Voluntary Cleanup Program

Remedial Investigation Work Plan: Off-Site Monitoring Wells At American Cleaners Kingston

734 Ulster Avenue
Kingston, NY
Site No: V-00601-3
Index No: W3-0952-03-03

For Submittal to

New York State Department of
Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233-7016

Prepared by

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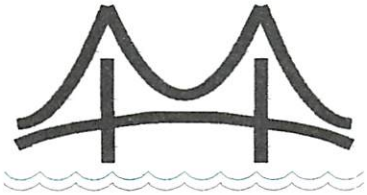
May 18, 2011, Revised July 7, 2011

I certify that I Katherine J. Beinkafner am currently a Qualified Environmental Professional as defined in 6 NYCRR part 375 and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



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1. Introduction and Purpose

This Remedial Investigation Work Plan (RIWP) is designed to continue to delineate the nature and extent of the PCE-contaminated groundwater flowing to the west and northwest from the Kingston American Cleaners site with the installation and sampling of monitoring wells on the western side of Albany Avenue (aka Ulster Avenue).

2. Site History and Description

The Kingston American Cleaners site has been in the NYSDEC voluntary cleanup program since March 17, 2003. Several partial investigations were planned, conducted, and reported by Berninger Environmental, Inc. until March of 2009. At that time, Mid-Hudson Geosciences took over the consulting work and prepared a Remedial Investigation Report dated December 2009. After compilation and mapping all of the soil, groundwater, soil gas, and air monitoring; the nature and extent of groundwater contamination by tetrachloroethene (PCE) was found to continue beyond the temporary downgradient Geoprobe sampling locations on the west side of Albany Avenue. PCE concentrations were ND (not detected) in one location (GW28 on maps) on the north edge of the Resource Center for Accessible Living (RCAL) property on the west side of Albany Avenue and northwest of the American Cleaners property. However, PCE concentrations were detected in groundwater near the sidewalk in front of Pauline's restaurant property across the street from American Cleaners and south of RCAL (GW27 and GW29 on maps). This proposed investigation is the next step to identify the extent of the groundwater contamination in the shallow groundwater at approximately 10 feet below ground surface and deeper flowing in an arc under Albany Avenue.

The radial groundwater flow from the American Cleaners varies from a vector of North 90° West at the south property line to North 65° West at the north property line (see annotated Figure 5.3 from RIR showing groundwater sampling locations and PCE concentrations detected at depths between 9.5 and 16 feet below ground surface). Sampling results on both sides of Ulster Avenue are summarized in Table 1 below. Additional groundwater sampling results are shown on Figure 5.4 showing similar information at depths 19.5 to 25 feet below ground surface. The contaminated water is discontinuous in this deeper part of the sand aquifer as shown by four separate areas on Figure 5.4. At four sampling levels PCE concentrations were mapped as shown in Figures 5.3 and 5.4; however, PCE concentrations were ND in the deeper zones of 29.5 to 36 and 42 to 44 feet below ground surface (see table of groundwater sampling results on west and east sides of Albany Avenue below). The sand aquifer below the site was found to be 18.5 feet thick from 8.3 to 27 feet below ground surface in MW4 behind the American Cleaners Building. The boring log indicates that the sand is confined above and below by clay layers.

Table 1 Relevant Groundwater Sampling with Geoprobe From RIR December 2009 Table 3					
Sampling on West Side of Ulster			Sampling on East Side of Ulster		
Location	Depth	PCE (ug/L)	Location	Depth	PCE (ug/L)
GW28	12-16	ND	GW-26	14-16	ND
	22-26	ND		22-24	ND
	32-36	ND		32-34	ND
				42-44	ND
GW29	12-16	8	GW24	14-16	180
	16-19	5		22-24	ND
	22-26	ND		32-34	ND
	32-36	ND		42-44	ND
			GW-19	13.5-15.5	5
				23.5-25.5	ND
GW27	13-15	18	GW20	11-15	44
	20-24	28		21-25	27
	30-34	ND			

The topography of the American Cleaners site and associated properties to the north, west and south is relatively flat with a slight slope westward to a wetland located about 2500 feet to the west-northwest and to the north-flowing Esopus Creek approximately 1 mile to the west. These landforms are shown on the USGS topographic map (Figure 1). The water table reflects the surface topography. All buildings in the area receive public water supplied by the Kingston Water District.

3. Work Plan Objective and Rationale

The objective of this proposed field investigation is to identify the horizontal extent of PCE contamination in the flow field of groundwater in the sandy aquifer below the American Cleaners site and extending downgradient under Albany Avenue and farther under the property of Pauline's Restaurant. To achieve that objective, monitoring wells will be installed in three locations shown on annotated Figure 5.3 (from draft RIR, December 2009). Two couplet wells and one single shallow well will be installed. The single well will be installed near the RCAL-Pauline's property line because the shallow sample and duplicate at GW29 reported 8 and 5 ug/L and ND at deeper levels. The monitoring wells are planned to have screened intervals from 11 to 16 feet for the shallow wells and 20 to 25 feet for the deeper wells. After development of the wells, a groundwater sample will be obtained from each one and sent to a New York State Department of Health Environmental Laboratory Approval Program (ELAP) - a certified laboratory for analysis for volatile organic compounds.

The monitoring well locations were selected to intercept the groundwater flow from the American Cleaners site. Also the couplet locations were chosen to evaluate if an additional suite of VOCs is migrating under Albany Avenue from

the Meineke Car Care Center, located immediately south of the American Cleaners site.

4. Scope of Work

The scope of work includes the following tasks:

- Site Utility Mark-Out
- Air Monitoring
- Installation of Monitoring Wells with Geoprobe
- Development of Monitoring Wells
- Groundwater Sampling
- Quality Assurance / Quality Control Protocols
- Survey Elevations and Locations of New Monitoring Wells
- Management of Investigation Derived Waste (IDW)

4.1 Site Utility Mark-Out

The Geoprobe drilling contractor will call the "Call before you Dig" hotline and have the site mark-out completed. He will have the map of the proposed drilling sites and alternative drilling sites (if needed).

4.2 Air Monitoring

Safety and air monitoring locations will be established at each drilling location when the Geoprobe is in place for each monitoring well. Air monitoring protocol consists of two types of monitoring: continuous and periodic as described in the attached Appendix 2: Community Air Monitoring Plan (CAMP). A photo-ionization detector (PID) is used to measure VOCs in air and a particulate meter is used to monitor dust. Monitoring and responses will be conducted according to specific guidelines to respond to monitoring measurements as listed in the CAMP.

4.3 Installation of monitoring wells with Geoprobe

Geoprobe work will not begin until after the utility mark-out has been completed. Drilling equipment (i.e., drilling rods, auger, casing, and sample collecting tools) will be decontaminated between each drilling location. Table 2 summarizes the location, rationale and analytical method to be used for each proposed monitoring well.

The monitoring wells will be 1-inch diameter PVC with 1-inch diameter 5-foot PVC screen sections. The monitoring wells will have either the shallow screened interval of 11 to 16 feet or the deep screened interval of 20 to 25 feet. An example of monitoring well construction details and boring log is shown on Figure 2. In the example the well construction diagram shows a boring ending at 16 feet; however, the bottom of the well is placed at 14.5 feet to place the screen a bit higher in the stratigraphic column to match the majority of the saturated zone.

Observation of the soil in the Geoprobe plastic core sleeve gives a very accurate assessment of the depth of the saturated zone as well as any dry zones within the water-bearing zone.

Continuing with the description of well construction: a PVC cap will be placed on the bottom of the well screen. The boring will be about 3 inches in diameter and the annular space will be filled with number one sand from the base of the screen to at least two feet above the screen. The remainder of the annular space above the sand will be filled with bentonite to within 1.5 feet of the surface. A square concrete pad will be placed in the blacktop of the parking lot or driveway to keep the drive-over watertight well cover flush with the blacktop surface. Under the bolted steel well cover, a locking PVC cap will be placed on top of the PVC riser inside the tiny manhole compartment.

The unsaturated soil cores will be collected in plastic sleeves and the sleeves will be opened and the cores scanned with a photo-ionization detector (PID). Positive readings may indicate that VOCs are moving through the pore space, possibly off-gassing from the water table below or moving laterally through the vadose zone. If PID measurements are above background (ambient air) when scanning a four-foot sample in the Geoprobe core, one soil sample will be placed in a lab-supplied wide-mouth glass jar. The soil samples will be stored in a cooler with ice-paks for preservation. The samples will be sent to the laboratory with fresh ice-paks and chain of custody.

Because the water table lies about 11 feet below ground surface, there will be a maximum limit of 3 soil samples per monitoring well. Saturated soil will not be sampled because the VOCs are in the groundwater and not the soil. Groundwater sampling of the monitoring well will sample the saturated sediment. Since the boring material cannot be used as annular backfill in the installation of monitoring wells, the soil material will be containerized and stored securely on site, while the samples are evaluated for classification as nonhazardous, solid or hazardous waste (see section 4.9)

■ 4.4 Soil Sampling (Contingency)

Soil sampling will be triggered by PID measurement above the ambient air level recorded at the site prior to and while operating the Geoprobe to obtain the 4-foot sediment samples in plastic core sleeves. When the cores are first opened, they will be scanned for off-gassing of VOCs along the length of the core. If PID measurements are found above the background levels, then a sample will be collected and placed in a 2 oz wide-mouth glass jar. A sterile metal scoop or spoon will be used to remove the sample from the plastic sleeve and place it in the sample jar, filling the jar to the top, leaving zero headspace. The disposable sampling implement will be placed in the American Cleaner's dumpster or saved and sterilized for another project. The samples will be sent to the laboratory for analysis. The remaining soil material will be stored in a separate labeled covered pail in a secure place on the American Cleaners site. The soil material can not

be used as backfill for the annular space of the monitoring wells, so storage and sampling are needed to establish the proper place of disposal. The laboratory report will be used to determine the appropriate method of disposal of remaining soil material from the 5 borings (see section 4.9).

■ 4.5 Development of Monitoring Wells

The new wells will be pumped with peristaltic pumps to remove fine sediments from the groundwater within the wells. Development will continue until a turbidity of 200 nephelometric turbidity units (ntus) or less is reached as measured by turbidity meter or a Horiba U-10. Every attempt will be made to achieve a turbidity of 50 ntus. If recharge is slow and the well(s) can be pumped dry, such well(s) will be pumped dry and allowed to recharge five times. After the last purge, when the well recharges, the turbidity will be recorded and that will be the end of development for such well(s).

The development water will be placed in drums and sampled. If the sample meets drinking water standards, the water will be discharged to the storm drain. If the sample has small quantities of PCE, the Kingston water treatment plant will be consulted to determine if that facility can dispose of the water. Alternatively, the groundwater could be treated with a carbon filter.

■ 4.6 Groundwater Sampling

The monitoring wells will be sampled using the US EPA Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells (US EPA Region 1, July 30, 1996, Revision 2). That method will minimize the volume of purge water. A peristaltic pump will be used to pump at the low flow rate and a Horiba U-10 water quality meter will be used to measure pH, conductivity, turbidity, dissolved oxygen, salinity, total dissolved solids, and oxidation-reduction potential at regular time intervals, usually every 2 minutes. The pumping rate is measured and the volume of discharge is measured in a graduated cylinder. The water level is recorded at the beginning of pumping and at the end of pumping and after taking the sample.

The low flow method requires pumping on the order of 0.1 to 0.4 liters per minute. During the purging process, stabilization of field indicator parameters includes less than the following percentage change over three sets of successive measurements made with the Horiba:

Turbidity	10%
Dissolved Oxygen	10%
Specific Conductance	3%
Temperature	3%
PH	+ / - 0.1 units
ORP / Eh	+/- 10 millivolts.

Samples will be collected when these parameters have stabilized. Experience has shown that these parameters normally stabilize in 20 minutes of pumping.

The groundwater sample from each monitoring well will be obtained with new tubing for the peristaltic pump placed with the input (suction) end approximately 6 inches above the bottom of the well. The sample will be slowly pumped into three 40-ml voa vials with HCl preservative provided by the subcontracting laboratory. The water will be directed at the inside wall of each vial to avoid turbulence and release of volatiles. Each vial will be filled to the top with a convex upward meniscus to assure the vials are full with no air space. Each vial will be check for air bubbles. If bubbles are found, the vial will be opened and additional water added or a new vial will be filled and the other discarded. The tubing used with the peristaltic pump will either be discarded or put into a plastic bag and saved for future sampling events.

On-site the samples will be stored in a cooler with ice-paks and the chain-of-custody. Fresh ice-paks will be added to the cooler for shipment to the laboratory.

■ 4.7 Quality Assurance Program Plan (QAPP)

This RIWP is for drilling, installation, development and sampling of 5 monitoring wells across Albany Avenue from American Cleaners in Kingston, NY. Sampling of groundwater from the monitoring wells will provide information on the presence or absence of tetrachloroethene (PCE), associated breakdown products, and possibly other petroleum-derived VOCs from former neighboring land use. The objective of this off--site investigation is to determine the downgradient extent of PCE dissolved in groundwater.

If PID scans of unsaturated soils in the Geoprobe plastic core sleeves indicate VOC measurements above background levels, a contingency plan for soil sampling will be implemented (see Section 4.3).

Resumes for project manager, Ph.D., CPG and Geoprobe owner-operator Todd Syska are included in Appendix 3: Investigation Personnel. See the bottom of page 1 in the Health and Safety Plan for more information on organization.

Field sampling procedures are described in section 4.4 for soil sampling and for groundwater sampling in section 4.6. Decontamination procedures are minimal and require cleaning of the Geoprobe parts in contact with soil, use of new tubing with the peristaltic pump, and new sterile scoops or spoons or used in collection of the soil samples. Data Quality Usability information is provided in section 5.0 Data Validation.

In addition to the groundwater samples for each monitoring well, QA/QC samples will include trip blank, equipment blank, one duplicate sample, one Matrix Spike (MS) sample, and one Matrix Spike Duplicate (MSD) sample. The duplicate, MS,

and MSD samples will be collected from the most productive well as determined during monitoring well development. One field blank and one trip blank will also be sent to the lab with the groundwater samples.

For the possible soil sampling event, the QA/QC samples will consist of one field blank and one trip blank.

The soil and groundwater samples will be collected in containers supplied by the laboratory including blanks and QA/QC samples will be placed on ice in a cooler with the chain of custody, sealed and sent to the lab.

The US EPA analytical method SW 846 8260B will be used by the ELAP-certified laboratory to analyze for volatile organic compounds plus methyl tertiary butyl ether (MTBE). The level of detection as listed by previous work by York Analytical Laboratories, Inc. is listed as "RL" which is defined in previous reports of groundwater analysis for this site as

1. The "RL" is the REPORTING LIMIT and is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. This REPORTING LIMIT is based upon the lowest standard utilized for calibration where applicable.

From examination of previous reports, the RL is equal to 5 ug/L. Occasionally, it is higher, probably due to interference of analytes. In this case the Reporting Limit is equal to the SCG for class GA groundwater of 5ug/L.

■ 4.8 Survey Elevations and Locations of new monitoring wells

The elevation and location of each of the completed monitoring wells will be surveyed relative to the site benchmark or the closest well on the east side of the street. The elevations of the measuring points marked on the well casing will be determined to +/- 0.01 foot. The original survey location notes from Berninger were not transferred with the project files; therefore, the wells on the east side of Albany Avenue will also be surveyed to check the elevations and obtain northing and easting relative to a new arbitrary benchmark.

■ 4.9 Management of Investigation Derived Waste (IDW)

Two types of waste may be derived from the activities outlined in this work plan: soil from borings and purge water from well development and sampling.

● 4.9.1 Waste Soil

Extra soil materials can not be mixed with bentonite to seal the annular space between the PVC riser and the adjacent earth materials; the material must be containerized, stored securely on–site and tested to determine its waste classification and proper method of disposal.

The soil cores with no PID readings above background can be used as fill between the back of the American Cleaners building and the railroad tracks to the east.

Soil analysis from the lab reported as ND or below the SCG for soil, those materials can also be used as fill.

Soil analyses with results for PCE greater than the SCG for soil will require additional tests for ignitability, corrosivity, reactivity, and toxicity character leachate procedure (TCLP). If the soil material does not have these hazardous characteristics, then it can be left on-site as fill. If the soil is characterized as hazardous waste by those 4 tests, it will have to be transported by a hauler permitted in accordance with 6 NYRCC Part 364 and the waste shipment must be accompanied by a manifest in accordance with 6 NYRCC Part 372.

● 4.9.2 Waste Water

If less than 27 gallons of purge water is collected, it can be stored securely on-site in labeled containers. Review of the laboratory VOC results for the groundwater sampling event are used to determine the classification and disposal of the waste water. If the groundwater is clean or PCE is below the SCG, it can be discharged to the groundwater within the source are behind the American Cleaners building. If PCE levels are above the SCG, disposal at Kingston Water Plant will be discussed with the operator. If not permitted, the water will be considered Hazardous waste and manifested and sent to a hazardous waste site in accordance 6 NYCRR Parts 364 and 372 as described above under waste soil.

All sampling results and disposal method will be reported in the revised RIR.

5.0 Data Validation

A NYSDOH environmental laboratory approved program (ELAP)-approved laboratory will provide NYS DEC Category B analytical data. The groundwater samples will be analyzed for Volatile Organic Compounds (VOCs) plus MTBE with US EPA Method SW 846 8260B as listed in the DEC Analytical Services Protocol (ASP, July 2005). The data will be sent to a Data Validation subcontractor to prepare a Data Usability Summary Report (DUSR). Such report will identify and discuss any pertinent data limitations for use of the data. The DUSR will be included in the final Remedial Investigation Report (RIR).

6.0 Health and Safety Protocols

Health and safety protocols include two elements: a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP). Both plans are attached as Appendices 1 and 2, respectively. Both plans are site-specific and activity-specific for this RIWP. Safety and air monitoring locations will be established at

each drilling location when the Geoprobe is in place for each monitoring well. Tailgate health and safety meetings will be held at the beginning of each workday.

7.0 Reporting

The Remedial Investigation Report (RIR) will be revised and updated with the information and data from this work plan.

8.0 Schedule

Upon approval of this work plan, Mid-Hudson Geosciences is prepared to mobilize within two weeks to perform the tasks, likely sooner if the driller is available and the DEC project manager is available.

Week 1 Drilling and Installation of Monitoring Wells
Week 2 Well Development
Week 3 Groundwater Sampling (unless DEC specifies two weeks between Developing and sampling)
Week 4 Survey locations and elevations of new monitoring wells and tie into Existing wells near American Cleaners building
Week after receipt of Laboratory Results-
Transmit Category B Results to Data Validation Subcontractor
Week 10 Prepare revision of RIR
Week 12 Submit revised RIR

9. References

DRAFT DER-10 TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION, May 3, 2010, New York State Department of Environmental Conservation, Division of Environmental Remediation.

LOW STRESS (low flow) PURGING AND SAMPLING PROCEDURE FOR THE COLLECTION OF GROUND WATER SAMPLES FROM MONITORING WELLS, July 30, 1996 Revision 2, U.S. ENVIRONMENTAL PROTECTION AGENCY REGION I.

Table 2
Soil and Groundwater Sampling Locations, Rationale, and Analytical Method
Remedial Investigation Work Plan: Off-Site Monitoring Wells
May 18, 2011 revised July 6, 2011
American Cleaners, Inc., 734 Ulster Avenue, Kingston, NY
NYSDEC DER VCP Site V-00601-3
Compiled by Mid-Hudson Geosciences

SAMPLE LOCATION, RATIONALE, NUMBERS, AND LABORATORY METHOD

Monitoring Well Identification	Screen Interval (feet)	Monitoring Well Location	Rationale for Location	Number of Soil Samples (if needed)	VOCs EPA 8060B	Number of Groundwater Samples	VOCs EPA 8060B
MW6	11-16	Behind GW27	Evaluate flow from Meineke & GW27	0-3	√	1	√
MW16	20-25	Behind GW27	Evaluate flow from Meineke & GW27	0-3	√	1	√
MW7	11-16	Behind Pauline's	Evaluate flow direct from AC	0-3	√	1	√
MW17	20-25	Behind Pauline's	Evaluate flow direct from AC	0-3	√	1	√
MW8	11-16	RCAL-Pauline Prop Line	Evaluate flow from GW29	0-3	√	1	√

Notes:
Additional QA/QC samples will be collected from the wells for duplicate, matrix spike, and matrix spike duplicate.
Selection of specific wells to collect such samples will be based on water productivity.
QA?QC samples will be collected from well(s) with highest productivity in gallons per minute.
QA/QC samples will be analyzed for volatile organic compounds with US EPA Method SW 846 8060B.

Monitoring well locations refer to Figure 5-3 PCE-concentrations in groundwater annotated with proposed new monitoring well information.
GW27 and GW29 refer to previous Geoprobe groundwater sampling locations shown on maps.
VOCs are Volatile Organic Compounds.
EPA 8060B is the US EPA Analytical Method SW 846 8060B for VOCs in soil or groundwater.
Soil and groundwater samples will be analyzed for VOCs plus MTBE.
Soil samples will only be collected if PID measurements in freshly opened Geoprobe core are above background levels (ambient air).

SAMPLE QUANTIFICATION

Parameter	SOIL	GROUNDWATER
Maximum number of samples	9	5
Number of field blanks	1	1
Number of trip blanks	1	1
Number of duplicate samples	0	1
Number of matrix spike samples	0	1
Number of matrix spike duplicate samples	0	1
Sample preservation	zero head space in container Cool at 4°C	HCl in lab supplied vials Cool at 4° C
Sample container volume	2 oz	3 x 40 ml
Sample container type	clear glass jar w screw lid	clear glass voa vials
Sample holding time	14 days	14 days
Sample storage in field	cooler with ice paks	cooler with ice paks
Transport to laboratory	cooler with fresh ice paks	cooler with fresh ice paks

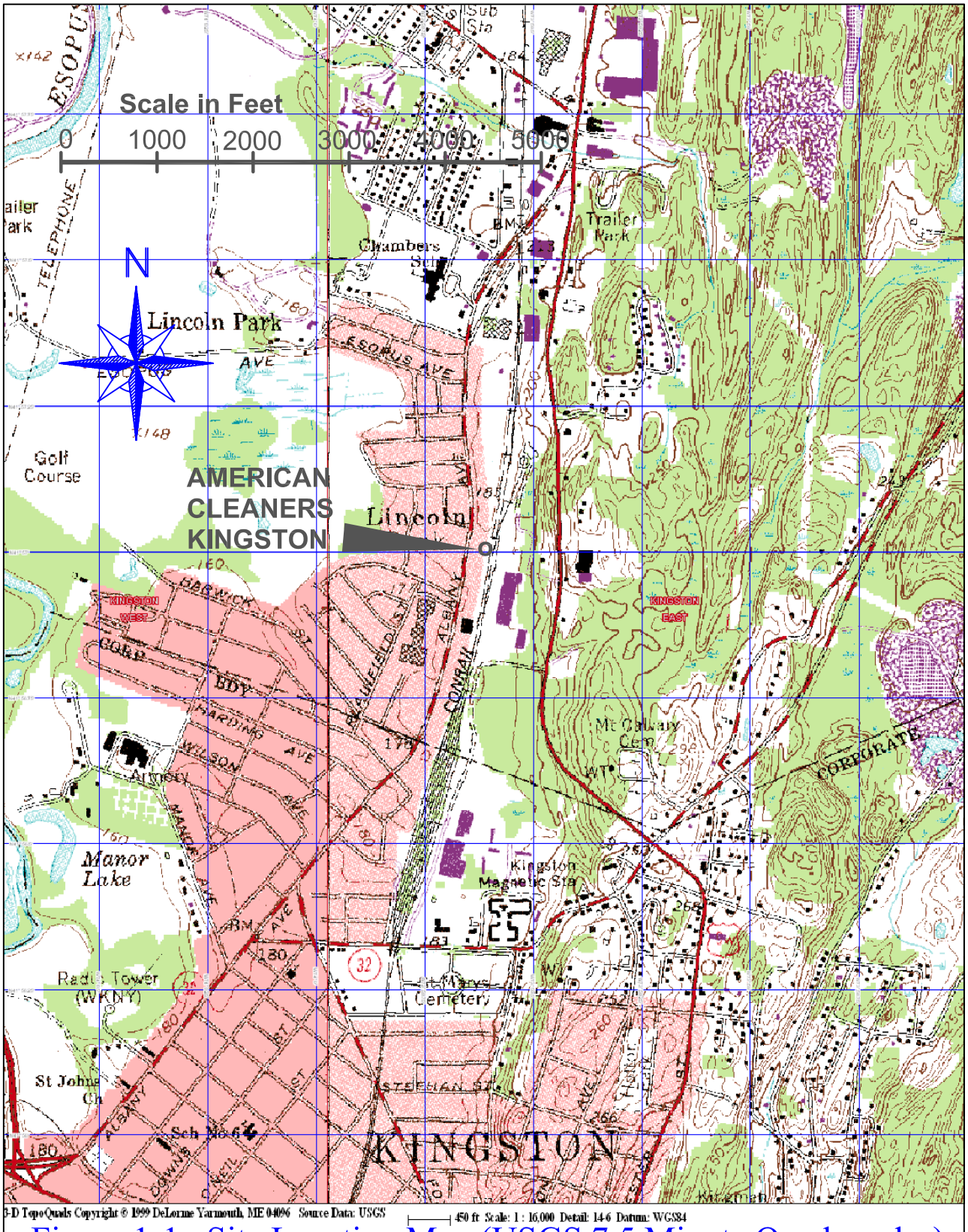

Figure 1-1, Site Location Map (USGS 7.5 Minute Quadrangles)

American Cleaners Inc, 734 Ulster Avenue, Kingston, NY

NYSDEC DER VCP Site V-00601-3 December 31, 2009

Mid-Hudson Geosciences

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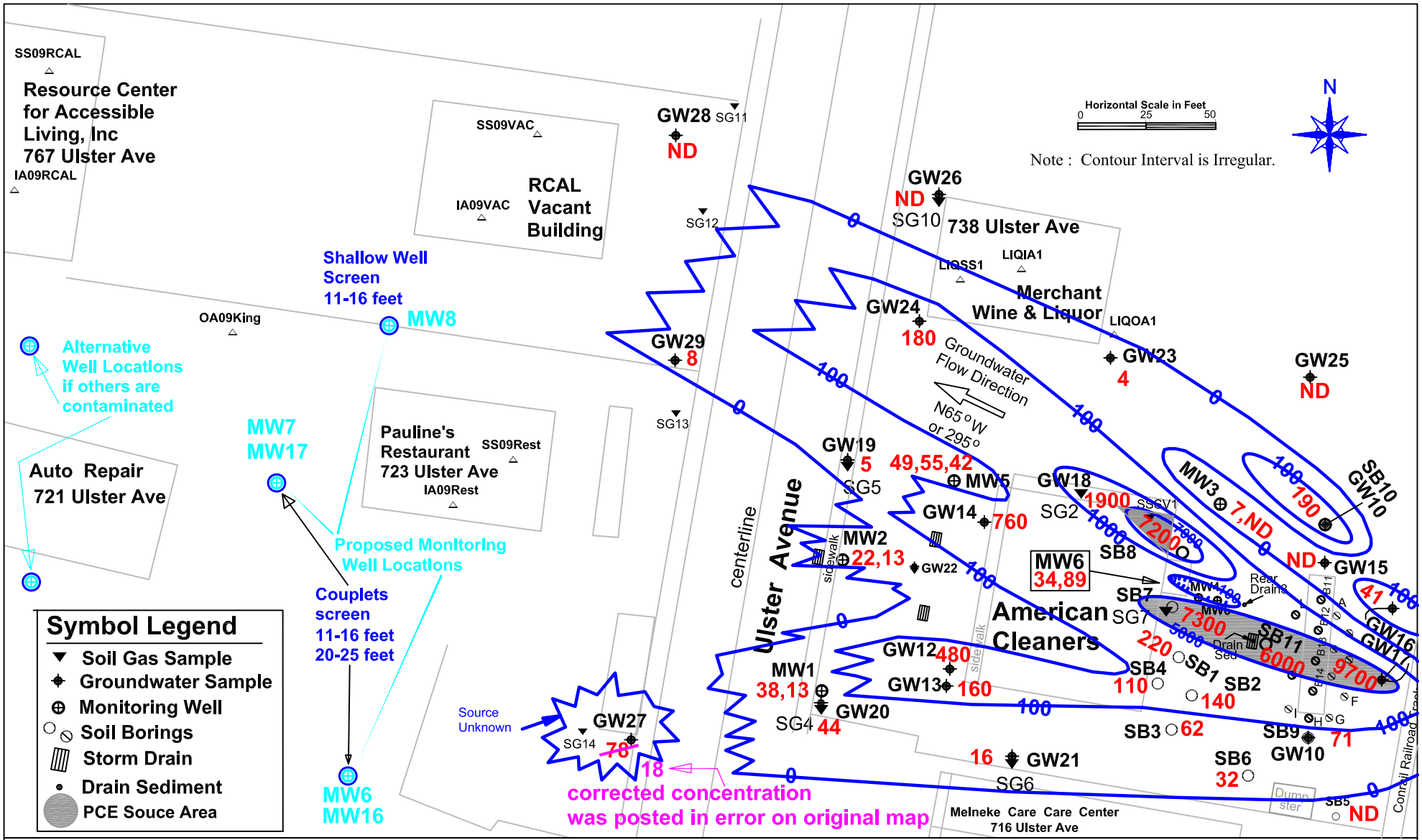

Figure 5-3. Isopleth Map and PCE Concentrations (ug/L) Detectd in Groundwater between 9.5 and 16 feet below ground surface.
American Cleaners Inc, 734 Ulster Avenue, Kingston, NY
NYSDEC DER VCP Site V-00601-3 December 31, 2009

May 18, 2011
Proposed New Monitoring Wells on West Side of Ulster Avenue

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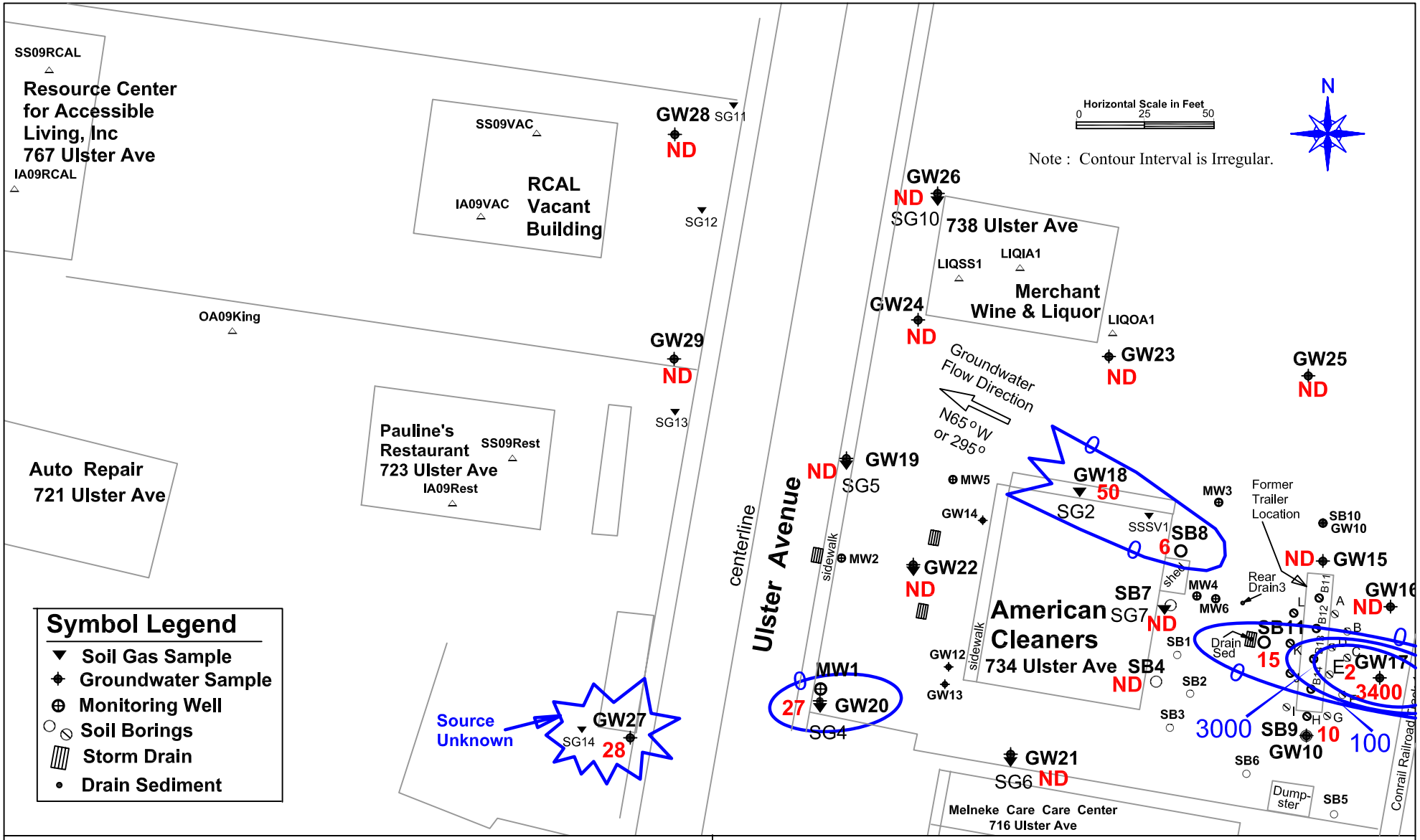

Figure 5-4. Isopleth Map and PCE Concentrations (ug/L Detected in Groundwater between 19.5 and 25 feet below ground surface.
American Cleaners Inc, 734 Ulster Avenue, Kingston, NY
NYSDEC DER VCP Site V-00601-3 December 31, 2009

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Mid-Hudson Geosciences	Subsurface Soil Boring Log	Figure 2 Well Construction Well ID: MW28 Sheet 1 of 1	Date Started: 11/12/09 Date Finished: 11/12/09
Client: American Cleaners Location: Caldor Plaza, Middletown, NY		Method of Investigation: Geoprobe	
Project Manager: K. J. Beinkafner	Drilling Co: Todd J. Syska, Inc. Geologist: K.J. Beinkafner	Driller: Todd Drill Rig: Geoprobe	Weather:

Depth (ft.)	45" Samples/ 4ft No.	Depth (feet)	Recovery (inches)	Sample Description	PID ppm	Well Details	Groundwater and Other Observations
	1	0-4	30	0-0.7' Wet dk brown sand	0.0		FlushMountTop
				0.7-4' Dry yell brown silt w gravel-size			Concrete
				rock frags, wrinkled bedding			
2							
					0.0		2-7.5'
							Bentonite
4							0-9.5' Sch40
	2	4-8	30	4-4.7' Sticky wet silt, clay, rock frags	0.0		PVC 1" ID Riser
		4.5	sample	4.7-5.1' Damp gray stained, sandy & silty clay			
				petroleum odor			
6				5.1-5.5' Damp, soft gray clay			
				5.5-8' Dry yell brown silt	0.0		
8							
	3	8-12	34	8-8.3' Wet sticky yell gray sand, silt & clay			7.5-14.5'
				8.3-8.7' Wet gray clay			#00 Sand
				8.7-10.8' Dry yell brown silty clay w sand & rxf			
10				10.8-12' Saturated sopupy sand, silt & rock frags			
							9.5-14.5'
							1" ID Screen PVC
12							Sch40 slot=0.01"
	4	12-16	45	12-12.7' Saturated sticky brown silt & vc sand			
				12.7-14' Saturated soupy yell brown silt & sand			
				14-14.4' Saturated yell brown silt			
14				14.4-15.6' Damp yell brown silt			
				15.6-16' Dry gray clay			Bottom Plug
16							
	5	16-20		End of Boring = 16 feet			

Sample Types:
S=Split Spoon: T= Shelby Tube:
R= Rock Core: O = 2 ft contiuous sampler
N = ASTM D1586

Backfill Well Key
Cement, Fine Sand, Sand, Bentonite

For Drilling, Monitoring Well Installation; Well Development; Soil, Groundwater and Surface Water Sampling, Pumping Tests and Remedial Activities at
New York State Department of Environmental Conservation,
Hazardous Waste Voluntary Cleanup Site No. V-00601-3
American Cleaners Store, 734 Ulster Ave, Kingston, NY 12401; Town & County of Ulster

A. SITE DESCRIPTION

Site: **American Cleaners Store, Dry Cleaning and Customer Service**
Date of Plan: May 1, 2011
Location: East Side of Ulster Avenue (aka Albany Ave), in free-standing building With parking area in front, back, north and south sides. Active Conrail tracks are located about 100 feet behind (east of) the American Cleaners building.
Hazards: Tetrachloroethene (PCE or Perc) was used in the dry cleaning process. A spill occurred in the parking area behind (south) of the building and waste PCE was placed in the dumpsters behind the building prior to hazardous waste control. PCE has migrated downward into the unconsolidated overburden sediments beneath the parking lot and under the building. PCE vapors have been detected next to the building and beneath the pavement in downgradient locations. Dissolved PCE has been detected in groundwater sampled from monitoring wells around the building and downgradient toward Ulster Avenue. Ambient air gas sampling with SUMMA canisters has shown no indoor air, outdoor air or subslab vapors contaminated with PCE above NYS DOH standards in Pauline's Restaurant and two other buildings across Albany Avenue. Oil and gasoline spills were reported at nearby gas station along Ulster Avenue. A Meineke Car Care store is located next door on the south side of American Cleaners.
Topography: The building lies at an elevation of approximately 175 feet above sea level. The area is generally flat along Ulster Avenue for a half mile or more to the south and north. The land slopes moderately downhill from Route 9W to the railroad tracks behind the AC Building. On the west side of Ulster Avenue, the land slopes gently toward the north-flowing Esopus Creek approximately a half mile to the west. The direction of groundwater flow is approximately North 65° West.
Additional Information: American Cleaners continues to function as a dry cleaning operation with standard use of regulated solvents and standard operating procedures, which reduce human exposure and spillage of materials.

B. **CLEANUP OBJECTIVES** – The objective of this investigation is to define the extent and nature of tetrachloroethene contamination in soils and groundwater in the subsurface overburden materials surrounding the building.

C. **ONSITE ORGANIZATION AND COORDINATION** – The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)
Health and Safety Officer …… Katherine J Beinkafner, PhD, CPG
Driller ……Todd Syska
American Cleaners Owner …… Erez Halevah
AC Site Manager ……..Jay Scanlon
NYSDEC Oversight & Project Manager …. Parag B. Amin

All site visitors will also be given an introduction to the Health and Safety plan and relevant site procedures.
All personnel arriving or departing the site should log in and out with Katherine Beinkafner or Jay Scanlon. All activities on site must be cleared through Katherine or Jay.

D. ONSITE CONTROL

The Health & Safety Officer has been designated to coordinate access control and security on site. Because hazardous or toxic waste is beneath the ground surface, the work zone will be defined by traffic cones, which define a safe perimeter. No one should enter the work zone without the acknowledgement of the driller or project manager. A hot zone will be defined if a need arises. The decontamination zone will be a special area where drilling equipment is cleaned or safety gear is changed. If hazardous or toxic waste is detected through monitoring, the safety zones will immediately be established by the Health & Safety Officer.

A safe perimeter will be established with orange traffic cones and yellow or orange caution tape and will move with the drill rig from drilling location to drillkng location.
No unauthorized person should be within this area.
The onsite Command Post will be at the American Cleaner's front door if an emergency arises or at the back of the Credit Union if the front door is unsafe.
The staging area for drilling or other site operations will be on the north side of the building near the front so that people inside can see the equipment and workers outside.
The prevailing wind conditions are from the north and northwest, so the command post is upwind from the Work Zone.

E. HAZARD EVALUATION

The following substance(s) are known or suspected to be on site. The primary hazards of each are identified.

Substances Involved	Concentrations (If Known)	Primary Hazards
Tetrachloroethene	ND to 7800 ug/L in groundwater ND to 580,000 ug/m^3 in Soil Gas	

The following additional hazards are expected on site: uneven parking lot and paved areas, pot holes, weeds and overgrowth off the pavement.

Hazardous Substance Fact Sheet for tetrachloroethene is attached.

F. PERSONAL PROTECTIVE EQUIPMENT

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	Job Function	Level of Protection
Work Zone	Drilling, Sampling	D until higher levels needed.
Contamination	N/A	A B C D Other
Reduction Zone	N/A	A B C D Other

Specific protective equipment for each level of protection is as follows:

Level A	Fully encapsulating suit, SCBA (disposable coveralls)
Level B	Splash gear (type), SCBA
Level C	Splash gear (type), Full-face canister respirator
Level D	**Hard Hats, Gloves, Safety Steel-toe Boots, Safety Glasses, Long sleeve shirts, long work pants.**

The following protective clothing materials are required for the involved substance(s):

Substance	Material
(Chemical Name)	(material name, e.g. Viton)
none at this time	none at this time

If air-purifying respirators are authorized, (filtering medium) is the appropriate canister for use with the involved substances and concentrations. A competent individual has determined that all criteria for using this type of respiratory protection have been met. Appropriate canister type will be filled in if dust, hazardous gas or vapors are detected on site.

No changes to the specified levels of protection shall be made without the approval of the site safety officer and the project team leader.

G. ONSITE WORK PLANS

The work party and any substitutes will be listed on the Signature Page of this Health and Safety Plan.

H. COMMUNICATION PROCEDURES

All other onsite communications will use voice commands.
Personnel in the Work Zone should remain in constant contact with or within sight of the Project Team Leader. Any failure of communication or accident or emergency requires an evaluation of whether personnel should leave the Work Zone.
Continuing Intermittent Horn BEEPING is the emergency signal to indicate that all personnel should leave the Work Zone and meet at the Command Post.

The following standard hand signals will be used in case of failure of voice communications:

Hand gripping throat ---------- Out of air, can't breathe
Grip partner's wrist or ---------- Leave area immediately
both hands around waist
Hands on top of head ---------- Need assistance
Thumbs up ---------- OK, I am all right, I understand
Thumbs down ---------- No, negative

I. DECONTAMINATION PROCEDURES

Personnel and equipment in contact with contaminated soil or groundwater upon leaving the Work Zone shall be thoroughly decontaminated. The standard level "C" decontamination protocol shall be used with the following decontamination stations (if needed):

Emergency decontamination will include the following stations (if needed):

Equipment Drop
Outer Garment, Boots, and Gloves Wash and Rinse
Outer Boot and Glove Removal
Canister or Mask Change
Boot, Gloves and Outer Garment Removal
Face Plate Removal
Field Wash

The following decontamination equipment is required:

Buckets with Brushes
Gallons of Distilled or Bottled Water
Detergent
Benches
Plastic on Ground & Plastic Bags for Disposable items
Spare Canisters for Respirators

Detergent and water will be used as the decontamination solution.

J. SITE-SPECIFIC SAFETY AND HEALTH PLAN

1. The Site Safety Officer and is directly responsible to the Project Team Leader for safety recommendations on site.
2. Emergency Medical Care

Emergency Medical Service: Hurley Avenue Medical
211 Hurley Avenue
Kingston, NY 12401
845 339-2804

Hospital with Emergency Room: Kingston Hospital
396 Broadway
See map to Hospital Kingston, NY 12401
(845) 331-3131

Ambulance Service: no listing in area, call Ulster Fire or 911

The following First-aid equipment is on site:
First-aid kit
Emergency eyewash
Emergency shower spray

List of emergency phone numbers:

Agency/Facility	Phone #	Contact
Police	845 331-1671	City of Kingston Police
	845 382-1111	Town of Ulster Police
Fire	845 331-1211	City of Kingston Fire Dept
	845 339-1280	Ulster Hose Company #5
		830 Ulster Avenue
Hospital	845 331-3131	Kingston Hospital
Ambulance	no local listings, call 911 or other services	

3. Environmental Monitoring (see attached Contingency Plan)

The following environmental monitoring instruments shall be used on site (cross out if not applicable) at the specified intervals.

Meter		Monitoring Frequency
Combustible Gas Indicator	-	excavation and fresh exposures
HNU/Microtip (VOCs)	-	excavation and fresh exposures

The following will be monitored if a relevant contingency plan is invoked:

Oxygen Monitor	-	continuous / hourly / daily / other
Colorimetric Tubes	-	continuous / hourly / daily / other
Air Temperature/Thermometer	-	continuous / hourly / daily / other
Radioactivity Meter	-	continuous / hourly / daily / other

4. Emergency Procedures (should be modified as required for incident)
The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Work Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal, continuing horn beeping shall be

sounded. All site personnel shall assemble at the Command Post. The rescue team will enter the Work Zone (if required) to remove the injured person to safety. The Site Safety Officer and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Work Zone until the cause of the injury is determined.

Personnel Injury in the Support Zone: Upon notification of any injury in the Support Zone, the Project Team Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk to others, the designated emergency signal, continuing intermittent horn beeping shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal continuing intermittent horn beeping shall be sounded and all site personnel assembled at the Command Post. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or alteration or protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Work Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the Project Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operation on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Work Zone until the situation is evaluated and appropriate actions taken.

5. PERSONAL MONITORING

The following personal monitoring will be in effect on site.

Personal exposure sampling: Total VOCs will be measured with an hnu DL-101 or photovac microtip HL-2000 or HL-3000 at the well bore or monitoring wells or soil sampling locations to assess the safety of the breathing zone.

Medical monitoring: The expected air temperature will be (50°F). If it is determined that heat stress monitoring is required (mandatory if over 70°F) the following procedures shall be followed: monitoring body temperature, respiration rate, pulse rate. If a level of personal Protection higher than C is required, continuous outdoor temperature monitoring will be a standard operating procedure and will be described in the revision of this Plan.

Health and Safety Plan Acknowledgement and Agreement Page

I acknowledge I have reviewed a copy of this Health and Safety Plan for
American Cleaners Middletown Site, understand it, and agree to comply with its provisions.

►Health and Safety Officer _____
Name Company
_____/_____/_____
Date Signature EMT? CPR? FirstAid?FirstResponder?

► _____
Position Name Company
_____/_____/_____
Date Signature EMT? CPR? FirstAid?FirstResponder?

► _____
Position Name Company
_____/_____/_____
Date Signature EMT? CPR? irstAid?FirstResponder?

► _____
Position Name Company
_____/_____/_____
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Position Name Company
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List of emergency phone numbers:

Agency/Facility	Phone #	Contact
Police	845 331-1671	City of Kingston Police
	845 382-1111	Town of Ulster Police
Fire	845 331-1211	City of Kingston Fire Dept
	845 339-1280	Ulster Hose Company #5
		830 Ulster Avenue
Hospital	845 331-3131	Kingston Hospital
Ambulance	no local listings, call 911 or other services	

DIRECTIONS
FROM AMERICAN CLEANERS KINGSTON
734 Ulster Avenue
TO KINGSTON HOSPITAL
EMERGENCY ROOM ENTRANCE
At eastern end of Jensen Avenue

A 734 Ulster Ave, Kingston, NY 12401

1.	Head **south** on **Ulster Ave** toward **Stahlman Pl**	go 0.4 mi total 0.4 mi
2.	Continue onto **Albany Ave**	go 0.4 mi total 0.7 mi
3.	Turn left onto **Foxhall Ave** About 4 mins	go 0.7 mi total 1.5 mi
4.	Turn right onto **Garden St** About 1 min	go 0.2 mi total 1.7 mi
5.	Continue onto **E O'Reilly St**	go 253 ft total 1.7 mi
6.	Turn left onto **Jansen Ave**	go 0.1 mi total 1.8 mi

B Jansen Ave Kingston Hospital ER Entrance

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

Emergency Phone Numbers:

Agency/Facility	Phone #	Contact
Police	845 331-1671	City of Kingston Police
	845 382-1111	Town of Ulster Police
Fire	845 331-1211	City of Kingston Fire Dept
	845 339-1280	Ulster Hose Company #5 830 Ulster Avenue
Hospital	845 331-3131	Kingston Hospital
Ambulance	no local listings, call 911 or other services	

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

TETRACHLOROETHYLENE
CAS # 127-18-4

Agency for Toxic Substances and Disease Registry ToxFAQs **September 1997**

This fact sheet answers the most frequently asked health questions (FAQs) about tetrachloroethylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Tetrachloroethylene is a manufactured chemical used for dry cleaning and metal degreasing. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Tetrachloroethylene has been found in at least 771 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is tetrachloroethylene?

(Pronounced tĕt′rə-klôr′ ō-ĕth′ə-lēn′)

Tetrachloroethylene is a manufactured chemical that is widely used for dry cleaning of fabrics and for metal-degreasing. It is also used to make other chemicals and is used in some consumer products.

Other names for tetrachloroethylene include perchloroethylene, PCE, and tetrachloroethene. It is a nonflammable liquid at room temperature. It evaporates easily into the air and has a sharp, sweet odor. Most people can smell tetrachloroethylene when it is present in the air at a level of 1 part tetrachloroethylene per million parts of air (1 ppm) or more, although some can smell it at even lower levels.

What happens to tetrachloroethylene when it enters the environment?

- Much of the tetrachloroethylene that gets into water or soil evaporates into the air.
- Microorganisms can break down some of the tetrachloroethylene in soil or underground water.
- In the air, it is broken down by sunlight into other chemicals or brought back to the soil and water by rain.
- It does not appear to collect in fish or other animals that live in water.

How might I be exposed to tetrachloroethylene?

- When you bring clothes from the dry cleaners, they will release small amounts of tetrachloroethylene into the air.
- When you drink water containing tetrachloroethylene, you are exposed to it.

How can tetrachloroethylene affect my health?

High concentrations of tetrachloroethylene (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death.

Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used tetrachloroethylene to get a "high."

In industry, most workers are exposed to levels lower than those causing obvious nervous system effects. The health effects of breathing in air or drinking water with low levels of tetrachloroethylene are not known.

Results from some studies suggest that women who work in dry cleaning industries where exposures to tetrachloroethyl-

ene can be quite high may have more menstrual problems and spontaneous abortions than women who are not exposed. However, it is not known if tetrachloroethylene was responsible for these problems because other possible causes were not considered.

Results of animal studies, conducted with amounts much higher than those that most people are exposed to, show that tetrachloroethylene can cause liver and kidney damage. Exposure to very high levels of tetrachloroethylene can be toxic to the unborn pups of pregnant rats and mice. Changes in behavior were observed in the offspring of rats that breathed high levels of the chemical while they were pregnant.

How likely is tetrachloroethylene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that tetrachloroethylene may reasonably be anticipated to be a carcinogen. Tetrachloroethylene has been shown to cause liver tumors in mice and kidney tumors in male rats.

Is there a medical test to show whether I've been exposed to tetrachloroethylene?

One way of testing for tetrachloroethylene exposure is to measure the amount of the chemical in the breath, much the same way breath-alcohol measurements are used to determine the amount of alcohol in the blood.

Because it is stored in the body's fat and slowly released into the bloodstream, tetrachloroethylene can be detected in the breath for weeks following a heavy exposure.

Tetrachloroethylene and trichloroacetic acid (TCA), a breakdown product of tetrachloroethylene, can be detected in the blood. These tests are relatively simple to perform. These tests aren't available at most doctors' offices, but can be performed at special laboratories that have the right equipment.

Because exposure to other chemicals can produce the same breakdown products in the urine and blood, the tests for breakdown products cannot determine if you have been exposed to tetrachloroethylene or the other chemicals.

Has the federal government made recommendations to protect human health?

The EPA maximum contaminant level for the amount of tetrachloroethylene that can be in drinking water is 0.005 milligrams tetrachloroethylene per liter of water (0.005 mg/L).

The Occupational Safety and Health Administration (OSHA) has set a limit of 100 ppm for an 8-hour workday over a 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends that tetrachloroethylene be handled as a potential carcinogen and recommends that levels in workplace air should be as low as possible.

Glossary

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Milligram (mg): One thousandth of a gram.

Nonflammable: Will not burn.

References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Tetrachloroethylene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

Where can I get more information? For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone:1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

Appendix 2:
Community Air Monitoring Plan, May 2011, revised July 7, 2011, page 1 of 3
For Drilling, Monitoring Well Installation; Well Development; Soil, Groundwater and Surface Water Sampling, Pumping Tests and Remedial Activities at
New York State Department of Environmental Conservation,
Hazardous Waste Voluntary Cleanup Site No. V-00601-3
American Cleaners Store, 734 Ulster Av, Kingston, NY 12401; Town & County of Ulster

Community air monitoring consists of two types of monitoring: continuous and periodic. Specific meters are required to monitor air. A photo-ionization detector (PID) is used to measure VOCs in air and a particulate meter is used to monitor dust. NYSDOH and NYSDEC provide specific guidelines to respond to monitoring measurements.

Continuous Monitoring will be conducted for the ground intrusive activities identified in the RIWP such as advancement of soil borings and installation of monitoring wells. Since these tasks will be performed outdoors in a public parking lot, continuous monitoring will be conducted 5 to 150 feet downwind of the boring / well locations avoiding any exhaust from machinery. A data recording Hnu (photo-ionization) meter will be used to monitor the VOCs in the air. Particulate dust will be monitored with a DataRAM™. The equipment will be calibrated at least once each day or in accordance with manufacturers' recommendations.

Periodic monitoring for VOCs will be conducted during the non-intrusive tasks of well development and collection of groundwater samples from monitoring wells. Readings will be taken with the Hnu meter when the cap of the monitoring well is first opened to determine if VOCs have accumulated above the water table inside the well casing. Readings will be obtained while the purge water is accumulating in the graduated cylinder to ascertain if VOCs are degassing from the pump discharge water.

The following two sections are from the generic CAMP in Appendix 1A in the back of the DER-10 manual (November 2009). They describe what actions to take based on monitoring results reaching specific measurement levels.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous

readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. 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 must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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

4. All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10

particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and DOH) personnel to review.

For Drilling, Monitoring Well Installation; Well Development; Soil, Groundwater and Surface Water Sampling, Pumping Tests and Remedial Activities at
New York State Department of Environmental Conservation,
Hazardous Waste Voluntary Cleanup Site No. V-00601-3
American Cleaners Store, 734 Ulster Av, Kingston, NY 12401; Town & County of Ulster

Field Work Identified in the RIWP will be conducted by

Consulting Hydrogeologist & Health and Safety Officer	Katherine J. Beinkafner, Ph.D. CPG
Geoprobe Driller & Geologist	Todd J. Syska

Their qualifications are provided in the resumes following this cover page.

Other Personnel& Contact Information

American Cleaners Site Owner ……Erez Halevah
Cell (845) 551-1133
Office (845) 343-0111

AC Site Manager ……..Jay Scanlon
Phone (845) 338-6164

NYSDEC Oversight & Project Manager …. …. Parag B. Amin
Phone (518) 402-9662

RESUME
KATHERINE J. BEINKAFNER, Ph.D., CPG
Geologist/Hydrogeologist

Mid-Hudson Geosciences
1003 Route 44/55; P.O.Box 332
Clintondale, NY 12515-0332

rockdoctor@optonline.net
Telephone and FAX (845) 883-5866
Cell: (845) 464-3622

EXPERTISE:
Investigation & Remediation of Subsurface Contaminants
Groundwater, Hydrology, Karst, and Wetland Studies
Environmental Regulatory Compliance, HazMat
QA, Senior Review, Expert Testimony
Surface and Borehole Geophysics
Computer Modeling of Groundwater Systems
Risk Assessment of Subsurface Contaminants

EMPLOYMENT EXPERIENCE:

1998-Present	Owner, Consultant	Mid-Hudson Geosciences
1997-1998	Sr. Hydrogeologist	Ballard Engineering, PC, New City, NY
Fall 1996	Adjunct Professor	Ramapo College, Mahwah, NJ
1991-1993	Sr. Hydrogeologist	EA Engineering, Newburgh, NY
1989-1991	Sr. Hydrogeologist	Dames & Moore, Pearl River, NY
Fall 1987	Adjunct Professor Groundwater-Hydrology	Rutgers, The State University of New Jersey, Newark Newark, NJ
1986-1987	Senior Consulting Hydrogeologist	Milton Chazen Engineering Associates Poughkeepsie, NY
1984-1986	Senior Reservoir Geologist	Lawrence-Allison West, Operations Contractor for Naval Petroleum Reserve #3, Casper, WY
1985	Dipmeter Consultant	Terrasciences, Inc., Lakewood, CO
1980-1984	Senior Development Geologist	Sohio Petroleum Company San Francisco, CA
1979	Summer Geologist	ARCO Oil and Gas Company Midland, TX
1979	Consulting Petroleum Geologist	Kirby Exploration Co. Houston, TX
1975	Adjunct Teaching Geologist	College of St. Rose Albany, NY
1972-1979	Scientist (Oil & Gas Geology)	Geological Survey, New York State Museum & Science Service, State Education Dept. Albany, NY 12234
1969-1972	Junior Scientist (Oil & Gas Geology)	Geological Survey (same as above)
1966-1968	Physics Teacher	F. D. Roosevelt H. S., Hyde Park, NY

EDUCATION:

1961-1965	S.U.N.Y. at New Paltz New Paltz, NY 12560	B.A. (Geology) M.A. (Geology)
1965-1966	Rensselaer Polytechnic Institute Troy, NY 12180	Geophysics
1968-1969	University of Pennsylvania Philadelphia, PA 19104	M.S. (Physics)
1977-1980	Syracuse University Syracuse, NY 13210	Ph.D. (Geology)

PUBLICATIONS:

Beinkafner, K.J., 2000, Increasing Water Resources with a Horizontal Well, Illinois Mountain, Highland Water District, Highland, NY: National Groundwater Association Eastern Focus Conference, Newburgh, NY October 5, 2000, 10:40 AM

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UNPUBLISHED REPORTS (continued):

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"Subsurface Investigation Report, Town of New Paltz Landfill, Ulster County, New York," 1991.

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"Hydrogeologic Study of Wallkill Public Water Supply Watershed and Aquifer (Critical Environmental Area)," Mid-Hudson Geosciences, 1992.

"Ecological Risk Assessment of Benzene and Barium, Liquid Disposal Inc. Site, Michigan." EA Engineering, 1993.

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"Closure Investigation Report for Youmans Flats Landfill in Harriman State Park: Geologic, Hydrogeologic, Gas Venting, and Vector Study," 2 Volumes. Mid-Hudson Geosciences, 1995.

"Groundwater Resources in the Town of Gardiner, Ulster County,New York." Mid-Hudson Geosciences, 1995.

"Designing, Conducting and Analyzing Aquifer Tests Applicable to New York State's Hydro-Geologic Conditions" Mid-Hudson Geosciences in conjunction with Hydrogeologic, Inc. and HKS Environmental, Inc. 1997, 4-day NYS DEC training course.

"Hydrogeologic Investigation of Underground Fuel Oil Tank at Highland High School, 320 Pancake Hollow Road, Highland, NY, NYSDEC Spill No. 97-06013", 1998.

"Hydrogeology of Leipold Field, Ellenville Central School District, Edwards Place, Ellenville," 1998.

"Investigation Summary and Remedial Plan Site No. 18 NYCDOT Nott Avenue Garage, Addendum No. 1" for NYC Dept. of Design & Construction, Ballard Engineering PC, March 20, 1998.

"Investigation Summary and Remedial Plan Site No. 13 NYCDOT Brookville Yard," for NYC Dept. of Design and Construction, Ballard Engineering PC, April 12, 1998.

"Investigation Summary and Remedial Plan Site No. 11 NYCDOT Flatlands Garage Addendum No. 1" for NYC Dept. of Design & Construction, Ballard Engineering PC, February 4, 1998.

"Final Site Investigation Report for Irvington Waterfront Park …Village of Irvington, Westchester County, NY" (NYS DEC Brownfields Program)Chapters on Physical Characteristics of the Site, Nature and Extent of Contamination, Contaminant Fate and Transport, and Exposure Assessment, Ecosystems Strategies, Inc. March 18, 1998.

"Report: Phase I: Exploration and Assessment for Development of Groundwater Resources on Illinois Mountain Watershed Property, Highland Water District, Highland, NY" Mid-Hudson Geosciences, December 1, 1999.

"Report: 72-Hour Pumping Test, Sunset Ridge Subdivision, Phillipsburg Road, Town of Goshen, Orange County", NY for Clients of Lanc & Tully Engineers by Mid-Hudson Geosciences, July 29, 2002.

"Shawangunk Recharge Area and Groundwater Management Plan" for New York-New Jersey Trail Conference by Mid-Hudson Geosciences, September 2002.

"Report: Aquifer Protection Study, Town of Hurley, Ulster County, NY" for Environmental Conservation Commission, Town of Hurley, Ulster County, December 2003, revised June 2004.

"Pumping Test Report for High Meadow School, Stone Ridge, NY" prepared for James L. Reynolds, Architect and Barry Medenbach, PE, Stone Ridge, NY October 28, 2004.

Letter Reports: "Hydrogeologic Analysis of Operation of Proposed Septic System Project," "Hydrogeologic Analysis of Rainstorm and Operation of Proposed Septic System Project," "Hydrogeologic Analysis of Water Table Variation During Monitoring Period, " and "Method of Calculating Hydraulic Conductivity from Slug Testing, Addendum to Hydrogeologic Analysis of Operation of Proposed Septic System, Project: Plaza South, Newtown," CT for PW Scott, PE of Brewster,NY, April through October 2005.

Several Papers RE: "Calculations and Actions for Pesticide Remediation in Former Orchards, now Residential Subdivisions in Orange County:" Greiner and Wildflower Vista Subdivisions, BCM Development in Town of Newburgh, Palladino and Double R Subdivisions, as a subcontractor to William L. Going & Associates, Pine Bush, NY, 2004-2005.

"Review of FEIS (November 18, 2004) and DEIS (July 28, 2004) for Proposed Mushroom Production and Processing Facility by Yukiguni Maitake Manufacturing Corporation of America in the Town of Mamakating" and "Review of DEIS (July 28, 2004) for Proposed Mushroom …" and associated testimony at Planning Board Hearings for Bashakill Area Assocation (BKAA), Wurtsboro, NY, April through October 2005.

UNPUBLISHED REPORTS (continued):

Additional Reports prepared for BKAA RE; Yukiguni Maitake Mushroom Plant:
"Evaluation and Assessment of Design of a Process Wastewater Infiltration System" May 009
"Groundwater Mounding Analysis beneath the Process Wastewater Infiltration Basin" August 2009.
"Special Conditions Associated with NYSDEC Issuance of Yukiguni Maitake Permits" Sept. 2009.

"Report: Aquifer Protection Study, Town of Marbletown, Ulster County, NY," for Environmental Conservation Commission, Town of Marbletown, Stone Ridge, NY, September 2005.

Report: "Geologic Assessment of Hudson Landing Site, Kingston, NY", Recommending stormwater management practices to protect groundwater from potential contamination by flow into karst pathways, Ecosystems Strategies, Inc. November 2007.

Reports concerning proposed Ulster Manor Project in Town of Ulster: "Comments for the Ulster Manor FEIS RE: Soils and Geology including evidence of Karst Features on site, Surface water, Wetlands and Groundwater Resources, July 2008. "Comments on 'Dworkin's Letter 11/8/08" RE: Ulster Manor indicating confirmation of Karst Features on site and needed mitigation measures, Ecosystems Strategies, Inc. December 2008.

Reports submitted to US EPA for Industrial Hazardous Waste Site: Former General Switch, Middletown, NY (as subcontractor to Ecosystems Strategies, Inc.): "Well Installation and Remedial Selection Report" (October 2007). "Evaluation of Cone of Depression and Capture Zone for Bedrock Well" July 2010. Short Term Pumping Test to Evaluate Use of Overburden Well" March 2011.

Report: "Review of Draft Environmental Impact Statement (DEIS) for Warwick Views Subdivision, submitted by Warwick Views, LLC to Town of Warwick Planning Board" March 2010.

Additional Reports Prepared in conjunction with Paul A. Rubin dba HydroQuest: "Karst Hydrology #1" June 2010, "Karst Hydrology #2" August 2010, "Revision of DEIS and Public Review Recommended" January 2010.

PROFESSIONAL AFFILIATIONS:

American Association of Petroleum Geologists
American Institute of Professional Geologists
Geological Society of America
National Ground Water Association
Hudson Mohawk Professional Geologists Association

PROFESSIONAL HONORS:

Fellow of Geological Society of America

PROFESSIONAL CERTIFICATION:

Petroleum Geologist Number 2683 by American Association of Petroleum Geologists
Professional Geological Scientist Number 6611 by American Institute of Professional Geologists

HAZARDOUS WASTE TRAINING

29CFR 1910.120(e)(2)	40-hour Safety at Hazardous Materials Sites- Hands-On Workshop
29CFR 1910.120(e)(8)	OSHA 8-Hour Hazardous Materials Site Safety – Refresher Course
29CFR 1910.120(e)(4)	Supervisors of Hazardous Waste Operations – 8 Hours

Todd J. Syska

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PROFESSIONAL HISTORY

More than thirty years of progressively increasing responsibilities and diversified experience in project management, community and government relations, environmental remediation, and water system development.

EDUCATION

BA Magna Cum Laude, Geology/ Geography, State University of New York at New Paltz

PROFESSIONAL CERTIFICATIONS

NYS Water Well Contractor

NYS Pump Installer, Large and Small

Connecticut non-potable water well contractor

FAA Certified Airline Transport Pilot

FAA Certified Flight Instructor, Instruments and Airplanes

NYS Certification in Secondary Education: Science, Mathematics, and Computer Science

ADDITIONAL TRAINING

29CFR 1910.12-8 General Safety Training

29CFR 1910.120 Supervisor Training

29CFR1910.132 PPE Training

29CFR1910.132 Chain Saw Safety Training

29CFR1910.134 Respiratory Protection Training

29 CFR 1910.146 Confined Space Training

29CFR 1926 Subpart I, Powder Actuated Tools

29CFR 1926.502 Fall Protection

Advanced Landfill Design and Closure

Landfill Liner and Cover Systems Construction and Related Quality Assurance and Quality Control Specialty Training, NYSDEC/EPA

Sherwin Williams Advanced Coatings Application and Quality Assurance, Polyurea

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EMPLOYMENT HISTORY

June 1994 to Present: Self Employed, President Todd J. Syska Inc.
Consultant to Engineers and professionals in the fields of environmental remediation and water system development.

June 1986 - June 1994: The Chazen Companies, Poughkeepsie, NY
Perform environmental site assessments. Responsible for the development of water, wastewater, and industrial waste treatment facilities. Design and permit landfills and municipal waste transfer and recycling centers. Provide computer support to the company and the scientific community.

July 1984 - June 1986: West Park Union Free School District
Established an instructional computer program where none had existed previously. Wrote and designed high school level curriculum. Taught computer application and programming to high school level students. Analyzed the computer needs of the administration and bookkeeping departments, specified hardware and software for use, and provided training and technical support to administrative and secretarial personnel.