lie two commercial structures. To the east is wooded and fallow land up to a residential subdivision. Located to the immediate north and south of the site are commercial properties.

1.3 POLICY STATEMENT

EA will take every reasonable step to provide a safe and healthy work environment and to eliminate or control hazards in order to minimize the possibility of injuries, illnesses, or accidents to site personnel. EA and EA subcontractor employees will be familiar with the Generic HASP and this HASP Addendum for each of the project activities they perform. Prior to entering the site, the Generic HASP and this HASP Addendum will be reviewed and an agreement to comply with the requirements will be signed by EA personnel, subcontractors, and visitors (Attachment B).

Operational changes that could affect the health and safety of the site personnel, community, or environment will not be made without approval from EA's Project Manager and Program Health and Safety Officer. This document will be periodically reviewed to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification to the HASP Addendum. Such changes will be documented in the form of a revision to this addendum.

2. KEY PERSONNEL

The following table contains information on key project personnel:

Title	Name	Telephone No.
Officer-in-Charge	Richard Waterman	508-485-2982
Program Health and Safety Officer	Peter Garger, CIH	410-771-4950
Program Manager	Chris Canonica, P.E.	315-431-4610
Quality Assurance/Quality Control Officer	Tom Porter, P.G.	315-431-4610
Project Manager	David Eck, P.E.	315-431-4610
Quality Assurance/Quality Control Coordinator	Scott L. Graham, P.G.	315-431-4610
Site Manager/Site Health and Safety Officer	Joe Von Uderitz	315-431-4610
NYSDEC Project Manager	Karen Cahill	518-897-1242

3. SCOPE OF WORK

This HASP Addendum was developed to designate and define site-specific health and safety protocols applicable to project activities. It is to be implemented and followed during field activities at the Jack's Drycleaner Site, Brewerton, New York. The scope of work covered by this HASP Addendum includes:

- Soil vapor monitoring
- Groundwater sampling
- Subsurface soil sampling.

Each of these activities is summarized below; additional detail for each activity is provided in the Work Plan for a Site Characterization.

3.1 SOIL VAPOR MONITORING

Five temporary soil vapor probes will be installed using Geoprobe macro-cores to install stainless steel drive points to approximately 8 ft below ground surface and 1 ft above the water table interface or the bedrock interface, whichever occurs first (Figure 2). Once the sampling depth is reached, the 6-in. stainless steel sampling screen attached to a dedicated section of 0.25-in. diameter Teflon tubing that is identified as laboratory or food grade will be installed and used to collect the soil vapor samples. The borehole will then be backfilled with sand/glass beads to a minimum of 6 in. above the screened interval. Granular bentonite pellets will then be placed from approximately 6 in. above the screen to the ground surface hydrating concurrently with placement. Sufficient time will then be provided for the bentonite to set (24 hours minimum). Soil boring spoils will be assumed to be non-hazardous waste and reworked into the surrounding ground surface unless a visible sheen or odor is evident in which case the spoils will be drummed and disposed of in accordance with Section 4.

Soil vapor samples will be collected from the soil vapor probes using the procedures detailed in the work plan, Section 3.2.2. The soil vapor samples will be analyzed by an Environmental Lead Proficiency Analytical Testing- (ELPAT-) certified laboratory for volatile organic compounds (VOCs) using U.S. Environmental Protection Agency Method (EPA) TO-15 (Table 1). A minimum reporting limit of 1 microgram per cubic meter ($\mu g/m^3$) will be achieved for all VOC analytes.

Upon completion of the sampling, the sample tubing will be removed and the temporary soil vapor probe location will be backfilled with bentonite and marked with a stake/flag that will be labeled with the proper sample identification and illustrated on the site map so it can be located using a high precision Global Positioning System unit. Borings performed in paved or concrete areas will be backfilled and refinished at the ground surface with concrete or cold patch.

3.2 GROUNDWATER MONITORING WELLS

Five groundwater sampling wells will be installed to further delineate impact to groundwater (Figure 2). The monitoring wells will be installed using a hollow-stem auger drill rig. The borehole will be advanced to the top of bedrock, estimated to be at 15 ft bgs. At each well location, soil samples will be collected continuously for visual classification and described according to the Unified Soil Classification System and screened with a photoionization detector (PID). A 2-in. diameter monitoring wells will be inserted into each open borehole. The monitoring wells will be constructed with a 10-ft- length of 0.010-in-slot screen and an appropriate length of Schedule 40 PVC riser to the ground surface. The screen filter pack will consist of Morie #0 (or equivalent) sandpack and will be brought 2 ft above the top of the screen interval. The remaining area in the borehole will be backfilled with bentonite chips to ground surface. A 6-in. protective well flushmount will be completed on each well, and should have a concrete pad with dimensions of at least 2-ft x 2-ft x 6-in.

3.2.1 Groundwater Sampling

In total, nine wells, including five existing monitoring wells and four newly installed monitoring wells, will be included in the groundwater sampling program. The table below lists the existing monitoring wells that will be included in the groundwater sampling program. Groundwater samples will be collected as described in the section 3.1.3.4 of the work plan.

Groundwater samples will be analyzed by Chemtech Consulting Group Inc. Mountainside, New Jersey, for VOCs by EPA Method 8260B in accordance with the NYSDEC Analytical Services Protocol.

The following wells from the monitoring well network are expected to be sampled at the site:

Well Sampling at Jack's Drycleaner Site	
Existing Monitoring Wells	Newly Installed Monitoring Wells
MW-01	MW-06
MW-02	MW-07
MW-03	MW-08
MW-04	MW-09
MW-05	

3.3 TEST PITS/SUBSURFACE SOIL SAMPLING

One soil sample may be collected from each of the exploratory test pits if deemed necessary by the onsite geologist. Soil samples will be classified and logged according to the Unified Soil Classification System. Field screening using a PID and field observations will be used when selecting soil samples for laboratory analysis. A field record of each exploratory test pit, classification, sampling interval, PID reading, and other field observations will be recorded on the soil boring log form shown in Attachment I. Soil samples collected from the test pits will be

submitted to Chemtech Consulting Group, Inc. of Mountainside, New Jersey for VOCs by EPA Method 8260B. The field screening along with field observations will be used to select a soil sample for subsequent laboratory analysis. The selection of subsurface soil samples for laboratory analysis will be made in consultation with the NYSDEC field representative.

3.4 STORAGE AND DISPOSAL OF WASTE

EA is responsible for the proper storage, handling, and disposal of investigative derived waste, including personal protective equipment, and solids and liquids generated during the well drilling, well development, and well sampling activities. Liquids generated during sampling that exhibit visual staining, sheen, or discernable odors will be collected in drums or other containers at the point of generation. The drums will be stored in the staging area. A waste subcontractor will then remove the drums and dispose at an offsite location. Liquids generated during monitoring well sampling that exhibit no visual staining, sheen, or discernable odor will be discharged to an unpaved area onsite, where it can percolate into the ground. Excess drill cuttings generated from the installation of soil vapor points will also be disposed of onsite if there is no visible staining, sheen, or discernable odors. Drill cuttings that do exhibit visible staining, sheen, or discernable odors will be staged onsite until an appropriate treatment/disposal procedure has been determined following completion of the feasibility study. All drummed materials will be clearly labeled with their contents and origin. All investigative derived waste will be managed in accordance with NYSDEC-Division of Environmental Remediation Technical and Administrative Guidance Memorandum 4032 (NYSDEC 1989)[2].

2. NYSDEC. 1989. Technical and Administrative Guidance Memorandum No. 4032, Disposal of Drill Cuttings. 21 November.

4. POTENTIAL HAZARD ANALYSIS

Based upon the above field activities, the following potential hazard conditions may be anticipated:

- The use of mechanical equipment such as drill rigs, powered augers, and hammer drills can create a potential for crushing and pinching hazards due to movement and positioning of the equipment; movement of lever arms and hydraulics; entanglement of clothing and appendages in exposed drives and augers; and impact of steel tools, masts, and cables should equipment rigging fail or other structural failures occur during hydraulic equipment operation and drilling mast extension and operation. Heavy equipment work must be conducted only by trained, experienced personnel. If possible, personnel must remain outside the turning radius of large, moving equipment. At a minimum, personnel must maintain visual contact with the equipment operator. When not operational, equipment must be set and locked so that it cannot be activated, released, dropped, etc.

- Equipment can be energized due to contact with overhead or underground electrical lines, utilities impaired by excavation of communication or potable/wastewater lines, or a potential for fire or explosion may occur due to excavation of below ground propane/ natural gas lines. Prior to commencement of invasive operations, a drilling/excavation permit will be obtained and the area will be inspected and flagged. Personnel should be aware that although an area may be cleared, it does not mean that unanticipated hazards will not appear. Safe distances will be maintained from live electrical equipment as specified in Generic HASP. Workers should always be alert for unanticipated events such as snapping cables, digging into unmarked underground utilities, etc. Such occurrences should prompt involved individuals to halt work immediately and take appropriate corrective measures to gain control of the situation.

- Work around large equipment often creates excessive noise. Noise can cause workers to be startled, annoyed, or distracted; can cause physical damage to the ear, pain, and temporary and/or permanent hearing loss; and can interfere with communication. If workers are subjected to noise exceeding an 8-hour time-weighted average sound level of 85 dBA, hearing protection will be selected with an appropriate noise reduction rating to comply with 29 CFR 1910.95 and to reduce noise below levels of concern.

- Personnel may be injured during physical lifting and handling of heavy equipment, construction materials, or containers. Additionally, personnel may encounter slip, trip, and fall hazards associated with excavations, manways, and construction debris and materials. Precautionary measures should be taken in accordance with the Generic HASP and this HASP Addendum.

- Field operations conducted during the winter months can impose excessive heat loss to personnel conducting strenuous activities during unseasonably cold weather days and can impose cold-related illness symptoms during unseasonably cold weather days, or when wind chill is high. In addition, heavy rains, electrical storms, and high winds may create extremely dangerous situations for employees.

- Entry into a confined space in support of this project is forbidden. However, it is not anticipated that confined space entry will be required during the completion of the field activities.

- Field investigation activities intended to define potential sources of environmental contamination often require employees to be in direct proximity or contact with hazardous substances. Employees may be exposed through inhalation of toxic dusts, vapors, or gases. Normal dust particulates from surficial soil may have adsorbed or absorbed toxic solvents, petroleum compounds, or toxic metal salts or metal particulates. Air monitoring equipment will be used to monitor airborne organic vapors and particulates. Water collected during well development and groundwater sampling activities may also contain toxic vapors, liquids, and gases and be inhaled during normal operations, or may be splashed onto the skin or eyes. Ingestion of toxic materials contained in dusts or particulates can be ingested if eating, smoking, drinking, and gum chewing are permitted prior to personnel washing their hands and face or removing contaminated work clothing and personal protective equipment. Some chemicals may be absorbed directly through the skin. Personal protective equipment, properly designed for the chemicals of concern, will always be provided and worn when a potential for skin contact is present.

5. PERSONAL PROTECTIVE EQUIPMENT

Based upon currently available information, it is anticipated that Level D protection will be required for currently anticipated conditions and activities. If at any time the sustained level of total organic vapors in the worker breathing zone exceeds 5 parts per million (ppm) above background, site workers will evacuate the area and the condition will be brought to the attention of the site Health and Safety Officer. Efforts will then be undertaken to mitigate the source of the vapors. Once the sustained level of total organic vapors has decreased to below 5 ppm above background, site workers will be allowed to continue activities at the direction of the site Health and Safety Officer.

The personal protective equipment components for use during this project are detailed in the Generic HASP. The components of Level D personal protective equipment are summarized below.

5.1 LEVEL D PERSONAL PROTECTIVE EQUIPMENT

Level D will be worn for initial entry onsite and initially for all activities and will consist of the following:

- Coveralls or appropriate work clothing
- Steel-toe, steel-shank safety boots/shoes
- Hard hats (when overhead hazards are present or as required by the site Health and Safety Officer)
- Chemical resistant gloves (nitrile/neoprene) when contact with potentially contaminated soil or water is expected
- Safety glasses with side shields
- Hearing protectors (during drilling or other operations producing excessive noise)
- Boot covers (optional unless in contact with potentially contaminated soil or water)
- Polycoated coveralls (when contact with contaminated soil and water is anticipated, e.g., when surging/pumping wells and pressure-washing equipment).

Insulated clothing, hats, etc. must be worn when temperatures or wind chill fall below 40°F.

6. SITE CONTROL AND SECURITY

Only authorized personnel will be permitted to conduct field activities. Authorized personnel include those who have completed hazardous waste operations initial training, as defined under OSHA Regulation 29 CFR 1910.120/29 CFR 1926.65, have completed their training or refresher training within the past 12 months, and have been certified by a physician as fit for hazardous waste operations.

6.1 SAFE WORK PRACTICES

Safe work practices that will be followed by site workers include, but are not limited to, the following rules:

- Working before or after daylight hours without special permission is prohibited.
- Do not enter restricted or posted areas without permission from the site Health and Safety Officer.
- Smoking is limited to designated areas.
- Possessing, using, purchasing, distributing, or having controlled substances in their system throughout the day or during meal breaks is prohibited.
- Consuming or possessing alcoholic beverages is prohibited.
- Good housekeeping – employees will be instructed about housekeeping throughout field activities.
- Sitting or kneeling in areas of obvious contamination is prohibited.
- Avoid overgrown vegetation and tall grass areas.

6.2 DAILY STARTUP AND SHUTDOWN PROCEDURES

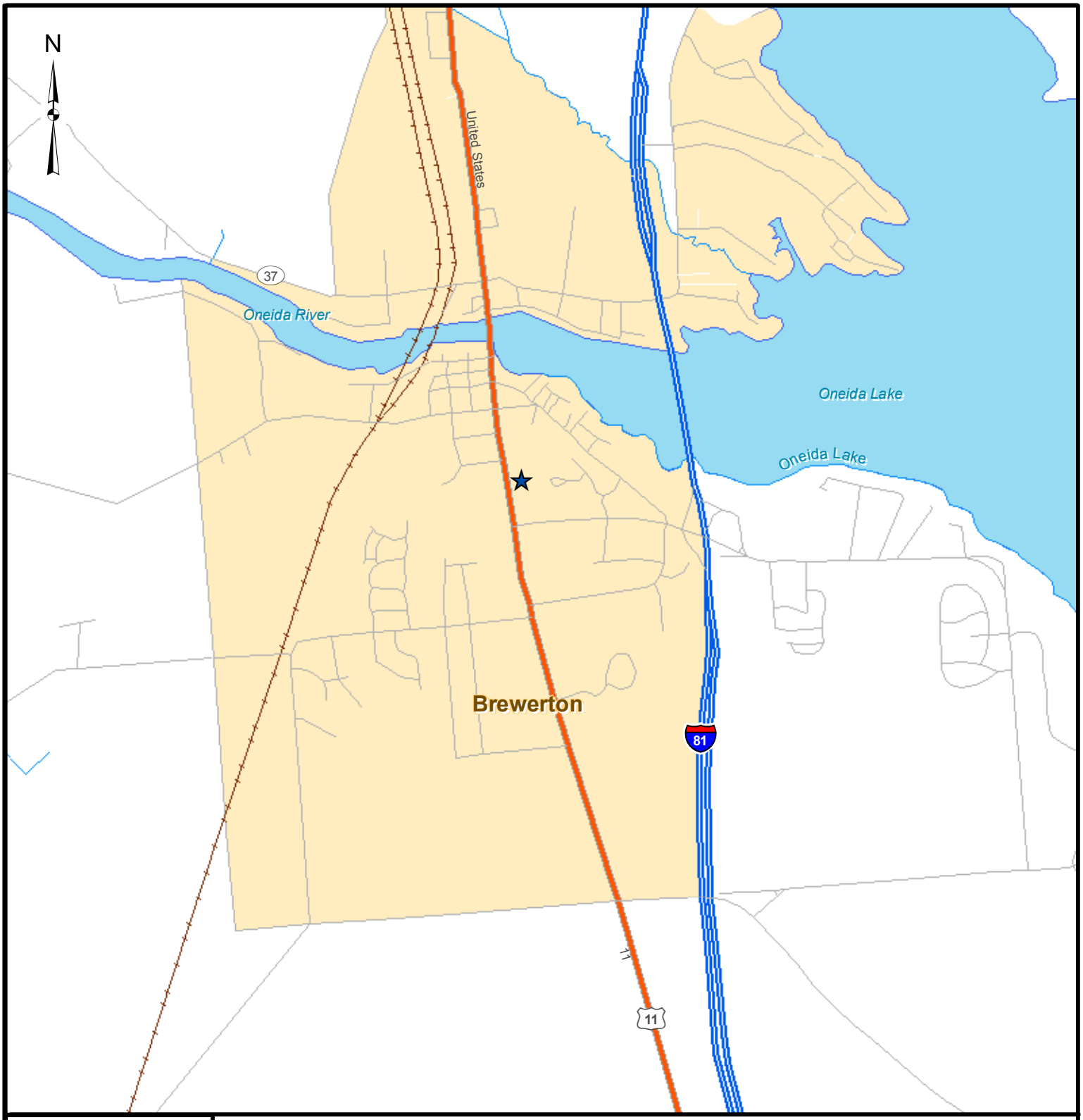
The following protocols will be followed daily prior to start of work activities:

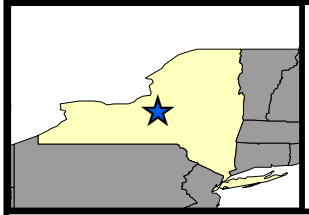
- The site Health and Safety Officer will review site conditions to determine if modification of work and safety plans is needed.
- Personnel will be briefed and updated on new safety procedures as appropriate.

- Safety equipment will be checked for proper function.

- The site Health and Safety Officer will ensure that the first aid kit is adequately stocked and readily available.

- The Contractor is responsible for the security of its own equipment. All onsite equipment and supplies will be locked and secure.





LEGEND

★ Site Location

Miles

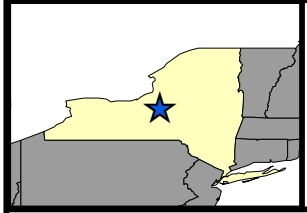
0 0.25 0.5 1

Source: ESRI Streetmaps 2005

JACK'S DRYCLEANERS SITE
BREWERTON, NEW YORK

FIGURE 1
Site Location Map

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
DWE	CJS	DCC	JAV	AS SHOWN	NOVEMBER 2007	14368.15	GIS/PROJECTS/ FIGURE1.MXD



Legend

- Estimated Property Boundaries
- Proposed Test Pit Location
- Proposed Soil Vapor Point
- Existing
- Proposed

0 25 50 100 Feet

Source: USGS EROS 2005

JACK'S DRYCLEANERS SITE
SITE CHARACTERIZATION WORK PLAN
BREWERTON, NEW YORK

FIGURE 2
Proposed Sampling Locations

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
DWE	CJS	CJS	JAV	AS SHOWN	NOVEMBER 2007	14368.15	GIS/PROJECTS/ FIGURE3.MXD

TABLE 1 SITE CHARACTERIZATION ANALYTICAL PROGRAM

	Sample Matrix	VOC EPA Method 8260	VOC EPA Method TO-15
GROUNDWATER SAMPLING PROGRAM			
No. of Samples	Aqueous	9	---
Field Duplicate		1	---
Trip Blank (a)		1	---
MS/MSD		2	---
Total No. of Analyses		13	
SOIL SAMPLING PROGRAM			
No. of Samples	Soil	6	---
Field Duplicate		1	---
Rinsate Blank (b)		1	---
MS/MSD		2	---
Total No. of Analyses		10	---
SOIL VAPOR SAMPLING PROGRAM			
No. of Samples	Air	---	6[(c)]
Field Duplicate		---	1
Rinsate Blank (b)		---	---
MS/MSD		---	---
Total No. of Analyses		---	7

(a) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(b) One rinsate blank per day of sampling with a field device that requires field decontamination.
(c) One of the samples will be and outdoor ambient air sample.

NOTE: VOC = Volatile organic compound.
--- = No Sample Taken
MS/MSD = Matrix Spike/Matrix Spike Duplicate
Laboratory quality control samples will be collected at a rate of 1 per 20 samples, per matrix.

Attachment A

Worker Training and Physical Examination Record

ATTACHMENT A

WORKER TRAINING AND PHYSICAL EXAMINATION RECORD

SITE: Jack's Drycleaner, Brewerton, New York						
Name	OSHA 40-Hour Hazardous Waste Operations Training		OSHA Hazardous Waste Supervisor Training	CPR (date of expiration)	First Aid (date of expiration)	Date of Last Physical Examination
	Initial	Annual				
EA PERSONNEL						
Tom Porter	2/3/89	11/8/06	3/3/89	---	---	6/12/01
David Eck, P.E.	3/1/96	9/6/07	---	8/07	8/07	4/29/04
Robert Casey	11/1/01	9/6/07	---	4/18/08	4/18/09	10/26/04
Kris Charney	3/10/06	---	9/20/06	7/18/08	7/18/09	3/1/06
Joe Von Uderitz	5/27/99	11/14/07	---	5/30/07	5/30/09	9/27/05
Richard Waterman	8/88	1998	2/94	3/04	3/05	---
SUBCONTRACTOR OR ADDITIONAL PERSONNEL						
---	---	---	---	---	---	---
---	---	---	---	---	---	---

NOTE: Prior to performing work at the site, this Health and Safety Plan must be reviewed and an agreement to comply with the requirements must be signed by all personnel, including contractors, subcontractors, and visitors. Contractors and subcontractors are ultimately responsible for ensuring that their own personnel are adequately protected. In signing this agreement, the contractors and subcontractors acknowledge their responsibility for the implementation of the Health and Safety Plan requirements. All personnel onsite shall be informed of the site emergency response procedures and any potential safety or health hazards of the operations.

Attachment B

Review Record

ATTACHMENT B

HEALTH AND SAFETY PLAN REVIEW RECORD

I have read the Health and Safety Plan for this site and have been briefed on the nature, level, and degree of exposure likely as a result of participation in this project. I agree to conform to all the requirements of this Plan.

SITE: Jack's Drycleaner, Brewerton, New York			
Name	Signature	Affiliation	Date

Attachment C

Site Entry and Exit Log

ATTACHMENT C

SITE ENTRY AND EXIT LOG

SITE: Jack's Drycleaner, Brewerton, New York				
Name	Date	Time of Entry	Time of Exit	Initials

Attachment D

Accident Investigation Report

ACCIDENT/LOSS REPORT

THIS REPORT MUST BE COMPLETED BY THE INJURED EMPLOYEE OR SUPERVISOR AND FAXED TO EA CORPORATE HUMAN RESOURCES WITHIN 24 HOURS OF ANY ACCIDENT. THE FAX NUMBER IS **(410) 771-1780**.

NOTE WHENEVER AN EMPLOYEE IS SENT FOR MEDICAL TREATMENT FOR A WORK RELATED INJURY OR ILLNESS, PAGE 4 OF THIS REPORT MUST ACCOMPANY THAT INDIVIDUAL TO ENSURE THAT ALL INVOICES/BILLS/CORRESPONDENCE ARE SENT TO HUMAN RESOURCES FOR TIMELY RESPONSE.

A. DEMOGRAPHIC INFORMATION:

NAME OF INJURED EMPLOYEE:_____
HOME ADDRESS:_____
HOME PHONE:_____ DATE OF BIRTH:_____
AGE:_____ SEX: M F
MARITAL STATUS:_____ NAME OF SPOUSE (if applicable)_____
SOCIAL SECURITY NUMBER:_____ DATE OF HIRE:_____
NUMBER OF DEPENDENTS:_____
EMPLOYEES JOB TITLE:_____
DEPT. REGULARLY EMPLOYED:_____
WAS THE EMPLOYEE INJURED ON THE JOB: Y N
PRIMARY LANGUAGE OF THE EMPLOYEE: _____

B. ACCIDENT/INCIDENT INFORMATION:

DATE OF ACCIDENT:_____ TIME OF ACCIDENT:_____
REPORTED TO WHOM: _____ NAME OF SUPERVISOR_____
EXACT LOCATION WHERE ACCIDENT OCCURRED (**including street, city, state, and county**):
_____
_____
EXPLAIN WHAT HAPPENED (include what the employee was doing at the time of the accident and how the accident occurred): _____
_____
_____
_____

DESCRIBE THE INJURY AND THE SPECIFIC PART OF THE BODY AFFECTED (i.e., laceration, right hand, third finger):
_____
_____

OBJECT OR SUBSTANCE THAT DIRECTLY INJURED EMPLOYEE:_____
_____
NUMBER OF DAYS AND HOURS EMPLOYEE USUALLY WORKS PER WEEK:_____
IS THE EMPLOYEE EXPECTED TO LOSE AT LEAST ONE FULL DAY OF WORK?_____
DOES THE EMPLOYEE HAVE A PREVIOUS CLAIM? Y N if yes, STATUS Open Closed
WAS THE EMPLOYEE ASSIGNED TO RESTRICTED DUTY? _____

C. ACCIDENT INVESTIGATION INFORMATION

WAS SAFETY EQUIPMENT PROVIDED? Y N If yes, was it used? Y N
WAS AN UNSAFE ACT BEING FORMED ? Y N If yes, describe_____
WAS A MACHINE PART INVOLVED? Y N If yes, describe _____
WAS THE MACHINE PART DEFECTIVE? Y N If yes, in what way _____
WAS A 3RD PARTY RESPONSIBLE FOR THE ACCIDENT/INCIDENT? Y N
If yes, list Name, address and phone number_____
_____
WAS THE ACCIDENT/INCIDENT WITNESSED? Y N
If yes, list Name, address and phone number: _____
_____

D. PROVIDER INFORMATION

WAS FIRST AID GIVEN ON SITE? Y N
If yes, what type of medical treatment was given _____
PHYSICIAN INFORMATION (if medical attention was administered)
NAME:_____
ADDRESS (incl. City, state and zip):_____
PHONE:_____

HOSPITAL ADDRESS (incl. Name, address, city, state, zip code & phone)
_____
_____

WAS THE EMPLOYEE HOSPITALIZED? Y N If yes, on what date_____
WAS THE EMPLOYEE TREATED AS AN OUTPATIENT, RECEIVE EMERGENCY TREATMENT OR AMBULANCE SERVICE? _____

PLEASE ATTACH THE PHYSICIANS WRITTEN RETURN TO WORK SLIP

***NOTE* A PHYSICIANS RETURN TO WORK SLIP IS REQUIRED PRIOR TO ALLOWING THE WORKER TO RETURN TO WORK**

E. AUTOMOBILE ACCIDENT INFORMATION (complete if applicable)

AUTHORITY CONTACTED AND REPORT #_____
EA EMPLOYEE VEHICLE YEAR, MAKE AND MODEL_____

V.I.N._____ PLATE/TAG #_____
OWNER'S NAME AND ADDRESS:_____
_____
DRIVER'S NAME AND ADDRESS: _____
_____
RELATION TO INSURED:_____DRIVER'S LICENSE #_____
DESCRIBE DAMAGE TO YOUR PROPERTY:_____
_____
_____
DESCRIBE DAMAGE TO OTHER VEHICLE OR PROPERTY:_____
_____
_____
OTHER DRIVER'S NAME AND ADDRESS: _____
_____
OTHER DRIVER'S PHONE:_____
OTHER DRIVER'S INSURANCE COMPANY AND PHONE:_____
_____
LOCATION OF OTHER VEHICLE:_____
NAME, ADDRESS AND PHONE OF OTHER INJURED PARTIES:_____
_____
_____
WITNESSES

NAME:_____ PHONE:_____
ADDRESS:_____
STATEMENT:_____
_____
SIGNATURE: _____

NAME:_____ PHONE:_____
ADDRESS:_____
STATEMENT:_____
_____
SIGNATURE: _____

F. ACKNOWLEDGEMENT

NAME OF SUPERVISOR:_____
DATE OF THIS REPORT: _____ REPORT PREPARED BY:_____

I have read this report and the contents as to how the accident/loss occurred is accurate to the best of my knowledge.

Signature: _____ Date: _____
Injured Employee

I am seeking medical treatment for a work related injury/illness.

Please forward all bills/invoices/correspondence to:

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

11019 McCORMICK ROAD

HUNT VALLEY, MD 21031

ATTENTION: Michele Bailey
HUMAN RESOURCES

(410) 584-7000

INCIDENT REPORT

THIS REPORT IS TO BE COMPLETED WHEN A NEAR MISS OCCURS THAT COULD HAVE POTENTIALLY RESULTED IN SERIOUS PHYSICAL HARM. PLEASE FAX THIS FORM TO EA HUMAN RESOURCES DEPARTMENT AT **(410) 771-1780**.

EXPLAIN WHAT HAPPENED (include what the employee was doing at the time the near miss and how it occurred:) _____

REPORT PREPARED BY: _____ DATE:_____

Attachment E

Emergency Telephone Numbers and Hospital Directions

ATTACHMENT E

EMERGENCY TELEPHONE NUMBERS AND HOSPITAL DIRECTIONS

SITE: Jack's Drycleaner Site, 9626 Brewerton Road, Brewerton, New York	
Police: Onondaga County Sheriff's Department	9-1-1
Fire: Brewerton Fire Department	9-1-1
Ambulance:	9-1-1
Hospital: Al Lee Memorial Hospital, 7 Bridge St., Phoenix, New York	(315) 695-4100
New York Regional Poison Control Center: 750 East Adams Street, Syracuse, NY	(315) 464-7078 800-222-1222
Directions toAl Lee Memorial Hospital, 7 Bridge St., Phoenix, New York Start at 9626 Brewerton Road, Brewerton going toward Jerome Street. Continue on US-11. Turn left on County Route 37 (CR-37). Turn left on CR-12. Turn right on Main Street (CR-57). Turn left on Bridge Street, Phoenix, NY. End at Al Lee Memorial Hospital, 7 Bridge Street. Total trip is 11.9 miles; travel time is approximately 22 minutes.	
Program Safety and Health Officer: ***Peter Garger, CIH***	(410) 771-4950
Program Manager: ***Christopher Canonica, P.E.***	(315) 431-4610
EA Project Manager ***Dave Eck***	(315) 431-4610
In case of spill, contact *Dave Eck*	(315) 431-4610
EA Medical Services EMR 4360 Chamblee Dunwoody Road, Suite 202 Atlanta, Georgia 30341 ***Contact: Dr. Elayne F. Theriault***	(800) 229-3674
Site Manager/Site Health and Safety Officer: ***Joe Von Uderitz***	(315) 431-4610
In case of accident or exposure incident, contact Corporate Health and Safety Officer ***Peter Garger***	(410) 771-4950

Attachment F

Emergency Equipment Available Onsite

ATTACHMENT F

EMERGENCY EQUIPMENT AVAILABLE ONSITE

Type of Equipment	Location
Communications Equipment	
Mobile Telephone	In EA vehicle
Medical Support Equipment	
First Aid Kits	In EA vehicle
Eye Wash Station	In EA vehicle
Fire Fighting Equipment	
Fire Extinguishers	In EA vehicle

Attachment G

Map to Hospital

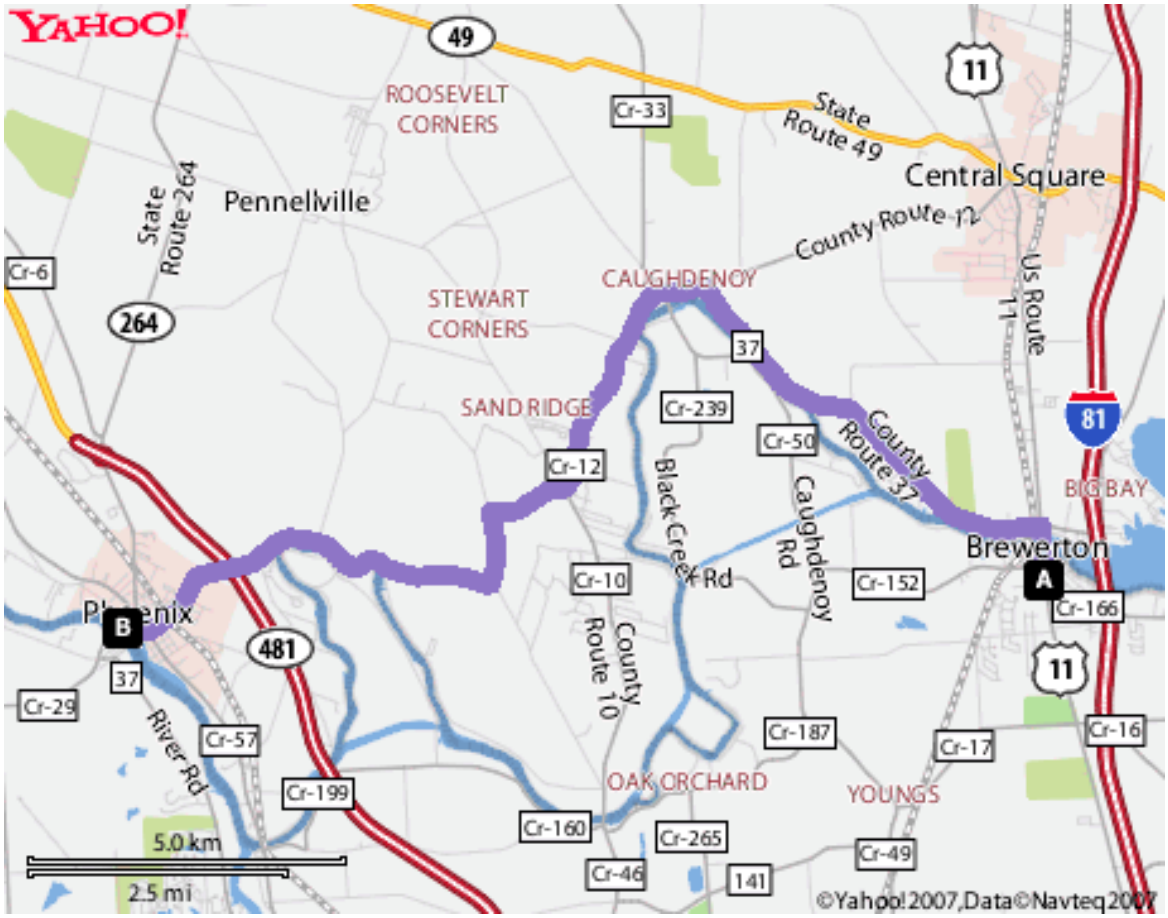
ATTACHMENT G

MAP TO HOSPITAL

Directions to Al Lee Memorial Hospital, 7 Bridge St., Phoenix, New York:

Start at 9626 Brewerton Road, Brewerton going toward Jerome Street. Continue on US-11. Turn left on County Route 37 (CR-37). Turn left on CR-12. Turn right on Main Street (CR-57). Turn left on Bridge Street, Phoenix, NY. End at Al Lee Memorial Hospital, 7 Bridge Street.

Total trip is 11.9 miles; travel time is approximately 22 minutes.



Attachment H

Personal Protective Equipment
Activity Record

ATTACHMENT H

PERSONAL PROTECTIVE EQUIPMENT ACTIVITY RECORD

SITE: Jack's Drycleaner, Brewerton, New York		
Weather Condition:		Onsite Hours: From To
Changes in Personal Protective Equipment Levels[(a)]	Work Operations	Reasons for Change
Site Health and Safety Plan Violations	Corrective Action Specified	Corrective Action Taken (yes/no)
Observations and Comments:		
Completed by: _____ Site Health and Safety Officer Date		
(a) Only the Site Health and Safety Officer may change personal protective equipment levels, using only criteria specified in the Health and Safety Plan.		

Attachment I

Field Forms

FIELD BORING LOG FORM

EA Engineering, P.C.
EA Science and Technology

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Below Surface:
Reference Elevation:
Reference Description:

Job. No.	Client:	Location:
14368.15	New York State Department of Environmental Conservation	Brewerton, NY - Jack's Drycleaner

Drilling Method:	Soil Boring Number:
Sampling Method:	Sheet 1 of

					Drilling	
Water Lev.					Start	Finish
Time						

Blow Counts (140-lb)	Feet Drvn / Ft. Recvrd	Well Diagram	PID (ppm) HNu	Depth in Feet		USCS Log	Surface Conditions: Weather: Temperature:
				0			
				1			
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

Logged by: _____ Date: _____

Drilling Contractor: _____ Driller: _____

FIELD SOIL VAPOR SAMPLING FORM

EA Engineering and Its Affiliate EA Science & Technology 6712 Brooklawn Parkway, Suite 104 Syracuse, NY 13211				Project #: 14368.15 Project Name: NYSDEC - Jack's Drycleaner Location: 9626 Brewerton Road Project Manager: Karen Cahill	
Sample Location Information:					
Site ID Number: x-xx-xxx				Sampler(s):	
PID Meter Used (Model, Serial #) :				Soil Vapor I.D. No.:	
SUMMA Canister Record:					
SOIL VAPOR POINT			**DUPLICATE SAMPLE (IF COLLECTED)**		
Flow Regulator No.:			Flow Regulator No.:		
Canister Serial No.:			Canister Serial No.:		
Start Date / Time:			Start Date / Time:		
Start Pressure: (inches Hg)			Start Pressure: (inches Hg)		
Stop Date / Time:			Stop Date / Time:		
Stop Pressure: (inches Hg)			Stop Pressure: (inches Hg)		
Sample ID:			Sample ID:		
Other Sampling Information:					
Helium percentage achieved in enclosure for Tracer Gas Test:			Depth to sample point:		
Tracer Gas test result (% of Helium):			Nearest Groundwater Elevation:		
Noticeable Odor?			Additional info:		
Purge Volume PID Reading (ppb)					
Duplicate Sample?					
Outdoor Ambient Temperature:					
Wind Direction:					
Comments:					
Sampler Signature:					

EA Engineering P.C. and its Affiliate
EA Science and Technology

GROUNDWATER SAMPLING
PURGE FORM

Well I.D.:	**EA Personnel:**	**Client:**
Location:	**Well Condition:**	**Weather:**
Sounding Method:	**Gauge Date:**	**Measurement Ref:**
Stick Up/Down (ft):	**Gauge Time:**	**Well Diameter (in):**

Purge Date:	**Purge Time:**
Purge Method:	**Field Technician:**

Well Volume		
A. Well Depth (ft):	**D. Well Volume (ft):**	**Depth/Height of Top of PVC:**
B. Depth to Water (ft):	**E. Well Volume (gal) C*D):**	**Pump Type:**
C. Liquid Depth (ft) (A-B):	**F. Five Well Volumes (gal) (E3):**	**Pump Designation:**

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (uS/cm)	DO (ug/L)	Turbidity (ntu)

Total Quantity of Water Removed (gal): _____ **Sampling Time:** _____
Samplers: _____ **Split Sample With:** _____
Sampling Date: _____ **Sample Type:** _____

COMMENTS AND OBSERVATIONS: _____