Work Plan
for Remedial Investigation/Feasibility Study
Camarota Cleaners (5-46-044)
Mechanicville, New York

Prepared for

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

Prepared by

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January 2008
Revision: FINAL
EA Project No. 14368.22

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22 January 2008
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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 remedial investigation/feasibility study at the Camarota Cleaners Site (NYSDEC Site No. 5-46-044). The site is located on the corner of Park Avenue and Second Avenue, City of Mechanicville, Saratoga County, New York (Figure 1).

The Work Assignment will be conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-22). The initial step in the remedial investigation/feasibility study 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 remedial investigation:

- Work Plan development
- Groundwater and phytoremediation monitoring
- Structure sampling
- Mitigation design/remedy selection
- Field documentation and reporting.

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 conference call was conducted on 7 November 2007 in conjunction with the development of the Project Management Work Plan (PMWP). Meeting attendees included representatives from the NYSDEC Division of Environmental Remediation and EA. The conference call was performed in order to become familiar with the site and discuss proposed field work activities.

1.2.2 Groundwater and Phytoremediation Monitoring (Task 2)

Groundwater monitoring will consist of monitoring well installation and groundwater sampling at various locations throughout the targeted area. During each monitoring event, poplar trees associated with phytoremediation will also be monitored. The protocol for this effort will follow *the* NYSDEC Division of Environmental Remediation *Draft DER-10 Technical Guidance for*

Site Investigation and Remediation, December 2002.

1.2.3 Structure Sampling (Task 3)

A total of nine structures will be sampled for sub-slab soil vapor. Sub-level air, first floor and outdoor air samples will also be collected during the soil vapor sampling. The protocol for this effort will follow *New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006.

1.2.4 Mitigation Design/Remedy Selection (Task 4)

A performance assessment will be conducted on the existing sub-slab depressurization system located at the site to determine if the system complies with the NYSDOH recommendations and to determine the appropriate equipment for the design of the off-site mitigation systems. The sub-slab depressurization system will be designed in accordance with American Society for Testing Materials (ASTM) E2121 and Soil Vapor Intrusion (SVI) Guidance and in consultation with the NYSDEC and NYSDOH.

1.2.5 Field Documentation and Reporting (Task 5)

Field logbooks, soil boring logs, groundwater purge forms, and soil vapor monitoring forms will be used during all on-site 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 groundwater monitoring wells, will be photo documented.

Upon completion of the field activities, a remedial investigation report in accordance with Section 3.14 of DER-10 will be prepared and submitted to NYSDEC that includes a summary of field and laboratory analytical data, presents the locations of field samples, and a summary/discussion of the findings of the remedial investigation/feasibility study.

1.2.6 Remedy Selection (Task 6)

A feasibility study report will be prepared and will evaluate remedial alternatives in accordance with DER-10, Section 4. As part of the feasibility study, an assessment of the IRMs shall be performed to determine if they are appropriate, if they can be enhanced, if supplemental actions are required to reach the goals, and if an alternative remedy will be more effective.

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 remedial investigation/feasibility study at the Camarota Cleaners site.

- ***Section 2***—Provides a brief site description and history

- ***Section 3***—Provides the data types and data uses to be obtained during the field activities; number, types, and locations of samples; rationale underlying the number and location of sampling points.

- ***Section 4***— Provides the storage and disposal of waste procedures.

- ***Section 5***—Provides the procedures and scope for the site survey and base map preparation.

- ***Section 6***— Provides the data validation/determination of usability.

- ***Section 7***— Provides the Quality Assurance Project Plan (QAPP).

- ***Section 8***— Provides the Health and Safety Plan (HASP).

Field forms are provided in Appendix A. The following two project-specific technical plans were developed for this remedial investigation and are included as Appendixes B and C:

- The specific procedures for the collection, analysis, and evaluation of data that will be legally and scientifically defensible are presented in the QAPP Addendum (Appendix B). 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 HASP Addendum (Appendix C).

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

2. SITE BACKGROUND

2.1 SITE LOCATION AND DESCRIPTION

The Camarota Cleaners site is a former dry cleaning facility located at 325-327 Park Avenue in the City of Mechanicville, Saratoga County, New York. The site covers 0.115 acres and is located at the southeast corner of the intersection of Park Avenue and Second Avenue in a primarily residential area. The site has a single-story building situated on a soil supported concrete slab (Figure 2).

2.2 GEOLOGY AND HYDROGEOLOGY

Two distinct strata are present in the overburden located at the Camarota Cleaner Site. From 0 to 3 ft below ground surface (bgs) consists of brown to gray medium sand with little gravel. From 3 ft to top of bedrock a gray to brown clay with some silt and little gravel has been encountered beneath the sand stratum to a depth ranging from approximately 7.5 to 12 ft bgs. Underlying the clay stratum is the Canajoharie Shale with an apparent northeast dip.

Based on documented groundwater measurements, the depth to groundwater was approximately 6-7 ft bgs with the groundwater flow direction towards the northeast.

2.3 SITE HISTORY/PREVIOUS INVESTIGATIONS

Previous history and investigation activities suggested that a release of contamination may have occurred at the site. In July 1991, a soil vapor survey was conducted at the site at request of the owner (Mr. Fred Camarota). Sample results showed that volatile organic compounds (VOCs) (including tetrachloroethylene [PCE] and petroleum compounds) were present in the subsurface. After a review of the 1991 data, NYSDEC and the NYSDOH expressed concerns about the subsurface contamination and potential impacts to human heath and the environment.

A subsequent investigation was conducted in July 1992 by Environmental Products and Services (EPS) to further assess potential petroleum and dry cleaning fluid release that may have occurred at the site. This investigation included both soil and groundwater sampling. Soil sampling in the asphalt area located south of the building revealed the presence of PCE (9.7 mg/kg) at levels exceeding New York State soil cleanup guidelines. Three monitoring wells were also installed at the site. Groundwater samples obtained from these monitoring wells showed that VOCs were present in shallow, on-site groundwater in concentrations above the Class GA groundwater standards. A groundwater sample from monitoring well EPS-2, located north of the on-site building along Park Avenue, contained a PCE concentration of 46 µg/L. Several VOCs were detected at levels above the applicable standards in monitoring well EPS-3, located in the asphalt area south of the building, as follows: PCE 9 (1,100 µg/L) benzene (130 µg/L, trans-1,2-Dichloroethylene (trans-1,2-DCE, 6 µg/L), and cis-1.2-DCE (34 µg/L).

EPS completed additional investigation work at the site in 1993. Five well points were installed and groundwater samples were obtained. Groundwater samples from the three previously installed monitoring wells were also collected. Analytical results showed that PCE was present in the groundwater at levels exceeding the Class GA standards in six of the eight samples; however, the PCE concentrations in EPS-2 (9 µg/L) and EPS-3 (590 µg/L) had decreased since 1992. Some typical PCE breakdown products were also detected in groundwater samples. EPS also collected indoor air samples from the basements of three residences in the vicinity of the site. Results indicated the presence of PCE in one of the residences (highest concentrations of 83 $\mu g/m^3$; below NYSDOH recommended average ambient air level of 100 $\mu g/m^3$), and toluene (20 $\mu g/m^3$) in another of the homes. After the second EPS report was issued in 1993, it was determined that chlorinated VOCs (predominately PCE) were the main contaminate of concern at the site. In July 1996, NYSDEC designated Camarota Cleaners site a potential Inactive Hazardous Waste Disposal site.

Additional investigations were conducted at the site in September 1998 (by Rowan Environmental Services, Inc.) and in May 1999 (by NYSDEC). The 1998 groundwater sampling event showed that PCE and other VOCs were still present in on-site groundwater in concentrations exceeding the Class GA groundwater standards. However, the 1998 PCE concentrations in the groundwater sampled from previous monitoring well and well point locations had decreased since 1993.

Groundwater samples were collected from EPS-1, EPS-2, EPS-3, and two of the previously installed well points (WP-2 and WP-4) in May 1999 and analyzed for volatiles. The results for PCE and trichloroethylene (TCE) were 1.1 µg/L and 2.3 µg/L; 12 µg/L and ND; 86 µg/L and 36 µg/L; 92 µg/L and 52 µg/L; and 1.2 µg/L and ND, respectively. When compared to the September 1998 data, these samples showed a decrease in PCE concentration at EPS-3, but a slight increase in TCE. WP-2 showed increases in both PCE and TCE. Soil samples were also collected at the site during the May 1999 sampling event. Five samples were collected from locations around the on-site building at depths of 2-4 ft below site grades. The results for PCE (and all VOCs analyzed for) were below the soil cleanup criteria in all of the soil samples.

In September 1999, a Preliminary Site Assessment (PSA) at the site was initiated by Lawler, Matusky, and Skelly Engineers LLP (LMS) with the collection of soil and groundwater samples in the area surrounding the Camarota Cleaners building. The PSA was conducted in an attempt to locate an on-site source of the PCE contamination. Nine soil samples (depth of 4-8 ft below site grades) were collected from the asphalt area located south of the Camarota Cleaners building. The samples were collected in this area because the highest on-site PCE concentrations were found here historically. Four groundwater probe samples were also collected in September 1999. The analytical results showed that three of the four samples had individual contaminants exceeding groundwater standards. Groundwater probe GW-01, located to the east of a private dwelling along Park Avenue, contained an elevated level of PCE (12 µg/L). GW-03, located to the southeast of the on-site building, exhibited elevated levels of vinyl chloride (14 ug/L), 1,2-Dichlorethylene (1,2-DCE, 8 µg/L), TCE (10 µg/L) and PCE (18 µg/L). A groundwater sample from GW-04, located along First Avenue, was obtained at 6.5 ft (bedrock was encountered at

approximately 7 ft); there were no detections of any VOCs in this sample. Groundwater probe GW-05 was located southwest of the Camarota Cleaners building. The concentrations of PCE were found to be 62 µg/L (above the groundwater standard of 1 µg/L).

A soil vapor and air sampling event was conducted at the site in November 1999 as part of the PSA to further characterize indoor air quality (within the on-site building) and subsurface conditions at the site. An indoor air sample was collected from the southern area of the on-site building, and an outdoor air sample as obtained from the east side of the building. No VOCs were detected in either sample. Two soil vapor samples (SG-01 and SG-02) were collected from beneath the floor slab of the on-site building, in areas that were presumed to have historically contained dry cleaning equipment. PCE was detected in both soil vapor samples, at concentrations of 105 ppb (715 µg/m^3) and 426 ppb (2,886 µg/m^3) in SG-01 and SG-02, respectively. Additional indoor air samples were collected in the basement of the structure to the south on 8 and 9 December 1999 by NYSDOH. PCE was detected at a maximum concentration of 27µg/m^3.

A SVI was conducted in 2006 at the site to compare the site conditions to current soil vapor intrusion guidance developed by NYSDOH. Site conditions primarily detected elevated concentrations of PCE in the groundwater (up to 120 µg/L) and soil vapor (up to 2,291 µg/m^3), sub-slab soil vapor (up to 5,131 µg/m^3), and indoor air (up to 52.3 µg/m^3). The temporary sample points also detected PCE degradation products at elevated concentrations in the groundwater and air samples.

2.4 SITE REMEDIATION

During the spring of 2007, the property owner completed two unilateral interim remedial measures to address on-site contamination. In April 2006, approximately 30 popular trees were planted within the open space at the site to improve groundwater quality through phytoremediation. Four shallow monitoring wells were installed to assess groundwater conditions. The baseline groundwater samples collected in May 2007 detected PCE at concentrations ranging from 17 to 43 µg/L. Groundwater samples collected in October 2007 detected PCE at concentrations ranging from 12 to 380 µg/L. In May 2006, a sub-slab depressurization system was installed at the on-site structure to reduce vapor intrusion.

3. SCOPE OF WORK

This section describes the data to be obtained during the field activities along with the number, types, and locations of samples. 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. The field sampling protocols and quality assurance/quality control procedures are provided in the site specific QAPP Addendum (Appendix B). Daily field reports will be completed for each day of field activities. A copy of the daily field report form is provided in Appendix A.

3.1 GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING

3.1.1 Monitoring Well Installation

A minimum of five groundwater monitoring wells (two bedrock and three overburden) will be installed in order to collect groundwater samples (Figure 2). Two bedrock wells will be installed onsite, one on the north side and one on the south side of the on-site structure. The three overburden wells will be installed off-site. Two of the overburden wells will be installed to the east on 1st Avenue, and the third overburden well will be installed to the west along 2nd Avenue.

The monitoring wells will be installed using combination hollow-stem auger (HSA)/HQ rock coring technologies to the approximate depth of 12-30 ft bgs. The two bedrock wells will be installed to a depth of approximately 30 ft bgs, while the three overburden wells will be installed to a depth of approximately 12 ft bgs (ie. depth to top of bedrock). Two-in. diameter wells will be inserted into each open boring. The wells will be constructed with up to 10 ft of 0.010-slot screen and an appropriate length of Schedule 40 polyvinyl chloride riser to the ground surface. Following well construction, flushmount roadboxes will be utilized to protect the monitoring wells.

During monitoring well installation, split-spoon soil samples will be collected continuously from surface to top of bedrock and logged according to the Unified Soil Classification System. A photoionization detector (PID) will be used to screen soil cuttings and rock cores. One soil sample will be collected from the monitoring well at the northeast corner of the property and sent for laboratory analysis of VOC by USEPA Method 8260B. The soil sample will be collected from the interval with the highest PID reading, or the overburden/bedrock interface. All soil cuttings generated during monitoring well installation will be drummed and disposed of as detailed in Section 4.

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

3.1.2 Monitoring Well Development

The newly installed monitoring wells will be developed no sooner than 24 hours following installation. The wells will be developed using surging and pumping techniques. Well development will be considered complete when temperature, conductivity, and pH have stabilized and a turbidity of less than 50 nephelometric turbidity units (NTUs) has been achieved. Development water that does not exhibit visible signs of contamination shall be discharged to the ground surface at the site. If non-aqueous phase liquid or an odor is observed, or if directed by NYSDEC, the development water will be containerized, handled, and disposed of as detailed in Section 4.

3.1.3 Groundwater Sampling

Four quarterly groundwater sampling events will be performed at the newly installed monitoring wells and previously installed monitoring wells using a submersible pump and section of polyethylene tubing. The groundwater samples will be collected using the procedures outlined in the Section 3.1.6. Groundwater samples will be analyzed by Mitkem Corporation of Warwick, Rhode Island for VOCs by EPA Method 8260B. In addition to the newly installed monitoring wells, the following wells from the existing monitoring well network are expected to be sampled at the site:

Monitoring Well Sampling at Camarota Cleaners Industries Site	
MW-1	MW-3
MW-2	MW-4

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 Appendix A. 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.

3.1.4 Purging and Sampling Equipment

Well purging and sampling may be performed using the following:

- Submersible and or peristaltic pumps

- Electronic water level measurement unit with accuracy of 0.01 ft

- Flow measurement device (containers graduated in milliliters) and stop watch

- PID instrument (MiniRAE or similar) to monitor vapor concentrations during purging and sampling as required by the HASP.

3.1.5 Field Analytical Equipment

Field equipment to be used at the site will include a Horiba U-22 water quality meter (or similar) with a flow-through cell, which includes probes for measurement of pH, Eh, turbidity, dissolved oxygen, temperature, and conductivity. Additionally, a PID will be used to get a headspace reading on the well head during groundwater sampling. Each piece of equipment will be checked by the EA Site Manager to be in proper working order before its use and calibrated as required by the manufacturer. Prior to each use, field analytical equipment probe(s) will be decontaminated. After each use, the instrument will be checked and stored in an area shielded from weather conditions.

Instruments will be calibrated at the beginning of each day of groundwater sampling.

3.1.6 Groundwater Sampling Procedures

During the 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. 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-examination. Decontamination fluids will be containerized.

- Calculate the volume of water in the well.

- Purge using low-flow sampling procedures. Purged water will be containerized separately from decontamination fluids.

- Allow field parameters of turbidity, 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:

  — Turbidity is below 50 NTUs
  — Consecutive pH readings are ±0.2 pH units of each other
  — Consecutive water temperatures are ±0.5°C of each other
  — Consecutive measured specific conductance is ±10 percent of each other.

  If these parameters are not met after purging a volume equal to three 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). The sample will be obtained from the well with a bailer suspended on new, clean nylon twine. The sampling will be performed with a new bailer dedicated to each individual well. The sample aliquot for VOC analysis will be collected by lowering and raising the bailer slowly to avoid agitation and degassing, then carefully pouring directly into the appropriate sample bottles.

- Sample bottles containing appropriate preservative for the parameter to be analyzed will be obtained from the laboratory.

- 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 submersible pump is used, it will be decontaminated following the procedure in Section 3.5, and the polyethylene suction/discharge line will be placed within the monitoring well for future use.

- 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.

3.2 PHYTOREMEDIATION MONITORING

During each quarterly groundwater monitoring event EA will monitor the conditions of the trees associated with the phytoremediation. Monitoring shall include qualitative observations (i.e. plant health observations) of all trees and quantitative evaluations (i.e. growth as indicated by leaf area index, girth and height). All observations made during each groundwater monitoring event will be recorded in a phytoremediation monitoring log (Appendix A). Flora samples will be collected from five poplar trees by the NYSDEC to assess the chemical matrix (levels of chlorinated VOCs and degradation indicator) of the plant tissues. The trees to be sampled shall be located near the existing monitoring wells and evenly distributed across the site to properly correlate the chlorinated VOC concentrations from the groundwater and flora samples. EA will incorporate the flora sample results as part of the remedial investigation report.

3.3 PERMANENT SUB-SLAB SOIL VAPOR MONITORING POINTS INSTALLATION

3.3.1 Sub-Slab Soil Vapor Sampling Procedures

A total of nine structures will be selected for sub-slab soil vapor sampling. The following procedures will be followed for the selection and installation of all sub-slab vapor points within the structures sampled during the field investigation.

- A visual assessment of the condition of the basement floor will be completed. The locations of the sub-slab vapor point will be selected to be out of the line of traffic, away from major cracks and other floor penetrations (sumps, pipes, etc.), and a minimum of at least 5 ft from an exterior wall, with an effort made to locate the soil vapor sample port near the center of the building.

- Once the location is determined, a 0.25-in. diameter hole will be drilled approximately 2 in. below the concrete floor slab using an electric hammer drill. A 3/8-in. diameter drill bit will then be used to over drill the top 0.5 in. of the borehole to create an annular space for the surface seal.

- Concrete dust and flooring material will be swept away from the drill hole and wiped with a dampened towel.

- A permanent sample point comprised of stainless steel or brass will be connected to teflon-lined polyethylene tubing (3/16-in. inside diameter × 0.25-in. outside diameter, of laboratory or food grade quality) and inserted into the borehole drilled in the floor. The polyethylene tubing will extend no further than 2 in. below the bottom of the floor slab.

- Hydraulic cement will be poured around the permanent sampling point and allowed to set firmly prior to the sample canister connection.

- A dedicated 60-cubic centimeter syringe will be used to purge approximately 200 ml

of air/vapor from the sampling point. The syringe will be capped and the purge air released outside the building into a ppbRAE as to not interfere with the indoor air sample collection. The purge air ppbRAE reading will be recorded on the field sampling form.

- 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the sub-slab vapor samples. The canisters and flow regulators will be individually certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect at a sample rate of less than 0.2 L/minute over a 24-hour collection period.

- The sample canisters will be connected to the sample tubing using a compression fitting and placed on the floor adjacent to the sampling point.

- A digital photograph will be taken of the canister setup and the surrounding area.

The field sampling team will maintain a sample log sheet (Appendix A) 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.

3.3.2 Structure Survey

Prior to the structure air sampling, an inspection of general site conditions will be performed at each property location. The pre-sampling inspection will include the completion of the NYSDOH indoor Air Quality Questionnaire and Building Inventory included in SVI Guidance (Appendix A), documentation of weather conditions outside and temperature inside, and ambient air screening using field equipment (i.e. PID, and selection of air sampling locations).

EA will inform the owner or occupant regarding the sensitivity pertaining to air sampling and the desire to obtain a representative sample that is not impacted by various activities detailed within the SVI Guidance.

3.3.3 Indoor Air Sampling

During sub-slab soil vapor sampling, two indoor air samples will be collected, one sub-level and one first floor. In accordance with the NYSDOH SVI Guidance, indoor air samples will be set up to collect a representative air sample from within the breathing zone (i.e., 3-5 ft above the floor). 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the indoor air samples. The canisters and flow regulators will be individually certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect at a sample rate of less than 0.2 L/minute over a 24-hour collection period.

3.3.4 Outdoor Air Sampling

A total of two outdoor air samples will be collected during the sub-slab soil vapor sampling to obtain a representative sample of the ambient air. In accordance with the NYSDOH SVI Guidance, outdoor ambient air samples will be set up to collect a representative air sample from within the breathing zone (i.e., 3-5 ft above the floor). If sample locations are unable to achieve the elevated sampling zone, dedicated Teflon-lined polyethylene tubing was used to reach the breathing zone. 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the outdoor ambient air samples. The canisters and flow regulators will be individually certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect a sample at a rate less than 0.2 L/minute over a 24-hour collection period

3.4 MITIGATION DESIGN/ASSESMENT

A performance assessment of the existing sub-slab depressurization system located at the site will be completed to determine if the system complies with the NYSDOH recommendations and to determine the appropriate equipment for the design of the off-site mitigation system. The sub-slab depressurization system will be assessed in accordance with ASTM E2121 and SVI Guidance and in consultation with the NYSDEC and NYSDOH. Emissions from the system shall be evaluated in accordance with Division of Air Resources Air Guide 1 model.

If sub-slab air sample results warrant it, EA will prepare a bidding package for the installation of the sub-slab depressurization system.

3.5 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.

3.6 LABORATORY ANALYSIS AND REPORTING

Air samples will be analyzed by an ELPAT- and ELAP-certified laboratory for VOCs using EPA Method TO-15. The analysis for soil vapor samples will achieve detection limits of 0.25 $\mu g/m^3$ for Carbon Tetrachloride, TCE, and VC. The remaining compounds will achieve a detection limit of 1 $\mu g/m^3$. Soil and groundwater samples will be analyzed by an ELPAT- and ELAP-certified laboratory for VOCs by EPA Methods 8021B and 8260B, respectively. One soil characterization sample will be collected and analyzed for Toxicity Characteristics Leaching Procedure (TCLP) by EPA Method 1311, VOCs by EPA Method 8021B, SVOC by EPA Method 8270C, Pesticides by EPA Method 8081A, polychlorinated biphenyls (PCBs) by EPA Method 8082, Metals by EPA Method 7000, and General Chemistry (ignitability by ASTM E 502-84, reactivity by EPA methods 9010 and 9030, corrosivity by EPA Method 9040 and moisture content by ASTM D 2216).

It is anticipated that preliminary analytical results will be available within 2 weeks of receipt at the laboratory, and final results will be provided within the standard turnaround time (i.e., 30 days). All samples collected will be validated by a third 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 Usability Summary Report will be submitted to NYSDEC.

3.7 REMEDIAL INVESTIGATION REPORT

Upon completion of the field activities, a remedial investigation report in accordance with Section 3.14 of DER-10 will be prepared and submitted to NYSDEC that includes a summary of field and laboratory analytical data, presents the locations of field samples, and a summary/discussion of the findings of the remedial investigation/feasibility study.

3.8 REMEDY SELECTION

A feasibility study will be completed which will evaluate remedial alternatives in accordance with DER-10, Section 4. As part of the feasibility study, an assessment of the IRM's shall be performed to determine if they are appropriate, if they can be enhanced, if supplemental actions are required to reach the goals, and if an alternative remedy will be more effective.

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 Technical and Administrative Guidance Memorandum 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 exhibit visible staining, sheen, or discernable odors will be staged on-site 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.

5. SITE SURVEY

The site survey will involve surveying all monitoring well locations in order to prepare a basemap. To ensure the collection of consistent elevation data, each of the existing monitoring wells will be included in the site survey. A detailed topographic base map of the site and immediate vicinity will be developed. All relevant features of the site and adjacent areas will be plotted. The site map will include all area important features associated with the investigation (i.e., surface water drainage, above and underground storage tanks, buildings, drywells, cesspools). The location and elevation of each monitoring well will be surveyed by a New York State licensed surveyor. The elevations of all monitoring well casings will be established to within 0.01 ft based on the National Geodetic Vertical Datum. A permanent reference point will be placed in all interior polyvinyl chloride casings to provide a point to collect future groundwater elevation measurements.

With respect to the site survey and map preparation, the following assumptions have been made:

- Three blue line copies of the maps will be submitted to the NYSDEC.
- The site base map will be provided in ArcMap™ 9.1.

6. DATA VALIDATION/DETERMINATION OF USABILITY

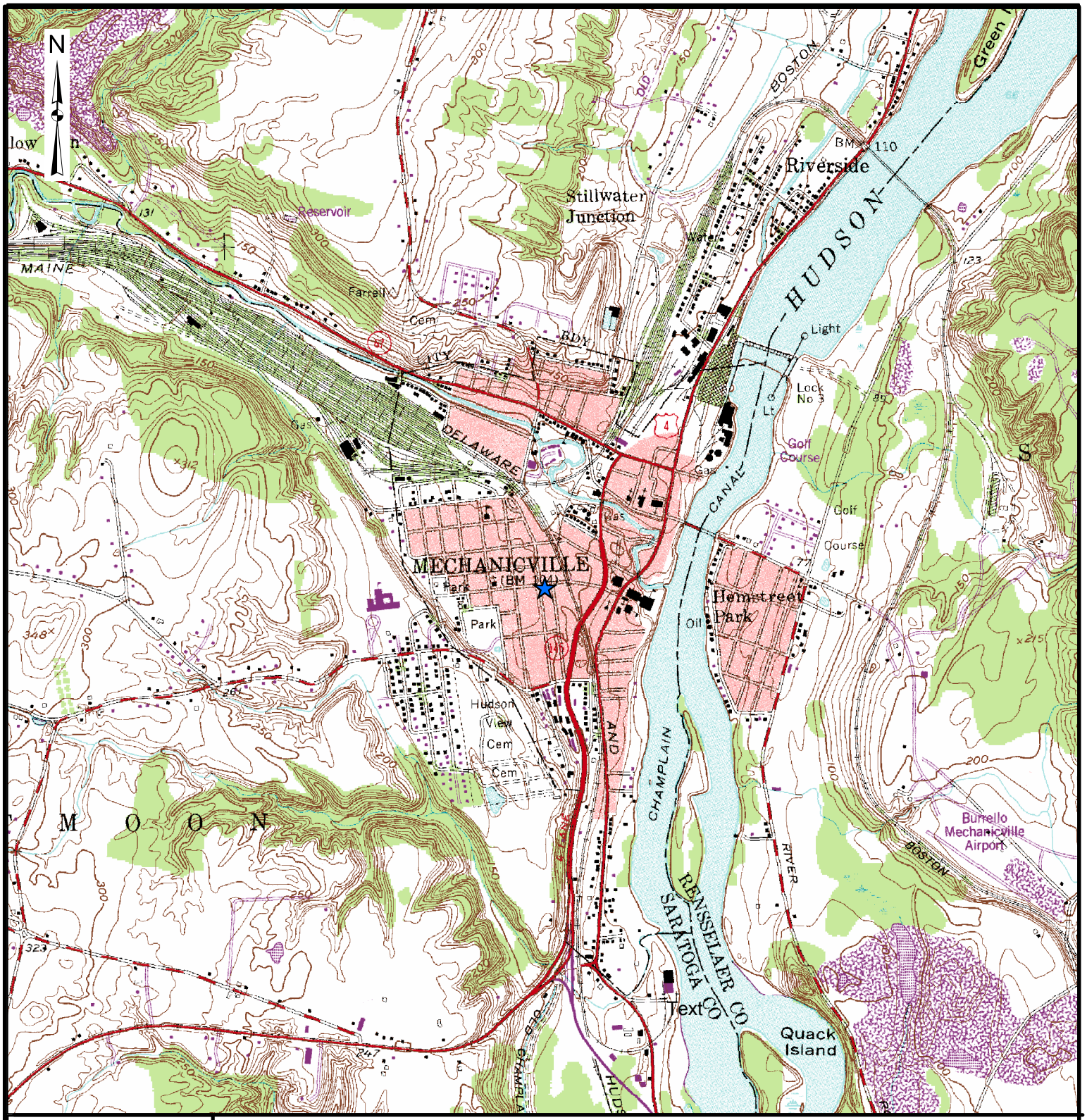
The collection and reporting of reliable data is a primary focus of the sampling and analytical activities. Laboratory and field data will be reviewed to determine the limitations, if any, of the data and to assure that the procedures are effective and that the data generated provide sufficient information to achieve the project objectives. A qualified independent third party will evaluate the analytical data according to NYSDEC Department of Environmental Remediation Data Usability Summary Report guidelines.

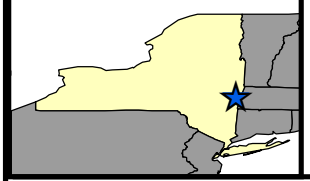
7. QUALITY ASSURANCE PROJECT PLAN

A Generic QAPP has been developed describing sampling, analysis, testing, and monitoring that could potentially be conducted during Work Assignments under the NYSDEC Standby Subcontracts D004438 and D004441. As previously stated, the Generic QAPP was submitted under separate cover on 11 August 2006 to the NYSDEC. An addendum to the Generic QAPP was developed to address site-specific quality assurance/quality control issues (Appendix B) for the proposed activities to complete the remedial investigation.

8. HEALTH AND SAFETY PLAN

A Generic HASP was developed for the Work Assignments conducted under the NYSDEC Standby Contracts D004438 and D004441. As previously stated, the Generic HASP was submitted under a separate cover on 11 August 2006 to the NYSDEC. An addendum to the Generic HASP was developed to address site-specific health and safety issues (Appendix C) for the proposed activities to complete the remedial investigation.





LEGEND

★ Site Location

Miles

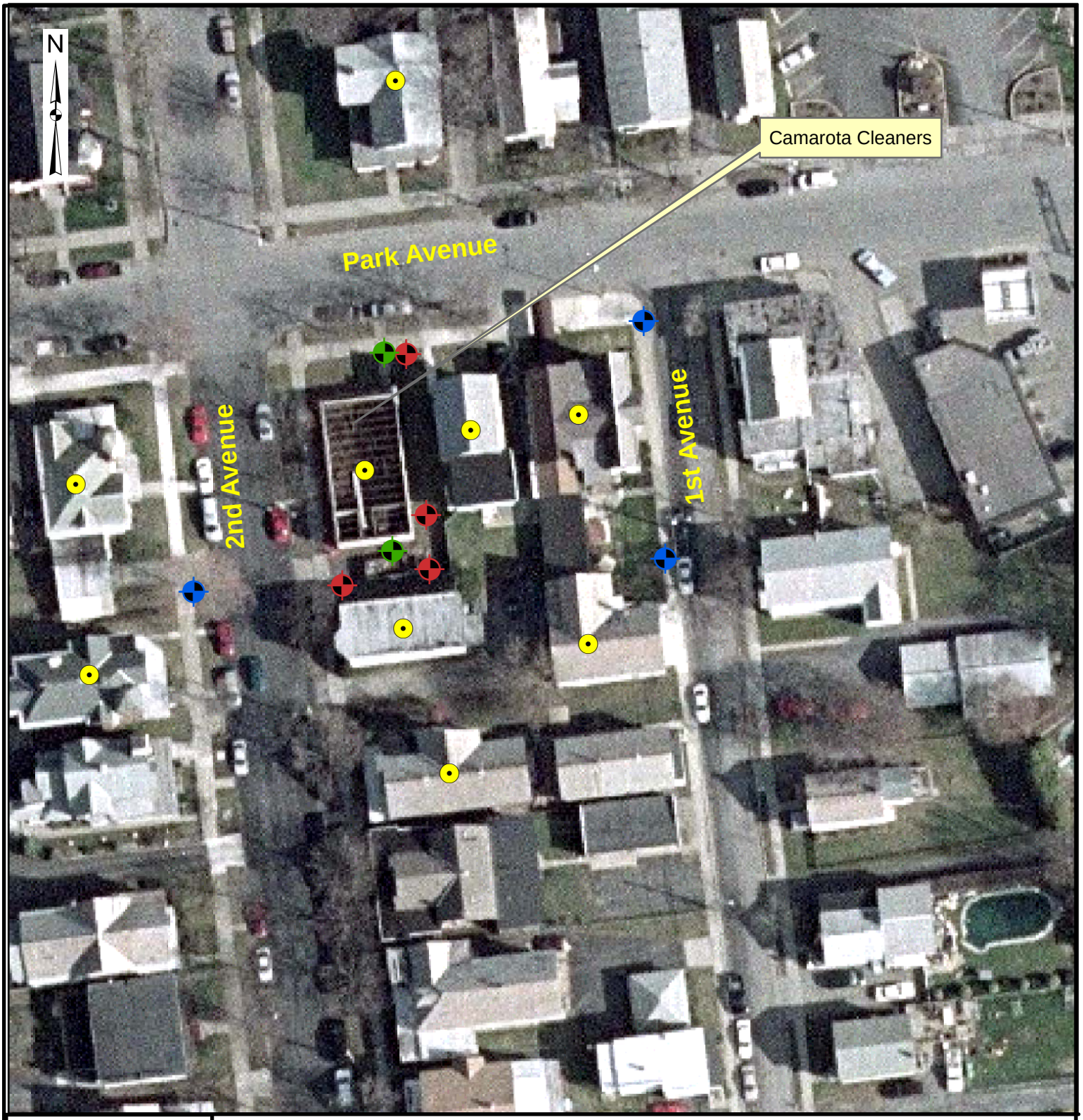
0 0.25 0.5 1

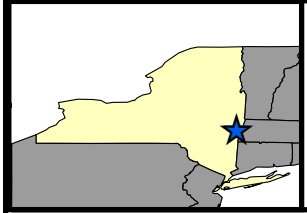
Source: NYSDEC, USGS Seamless Data Distribution

CAMAROTA CLEANERS (Site No. 5-46-044)
MECHANICVILLE, NEW YORK

FIGURE 1
Site Location

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	CJS	CJS	JCH	AS SHOWN	NOVEMBER 2007	14368.22	GIS/PROJECTS/ FIGURE1.MXD





Legend

- Existing
- Proposed
- Proposed Bedrock
- Vapor Sample Location

Feet

0 25 50 100

Source: NYSDEC, USGS Seamless Data Distribution

CAMAROTA CLEANERS (Site No. 5-46-044)
MECHANICVILLE, NEW YORK

FIGURE 2
Field Sample Locations

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	CJS	CJS	JCH	AS SHOWN	NOVEMBER 2007	14368.22	GIS/PROJECTS/ FIGURE1.MXD

TABLE 1 SITE CHARACTERIZATION ANALYTICAL PROGRAM

	Sample Matrix	VOC EPA Method 8260	TO-15 EPA Method[a]
GROUNDWATER SAMPLING PROGRAM			
No. of Samples	Aqueous	36	---
Field Duplicate		4	---
Trip Blank[b]		4	---
Matrix Spike/Matrix Spike Duplicate		8	---
Field Blanks		4	---
Total No. of Analyses		48	
SOIL SAMPLING PROGRAM [c]			
No. of Samples	Soil	1	---
Field Duplicate		---	---
Rinsate Blank[c]		---	---
Matrix Spike/Duplicate		---	---
Total No. of Analyses		1	---
AIR SAMPLING PROGRAM [d]			
No. of Samples	Air	---	27
Field Duplicate		---	2
Rinsate Blank[c]		---	---
Matrix Spike/Duplicate		---	---
Total No. of Analyses		---	29

(a) The detection limits for analyzing indoor air and ambient air samples with method TO-15 are 0.25 $\mu g/m^3$ for trichloroethene and 1.0 $\mu g/m^3$ for all other compounds.
(b) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(c) One soil sample will also be collected for disposal purposes. The following parameters will be analyzed; Full TCLP for VOC, SVOC, PCB/Pesticides and Metals. General chemistry will also be analyzed and will include; ignitability, reactivity, corrosivity and moisture content
(d) One field blank per day of sampling with a field device that requires field decontamination.

NOTE: VOC = Volatile Organic Compound.
SVOC = Semi-Volatile Organic Compound
PCB = Polychlorinated Biphenyls
Dashes (---) indicate no sample taken.
Laboratory quality control samples will be collected at a rate of 1 per 20 samples, per matrix.

Appendix A

Field Forms

EA Engineering, P.C.
EA Science and Technology

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client: New York State Department of Environmental Conservation	Location:
Drilling Method:		Soil Boring Number:
Sampling Method:		Sheet 1 of 1

					Drilling	
Water Lev.					Start	Finish
Time						
Date						
Reference						

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: _____

WELL SPECIFICATIONS:

Diam. of casing: _____ Screen Interval: _____ Sand Pack _____ Grout: _____

BOH: _____ Riser Interval: _____ Bentonite: _____ Cover: _____

EA Engineering PC and its Affliate,
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:** To
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 (gallons)	Rate (Lpm)	pH (pH units)	ORP (mV)	Temperature (oC)	Conductivity (mS/cm)	DO (mg/L)	Turbidity (ntu)

Total Quantity of Water Removed (gal): _____ **Sampling Time:** _____
Samplers: _____ **QA/QC Sample** _____
Sampling Date: _____ **Sample Type:** _____

COMMENTS AND OBSERVATIONS: _____

NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _Independent Consultant – EA Engineering_ Phone No._315-431-4610_____

Purpose of Investigation ___

1. OCCUPANT: Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS Type of

Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch		
	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many?
_____ If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____ Building age_____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors
Airflow near source
Outdoor air infiltration
Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	concrete	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with _____	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with _____	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: _____(feet)
Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

6. HEATING, VENTING and AIR CONDITIONING

Type of heating system(s) used in this building: (circle all that apply –note primary)

Hot air circulation - Heat pump - Hot water baseboard - Space Heaters - Stream radiation - Radiant floor - Electric baseboard - Wood stove - Outdoor wood boiler - Other _____

The primary type of fuel used is:
Natural Gas - Fuel Oil - Kerosene - Electric - Propane - Solar - Wood - Coal

Domestic hot water tank fueled by: _____
Boiler/furnace located in: Basement - Outdoors - Main Floor - Other_____
Air conditioning: Central Air - Window units - Open Windows - None
Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY
Is basement/lowest level occupied? Full-time - Occasionally - Seldom - Almost Never

Level General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)

Basement _____
1st Floor _____
2nd Floor _____
3rd Floor _____
4th Floor _____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / N

b. Does the garage have a separate heating unit? Y / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify_____

d. Has the building ever had a fire? Y / N When?_____

e. Is a kerosene or unvented gas space heater present? Y / N Where? _____

f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____

g. Is there smoking in the building? Y / N How frequently? _____

h. Have cleaning products been used recently? Y / N When & Type? _____

i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N When & Type? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? _____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When &Type? _____

Are there odors in the building? Y / N
If yes, please describe:
_____

Do any of the building occupants use solvents at work? Y / N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____
If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) No
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / N Date of Installation:
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE
Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____
Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)
a. Provide reasons why relocation is recommended: _____
b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel
c. Responsibility for costs associated with reimbursement explained? Y / N
d. Relocation package provided and explained to residents? Y / N

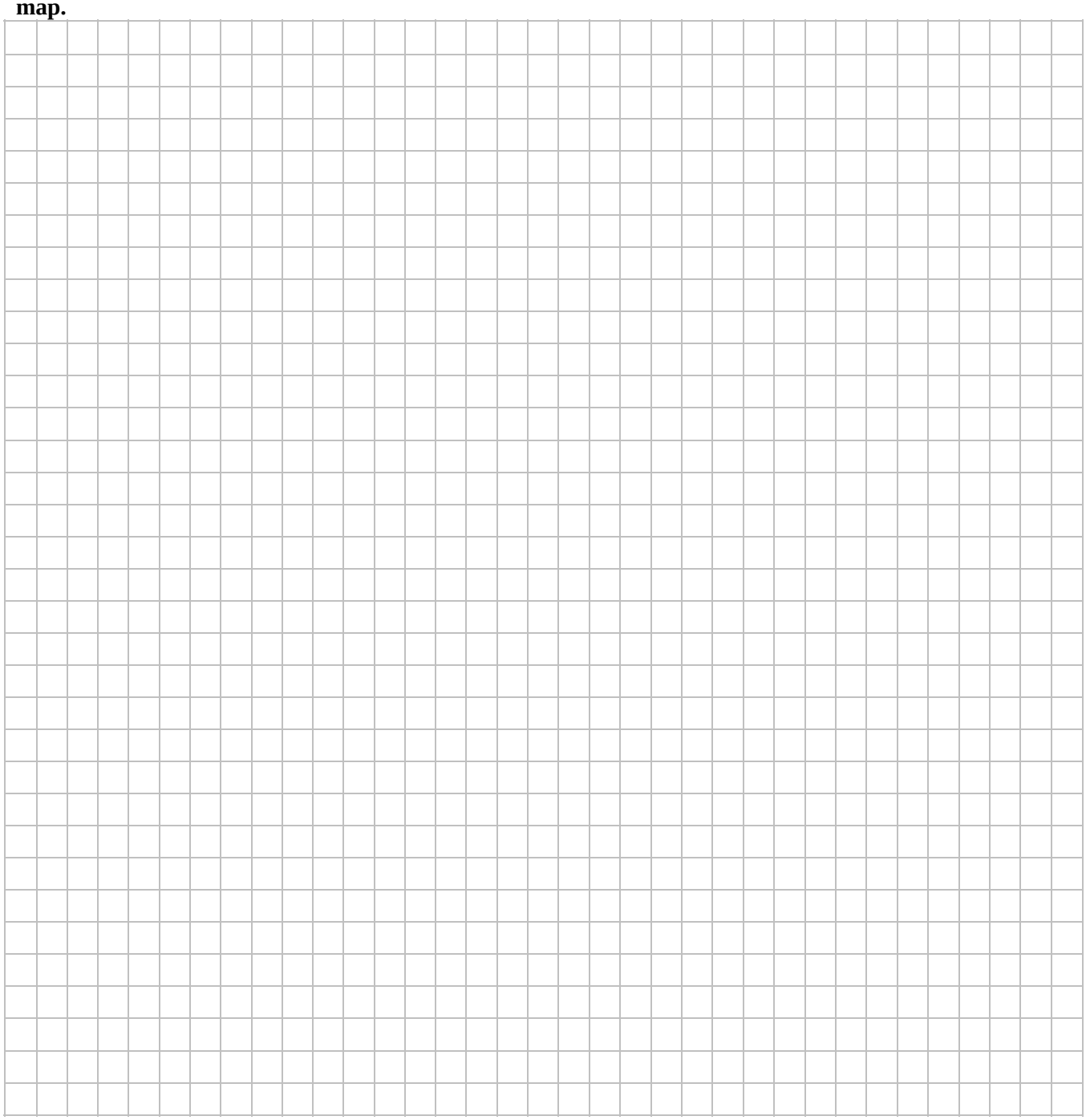
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

First Floor: 12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.
Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residences that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

EA Engineering PC and its Affliate,
EA Science and Technology

PHYTOREMEDIATION MONITORING FORMS

EA PERSONNEL:	LOCATION:	Client:

	QUALITATVE OBSERVATION				QUANTITATIVE EVALUATIONS			
	PLANT HEALTH							
TREE NUMBER	POOR	FAIR	GOOD	COMMENTS	GIRTH	HEIGHT	LEAF AREA INDEX	COMMENTS
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
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19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

GENERAL COMMENTS AND OBSERVATIONS:

FIELD SOIL VAPOR SAMPLING FORM

EA Engineering and Its Affiliate EA Science & Technology 6712 Brooklawn Parkway, Suite 104 Syracuse, NY 13211	Project #: Project Name: NYSDEC: Location: Project Manager:

Sample Location Information:

Site ID Number:				Sampler(s):	
PID Meter Used (Model, Serial #) :	ppbRAE			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:

Appendix B

Quality Assurance Project Plan Addendum

Quality Assurance Project Plan Addendum for Remedial Investigation/Feasibility Study Camarota Cleaners (5-46-044) Mechanicville, 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
Syracuse, New York 13211
(315) 431-4610

January 2008
Revision: FINAL
EA Project No. 14368.22

Quality Assurance Project Plan Addendum
for Remedial Investigation/Feasibility Study
Camarota Cleaners (5-46-044)
Mechanicville, New York

Prepared for

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

Prepared by

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Syracuse, New York 13211
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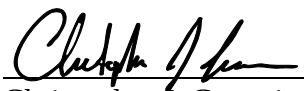
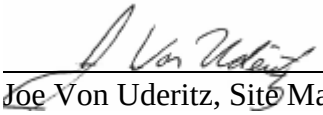


22 January 2008
Christopher J. Canonica, P.E., Program Manager — Date
EA Engineering, P.C.

22 January 2008
Jim Hayward, P.E., Project Manager — Date
EA Engineering, P.C.



22 January 2008
Joe Von Uderitz, Site Manager — Date
EA Science and Technology

January 2008
Revision: Final
Project No.: 14368.22

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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 Remedial Investigation/Feasibility Study (RI/FS) at the Camarota Cleaners Site, located in the City of Mechanicville, Saratoga County, New York (NYSDEC Site No. 5-46-044). 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.

- ***Jim Hayward 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.

- ***Robert Casey 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 on-site 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 Mitkem Corporation of Warwick, Rode Island and Con-Test Analytical lab in East Longmeadow, Massachusetts under a subcontract agreement with EA. Environmental Data Services, 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 Remedial Investigation/Feasibility Study Work Plan (EA 2007a)[2]. The rationale and frequency of the QC samples collected is discussed in the Generic QAPP. The site characterization 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. 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**
  — SITE ID- MW-XX

- **Soil Samples**
  — SITE ID-Composite-01

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.

2. EA Engineering, P.C. 2007. *Remedial Investigation/Feasibility Study Work Plan for Camarota Cleaners Site (Site No. 5-46-044) in Mechanicville, New York.* December.
3. Site ID No. 5-46-044.

3.4 DATA QUALITY CONTROL OBJECTIVES

Data Quality Control Objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required too 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 its 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 Con-Test Analytical Lab in East longmeadow, Massachusetts. All groundwater and soil samples will be submitted to Mitkem Corporation in Warwick, Rode Island. Both of the labs are New York State Department of Health Environmental Laboratory Analytical 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 8021B and 8260B, respectively, for volatile organic compounds (VOCs). One soil characterization sample will be collected and analyzed for Toxicity Characteristics Leaching Procedure (TCLP) by EPA Method 1311, VOCs by EPA Method 8021B, SVOC by EPA Method 8270C, Pesticides by EPA Method 8081A, Polychlorinated biphenyls (PCB's) by EPA Method 8082, Metals by EPA Method 7000, and General Chemistry (ignitability by ASTM E 502-84, reactivity by EPA methods 9010 and 9030, corrosivity by EPA Method 9040 and moisture content by ASTM D 2216). Soil vapor samples will be analyzed using U.S. Environmental Protection Agency Method TO-15 for VOCs. 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 Environmental Data Services, 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	TO-15 EPA Method[a]
GROUNDWATER SAMPLING PROGRAM			
No. of Samples	Aqueous	36	---
Field Duplicate		4	---
Trip Blank[b]		4	---
Matrix Spike/Matrix Spike Duplicate		8	---
Field Blanks		4	---
Total No. of Analyses		48	
SOIL SAMPLING PROGRAM [c]			
No. of Samples	Soil	1	---
Field Duplicate		---	---
Rinsate Blank[c]		---	---
Matrix Spike/Duplicate		---	---
Total No. of Analyses		1	---
SOIL VAPOR SAMPLING PROGRAM [d]			
No. of Samples	Air	---	27
Field Duplicate		---	2
Rinsate Blank[c]		---	---
Matrix Spike/Duplicate		---	---
Total No. of Analyses		---	29

(a) The detection limits for analyzing indoor air and ambient air samples with method TO-15 are 0.25 $\mu g/m^3$ for trichloroethene and 1.0 $\mu g/m^3$ for all other compounds.
(b) Trip blanks are required for VOC sampling of aqueous media at a rate of one per sample shipment.
(c) One soil sample will also be collected for disposal purposes. The following parameters will be analyzed; Full TCLP for VOC, SVOC, PCB/Pesticides and Metals. General chemistry will also be analyzed and will include; ignitability, reactivity, corrosivity and moisture content
(d) One field blank per day of sampling with a field device that requires field decontamination.

NOTE: VOC = Volatile Organic Compound.
SVOC = Semi-Volatile Organic Compound
PCB = Polychlorinated Biphenyls
Dashes (---) indicate no sample taken.
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	10 days
Target Compound List volatile organic compounds	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	Minimize headspace, cool 4°C	10 days
Target Compound List semi-volatile organic compounds	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	10 days [(a)], 40 days [(b)]
Pesticides/Polychlorinated Biphenyls (PCBs)	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	10 days [(a)], 40 days [(b)]
Metals	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	180 days
Toxicity Characteristic Leaching Procedure (TCLP)	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	14 days
Ignitability	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	NA
Reactivity	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	NA
Corrosivity	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	NA
Moisture Content	Soil	One 125-mL wide-mouth glass jar with Teflon-lined cap	8 oz.	None, cool 4°C	NA
Target Compound List volatile organic compounds	Air	One 6-liter Summa canister	6 L	None	30 days

Notes:
(a) The extraction must be performed within the time listed above from the time of collection.
(b) Analysis within 40 days of sample extraction date.

Appendix C

Health and Safety Plan Addendum

Health and Safety Plan Addendum
for Remedial Investigation/Feasibility Study
Camarota Cleaners (5-46-044)
Mechanicville, 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
Syracuse, New York 13211
(315) 431-4610

January 2008
Revision: FINAL
EA Project No. 14368.22

Health and Safety Plan Addendum
for Remedial Investigation/Feasibility Study
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Christopher J. Canonica, P.E., Program Manager — 22 January 2008
EA Engineering, P.C. — Date

Jim Hayward, P.E., Project Manager — 22 January 2008
EA Engineering, P.C. — Date

Joe Von Uderitz, Site Manager — 22 January 2008
EA Science and Technology — Date

January 2008
Revision: FINAL
EA Project No.: 14368.22

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LIST OF FIGURES

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 Camarota Cleaners site (NYSDEC Site No. 5-46-044) in the City of Mechanicville, Saratoga 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 Camarota Cleaners site is located, on all sides, by a residential area. The site covers approximately 0.115 acres on southeast intersection of Park Avenue and Second Avenue in the City of Mechanicville, Saratoga County, New York.

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	315-431-4610
Project Manager	Jim Hayward, P.E.	315-431-4610
Quality Assurance/Quality Control Coordinator	Robert Casey	315-431-4610
Site Manager/Site Health and Safety Officer	Joe Von Uderitz	315-431-4610
NYSDEC Project Manager	Brian Jankauskas	518-402-9620

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 Camarota Cleaners site, Mechanicville, New York. The scope of work covered by this HASP Addendum includes:

- Monitoring Well Installation/Groundwater Sampling
- Phytoremediation Monitoring
- Sub-Slab Soil Vapor Monitoring
- Mitigation Design.

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

3.1 GROUNDWATER MONITORING

3.1.1 Monitoring Well Installation

Up to five groundwater monitoring wells will be installed throughout the site to collect groundwater samples (Figure 2). The monitoring wells will be installed using a combination hollow-stem auger/rock coring rig to a maximum depth of 30 ft below ground surface (bgs). Two-in. diameter wells will be inserted into each open boring. The wells will be constructed with up to 10 ft length of 0.010-slot screen and an appropriate length of Schedule 40 polyvinyl chloride riser to the ground surface. The wells will be covered with above grade protective casings.

3.1.2 Monitoring Well Development

The monitoring wells will be developed no sooner than 24-hours following installation. The wells will be developed using surging and pumping techniques. Well development will be considered complete when temperature, conductivity, and pH have stabilized and a turbidity of less than 50 nephelometric turbidity units has been achieved. Development water will be discharged to the ground surface away from the well, unless otherwise directed by the NYSDEC. If non-aqueous phase liquid or an odor is observed, or if directed by NYSDEC, the development water will be containerized, handled, and disposed of as detailed in Section 3.4.

3.1.3 Groundwater Sampling

Groundwater samples will be collected from the newly installed monitoring wells and previously installed monitoring wells using a submersible pump and section of polyethylene tubing or dedicated polyethylene bailer. Groundwater samples will be analyzed by Mitkem Corporation, Warwick, Rode Island, for volatile organic compounds (VOCs) by U.S. Environmental

Protection Agency (EPA) Method 8260B. In addition to the newly installed monitoring wells, the following wells from the existing monitoring well network are expected to be sampled at the site:

Monitoring Well Sampling at Camarota Cleaners Industries Site	
MW-1	MW-3
MW-2	MW-4

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. 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. Groundwater samples will be collected by purge of 3-5 well volumes.

3.2 PHYTOREMEDIATION MONITORING

During each groundwater monitoring event EA will monitor the conditions of the trees associated with the phytoremediation. Monitoring shall include qualitative observations (i.e. plant health observations) of all trees and quantitative evaluations (i.e. growth as indicated by leaf area index, girth and height). All observations made during the groundwater monitoring event will be recorded in phytoremediation log (Appendix A). Flora samples will be collected from five poplar trees by the NYSDEC to assess the chemical matrix (levels of chlorinated VOCs and degradation indicator) of the plant tissues. The trees to be samples shall be located near the existing monitoring wells and evenly distributed across the site to properly correlate the chlorinated the chlorinated volatile organic concentrations from the groundwater and flora samples. EA will incorporate the flora sample results as part of the remedial investigation report

3.3 SUB-SLAB SOIL VAPOR SAMPLING

3.3.1 Soil Vapor Point Installation

A total of nine structures will be selected for sub-slab soil vapor sampling. The following procedures will be followed for the selection and installation of all sub-slab vapor points within the structures sampled during the field investigation.

- A visual assessment of the condition of the basement floor will be completed. The locations of the sub-slab vapor point will be selected to be out of the line of traffic, away

from major cracks and other floor penetrations (sumps, pipes, etc.), and a minimum of at least 5 ft from an exterior wall, with an effort made to locate the soil vapor sample port near the center of the building.

- Once the location is determined, a 0.25-in. diameter hole will be drilled approximately 2 in. below the concrete floor slab using an electric hammer drill. A 3/8-in. diameter drill bit will then used to over drill the top 0.5 in. of the borehole to create an annular space for the surface seal.

- Concrete dust and flooring material will be swept away from the drill hole and wiped with a dampened towel.

- Teflon-lined polyethylene tubing (3/16-in. inside diameter × 0.25-in. outside diameter, of laboratory or food grade quality) will be inserted into the borehole drilled in the floor, extending no further than 2 in. below the bottom of the floor slab.

- Melted beeswax will be poured around the tubing at the floor penetration and allowed to set tightly around the tubing prior to the sample canister connection.

- A dedicated 60-cubic centimeter syringe will be used to purge approximately 200 ml of air/vapor from the sampling point. The syringe will be capped and the purge air released outside the building into a ppbRAE as to not interfere with the indoor air sample collection. The purge air ppbRAE reading will be recorded on the field sampling form.

- 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the sub-slab vapor samples. The canisters and flow regulators will be batch certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect at 0.2 L/minute over a 24-hour collection period.

- The sample canisters will be connected to the sample tubing using a compression fitting and placed on the floor adjacent to the sampling point.

- A digital photograph will be taken of the canister setup and the surrounding area.

The field sampling team will maintain a sample log sheet (Appendix A) 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.

3.3.2 Structure Survey

Prior to the structure air sampling, an inspection of general site conditions will be performed at each property location. The pre-sampling inspection will include the completion of the New York State Department of Health (NYSDOH) indoor Air Quality Questionnaire and Building Inventory included in Soil Vapor Intrusion (SVI) Guidance, documentation of weather conditions outside and temperature inside, ambient air screening using field equipment (i.e. photoionization detector (PID), and selection of air sampling locations.

EA will inform the owner or occupant regarding the sensitivity pertaining to air sampling and the desire to obtain a representative sample that is not impacted by various activities detailed within the SVI Guidance.

3.3.3 Indoor Air Sampling

During sub-slab soil vapor sampling, two indoor air samples will be collected, one sub-level and one first floor. In accordance with the NYSDOH SVI Guidance, indoor air samples will be set up to collect a representative air sample from within the breathing zone (i.e., 3-5 ft above the floor). 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the indoor air samples. The canisters and flow regulators were batch certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect at 0.2 L/minute over a 24-hour collection period.

3.3.4 Outdoor Air Sampling

A total of two outdoor air samples will be collected during the sub-slab soil vapor sampling to obtain a representative sample of the ambient air. In accordance with the NYSDOH SVI Guidance, outdoor ambient air samples will be set up to collect a representative air sample from within the breathing zone (i.e., 3-5 ft above the floor). If sample locations are unable to achieve the elevated sampling zone, dedicated Teflon-lined polyethylene tubing was used to reach the breathing zone. 6-L Summa® canisters equipped with flow regulators and vacuum gauges will be used to collect the outdoor ambient air samples. The canisters and flow regulators will be batch certified clean by the laboratory prior to use. The flow controllers will be regulated by the laboratory to collect at 0.2 L/minute over a 24-hour collection period.

3.4 MITIGATION DESIGN

A performance assessment of the existing sub-slab depressurization system located at the site will be completed to determine if the system complies with the NYSDOH recommendations and to determine the appropriate equipment for the design of the off-site mitigation system.

3.5 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 off-site location. Liquids generated during monitoring well sampling that exhibit no visual staining, sheen, or discernable odor will be discharged to an unpaved area on-site, where it can percolate into the ground. Excess drill cuttings generated from the installation of soil vapor points will also be disposed of on-site if there is no visible staining, sheen, or discernable odors. Drill cuttings that do exhibit visible staining, sheen, or discernable odors will be staged on-site pending lab results for characterization. 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 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 on-site 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.

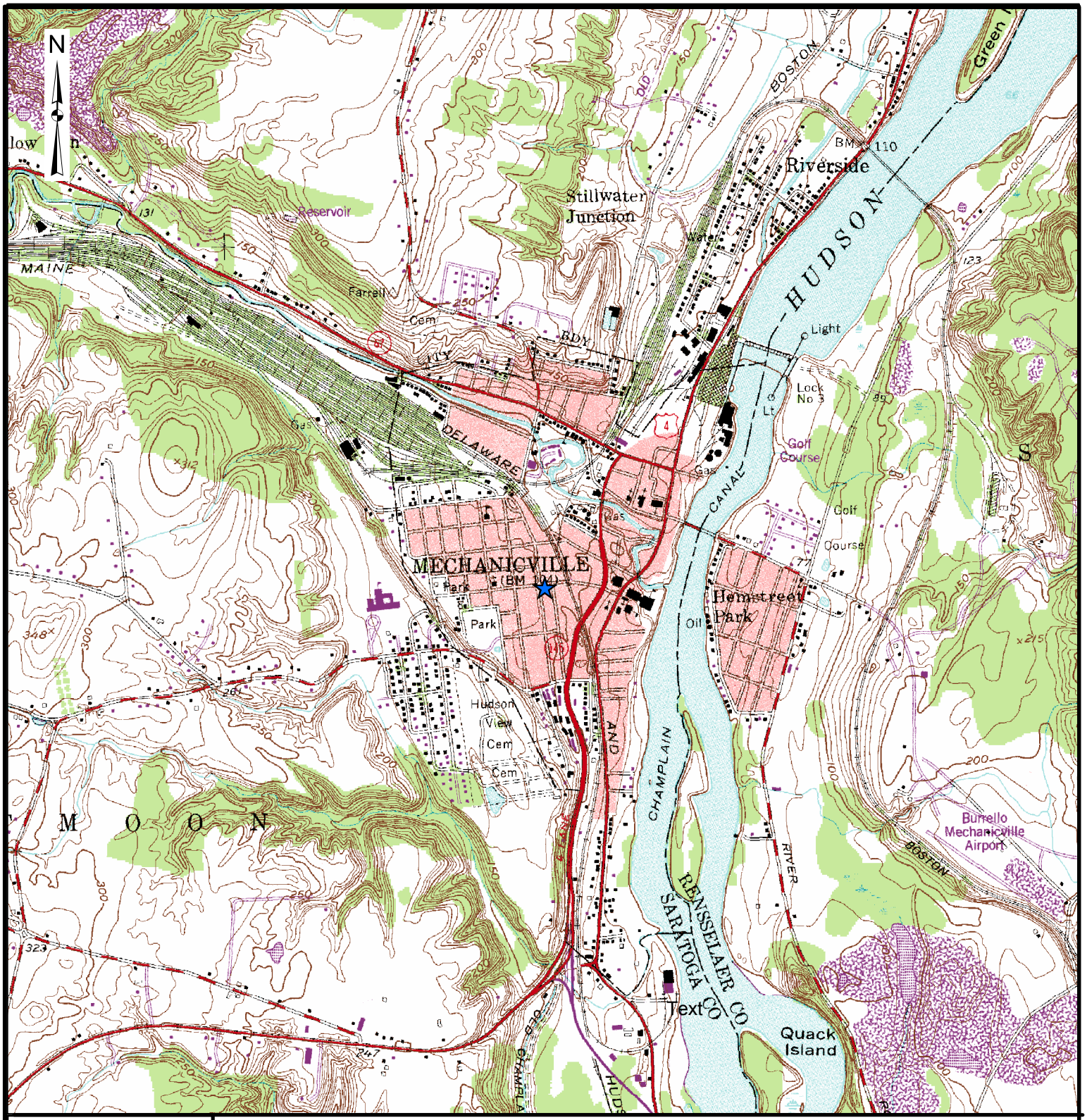
6.2 DAILY STARTUP AND SHUTDOWN PROCEDURES

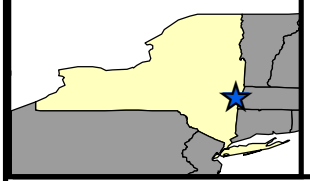
The following protocols will be followed daily prior to start of work activities:

- 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

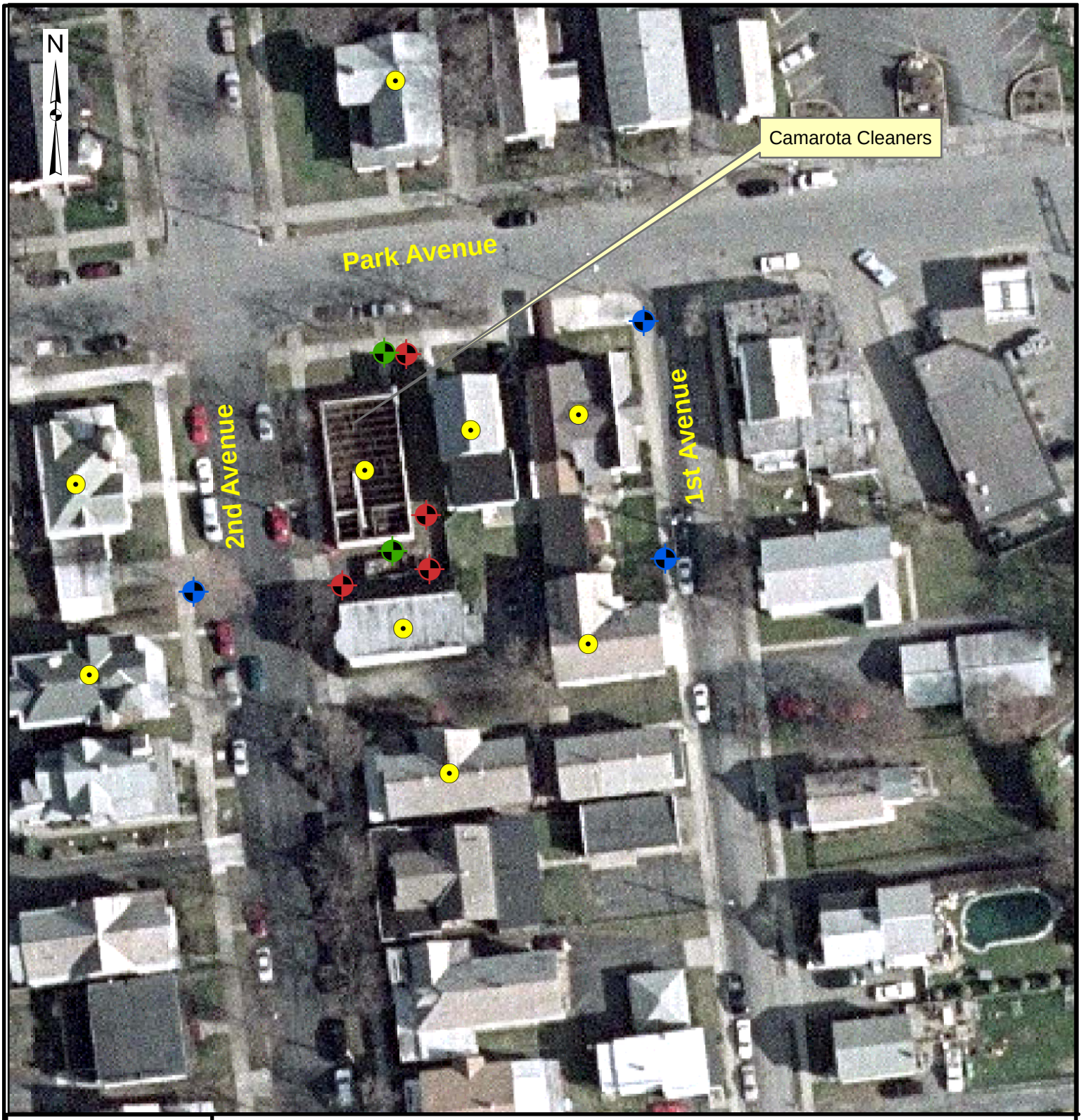
0 0.25 0.5 1

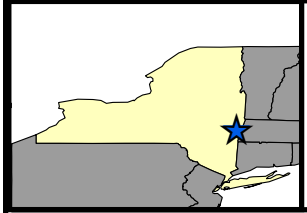
Source: NYSDEC, USGS Seamless Data Distribution

CAMAROTA CLEANERS (Site No. 5-46-044)
MECHANICVILLE, NEW YORK

FIGURE 1
Site Location

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	CJS	CJS	JCH	AS SHOWN	NOVEMBER 2007	14368.22	GIS/PROJECTS/ FIGURE1.MXD





Legend

- Existing
- Proposed
- Proposed Bedrock
- Vapor Sample Location

Feet

0 25 50 100

Source: NYSDEC, USGS Seamless Data Distribution

CAMAROTA CLEANERS (Site No. 5-46-044)
MECHANICVILLE, NEW YORK

FIGURE 2
Field Sample Locations

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
JCH	CJS	CJS	JCH	AS SHOWN	NOVEMBER 2007	14368.22	GIS/PROJECTS/ FIGURE1.MXD

Attachment A

Worker Training and Physical Examination Record

ATTACHMENT A

WORKER TRAINING AND PHYSICAL EXAMINATION RECORD

SITE: Camarota Cleaners, Mechanicville, 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
Jim Hayward, P.E.	1/28/94	9/6/07	7/01/94	6/26/07	6/26/07	3/30/04
Robert Casey	11/1/01	6/12/06	---	4/18/08	4/18/09	10/26/04
David Crandall	3/10/06	---	---	4/18/08	4/18/09	3/20/07
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	---
Megan Scott	7/12/07		--	6/26/09	6/26/09	4/26/07
Kris Charney	3/17/096	6/26/09	9/8/07	6/26/09	6/26/09	3/1/06
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

Health and Safety Plan
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: Camarota Cleaners, Mechanicville, New York			
Name	Signature	Affiliation	Date

Attachment C

Site Entry and Exit Log

ATTACHMENT C

SITE ENTRY AND EXIT LOG

SITE: Camarota Cleaners, Mechanicville, 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: Camarota Cleaners, 325-327 Park Avenue, Mechanicville, New York	
Police : Sheriff's Department	9-1-1
Fire: Fire Department	9-1-1
Ambulance:	9-1-1
Hospital: Saratoga Care, Saratoga Springs, New York	(518) 587-3222
New York Regional Poison Control Center: 750 East Adams Street, Syracuse, NY	(315) 464-7078 800-222-1222
Directions to Saratoga Care,Mt. Carmel East East BLVD, Saratoga Springs, New York From Camarota Cleaners (325 Park Avenue), go east toward 1st Avenue, turn left onto Railroad Street, turn right onto Viall Avenue, turn left onto round Lake Avenue, turn left onto NY-67, stay straight to go onto US-9 north, turn left onto NY-9 north/Church Street, End at Saratoga Care. Total trip is approximately 16.6 mi. Total travel time is approximately 26 minutes.	
Program Safety and Health Officer: ***Peter Garger, CIH***	(410) 771-4950
Program Manager: ***Christopher Canonica, P.E.***	(315) 431-4610
EA Project Manager ***Jim Hayward, P.E.***	(315) 431-4610
In case of spill, contact *Robert Casey*	(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, CIH***	(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

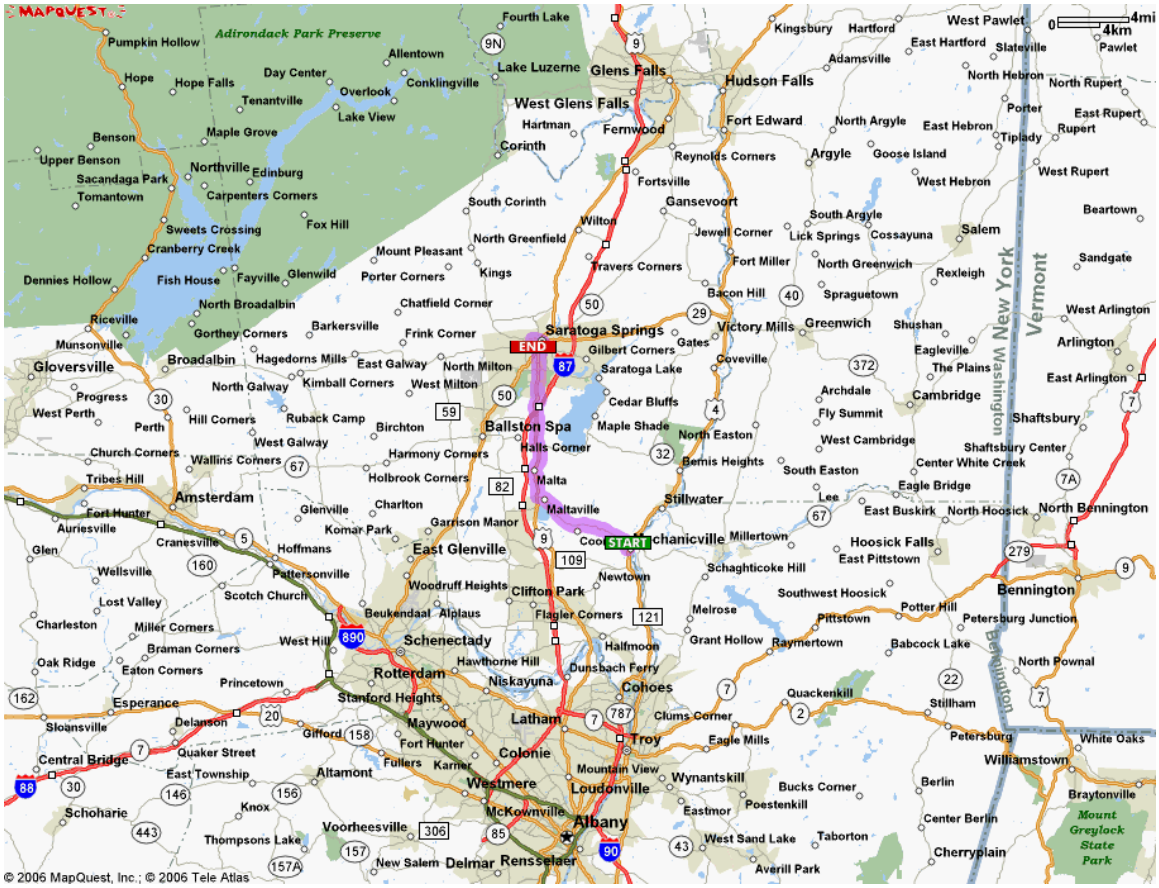
Map to Hospital

ATTACHMENT G

MAP TO HOSPITAL

Directions to Mt. Carmel East Hospital:

From Camarota Cleaners (325 Park Avenue), go east toward 1st Avenue, turn left onto Railroad Street, turn right onto Viall Avenue, turn left onto round Lake Avenue, turn left onto NY-67, stay straight to go onto US-9 north, turn left onto NY-9 north/Church Street, End at Saratoga Care. Total trip is approximately 16.6 mi. Total travel time is approximately 26 minutes.



Attachment H

Personal Protective Equipment
Activity Record

ATTACHMENT H

PERSONAL PROTECTIVE EQUIPMENT ACTIVITY RECORD

SITE: Camarota Cleaners, Mechanicville, 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.		

Appendix D

Community Air Monitoring Plan

Community Air Monitoring Plan
for Remedial Investigation/Feasibility Study
Camarota Cleaners (5-46-044)
Mechanicville, 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
6731 Collamer Road, Suite 2
East Syracuse, New York 13057
(315) 431-4610

January 2008
Revision: FINAL
EA Project No. 14368.22

Community Air Monitoring Plan
for Remedial Investigation/Feasibility Study
Camarota Cleaners (5-46-044)
Mechanicville, New York

Prepared for

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

Prepared by

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EA Science and Technology
6731 Collamer Road
East Syracuse, New York 13057-9808
(315) 431-4610

22 January 2008
Christopher J. Canonica, P.E., Program Manager — Date
EA Engineering, P.C.

22 January 2008
Jim Hayward, P.E., Project Manager — Date
EA Engineering, P.C.

22 January 2008
Joe Von Uderitz, Site Manager — Date
EA Science and Technology

January 2008
Revision: FINAL
EA Project No.: 14368.22

CONTENTS

1. INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C., and its affiliate EA Science and Technology (EA), to develop and implement a Remedial Investigation/Feasibility Study (RI/FS) for the Camarota Cleaners Site (NYSDEC Site No. 5-46-044).

The Work Assignment will be conducted under the NYSDEC State Superfund Standby Contract (Work Assignment No. D004438-22). This Community Air Monitoring Plan (CAMP) was prepared as a requirement of the RI/FS Work Plan. The elements of this CAMP were prepared in accordance with the NYSDEC *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC 2002)[1].

1.1 SITE DESCRIPTION

The Camarota Cleaners site is a former dry cleaning facility located at 325-327 Park Avenue in the City of Mechanicville, Saratoga County, New York. We understand that the facility is currently inactive. The site covers 0.115 acres and is located at the southeast corner of the intersection of Park Avenue and Second Avenue in a primarily residential area. At the site, a single-story building without a sub-level is situated on a soil supported concrete slab. The current building was constructed in the mid- to late-1970's and has been recently renovated. The building is surrounded by grass and trees.

1.2 SITE BACKGROUND

Previous history and investigations at the site indicate that a release of contamination has occurred. The major contaminant of concern at the site was identified to be tetrachloroethylene (PCE), a compound commonly used in dry cleaning. Since no other users or possible sources of PCE were identified in the vicinity of the site, and since PCE contamination in the on-site subsurface has been documented, it is inferred that a release of PCE occurred at the site. No specific source of contamination was identified during the Preliminary Site Assessment (PSA) and the Soil Vapor Intrusion Evaluation (SVIE). It appears that improper handling of PCE waste or poor housekeeping practices while the dry cleaning facility was in operation may have resulted in a release of PCE to the subsurface at the site.

1.3 MONITORING

Real-time air monitoring for volatile organic compounds (VOCs) levels at the perimeter of the work area will be necessary. Monitoring activities will consist of a combination of continuous and periodic monitoring, which will be performed dependent upon the type of activity being conducted at the site, as discussed below.

[1] NYSDEC. 2002. Draft DER-10 Technical Guidance for Site Investigation and Remediation. December.

1.3.1 Continuous Air Monitoring

Continuous monitoring for VOCs will be required for all ground intrusive activities associated with the Camarota Cleaners RI/FS Work Assignment. Ground intrusive activities are anticipated to include the installation of soil vapor probes and groundwater monitoring wells.

VOCs will be monitored at the downwind perimeter of the immediate work area on a continuous basis. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using a MiniRAE 2000 or equivalent, which is appropriate to measure the types of contaminants known or suspected to be present at the site. The MiniRAE 2000 will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The MiniRAE 2000 is capable of calculating 15-minute running average concentrations, which will be compared to the levels specified in Section 1.4.1.

All site activities with the potential of generating dust will be visually monitored on a regular basis. Activities will be monitored to assure that dust is not migrating from the work area.

1.3.2 Periodic Air Monitoring

Periodic monitoring for VOCs will be required during non-intrusive activities associated with the Camarota Cleaners RI/FS Work Assignment. Non-intrusive activities are anticipated to include the collection of soil and sediment samples, the collection of groundwater samples from existing monitoring wells, and the collection of indoor air and soil vapor samples. Periodic monitoring during sample collection will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location.

1.4 ACTION LEVELS AND RESPONSE

This subsection identifies the action levels and corresponding responses for concentrations of VOCs and particulates detected during the field activities associated with the RI/FS for the Camarota Cleaners Site.

1.4.1 Volatile Organic Compounds

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background, but less than 25 ppm, work activities will be stopped, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 ft downwind of the work zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 ft), is below 5 ppm over background for the 15-minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings will be recorded and be available for NYSDEC and New York State Department of Health (NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

1.4.2 Dust Particulates

Dust suppression measures and other controls will be implemented if activities are generating visual dust migrating from the work area. Dust suppression measures will continue until the dust generating activity is complete.