# REMEDIATION REPORT
FOR
# SHARON CLEANERS
# 48 LINCOLN AVENUE
# SARATOGA SPRINGS, NY
# 12866

PREPARED BY:


## ENVIRONMENTAL HYDROGEOLOGY CORPORATION
## 900 ROUTE 146
## CLIFTON PARK, NEW YORK 12065
## 518-371-7940


**Environmental Hydrogeology Corporation certifies that all site activities were performed in full accordance with the investigation work plan and the findings included herein are deemed accurate based upon information and data understood to be factual.**

CERTIFIED BY:

**Mona M. Zulli**
**Environmental Scientist**

**Eric M. Holt, P.E.**
**Environmental Engineer**

STATE OF NEW YORK
ERIC M. HOLT
051456
LICENSED PROFESSIONAL ENGINEER

**MAY 10, 2001**

**REVISED ON JUNE 13, 2001 AND JULY 27, 2001**

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## SECTION I

## SITE REVIEW

### 1.00 BACKGROUND

The subject site has been utilized as a dry cleaning facility for an estimated 50 years. Haines Dry Cleaners occupied the site for 40 years until it was purchased by Mr. Gerald Hennigan and maintained as a dry cleaners. Sharon Cleaners has occupied the study site since the owner, Jim Smalley, purchased the property from Mr. Hennigan in 1978. According to Mr. Smalley, there have been no changes in the adjacent properties or surrounding land use since 1978.

The initial site investigation was requested by Ballston Spa National Bank in February of 2000 to determine if any contamination existed on site as a result of the historical use of a dry cleaning facility. Upon detection of chlorinated solvents, particularly trichloroethene and tetrachloroethene, the NYSDEC Region 5 was notified and all subsequent site work was performed in accordance with the approved work plan.

Beginning in March 2001, the Smalley's retired from the business and the facility is currently being leased by Marc and Luci Guirk with an option to purchase the operation and property. The site is currently occupied by A.J. Cleaners, a dry cleaning business, managed by Marc and Luci Guirk. The Guirk's replaced the self-contained trichloroethylene and tetrachloroethylene (TCE/PCE) dry cleaning machine used previously by Sharon Cleaners, with a new machine that utilizes mineral spirits, a petroleum based cleaning solution.

### 2.00 OFF SITE INVESTIGATION

The adjacent properties and surrounding land use of the site is mainly residential and mixed commercial. Sharon Cleaners, as well as the adjacent properties, are serviced by municipal water and sewer provided by the City of Saratoga Springs. There are no water wells in the area according to the City of Saratoga Springs.

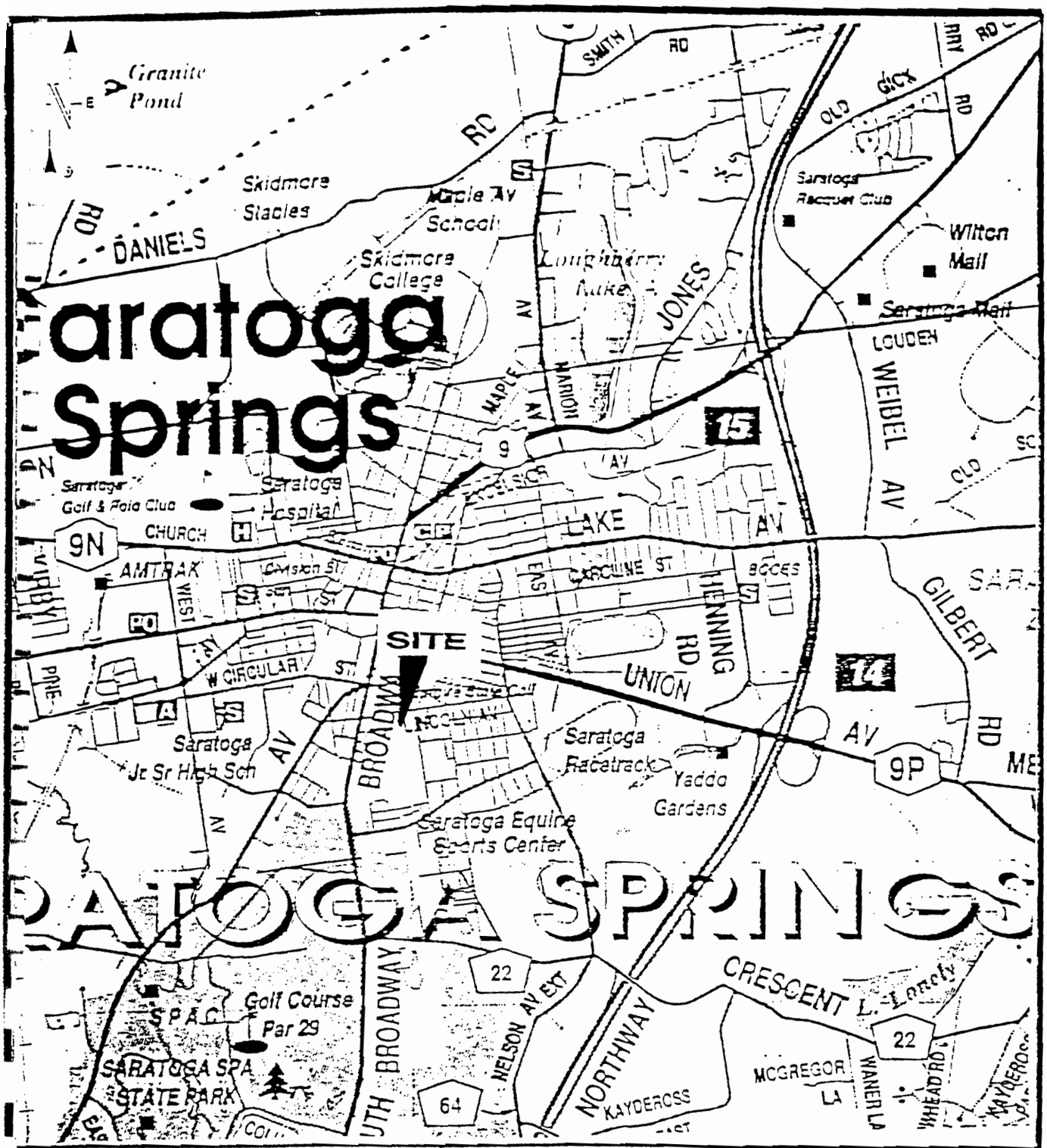
The properties adjacent to the site are occupied by residential homes to the north, east and west of the Sharon Cleaners facility. La Brake Memorials, an established cemetery marker retailer is located north of the site, across Lincoln Avenue. Greenridge Cemetery lies to the south.

The majority of commercial businesses located within the vicinity of the site are located along Broadway, west of the study site. The commercial businesses located at the intersection of Broadway and Lincoln Avenue include: Kimberly Guest House, a bed and breakfast located on the southeast corner, the St. Charles Motel, located on the northeast

corner, The Springs Motel, located on the northwest corner of the intersection and a Mobil Station that occupies the southwest corner of the intersection.

Greenridge Cemetery has been located to the south of Sharon Cleaners since it was established in 1880. All of the residential homes to the east of the site, along Greenridge Place are more than 100 years old with the remaining homes in the area ranging in age from 50 to 100 years old. The surrounding commercial businesses such as St. Charles Motel and The Springs Motel have been present prior to 1978.

The Mobil Station located on the southwest corner of Broadway and Lincoln Avenue has changed hands in management though the site was historically used as a gas station. Groundwater contamination has occurred at this site as indicated in the NYSDEC Spill List, Spill Numbers 9801976, 9609618, 9512469, and 9310733. There is no indication from NYSDEC records that contamination has affected the Sharon Cleaners site.




**SITE MAP**

**SHARON'S CLEANERS**

**SARATOGA SPRINGS, NEW YORK**

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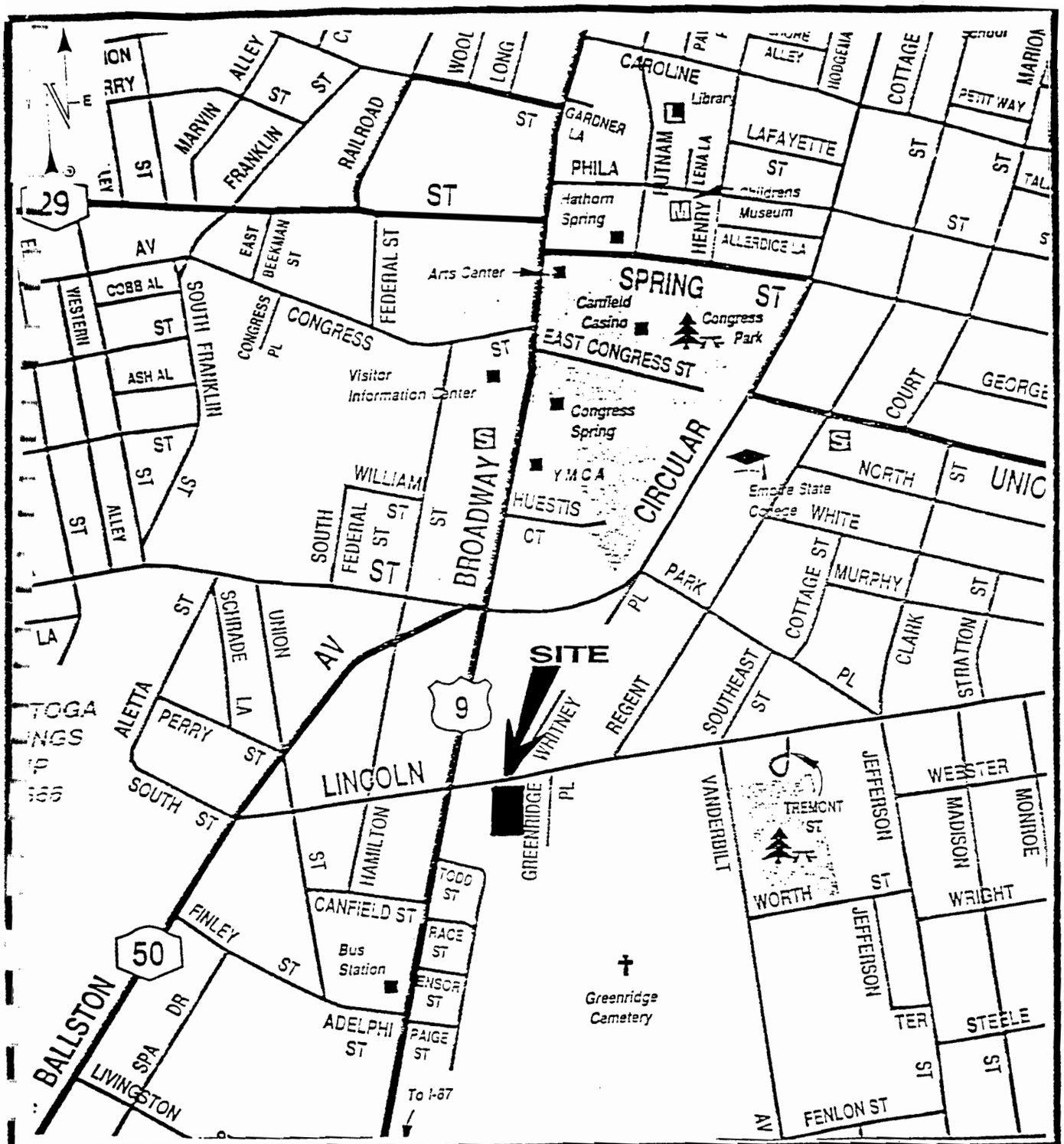


**SITE MAP**

**SHARON'S CLEANERS**

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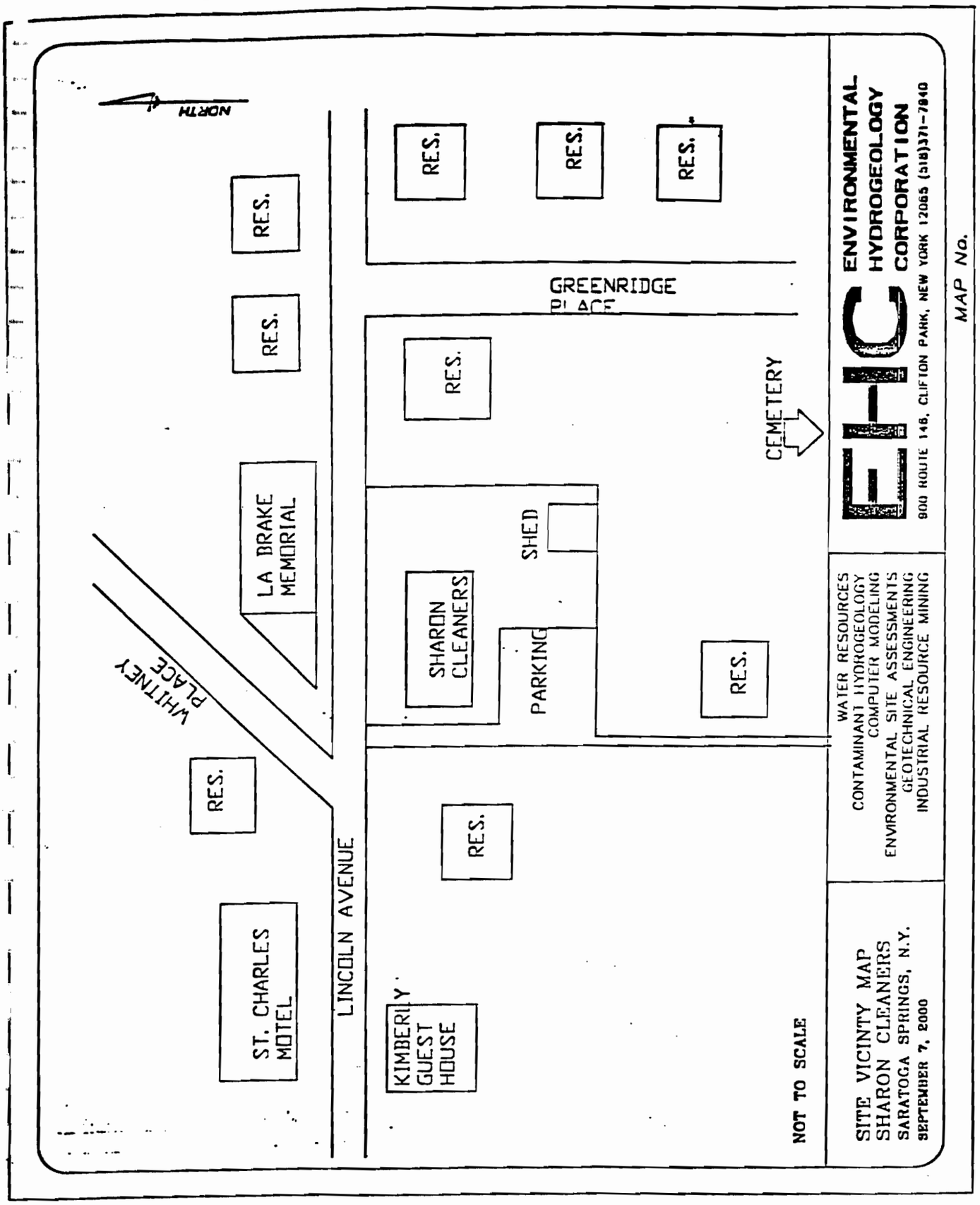
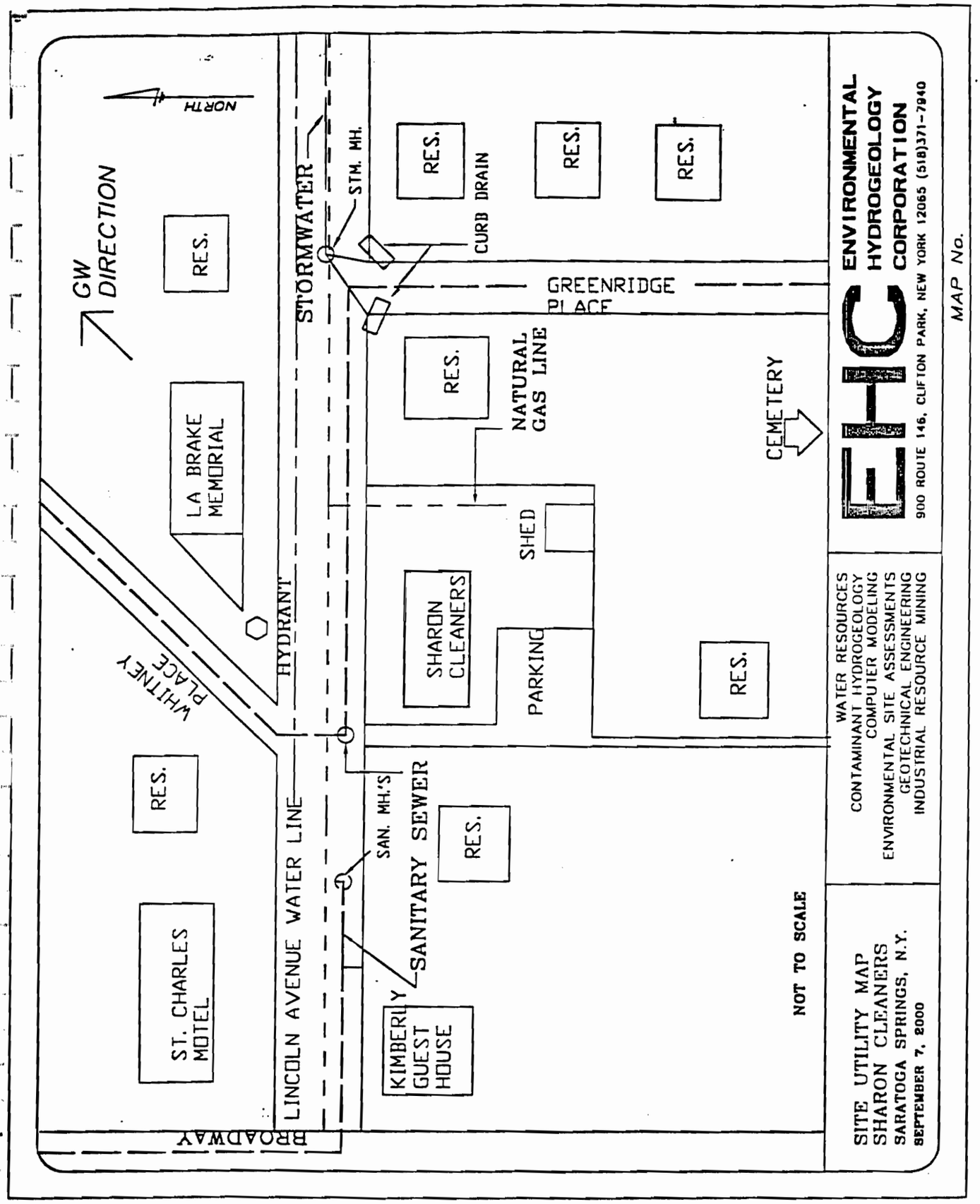
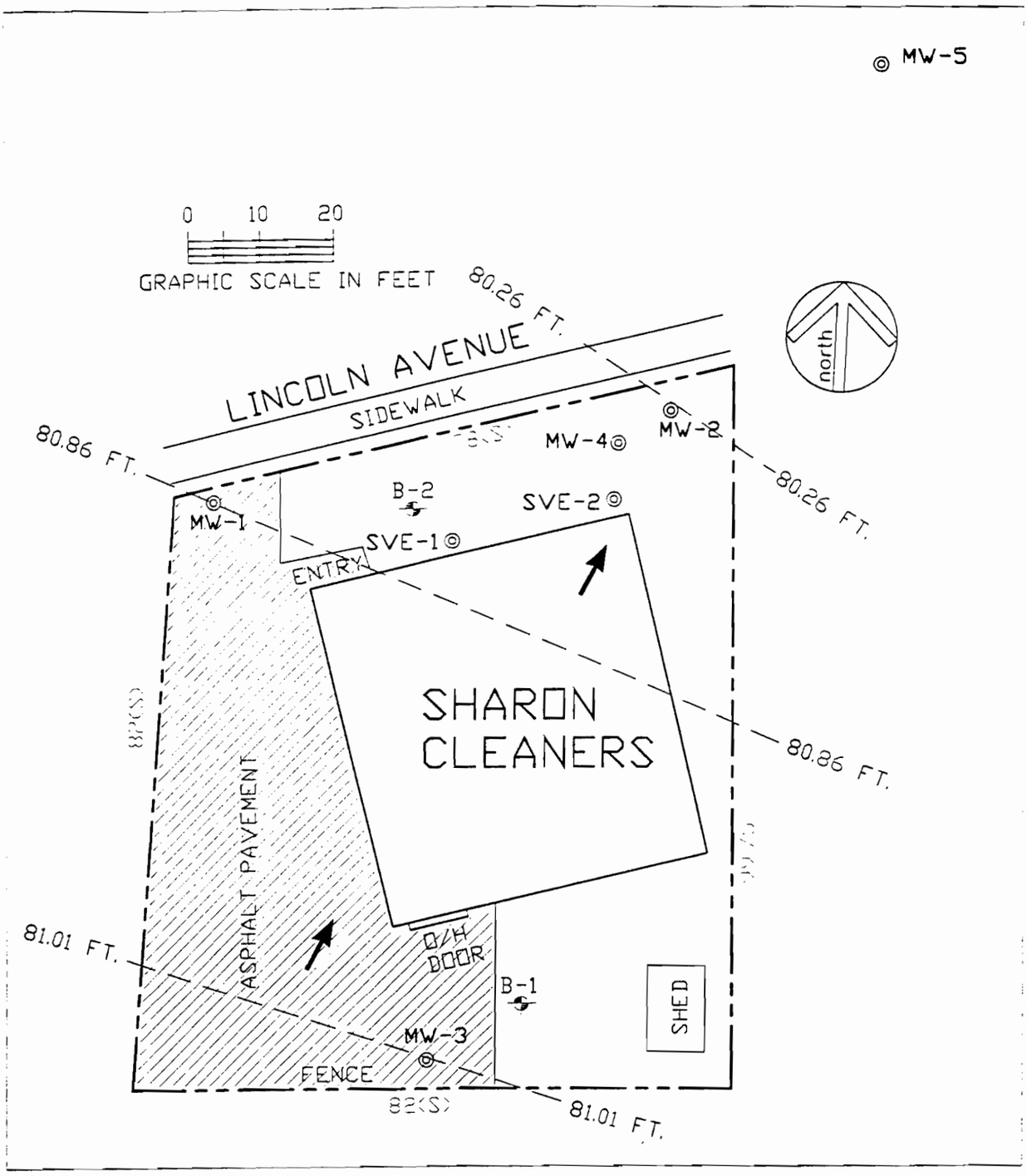
## 2.20 Site Vicinity Map



## 2.30 Site Utility Map



**2.40 Groundwater Direction Map**




PLOT SCALE: 1" = 20'

MAP No.

# GROUNDWATER DIRECTION MAP

REV. JULY 17, 2001
JUNE 11, 2001

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## 3.00 GEOLOGICAL REVIEW

EHC has evaluated available geologic and hydrogeologic data specific to the site through review of the Soil Survey of Saratoga County, New York, prepared by the United States Department of Agriculture Soil Conservation Service. The following is the information provided for the study site:

The soils underlying the study site are classified as OeE - Oakville and Windsor soils, 25 to 35 percent slopes.

These very deep, well drained to excessively drained soils formed in water-sorted sand. They are on very steep eroded sides of gullies in glacial outwash plains, lake plains and beach ridges. Individual areas range mainly from 10 to 80 acres and are long, narrow and irregularly shaped. This unit is about 40 percent Oakville soils, 40 percent Windsor soils and 20 percent other soils. The Oakville and Windsor soils were mapped together because of their similar use and management. Some areas are mostly Oakville soils, some are mostly Windsor soils and many contain both kinds of soils.

The typical sequence, depth and composition of the layers of the soil are as follows:

Oakville Soils

| | | |
|---|---|---|
| Surface Layer: | 0 to 7 inches | dark yellowish brown loamy fine sand |
| Subsoil: | 7 to 13 inches | yellowish brown loamy fine sand |
| | 13 to 31 inches | brownish yellow loamy fine sand |
| | 31 to 37 inches | mottled yellowish brown loamy fine sand |
| Substratum: | 37 to 60 inches | yellowish brown loamy fine sand with bands of dark yellowish brown and brown fine sandy loam |
| | 60 to 90 inches | dark yellowish brown loamy fine sand |

The properties of the Oakville soils include rapid permeability, low available water capacity, rapid surface runoff rates and a severe erosion hazard. The depth to groundwater exceeds 6 feet and the depth to bedrock is greater than 60 inches.

Windsor Soils

| | | |
|---|---|---|
| Surface Layer | 0 to 9 inches | very dark grayish brown loamy sand |
| Subsoil | 9 to 19 inches | yellowish brown loamy sand |
| | 19 to 23 inches | yellowish brown sand |
| Substratum | 23 to 72 inches | light yellowish brown sand |

The properties of the Windsor Soils include rapid to very rapid permeability, a low available water capacity, moderate surface runoff rates and a moderate erosion hazard. The depth to groundwater exceeds six feet and the depth to bedrock is greater than 60 inches.

Based on the soil descriptions summarized above and the on site soil classifications documented within previous investigations, the composition of the layers of the soil on site are a mixture of both Oakville and Windsor soils. The sequence, depth and composition of the soil layers underlying the study site are as follows:

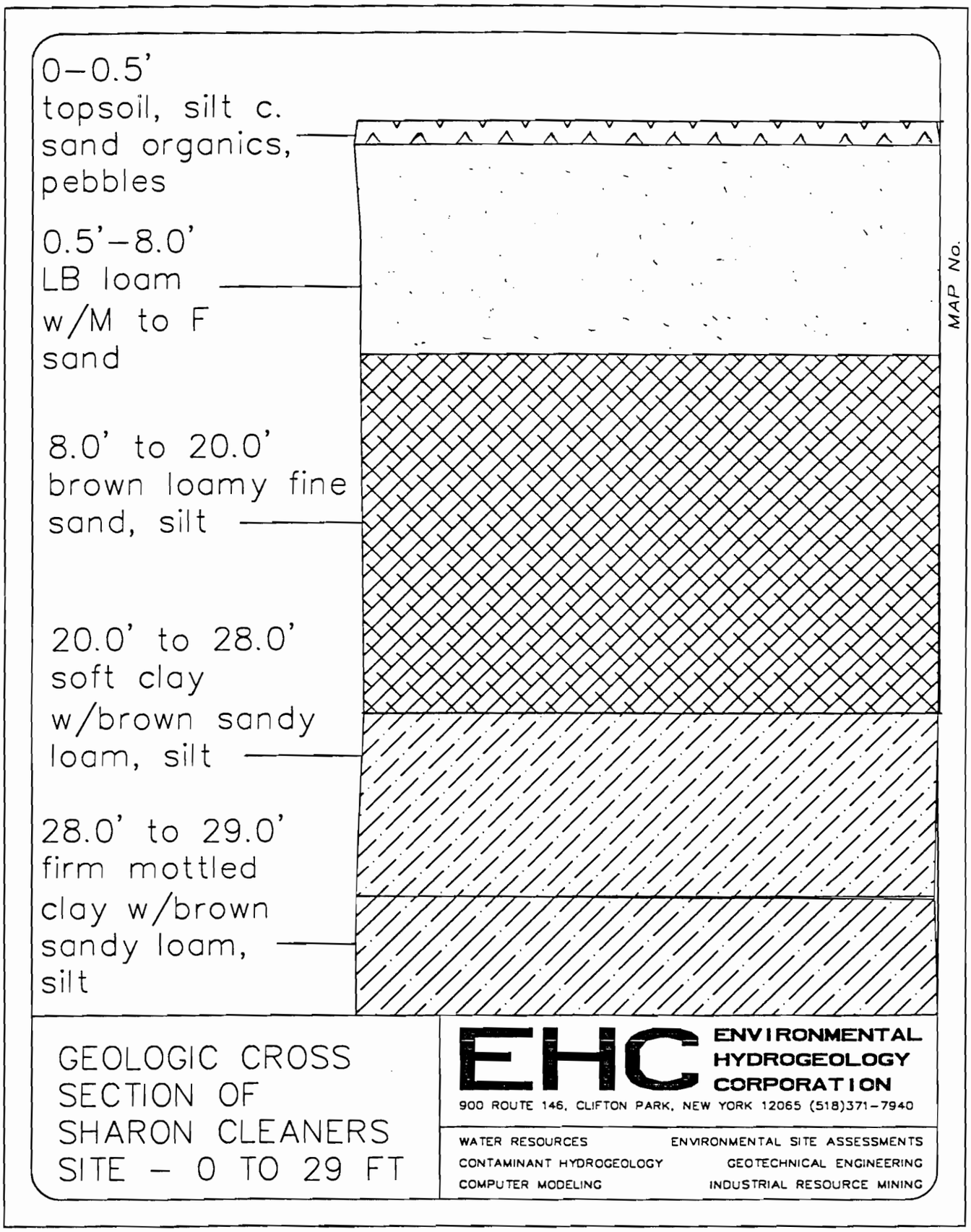
| | | |
|---|---|---|
| Surface Layer: | 0 to 7 inches | asphalt, v. coarse sand 1.0-2.0 mm, organics, silt, yellowish brown loamy fine sand |
| Subsoil: | 7 to 13 inches | yellowish brown loamy fine sand, silt |
| | 13 to 31 inches | yellowish brown loamy sand, silt |
| | 31 to 37 inches | brownish fine sandy loam, silt |
| Substratum: | 37 to 60 inches | brownish fine sandy loam, silt |
| | 60 to 90 inches | brownish fine sandy loam, silt |

The depth to groundwater ranges from 16.8 feet to 19.0 feet and bedrock exceeds 30 feet.

Soft clay was encountered at approximately 20-22 feet and extends to a depth of 29.0 feet. The clay platelets within the soil composition create a confining layer that limits contaminant migration to a maximum depth of 22 feet and as a result, prevents the contaminants from migrating to a deeper aquifer. Chlorinated contaminants, such as TCE and PCE, also have a chemical affinity for clay platelets, which causes the compounds to settle near the clay layer. No TCE and PCE were detected within the soil samples collected at MW-4 at depths deeper than 15 feet and no PCE and TCE were detected within the groundwater collected at a depth of 31 feet.

The presence of a clay confining layer, as well as, the chemical properties of chlorinated compounds and the lack of contaminant detection below 15 feet, confirm that the target contaminants have not migrated to deeper depths and reside exclusively within the vadose zone soils and upper groundwater.

## 3.10 Geologic Cross Section Map



## 4.00 SITE INVESTIGATION

The subsurface investigations previously conducted at the subject site document contaminants, specifically chlorinated compounds, identified within the soil and groundwater. The investigations were conducted on February 25, 2000 and March 22, 2000 and the information obtained provides baseline information prior to site remediation.

### 4.10 Borings

Two geoprobe borings, labeled B1 and B2 were installed by Marty Rowan of Rowan Environmental Services Inc. on February 25, 2000. Boring B1 was located on the southern side of the parcel, behind the dry cleaning building and boring B2 was located on the northern side of the parcel, in front of the building between the sidewalk and the entrance. The borings were installed to identify potential on-site contaminants as part of a property transaction undertaken by Ballston Spa National Bank.

The two groundwater samples were delivered to Hudson Environmental Services Inc. for analysis by EPA STARS Method 8021 for petroleum chlorinated solvents.

Groundwater Results

Groundwater sample results collected from Boring B1 (rear of building) indicated a tetrachloroethylene reading of 6.4 micrograms per liter (ug/l) or parts per billion (ppb), which is above the NYSDEC groundwater standard of 5 ug/l. Boring B2 (front of building) found a tetrachloroethylene reading of 27 ug/l. No additional solvents commonly associated with dry cleaning operations were observed.

Additional compounds observed in the rear boring were low levels of MTBE, benzene, toluene, m-Xylene/p-Xylene, c-Xylene and p-isopropyltoluene, all associated with gasoline. The levels detected are low and may be associated with a minor spill on the ground surface or leak from a vehicle. Although the exact source of the BTEX compounds are unknown, the investigation did not show a significant impact to the groundwater on site.

### 4.20 Monitoring Wells

Three monitoring wells, labeled MW-1, MW-2, and MW-3 were installed by Marty Rowan of Rowan Environmental Services Inc. using a truck-mounted Geoprobe 5400 on March 22, 2000 with two additional monitoring wells, MW-4 and MW-5, being installed at the direction of the NYSDEC the following year on March 1, 2001 by Aquifer Drilling and Testing, Albany NY using a truck-mounted auger drill rig.

The purpose of the monitoring wells was to identify the extent of PCE contamination previously detected within the groundwater through test borings on site as a result of the historical use of a dry cleaning facility.

Trichloroethylene (TCE) and tetrachloroethylene (PCE) are alkenyl halides that contain at least one halogen atom and at least one carbon-carbon double bond that creates a very stable and resilient compound. TCE and PCE are lighter chlorinated compounds that are colorless, nonflammable, volatile and suspected carcinogens.

The source of contamination does not appear to have occurred at the rear overhead door or dumpster located on the back side of the building. The source appears to have originated beneath the concrete floor, possibly from the trenches (located in the center of the building) that were filled with concrete prior to Smalley's reportedly occupying the building. One monitoring well, MW-3 located on the south side of the site, was installed to identify background conditions.

Three additional monitoring wells were placed on the northern end of the property, in front of the building on site to determine the extent of contamination within the suspected source area. The fifth well, located across Lincoln Avenue, was located to the northeast of the site to determine whether contaminants had migrated off site.

Based on the size and location of the site and the limited funds available by the Smalley's for the investigation, additional off site monitoring wells were not installed at this time.

The installation of additional wells would identify the down gradient impacts and extent of contaminant migration. However, the work plan has been limited since migration is in an area serviced by municipal water and sufficiently below the ground surface (10+ feet below grade) so the public will not come into direct contact with the contamination.

Monitoring wells 1, 2 and 4 are located on the northern side of the parcel, in front of the building. MW-3 is located on the south side of the building, upgradient from the contamination plume and MW-5 is located off site, across Lincoln Avenue, northeast of the site.

MW-1 is located within the northwest corner of the property within the paved parking area adjacent to the site entrance. MW-1 was drilled to a depth of 20 feet and consists of a 1" solid casing PVC from the surface to a depth of ten feet and a 0.020-slot screen casing from 10 to 20 feet.

MW-2 is located on the northeast corner of the site property within the grass area adjacent to the sidewalk separating the site from the neighboring property. MW-2 was drilled to a depth of 20 feet and consists of a 1" solid casing PVC from the surface to a depth of ten feet and a 0.020-slot screen casing from 10 to 20 feet.

MW-3 is located in the southeast corner of the paved parking area, across from the garage door located on the south side of the dry cleaning building. MW-3 was drilled to a depth of 22 feet and consists of a 1" solid casing PVC from the surface to a depth of ten feet and a 0.020-slot screen casing from 10 to 22 feet.

MW-4 is located adjacent to MW-2 to the west within the middle of the front lawn area. MW-4 was drilled to a total depth of 31 feet and has 10 feet of 1" 0.020-slot screen from a depth of 21 to 31 feet with 1" solid casing PVC extending to the ground surface.

MW-5 is located off site across Lincoln Avenue within the Right of Way in front of La Brake Memorial. MW-5 was drilled to a depth of 20 feet with 10 feet of 2" 0.020-slot screen PVC from a depth of 20 to 10 feet with solid 2" PVC extending to the ground surface.

MW-1, MW-2 and MW-3 were sealed with Uninim sand from the bottom of the well to 7 feet. A bentonite seal is located from 7 to 5 feet with a gravel layer placed between 5 and 6 feet. A bentonite base with concrete and mortar was used to seal the top of the well from 6" to the surface.

MW-4 was sealed using sand #0 from 31 to 19 feet, chips from 19 to 17 feet and backfill from 17 feet to the surface. MW-5 was sealed using the sand #0 from 20 to 8 feet, chips from 8 to 6 feet and backfill from 6 feet to the surface. (SEE APPENDIX A)

The monitoring wells installed were not related to the borings drilled, sampled and closed in the previous investigation.

### 4.20.1 2000 Sampling

Composite soil samples representing a depth of 0-16 feet were collected on March 22, 2000 during the installation of MW-1, MW-2 and MW-3 with grab-groundwater samples collected for laboratory analysis.

Continuous soil core samples were collected using four-foot long, two-inch diameter stainless steel sampling tubes. Prior to soil sample collection, a disposable acetate liner was inserted into the sampling tube. The sample tube was then driven into the desired sample interval. Upon retrieval, the acetate liner containing the soil sample was removed from the stainless steel sampling tube for observation by EHC's on-site environmental scientist. The three composite soil samples were delivered to Hudson Environmental Services Inc. for analysis by EPA Method Full 8021 for total volatile organic compounds (VOCs).

**Soil Results**

The results discussed below are reported in units of micrograms per kilogram (ug/kg) or parts per billion (ppb). The detection limit for the soil analysis was 5.0 ug/kg and the results were as follows:

The analytical results indicated the presence of tetrachloroethene within the soil samples at each boring and trichloroethene detected at MW-1. There were no additional petroleum related or chlorinated compounds detected.

MW-1

Soil sample results collected from MW-1 (front of building-west side) labeled EHC-B1 (0-16) indicated the presence of trichloroethene with a concentration of 15.0 micrograms per kilogram (ug/kg) and tetrachloroethene with a concentration of 110.0 micrograms per kilogram (ug/kg). The hazardous waste regulatory level for toxicity characteristic in soils is 700 ug/kg for tetrachloroethylene and 500 ug/kg for trichloroethylene. There were no additional reportable solvents commonly associated with dry cleaning operations were detected at MW-1.

MW-2

Soil sample results collected from MW-2 (front of building-east side) labeled EHC-B2 (0-16) indicated the presence of tetrachloroethene with a concentration of 151.0 ug/kg. No additional solvents commonly associated with dry cleaning operations were detected at MW-2.

MW-3

Soil samples collected from MW-3 (back of building-south side) labeled EHC-B3 (0-16) indicated the presence of tetrachloroethene with a concentration of 175.0 ug/kg. No additional solvents commonly associated with dry cleaning operations were detected at MW-3.

**Groundwater Results**

The grab-groundwater samples were collected from the finished wells, MW-1, MW-2 and MW-3 using a 0.75" bailer with each well purged of a minimum of three well volumes prior to the collection of a water sample. The three grab water samples were delivered to Hudson Environmental Services Inc. for analysis by EPA Method Full 8021 for total volatile organic compounds (VOCs).

The results discussed below are reported in units of micrograms per liter (ug/l) or parts per billion (ppb). The detection limit for the groundwater analysis was 0.5 ug/l and the results were as follows:

The analytical results indicate the presence of tetrachloroethene within all of the groundwater samples and trichloroethene detected at MW-1 and MW-2. There were no additional chlorinated compounds detected.

MW-1

Groundwater samples collected from MW-1 indicated the presence of both trichloroethene and tetrachloroethene. Trichloroethene was detected in a concentration of 1.2 ug/l and tetrachloroethene was detected in a concentration of 17.0 ug/l. There were no additional chlorinated compounds detected at MW-1.

MW-2

Groundwater samples collected from MW-2 indicated the presence of both trichloroethene and tetrachloroethene. Trichloroethene was detected with a concentration of 11.0 micrograms per liter or ug/l and tetrachloroethene was detected with a concentration of 875.0 ug/l. There were no additional chlorinated compounds detected at MW-2.

MW-3

Groundwater samples collected from MW-3 indicate the presence of tetrachloroethene. Tetrachloroethene was detected with a concentration of 29.0 ug/l. No additional chlorinated compounds detected at MW-3.

### 4.20.2 2001 Sampling

MW-4

Additional soil sampling was conducted during the installation of MW-4 on February 28, 2001 as required by NYSDEC, for the purposes of obtaining discreet soil samples just above and below the groundwater table, into the saturated zone. Based on a groundwater depth of approximately 17 feet, soil samples were collected at depths of 15'-19', 19'-23', 23'-27' and 27'-31'. The soil samples were delivered to Upstate Laboratories Inc., Albany, New York for laboratory analysis by EPA Method 8260, which detects the contaminants of concern, including perchloroethylene (PCE) and trichloroethylene (TCE). Method 502.2 could not be utilized due temporary instrumentation problems at the Upstate Laboratory. The lab director indicated that Method 8260 could be run as an alternate, which would result in lower detection limits. This option was discussed and approved by Mr. Russ Mulvey. The purpose of the interval sampling was to determine whether chlorinated compounds have migrated through the soil leaving residual contamination.

**Soil Results**

The soil results are reported in units of micrograms per kilogram (ug/kg) or parts per billion (ppb). The detection limit for TCE and PCE compounds is 6.0 ppb. The detection limits for additional compounds range from 6.0 ppb to 11.0 ppb due to the analysis being performed with dry weight. Concentrations of dry weights include percentage solids, which may affect the detection limit for a contaminant. Mathematical calculations have been preformed at the laboratory prior to reporting to account for percent solids and the concentrations reported pertain to the exact amount of sample submitted.

The results indicate a single tetrachloroethene hit of 15 ppb at fifteen feet below grade with no levels exceeding the detection limit at greater depths.

Acetone and/or methylene chloride were observed in the Upstate Laboratory samples, however, the low level concentrations were attributed to laboratory contamination according to Phil Shaw, Upstate Laboratories Inc. According to Mr. Shaw, acetone and methylene chloride are cleaners used in the laboratory and periodically show up as artifacts in laboratory samples.

**Groundwater Results**

The groundwater results are reported in units of micrograms per liter (ug/l), parts per billion (ppb). The detection limit for TCE and PCE compounds is 5.0 ppb.

No compounds were detected including any compounds relating to dry cleaning fluids in the groundwater sample collected from MW-4, which further supports laboratory contamination.

Additional groundwater samples were collected from monitoring well MW-1, MW-2, MW-4 and MW-5 on March 2, 2001 with groundwater samples collected at MW-3 on April 12, 2001 due to heavy ice and snow cover impeding access to the monitoring well area. Each monitoring well was purged of a minimum of three well volumes prior to the collection of a water sample. The water samples were delivered to Upstate Laboratories Inc., Albany, New York for laboratory analysis by DUSR protocol.

The analytical method requested for sample analysis was EPA Method 502.2, as per the Work Plan / Health and Safety Plan. Laboratory representatives contacted EHC pertaining to samples collected from MW-1, MW-2, MW-4 and MW-5 with regard to temporary problems in the instrumentation for method 502.2 (i.e. Gas Chromatograph). The laboratory requested a change in method to insure QA/QC accuracy from 502.2 to EPA Method 8260, which uses a GC Mass Spec that has a lower detection limit. Samples collected from MW-3 were also analyzed Method 8260 to be consistent with the previous sample. Method 8260 is comparable to the 502.2 Method and as a cost saving measure, Method 8260 will only be utilized for the initial sampling event. The temporary change in analytical method was verbally approved by Mr. Russ Mulvey prior to analysis of the samples.

MW-1

Two compounds were detected within monitoring well MW-1; chloroform (CAS 67-66-3) and tetrachloroethene (CAS 127-18-4). The chloroform was noted on the GCMS chart at 2 parts per billion (ppb), below the groundwater limit of 7 ppb. Chloroform was not detected within another sample collected. The tetrachloroethene observation at 12 ppb was consistent with contaminant migration along the edge of the groundwater plume.

MW-2

The MW-2 sample was designated by Upstate Laboratories Inc. as MW-2DC to indicate that the sample was diluted for analysis due to a high concentration of 2-Butanone (CAS 78-93-3) also known as MEK. 2-Butanone was detected in the MW-2 sample at a concentration of 6,700 ug/l within a detection limit of 250 ug/l. The high concentration appears to have been influenced by solvents used to clean glue joints for the SVE well that were installed, adjacent to the MW-2.

After a discussion with Ken Myers, H&M Oil Co., who installed the SVE system, it was discovered that the solvent used to clean the glue joints was Oatey Cleaner with Duaber, No. 30795 that identifies 2-Butanone as the main compound. The description also identifies that the product emits 650 grams per liter of VOCs when tested according to SCAQMD Method 316A. A copy of the label is included in Appendix I of this report.

The cleaner information supports the assumption that the 2-Butanone detected within the sample is due to the solvent used to clean the glue joints and not a contaminant discharge from dry cleaning operations. 2-Butanone was detected in MW-5 at a concentration of 31.0 ug/l with a detection limit of 10 ug/l. Installation of PVC monitoring well components for MW-5 utilized threaded fasteners, therefore, 2-butanone was not a component of PVC assembly. Since 2-Butanone was not identified in previous soil or groundwater samples during the original sampling events on the Sharon Cleaners site prior to the use of solvent glued SVE well compounds, there is the possibility of sampling or laboratory contamination of MW-5 sample. Confirmation of 2-Butanone in the groundwater at MW-5 will be determined during the next sample event.

The target contaminants, PCE and TCE were identified in concentrations below the detection limit within MW-2.

MW-3

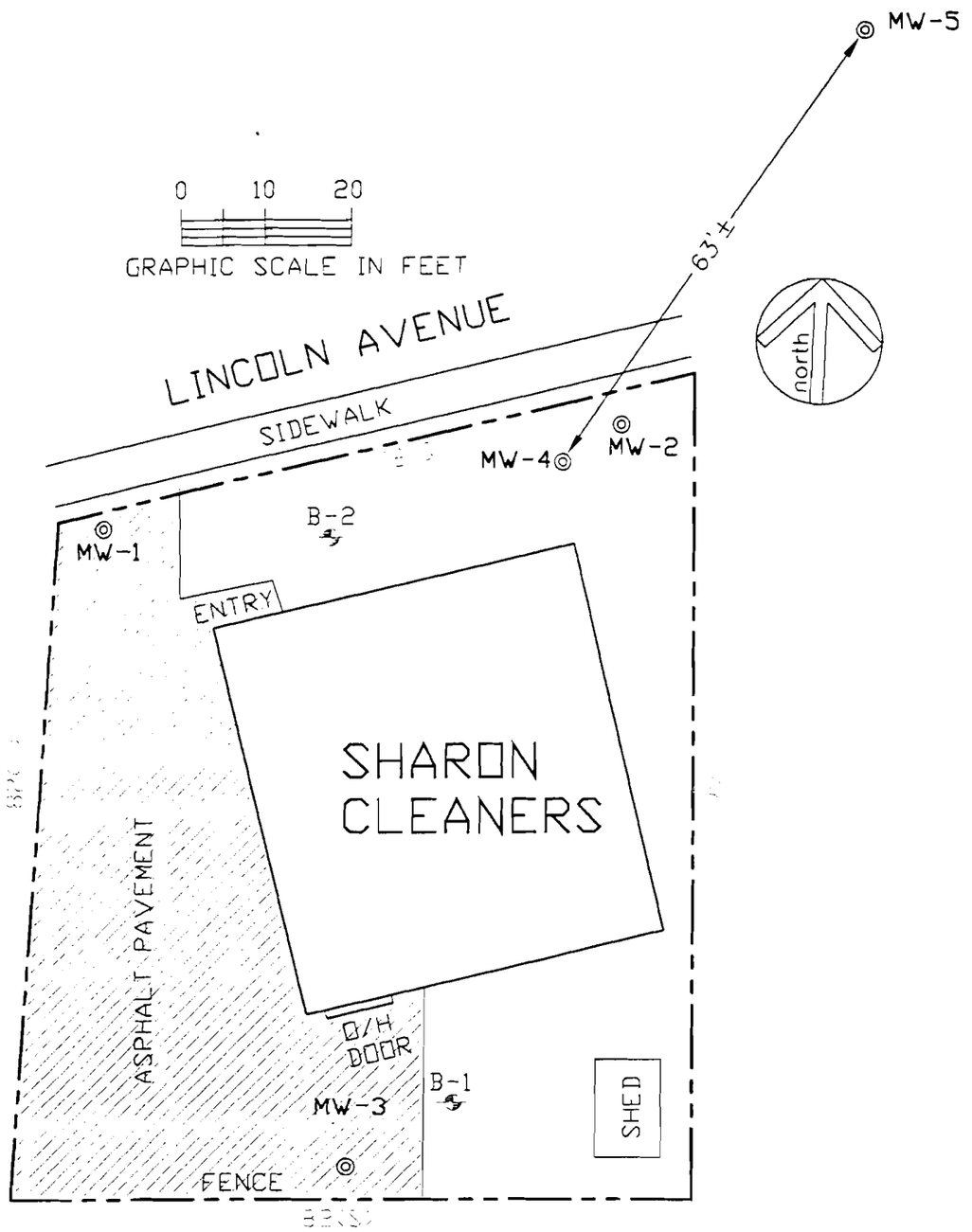
MW-3 is located in the southern parking lot, upgradient from the dry cleaning facility. Tetrachloroethene was detected at a concentration of 9.0 ppb.

MW-4

No compounds were detected within MW-4 from the deep water sample that indicates no chlorinated compound migration into the deeper aquifer beneath the structure. The clay containing soil layers beginning at 20 feet appear to be preventing the chlorinated compounds to migrate to the deeper depth.

MW-5

MW-5 is located on the north side of Lincoln Street across from Sharon Cleaners and in the direction of the contamination plume. Three compounds were detected; methylene chloride (CAS 75-09-2) in a concentration equal to that of the detection limit of 6 ug/l, 2-butanone (CAS 78-93-2) in a concentration equal to the detection limit of 31 ug/l and tetrachloroethene (CAS 127-18-4); two relating to laboratory contamination with the presence of tetrachloroethene indication plume migration across the street. Tetrachloroethene was detected at a concentration of 280 ppb.




MAP No.

PLOT SCALE: 1" = 20'

# BORING AND MONITORING WELL LOCATION MAP

JUNE 11, 2001

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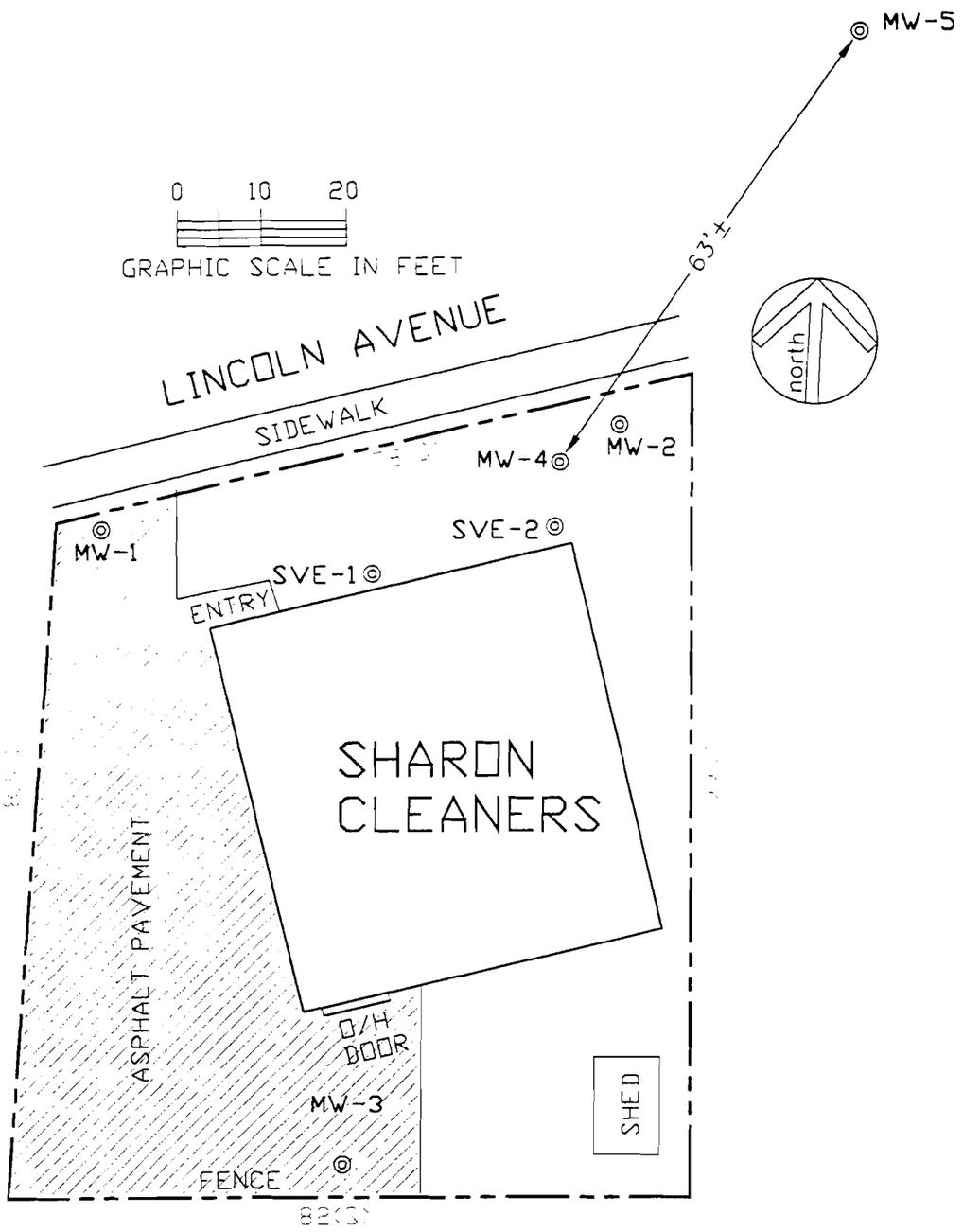
4.40 Site Plan Existing Conditions Map




MAP No.

PLOT SCALE: 1" = 20'

# SITE PLAN EXISTING CONDITIONS

JUNE 11, 2001

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## 5.00 TREATMENT OPTION SUMMARY

Treatment at this facility is required in order to clean the contaminated groundwater to concentrations below the groundwater standards outlined in 6NYCRR Part 703 for PCE and TCE of 5.0 micrograms per liter or ug/l. The treatment systems used to remediate VOC's, including PCE and TCE were considered for the Sharon Cleaner site and included the following:

- Soil Vapor Extraction, SVE
- Sparge/SVE system
- Groundwater Pump and Treat

Each option was examined based on site conditions, cost of operation, concentrations of contaminants, direction of groundwater flow and plume migration.

Sparge/Vacuum System

A sparge/vacuum system requires the basic SVE system consisting of a vacuum pump, slotted well points and an exhaust stack, as well as, sparge wells, a blower and piping to inject air into the groundwater, which then volatilizes contaminants into the soil. Once above the groundwater surface, the SVE would extract contaminants by vacuuming. Although the combined sparge/SVE system increases the efficiency of remediation, it was not selected due to the small site area and high cost of installation and operation.

Pump and Treat

The pump and treat method reduces contaminant levels directly from the groundwater by use of a pump, piping and carbon filter with a discharge to the municipal sewer. Review of the pump and treat method with NYSDEC remediation specialist indicated that the method has a low efficiency and does not extract contaminants above the groundwater, which can migrate into the water over time. The method was not chosen due to the inefficiency of soil remediation and the high cost of the pump and treat method.

Soil Vapor Extraction (SVE) System

The SVE system consists of a vacuum pump, slotted well points to extract vapors from the soil above the groundwater table and an exhaust stack. The vacuum wells extract vapors from the groundwater surface and soil on a continuous, 24-hour basis, which are vented into the atmosphere. The system effectively remediates both PCE and TCE from the soil and the groundwater at a low operation cost to the responsible party.

The basic SVE system was selected as a remediation option since it is effective in removing VOC's from a wide area at a minimal expense. The two SVE wells are capable of extracting vapors from the front yard, beneath the building and portions of the area beneath Lincoln Avenue.

Since there were no TCE/PCE contaminants identified at soil depths greater than 15 feet within the 31-foot well and within the subsequent groundwater sample collected, contaminants appear to be within the vadose zone soils and near the groundwater surface.

## 6.00 SAMPLING SCHEDULE SUMMARY

The following is a summary of the sampling schedule submitted prior to system installation to Mr. Russ Mulvey, NYSDEC Region 5 on September 27, 2000 for the study site.

The analytical methodology chosen by EHC for the soil and groundwater samples was determined by following factors: target contaminants, type of instrumentation used, detection limits and cost per sample.

### Air Sampling

Air sampling was conducted prior to system installation outside the Sharon Cleaners building and within the basement of the home of Mrs. Gillespie, a private residence located adjacent to Sharon Cleaners on the eastern side near the corner of Lincoln Avenue and Greenridge Road.

The air sampling containers used were Summa Canisters, provided by CON-TEST Laboratories, East Longmeadow, MA that were set simultaneously for an interval of four (4) hours as outlined by John Sheehan, NYSDOH. One canister was placed in the basement of Mrs. Gillespie's home with the other placed outside between the Sharon Cleaners building and the Gillespie residence. The outside air sample was used to provide a background sample to determine whether the basement sample has interference from air emissions from Sharon Cleaners. The air samples was sent to CON-TEST Laboratory and analyzed for perchloroethylene and tetrachloroethylene by EPA Method TO14 using a GC Mass Spec that has a detection limit of 0.5 parts per billion (ppb).

SVE exhaust is sampled by use of a Sensidyne Model 800 syringe type sampler. Results for March, April, May and June indicate that TCE /PCE is being extracted as planned. The specific sampling procedure is as follows:

### SVE System Monitoring

EHC will perform monthly visits to the facility to scan the vacuum exhaust with a Sensidyne Model 800 to determine volatile organic concentrations in the air stream, check equipment operation and adjust vacuum levels to each well. TCE will be monitored using a Sensidyne Precision Gas Detector Tube #134SA and PCE will be monitored using a Sensidyne Precision Gas Detector Tube #135SA. Each sample tube has a detection range of 5 to 300 parts per million (ppm). The equipment check and Sensidyne scanning will occur each month.

Each Sensidyne detector tube contains pre-treat reagent that treats the incoming airflow for the target contaminant and original reagent that changes color upon contaminant detection (i.e. PCE or TCE). The glass tube is inserted into the end of the Sensidyne Model 800 Sampler and is held in place by a rubber tube connector.

The incoming airflow is pre-measured by the Sensidyne Model 800 by pulling the handle to a full stroke and turning a quarter turn to lock the handle in place. This procedure ensures that the same amount of air flows through each sample tube during each monitoring event. The reagents within the sample tube cause a color change based on concentration within 2 minutes of the initial air intake and the exact concentration is read from the gauge located on the outside of the sample tube. Additional information regarding sampling is included in Section IV Subsections 1.00, 1.10, 1.20 and 1.30 of this report.

**Soil Sampling**

The soil samples were analyzed by EPA Method 8260, which is performed on a Gas Chromatograph. All of the samples will be analyzed by Upstate Laboratories Inc., Albany NY, USEPA CLP certified laboratory.

Soil sampling was conducted during the installation of MW-4 for the purposes of obtaining discreet soil samples just above and below the groundwater table; into the saturated zone. Based on a groundwater depth of approximately 17 feet, soil samples were collected at depths of 15'-19', 19'-23', 23'-27' and 27'-31'. As a cost savings measure, the soil samples were planned to be analyzed by EPA Method 502.2 limited scan, which detects the contaminants of concern, including perchloroethylene (PCE) and trichloroethylene (TCE). Method 502.2 could not be utilized due temporary instrumentation problems at the Upstate Laboratory. The lab director indicated that Method 8260 could be run as an alternate, which would result in lower detection limits. Method 8260 was used consistently throughout the sample analysis for accurate comparison.

No additional soil sampling is scheduled for this site.

**Groundwater Sampling**

The analytical method chosen for the groundwater samples was EPA Method 502.2, which due to temporary instrumentation problems, was replaced by EPA Method 8260 that has a detection limit of 0.5 ppb. All of the samples will be analyzed by Upstate Laboratories Inc., Albany NY, USEPA CLP certified laboratory.

Groundwater samples were collected from each of the finished wells with each well purged of a minimum of three well volumes prior to the collection of a water sample.

The first sampling event consisted of groundwater samples being collected from each monitoring well on site. After the initial sample collection, groundwater sampling events will occur quarterly (four events per year) where each monitoring well is sampled for chlorinated compounds, particularly, PCE and TCE to determine system efficiency. One (1) groundwater sample will be collected from each well and analyzed by the original, less costly method 502.2.

The SVE system will remain in continuous operation until four consecutive groundwater sample events identify concentrations of PCE and TCE at or below the NYSDEC groundwater standard of 5.0 ug/l.

## SECTION II

## AIR SAMPLING

### 1.00 AIR SAMPLING SUMMARY

Air sampling was conducted on site prior to the system installation on February 28, 2001. As per the Site Work Plan, two Summa canisters were used for obtaining one outdoor background sample, located behind the Sharon Cleaners facility and one indoor sample from the basement of the closest next-door neighbor, Ms. Mary Gillespie, 50 Lincoln Avenue. The samples were collected at each location simultaneously, over a four-hour period.

Initially, the results were reported in units of PPBv- parts per billion-volume. For standard comparison purposes, EHC requested that CON-TEST submit a revised version of the results reporting in units of ug/m3.

The results found both indoor and outdoor samples to have non-detectable concentrations of trichloroethene with tetrachloroethene reporting below 7.0 ug/m3. There does not appear to be any significant difference between the indoor and the outdoor samples.

A telephone conversation with Mr. John Sheehan confirmed that results appear to be background and no problems are apparent with the sample results.

### 1.10 Indoor Air Quality Result Summary

The indoor air sample was collected within the center of the Gillespie basement using a Summa Canister labeled, A1. The sample time began at 2 p.m. and ended at 6 p.m. equaling a total sample interval of four hours.

The indoor air quality results for sample A1 are as follows:

| Parameter | Result in PPBv | Minimal Detection Limit PPBv | Result in ug/mg3 | Minimal Detection Limit ug/mg3 |
|---|---|---|---|---|
| Trichloroethene | ND | 0.5 | ND | 2.7 |
| Tetrachloroethene | 1.0 | 0.5 | 6.8 | 3.4 |

## 1.20 Ambient Air Quality Results

The outdoor air sample was collected in back of the Sharon Cleaners facility near the shed using a Suma Canister labeled, A2. The sample time began at 2 p.m. and ended at 6 p.m. equaling a total sample interval of four hours.

The outdoor air quality results for sample A2 are as follows:

| Parameter | Result in PPBv | Minimal Detection Limit PPBv | Result in ug/mg3 | Minimal Detection Limit ug/mg3 |
|---|---|---|---|---|
| Trichloroethene | ND | 0.5 | ND | 2.7 |
| Tetrachloroethene | 0.83 | 0.5 | 5.6 | 3.4 |

## SECTION III

## SVE SYSTEM

### 1.00 SVE SYSTEM LAYOUT

The remediation system selected by EHC for Sharon Cleaners is a Soil Vapor Extraction System that was also reviewed for use by NYSDEC and NYSDOH representatives, based on the types of contaminants found, as well as, the concentrations detected therein.

The system is comprised of two, 20 foot, 4" PVC soil vapor extraction wells located on the northern end of the property in front of the building that are connected by 2" PVC pipe running along the eastern property line to a Fuji blower located on a concrete slab, enclosed by a shed; presently located in the southeast corner of the property.

The exhaust stack for the system is located on the north end of the shed and extends seven feet from the roof and a total of fourteen feet above grade. A small ½" diameter exhaust sampling port is located on the exhaust stack, approximately six feet above grade. As per the request of the NYSDEC Region 5 Air Quality Division, a carbon canister will be placed on the system exhaust to ensure compliance with air quality regulations. The carbon canister is scheduled for shipping on July 18, 2001 and will be installed promptly upon receipt.

Each SVE well has ten feet of 0.020-slotted pipe for vapor extraction with a ten-foot solid well section extending to grade. Each well was sealed using sand pack from 20 to 8 feet, bentonite chips from 8 to 6 feet and backfill from 8 feet to the surface.

The Fuji regenerative blower chosen for the project is Stock #4Z751, Fuji Model VFC 404P-5T that has a maximum airflow of 98 cubic feet per minute (cfm). The airflow measured upon system operation was 87 cfm.

There are a total of five monitoring wells to monitor and determine the efficiency of the system; four monitoring wells are on site and one off-site, across Lincoln Avenue.

### 1.10 SVE System Installation

The SVE system installation was conducted on February 27, 2001 through March 2, 2001. Aquifer Drilling and Testing, Albany, NY was contracted to perform the drilling procedures for the two SVE wells required for the system operation. H&M Oil Co., Schenectady, New York was contracted as the piping and blower installation contractor that connected the entire system for operation on Friday March 2, 2001.

Following discussions with NYSDEC personnel, the 2-4" PVC SVE wells were installed at this time to minimize the additional expense to the Smalley's due to the added expense of the driller to return at a later date.

## 1.20 SVE Well Installation

The SVE wells were installed on February 28, 2001 by ADT with a truck mounted auger drill rig using 8 ¼ inch augers. The PVC wells were drilled to the top of the groundwater table, bedded with coarse morie sand to six feet below grade and sealed with two feet of bentonite clay. The well casings were extended to grade, each assembled with a PVC 4x2 "T" and plumbed with 2-inch PVC pipe extending along the eastern side of the building to the vacuum shed located on the southeast corner of the property. The system began operating continuously on March 5, 2001.

H&M Oil Co. tested the air flow of the system upon start-up and the air flow was recorded at approximately 87 cubic feet per minute (cfm).

The SVE system will remain in continuous operation until four consecutive groundwater sample events identify concentrations of PCE and TCE at or below the NYSDEC groundwater standard.

## 1.30 SVE System Operation

The system operation will be based on achieving the New York State Ambient Water Quality Standard for TCE and PCE of 5.0 ug/l. Once the groundwater samples collected are at or below the Ambient Water Quality Standards consistently for one year, the system will be shut down, dismantled, decontaminated and removed from site. Decontamination procedures are described in Section V, Subsection 4.60 of this report.

System operation for PCE and TCE removal will be monitored for air emissions from the SVE system as described in Section I, Subsection 6.00 of this report. SVE air sample ports are installed on the four-inch exhaust pipe before and after the Carbitrol carbon canister. Soil vapor readings will be collected by a Sensidyne syringe sampler prior to treatment in the carbon canister and monitored for extraction of TCE and PCE. Continued detection of the two parameters will indicate that vapors are being extracted from the soil. Lower detection limit sample tubes will be used when the sample results fall below 5 ppm.

The carbon canister will be monitored for efficiency and contaminant break through by quarterly sampling, as per manufacturer recommendation. Once the ambient air sample result after the carbon canister approaches the NYSDEC Air Division Short-term Guideline Concentrations for Stationary Sources of 1,000 ug/m3 (0.147 ppm) for PCE and 54,000 ug/m3 (10 ppm) for TCE, the carbon canister will be changed and replaced with fresh carbon.

The SVE system will remain in operation until the groundwater results demonstrate continued improvement to the groundwater quality and will be shut down when the groundwater results meet the acceptable limits. In the event that TCE and PCE levels stabilize after two (2) years of operation and without continue improvement, all results will be reviewed with the Region 5 Office of Environmental Quality regarding further action. If substantial improvement is not achieved with the existing SVE, the addition of a sparge modification using a compressor will be evaluated.

For purposes of system efficiency, the TCE and PCE concentrations detected in the groundwater in February 2001 will be used for baseline calculations since the procedures, methods and QA/QC followed NYSDEC DUSR requirements.

**SOIL AND GROUNDWATER RESULTS**
**FOR**
**TCE AND PCE**
**BY EPA METHOD 8260**

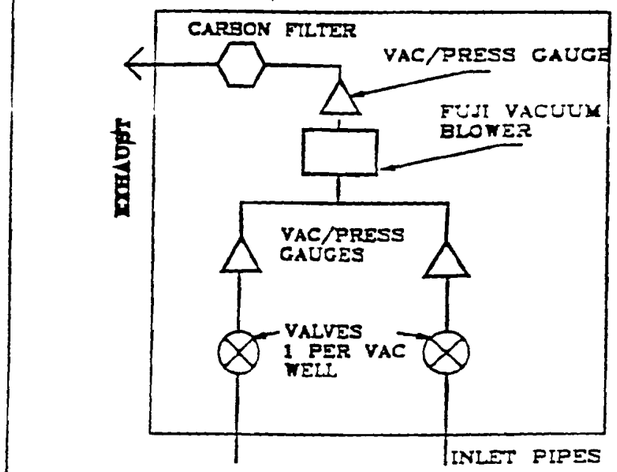
**FEBRUARY 2001**

| SAMPLE ID | MATRIX | DEPTH FT | TCE RESULT ug/kg | PCE RESULT ug/kg | NYSDEC TCE STANDARD ug/kg | NYSDEC PCE STANDARD ug/kg |
|---|---|---|---|---|---|---|
| MW-4 | SOIL | 15-19/C | ND | 15.0 | 500 | 700 |
| | SOIL | 19-23/C | ND | ND | 500 | 700 |
| | SOIL | 23-27/C | ND | ND | 500 | 700 |
| | SOIL | 27-31/C | ND | ND | 500 | 700 |
| MW-1 | GW | 20 / G | ND | 12.0 | 5.0 | 5.0 |
| MW-2 | GW | 20 / G | ND | ND | 5.0 | 5.0 |
| MW-3 | GW | 22 / G | ND | 9.0 | 5.0 | 5.0 |
| MW-4 | GW | 31 / G | ND | ND | 5.0 | 5.0 |
| MW-5 | GW | 20 / G | ND | 280.0 | 5.0 | 5.0 |

C = COMPOSITE SAMPLE
G = GRAB SAMPLE

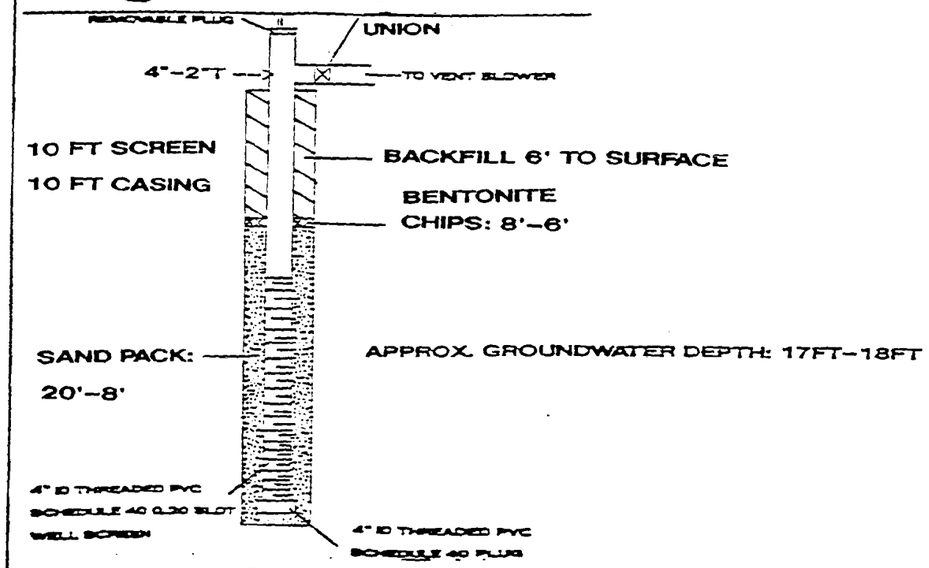
The zone of influence for the SVE vacuum system is effective for removing vapors for a radius of approximately 45-50 feet from each SVE well based on a soil porosity of 0.33 and an initial vacuum reading in Inches Water Gauge (IWG) of 47 at 87 cfm.

1.40 SVE System Diagram



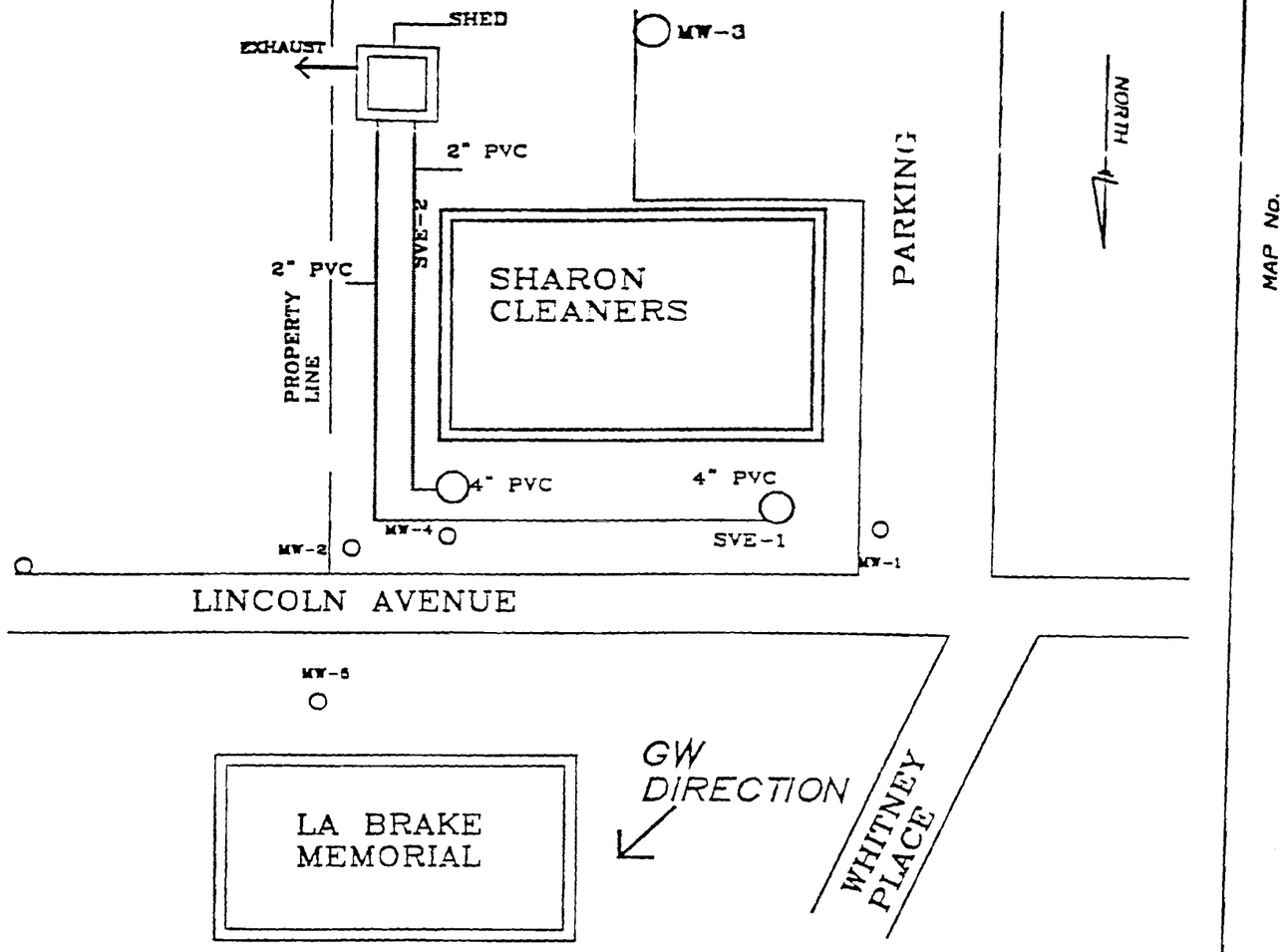

SHED DIAGRAM

NOT TO SCALE




VACUUM WELL DESIGN

NOT TO SCALE




SVE PIPING LAYOUT

NOT TO SCALE

SVE DIAGRAMS FOR
SHARON CLEANERS
SARATOGA SPRINGS
NOVEMBER 20, 2000

WATER RESOURCES
CONTAMINANT HYDROGEOLOGY
COMPUTER MODELING
ENVIRONMENTAL SITE ASSESSMENTS
GEOTECHNICAL ENGINEERING
INDUSTRIAL RESOURCE MINING

EHC ENVIRONMENTAL HYDROGEOLOGY CORPORATION
900 ROUTE 146, CLIFTON PARK, NEW YORK 12065 (518)371-7940

## SECTION IV

## MONITORING PROGRAM

### 1.00 SHED EXHAUST MONITORING

Monthly visits will be conducted to scan the vacuum exhaust with a Sensidyne Model 800 and sample tubes #134SA and #135SA as per the sampling schedule to determine volatile organic concentrations in the air stream, check equipment operation and adjust vacuum levels to each well. Sample tube #135SA for PCE was not received until June 12, 2001 and as a result, was not used for the April and May sampling events.

The contaminant mass removed was derived from a calculation using the Ideal Gas Law and sample calculations are included in Appendix J of this report.

### 1.10 Initial Exhaust Reading

The initial exhaust air reading for the system was taken at noon on Thursday March 8, 2001 by NYSDEC representative, Mr. Russ Mulvey. The initial reading recorded after three days of continuous operation was 20-22 ppm. Based on an airflow of 87 cfm, the rate of TCE removed is approximately 0.88 lbs/day.

### 1.20 Exhaust Reading for April

The exhaust reading for April was taken at 12:30 p.m. on April 12, 2001 using a Sensidyne Model 800 with a trichloroethylene sample tube #134SA. The reading recorded for April was 10 ppm with continuous operation since the systems initial installation. Based on the initial airflow reading of 87 cfm, the total trichloroethylene being removed is approximately 0.42 lbs. per day.

### 1.30 Exhaust Reading for May

The exhaust reading for May was taken at 2 p.m. on May 7, 2001 using a Sensidyne Model 800 with a trichloroethylene sample tube #134SA. The reading recorded for May was 10 ppm with continuous operation since the systems initial installation. Assuming the rate of air flow has remained constant, the removal rate remains approximately 0.42 lbs. of trichloroethylene per day.

### 1.40 Exhaust Reading for June

The exhaust reading for June was taken at 1 p.m. on June 19, 2001 using a Sensidyne Model 800 with a trichloroethylene sample tube #134SA and tetrachloroethylene sample tube #135SA. The reading recorded for June with continuous operation since the systems initial installation was 5.0 ppm of TCE and 5.0 ppm of PCE. Assuming the rate of

airflow has remained constant, the removal rate is approximately 0.21 lbs. of trichloroethylene and 0.265 lbs. of tetrachloroethylene per day.

**TABLE 1**
**MONTHLY EXHAUST READINGS**
**SHARON CLEANERS**

| Month | TCE Conc. Units = ppm | PCE Conc. Units = ppm | Detection Range Unit-ppm | TCE Removed lbs/day | PCE Removed lbs/day | TCE Cumulative Mass Removed lbs/sample interval | PCE Cumulative Mass Removed lbs/sample interval |
|---|---|---|---|---|---|---|---|
| March | 20-22 | NS | 5.0-300 | 0.88 | NS | 30.45 | NA |
| April | 10.0 | NS | 5.0-300 | 0.42 | NS | 40.95 | NA |
| May | 10.0 | NS | 5.0-300 | 0.42 | NS | 59.01 | NA |
| June | 5.0 | 5.0 | 5.0-300 | 0.21 | 0.26 | 64.41 | 11.44 |

NS = Not Sampled

## SECTION V

## HEALTH AND SAFETY PLAN

This health and safety plan describes the procedures to be implemented by the Environmental Hydrogeology Corporation (EHC) during the installation and operation of the proposed Soil Vapor Extraction System (SVE) at Sharon Cleaners, Saratoga Springs, New York. It is our policy to conduct all activities in a manner designed to protect the health and safety of project personnel and the public. All of the proposed work will be conducted in accordance with applicable federal, state and local regulations.

EHC recognizes that the potential exists for exposure to volatile organic compounds (VOCs) during the installation and operation of the SVE system within the designated property boundaries as well as off-site areas. The main element of the plan is to ensure personnel protection, air quality control and decontamination procedures.

### 1.00 STANDARD LEVELS OF PERSONAL PROTECTIVE EQUIPMENT

Level A: Fully Encapsulating Chemical Resistant Suit and SCBA
Self contained breathing apparatus with fully encapsulated suit.

Should be worn when highest levels of respiratory, eye and skin protection is needed.

Level B: SCBA and Some Chemical Protective Clothing
Breathing apparatus (4 hour portable or line) with TYVEK SARAN disposable suit (with chemical splash suits, if necessary), boots and gloves (double NEOPRENE over VITON)

Should be worn when highest level of respiratory protection is needed but a lesser level of skin protection is required. Minimum level for IDLH atmospheres.

Level C: Air Purifying Respirator with Chemical Resistant Clothing
Full or half faced APR, carbon canister for standard organics, acid gasses, radio-nucleotides, fumes, mists, dust, particulates, TYVEK-SARAN or poly-laminated coveralls, safety boots, gloves (NEOPRENE over VITON), hard hats with integral face shield and goggles and personal first aid kit

Should be worn when criteria for using air-purifying respirators are met.

Level D: "Normal Work Clothes"
Includes designated apparel: gloves, goggles if required, first aid kit
Respirator use is optional and must be available at all times

Should be worn only as a work uniform and not on any site with respiratory or skin hazards. Work clothes provide little if any protection against chemical hazards.

Level D is currently recommended for the most activities proposed. The "normal work clothes" of EHC personnel include boots, gloves and optional earplugs when working around heavy machinery. Level D personal protective equipment has been used for prior investigations on site and will continue to be utilized unless conditions warrant a change.

## 2.00 PROJECT PERSONNEL

EHC personnel will oversee all phases of the SVE system installation and operation. The following structure will be instituted for the purpose of successfully and safely completing the project work.

### 2.10 Project Director/Project Manager/Site Coordinator/Site Safety Officer

Name: Eric M. Holt, P.E.

Duties: Responsible for implementing the project, overall coordination, oversight, and obtaining any necessary personnel and/or resources for the completion of the project. The specific duties will include the following:

- Coordinating the activities of all subcontractors
- Ensuring that the tasks assigned are being completed as planned and on schedule.
- Ensuring that all personnel allowed to enter the site (i.e. EPA, contractors, government officials, visitors) are made aware of the potential hazardous associated with the substances known or suspected to be on site.
- Approving the selection of the level of personal protective equipment (PPE) to be used on site for specific tasks
- Monitoring the compliance activities and documentation processes undertaken at the site
- Monitoring the compliance of field personnel for the routine, proper use and inspection of the PPE that has been designated for each task
- Stopping the work on site if any operation threatened the health and safety of workers or the public
- Changing work assignments or procedures if they area endangering the health and safety of the individual or anyone in the vicinity
- Knowing emergency procedures, evacuation routes and telephone numbers of the ambulance, local hospital, poison control center, fire and police departments

## 2.20 Field Team Leader

Name: Mona M. Zullo, Environmental Scientist, EHC

Duties: In the event that the Project Manager/Site Safety Officer is not on site, the field team leader will assume all responsibility for enforcing safety procedures. The additional specific duties include:

- Working with the Site Safety Officer to determine the adequate protection levels
- Reviewing site conditions which may adversely affect the health and safety of field personnel
- Reporting to the Site Safety Officer any potentially hazardous conditions
- Managing all daily operations on site
- Maintaining controlled access to hazardous areas

## 2.30 Additional Field Personnel

All field personnel, including subcontractors, shall be responsible for acting in compliance with all safety procedures outlined in the Site Health and Safety Plan. Any hazardous work situations or procedures should be reported to the Site Safety Officer so that corrective steps can be taken. All site personnel will hold current OSHA certification according to 29 CFR 1910.120.

## 3.00 SITE DESCRIPTION AND HAZARD ASSESSMENT

The subject site is located at 48 Lincoln Avenue in the City of Saratoga Springs New York. The site contains one, one-story masonry building and a wooden shed located in the southeast corner of the property. The building is bordered by a paved parking lot on the west side and grassy areas line the north, east and south side of the parcel. The age of the building exceeds fifty years and historically the building has been utilized as a dry cleaning facility. Mr. Jim Smalley, the current owner of Sharon Cleaners has owned the property since 1978.

The source of contamination does not appear to have occurred at the rear overhead door or dumpster located on the back side of the building. The source appears to have originated beneath the concrete floor, possibly from the trenches (located in the center of the building) that were filled with concrete prior to Smalley's reportedly occupying the building.

Contaminant concentrations were detected in the monitoring wells located on the northern site boundary, which indicates migration off site, beneath Lincoln Avenue, in a northeastern direction.

Based on the groundwater flow direction towards the northeast, La Brake Memorial is the first private off site property that the contamination would affect due to migration. A

groundwater sample collected from MW-5 on March 2, 2001 confirmed that contamination has migrated across Lincoln Avenue. Contaminants were detected at a minimum depth of 16.5 feet below grade, which would result in no direct contact with humans or animals living or working across Lincoln Avenue.

There is little to no potential for municipal worker or contract excavator exposure if excavation is required in the street.

There is no evidence that suggests that additional investigation poses immediate dangers to life or health (IDLH) or may cause death or serious harm.

The principal hazards related to the potential exposure are due to the following conditions:

- VOCs may be encountered during the well installation and sampling operation resulting in an inhalation hazard. Significant potential exposures are strongly dependent on major quantities of water being available to the air of volatilization of organic compounds.

  Fortunately, only small quantities of water, three well volumes for sampling, will be available for volatilization.

- Skin contact with contaminants may occur during the cleaning and maintenance of probes and/or soil sampling equipment. Eye contact may result from splashing during these same operations.

- Soil vapor and air quality monitoring equipment will be used to determine levels of personal protective equipment to be used for each task.

  A carbon canister will be placed on the system exhaust to minimize the potential for VOC inhalation by workers or surrounding residents. The carbon canister is scheduled for installation upon receipt.

- Ingestion of contaminants will be controlled by prohibiting all eating, smoking, drinking or application of cosmetics in areas of possible contamination.

## 3.10 Personal Potential Exposed to Hazardous Substances

Authorized personnel only will be permitted within the designated drilling/working area. The following persons may be potentially exposed to possible contamination:

1) EHC personnel
2) Drilling Subcontractors
3) Sharon Cleaners Personnel

### 3.20 Specific Levels of Protection

Most tasks will be performed under Level D Health and Safety Protection unless HNu response levels of >5 ppm is obtained, in which case Level C protection will be utilized.

## 4.00 HEALTH AND SAFETY REQUIREMENTS

### 4.10 General Safety Practices

Personnel who regularly conduct field investigations that require the use of respiratory protective equipment should not have beards, as they interfere with the satisfactory fit of the mask-to-face seal.

Contact with contaminated surfaces or surfaces suspected of being contaminated should be avoided.

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Prescription drugs should not be taken by personnel assigned to operations where the potential for absorption, inhalation or ingestion of toxic substances exists; unless specifically approved by a qualified physician.

Drinking and driving, as well as driving at excessive speeds is prohibited.

No person should work alone on a potentially dangerous site. However, when it is necessary to work alone, personnel should avoid any potentially dangerous environments or situations.

Proper preparation must be undertaken before leaving for a site visit. Each person will have access to a first aid kit, fire extinguisher, flashlight and proper clothing, which will include gloves, coveralls, goggles and a respirator.

All personnel are required to contact their project manager when conducting a field investigation or site inspection. They must at a minimum, call before entering and leaving the site. This is especially important when working alone.

All personnel are required to wear gloves when contacting any contamination.

A hard hat, earplugs, and steel-toed boots must be worn when drilling.

A shirt and long pants must be worn at all times.

Orange vests must be worn when working in an area of heavy traffic or when working at night.

Eating, drinking or chewing gum, chewing tobacco, smoking or any practice that increases the probability of hand to mouth transfer or ingestion of material is prohibited in any area designated as contaminated.

Hands and face must be washed thoroughly washed upon leaving the work area and particularly before eating or drinking.

Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.

Skin abrasions must be thoroughly protected to prevent chemicals form penetrating the abrasion.

## 4.20 Fire Prevention

During the equipment operation, periodic vapor concentration measurements should be taken with the explosimeter. If at any time the vapor concentrations reach known explosive limits, then the Site Safety Officer or designated field worker should immediately shut down all operations.

Approved safety cans will be used to transport and store any flammable liquids.

All gasoline and diesel driven engines requiring refueling must be shut down and allowed to cool before filling.

Smoking is not allowed during any operations in close proximity to VOC exhaust, petroleum products of solvents in free floating, dissolved or vapor forms, or other flammables. Smoking is only allowed in designated locations and during authorized lunch periods and work breaks.

No open flame or spark is allowed in any area containing petroleum products o other flammable liquids.

## 4.30 Soil and Groundwater Investigation

During drilling operations, two (2) persons designated as the "driller" and the "helper" must be present at the rig at all times.

The immediate area surrounding the rig shall be cordoned off with temporary barricades or flagging to keep traffic away from the rig.

Only authorized personnel are to be allowed within the area of drilling. If any unauthorized personnel enters the work area, the operation should be shut down until the area is cleared.

The mast of the drill rig must maintain a minimum clearance of 10 feet from any overhead electrical cables.

All drilling operations will cease immediately during hazardous weather conditions.

The Site Safety Officer has the authority to shut down the drilling operations at any time a hazardous situation is deemed top be present.

## 4.40 Dust Control

Dust control shall be provided as necessary.

## 4.50 Decontamination Procedures

Decontamination of equipment and personnel shall be performed to prevent the possibility of contamination being carried off site. All tools, equipment, sampling devices and personnel shall be decontaminated prior to reuse and site exit respectively.

## 4.60 Decontamination of Equipment

All reusable equipment and tools will be cleaned immediately after each use. Cleaning will consist of scrubbing with soap and water followed by repeat water rinses. Non reusable equipment such as latex gloves will be removed from the outside in, allowing the residual material on the outside of the glove to be contained as per HAZMAT procedures outline. The material is then discarded in the proper decon disposal containers.

Drilling equipment is scrubbed with soap and water followed by repeat water rinses between uses and will be steam cleaned between each location and prior to being removed from the site.

## 4.70 Personnel Decontamination

After removing all personal protective equipment (i.e. goggles, gloves, hard hat) according to HAZMAT procedures, personnel will wash with soap and water to remove possible residual dust.

Following decontamination, clean equipment will be stored away from the contaminated areas or removed from the site.

The Safety Officer shall be responsible for inspecting all equipment prior to its removal from the site. The Site Safety Officer shall also be responsible for performing any tests appropriate after the project is completed to ensure that the work area has been fully decontaminated.

## 5.00 PERSONNEL TRAINING

Our on site EHC staff and subcontractors hold current 40 hour OSHA training certificates to hazardous waste sites as defined by 29 CFR 190.120(e). All persons will be required to review the health and safety plan.

## 6.00 CONTAMINATED MATERIALS CONTAINMENT AND/OR DISPOSAL

All contaminated soils and/or decon water will be drummed for off site disposal.

## 7.00 ACCIDENT AND EMERGENCY RESPONSE

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid equipment is located on site inside the EHC field vehicle. Notify the Site Safety Officer about the situation as soon as possible.

**Emergency Services**

Saratoga Hospital
211 Church Street
Saratoga Springs, NY
(518) 587-3222

Poison Control Center (800) 336-6997

**Ambulance Service**

Saratoga Emergency Corp. Inc. - 911

**Fire Department**

City of Saratoga Springs - 911

**Police Department**

City of Saratoga Springs - 911

**Environmental Hydrogeology Corporation**

Corporate Offices – (518) 371-7940

## 7.10 Recognize Emergency Situations

Personnel encountering a potentially hazardous environment (i.e. strong vapor levels of unidentified substances) shall instruct other on site personnel to leave the site and must call the project director for instructions. Personnel should not re-enter the site without proper protective clothing and equipment. They should not work at the site until the known substance is identified. An escape respirator should always be available for all site workers.

## 7.20 Review of Exposure Symptoms

Symptoms to the hazards of concern should be reviewed by all site personnel. The Site Safety Officer or designated field worker should be watchful for outward evidence of changes in worker health. These outward symptoms may include dizziness, tingling in hands or feet, skin irritations, skin discoloration, eye irritations, muscular soreness, fatigue, nervousness or irritability, intolerance to heat or cold or loss of appetite. Employees should routinely be asked to assess their general state of health during the project.

## 7.30 Procedures for Injury

1) Notify Project Manager/Site Safety Officer
2) Notify the ambulance service is necessary
3) Notify the receiving hospital of the incoming patient and type of injury or exposure

## 7.40 Procedures for Minor Injuries

1) Notify the Site Safety Officer
2) Utilize the on-site safety kit
3) Assess the injury as to if medical assistance is needed (i.e. stitches, check –up)

## 7.50 First Aid Procedures and Emergency Treatment

In all cases of poisoning, follow standard procedures for poison management, first aid and cardiopulmonary resuscitation. Whenever transporting a poisoned person to a hospital, bring the container, label and/or other information to assist medical personnel with diagnosis and treatment. Four different routes of exposure and their respective first aid/poison management are outlined below:

Ingestion:

1) Call the Poison Control Center at (800) 336-6997. For most chemicals vomiting would not be recommended. If this is the case, proceed as follows:

   - Dilute the poison by making the person drink one or two glasses of water or milk. Do not use carbonated beverages.

   - Notify your Supervisor or Site Safety Officer of this or any exposure.

2) If the Poison Control Center recommends inducing vomiting, make the person vomit, UNLESS the person is unconscious or having convulsions.

   INSTRUCTIONS FOR INDUCING VOMITING: For adults, give two tablespoons (1 once) of syrup of ipecac. The ipecac should be followed with at least one cup of water. After ipecac has been administered, promptly transport the person to a medical facility. If vomiting does not occur within 20 minutes, the original dosage may be repeated once.

3) Notify your supervisor or Health and Safety Officer of this or any poison exposure.

4) FURTHER MANAGEMENT: In some cases, activated charcoal (U.S.P.) may be indicated. Only give activated charcoal upon the recommendation of a Poison Control Center, Emergency Department or Physician.

**Inhalation:**

1) Stop exposure by moving the person from the contaminated area to a clean air area.

2) Call the Poison Control Center (800) 336-6997

3) Have someone call a rescue unit or medical professional.

4) If necessary, transport the person to an emergency medical facility promptly.

**Skin:**

1) Wash off skin immediately with large amount of water; use soap if available.

2) Remove any contaminated clothing and re-wash skin

3) Transport person to a medical facility as necessary

**Eyes:**

1) Gently rinse eye immediately, using large amounts of water for fifteen minutes, if possible, with eyelids held open.

2) If possible, have the person remove contact lenses if worn; never permit the eyes to be rubbed.

3) Transport the person to an emergency medical facility promptly as necessary.

# APPENDIX A

MONITORING WELL DIAGRAMS

# MONITORING WELL CONSTRUCTION

## MW-1, MW-2 AND MW-3

TOTAL DEPTH: 20 FT
DIAMETER: 1" PVC PIPE

SOLID CASING: 0-10'
10 SLOT SCREEN: 10'-20'
UNINIM SAND #0 FROM BOTTOM OF HOLE TO 7'
BENTONITE SEAL FROM 7' TO 5'
GRAVEL: 5' TO 6"
BENTONITE BASE W/ CONCRETE AND MORTAR FROM 6" TO 1"

# MONITORING WELL CONSTRUCTION

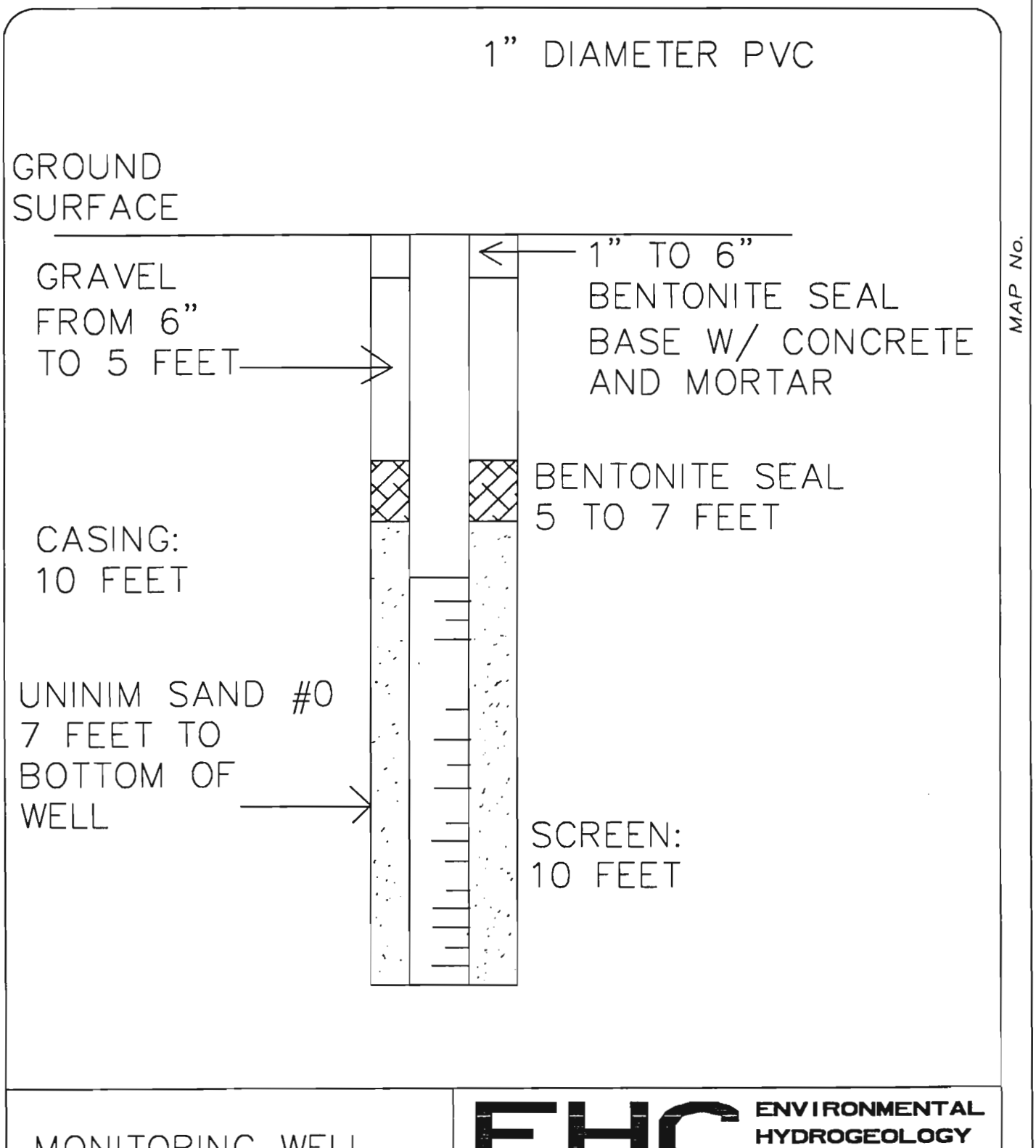
## MW-4

TOTAL DEPTH: 31 FT
DIAMETER: 1" PVC PIPE
SOLID CASING: 0-21'
SCREEN: 21'-31'
SAND FROM BOTTOM OF HOLE TO 19'
CHIPS FROM 19' TO 17'
BACKFILL: 17' TO SURFACE

# MONITORING WELL CONSTRUCTION

## MW-5

TOTAL DEPTH: 20 FT
DIAMETER: 2" PVC PIPE
SOLID CASING: 0-10'
SCREEN: 10'-20'
SAND FROM BOTTOM OF HOLE TO 8'
CHIPS FROM 8' TO 6'
BACKFILL: 6' TO SURFACE

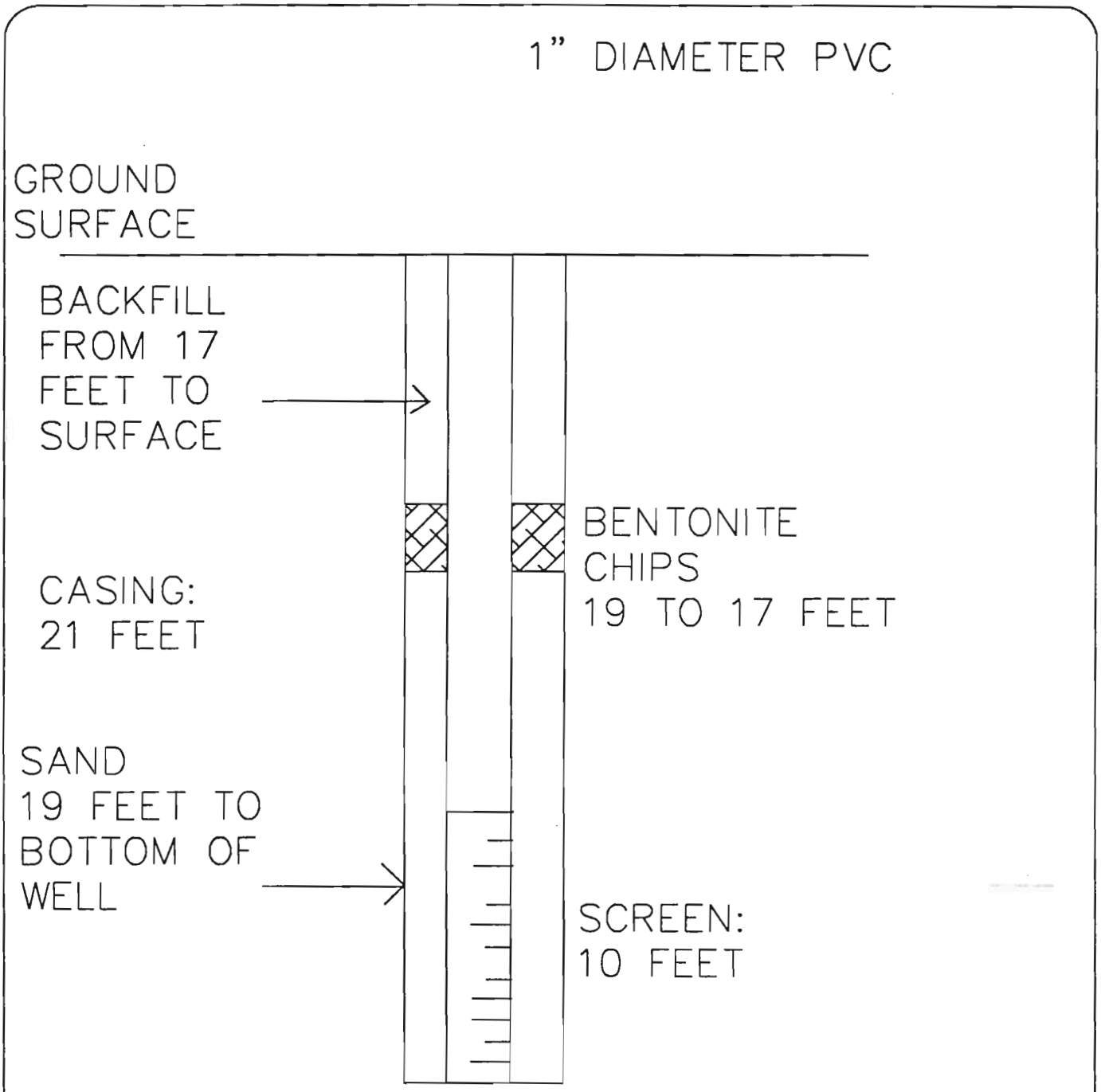



MAP No.

# MONITORING WELL CONSTRUCTION DIAGRAM MW-1, MW-2, MW-3

EHC ENVIRONMENTAL HYDROGEOLOGY CORPORATION
900 ROUTE 146, CLIFTON PARK, NEW YORK 12065 (518)371-7940

WATER RESOURCES — ENVIRONMENTAL SITE ASSESSMENTS
CONTAMINANT HYDROGEOLOGY — GEOTECHNICAL ENGINEERING
COMPUTER MODELING — INDUSTRIAL RESOURCE MINING

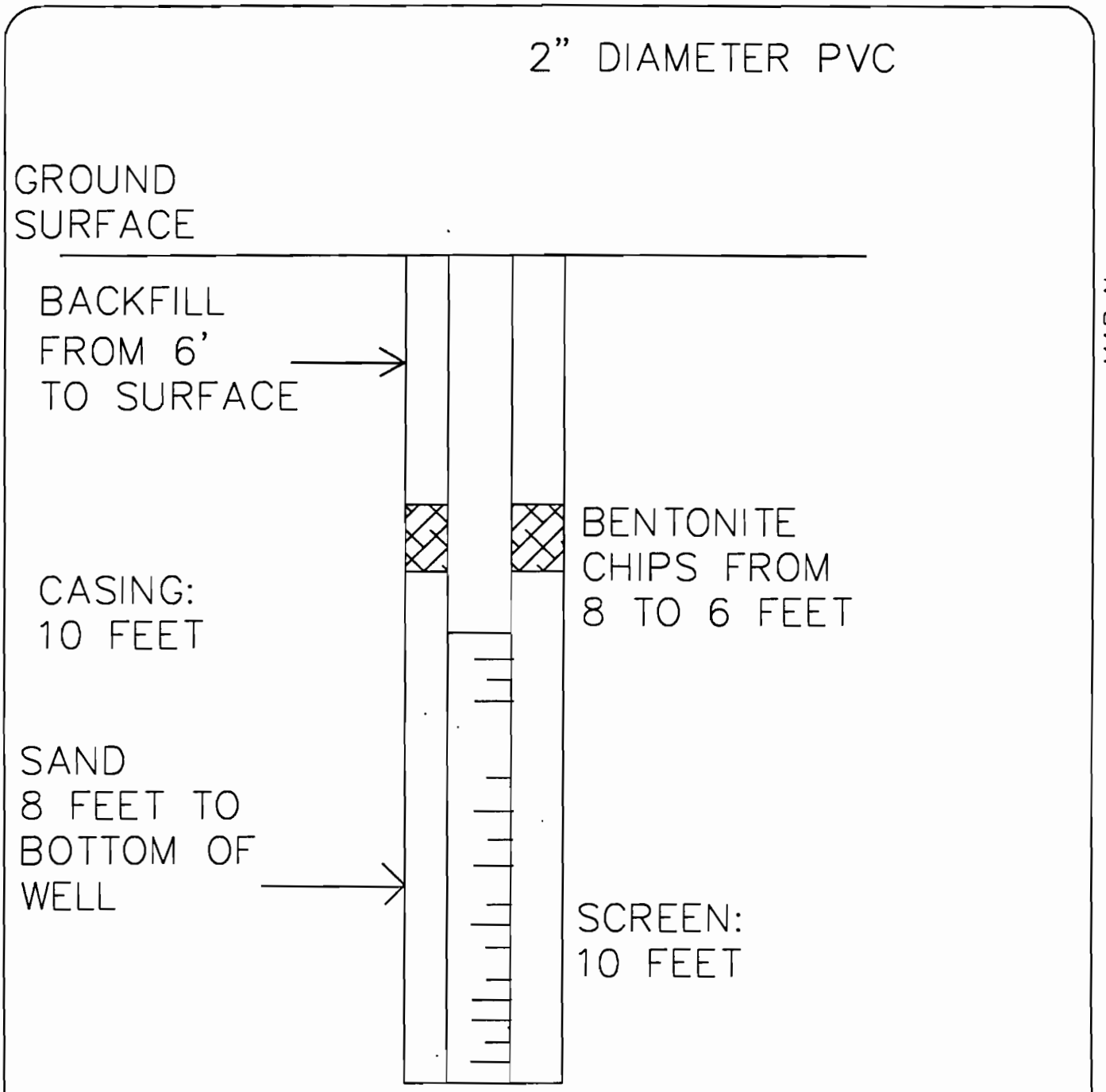



MAP No.

MONITORING WELL CONSTRUCTION DIAGRAM MW-4

EHC ENVIRONMENTAL HYDROGEOLOGY CORPORATION
900 ROUTE 146, CLIFTON PARK, NEW YORK 12065 (518)371-7940

WATER RESOURCES
CONTAMINANT HYDROGEOLOGY
COMPUTER MODELING
ENVIRONMENTAL SITE ASSESSMENTS
GEOTECHNICAL ENGINEERING
INDUSTRIAL RESOURCE MINING




MAP No.

# MONITORING WELL CONSTRUCTION DIAGRAM MW-5

EHC ENVIRONMENTAL HYDROGEOLOGY CORPORATION
900 ROUTE 146, CLIFTON PARK, NEW YORK 12065 (518)371-7940

WATER RESOURCES
CONTAMINANT HYDROGEOLOGY
COMPUTER MODELING
ENVIRONMENTAL SITE ASSESSMENTS
GEOTECHNICAL ENGINEERING
INDUSTRIAL RESOURCE MINING

# APPENDIX B

ANALYTICAL RESULT TABLES

TABLE 1

GROUNDWATER RESULTS FOR PCE AND TCE
BY EPA METHOD STARS 8021
FEBRUARY 2000

| SAMPLE ID | TCE ug/l | PCE ug/l | NYSDEC STANDARD | EXCEED STANDARD? |
|---|---|---|---|---|
| B1 | ND | 6.4 | 5.0 | YES |
| B2 | ND | 27.0 | 5.0 | YES |

TABLE 2

SOIL AND GROUNDWATER RESULTS FOR PCE AND TCE
BY EPA METHOD 8021 FULL SCAN
MARCH 2000

| SAMPLE ID | MATRIX | DEPTH FT | TCE ug/kg | PCE ug/kg | NYSDEC TCE STANDARD ug/kg | NYSDEC PCE STANDARD ug/kg |
|---|---|---|---|---|---|---|
| EHC-B1 | SOIL | 0-16 / C | 15.0 | 110.0 | 500 | 700 |
| EHC-B2 | SOIL | 0-16 / C | ND | 151.0 | 500 | 700 |
| EHC-B3 | SOIL | 0-16 / C | ND | 175.0 | 500 | 700 |
| MW-1 | GW | 20 / G | 1.2 | 17.0 | 5.0 | 5.0 |
| MW-2 | GW | 20 / G | 11.0 | 875.0 | 5.0 | 5.0 |
| MW-3 | GW | 22 / G | ND | 29.0 | 5.0 | 5.0 |

C = COMPOSITE SAMPLE
G = GRAB SAMPLE

# TABLE 3

## SOIL AND GROUNDWATER RESULTS FOR TCE AND PCE BY EPA METHOD 8260 FEBRUARY 2001

| SAMPLE ID | MATRIX | DEPTH FT | TCE RESULT ug/kg | PCE RESULT ug/kg | NYSDEC TCE STANDARD ug/kg | NYSDEC PCE STANDARD ug/kg |
|---|---|---|---|---|---|---|
| MW-4 | SOIL | 15-19/C | ND | 15.0 | 500 | 700 |
| | SOIL | 19-23/C | ND | ND | 500 | 700 |
| | SOIL | 23-27/C | ND | ND | 500 | 700 |
| | SOIL | 27-31/C | ND | ND | 500 | 700 |
| MW-1 | GW | 20 / G | ND | 12.0 | 5.0 | 5.0 |
| MW-2 | GW | 20 / G | ND | ND | 5.0 | 5.0 |
| MW-3 | GW | 22 / G | ND | 9.0 | 5.0 | 5.0 |
| MW-4 | GW | 31 / G | ND | ND | 5.0 | 5.0 |
| MW-5 | GW | 20 / G | ND | 280.0 | 5.0 | 5.0 |

C = COMPOSITE SAMPLE
G = GRAB SAMPLE

# APPENDIX C

SOIL BORING LOGS

| **EHC** Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065 (518)371-7940 | **SOIL BORING LOG** | **BORING NO.**<br>B-1 |
|---|---|---|
| **Project** Sharon Cleaners | | **Sheet 1 of 2** |
| **Client** Ballston Spa National Bank | | **Date** 2/25/00 |
| **Drilling Contractor** Rowan Environmental Services | | **Driller** Marty Rowan |
| **Purpose** Subsurface investigation | | **Inspector** Mona Reynolds |

| | | **Sample** | **Core** | **Casing** | |
|---|---|---|---|---|---|
| **Drilling Method** Geoprobe 5400 | | | | | |
| **Drill Rig Type** Truck mounted | **Type** | | acetate | steel | |
| **Groundwater Depth** | **Diameter** | 2" | 2" | 2" | |
| **Measuring Point** ground level | **Weight** | | | | |
| **Date of Measurement** | **Fall** | | | | |

| **DEPTH** (feet) | **SAMPLE NUMBER** | **RECOVERY** (feet) | **GEOLOGIC DESCRIPTION** | **REMARKS** |
|---|---|---|---|---|
| 4 | | 3.5 | 0-.5': topsoil, silt, little gravel<br>.5'-3.5': light brown loamy medium to fine sand | No PID reading |
| 8 | | 4.0 | 4.0'-8.0': light brown loamy medium to fine sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moisture around 15' |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated |

| **EHC** Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065 (518)371-7940 | | | | | **SOIL BORING LOG** | **BORING NO.** B-2 |
|---|---|---|---|---|---|---|
| **Project** Sharon Cleaners | | | | | | **Sheet 1 of 2** |
| **Client** Ballston Spa National Bank | | | | | | **Date** 2/25/00 |
| **Drilling Contractor** Rowan Environmental Services | | | | | | **Driller** Marty Rowan |
| **Purpose** Subsurface investigation | | | | | | **Inspector** Mona Reynolds |
| **Drilling Method** Geoprobe 5400 | | | **Sample** | **Core** | **Casing** | |
| **Drill Rig Type** Truck mounted | | **Type** | | acetate | steel | |
| **Groundwater Depth** | | **Diameter** | 2" | 2" | 2" | |
| **Measuring Point** ground level | | **Weight** | | | | |
| **Date of Measurement** | | **Fall** | | | | |

| **DEPTH** (feet) | **SAMPLE NUMBER** | **RECOVERY** (feet) | **GEOLOGIC DESCRIPTION** | **REMARKS** |
|---|---|---|---|---|
| 4 | | 4.0 | 0-.5': topsoil, little gravel, coarse sand few stones<br>.5'- 4.0': light brown loamy medium sand | No PID reading |
| 8 | | 4.0 | 4.0'- 8.0': light brown loamy medium to fine sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moisture around 14' |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated |

| EHC Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065<br>(518)371-7940 | SOIL BORING LOG | BORING NO.<br>MW-1 |
|---|---|---|
| **Project** Sharon Cleaners | | **Sheet 1 of 3** |
| **Client** Mr. Jim Smalley | | **Date** 3/22/00 |
| **Drilling Contractor** Rowan Environmental Services | | **Driller** Marty Rowan |
| **Purpose** Subsurface investigation | | **Inspector** Mona Reynolds |

| | | Sample | Core | Casing | |
|---|---|---|---|---|---|
| **Drilling Method** Geoprobe 5400 | | | | | |
| **Drill Rig Type** Truck mounted | **Type** | | acetate | steel | |
| **Groundwater Depth** | **Diameter** | 2" | 2" | 2" | |
| **Measuring Point** ground level | **Weight** | | | | |
| **Date of Measurement** | **Fall** | | | | |

| DEPTH (feet) | SAMPLE NUMBER | RECOVERY (feet) | GEOLOGIC DESCRIPTION | REMARKS |
|---|---|---|---|---|
| 4 | | 3.5 | 0 -1': asphalt, gravel, coarse sand, topsoil, organics<br>1'- 3.5': light brown loamy medium to coarse sand | No PID reading |
| 8 | | 4.0 | 4.0'- 8.0': light brown loamy medium sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moisture around 16' |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated |

| EHC Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065<br>(518)371-7940 | SOIL BORING LOG | BORING NO.<br>MW-2 |
|---|---|---|
| **Project** Sharon Cleaners | | **Sheet 1 of 3** |
| **Client** Mr. Jim Smalley | | **Date** 3/22/00 |
| **Drilling Contractor** Rowan Environmental Services | | **Driller** Marty Rowan |
| **Purpose** Subsurface investigation | | **Inspector** Mona Reynolds |

| **Drilling Method** Geoprobe 5400 | | **Sample** | **Core** | **Casing** | |
|---|---|---|---|---|---|
| **Drill Rig Type** Truck mounted | **Type** | | acetate | steel | |
| **Groundwater Depth** | **Diameter** | 2" | 2" | 2" | |
| **Measuring Point** ground level | **Weight** | | | | |
| **Date of Measurement** | **Fall** | | | | |

| DEPTH (feet) | SAMPLE NUMBER | RECOVERY (feet) | GEOLOGIC DESCRIPTION | REMARKS |
|---|---|---|---|---|
| 4 | | 3.0 | 0-.5': topsoil, few stones, some sand<br>.5'- 3.0': light brown loamy medium to coarse sand | No PID reading |
| 8 | | 4.0 | 4.0-8.0': light brown loamy medium to fine sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moist toward bottom |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated at end of column –est. 18ft |

| EHC Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065<br>(518)371-7940 | | | | SOIL BORING LOG | | | BORING NO.<br>MW-4 |
|---|---|---|---|---|---|---|---|
| **Project** Sharon Cleaners | | | | | | | **Sheet 1 of 2** |
| **Client** Mr. Jim Smalley | | | | | | | **Date** 3/1/01 |
| **Drilling Contractor** Aquifer Drilling and Testing (ADT) | | | | | | | **Driller** Ritchie C. |
| **Purpose** Subsurface investigation | | | | | | | **Inspector** Mona Zullo |
| **Drilling Method** Auger | | | | **Sample** | **Core** | **Casing** | |
| **Drill Rig Type** Truck mounted | | | **Type** | | acetate | steel | |
| **Groundwater Depth** 18' | | | **Diameter** | 1" | 1" | 1" | |
| **Measuring Point** ground level | | | **Weight** | | | | |
| **Date of Measurement** | | | **Fall** | | | | |

| DEPTH (feet) | SAMPLE NUMBER | RECOVERY (feet) | GEOLOGIC DESCRIPTION | REMARKS |
|---|---|---|---|---|
| 4 | | 3.5 | 0 –.5': topsoil, coarse sand, stones<br>.5'- 3.5': light brown loamy medium to coarse sand | No PID reading |
| 8 | | 4.0 | 4.0'- 8.0': light brown loamy medium sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moisture around 16' |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated |
| 24 | | 4.0 | 20.0'-24.0': soft clay w/ brown sandy loam, silt | No PID reading<br>Saturated |
| 28 | | 4.0 | 24.0'-28.0': soft mottled clay w/ brown sandy loam, silt | No PID reading<br>Saturated |
| 30 | | 1.0 | 28.0'-29.0': firm mottled clay w/ brown sandy loam, silt<br>29.0'-31.0': no recovery | No PID reading<br>Saturated |

| EHC Environmental Hydrogeology Corporation<br>900 Route 146 Clifton Park, NY 12065<br>(518)371-7940 | | | SOIL BORING LOG | | | BORING NO.<br>MW-5 |
|---|---|---|---|---|---|---|
| **Project** Sharon Cleaners | | | | | | **Sheet 1 of 3** |
| **Client** Mr. Jim Smalley | | | | | | **Date** 3/1/01 |
| **Drilling Contractor** Aquifer Drilling and Testing (ADT) | | | | | | **Driller** Ritchie C. |
| **Purpose** Subsurface investigation | | | | | | **Inspector** Mona Zullo |
| **Drilling Method** Auger | | | **Sample** | **Core** | **Casing** | |
| **Drill Rig Type** Truck mounted | | **Type** | | acetate | steel | |
| **Groundwater Depth** 17' | | **Diameter** | 2" | 2" | 2" | |
| **Measuring Point** ground level | | **Weight** | | | | |
| **Date of Measurement** | | **Fall** | | | | |

| DEPTH (feet) | SAMPLE NUMBER | RECOVERY (feet) | GEOLOGIC DESCRIPTION | REMARKS |
|---|---|---|---|---|
| 4 | | 4.0 | 0-.5': topsoil, pebbles, coarse sand, organics<br>.5'- 4.0': light brown loam w/ medium to coarse sand | No PID reading |
| 8 | | 4.0 | 4.0-8.0': light brown loamy medium to coarse sand | No PID reading |
| 12 | | 4.0 | 8.0'-12.0': brown loamy fine sand, silt | No PID reading |
| 16 | | 4.0 | 12.0'-16.0': brown loamy fine sand, silt | No PID reading<br>Moist toward bottom |
| 20 | | 4.0 | 16.0'-20.0': brown loamy fine sand, silt | No PID reading<br>Saturated at end of column –est. 17ft |

**Aquifer Drilling & Testing, Inc.**

ADT JOB NO.: _____

| NEW YORK CITY OFFICE | ALBANY OFFICE | NEW JERSEY OFFICE | CONNECTICUT OFFICE |
|---|---|---|---|
| (800) 238-3745 | (518) 464-2848 | (908) 474-9744 | (860) 243-0352 |
| (516) 616-6194 Fax | (518) 464-9804 Fax | (908) 474-9855 Fax | Phone/Fax |


# DAILY JOB REPORT

DATE: 2-28-01 CLIENT: E&C DRILLER: Ritchie C

HELPER(S): Colin L

JOB LOCATION: Shaw Cleaners Lincoln Av. Saratoga RIG NO.: CME 55

DESCRIPTION OF WORK: Soil Samples + WELLS SUPPORT TRUCK: CUBE VAN

MW-4 Sand-Pak From 31' To 19', Chips To 17' Backfill To Surface

MW-5 Sand-Pak From 20' To 8' Chips To 6' Backfill To Surface

## SOIL BORINGS

| BORING NO. | TOTAL DEPTH | SAMPLES SPOONS | SAMPLES MC/LB | WATER |
|---|---|---|---|---|
| | | 9 | | 18' |
| | | 0 | | 17 |

## WELL CONSTRUCTION

| WELL NO. | SIZE (DIA) | RISER (FT) | SCREEN (FT) | TOTAL DEPTH | SAND (BAGS) | CHIPS (BAGS) | CEMENT (BAGS) | BENTONITE (BAGS) | MANHOLE (M) STANDPIPE (P) |
|---|---|---|---|---|---|---|---|---|---|
| MW-4 | 2" | 21' | 10' | 31 | 5 | 2 | 1 | | M |
| MW-5 | 2" | 10 | 10 | 20 | 4 | 1 | 1 | | M |

| | | | Hollow Stem Auger | | Air / Mud Rotary | |
|---|---|---|---|---|---|---|
| Steam Cleaning | (HRS) | | Footage | Size | Footage | Size |
| Standby | (HRS) | | | | | |
| Drums | (NO.) | 2 | | | | |
| Drum / Stage Soils | (HRS) | 1 | | | | |
| Concrete Cores | (NO.) | | | | | |
| Expend. Points | (NO.) | | Drive & Wash | | TUBEX | |
| Poly Tubing | (FT) | | Footage | Size | Footage | Size |
| Grout / ORC Pump | (Y/N) | | | | | |
| Well Development | (HRS) | | | | | |

| PERSONNEL | SIGNATURE | AM SHOP | MOBE* | ON SITE | DEMOBE** | PM SHOP | TOTAL |
|---|---|---|---|---|---|---|---|
| Ritchie C | | | | 7:30 | | | |
| Colin L | | 6:30 | | 7:30 | | | |
| | | | | | | | |
| | | | | | | | |

APPROVED: _____ DATE: 2/28/01

CLIENT REPRESENTATIVE

PRINT NAME: Tom M. Fuller

Client's signature approves crews ON SITE hours.

* Indicate if Initial Mobilization

** Indicate if Final Demobilization

White (Client) Yellow (Accounting) Pink (Admin)

**Aquifer Drilling & Testing, Inc.**

ADT JOB NO.: _____

| NEW YORK CITY OFFICE | ALBANY OFFICE | NEW JERSEY OFFICE | CONNECTICUT OFFICE |
|---|---|---|---|
| (800) 238-3745 | (518) 464-2848 | (908) 474-9744 | (860) 243-0352 |
| (516) 616-6194 Fax | (518) 464-9804 Fax | (908) 474-9855 Fax | Phone/Fax |


# DAILY JOB REPORT

DATE: 2-27-01 CLIENT: EHC DRILLER: Ritchie

HELPER(S): Colin L

JOB LOCATION: Shaw Cleaners Lincoln Av Staten RIG NO.: CME 55

DESCRIPTION OF WORK: Soil Samples + WELLS SUPPORT TRUCK: CUBE VAN

2 V-1 Sand-Pak From 20' To 8' Chips To 6' Backfill To Surface on Both WELLS

## SOIL BORINGS

| BORING NO. | TOTAL DEPTH | SAMPLES SPOONS | SAMPLES MC/LB | SAMPLES WATER |
|---|---|---|---|---|
| | 20 | 0 | | |
| | 20 | 0 | | |

## WELL CONSTRUCTION

| WELL NO. | SIZE (DIA) | RISER (FT) | SCREEN (FT) | TOTAL DEPTH | SAND (BAGS) | CHIPS (BAGS) | CEMENT (BAGS) | BENTONITE (BAGS) | MANHOLE (M) STANDPIPE (P) |
|---|---|---|---|---|---|---|---|---|---|
| SV1 | 4" | 12 | 10 | 20 | 5 | 2 | | | |
| SV2 | 4" | 12 | 10 | 20 | 5 | 2 | | | |

| | | | Hollow Stem Auger | | Air / Mud Rotary | |
|---|---|---|---|---|---|---|
| Steam Cleaning | (HRS) | | Footage | Size | Footage | Size |
| Standby | (HRS) | | | | | |
| Drums | (NO.) | 2 | | | | |
| Drum / Stage Soils | (HRS) | | | | | |
| Concrete Cores | (NO.) | | | | | |
| Expend. Points | (NO.) | | Drive & Wash | | TUBEX | |
| Poly Tubing | (FT) | | Footage | Size | Footage | Size |
| Grout / ORC Pump | (Y/N) | | | | | |
| Well Development | (HRS) | | | | | |

| PERSONNEL | SIGNATURE | AM SHOP | MOBE* | ON SITE | DEMOBE** | PM SHOP | TOTAL |
|---|---|---|---|---|---|---|---|
| Ritchie C | | 6:30 | 9:00 | 10:30 4:30 | | | |
| Colin L | | 6:00 | 9:00 | 10:30 4:30 | | 5:00 | |
| | | | | | | | |
| | | | | | | | |

APPROVED: _____ DATE: 2/27/01

CLIENT REPRESENTATIVE

PRINT NAME: Mona M. ZULLO

Client's signature approves crews ON SITE hours.

* Indicate if Initial Mobilization

** Indicate if Final Demobilization

White (Client) Yellow (Accounting) Pink (Admin)

# APPENDIX D

HUDSON ENVIRONMENTAL ANALYTICAL RESULTS
FOR SOIL BORINGS

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

DATE SAMPLED: 02/25/00

SAMPLE DESCRIPTION: EHC-B1

TIME SAMPLED: 10:00 am

MATRIX: Groundwater

DATE SAMPLE RECD: 02/25/00

LOCATION: Sharon's Dry Cleaners, Saratoga

TYPE SAMPLE: Groundwater

H.E.S.#: 000225H01

SAMPLER: MR/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| MTBE | SW846-8021B | 1.3 | ug/l | 03/01/00 |
| Benzene | SW846-8021B | 2.5 | ug/l | 03/01/00 |
| Trichloroethylene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Toluene | SW846-8021B | 4.3 | ug/l | 03/01/00 |
| Tetrachloroethylene | SW846-8021B | 6.4 | ug/l | 03/01/00 |
| Chlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Ethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| m-Xylene\p-Xylene | SW846-8021B | 1.5 | ug/l | 03/01/00 |
| o-Xylene | SW846-8021B | 0.6 | ug/l | 03/01/00 |
| Styrene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Isopropylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| n-Propylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Bromobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 2-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 4-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| tert,Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| sec-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| p-Isopropyltoluene | SW846-8021B | 0.6 | ug/l | 03/01/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| n-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Hexachlorobutadiene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Naphthalene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC
SAMPLE DESCRIPTION: EHC-B2
MATRIX: Groundwater
LOCATION: Sharon's Dry Cleaners, Saratoga
H.E.S.#: 000225H02

DATE SAMPLED: 02/25/00
TIME SAMPLED: 1:00 pm
DATE SAMPLE RECD: 02/25/00
TYPE SAMPLE: Groundwater
SAMPLER: MR/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| MTBE | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Benzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Trichloroethylene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Toluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Tetrachloroethylene | SW846-8021B | 27 | ug/l | 03/01/00 |
| Chlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Ethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| m-Xylene\p-Xylene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| o-Xylene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Styrene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Isopropylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| n-Propylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Bromobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 2-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 4-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| tert,Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| sec-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| p-Isopropyltoluene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| n-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Hexachlorobutadiene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| Naphthalene | SW846-8021B | <0.5 | ug/l | 03/01/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/01/00 |

Approval By: MH
Date: 3-6-00
All samples were analyzed within EPA prescribed holding times.
N.Y.S.D.O.H. Lab ID #11140

# APPENDIX E

HUDSON ENVIRONMENTAL ANALYTICAL RESULTS
FOR MONITORING WELLS

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: EHCB1 - 0-16

MATRIX: Soil

LOCATION: Not Specified - Sharon's Cleaners

H.E.S. #: 000322N01

DATE SAMPLED: 03/22/00

TIME SAMPLED: 12:00 pm

DATE SAMPLE RECD: 03/22/00

TYPE: Composite

SAMPLER: M.Reynolds/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| Dichlorodifluoromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Vinyl chloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromomethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Trichlorofluoromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Methylene chloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| trans-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 2,2-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| cis-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromochloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloroform | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,1-Trichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Carbon Tetrachloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Benzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Trichloroethene | SW846-8021B | 15 | ug/kg | 03/28/00 |
| 1,2-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Dibromomethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromodichloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| cis-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Toluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| trans-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,2-Trichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Tetrachloroethene | SW846-8021B | 110 | ug/kg | 03/28/00 |
| 1,3-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Dibromochloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dibromoethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: EHCB1 - 0-16

H.E.S. #: 000322N01 (Continued)

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Ethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| m-Xylene-p-Xylene | SW846-8021B | <10 | ug/kg | 03/28/00 |
| o-Xylene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Styrene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromoform | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Isopropylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,2,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,3-Trichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| n-Propylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 2-Chlorotoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 4-Chlorotoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 4-Isopropyltoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| sec-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| tert-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| n-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dibromo-3-chloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Hexachlorobutadiene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Naphthalene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| MTBE | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Non-Target Peaks | | Negative | | |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: MW-1

MATRIX: Groundwater

LOCATION: Not Specified - Sharon's Cleaners

H.E.S. #: 000322N04

DATE SAMPLED: 03/22/00

TIME SAMPLED: am

DATE SAMPLE RECD: 03/22/00

TYPE: Grab

SAMPLER: M.Reynolds/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| Dichlorodifluoromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Vinyl chloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromomethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Trichlorofluoromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Methylene chloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| trans-1,2-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 2,2-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| cis-1,2-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromochloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloroform | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,1-Trichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Carbon Tetrachloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Benzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Trichloroethene | SW846-8021B | 1.2 | ug/l | 03/30/00 |
| 1,2-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Dibromomethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromodichloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| cis-1,3-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Toluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| trans-1,3-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,2-Trichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Tetrachloroethene | SW846-8021B | 17 | ug/l | 03/30/00 |
| 1,3-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Dibromochloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dibromoethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: **MW-1**

H.E.S. #: 000322N04 (Continued)

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Ethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| m-Xylene-p-Xylene | SW846-8021B | <1.0 | ug/l | 03/30/00 |
| o-Xylene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Styrene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromoform | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Isopropylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,2,2-Tetrachloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,3-Trichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| n-Propylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 2-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 4-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 4-Isopropyltoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| sec-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| tert-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| n-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dibromo-3-chloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Hexachlorobutadiene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Naphthalene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| MTBE | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Non-Target Peaks | | Negative | | |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: **MW-2**

MATRIX: Groundwater

LOCATION: Not Specified - sharons cleaners

H.E.S. #: 000322N05

DATE SAMPLED: 03/22/00

TIME SAMPLED: am

DATE SAMPLE RECD: 03/22/00

TYPE: Grab

SAMPLER: M.Reynolds/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| Dichlorodifluoromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Chloromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Vinyl chloride | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Chloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Bromomethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Trichlorofluoromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1-Dichloroethene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Methylene chloride | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| trans-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1-Dichloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 2,2-Dichloropropane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| cis-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Bromochloromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Chloroform | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1,1-Trichloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1-Dichloropropene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Carbon Tetrachloride | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Benzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2-Dichloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Trichloroethene | SW846-8021B | 11 | ug/l | 03/31/00 |
| 1,2-Dichloropropane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Dibromomethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Bromodichloromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| cis-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Toluene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| trans-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1,2-Trichloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Tetrachloroethene | SW846-8021B | 875 | ug/l | 03/31/00 |
| 1,3-Dichloropropane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Dibromochloromethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2-Dibromoethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Chlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |

CLIENT: EHC

SAMPLE DESCRIPTION: **MW-2**

H.E.S. #: 000322N05 **(Continued)**

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Ethylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| m-Xylene-p-Xylene | SW846-8021B | <10 | ug/l | 03/31/00 |
| o-Xylene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Styrene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Bromoform | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Isopropylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Bromobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,1,2,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2,3-Trichloropropane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| n-Propylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 2-Chlorotoluene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 4-Chlorotoluene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 4-Isopropyltoluene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| sec-Butylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| tert-Butylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| n-Butylbenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2-Dibromo-3-chloropropane | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Hexachlorobutadiene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Naphthalene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| MTBE | SW846-8021B | <5.0 | ug/l | 03/31/00 |
| Non-Target Peaks | | Negative | | |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: EHC-B3 - 0-16

MATRIX: Soil

LOCATION: Not Specified - Sharon's Cleaners

H.E.S. #: 000322N03

DATE SAMPLED: 03/22/00

TIME SAMPLED: Not Specified

DATE SAMPLE RECD: 03/22/00

TYPE: Composite

SAMPLER: M.Reynolds/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| Dichlorodifluoromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Vinyl chloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromomethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Trichlorofluoromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Methylene chloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| trans-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 2,2-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| cis-1,2-Dichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromochloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chloroform | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,1-Trichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Carbon Tetrachloride | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Benzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Trichloroethene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Dibromomethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromodichloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| cis-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Toluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| trans-1,3-Dichloropropene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,2-Trichloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Tetrachloroethene | SW846-8021B | 175 | ug/kg | 03/28/00 |
| 1,3-Dichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Dibromochloromethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dibromoethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Chlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: EHC-B3 - 0-16

H.E.S. #: 000322N03 (Continued)

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Ethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| m-Xylene-p-Xylene | SW846-8021B | <10 | ug/kg | 03/28/00 |
| o-Xylene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Styrene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromoform | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Isopropylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Bromobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,1,2,2-Tetrachloroethane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,3-Trichloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| n-Propylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 2-Chlorotoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 4-Chlorotoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 4-Isopropyltoluene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| sec-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| tert-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| n-Butylbenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2-Dibromo-3-chloropropane | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Hexachlorobutadiene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Naphthalene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| MTBE | SW846-8021B | <5.0 | ug/kg | 03/28/00 |
| Non-Target Peaks | | Negative | | |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: MW-3

MATRIX: Groundwater

LOCATION: Not Specified -Sharons cleaners

H.E.S. #: 000322N06

DATE SAMPLED: 03/22/00

TIME SAMPLED: Not Specified

DATE SAMPLE RECD: 03/22/00

TYPE: Grab

SAMPLER: M.Reynolds/EHC

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| Dichlorodifluoromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Vinyl chloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromomethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Trichlorofluoromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Methylene chloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| trans-1,2-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 2,2-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| cis-1,2-Dichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromochloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chloroform | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,1-Trichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Carbon Tetrachloride | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Benzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Trichloroethene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Dibromomethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromodichloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| cis-1,3-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Toluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| trans-1,3-Dichloropropene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,2-Trichloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Tetrachloroethene | SW846-8021B | 29 | ug/l | 03/30/00 |
| 1,3-Dichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Dibromochloromethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dibromoethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Chlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |

HUDSON ENVIRONMENTAL SERVICES, INC.
Mail: 22 Hudson Falls Rd., So. Glens Falls, NY 12803
Delivery: 211 Ferry Blvd., So. Glens Falls, NY 12803
Phone: 518/747-1060 Fax: 518/747-1062

CLIENT: EHC

SAMPLE DESCRIPTION: **MW-3**

H.E.S. #: 000322N06 (Continued)

| PARAMETER | METHOD | RESULT | UNITS | TEST DATE |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Ethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| m-Xylene-p-Xylene | SW846-8021B | <1.0 | ug/l | 03/30/00 |
| o-Xylene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Styrene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromoform | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Isopropylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Bromobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,1,2,2-Tetrachloroethane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,3-Trichloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| n-Propylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 2-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 4-Chlorotoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,3,5-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 4-Isopropyltoluene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,4-Trimethylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| sec-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,3-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| tert-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,4-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| n-Butylbenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2-Dibromo-3-chloropropane | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,4-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Hexachlorobutadiene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Naphthalene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| 1,2,3-Trichlorobenzene | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| MTBE | SW846-8021B | <0.5 | ug/l | 03/30/00 |
| Non-Target Peaks | | Negative | | |

Approval By: ML Hanagh
Date: 3-31-00
All samples were anlayzed within EPA prescribed holding times.
N.Y.S.D.O.H. Lab ID #11140

# APPENDIX F

CON-TEST LABORATORY AIR SAMPLE RESULTS

con-test
ANALYTICAL LABORATORY
39 Spruce Street * 2nd Floor * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

REPORT DATE 3/6/01

ENVIRONMENTAL HYDROGEOLOGY CORPORATI
900 P.T. 146
CLIFTON PARK, NJ 12065
ATTN: MONA ZULLO/ERIC HOLT

CONTRACT NUMBER:
PURCHASE ORDER NUMBER:

PROJECT NUMBER:

## ANALYTICAL SUMMARY

LIMS BAT #: LIMS-54056
JOB NUMBER: -

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: SHARON CLEANERS

| FIELD SAMPLE # | LAB ID | MATRIX | SAMPLE DESCRIPTION | TEST |
|---|---|---|---|---|
| EHC-A1 | 01604939 | AIR | NOT SPECIFIED | to-14 |
| EHC-A2 | 01604940 | AIR | NOT SPECIFIED | to-14 |

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations :

| | |
|---|---|
| AIHA 100033 | AIHA ELLAP (LEAD) 100033 |
| MASSACHUSETTS MA0100 | NEW HAMPSHIRE 2516 |
| CONNECTICUT PH-0567 | VERMONT DOH (LEAD) No. LL015036 |
| NEW YORK ELAP 10899 | RHODE ISLAND (LIC. No. 112) |

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Edward Denson 3/7/01

SIGNATURE DATE

Tod Kopyscinski
Director of Operations

Edward Denson
Technical Director

# Results for Method To-14

Lab ID Number: 00B04939
Client ID Number: EHC-A1
Gillespie Basement

LIMS Number: 54056
Date Analyzed: 3/5/01
Analyst: CJW

| Analyte: | Sample Results PPBv | Sample Results UG/M3 | MDL PPBv | MDL UG/M3 |
|---|---|---|---|---|
| Trichloroethene | ND | ND | 0.5 | 2.7 |
| Tetrachloroethene | 1.0 | 6.8 | 0.5 | 3.4 |
| Surrogate Recovery (4-Bromofluorobenzene) | 92 | % | | |

MDL = Minimum Detectable Limit
ND = Not Detected
PPBv = Parts Per Billion By Volume

Method: TO-14 (Modified)

Sampled into a Summa Canister. Analyzed by GCMS.

# Results for Method To-14

Lab ID Number: 00B04940
Client ID Number: EHC-A2
OUTDOOR- BACKGROUND.

LIMS Number: 54056
Date Analyzed: 3/5/01
Analyst: CJW

| Analyte: | Sample Results PPBv | Sample Results UG/M3 | MDL PPBv | MDL UG/M3 |
|---|---|---|---|---|
| Trichloroethene | ND | ND | 0.5 | 2.7 |
| Tetrachloroethene | 0.83 | 5.6 | 0.5 | 3.4 |
| Surrogate Recovery (4-Bromofluorobenzene) | 90 | % | | |

MDL = Minimum Detectable Limit
ND = Not Detected
PPBv = Parts Per Billion By Volume

Method: TO-14 (Modified)

Sampled into a Summa Canister. Analyzed by GCMS.

# APPENDIX G

INGREDIENT LIST FOR PVC CLEANING SOLVENT

Epic Adhesives

**Oatey**

No. 31019

MEDIUM • CLEAR

# PVC CEMENT

CEMENTO DE PVC MEDIANO • TRANSPARENTE

## DANGER:/PELIGRO:

EXTREMELY FLAMMABLE • HARMFUL OR FATAL IF SWALLOWED • VAPOR HARMFUL • MAY IRRITATE EYES AND SKIN • MAY BE ABSORBED THROUGH SKIN • VAPORS MAY CAUSE FLASH FIRES

EXTREMADAMENTE INFLAMABLE • NOCIVO O FATAL SI SE INGIERE • VAPORES NOCIVOS • PUEDE IRRITAR LOS OJOS Y LA PIEL • PUEDE SER ABSORBIDO A TRAVES DE LA PIEL • LOS VAPORES PUEDEN CAUSAR INCENDIOS

MADE IN USA

16 fl oz (1 PT) 473ml

HECHO EN E.U.

OATEY PVC CEMENT WITH APPLICATOR

CEMENTO OATEY DE PVC CON APLICADOR

UPC

NSF

HAZARDOUS INGREDIENTS:

KEEP OUT OF REACH OF CHILDREN.

INGREDIENTES PELIGROSOS:

MANTENGASE FUERA DEL ALCANCE DE LOS NIÑOS

MANUFACTURED BY OATEY

4700 West 160th St. • Cleveland, OH 44135 U.S.A.

0 38753 31019 0

— MEK.

**Oatey**

No. 30795

FOR CPVC or PVC or ABS • CLEAR

# CLEANER

LIMPIADOR PARA CPVC o PVC o ABS • TRANSPARENTE

## DANGER:/PELIGRO:

EXTREMELY FLAMMABLE • HARMFUL OR FATAL IF SWALLOWED • VAPOR HARMFUL • MAY IRRITATE EYES AND SKIN • MAY BE ABSORBED THROUGH SKIN • VAPORS MAY CAUSE FLASH FIRES

EXTREMADAMENTE FLAMABLE • NOCIVO O FATAL SI SE INGIERE • VAPORES NOCIVOS • PUEDE IRRITAR LOS OJOS Y LA PIEL • PUEDE SER ABSORBIDO A TRAVES DE LA PIEL • LOS VAPORES PUEDEN CAUSAR INCENDIOS

MADE IN USA

16 fl oz (1 Pt) 473 ml

HECHO EN E.U.

For Emergency First Aid Help call 1-303-623-5716 COLLECT.
Para primeros auxilios, en caso de emergencia llame "por cobrar" al 1-303-623-5716.

**OATEY CLEANER WITH DAUBER** • This product emits 650 grams/liter VOC when tested according to SCAQMD Method 316A. Store and use at temperatures between 40°F and 110°F. **DIRECTIONS:** 1. Square pipe ends and remove all burrs and dirt. 2. Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way in. If pipe bottoms, it should be snug. 3. Use the dauber applicator to apply the cleaner sparingly on the pipe and inside of the socket. 4. Use sparingly on ABS pipe and fittings. 5. Oatey Cleaner may be used on ABS, PVC, and CPVC plastic pipe.
**LIMPIADOR OATEY CON APLICADOR** • Este producto emite 650 gramos/litro VOC cuando se lo prueba según SCAQMD Método 316A. Guárdelo y utilícelo a temperaturas entre 4°C y 38°C (40°F y 110°F). **INSTRUCCIONES:** 1. Escuadre los extremos de los caños y saque todas las rebabas y suciedad. 2. Pruebe en seco el ajuste entre caño y conexión: el caño debe entrar fácilmente 1/3 de la cavidad. Si el caño llega al fondo, debe quedar apretado. 3. Utilice el aplicador para poner el limpiador abundantemente al caño y en el interior de la conexión. 4. Utilizar con moderación en caños y acoples de ABS. 5. El limpiador Oatey puede usarse en caños de plástico ABS, PVC y CPVC.

0 38753 30795 4

**HAZARDOUS INGREDIENTS:** Methyl Ethyl Ketone 78-93-3 and Acetone 67-64-1 Store in a cool, dry, well ventilated place. Close container after use. Vapors may ignite explosively. Use only with adequate ventilation. If forced air ventilation is used, be sure it does not cause a fire hazard from the solvent vapors. If adequate ventilation can not be provided, wear a NIOSH-approved respirator for organic solvents. Wear safety glasses with side shields. Avoid skin contact; wear rubber gloves. If swallowed, drink water. DO NOT INDUCE VOMITING. call a physician or poison control center immediately. If inhaled and headache, dizziness, respiratory discomfort, or intoxication are experienced, get fresh air and obtain medical attention if all feelings persist. Wash thoroughly after use and before eating. In case of eye or skin contact, immediately flush with water for 15 minutes and seek medical attention if irritation persists. Long term, repeated overexposure to solvents may cause damage to the brain and nervous system, reproductive and respiratory systems, mucous membranes, liver and kidneys. For more information, obtain a copy of MSDS from distributor.
**KEEP OUT OF REACH OF CHILDREN.**

**INGREDIENTES PELIGROSOS:** Metiletilcetona 78-93-3 y acetona 67-64-1 Almacene en un lugar fresco, seco, bien ventilado. Cierre el recipiente después de usado. Los vapores pueden encenderse explosivamente. Si se utiliza ventilación a aire forzado, asegúrese que los vapores del solvente no causan riesgo de incendio. Si no se puede proveer ventilación adecuada, utilice un respirador aprobado por NIOSH para solventes orgánicos. Use antiparras de seguridad con viseras laterales. Evite el contacto con la piel; use guantes de goma. En caso de ingestión, beba agua. NO PROVOQUE EL VÓMITO. Llame al médico o al centro de control de envenenamiento inmediatamente. Si se lo ha inhalado y se experimenta dolor de cabeza, mareo, malestar respiratorio o intoxicación, busque aire fresco y consulte atención médica si el malestar persiste. Lávese cuidadosamente luego de su utilización y antes de comer. En caso de contacto con los ojos o la piel, lávese inmediatamente con abundante agua durante 15 minutos y consulte al médico si la irritación persiste. Exposición prolongada, o sobre-exposición repetida a solventes puede causar daños al cerebro y a los sistemas nervioso, reproductivo y respiratorio, membranas mucosas, hígado y riñones. Para detalles, obtenga del distribuidor una copia de la ficha técnica del producto. **MANTENGA FUERA DEL ALCANCE DE LOS NIÑOS**

**MANUFACTURED BY OATEY**
**4700 West 160th Street • Cleveland, OH 44135 U.S.A. www.oatey.com**

# APPENDIX H

EXAMPLE CALCULATION SHEET
FOR
MASS OF CONTAMINANTS REMOVED

TCE = 130.36 g

$$\frac{mg}{m^3} = \frac{ppm \times mol\ wt.}{24.45}$$

$$\frac{mg}{m^3} = \frac{(10)(130.36)}{24.45}$$

$$\frac{53.3\ mg\ TCE}{m^3} \times \frac{.02832\ m^3}{ft^3}$$

$$\frac{1.509\ mg\ TCE}{ft^3} \times \frac{125280\ ft^3}{Day}$$

$$\frac{189047.52\ mg\ TCE}{Day} \times \frac{1g}{1000\ mg} \quad \frac{2.205 \times 10^{-3}}{1g} = .417\ lb.$$

PCE = 165.81 g

$$\frac{mg}{m^3} = \frac{ppm \times wt}{24.45} \qquad \frac{mg}{m^3} = \frac{(10)(165.81)}{24.25} \qquad \frac{67.816\ mg}{m^3}$$

$$\frac{67.816\ mg}{m^3} \times \frac{.02832\ m^3}{ft^3} \times \frac{1g}{1000\ mg} \times \frac{2.205 \times 10^{-3}}{1g} \times \frac{125280\ ft^3}{Day}$$

$$\frac{0,526\ mg}{Day} = .53\ mg\ TCE$$

$$\frac{1 \text{ volume of gaseous pollutant}}{10^6 \text{ volumes of air}} = 1 \text{ ppm (by volume)} \tag{1.4}$$

At times, gaseous concentrations are expressed with mixed units of mass per unit volume such as $\mu g/m^3$ or mg/m$^3$. The relationship between ppm (by volume) and mg/m$^3$ depends on the density of the pollutant, which, in turn, depends on its pressure and temperature as well as its molecular weight (mol wt). At a temperature of 0 °C and a pressure of 1 atmosphere, one mole of an ideal gas (that is, an amount of gas having weight equal to its molecular weight) occupies a volume of 22.4 L (or $22.4 \times 10^{-3}$ m$^3$). Thus we can write

$$\text{mg/m}^3 = \text{ppm} \times \frac{1 \text{ m}^3 \text{ pollutant}/10^6 \text{ m}^3 \text{ air}}{\text{ppm}} \times \frac{\text{mol wt (g/mol)}}{22.4 \times 10^{-3} \text{ m}^3/\text{mol}} \times 10^3 \text{ (mg/g)}$$

or, more simply,

$$\text{mg/m}^3 = \frac{\text{ppm} \times \text{mol wt}}{22.4} \quad \text{(at 0 °C and 1 atm)} \tag{1.5}$$

For other temperatures and pressures, corrections to (1.5) need to be applied as follows

$$\text{mg/m}^3 = \frac{\text{ppm} \times \text{mol wt}}{22.4} \times \frac{273}{T(\text{K})} \times \frac{P(\text{atm})}{1 \text{ atm}} \tag{1.6}$$

where temperature ($T$) needs to be expressed in kelvins (K = °C + 273), and pressure ($P$) is in atmospheres (atm).

**Example 1.1 Converting ppm to $\mu g/m^3$**

The federal air quality standard for carbon monoxide (based on an 8-hr measurement) is 9.0 ppm. Express this standard as a percentage by volume as well as in mg/m$^3$ at 1 atm and 25 °C.

**Solution** Within a million volumes of this air there are 9.0 volumes of CO, no matter what the temperature or pressure (this is the advantage of the ppm units). Hence, the percentage by volume is simply

$$\text{Percent CO} = \frac{9.0}{1 \times 10^6} \times 100 = 0.0009 \text{ percent}$$

To find the concentration in mg/m$^3$ we need the molecular weight of CO, which is 28 (the atomic weights of C and O are 12 and 16, respectively). There is no pressure correction required, but the temperature correction must be applied. Converting 25 °C to 298 K and substituting into (1.6) yields

$$\text{CO} = \frac{9 \times 28}{22.4} \times \frac{273}{298} = 10.3 \text{ mg/m}^3$$

Actually, it is usually given as 10 mg/m$^3$.