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Geology
Hydrology
Remediation
Water Supply

Remediation Plan for New Paltz Plaza (Site No. 356021)

Prepared for:

New Paltz Plaza Properties, L.P.
257 Mamaroneck Avenue
White Plains, New York

Prepared by:

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1.0 INTRODUCTION

Alpha Geoscience (Alpha) has prepared this Remediation Plan (the plan) on behalf of New Paltz Plaza Properties, L.P. (NPPP) as part of a Voluntary Cleanup Agreement with the New York State Department of Environmental Conservation (NYSDEC). The plan presents remedial activities proposed for the New Paltz Plaza Shopping Center, which includes the Revonak Dry Cleaners inactive hazardous waste site (Site No. 356021), in New Paltz, New York. The scope of the remedial activities described herein is based on the information and data obtained at the site during previous investigations, including the test pit investigation completed on February 13, 1997. Results of the test pit investigation suggest that additional excavation of contaminated soil from selected areas may sufficiently remediate the site. The purpose of this plan is to present the details of the proposed remedial activities, and a long term monitoring plan. The objective will be to remove and properly dispose of soil which may be acting as a continuing source of ground water contamination for both petroleum and volatile organic compounds (VOCs), and to monitor ground water to evaluate the effectiveness of the remediation. Criteria for remediation will be consistent with NYSDEC DHWR TAGM 94-4046, Determination of Soil Cleanup Objectives and Cleanup Levels, dated January 24, 1994.

1.1 Site Description

The New Paltz Plaza lies within an area of light commercial business, with some rural/residential areas to the north of the Plaza. To the south of the Plaza are several commercial establishments, to the east of the Plaza is a wooded area and the New York State Thruway, and to the west of the Plaza is the Village of New Paltz. The Plaza consists of buildings and adjacent asphalt covered parking areas. Overhead utility service runs along the eastern boundary of the Plaza property, with overhead connections to the Plaza. The Plaza is served by municipal water lines, which are located under the asphalt pavement on the east side of the Plaza. The Plaza also has sewer service, with connections to the individual Plaza tenants running under the asphalt pavement generally on the east side of the Plaza.

The Plaza is served by the Town of New Paltz Water Department, which draws its water from the Village of New Paltz water system. The Village water system is supplied by surface water reservoirs over five miles away from the site. A review of a USGS well database and interviews with public works officials by Flour Daniels GTI revealed four ground water wells within one mile of the site. The closest downgradient well is a domestic well approximately one-half mile from the property to the northeast. The well is 111 feet deep and the depth to water is approximately 15 feet below grade. The remaining wells are upgradient or cross-gradient from the property.

The soil on the east side of the Plaza consists of a mixture of cobbles, gravel, sand, silt and clay. Bedrock was encountered at depths of 6.5 to 9.0 feet during the recent test pit investigation. The depth to ground water is approximately 2 to 4 feet below grade and fluctuates seasonally. The ground water flow direction is generally to the north, as identified in previous reports.

1.2 Background

Available information and documents indicate that the involvement of NYSDEC with this site dates back to early 1991 when a ground water monitoring program was initiated as a result of the discovery of a petroleum product discharge from an underground storage tank and piping associated with a former supermarket on the shopping center premises. December 1991 ground water sampling results indicated that chlorinated VOCs were present, in addition to petroleum constituents. Specifically, tetrachloroethylene (PCE) and trichloroethylene (TCE) were identified and attributed to the dry cleaning tenant within the shopping center. A 0.05 acre area associated with the dry cleaning tenant was subsequently listed in the New York State Registry of Inactive Hazardous Waste sites as a Class 2 site, priority 3 (low priority) as Site No. 356021.

Several investigations were completed on behalf of the owner, New Paltz Plaza Associates, LLC , during 1995 and 1996, pursuant to a NYSDEC Order on Consent (Index No,. W3-0667-93-11). These investigations included a soil gas survey, soil borings and soil sampling, test pits, temporary well installation, ground water sampling and analysis, floor drain survey, sewer line investigation and a Geoprobe investigation of soil and ground water. These prior investigations did not identify a discrete, continuing source area of highly contaminated soil that poses a threat to ground water quality, even through ground water samples from well MW-2 consistently contains high levels of VOCs.

In light of the results of previous investigations, the NYSDEC approved a plan for an investigation program submitted by Alpha Geoscience, dated January 24, 1997, on behalf of NPPP. The results of this investigation, submitted to the NYSDEC on February 25, 1997, identified an area (test pits TP-9, TP-9E and TP-16) of elevated PCE in the upper two to three feet of soil immediately behind (east) the dry cleaning facility. Sampling results from test pits TP-14, TP-14E, and TP-17 also indicated elevated levels of PCE and petroleum-related compounds in the soil and ground water near well MW-2. The results of discrete sampling of soil and ground water suggest the presence of preferential migration pathways between the dry cleaning facility and well MW-2. Approximately 20 tons of PCE-contaminated soil and 15 tons of petroleum-contaminated soil are currently containerized on site. This soil is scheduled for off site disposal pending the completion of waste characterization analyses. Summary tables of the results of the investigation, and a map showing test pit and excavation areas, are presented in Appendix A.

2.0 REMEDIAL EXCAVATION

The recent investigation program identified areas of soil which contain elevated levels of contaminants. Contaminated soil was removed and containerized during the investigation and is scheduled for proper off site disposal. Additional excavation is proposed as part of this Remediation Plan to remove soil which may be acting as a continuing source of ground water contamination. Soil excavation will continue to the north and south of contiguous test pits TP-9 and TP-16 and to the north and west of contiguous test pits TP-14E and TP-17, to the extent practicable. The location of the proposed remedial excavation areas is shown in Figure 1.

During excavation, soil from the test pit will be screened, sampled and analyzed, as described below. The extent of excavation will be guided in the field based upon on-site GC data (see Section 2.1),

NYSDEC DHWR TAGM 94-4046, Determination of Soil Cleanup Objectives and Cleanup Levels (January 24, 1994), and/or physical limitations such as buried utilities and the building foundation. The determination of whether soil requires off site disposal will be based on the screening and analytical data described in Section 2.1.

Analytical results from the recent investigation (Appendix A) indicate that the PCE-contaminated soil is generally limited to the upper two to three feet in the vicinity of test pits TP-9 and TP-16 and occurs at a depth of approximately seven to nine feet near test pits TP-14E and TP-17. Accordingly, continued excavation around TP-9 and TP-16 will be limited to the upper few feet of soil in this area unless screening and analytical data indicate the presence of contaminated soil at greater depths. Excavation to the north and west of TP-14E and TP-17 is expected to extend to bedrock (approximately 8 to 10 feet).

Each excavation will be logged by an Alpha geologist/hydrogeologist. The log will record the excavation dimensions, soil texture and grain size, ground water occurrence and yield, HNU photoionization detector (PID) measurements, visual or olfactory evidence of petroleum contamination, and any other pertinent information. The extent of the excavation will be documented with laboratory analyses and by plotting the perimeters on a map. Post-excavation samples will be collected after either physical barriers have been encountered or field screening and GC results indicate that the limits of contamination have been reached. At least four post-excavation samples will be collected for each separate excavation and submitted to a laboratory for Method 8260 plus TICs and a Category B deliverable package. The maximum extent of excavation will be measured from fixed points and plotted on a site map.

At the completion of remedial activities, excavations will be backfilled using either excavated soil approved by a NYSDEC on-site representative, or soil from an off-site source. The backfill will be tamped to minimize settlement. Crushed stone will be placed in the upper 6 to 12 inches of each backfilled area to support traffic and parking.

2.1 Soil Sampling, Screening, and Analysis

The soil, if necessary, will be screened twice and sampled once. Once the soil is excavated, and while still in the backhoe bucket, it will immediately be screened with the on-site PID. If the PID detects a concentration greater than 1 ppm above background, the soil will be placed in a rolloff to be managed and disposed of as hazardous waste, unless petroleum odors are present, in which case the soil may be placed into a designated petroleum contaminated rolloff. Soil placed into the petroleum contaminated rolloff will be analyzed by the GC at a rate of approximately 1 sample every cubic yard to ensure that the tetrachloroethylene limit (1.4 ppm) is not exceeded, thus making the soil a hazardous waste.

If the PID does not record a value greater than 1 ppm, the soil will be placed on plastic and sampled and analyzed by the on-site GC. The results of the on-site GC will be used to determine whether the soil will be placed in the hazardous rolloff, the petroleum rolloff, or remain on the plastic to be used as backfill. The GC result will use 1.4 ppm of tetrachloroethylene as the cutoff between disposal and backfill. For a Quality Assurance check, approximately twenty percent of the samples collected for

the on-site GC will also be analyzed by a NYSDOH approved ELAP laboratory as described below. The excavation will continue until either the cleanup criteria specified in NYSDEC DER TAGM 4046 are met and/or physical limitations are encountered. No soil will be treated on site.

The extent of the excavation will be confirmed with laboratory data. Petroleum hydrocarbons were detected in both the soil and ground water samples obtained from the test pits. Prior to backfilling the excavations, a minimum of four samples per excavation will be submitted to a NYSDOH certified laboratory for analysis by EPA Method 8270 base/neutrals plus TICs with a Category B deliverable package, for comparison to NYSDEC STARS cleanup criteria.

Soil exhibiting 1.0 ppm to background PID readings will be sampled at a frequency of approximately 1 sample per 1 cubic yard of excavated soil. Two laboratory supplied containers will be filled for each sample. The sample in one of the containers will be analyzed on site for tetrachloroethylene, trichloroethylene, benzene, toluene, ethylbenzene, and xylene using an SRI Model 9300 gas chromatograph (GC). The GC will be set up inside one of the vacant buildings within the plaza to ensure a constant room temperature environment for sample analysis. The GC utilizes both a flame ionization detector and a photoionization detector during sample analysis and is equipped with a purge and trap apparatus. The GC is operated in accordance with the manufacturer's specifications and procedures by an experienced technician. The analytical and calibration procedures to be used for the target compounds is provided in Appendix B. Analytical results from the on-site GC are typically available within approximately one hour from the time of sample collection, facilitating decisions regarding the lateral and vertical extent of excavation.

Alpha and NYSDEC personnel will review the portable GC data to determine if additional soil staged adjacent to the excavations will be placed in the rolloff containers for off-site disposal. The portable GC data will also be used to identify duplicate samples which potentially contain low levels, or no contamination. Approximately 20 percent of the duplicate samples will be submitted to a NYSDOH-certified laboratory for analysis of halogenated VOCs, aromatic VOCs and petroleum related compounds by EPA Method 8260 plus TICs and a Category B deliverable package. After receiving the confirming lab results, the staged soil will either be used as backfill for the excavation or loaded into a rolloff container for off-site disposal as a hazardous waste. All soil transport will be performed by a permitted 364 hauler.

A detailed sample identification system will be implemented to insure accurate correlation between the soil samples and the staged soil piles. Each sample jar will be labeled with a unique sample number, followed by a suffix correlating to the approximate depth or lateral distance of the sample from a known point. An additional suffix of "A" and "B" will be used to distinguish the two containers for each sample. A surveyors stake or pin flag will be placed in each staged soil pile and labeled with the sample number (or numbers) corresponding to the pile. A field log will be maintained which lists each sample number, the date of collection, the initial PID reading, the GC result, and, whether or not the sample was submitted for laboratory analysis.

All samples to be submitted for laboratory analysis will be collected in clean glass jars provided by the laboratory. Each jar will be filled with soil to minimize air space and volatilization. After collection, each sample will be labeled with a unique identification number and placed in a cooler for preservation. Selected samples will be transported to a NYSDOH-certified laboratory using proper

chain of custody procedures. One duplicate soil sample will be analyzed for each ten samples submitted for laboratory analysis. These quality control samples will be analyzed for halogenated and aromatic VOCs, and petroleum related compounds by EPA Method 8260 plus TICs. Either (Sci-Lab) of Latham, New York or Envirotest of Newburgh, New York will be used to perform the off-site laboratory work. A copy of their DOH certification will be provided, upon request. Laboratory reporting will be according to NYSDEC ASP Category B deliverables.

2.2 Dewatering

Dewatering will be necessary if excessive water enters an excavation. Water generated during remedial excavation will be transported by a permitted hauler. At the start of the investigation, a vacuum truck will be on site to evacuate water which enters the test pits during excavation. Water will be transported and disposed off site at a permitted facility.

2.3 Reporting

Alpha will prepare and submit a report of the findings to the NYSDEC at the conclusion of remedial excavation activities. The report will contain field documentation and results of the excavations. Documentation will include excavation logs, calibration runs for both the GC and PID, organic vapor screening results, GC results and laboratory analytical results. A site map will be prepared showing the locations of the remedial excavations. The text of the report will provide a description and summary of the completed remediation.

3.0 LONG TERM MONITORING

The effectiveness of the remedial excavation will be determined by long term monitoring of ground water quality at the site. Removal of contaminated soil is expected to result in both short term and long term improvements in the ground water quality. Four monitoring wells currently exist at the site. These wells were installed in response to a petroleum release (Spill No. 9102195) at the former Great American Supermarket. Per NYSDEC instructions, each of these wells (MW-1, MW-2, MW-3 and MW-4) were installed to a "depth of 10 feet into the ground water". As a result, several of the wells penetrate the upper few feet of bedrock. Construction logs for these wells are provided in Appendix C. These wells will continue to be sampled during the first year of monitoring as described in Section 3.4 to allow comparison of post-remedial ground water quality with historical ground water data. Continued use of these wells will be evaluated after the first year of monitoring by comparing sampling results from these wells to results obtained from newly installed overburden and bedrock wells.

Four overburden monitoring wells and three bedrock monitoring wells will be installed at the site following remedial excavation activities. The proposed location of these seven new wells is shown on Figure 1. Final locations of these wells may be modified based on the results of the remedial excavation, with approval of the NYSDEC. The seven new wells will be used in conjunction with the four existing wells as a well network for ground water monitoring.

3.1 Overburden Well Installation

The soil borings for the overburden monitoring wells will be advanced using the hollow stem auger (4 ¼ inch inside diameter) drilling method. A truck-mounted drill rig is expected to be used to advance the borings to the top of bedrock. Split spoon samples will be collected continuously, following ASTM Standard D-18-1586. Split spoon samples will be obtained by driving a sampler with a 140-pound hammer falling 30 inches until either 24 inches of soil has been penetrated or 100 blows applied with less than six inches of penetration. The number of blows required to advance the split spoon each six inch interval will be recorded. All split spoon samples will be logged on site.

Samples obtained in this manner will be examined and described using the Unified Soil Classification system. Samples will be retained in glass jars with aluminum foil-lined screw top lids or in sealed plastic bags for headspace analysis. In compliance with ASTM methods, the sample jars will be labeled with the following information: job designation, boring number, sample number, depth of sample, depth penetration record and length of recovery. The headspace of the sample will be screened for volatile organics using an HNU DL-101 photoionization detector.

All drill cuttings will be placed in the rolloff container designated for off-site disposal. A sample from each of the soil borings will be sent to the laboratory for analysis by EPA 8260, except for the boring near TP-11 which will not be analyzed. This sample will consist of a duplicate of the sample that recorded the highest PID reading during split spoon sampling. The results of this sample analysis will be used to characterize the drill cuttings for disposal according to the criteria presented in Section 2.1.

The overburden monitoring wells will be constructed of 2-inch, threaded joint, Schedule 40 PVC pipe with a maximum of ten feet of 10-slot well screen. The length of the well screen may be less than 10 feet, depending on the depth to bedrock, to accommodate the standpipe and bentonite seal above the screen. The annular space around, and from 0.5 feet below to 1.0 feet above, the screen will be filled with a clean, Grade 1, filter sand pack. A bentonite seal will be installed above the sand pack. The remainder of the borehole annular space will be cement-bentonite grouted to the surface. Lockable, steel, protective casing will be cemented over each well to prevent unauthorized access and provide protection for the wells. The casings will stick up above land surface in areas off the pavement and will be flush mounted in paved areas.

An experienced Alpha geologist or hydrogeologist will supervise all aspects of the soil boring and monitoring well installation program, and will be responsible for detailed logging of all soil samples and monitoring well construction details. Alpha personnel will prepare a descriptive boring log in the field which records all relevant sampling and drilling information and the results of initial PID screening.

3.2 Bedrock Monitoring Well Installation

Each proposed bedrock monitoring well will be installed adjacent to an overburden monitoring well at which soil sampling will have been completed. Therefore, soil sampling will not be performed during installation of the bedrock monitoring wells. At each bedrock well location, a boring will be

drilled approximately 0.5 to 1.0 feet into the top of bedrock. Approximately one to two feet of bentonite will be placed in the bottom of the boring and casing will be set into the bentonite. Cement-bentonite grout will be tremied into the boring annulus around the casing and allowed to set up. A boring will then be advanced approximately 10 feet into the bedrock to serve as an open bedrock monitoring well. It is anticipated that the rock boring will be advanced using tricone rotary methods. The well will be finished at the surface by cementing a flush-mount protective casing over the well casing to prevent unauthorized access and provide protection for the well. The protective steel casing will be either flush mounted or have stick up depending on whether or not the well is installed in a paved area, respectively.

An Alpha geologist or hydrogeologist will be on site to document all bedrock well drilling and installation procedures. Alpha personnel will prepare a boring log to describe the materials encountered in the adjacent overburden boring, the drilling conditions and any rock chips produced during drilling. A boring log and well construction log will be prepared for each bedrock monitoring well.

3.3 Monitoring Well Development

Each, newly-installed, overburden and bedrock monitoring well will be developed for the following reasons:

- To remove residual formational silts and clays, thereby reducing turbidity during sampling that could potentially interfere with chemical analysis; and,
- To increase the hydraulic communication between the saturated zone and the well and improve the well yield.

Well development will be accomplished using the dedicated bailer technique, a WaTerra inertial pump (with dedicated tubing), or a submersible pump. Well development will be terminated after the turbidity, pH, conductance and temperature of the purge water have equilibrated (i.e., no substantial change after three consecutive well volumes). Development will cease if equilibration is not reached after 12 well volumes. Field parameters will be measured after every well volume of water is removed. Well development will be performed after forty-eight hours have elapsed since well installation. Water generated during well development will be temporarily containerized and subsequently transferred to a vacuum truck for proper off-site disposal.

3.4 Ground Water Sampling

Ground water samples will be collected from each of the eleven monitoring wells on a quarterly basis for one year. The initial round of sampling will be conducted at least one week after well development. Each sampling event will also include an examination of the existing on-site recovery well for free petroleum product. Samples will be collected in accordance with the procedures outlined in the Ground Water Sampling Protocol presented in Appendix D. Ground water generated during purging will be temporarily containerized and subsequently transported off site for proper disposal. Samples will be analyzed at a NYSDOH-approved laboratory for halogenated VOCs, aromatic VOCs and petroleum related compounds by EPA Method 8260 plus TICs. Laboratory

reporting will be according to NYSDEC ASP Category B deliverables. In addition, ground water samples from wells MW-2, MW-3, MW-4 and the proposed couplet north of MW-2 will be analyzed by EPA Method 8270 (base neutrals) plus TICs with Category B deliverables. Ground water analytical results will be provided to the NYSDEC in a quarterly report within 30 days of receiving the laboratory analytical data.

At the completion of the first year of monitoring, the results of the ground water sampling and analyses will be reviewed. Based on this review, a continued long term monitoring plan will be proposed which identifies sampling locations, sampling frequency, analytical methods, and reporting requirements.

3.5 Surveying

Each of the eleven monitoring wells will be surveyed to accurately determine their relative location and top-of-casing elevation. A local datum will be used to survey each well vertically (elevation) to an accuracy of 0.01 foot. The survey elevations will be used to calculate ground water elevations and determination of both horizontal and vertical hydraulic gradients at the site. The well locations will be shown on a scaled map relative to other structures and features at the site, based on the survey.

4.0 QUALITY ASSURANCE/QUALITY CONTROL

All analyses which are part of this remedial plan will be performed according to SW-846 protocols with NYSDEC ASP Category B deliverables. Samples will be analyzed by a NYSDOH-ELAP-approved and ASP-certified laboratory. Laboratory reports will include the results of analysis of matrix spike/matrix spike duplicates, method blanks and blank spikes. Quantitation reports will be provided for each sample analyzed and for analysis of laboratory standards.

Data received from the laboratory will be reviewed and validated according to the guidelines provided in the USEPA document, "CLP Organics Data Review". The objective of the validation will be to identify the degree and accuracy and completeness exhibited by the laboratory data reports. Once the entire laboratory data package has been reviewed, a narrative report and deliverables summary will be prepared describing data reduction, usability, reporting and validation procedures. This report will indicate the quality of the data and identify any specific problem areas. The data validation/usability reports will be incorporated into the Remediation Report. Data validation will be performed by Mr. C. Brett Mongillo. Mr. Mongillo is experienced in a wide range of chemistry issues related to hazardous waste site investigations and remediation, and has performed data validation on numerous projects. Mr. Mongillo's resumé is provided in Appendix E.

4.1 Field Duplicate Samples

Field duplicate samples will be used to assess the variability of a matrix at a specific sampling point and to assess the reproducibility of the sampling method. Field duplicate samples will be defined as a second sample collected from the same location, at the same time, in the same manner as the first, and placed into a separate container (with no prior mixing). Field duplicate samples will be analyzed at a frequency of one per every ten soil samples and one per round of ground water samples. Each

duplicate sample will be analyzed for the same parameters as the samples collected that day. Thus, both total and component (field vs. lab) variability can be determined.

4.2 Trip Blanks

The purpose of a trip blank is to place a mechanism of control on sample bottle preparation and blank water quality, as well as sample handling. The trip blank travels to the site with the empty sample bottles and back from the site with the collected samples, thus duplicating sample handling conditions. Trip blanks will be utilized for ground water samples at a frequency of one for each round of samples sent to the laboratory for analysis.

4.3 Field Testing QC

Field QC check control limits (pH, specific conductance and turbidity) are detailed below:

- pH - If the pH QC sample (pH 10.0 buffer after initial calibration with pH 4.0 and 7.0 buffers) exceeds $\pm$ 0.5 pH units from the true value, the source of the error will be determined and the instrument recalibrated. If a continuing calibration check with pH 7.0 buffer is off by $\pm$ 0.5 pH unit, the instrument will be recalibrated.

- Specific conductance and turbidity QC samples must be within 10% of the true values. The specific conductance QC sample will be a 0.01 M or 0.1 M potassium chloride solution. The turbidity QC sample will be a commercially prepared standard.

A field determination of pH, turbidity, and specific conductance will be obtained in duplicate for each round of ground water sampling.

5.0 HEALTH AND SAFETY

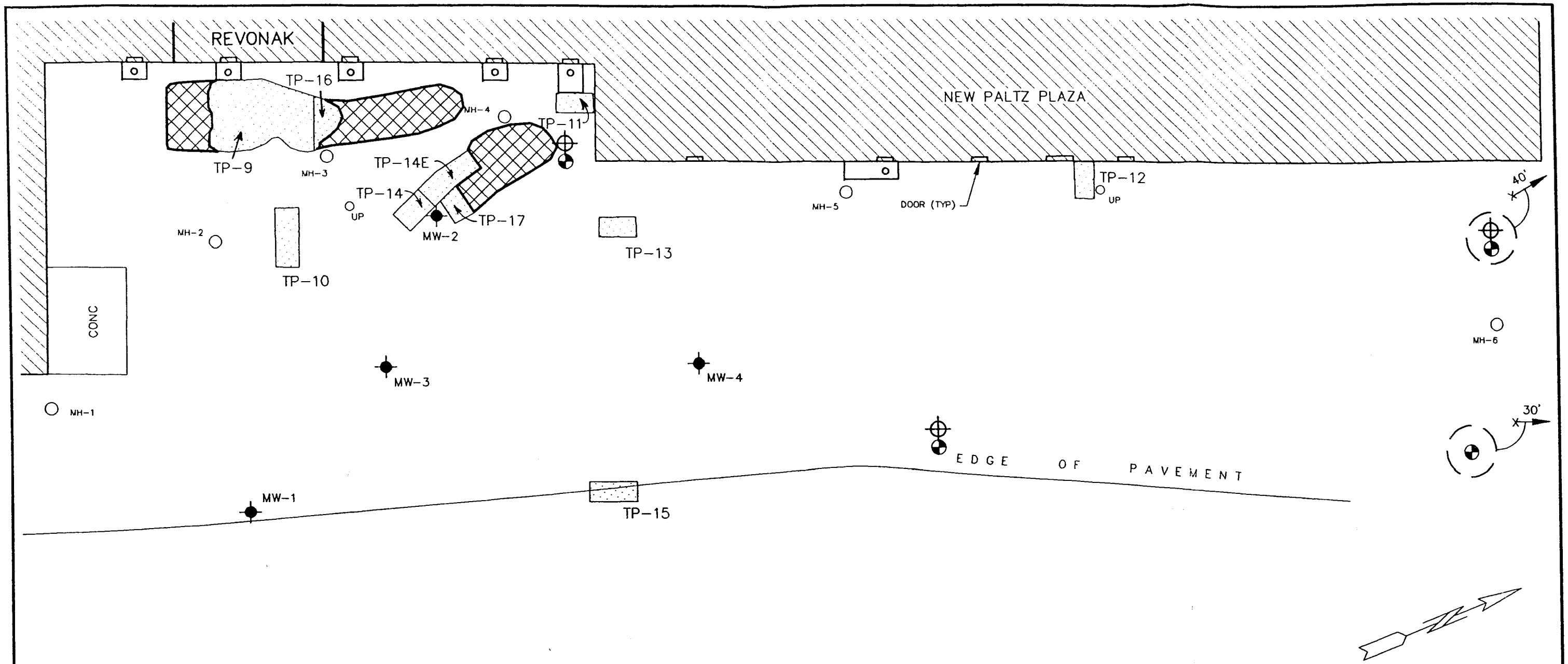
A Field Health and Safety Plan (HASP) has been prepared by Alpha. All site activities performed under this Remediation Plan will meet the minimum provisions outlined in the HASP. All personnel performing remedial activities will be trained in accordance with CFR 1910.120 for work at hazardous waste sites. The completed field HASP is presented in Appendix F.

6.0 SCHEDULE

The remedial excavation, and soil screening activities associated with this plan, can be completed in less than two weeks from the time approval to proceed is provided by the NYSDEC. Installation of monitoring wells is expected to take an additional week to complete following the completion of excavation activities. Selected confirmatory soil samples would be submitted for expedited analysis to allow backfilling of excavations in a timely manner. Other samples will be analyzed according to normal laboratory turnaround times, as appropriate. Assuming work would not occur on weekends, the anticipated duration schedule is as follows:

▸ NYSDEC Remediation Plan Approval	Week 1
▸ Mobilization and Field Preparation	Week 1
▸ Remedial Excavation and Soil Sampling	Weeks 1 & 2
▸ Monitoring Well Installation and Sampling	Week 3
▸ Final Laboratory Soil and Ground Water Results	Week 6
▸ Remediation Report to NYSDEC	Week 8

Once the Voluntary Agreement has been executed and the work plan approved, a schedule with corresponding dates will be provided to the Department. In addition to the above schedule, three additional rounds of ground water sampling and associated reporting would be performed as described in Section 3.4. A long-term monitoring plan would be prepared and submitted to the NYSDEC following, and based on, the first year of ground water monitoring.



LEGEND

MW-1	EXISTING MONITORING WELL
	PROPOSED BEDROCK MONITORING WELL
	PROPOSED OVERBURDEN MONITORING WELL
TP-11	COMPLETED TEST PIT EXCAVATION
	PROPOSED EXCAVATION AREA
	STAIRWELL WITH DRAIN
UP	UTILITY POLE
MH-2	MANHOLE

0 20

SCALE IN FEET

SOURCES: "SURVEY PREPARED FOR NEW PALTZ PLAZA ASSOCIATES" DATED 4/17/86 BY JOHN H. DIPPEL AND "GROUNDWATER CONTOUR MAP" DATED 9/91 BY ENVIRONMENTAL PRODUCTS & SERVICES, INC.

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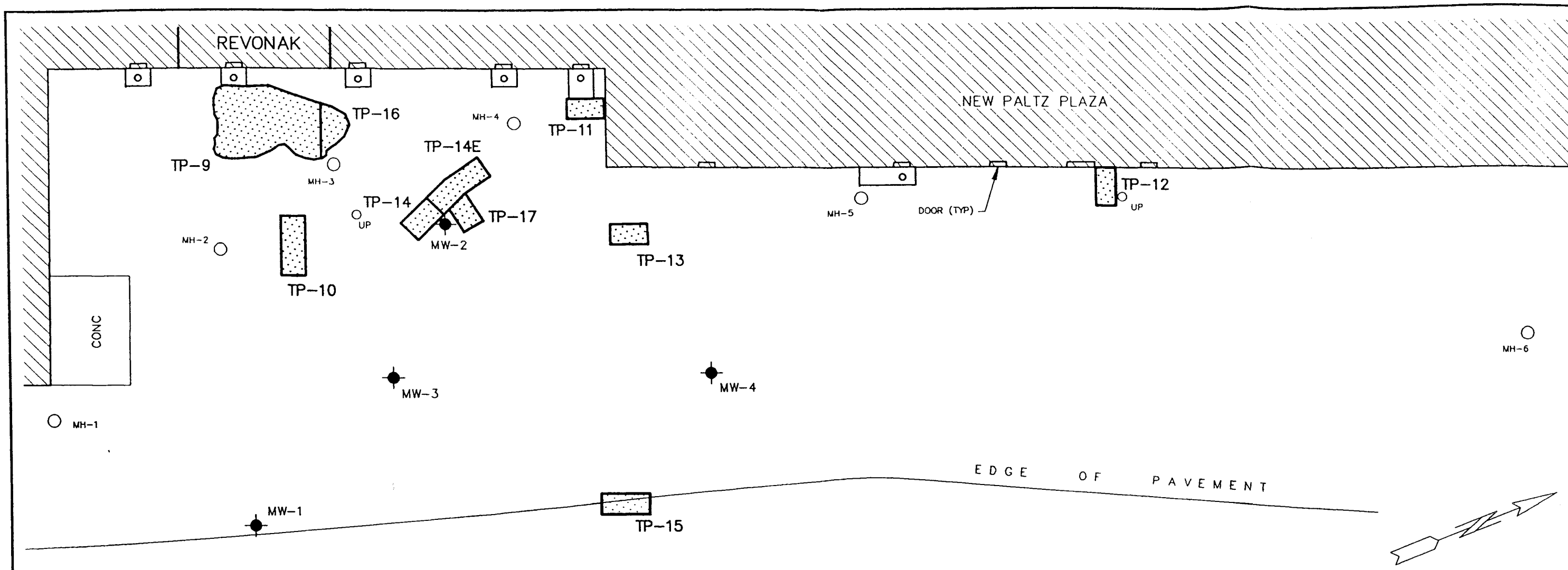
FIGURE 1
PROPOSED REMEDIATION PLAN
NEW PALTZ PLAZA

PROJECT 95141 NEW PALTZ, NY

95141-03.DWG



LEGEND

MW-1	MONITORING WELL
TP-11	TEST PIT EXCAVATION
	STAIRWELL WITH DRAIN
UP	UTILITY POLE
MH-2	MANHOLE

0 20

SCALE IN FEET

SOURCES: "SURVEY PREPARED FOR NEW PALTZ PLAZA ASSOCIATES" DATED 4/17/86 BY JOHN H. DIPPEL AND "GROUNDWATER CONTOUR MAP" DATED 9/91 BY ENVIRONMENTAL PRODUCTS & SERVICES, INC.

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APPROXIMATE TEST PIT LOCATIONS NEW PALTZ PLAZA

PROJECT 95141 NEW PALTZ, NY

95141-02.DWG

APPENDIX A

Test Pit Investigation Results

Table 1
Summary of Laboratory Soil Analyses
Test Pit Investigtion Program
New Paltz Plaza

	Total 1,2 DCE	TCE	PERC	Vinyl Chloride	Methylene Chloride	Dichloro-difluoromethane	1,1-DCA	1,1,1-TCA	Ethyl-benzene	Xylenes (total)
TP-9										
TP-9-4A	<710	<710	<710	<710	<710	<710	<710	<710	6,000	14,000
TP-9-4D	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7	110	350
TP-9-7A	5.9	2.9	110	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	16
TP-9 (expanded)										
TP-9-1N-A	3.1	4.6	2100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-9-1E-A	<1.1	<1.1	6.4	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-9-3S-A	<140	<140	<140	<140	<140	<140	<140	<140	<140	840
TP-10										
TP-10-1A	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-10-3A	<1.1	<1.1	<1.1	<1.1	3.4	<1.1	<1.1	<1.1	<1.1	1.8
TP-10-5A	5.0	8.7	53	1.6	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-11										
TP-11-2A	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-11-4A	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
TP-11-6A	<1.1	<1.1	7.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-12										
TP-12-3A	<1.1	<1.1	17	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-12-5B	<1.2	<1.2	10	<1.2	<1.2	6.4	<1.2	<1.2	<1.2	<1.2
TP-12-7A	22	12	270	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
TP-12-9A	68	29	1200	<1.2	<1.2	5200	<1.2	<1.2	<1.2	<1.2
TP-13										
TP-13-3A	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-13-5A	14	7.1	11	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
TP-13-7A	340	160	210	16	<1.2	<1.2	4.2	8.6	<1.2	<1.2
TP-13-7B	340	180	190	15	<1.2	<1.2	4.4	7.8	<1.2	<1.2

Summary of Laboratory Soil Analyses
Test Pit Investigtion Program
New Paltz Plaza

	Total 1,2 DCE	TCE	PERC	Vinyl Chloride	Methylene Chloride	Dichloro-difluoromethane	1,1-DCA	1,1,1-TCA	Ethyl-benzene	Xylenes (total)
TP-14										
TP-14-3A	19	11	53	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-14-4A	16	14	18	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-14-5A	9.5	9.7	22	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	19
TP-14-7A	230	230	290	<140	<140	<140	<140	<140	<140	<140
TP-14E										
TP-14E-2A	32	13	54	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-14E-7A	<720	<720	<720	<720	<720	<720	<720	<720	1,400	2,100
TP-15										
TP-15-3A	<1.1	2.2	18	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-15-5A	57	3.7	15	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-15-7A	410	5.0	29	47	<5.7	<5.7	<5.7	<5.7	<5.7	<5.7
TP-16										
TP-16-1A	<1.1	<1.1	35	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
TP-16-2A	<270	<270	1000	<270	<270	<270	<270	<270	740	2,200
TP-16-5A	<5.6	<5.6	230	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6	<5.6
TP-16-Grab	<270	<270	<270	<270	<270	<270	<270	<270	1,100	2,800
TP-17										
TP-17-6A	<280	<280	630	<280	<280	<280	<280	<280	<280	710

Notes:

1. All results are in micrograms per kilogram (parts per billion).
2. All samples analyzed for halogenated and aromatic volatile organic compounds by Methods 8010 and 8020, respectively.
3. Compounds not shown were not detected at or above the laboratory analytical detection limit.

Table 2
Summary of Laboratory Ground Water Analyses
Investigation Program
New Paltz Plaza

Parameter	TP-9-W1	TP-11-W	TP-14-W	TP-14E-W	TP-15-W	TP-17-W	MW-1	MW-2	MW-3	MW-4
Vinyl Chloride	<1.0	<1.0	<100	<50	<1.0	31.0	<1.0	21	<1.0	2.2
Methylene Chloride	1.4	<1.0	<100	<50	<1.0	<25	<1.0	<1.0	<1.0	<1.0
1,1-DCE	<1.0	<1.0	<100	<50	<1.0	<25	<1.0	12	<1.0	<1.0
1,1-DCA	<1.0	<1.0	<100	<50	<1.0	<25	<1.0	6.0	<1.0	<1.0
Total 1,2-DCE	<1.0	<1.0	240	68	30	370	7.7	160	3.8	120
Chloroform	7.4	<1.0	<100	<50	<1.0	<25	<1.0	<1.0	<1.0	<1.0
1,1,1-TCA	<1.0	<1.0	<100	<50	<1.0	92.0	<1.0	160	<1.0	<1.0
TCE	0.7	<1.0	100	<50	5.3	150	9.3	120	<1.0	24.0
PERC	5.8	1.4	1500	210	32	4200	57	9100	<1.0	88.0
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<100	<50	<1.0	<25	<1.0	4.1	<1.0	<1.0
Benzene	0.7	NA	<100	<50	<1.0	<25	<1.0	<1.0	<1.0	<1.0
Ethylbenene	1.5	NA	<100	<50	<1.0	<25	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	3.5	NA	110	<50	<1.0	<25	<1.0	<1.0	<1.0	<1.0

Notes:
1. All concentrations are in micrograms per liter (parts per billion)
2. All samples analyzed by EPA Methods 8010 and 8020, except TP-11-W, as noted
3. NA - Not Analyzed

Table 3
Summary of GC Analytical Results
Test Pit Investigation Program
New Paltz Plaza

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/3/97	Standard: BTEX, 200 ppb	GC	<50	<50	640	211	197	211	215
2/3/97	Background Soil	GC	<50	<50	<50	<50	<50	<50	<50
2/3/97	Standard: PCE, 200 ppb	GC	193	<50	<50	<50	<50	<50	<50
2/3/97	Standard: TCE, 200 ppb	GC	<50	175	<50	<50	<50	<50	<50
2/4/97	D.I. Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/4/97	Standard: PCE, 200 ppb	GC	186	<50	<50	<50	<50	<50	<50
2/4/97	Standard: PCE, 200 ppb	GC	269	<50	<50	<50	<50	<50	<50
2/4/97	Standard: PCE, 200 ppb	GC	253	<50	<50	<50	<50	<50	<50
2/4/97	TP-9-4D	Lab	*<5.7*	*<5.7*	*<5.7*	*<5.7*	*110*	*350*	*
	TP-9-4C	GC	<50	<50	<50	<50	<50	<50	<50
2/4/97	TP-9-4A	Lab	*<710*	*<710*	*<710*	*<710*	*6,000*	*14,000*	*
	TP-9-4B	GC	<50	<50	<50	<50	707	810	995
2/4/97	TP-9-7A	Lab	*110*	*2.9*	*<1.1*	*<1.1*	*<1.1*	*16*	*
	TP-9-7B	GC	195	88	<50	<50	<50	<50	<50
2/4/97	TP-9-1B	GC	14,300	160.71	<50	<50	<50	<50	<50
2/4/97	TP-9-1D	GC	11,056	150	<50	<50	<50	<50	<50
2/4/97	TP-9-3	GC	197	<50	<50	<50	<50	<50	<50
2/4/97	TP-9-2B	GC	8,773	125	<50	<50	<50	<50	<50
2/4/97	TP-9-3B	GC	5,976	96	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/4/97	TP-10-1A	Lab	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*
	TP-10-1B	GC	<50	<50	<50	<50	<50	<50	<50
2/4/97	TP-10-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/4/97	TP-10-3A	Lab	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*1.8*	*
	TP-10-3B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	Standard BTEX, 100 ppb	GC	<50	<50	**121**	**123**	**111**	**118**	**118**
2/5/97	TP-10-1D	GC	**77**	<50	<50	<50	<50	<50	<50
2/5/97	TP-10-3D	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-10-4A	GC	**105**	**88**	<50	<50	<50	<50	<50
2/5/97	TP-10-6B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-10-4B	GC	**267**	**88**	<50	<50	<50	<50	<50
2/5/97	TP-10-5A	Lab	*53*	*8.7*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*
	TP-10-5B	GC	**54**	**80**	<50	<50	<50	<50	<50
2/5/97	TP-11-1B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-11-2A	Lab	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*
	TP-11-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-11-3B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-11-4A	Lab	*<1.2*	*<1.2*	*<1.2*	*<1.2*	*<1.2*	*<1.2*	*
	TP-11-4B	GC	<50	<50	<50	<50	<50	<50	<50
2/5/97	TP-11-5B	GC	**50**	**52**	<50	<50	<50	<50	<50
2/5/97	TP-11-6A	Lab	*7.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*<1.1*	*
	TP-11-6B	GC	**110**	**94**	<50	<50	<50	<50	<50
2/5/97	Standard: PCE, 200 ppb	GC	**160**	<50	<50	<50	<50	<50	<50
2/5/97	TP-11-W	Lab	*1.4*	*<1.0*	*NA*	*NA*	*NA*	*NA*	*NA*
	TP-11-W	GC	<10	<10	<10	<10	<10	<10	<10
2/6/97	Standard: TCE/PCE, 200 ppb	GC	**170**	**630**	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/6/97	TP-9-4B (rerun)	GC	534	<50	<50	<50	1,168	1,326	1,550
2/6/97	TP-12-1B	GC	<50	<50	<50	<50	<50	<50	<50
2/6/97	TP-12-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/6/97	TP-12-3A	Lab	17	<1.1	<1.1	<1.1	<1.1	<1.1	*
	TP-12-3B	GC	77	<50	<50	<50	<50	<50	<50
2/6/97	TP-12-4B	GC	<50	<50	<50	<50	<50	<50	<50
2/6/97	Standard: BTEX, 100 ppb	GC	<50	<50	304	128	118	124	123
2/6/97	D.I. Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/6/97	TP-12-5A	Lab	10	<1.2	<1.2	<1.2	<1.2	<1.2	*
	TP-12-5B	GC	<50	<50	<50	<50	<50	<50	<50
2/6/97	TP-12-6B	GC	431	81	<50	<50	<50	<50	<50
2/6/97	TP-12-7A	Lab	270	12	<1.2	<1.2	<1.2	<1.2	*
	TP-12-7B	GC	1,025	128	<50	<50	<50	<50	<50
2/6/97	TP-12-8B	GC	830	122	<50	<50	<50	<50	<50
2/6/97	TP-12-9A	Lab	1,200	29	<1.2	<1.2	<1.2	<1.2	*
	TP-12-9B	GC	1,219	195	<50	<50	<50	<50	<50
2/7/97	Standard: PCE, 400 ppb	GC	369	<50	<50	<50	<50	<50	<50
2/7/97	Standard: BTEX, 200 ppb	GC	<50	<50	458	196	198	190	195
2/7/97	TP-13-1B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-13-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-13-3A	Lab	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	*
	TP-13-3B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-13-4B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-13-5A	Lab	11	7.1	<1.2	<1.2	<1.2	<1.2	*
	TP-13-5B	GC	151	222	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/7/97	TP-13-6B	GC	51	101	<50	<50	<50	<50	<50
2/7/97	TP-13-7A	Lab	190	180	<1.2	<1.2	<1.2	<1.2	*
	TP-13-7B	GC	226	504	<50	<50	<50	<50	<50
2/7/97	D.I. Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-15-1B	GC	59	<50	<50	<50	<50	<50	<50
2/7/97	TP-15-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-15-3A	Lab	18	2.2	<1.1	<1.1	<1.1	<1.1	*
	TP-15-3B	GC	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-15-4B	<50	<50	<50	<50	<50	<50	<50	<50
2/7/97	TP-15-5A	Lab	16	3.7	<1.1	<1.1	<1.1	<1.1	*
	TP-15-5B	GC	<50	<50	<50	<50	<50	<50	<50
2/10/97	D.I. Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/10/97	TP-15-6B	GC	143	<50	<50	<50	<50	<50	<50
2/10/97	TP-15-7A	Lab	29	5	<5.7	<5.7	<5.7	<5.7	*
	TP-15-7B	GC	262	93	<50	<50	<50	<50	<50
2/10/97	TP-15-8B	GC	199	<50	<50	<50	<50	<50	<50
2/10/97	Standard: PCE, 400 ppb	GC	368	<50	<50	<50	<50	<50	<50
2/10/97	TP-14-1B	GC	<50	<50	<50	<50	<50	<50	<50
2/10/97	TP-14-2B	GC	<50	<50	<50	<50	<50	<50	<50
2/10/97	TP-14-3A	Lab	53	11	<1.1	<1.1	<1.1	<1.1	*
	TP-14-3B	GC	563	215	<50	<50	<50	<50	<50
2/10/97	TP-14-7A	Lab	290	230	<140	<140	<140	<140	*
	TP-14-7B	GC	1,363	681	<50	<50	135	<50	104
2/10/97	TP-14-4A	Lab	18	14	<1.1	<1.1	<1.1	<1.1	*
	TP-14-4B	GC	406	424	<50	<50	<50	<50	<50
2/10/97	TP-14-5A	Lab	22	9.7	<5.6	<5.6	<5.6	19	*
	TP-14-5B	GC	171	<50	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/10/97	TP-14-6B	GC	373	<50	<50	<50	<50	<50	<50
2/10/97	MW-4	Lab	88	24	<1.0	<1.0	<1.0	<1.0	*
	MW-4	GC	115	64	<50	<50	<50	<50	<50
2/10/97	TP-14-WATER	Lab	1,500	100	<100	<100	<100	110	*
	TP-14-WATER	GC	146	97	<10	<10	<10	<10	<10
2/10/97	D.I.Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/11/97	Standard: BTEX, 200 ppb	GC	<50	<50	569	184	190	180	186
2/11/97	TP-9-1S-B	GC	513	<50	<50	<50	<50	<50	<50
2/11/97	TP-9-3S-A	Lab	<140	<140	<140	<140	<140	840	*
	TP-9-3S-B	GC	2,497	<50	<50	<50	349	168	234
2/11/97	TP-9-W1	Lab	5.8	<1.0	0.7	<1.0	1.5	3.5	*
	TP-9-W1	GC	<10	<10	<10	<10	<10	<10	<10
2/11/97	TP-9-1N-A	Lab	2,100	4.6	<1.1	<1.1	<1.1	<1.1	*
	TP-9-1N-B	GC	1,464	126	<50	<50	<50	<50	<50
2/11/97	TP-9-2N-B	GC	515	<50	<50	<50	<50	<50	<50
2/11/97	TP-9-3N-B	GC	496	<50	<50	<50	<50	<50	91
2/11/97	TP-9-1E-A	Lab	6.4	<1.1	<1.1	<1.1	<1.1	<1.1	*
	TP-9-1E-B	GC	187	<50	<50	<50	<50	<50	<50
2/11/97	TP-9-2E-B	GC	98	<50	<50	<50	<50	<50	<50
2/11/97	TP-9-3E-B	GC	74	<50	<50	<50	<50	<50	<50
2/11/97	Standard: PCE, 200 ppb	GC	305	<50	<50	<50	<50	<50	<50
2/11/97	D.I. Blank	GC	<50	<50	<50	<50	<50	<50	<50
2/12/97	D.I. Blank	GC	1,734	<50	<50	<50	<50	<50	<50
2/12/97	D.I. Blank	GC	498	<50	<50	<50	<50	<50	<50
2/12/97	D.I. Blank	GC	425	<50	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/12/97	D.I. Blank	GC	384	<50	<50	<50	<50	<50	<50
2/12/97	TP-16-Grab	Lab	<270	<270	<270	<270	1,100	2,800	*
	TP-16-B (grab)	GC	3,174**	<50	<50	<50	615	981	233
2/12/97	D.I. Blank	GC	298	<50	<50	<50	<50	<50	<50
2/12/97	TP-16-1A	Lab	35	<1.1	<1.1	<1.1	<1.1	<1.1	*
	TP-16-1B	GC	3,617**	232	<50	<50	<50	<50	<50
2/12/97	TP-16-2A	Lab	1,000	<270	<270	<270	740	2,200	*
	TP-16-2B	GC	2,933**	143	<50	<50	60	68	135
2/12/97	TP-16-3B	GC	1,802**	118	<50	<50	<50	<50	<50
2/12/97	TP-16-5A	Lab	230	<5.6	<5.6	<5.6	<5.6	<5.6	*
	TP-16-5B	GC	660**	<50	<50	<50	<50	<50	<50
2/12/97	TP-16-6B	GC	734**	<50	<50	<50	<50	<50	98
2/12/97	TP-16-4B	GC	1,308**	75	<50	<50	<50	<50	<50
2/12/97	Standard: PCE/TCE, 400 ppb	GC	345**	681	<50	<50	<50	<50	<50
2/13/97	D.I. Blank	GC	144	<50	<50	<50	<50	<50	<50
2/13/97	TP-14E-1B	GC	217**	<50	<50	<50	<50	<50	<50
2/13/97	TP-14E-2A	Lab	54	13	<1.1	<1.1	<1.1	<1.1	*
	TP-14E-2B	GC	384**	103	<50	<50	<50	<50	<50
2/13/97	TP-14E-7A	Lab	<720	<720	<720	<720	1,400	2,100	*
	TP-14E-7B	GC	8,707**	99	<50	<50	381	306	237
2/13/97	TP-14E-8B	GC	4,439**	<50	<50	<50	79	<50	91
2/13/97	TP-14E-W	Lab	210	<50	<50	<50	<50	<50	*
	TP-14EWATER	GC	245**	75	<10	<10	<10	142	<10
2/13/97	D.I. Blank	GC	82	<50	<50	<50	<50	<50	<50
2/13/97	Standard: TCE/PCE 400 ppb	GC	433**	1,584	<50	<50	<50	<50	<50
2/13/97	TP-17-3B	GC	154**	<50	<50	<50	<50	<50	<50

Sampling Date	Sample Number	Analysis Method	PCE	TCE	Benzene	Toluene	Ethylbenzene	M&P Xylene	O Xylene
2/13/97	TP-17-6B	Lab	630	<280	<280	<280	<280	710	*
		GC	858**	455	<50	<50	<50	<50	194
2/13/97	TP-17-7B	GC	1,405**	173	<50	<50	<50	<50	<50
2/13/97	TP-17-W	Lab	4,200	150	<25	<25	<25	<25	*
		GC	2,022**	351	<10	<10	<10	<10	<10

Notes:
1. All results are in micrograms per kilogram (parts per billion)
2. * = indicates coelution with m&p xylene
3. ** = PCE present in associated blank samples
4. Laboratory analytical results shown for GC-target parameters only. See Tables 1 and 2 for complete summary of laboratory analytical results.
5. NA = Not Analyzed

APPENDIX B

On-Site GC Calibration and Procedures

Analysis for BTEX, Perchloroethylene, and Trichloroethene in Soil using Methyl Alcohol Extraction and Purge and Trap Gas Chromatography

(not a certified laboratory)

1. Scope and Application

This method is used for the determination of concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX), perchloroethylene (PERC), and trichloroethene (TCE) in soil using a methyl alcohol extraction and purge and trap gas chromatography. The concentration of the following compounds in soil are determined by this method.

Benzene
Toluene
Ethylbenzene
M, P, & O Xylenes
Perchloroethylene
Trichloroethene

2. Safety

The chemicals used in this method are found to be toxic if inhaled in quantity or ingested. Benzene, TCE, and PERC are classified as carcinogens. Safe handling of the chemicals used in this method is advised. Material safety data sheets (MSDS) are available for the stock solutions used in this method.

The solvent used in this method is methyl alcohol and is flammable and toxic. Methyl alcohol is irritating to the eyes, respiratory system, and skin. It may cause blindness or death if swallowed. The vapor is also harmful. It is important to keep the container tightly closed when not in use and away from fire or other ignition sources.

The gases used in this method include compressed hydrogen and compressed helium (Air Products and Chemicals, Inc.). Helium is classified as a simple asphyxiant and is under pressure. Hydrogen is classified as an asphyxiant, is flammable, and is under pressure. Only use both gases in a well ventilated area. Additional information is available in the MSDS for each gas. In case of a gas emergency call 1-800-523-9374, which is the emergency number provided by the supplier.

3. Apparatus and Equipment

Sample and Standard Containers - 2 mL to 40 mL screw cap vials equipped with PTFE-faced silicone septum (Supelco). Samples analyzed in VWR Scientific disposable 16 x 125 mm borosilicate glass culture tubes.

Gas Chromatography System - The SRI Model 9300B gas chromatograph (gc) is equipped with a photoionization detector (PID) and flame ionization detector (FID) and is capable of temperature and event programming with the use of PeakSimpleII software. Flow rates are controlled throughout the programmed events. The Model 9300B is equipped with an EPA style purge and trap unit and a built in air compressor.

The gc is outfitted with a 15 meter capillary column with a 5 micron film of nonpolar 100% methylsilicone stationary phase. The flow rate of the helium carrier is 17.6 mL/min. The programmed column temperature is started at 40 C, then ramps to 160 C during the analysis.

The PID consists of a UV lamp mounted on a low volume flow-through cell. The lamp is 10.2 electron volts and the lamp current is adjustable to optimize sensitivity and lamp life. The flame ionization detector is constructed of a stainless steel jet.

The programmable purge and trap apparatus allows for concentration of organics onto an adsorbent trap using an aliquot of the methyl alcohol extraction in 10mL of water.

Pipettes - 10mL and 1mL Pyrex disposable serological pipettes used to dispense reagent.

Reagents - Distilled water, which is free of analytes.

Solvents - Methyl Alcohol, purge and trap grade (Supelco) used in soil extraction. Also used to decontaminate glassware and syringes.

Syringes - 10 to 500 microliter Hamilton syringes used to dispense methyl alcohol extraction and sample dilution during calibration.

Stock Standard Solutions - The standards used in this method are purchased from Supelco and are HC BTEX Mix (2000 micrograms/mL), Perchloroethylene (5000 micrograms/mL), and Trichloroethene (5000 micrograms/mL). A five point calibration curve will be used in this method.

To prepare standard dilutions (BTEX), 1 microliter of 2000 micrograms/mL stock standard is measured into 20 mL, 10 mL, 5 mL, 2.5 mL, and 1 mL of methyl alcohol creating an equivalent 50 part per billion (ppb), 100 ppb, 200 ppb, 400 ppb, and 1000 ppb dilution, respectively. PERC and TCE dilutions: 1 microliter of 5000 micrograms/mL stock solution is measured into 50 mL, 25 mL, 12.5 mL, 6.25 mL, and 2.5 mL of methyl alcohol creating an equivalent 50 ppb, 100 ppb, 200 ppb, 400 ppb, and 1000 ppb dilution, respectively.

4.) Sample Collection, Preservation, and Storage

All samples collected in accordance with approved procedures.

The samples should be chilled to approximately 4 C after collection and until analysis.

5.) Five Point Calibration

Starting with the standard dilution of lowest concentration, 125 microliters of each calibration standard is dispensed into 10 mL of reagent water in a culture tube. Each standard is analyzed according to in the procedure described below in Section 7 and retention times and area response for each peak are recorded. The results are used to prepare a five point initial calibration curve for each compound with a correlation coefficient of ≥ 0.95.

The calibration curve for each compound should be checked prior to analyzing samples each day and/or after every ten analyses, whichever is more frequent using a midpoint calibration standard prepared as outlined in section 3. If the relative percent difference is greater than 30% for any analyte, a new calibration curve must be generated. Calibration curves are saved in the PeakSimpleII program.

Instrument Performance - All of the peaks in the calibration chromatograms should be sharp and symmetrical. Deviations from ideal peaks signals error in the procedure and/or instrument and must be corrected. Retention times must also be within small deviation (±3%). Erroneous retention times must be corrected before data generated.

6.) Quality Control

Quality control is the demonstration that consistent and accurate results are generated by the gc. It is initially imperative that there is low system background. Background contamination from equipment, gas, or glassware must be eliminated before proceeding with analyses.

Keeping records of instrument performance and attention to consistency using the standard solutions maintains that instrument performance is reliable.

Before running samples during each work day, a blank sample must be run to show that there is no background contamination interfering with further analyses.

Additionally, a blank run will be performed after each calibration standard. The peak area for target compounds must be less than one-half the area of the reported detection limit before proceeding with sample analysis.

Quality control will include a duplicate analysis of every tenth sample (10%) to confirm reproducibility of results. Approximately 10% of the samples analyzed will also be submitted to a New York State Department of Health certified laboratory for analysis of the target compounds.

7.) Analytical Procedure

Instrument Start-up - Turn on gases, switch on power to SRI gc. Make sure air compressor switch is in the ON position. Initiate PeakSimpleII software from Microsoft Windows. Set hydrogen regulator to 19 psi, check that FID pressure is at 7 psi, set carrier gas prepressure to at least 50 psi, set column head pressure no. 1 to 550 (digital dial). Light FID, light PID and adjust lamp current knob until display reads 70. Load desired temperature program and events program (ALPHA.TEM and ALPHA.EVT).

Sample Preparation - In a 40 mL vial weigh 10 grams of soil, add 10 mL of methyl alcohol, cap tightly, and shake for 2 minutes. Allow sediment to settle and extract 125 microliters of the extraction solution and inject into 10 mL reagent water, which is measured into a clean culture tube.

Sample Introduction and Purging - The culture tube containing the sample is attached to the purging device and the chromatograph run is initiated at this time. The procedure is repeated as necessary. It is possible to save the sample by putting the methyl alcohol extraction solution in a vial with no headspace. If a highly contaminated sample is analyzed, run a blank to check for ghost peaks. Record sample designator, date, volume/type of injection, and file names in the log book.

At conclusion of daily use, the instrument is to be shut down. Turn PID current off, turn FID ignitor switch off, close gc hydrogen regulator all the way (counter clockwise), set column head pressure no. 1 to 100, turn power off to GC, exit PeakSimpleII, and close regulator valves to gas supply.

8.) Calculations

The software recognizes each analyte by retention time and calibrates concentration with the saved calibration curves. It is necessary for the operator to recognize the peaks and verify that the software is recognizing the peaks correctly before reporting concentrations (in ppb).

APPENDIX C

Existing Monitoring Well Logs

Environmental
PRODUCTS & SERVICES, INC.

SUBSURFACE LOG

Well No.: 1
Sheet 1 of 1

Project Location: New Paltz, NY

Client: Victory Markets, Inc.

SAMPLER
Type: 2' Split Spoon
Hammer: 140 lbs. Fall: 30 inches

Groundwater Depth: Date:

Project No.: 45N1827

Drilling Co.: Kendrick Drilling
Project Coordinator:
Geologist: Robert Hulihan

Driller:
Ground Elevation:
Date Started: Ended:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows /6"	Penetr/ Recovry	"N" Value	Sample Description	Stratum Change General Descrip.	Equipment Installed	Observations/Remarks
0						3" Asphalt, crushed stone, dark brown sandy SILT with many pebbles (gravel).			
2									5' of .020 4" PVC riser
4						Same, moist, some clay.			
						Pebbbles.			
6						Gray brown sandy soil, many pebbles, clay, moist.			
8						Layer of pea sized smooth gravel.			10' of .020 4" screen
						Sandy gravel, silt, clay, moist.			
10									Bolders encountered 10' - 13'.
12									
14									Boring terminated at 15'.
16									

Additional Remarks:

KEY: Auger Spoils, Bentonite, Cement, Sand

2013.088

Environmental
PRODUCTS & SERVICES, INC.

SUBSURFACE LOG

Well No.: 2
Sheet 1 of 1

Project Location: New Paltz, NY

Client: Victory Markets, Inc.

SAMPLER
Type: 2' Split Spoon
Hammer: 140 lbs. Fall: 30 inches

Groundwater Depth: Date:

Project No.: 45N1827

Drilling Co.: Kendrick Drilling
Project Coordinator:
Geologist: Robert Hulihan

Driller:
Ground Elevation:
Date Started: Ended:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Sample Blows /6"	Sample Penetr/ Recovry	Sample "N" Value	Sample Description	Stratum Change General Descrip.	Equipment Installed	Observations/Remarks
0						6" Asphalt, crushed stone (pea gravel, sand), dry.			Very hard drilling (cobbles)
2						Sand, fine gravel, silt, dry.			3' of 4" PVC riser
4						Pebble layer, cobbles, sand, clay, silt, dry.			
6									
8						Brown SAND, many pebbles and cobbles, clay, silt, moist.	▽		10' of .020 4" screen
10									
12									Boring terminated at 13'.
14									
16									

Additional Remarks:

KEY: Auger Spoils, Cement, Bentonite, Sand

2013.086

Environmental PRODUCTS & SERVICES, INC.	SUBSURFACE LOG	Well No.: 3 Sheet 1 of 1
Project Location: New Paltz, NY Client: Victory Markets, Inc.	SAMPLER Type: 2' Split Spoon Hammer: 140 lbs. Fall: 30 inches	Groundwater Depth: Date: Project No.: 45N1827
Drilling Co.: Kendrick Drilling Project Coordinator: Geologist: Robert Hulihan	Driller: Ground Elevation: Date Started: Ended:	

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows /6"	Penetr/ Recovry	"N" Value	Sample Description	Stratum Change General Descrip.	Equipment Installed	Observations/Remarks
0						4" Asphalt, crushed stone			
						Dark brown sand, silt, little clay, pebbles,dry.			
2									5' of 4" PVC riser
4						Boulder			
6						Shale boulder, moist			
8							▽		
10									10' of .020 4" PVC screen
12									
						13.5': Black gray shale, solid sandstone, pebbles			
14									Boring terminated at 15'.
16									

Additional Remarks:

KEY: Auger Spoils, Cement, Bentonite, Sand

2013.086

Environmental PRODUCTS & SERVICES, INC.	SUBSURFACE LOG	Well No.: 4 Sheet 1 of 1
Project Location: New Paltz, NY Client: Victory Markets, Inc.	SAMPLER Type: 2' Split Spoon Hammer: 140 lbs. Fall: 30 inches	Groundwater Depth: Date: Project No.: 45N1827
Drilling Co.: Kendrick Drilling Project Coordinator: Geologist: Robert Hulihan	Driller: Ground Elevation: Date Started: Ended:	

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows /6"	Penetr/ Recovry	"N" Value	Sample Description	Stratum Change General Descrip.	Equipment Installed	Observations/Remarks
0						4" Asphalt, crushed stone			
2						Brown sand, silt, pebbles, some clay, loose, dry			5' of 4" PVC riser
4						Same	▽		
6									
8									
10									10' of 0.020 4" PVC screen
12						Gray shale, weathered, pebbles, semi-competent			
14						Gray black shale, competent , many pebbles			Boring terminated at 15'.
16									

Additional Remarks:

KEY: Auger Spoils, Cement, Bentonite, Sand

2013.066

APPENDIX D

Ground Water Sampling Protocol

Ground Water Sampling Protocol

1. Measure the depth to water and the bottom of the well. Calculate the volume of water in the well casing, and record all information on a Ground Water Sampling Record. Decontaminate the measuring device between each well, if necessary.

2. Account for the sand pack, as appropriate, in a low permeability unit, and purge three to five well volumes or until dry, using a dedicated disposable bailer, or clean dedicated tubing. After purging 5 well volumes, the turbidity of the water from the well will be measured. If the turbidity is 50 NTUs or less, samples will be collected for laboratory analysis, as described below. If the turbidity exceeds 50 NTUs, the NYSDEC on site representative will determine whether the sample is acceptable for laboratory analysis ,or additional purging is warranted. Measurements of pH, temperature, and specific conductivity will be recorded during purging and/or sampling to assess the effectiveness of purging. Decontaminate monitoring probes or instrumentation between each well use, if necessary. Record purge start and stop time and actual volume removed from well. Don new latex gloves for each well, or more frequently, if necessary. Use clean ground plastic at each well.

3. Allow ground water to recover to 90% of original depth to water or for a maximum of 3 hours prior to sampling. Field personnel will document reason(s) for sampling prior to 90% recovery, if necessary. Measure and record depth to water at the time of sampling.

4. Collect the water sample from the appropriate depth with as little agitation as possible, using the dedicated sampling equipment. Transfer the sample to a clean container which does not contain any preservative, again minimizing agitation. Ensure no air bubbles are present in the container. Record sample time, description (i.e., turbid, odor, sheen, etc.), and type of analysis required.

5. Immediately place sample in a chilled cooler and keep properly chilled until delivery to the laboratory. Complete proper chain of custody forms to accompany samples during transport.

d:/project/npplaza/gwsamp.wpd

APPENDIX E

Health and Safety Plan

FIELD HEALTH AND SAFETY PLAN

Revonak Dry Cleaners
(Site No. 356021)

Alpha Geoscience
400 Trillium Lane
Albany, New York 12203

August 21, 1997

ALPHA GEOSCIENCE

HEALTH AND SAFETY PLAN

CLIENT:	**New Paltz Plaza Properties, L.P.**
SITE NAME:	**Revonak Dry Cleaners (Site No. 356021)**
PROJECT/TASK ID#:	**Alpha Project No. 95141**
SITE ADDRESS:	**Rt. 299, New Paltz Plaza, New Paltz, New York**
DATE:	**January, 1997**
PLAN EXPIRATION DATE:	**January, 1998**

HASP APPROVALS:

PROJECT MANAGER	Thomas M. Johnson	Thomas M Johnson Signature	8/21/97 Date
IH REVIEW	R. Kip Score	R. Kip Score Signature	8-21-97 Date
HEALTH AND SAFETY MANAGER	Jean M. Neubeck	J M Neubeck Signature	8/21/97 Date

TABLE OF CONTENTS

SECTION 1.0

GENERAL INFORMATION

1.1 INTRODUCTION

This Health and Safety Plan (HASP) addresses those activities associated with the scope of work stated in the HASP and will be implemented by the Site Safety Officer (SSO) during site work. All contractors, subcontractors, other persons, and third parties must have their own HASP for performing work or visiting at the Site; however, compliance with this HASP is required of all such persons and third parties who enter this site. Assistance in implementing this plan can be obtained from the Site Safety Officer and Project Manager, and/or the Health and Safety Manager (HSM). The content of the HASP may be modified based upon additional information made available to health and safety (H&S) personnel, monitoring results or changes in the scope of work. Any changes proposed must be reviewed by H&S staff and are subject to approval by the HSM and Project Manager.

This HASP has been written for the use of Alpha Geoscience and its employees. It may also be used as a guidance document by properly trained and experienced Alpha Geoscience subcontractors. However, Alpha Geoscience does not guarantee the health or safety of any person entering this site, and all subcontractors and third parties are responsible for the health and safety of their own employees, including developing and implementing their own HASP.

Due to the potentially hazardous nature of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards which may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this HASP were prepared specifically for this site and should not be used on any other site without prior research by trained health and safety specialists.

Alpha Geoscience claims no responsibility for the use of this HASP by unauthorized persons. The HASP is written for the specific site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

1.2 KEY PERSONNEL

TABLE 1-1

PERSONNEL RESPONSIBILITIES AND QUALIFICATIONS

TITLE/NAME	GENERAL DESCRIPTION	SPECIFIC RESPONSIBILITIES	REQUIRED TRAINING AND MEDICAL SURVEILLANCE
Project Manger _____ Tom Johnson _____	Reports to upper-level management. Has authority to direct response operations. Directs site environmental activities.	Prepares and organizes the background review of the job at hand, the Work Plan, the Health and Safety Plan, and the field team. Obtains permission for site access and coordinates activities with appropriate officials. Ensures that the work plan is completed and on schedule. Briefs the field teams on their specific assignments. Uses the Site Safety Officer to ensure that safety and health requirements are met. Prepares the final report and support files on the response activities. Serves as the liaison with public officials.	40-hr. Hazardous Waste Training including 8-hr. update (29 CFR 1910.120). 8-hr. Manger/Supervisor Hazardous Waste Training (29 CFR 1910.120). Respirator use training (if on-site work). Initial site specific (if on-site). Daily site specific "Tailgate". Special Medical surveillance participant (if on-site work).

Site Safety Officer/ Alternate Site Safety Officer Tom Johnson	Advises the Field Supervisor on all aspects of health and safety on-site. Recommends stopping work if any operations threaten worker or public health or safety.	Coordinates safety and health program activities. Conducts Tailgate Safety Meetings and completes all documentation forms required by the HASP. Monitors site personnel for signs of stress, such as cold exposure, heat stress and fatigue. Monitors on-site hazards and conditions. Participates in preparation of and implements the HASP. Ensures that protective clothing and equipment are properly stored and maintained. Knows emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire and police department. Notifies, when necessary, local public emergency officials. Coordinates emergency medical care.	40-hr. Hazardous Waste Training including 8-hr. update (29 CFR 1910.120). 8-hr. Manager/Supervisor Hazardous Waste Training (29 CFR 1910.120) Respirator use training Initial HASP review Daily review of site conditions Special Medical surveillance participant

Field Personnel Tom Johnson Mike Ralbovsky Jean Neubeck Mike Palleschi Steve Trader	Responsible for field team operations and safety Reports to Project Manager	Manages field operations. Executes the Work Plan and schedule. Monitors safety procedures. Coordinates with the Site Safety Officer in determining protection level. Controls site access. Documents field activities and sample collection. Serves as liaison with public officials. Complies with Health and Safety Plan. Notifies the Site Safety Officer or Project Manager of unsafe conditions	40-hr. Hazardous Waste Training including 8-hr. update (29 CFR 1910.120). Respirator use training. Initial site specific Daily site specific "Tailgate" Special Medical surveillance participant

1.3 AUTHORIZED ALPHA GEOSCIENCE SITE PERSONNEL

Personnel authorized to enter the subject site while operations are being conducted must be approved by the HSM. Authorization requires confirmation of conformance with OSHA 29 CFR 1910.120 training and medical examination requirements and/or other applicable regulations and review/sign-off of this HASP. All personnel must comply with facility safety requirements, as applicable.

TABLE 1-2

Name	Alpha Geoscience Staff Training Summary						
	40-hr. Haz-woper	8-hr. Haz-woper	8-hr. Super/ Mgr	CPR	First Aid	BBP	Other
Thomas M. Johnson	X	X	X				
Jean M. Neubeck	X	X	X				
Samuel W. Gowan	X	X	X				
Michael D. Palleschi	X	X	X				
Michael S. Ralbovsky	X	X	X				
Steven M. Trader	X	X	X				

1.4 SIGNATURE AND ACKNOWLEDGMENT
SITE NAME: Revonak Dry Cleaners (Site No. 356021)

All Alpha Geoscience personnel, and their subcontractors, working at or visiting the site (beyond the Support Zone) must acknowledge by signing below that the contents of this HASP have been reviewed with them. All contractors, subcontractors, other persons, and third parties must have their own HASP for performing work. All personnel acknowledge that they participate in a medical surveillance program and have been trained in accordance with 20 CFR 1910.120 (OSHA's Hazardous Waste Operations and Emergency Response standard). Each person agrees that he/she has read and understands this HASP and agrees to comply with it.

Name	Signature	Date	Company
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

1.5 MEDICAL SURVEILLANCE

Alpha Geoscience personnel, and subcontractors, working at the site will participate in a medical surveillance program which meets the requirements of 29 CFR 1910.120. Alpha's medical surveillance program is outlined in the Corporate Policy Manual, Medical Surveillance Program.

Employees working at hazardous waste sites are provided with annual and termination medical examinations to ensure that they are medically fit to perform work and wear personal protective equipment. The scope of the medical exams includes a physical examination, audiometric testing, pulmonary function testing, visual testing, blood testing and urinalysis. The results of the examinations are confidential. Alpha personnel are tested to assure proper fit of individual air purifying respirators. Employees are provided with medical certificates and results of all fit testing. Employees and their supervisors are informed of any restrictions or limitations.

Employees requesting access to their medical records should contact the Health and Safety Manager.

SECTION 2.0

PROJECT INFORMATION

2.1 SITE DESCRIPTION The Site occupies a portion of the New Paltz Plaza on Route 299 in the Town of New Paltz, Ulster County, New York (Figure 1). The Site is currently an active commercial dry cleaning operation, and is bordered to the north and south by commercial business establishments; to the east by a paved parking lot, a drainage channel and a wooded area; and to the west by a paved parking lot.

The land use adjacent to the Site is predominantly light commercial with rural/residential areas beyond the plaza boundaries. Specifically, to the north of the Site is a residential area, to the south are several commercial establishments, to the east is a woodlands area and the New York State Thruway, and to the west is the Village of New Paltz.

2.2 BACKGROUND INFORMATION The New Paltz Plaza was constructed in sections, starting in 1967 by developer, Austin T. Simmons. Prior to the construction of the Shopping Center, the land was used for agricultural purposes. Upon the death of Simmons, Benjamin Malman purchased the Shopping Center and completed two small sections during 1969. The financing for the purchase was made by Institutional Investors Trust (IIT). When Malman defaulted in his payments on the mortgage in 1976, IIT took a deed in lieu of foreclosure and employed Summit Realty Corporation to manage the property. Within six months, XYZ Realty Associates, an affiliate of Summit, purchased a 50% interest in the property, and entered into a joint venture with IIT called New Paltz Plaza Associates. Approximately 1 to ½ years later, the same principals established ABC Realty Associates which purchased the remaining 50% held by IIT, with Summit continuing the management. In August, 1992, the entire property was net leased to New Paltz Plaza, Inc., an affiliate of the Kempner Corporation, who are not managing the property.

The Site has reportedly been operated as a dry cleaning facility since the development of NPPSC. In 1968 the site was leased to Franchise Laundry and Dry Cleaning Corporation. In 1973, the Site was leased to Revonak Dry Cleaners, Inc. who are the current operators of a dry cleaning operation.

Past investigations conducted by others have detected volatile organic compounds (VOCs) in the soil. The source of the VOCs is believed to be the dry cleaning facility and a release of petroleum from an underground storage tank which was previously removed from the former supermarket. The prior investigations did not identify a discrete, continuing source area of highly contaminated soil that poses a significant threat to ground water, despite the drilling of more than 50 borings within an area of less than one acre. The ground water in the immediate area has been sampled and measured to currently contain relatively high levels of VOCs.

2.3 PURPOSE OF SITE WORK A variety of tasks may be performed at the site as part of the investigation and remediation of the Site. The goal of the tasks to be performed is to characterize the magnitude and extent of the contamination and remediate the site in a manner acceptable to the New York State Department of Environmental Conservation

(NYSDEC) . The specific remedy for the Site will be selected based on the available information once the investigation is completed. This HASP attempts to anticipate all tasks which may be performed as part of the site investigation and remediation to minimize revisions to the plan. The potential tasks to be performed are described in the following section.

2.4 SCOPE OF WORK This section lists the tasks which may be performed at the site during investigation or remediation activities. A brief description of the purpose and activities to be performed during each task is also provided to allow identification and evaluation of the risks and hazards which may be associated with the work. Each of the tasks listed below will not necessarily be undertaken; the following is meant to be a comprehensive list of tasks which **may** be performed at the site.

1) Excavation: excavations of soil may be performed using a backhoe or excavator. The purposes of excavation may include, but are not necessarily limited to, test pit excavation, removal of contaminated soil, utility line repair, and installation of piping for remedial systems.

2) Drilling: drilling may be performed using an auger rig or direct push soil probe system. The purposes of drilling may include, but are not necessarily limited to, exploration borings, soil sampling, dewatering, well installations, and installation of piping for remedial systems.

3) Drum Handling: soil and water generated during site activities may require temporary storage in 55 gallon steel drums. Drums will be filled or partially filled with soil or liquid and stored in a central area with the tops secured in place. The contents of the drum and date material was placed in the drum will be clearly labeled on the outside of the drum.

4) Ground Water Sampling: this activity will use dedicated polyethylene bailers or pumps to remove ground water from wells at the site. The purpose of this task is to obtain samples of ground water for testing.

5) Water Level Measurements and Surveying: this activity would involve measurement of the depth to water in wells, total well depths, and/or surveying of the location and elevation of wells or other sampling points.

2.5 SCHEDULED DATES OF SITE WORK Investigation and remediation activities will be scheduled based on the results of previously completed site work. Schedules for specific scopes of work will be contained in work plans which provide details on specific tasks to be performed at the site. The project manager will be responsible for notifying the site safety officer and appropriate NYSDEC personnel of the schedule for project tasks to be performed which are governed by this HASP.

SECTION 3.0

HEALTH AND SAFETY RISK ANALYSIS

3.1 HAZARD ANALYSIS

Non-chemical hazards may be associated with:

1. Excavation Tasks
2. Drilling Tasks
3. Drum Handling Tasks

Chemical hazards may be associated with:

1. Excavation Tasks
2. Drilling Tasks
3. Drum Handling Tasks
4. Ground Water Sampling
5. Water Level Monitoring

The overall hazard is:

___ Low

_X_ Moderate

___ High

3.2 NON-CHEMICAL HAZARD SUMMARY

See Table 3-1 for summary assessment of non-chemical hazards

3.3 SITE CONTAMINANT SOURCE(S) AND DATA

See Tables 3-2 and 3-2a for list of known contaminants detected in samples collected at the site.

3.4 CHEMICAL HAZARD SUMMARY

See Table 3-3 for summary assessment of chemical hazards, based on the contaminants identified in Section 3.3.

TABLE 3-1

ASSESSMENT OF NON-CHEMICAL HAZARDS
(Hazard mitigation is discussed in Section 5 for each "Yes" response)

Non-Chemical Hazard	Yes	No	Task No.(s)	Non-Chemical Hazard	Yes	No	Task No.(s)
1. Electrical (overhead lines)	X		1&2	16. Shoring	X		1
2. Electrical (underground lines)		X		17. Biologic		X	
3. Gas/Water lines	X		1&2	18. Holes/Ditches	X		1&2
4. Drilling Equipment	X		2	19. Steep Grades		X	
5. Excavation Equipment	X		1	20. Slippery Surfaces		X	
6. Machinery	X		1&2	21. Uneven Terrain		X	
7. Heat Exposure		X		22. Unstable Surfaces	X		1
8. Cold Exposure	X		All	23. Elevated Surfaces (scaffolding)		X	
9. Oxygen Deficiency		X		24. Poor Lighting		X	
10. Confined Spaces		X		25. Vehicle Traffic	X		All
11. Noise	X		1&2	26. Insects/vermin		X	
12. Ionizing Radiation		X		27. Poisonous Plants		X	
13. Non-ionizing Radiation		X		28. Water Bodies		X	
14. Fire	X		1&2	29. Unstable Soil Conditions		X	
15. Explosive Atmospheres	X		1&2	30.			

TABLE 3-2

Summary of Water Results
Revonak Dry Cleaners
Site No. 356021

Location	Sampling Date	Analysis Method	PCE	TCE	1,1,1-TCA	1,2-DCE	Vinyl Chloride	Total VOCs
MW-1	12/91	624	65.0	16.0	U	<5.0	U	U
	9/94	624	39.0	7.1	U	5.5	U	U
	2/21/96	8010	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	3/7/96	8010	1.1	<1.0	<1.0	<1.0	<1.0	U
	3/19/96	8010	2.6	<1.0	<1.0	<1.0	<1.0	U
MW-2	12/91	624	3,100	1,400	<500	<500	U	U
	9/94	624	7,600	<500	<500	600	U	U
	2/5/96	8010	21,000	<500	550	<500	<500	21,550
	3/7/96	8010	31,000	<500	750	<500	<500	U
	3/19/96	8010	21,000	<200	590	420	<200	U
	3/19/96	8240	21,000	<1000	<1000	<1000	<2000	U
	3/22/96	8010	13,000	160	270	260	<500	13,690
	4/26/96	8010	15,000	<200	300	280	<1000	15,580
MW-3	12/91	624	15.0	3.0	U	<5.0	U	U
	9/94	624	<5.0	<5.0	U	10.0	U	U
	2/5/96	8010	2.9	<1.0	<1.0	7.0	1.8	11.7
	3/7/96	8010	<1.0	<1.0	<1.0	7.9	1.4	U
	3/19/96	8010	8.6	<1.0	<1.0	12.0	2.2	U
MW-4	12/91	624	178	8.0	U	<5.0	U	U
	9/94	624	200	18.0	U	36.0	U	U
	2/5/96	8010	310	32.0	<10.0	240	<10.0	582
	3/7/96	8010	110	10.0	<2.0	46.0	<2.0	U
	3/19/96	8010	290	26.0	<5.0	220	<5.0	U
SB-1	4/12/95	PGC	350	50	U	70	U	500
SB-2	4/12/95	PGC	370	20E	U	100	U	500
SB-3	4/12/95	PGC	<5	<5	U	<5	U	ND
SB-4	4/12/95	PGC	100	20E	U	50	U	200
SB-5	4/12/95	PGC	140	10	U	30	U	200
SB-8	4/13/95	PGC	100*	<50	U	<50	U	2,300
SB-9	4/13/95	PGC	<5	<5	U	<5	U	ND
SB-10	4/13/95	PGC	<5	<5	U	<5	U	150
SB-11	4/13/95	PGC	4,000	50	U	100	U	6,000
SB-12	4/13/95	PGC	80	50	U	170	U	300
SB-13	4/13/96	PGC	8,600	90	U	170	U	8,900
SB-14	4/13/95	PGC	20	5	U	10	U	40
SB-15	4/13/95	PGC	80	<50	U	<50	U	80
SB-16	4/13/95	PGC	30	10	U	10	U	60

Location	Sampling Date	Analysis Method	PCE	TCE	1,1,1-TCA	1,2-DCE	Vinyl Chloride	Total VOCs
SB-17	4/13/95	PGC	50	<50	U	200	U	400
SB-18	4/13/95	PGC	<5	<5	U	<5	U	ND
SB-19	4/14/95	PGC	80	<5	U	10	U	90
SB-20	4/14/95	PGC	600	60	U	60	U	800
SB-21	4/14/95	PGC	10	<5	U	10	U	20
SB-22	4/14/95	PGC	20	10	U	20	U	60
SB-23	4/14/95	PGC	<5	<5	U	<5	U	ND
SB-49	1/31/96	8010	<1.0	<1.0	<1.0	2.5	<1.0	2.5
SB-49 (dup)	1/31/96	8010	<1.0	<1.0	<1.0	3.7	<1.0	3.7
SB-50	1/31/96	8010	130	26.0	<5.0	120	<5.0	276
SB-51	1/31/96	8010	<1.0	<1.0	<1.0	<1.0	<1.0	ND
SB-52	1/31/96	8010	<1.0	<1.0	<1.0	<1.0	<1.0	ND
SB-53	1/31/96	8010	<1.0	<1.0	<1.0	<1.0	<1.0	ND
MH-3	3/7/96	8010	63.0	<1.0	<1.0	<1.0	<1.0	U
	3/19/96	8010	610	<1.0	<1.0	<1.0	<1.0	U
Floor Drain	8/9/95?	PGC	260	<5.0	U	<5.0	U	260
	3/19/96	8010	63.0	<1.0	<1.0	<1.0	<1.0	U
CB-1	8/9/95	PGC	30.0	10.0	U	30.0	U	80.0
	8/9/95	624	27.0	7.7	<5.0	37.0	<10.0	71.7
TP-2	8/9-10/95	PGC	20.0	3.0E	U	3.0E	U	300
TP-6a	8/9-10/95	PGC	<5.0	15.0	U	15.0	U	2,800
NYS Ground Water Standards			5.0	5.0	5.0	5.0	2.0	

Notes:
1. All results are in micrograms per liter (parts per billion)
2. PGC = Portable Gas Chromatograph
3. U = Unavailable or Unknown
4. ND = Not detected at or above the practical quantitation limit
5. E = Estimated value
6. * = tentatively identified compound due to matrix interference
7. Ground water samples collected February,1996 from wells MW-1, MW-2, MW-3 and MW-4 and the water samples collected from CB-1 and the Floor Drain were analyzed for aromatic volatile organics by Method 8020. All results were non-detectable.
8. Water samples collected from TP-2 and TP-6a were analyzed for aromatic volatile organics by Method 8020. Results are not shown herein.

TABLE 3-2a

Summary of Soil and Sediment Sample Results
Revonak Dry Cleaners
Site No. 356021

Location	Sampling Date	Analysis Method	Sample Depth (ft.)	TCE	PCE	1,2-DCE	Benzene	Toluene	Ethylbenzene	Xylenes	Total VOCs
Sewer Sediment											
MH-1	8/14/95	PGC	U	<20	<20	<20	<20	900	<40	<40	980
MH-2	8/14/95	PGC	U	<20	<20	<20	<20	20	<40	<40	20
MH-3	8/14/95	PGC	U	<20	<20	<20	<20	<20	<40	<40	ND
MH-4	8/14/95	PGC	U	<20	<20	<20	<20	<20	<40	<40	ND
MH-6	8/14/95	PGC	U	<20	<20	<20	<20	<20	<40	<40	ND
Catch Basin											
CB-1	8/14/95	PGC	NA	<20	50	<20	<20	<20	<40	<40	60
Test Pits											
TP-1	8/14/95	PGC	2.5	<20	80	<20	<20	<20	70	300	700
		8240	2.5	<620	660	<1240	<620	<620	<620	<620	NA
TP-2	8/14/95	PGC	2.5	200	1,500	200	150	300	2,400	10,000	49,000
TP-3	8/14/95	PGC	3.5	<20	30	<20	<20	<20	<40	<40	30
TP-4	8/14/95	PGC	4.5	<20	20	10	<20	<20	10	60	200
		8240	4.5	<620	3,700	<1240	<620	<620	<620	<620	NA
TP-5	8/14/95	PGC	2.5	70	1,000	150	<20	<20	<40	<40	1,300
TP-6a	8/14/95	PGC	5	200	800	<200	<200	300	1,100	3,500	24,000
TP-6b	8/14/95	PGC	5.5	<20	20	<20	<20	<20	<40	<40	40

Summary of Soil and Sediment Sample Results
Revonak Dry Cleaners
Site No. 356021

Location	Sampling Date	Analysis Method	Sample Depth (ft.)	TCE	PCE	1,2-DCE	Benzene	Toluene	Ethylbenzene	Xylenes	Total VOCs
		624	5.5	<620	1,500	<1240	<620	<620	<620	<620	NA
TP-7	8/14/95	PGC	3.5	30	700	50	<20	<20	<40	<40	800
TP-8	8/14/95	PGC	4	10	90	20	<20	<20	<40	<40	120
Soil Borings											
SB-1	4/12/95	PGC	8-10	<20	<20	<20					40
SB-2	4/12/95	PGC	6-8	20	120	20					200
SB-3	4/12/95	PGC	4-6	<20	<20	<20					ND
SB-4	4/12/95	PGC	2-4	30	500	60					600
SB-5	4/12/95	PGC	8-10	10*	30	10*					50
SB-6	4/13/95	PGC	8-10	<20	<20	<20					ND
SB-7	4/13/95	PGC	2-3	<20	<20	<20					ND
SB-8	4/13/95	PGC	2-4	<200	800**	<200					29,000
SB-9	4/13/95	PGC	6-8	<20	<20	<20					ND
SB-10	4/13/95	PGC	8-10	<20	<20	<20					ND
SB-11	4/13/95	PGC	5-7	<200	300	<200					300
SB-12	4/13/95	PGC	6-8	20	80	60					170
SB-13	4/13/95	PGC	8-10	<200	800	<200					800
SB-14	4/13/95	PGC	6-8	<20	20	<20					20
SB-15	4/13/95	PGC	6-8	<20	<20	<20					ND
SB-16	4/13/95	PGC	4-6	<20	10*	<20					10
SB-17	4/13/95	PGC	6-8	100	900	400					1,600

Summary of Soil and Sediment Sample Results
Revonak Dry Cleaners
Site No. 356021

Location	Sampling Date	Analysis Method	Sample Depth (ft.)	TCE	PCE	1,2-DCE	Benzene	Toluene	Ethylbenzene	Xylenes	Total VOCs
SB-18	4/13/95	PGC	13-15	<20	<20	<20					ND
SB-19	4/14/96	PGC	6-8	<20	<20	<20					ND
SB-20	4/14/96	PGC	4-6	<20	<20	<20					ND
SB-21	4/14/96	PGC	6-8	<20	<20	<20					ND
SB-22	4/14/96	PGC	6-8	<20	<20	<20					ND
SB-23	4/14/96	PGC	6-8	<20	<20	<20					ND
SB-24	1/29/96	8010/8020	8-10	370	6,800	230	<6	<20	<20	<70	7,400
SB-25	1/29/96	8010/8020	8	<100	2,300	<100	<6	<20	<20	<70	2,300
SB-26	1/29/96	8010/8020	6-8	370	3,100	430	<6	<20	<20	<70	3,900
SB-27	1/29/96	8010/8020	6-8	<100	<100	<100	<6	<20	<20	<70	ND
SB-28	1/29/96	8010	2-4	<100	<100	<100					ND
SB-28	1/29/96	8010/8020	6-8	400	6,800	320	<6	<20	<20	<70	7,520
SB-29	1/29/96	8010/8020	4-8	<100	270	<100	<6	<20	<20	<70	630
SB-30	1/29/96	8010	6-8	110	4,700	160					4,970
SB-31	1/29/96	8010	2-4	<100	<100	<100					ND
SB-31	1/29/96	8010	6-8	710	3,800	530					5,040
SB-32	1/29/96	8010	2-4	<100	<100	<100					ND
SB-32	1/29/96	8010	8-10	<100	<100	<100					ND
SB-33	1/29/96	8010	2-4	<100	<100	<100					ND
SB-33	1/29/96	8010	6-8	<100	<100	<100					ND
SB-35	1/30/96	8010	8-10	740	54,000	1,000					55,740
SB-35 (dup)	1/30/96	8010	8-10	220	13,000	370					13,590

Summary of Soil and Sediment Sample Results
Revonak Dry Cleaners
Site No. 356021

Location	Sampling Date	Analysis Method	Sample Depth (ft.)	TCE	PCE	1,2-DCE	Benzene	Toluene	Ethylbenzene	Xylenes	Total VOCs
SB-36	1/30/96	8010	10-12	<100	<100	<100					ND
SB-39	1/31/96	8010	10-12	<100	<100	<100					ND
SB-41	1/30/96	8010	10-11	340	1,400	<100					1,740
SB-43	1/30/96	8010	0-4	<100	630	<100					630
SB-44	1/30/96	8010/8020	4-6	410	2,200	430	<6	<20	<20	<70	3,040
SB-45	1/30/96	8010/8020	4-6	120	10,000	<100	<6	<20	<20	<70	10,120
SB-46	1/31/96	8010/8020	4-7	1,000	9,600	580	<6	<20	<20	<70	11,180
SB-46 (dup)	1/31/96	8010	4-7	670	5,500	400					6,570
SB-47	1/31/96	8010/8020	4-6	220	5,700	320	<6	<20	<20	<70	6,240
SB-48	1/31/96	8010/8020	4-6	250	5,600	720	<6	<20	<20	<70	6,570
SB-51	1/31/96	8010	10-12	<100	<100	<100					ND
SB-52	1/31/96	8010	4-6	<100	<100	<100					ND
SB-53	1/31/96	8010	8-10	<100	<100	<100					ND

Notes:
1. All results are in micrograms per kilogram (parts per billion)
2. PGC = Portable Gas Chromatograph
3. Sampling date shown for PGC analysis is date analyzed.
4. ND = not detected at or above laboratory practical quantitation limit (PQL)
5. Blank means sample not analyzed for that compound
6. U = unknown or unavailable
7. NA = not applicable due to elevated PQLs
8. * = estimated value
9. ** = analyte identification is tentative due to matrix interference

TABLE 3-3

ASSESSMENT OF CHEMICAL HAZARDS

Task No.(s)	Chemical Name (or class)	PEL/TLV (ppm)	Other Pertinent Limits (Specify)	Potential Exposure Pathways	Acute Health Effects	Chronic Health Effects
1,2,3 4&5	Benzene	1/10 (0.1)	STEL = 5 ppm TLV-STEL = 0.3	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	Leukemia; Dermatitis
1,2,3 4&5	1,2-Dichloroethylene (acetylene dichloride)	200/200 ppm	None cited	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	None cited
1,2,3 4&5	Perchloroethylene (tetrachloroethylene; tetrachloroethene; or PCE)	25/50 ppm	C = 300 ppm TLV-STEL = 200 ppm	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression; skin burns	Liver damage; peripheral neuropathy; suspected human carcinogen
1,2,3 4&5	Toluene	100/100 (50) ppm	STEL = 150 ppm C = 500 ppm	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	Possible liver & kidney damage; dermatitis
1,2,3 4&5	1,1,1-Trichloroethane (methyl chloroform; or TCA)	350/350 ppm	STEL = 450 ppm C = 800 ppm	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	Possible liver damage, dermatitis
1,2,3 4&5	Trichloroethylene (TCE)	25/50 ppm	STEL = 200 ppm C = 300 ppm	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	Possible liver, kidney, cardiovascular & GI injury; suspected human carcinogen
1,2,3 4&5	Vinyl chloride	1/5 ppm	None cited	Inhalation; Dermal; Ingestion	CNS depression	Liver cancer; Reynauds syndrome; vascular disturbances
1,2,3 4&5	Xylene	100/100 ppm	STEL = 150 ppm C = 300 ppm	Inhalation; Dermal; Ingestion	Eye, skin & respiratory irritation; CNS depression	Possible liver & kidney damage; dermatitis

PEL — OSHA Permissible Exposure Limit; represents the maximum allowable 8-hr. time weighted average (TWA) exposure concentration.

TLV — ACGIH Threshold Limit Value; represents the maximum recommended 8-hr. TWA exposure concentration.

STEL — OSHA Short-term Exposure Limit; represents the maximum allowable 15 minute TWA exposure concentration.

TLV-STEL — ACGIH Short-term Exposure Limit; represents the maximum recommended 15 minute TWA exposure concentration.

C — OSHA Ceiling Limit; represents the maximum exposure concentration above which an employee shall

PEL	OSHA Permissible Exposure Limit; represents the maximum allowable 8-hr. time weighted average (TWA) exposure concentration.
TLV	ACGIH Threshold Limit Value; represents the maximum recommended 8-hr. TWA exposure concentration.
STEL	OSHA Short-term Exposure Limit; represents the maximum allowable 15 minute TWA exposure concentration.
TLV-STEL	ACGIH Short-term Exposure Limit; represents the maximum recommended 15 minute TWA exposure concentration.
C	OSHA Ceiling Limit; represents the maximum exposure concentration above which an employee shall not be exposed during any period without respiratory protection.
IDLH	Immediately Dangerous to Life and Health; represents the concentration at which one could be exposed for 30 minutes without experiencing escape-impairing or irreversible health effects.
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compounds
( )	ACGIH TLV Intended Change

SECTION 4.0

HEALTH AND SAFETY FIELD IMPLEMENTATION

4.1 PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS

PPE may be upgraded or downgraded by the Site Safety Officer based upon site conditions and air monitoring results. Reference to required PPE will be by Level of Protection (A-D). A summarized description of PPE by level of protection is indicated below:

LEVEL A: Should be worn when the highest level of respiratory, skin and eye protection is needed.

LEVEL B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection is allowable. Level B is the primary level of choice when encountering unknown environments.

LEVEL C: Should be worn when the criteria for using air-purifying respirators are met and a lesser level of skin protection is needed. Constant use of respirators is not necessary if appropriate air monitoring is performed as described below.

LEVEL D: Should be worn only as a work uniform and not in any area with respiratory or dermal hazards. It provides minimal protection against chemical hazards.

See Table 4-1 for specific PPE Requirements.

4.2 MONITORING EQUIPMENT REQUIREMENTS

Monitoring is conducted by the Site Safety Officer or designee. Conduct contaminant source monitoring initially. Conduct breathing zone monitoring if source concentrations are near or above contaminant action level concentrations. Log direct reading monitoring and record results on Direct Reading Report form or similar log form. Calibrate monitoring instruments daily or in accordance with manufacturers' specifications. Record calibration data on the Instrument Calibration Log or similar log form.

Results shall be interpreted by the Site Safety Officer. At a minimum, exposures to suspected chemicals of contamination, as defined in this HASP, should be monitored prior to and during intrusive field activities. Additional characterization monitoring shall begin immediately if the operation destabilizes, the environment changes, or the potential for exposure is otherwise affected. Monitoring should continue on a continuous basis until the operation is stable and the SSO or HSM feels that the monitoring is sufficient to adequately assess and characterize exposure during that operation.

See Table 4-2 for monitoring protocols and contaminant action levels.

TABLE 4-1

PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS

Job Task	Level of Protection	PPE Suit	PPE Gloves	PPE Feet	PPE Head	PPE Eye	PPE Ear	PPE Respirator	Level of Upgrade	
1	C	Tyvek	L,N	Steel +	HH	glass	plugs	Full APR/OV	Full APR/OV	
2	D	Std	L,N	Steel	HH	glass	plugs	monitor	C	
3	D	Std	L,N	Steel	--	glass	--	monitor	C	
4	D	Std	L,N	Steel	--	glass	--	monitor	D	
5	D	Std	L	--	--	glass	--	--	D	

SUIT:
Std = Standard work clothes or coveralls
Tyvek = Uncoated Tyvek disposable coverall
PE Tyvek = Polyethylene-coated Tyvek
Chemrel = Chemrel coverall with hood
Saranex = Saranex-laminated Tyvek
Lt PVC = Light wt. PVC raingear
Med PVC = Medium wt. PVC suit
Hvy PVC = Heavy PVC coverall with hood
Road = Roadwork vest

GLOVES:
Work = Work gloves (canvas, leather)
Neo = Neoprene gloves
PVC = PVC gloves
N = Nitrile gloves
V = Vinyl gloves
L = Latex gloves

FEET:
Steel = Steel-toe boots
Steel+ = Steel toe boots with PVC overboots
Booties = PVC booties

HEAD:
HH = Hardhat

EYE:
Glass = Safety glasses
Goggle = Goggles
Shield = Face shield

EAR:
Plugs = Earplugs
Muff = Ear muff

RESPIRATOR:
APR = Air purifying respirator
Full APR = Full face APR
Half APR = Half face APR
PAPR = Powered APR
SAR = Airline supplies air respirator
SCBA = Self contained breathing apparatus
Escape = Escape SCBA
OV = Organic Vapor cartridge
AG = Acid gas cartridge
OV/AG = Organic vapor/Acid gas cartridge
AM = Ammonia cartridge
D/M = Dust/mist pre-filter and cover for cartridge
HEPA = High efficiency particulate air filter cartridge

OTHER:
* = use if contact with wet soil or water
** = Optimal use except if specific hazard present

COMMENTS: -- = not applicable or not necessary; monitor = perform air monitoring in work zone to determine need for respirator.

TABLE 4-2

MONITORING PROTOCOLS AND CONTAMINANT ACTION LEVELS

				Breathing Zone Action Level Concentrations*	
Job Task	Contaminant	Monitoring Equipment	Monitoring Protocol/Frequency	Monitored Level for Mandatory Respirator Use	Monitored Level for Mandatory Work Stoppages**
1,2,3,4&5	Tetrachloro-ethylene	PID	As dictated by working conditions	12.5 ppm+	200 ppm

COMMENTS: Actual PID response and readings will depend on type of monitoring equipment.

* Monitoring performed at operator's breathing zone.
** Call the Regional Health and Safety Manager for consultation.
+ The PEL for PERC is 25 ppm. The conservative PID response for PERC is 12.5 ppm when present at a concentration of 25 ppm.
PID - Photoionization Detector (HNU, TIP, OVM)
FID - Flame Ionization Detector (OVA)
LEL - Lower Explosive Limit; represents the minimum concentration of combustible vapor in air that will ignite, if an ignition source is present (expressed in % by volume).
LEL-02 - LEL and Oxygen Meter
CT = Coloimetric Gas Detector Tube

4.3 SITE ZONES/DELINEATION

Exclusion Zone:

___X___	Areas within barricades, cones and/or caution tape
___X___	Within 40-ft radius of drill rig operations
___X___	Within 40-ft radius of heavy equipment operations
___X___	Within 10-ft radius of hand augering location
___X___	Within 10-ft radius of ground water monitoring well locations
___X___	Other (describe): The exclusion zone will include rolloffs containing excavated soil and stockpiled soil to ensure that the general public does not have access to potentially contaminated material.

Contamination Reduction Zone: At perimeter of Exclusion Zone.

Support Zone: Outside of Contamination Reduction Zone.

4.4 SITE COMMUNICATION

_____	By two way radio
___X___	By telephone (cellular)
_____	By pager
_____	By other means (describe):

4.5 SITE SECURITY

___X___	Restricted access
_____	Fenced
_____	Security guard
_____	Other means (describe):

SECTION 5.0

SITE OPERATING PROCEDURES

5.1 INITIAL SITE ENTRY PROCEDURES

- Review Initial Health and Safety Mobilization Checklist.
- Locate nearest available telephone. Indicate location on Site Map.
- Determine wind direction, establish hotline, and set up decontamination facilities. Note wind direction and location of decontamination facilities on site map.
- Post Emergency Information. Confirm/post emergency phone numbers and confirm hospital route, at least weekly.
- Designate at least one vehicle for emergency use.
- If toilet facilities are not located within a 5-minute walk from the decontamination facilities, either provide a chemical toilet and hand washing facilities or have a vehicle available (not the emergency vehicle) for transport to nearby facilities.
- Prior to working on site, conduct an inspection for physical and chemical hazards.
- Conduct or review utility clearance prior to start of work, if appropriate.
- Note any specialized protocols particular to work tasks associated with the project.

5.2 DAILY OPERATING PROCEDURES

- Hold daily Tailgate Safety Meetings prior to work start.
- Use monitoring instruments and follow designated protocol and contaminant action levels.
- Use personal protective equipment (PPE) as specified.
- Remain upwind of operations and airborne contaminants, if possible.
- Establish a work/rest regime when ambient temperatures and protective clothing create a potential heat stress hazard.
- Do not carry cigarettes, gum, etc. into contaminated areas.
- Refer to Site Safety Officer for specific concerns for each individual site task.
- **USE BUDDY SYSTEM WHERE APPROPRIATE.**
- Be alert to your own physical condition. Watch buddy for signs of fatigue, exposure, etc.
- All accidents, no matter how minor, must be reported immediately to the SSO.
- A work/rest regimen must be initiated when ambient temperature and protective clothing create a potential heat stress situation.
- Contain liquids and cuttings generated during drilling.
- Limit contaminants contact with clean equipment.
- Practice contamination avoidance, on- and off-site. Activities should be planned ahead of time.
- Apply immediate first aid to any and all cuts, scratches, abrasions, etc.

5.3 UTILITY CLEARANCE

Date to be performed: Approximately one to two weeks prior to intrusive work.

Will be performed by following personnel who are contacted by the applicable contractor that is actually performing intrusive work. Contact utility identification service, such as Digsafe or One-Call. The utility identification service will contact appropriate public utility companies.

Method that will be utilized: A utility identification service authorization number will be obtained prior to performing intrusive work. Utility representatives will provide clearance according to their standard procedures.

Owner responsibility: Identify on-site subsurface utilities.

Additional utility clearance information is contained in Attachment 1.

5.4 ADDITIONAL SITE-SPECIFIC OPERATING PROCEDURES

Work performed at the site will require basic knowledge of the specific tasks to be performed in order to promote a safe work place. Site personnel should be familiar with the scope of work being performed and the objectives of the work. A copy of all written work plans will be maintained on site. Site personnel should review written work plans or sections of work plans which describe the work to be performed.

Non-chemical hazards have been identified (Table 3-1) in association with certain tasks or activities. The following sections describe precautions which should be considered to mitigate the identified hazards.

5.4.1 Electrical Overhead Lines

The presence of overhead electrical lines at the site present a potential electrical shock hazard for excavation or drilling tasks. Equipment used for excavating or drilling have the potential to come in contact with the overhead wires. Equipment should be kept a safe distance (minimum of 20 feet clearance) from the overhead electrical lines at all times. If this is not possible, the lines must be fitted with insulator sleeves or the power must be shut off to allow safe working conditions.

5.4.2 Gas/Water/Sewer Lines

There are no known gas lines within the area of contamination at the site. An 8-inch diameter water main and a sewer pipe, shown on site drawings (Attachment 1), traverse areas where excavating or drilling may occur. Drilling locations must be carefully located to avoid puncturing the sewer or water lines. Excavations near the water or sewer lines should proceed carefully to avoid potential damage.

5.4.3 Drilling and Excavation Equipment

Drilling and excavation equipment represent hazards primarily from moving parts and the creation of pinch points during work. Additionally, hazards may exist due to the presence of overhead or underground utilities. Precautionary measures prior to conducting intrusive work include the marking of underground lines by utility personnel, review of site-specific utility plans, and careful location of excavation or drilling sites. Operators of heavy equipment are to be responsible for the safe operation of the equipment and must be familiar with all controls. All personnel working within the vicinity of heavy equipment should be familiar with the location of emergency shutoff devices.

Narrow excavations greater than four (4) feet deep should be considered confined spaces which may contain concentrated vapors, gases, or oxygen deficient atmospheres. Atmospheres within such trenches should be checked periodically for changing conditions. OSHA provisions regarding shoring and sloping of trench sides may be applicable, depending on the dimensions of the excavation. Large excavations require a readily available means of egress. Excavations which are to remain open overnight, during non-working hours, or for other periods of time when site personnel are not present, must have access restricted by means of barricades, covers or caution tape.

5.4.4 Machinery

A variety of mechanical, hydraulic, pneumatic and electrical machinery may be used during excavation and drilling activities. Such machinery may include pumps, generators, hand drills, jack hammers, tampers, etc. Work crews will be cognizant of the hazards inherent in the use of such machinery and will take precautionary measures to reduce or eliminate the risk of fire, electrical shock or explosion which their use may create. Machinery will be inspected prior to use to ensure that moving parts and electrical cables are not excessively worn or deteriorated. Machinery which may create a shock hazard will be properly grounded during use.

5.4.5 Cold Exposure

Prolonged exposure to cold environments can result in reduced mental alertness, confusion, irritability, and loss of consciousness. High wind can aggravate exposure to cold temperatures due to wind chill effects. Personnel working within cold environments will be familiar with the symptoms of excessive exposure to cold including severe shivering and/or pain in the extremities. The effects of the cold environment should be minimized by wearing appropriate clothing and covering the extremities (including face, hands, and feet). Periodic "warm up" breaks may be necessary depending on the temperatures and the work schedule.

5.4.6 Occupational Noise

Excessive levels of noise may be generated by excavation or drilling equipment during site work. Personnel working the vicinity of such equipment should utilize either earplugs or protective hearing muffs to reduce the noise to acceptable levels.

5.4.7 Fire Hazards

The primary hazard for the occurrence of fire at the site is expected to be from flammable gases which may be generated or accumulate during drilling or excavation activities. Such gases may be generated from the organic chemicals presents in the soil and ground water at the site. Monitoring of the atmosphere in the work zone will be performed to detect the presence or accumulation of organic vapors during drilling or excavation activities. An LEL meter and/or combustible gas meter may be necessary to determine the fire or explosive hazard associated with such gases. Care should be taken to avoid the generation of ignition sources if such vapors are present during work activities. All personnel within the work zone will be familiar with the location, operation, and proper selection of fire extinguishing equipment. Fully charged and inspected fire extinguishers will be immediately available at the work site. Emergency plans must be immediately implemented in the event of a fire.

5.4.8 Explosive Atmospheres

The potential for the generation of explosive atmospheres is possible due to the presence of organic chemicals in the soil and ground water at the site. Organic vapor monitoring will help determine the presence of a potentially explosive atmosphere during drilling or excavation activities. An LEL meter will also be available to monitor the explosive limit of gases which may accumulate the work zone.

5.4.9 Shoring

Shoring may be required during excavation activities where narrow trenches or pits greater than four (4) feet deep are excavated. OSHA provisions for shoring as provided in 29 CFR 1926 will be implemented, as appropriate.

5.4.10 Holes/Ditches

Excavation or drilling activities at the site may create holes or ditches in the surface. The general hazards associated with holes or ditches are discussed in section 5.4.3. Generally, holes and ditches should be backfilled as soon as possible upon completion of work. Otherwise, barricades or caution tape will be used to limit access to areas where holes and ditches are present.

5.4.11 Unstable Surfaces

Unstable surfaces may be present at the site in the vicinity of excavations. The area around and near excavations will be inspected daily for evidence of cracks, slides, or scaling. Such conditions may indicate the existence of unstable surfaces related to the excavation. Heavy equipment and personnel will be kept away from the sides of trenches or excavations, particularly if there is evidence of an unstable surface. Access to such areas will be restricted by using barricades or caution tape, as appropriate.

5.4.12 Vehicle Traffic

The area of contamination at the site is located at the rear of the shopping plaza behind the public entrances. Vehicular traffic through this area is typically low but may consist of heavy trucks and large commercial vehicles. During drilling and excavations activities, traffic will be restricted using barricades or caution tape, as appropriate. If large or multiple excavations are undertaken, it may be necessary to eliminate vehicle access to a portion of the rear of the shopping plaza. Traffic may be controlled on a local basis using traffic cones or similar methods for tasks which do not require heavy equipment on site.

5.5 DECONTAMINATION PROCEDURES

Depending on the specific job task, decontamination may include personnel themselves, sampling equipment, and/or heavy equipment. The specified level of protection for a task (A, B, C, or D) does not in itself define the extent of personal protection or equipment decontamination. For instance, Level C without dermal hazards will require less decontamination than Level C with dermal hazards. And, heavy equipment will always require decontamination to prevent cross-contamination of samples and/or facilities. The following sections summarize general decontamination protocols.

5.5.1 Heavy Equipment

Heavy equipment will be decontaminated prior to personnel decontamination. Operators or other designated personnel will remove loose soil and pressure wash their equipment after use, preferably at locations near the individual work site. Containment systems will be set up for collection of decon fluids and materials. Berms and wind barriers will be set up, if appropriate.

Vehicles that become contaminated with suspect soil will be cleaned prior to leaving the site. The wheel wells, tires, sides of vehicles, etc. may be pressure washed or brushed clean of visible debris at a location to be determined by the SSO.

5.5.2 Samples and Sampling Equipment

The same decontamination line will be used for sampling equipment decon as is used for personnel decon. At a minimum, the following is performed:

- Hand augers and buckets will be washed in TSP solution or equivalent and rinsed with distilled water.
- Sampling equipment will be brushed clean, rinsed with detergent and potable water, followed by a rinse with distilled water or other appropriate cleaning material.
- Samples will be dry-wiped prior to packaging.

5.5.3 Decon Wastes

- Spent decon solutions may be required to be drummed and disposed of as hazardous waste and/or solvent solutions may be required to be segregated from water rinses.

- Decontamination shall be performed in a manner that minimizes the amount of waste generated.

5.6 PROCEDURES FOR HANDLING OF ANTICIPATED DECON WASTES

5.6.1 Waste Generation

Anticipated: Yes __X__ No _____

Types: Liquid _X_ Solid _X_ Sludge _____ Gas _____

Quantity:

Expected Volume of Solid __<1 cubic yard__ (include units)
Expected Volume of Liquid _____

Characteristics:

Corrosive ___ Ignitable ___ Radioactive ___ Volatile _X_
Toxic ___ Reactive ___ Unknown ___ Carcinogenic ___
Other (specify): _____

Known Non-Hazardous: Yes ____ No _X_

Known Hazardous Waste or Extremely Hazardous waste: Yes _X_ No ___

Potentially Hazardous Waste or Extremely Hazardous Waste: Yes ___ No ___

Waste Requires Analysis: Yes _X_ No ____
Specify Type: Decon wastes to be combined with contaminated soil and ground water for disposal

5.6.2 Storage and/or Treatment Methods Proposed:

- These wastes will be (1) temporarily stored* in the following manner(*s):

Open head 55-gallon drum	_____
Closed head 55-gallon drum	_____
Overpack drum	_____
Baker tanks	_____
Lined waste bins	Rolloffs for soils
Other	Vacuum Truck for liquids

5.6.3 Disposal

- If Extremely Hazardous waste is identified, an Extremely Hazardous Waste Disposal Permit is required.

- Hazardous waste to be shipped for off site disposal must be accompanied with a manifest signed by the client (generator). Manifest must not identify Alpha Geoscience as the generator. Alpha Geoscience employees may not sign manifests as agents or generators.

5.7 SITE INSPECTIONS

Conduct site inspections weekly utilizing the Project Manager/Field Supervisor Job Safety Checklist, HS 5-1 (Attachment 2).

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* Temporary storage of hazardous waste without a permit is limited to 90 days. Label all temporary storage containers with:

(1) "Contents Under Analysis"
(2) The composition of the waste (soil, drilling, cuttings, etc.)
(3) The nature of known contaminants and their hazardous properties; (e.g., soil contaminated with gasoline-inhalation and dermal hazard).
(4) The name of generator (site owner)
(5) The date of accumulation; and,
(6) A phone contact for questions (the Alpha Geoscience office)

SECTION 6.0

EMERGENCY RESPONSE PROCEDURES

6.0 EMERGENCY RESPONSE

The Emergency Response Plan will be prepared to address the site specific nature of hazards and potential emergencies. Emergency procedures will be implemented as appropriate.

6.1 EMERGENCY RESPONSE PLANNING

Step 1: Post site map which includes topography, layout, evacuation routes, safe distances and assembly area. Note location of utilities main shut-offs and disconnects on site map. Review this information during initial Tailgate Safety training, subsequent daily tailgate meetings, or periodically, as determined to be appropriate by the SSO.

Step 2: Complete and post Emergency Response Contact List, directions and map to hospital. Ensure that emergency communications equipment is available.

Step 3: Notify local authorities (e.g., fire and police) of your presence and integrate any emergency plans with local requirements. Post hospital route and verify hospital route is accessible (Attachment 3).

Step 4: Provide emergency equipment for first aid, emergency decontamination, fire protection, personal protection and spill response. Designate vehicle for emergency transport.

(Include emergency equipment as site conditions and characteristics require.)

Step 5: Assure that personnel certified in first aid and CPR are available to respond to injuries.

Step 6: Conduct training for site personnel in emergency response during initial orientation. Establish alarm and methods of notification and communication during an emergency.

6.2 LINES OF AUTHORITY AND PERSONNEL RESPONSIBILITIES

During an emergency incident, the Field Personnel shall have the authority to commit the necessary resources for responding to the emergency, and shall assume the following responsibilities:

Step 1: Determine the extent of the incident and direct the emergency response efforts.

Step 2: Direct the SSO to conduct perimeter air monitoring, and monitor wind speed and wind direction to determine the extent of impacted areas.

Step 3: Alert personnel of the emergency using an air horn or other suitable means of communication. If necessary, initiate evacuation procedures.

Step 4: Make the required notifications. As a minimum, the Alpha Geoscience Project Manager and the Alpha Geoscience Health and Safety Manager must be notified immediately. Additional notifications and assistance from outside agencies may be required based on the extent of the incident.

Step 5: Prepare an Accident/Injury Report and send it to the Health and Safety Director and the Health and Safety Manager.

6.3 EVACUATION PROCEDURES

If evacuation is required, the Field Personnel shall:

Step 1: Activate the communication system to alert site workers of evacuation. Personnel shall be advised to remain upwind of contaminants, if possible, and proceed to the designated assembly area.

Step 2: Account for all personnel at the assembly area.

Step 3: Notify the Fire and Police Departments and request their assistance for evacuating the surrounding area and residences.

Step 4: Notify the client of the need to initiate evacuation procedures for other site personnel.

6.4 EMERGENCY MEDICAL TREATMENT

Refer to the Hospital Route Directions and Map (Attachment 3). If an injury/medical emergency occurs, the following procedures shall be used:

Step 1: Notify the Field Personnel immediately.

Step 2: The Field Personnel shall ensure that medical treatment is provided for the injured person immediately. The Field Personnel shall summon the first aid responders and notify the hospital and the local Emergency Medical Service (EMS) if necessary.

Step 3: If the injured/ill person is within the exclusion zone, steps should be taken to decontaminate him/her and remove the PPE if it can be done without worsening the injury.

Step 4: First aid responders shall use universal precautions for infection control when providing first aid.

Step 5: Prepare an Accident/Injury Report and distribute it to the Health and Safety Director and the Health and Safety Manager within 24 hours.

6.5 SPILL CONTROL

If a spill occurs which poses a serious hazard ro threat to site personnel, the public or the environment, the following steps shall be taken to mitigate the incident:

Step 1: Notify the Field Supervisor, and he/she shall assess the extent of the spill to determine if it can be safely mitigated with the personnel and protective equipment available at the site.

Step 2: If the release is beyond the field team's capabilities, the Field Supervisor shall evacuate the site personnel to a safe location upwind of the release, and notify the NYSDEC on-site representative, the Project Manager and Fire Department.

Step 3: The Project Manager shall notify the client, Health and Safety Manager, Corporate Health and Safety Director, and regulatory agencies, if necessary.

Step 4: If the spill can be safely mitigated using defensive actions, first don the appropriate PPE. Initially, Level C PPE should be worn until air monitoring indicates a downgrade in PPE is appropriate.

Step 5: Takes steps to secure the area and to prevent unauthorized persons from entering the area.

Step 6: Takes steps to contain the spill and to prevent it from reaching sewers, storm ditches, etc.

Step 7: Clean up the spill with absorbent, neutralizers, soil removal as appropriate. Place waste in sealed, labeled containers for disposal.

6.6 EMERGENCY AND MEDICAL RESOURCES

Emergency and medical response phone numbers and information are provided in Attachment 4. This list will be posted at the site for reference in emergency situations.

SECTION 7.0

RECORDKEEPING

7.0 RECORDKEEPING

The Project Manager (PM) will assure that all field documentation is properly completed in a timely manner. All HASP documentation, including monitoring results, calibration logs, tailgate safety meeting forms, utility clearance and utility maps, and Project Manager/Field Supervisor Jobsite Safety Checklists, are to be forwarded to the Project Manager for review and signature on a regular basis (recommended weekly). Once reviewed by the PM, HASP forms should then be distributed to the HSM and to the project file.

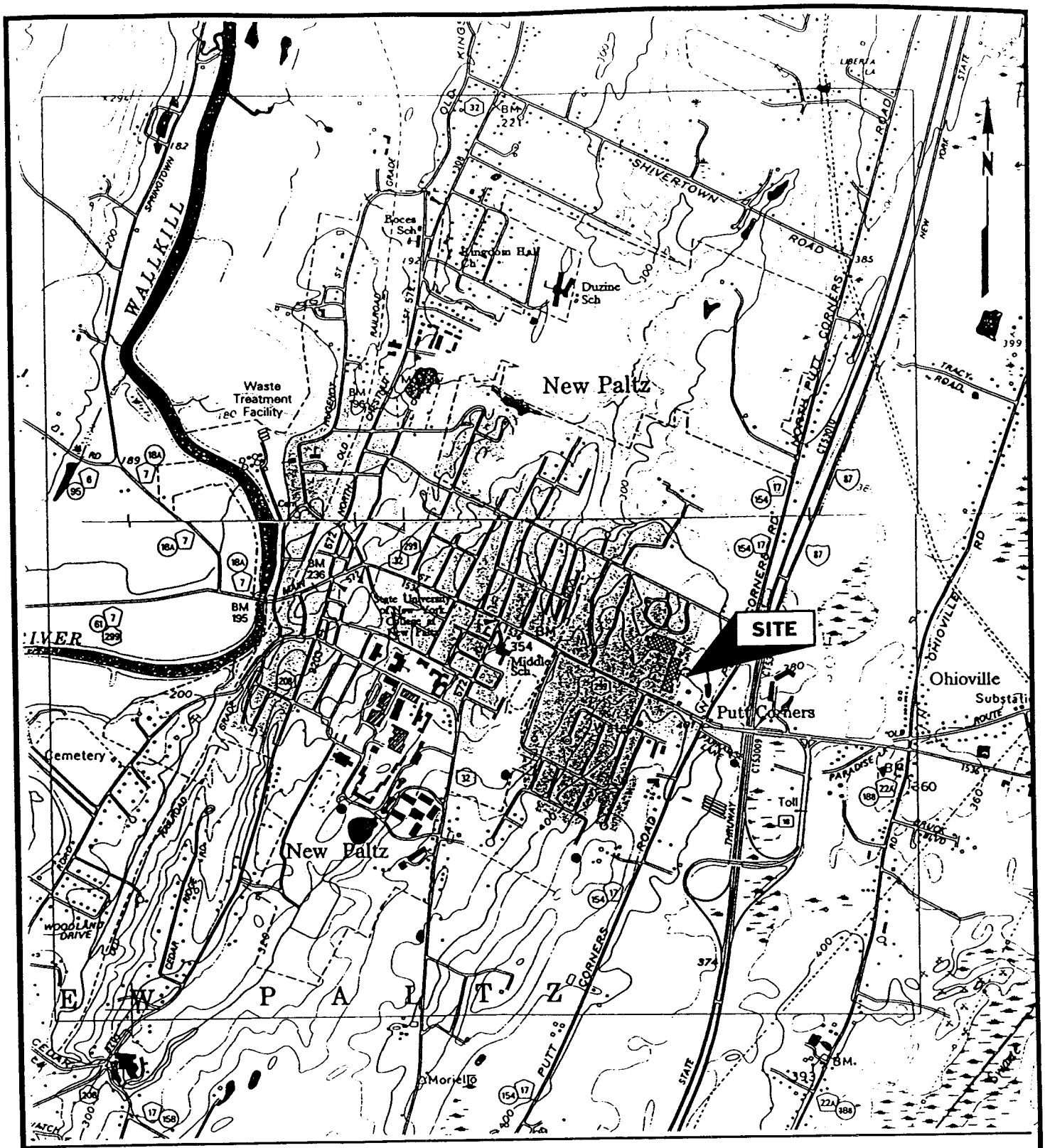
The HSM will review and initial all forms indicating acceptance of finding. The HSM will contact the PM to confirm the information in the records and findings as appropriate.

(Indicated forms that should be completed)

FORM NAME	FORM	APPLICABLE	
		YES	NO
Signed Cover Sheet	- -	X	
Signature and Acknowledgment	SECTION 1.4	X	
Training Verification (Alpha Geoscience)	TABLE 1-2	X	
Training Verification (Subcontractor)	NONE	X	
Job Safety Checklist	HS 5-1	X	
Tailgate Safety Meeting	HS 5-2	X	
Direct Reading Form	HS 5-3	X	
Instrument Calibration	HS 5-4	X	
Emergency Response Contacts	HS 13-1	X	
Confined Space Entry Permit	HS 14-2		X
Utility Clearance Request	HS 15-1	X	
Utility Clearance Checklist	HS 15-2	X	
Hot Work Permit	HS 30-1		X

ATTACHMENT 1

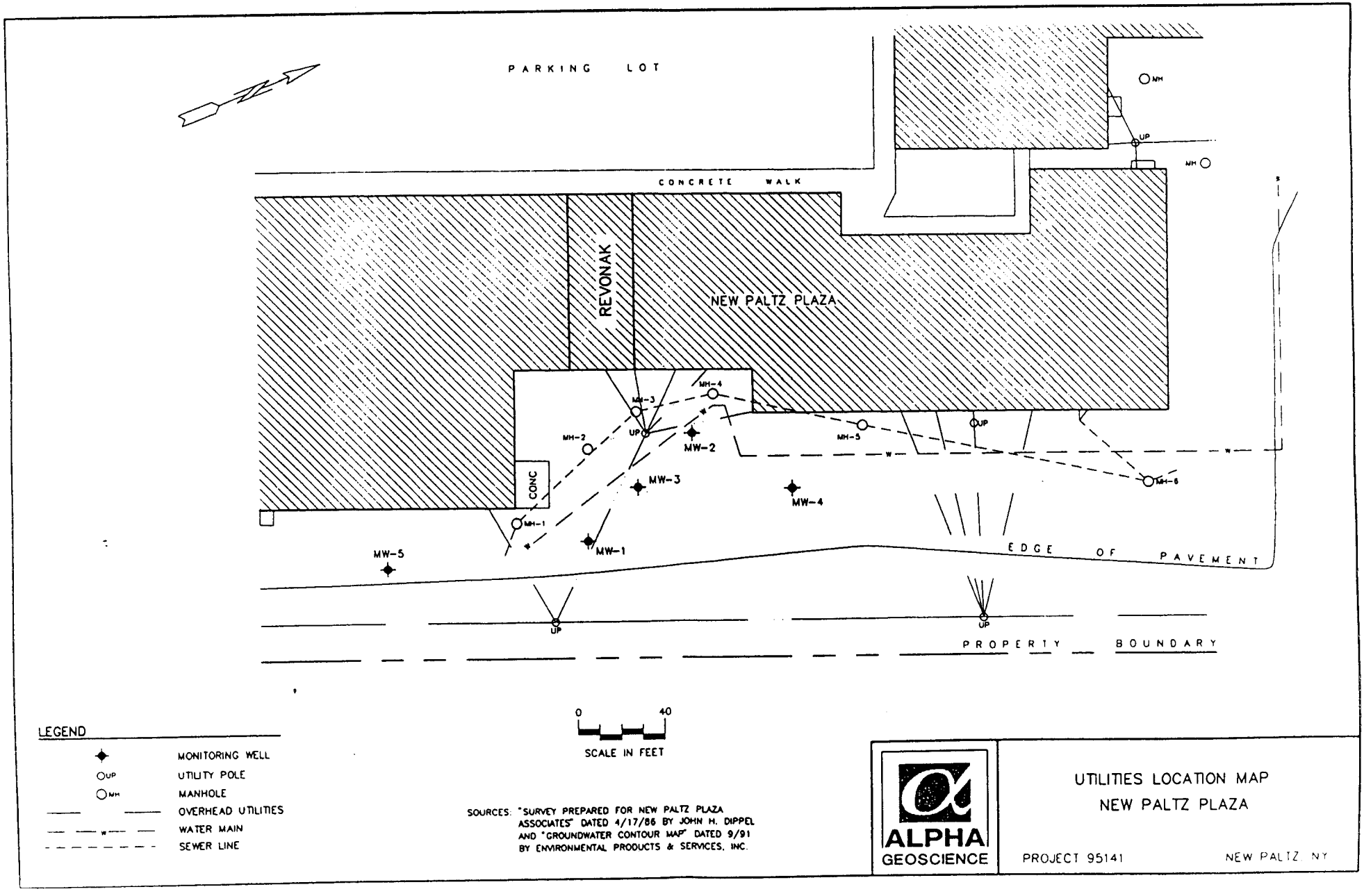
SITE MAP(S)



ALPHA GEOSCIENCE

SITE MAP

Revonak Dry Cleaners
Site No. 356021


PARKING LOT
CONCRETE WALK
REVONAK
NEW PALTZ PLAZA
CONC
MH-1
MH-2
MH-3
MH-4
MH-5
MH-6
MW-1
MW-2
MW-3
MW-4
MW-5
UP
MH
W
EDGE OF PAVEMENT
PROPERTY BOUNDARY
LEGEND
MONITORING WELL
UTILITY POLE
MANHOLE
OVERHEAD UTILITIES
WATER MAIN
SEWER LINE
0
40
SCALE IN FEET
SOURCES: "SURVEY PREPARED FOR NEW PALTZ PLAZA ASSOCIATES" DATED 4/17/86 BY JOHN H. DIPPEL AND "GROUNDWATER CONTOUR MAP" DATED 9/91 BY ENVIRONMENTAL PRODUCTS & SERVICES, INC.
ALPHA GEOSCIENCE
UTILITIES LOCATION MAP
NEW PALTZ PLAZA
PROJECT 95141
NEW PALTZ, NY

ATTACHMENT 2

PROJECT MANAGER/FIELD SUPERVISOR

JOBSITE SAFETY CHECKLIST, HS 5-1

PROJECT MANAGER/FIELD SUPERVISOR
JOBSITE SAFETY CHECKLIST

. Name

Date of Inspection

Name

Project Manager/Site Supervisor

ect Number

Auditor

A. Adequate at time of inspection. C. Item not applicable.
B. Need immediate attention. N/A No items in section applicable.

Check one of the following:

	A	B	C	N/A
A. Posters & Records				
1. OSHA poster displayed?				
2. Site supervisor holding weekly meetings - recording?				
3. Emergency medical numbers posted?				
4. Copy of OSHA regulation on jobsite?				
5. Have utility contacts been made/recorded?				
6. Are safety "tail-gate" meetings daily?				
7. Blank accident report forms available?				
8. Are MSDSs available?				
B. Housekeeping & Sanitation				
9. General housekeeping of jobsite?				
10. Passageways and walkways clear?				
11. Nails removed from lumber?				
12. Materials of all types properly stockpiled?				
13. Is an area provided for waste and trash and is it removed regularly?				
14. Adequate lighting in passageways, stairways, and work areas?				
15. Toilet facilities adequate and clean?				
16. Sanitary supply of drinking water?				
17. Disposable drinking cups and refuse container available?				
18. Means provided for sanitizing personal protective equipment?				
C. Fire Protection				
19. Are "No Smoking" or "Flammable" signs posted at all storage and fueling locations?				
20. Clear access provided to all fire fighting equipment/are inspections recorded?				
21. Location of all fire fighting equipment prominently marked?				
22. Are flammable liquids stored in approved containers?				
23. Fire extinquishers adequate size?				
24. Large fuel tanks properly diked and separated?				
D. First Aid				
25. Is an individual size first aid kit available?				
26. First aid kits well stocked?				
27. Trained first-aider on jobsite?				

Check one of the following:

	A	B	C	N/A
E. Electrical				
28. Distribution boxes covered or marked?				
29. GFI's in use or positive grounding been tested?				
30. Temporary lighting electrically protected?				
F. Tools				
31. Damaged or broken tagged out of service?				
32. Proper storage space provided?				
33. Operating guards on all power tools?				
34. Persons using power actuated tools trained?				
35. Are guards provided on grinders?				
36. Airhose couplers secured or safety valve in				
37. Tools being properly used?				
38. Correct personal protection being used?				
39. Extension cords tested for assured ground?				
G. Structures				
40. Floors opening covered or guardrailed?				
41. Standard guardrailing on scaffolds, bridge decks, floors of buildings, work platforms, and walkways?				
42. Work areas clear of debris, snow, ice, and grease?				
43. Stairways provided with handrails?				
44. Ladders properly contructed?				
45. Side rails of ladders extend 36" above landing?				
46. Scaffolds properly anchored, braced, and plumb?				
47. Protection provided over vertical rebars working above?				
48. Safety belts in use when guardrails are				
49. Employees clear of swinging crane loads?				
50. Tag lines used on suspended crane loads?				
51. Gas cylinders separated, secured upright, and capped if not in use?				
52. Safety lines in use on suspended scaffolds?				
53. Heating devices properly ventilated?				
H. Drill Riggs				
54. Rig at least 20 feet from power lines?				
55. Rig inspected daily?				
56. Rig "kill" switch operational?				
57. PPE worn?				
58. Work area free of debris?				
58. Hand tools in good condition?				
59. Wire rope inspected and in good condition?				

A. Adequate at time of inspection.
B. Need immediate attention.
C. Item not applicable.
N/A Not items in section applicable.

Check one of the following:

	A	B	C	N/A
Traffic Control				
50. Advance signing at approaches to work area?				
51. Correct message on signs?				
52. Flag persons properly dressed and equipped?				
53. Flag persons performing properly?				
J. Welding & Cutting				
54. Using right type of eye protection?				
55. Gauges, valves, torches, and lines in good condition and free of oil and grease?				
66. Cylinders not in use capped?				
67. Cylinders in use or storage secured upright?				
68. Anti-flashback valves at torch?				
69. Stored oxygen separated from actylene by 20 feet?				
70. Fire extinguisher near welding or cutting operations?				
71. Adequate ventilation provided?				
72. Grounding for arc welding machine?				
73. All parts of arc welding outfits properly insulated?				
K. Heavy Equipment				
74. Operators wearing hard hats?				
75. Hearing protection being used?				
76. Dust control?				
77. Haul road adequate and maintained?				
78. Equipment speeds excessive for safety?				
79. Horns and back-up alarms functioning?				
80. Clearing cabs on machines when clearing?				
81. Engines shut-down when refueling or lubricating?				
Seat belts on machines with ROPS?				
Steps and hand holds adequate and safe conditions?				
84. Adequate lighting of haul roads at night?				
85. Parked or unattended equipment have blade lowered to the ground?				
86. No hitchhikers riding on equipment?				
87. Full fire extinguisher near refueling truck?				
88. Dump man prominently located?				
89. Overhead guard on fork lift truck?				
90. Vehicles with restricted rear visibility equipped with operating back-up alarms?				
L. Cranes				
91. Power line distance from machines?				
92. Annual inspection?				
93. Cables in safe condition?				
94. Rear swing protection and pinch point guarding?				
95. Exposed gears, shaft, and belts guarded?				
96. Fire extinguisher, boom angle indicator, load capacity chart and hand signal poster in crane?				
97. Signs and/or flags on cranes in transit?				
98. Operator making daily inspections and test?				
M. Trenching & Excavations				
99. Trench side shored, layed back or boxed?				
100. Utilities contacted and located before digging?				
101. Ladder in trench?				
102. Stop logs placed where necessary along top of trench?				
103. Excavated material stockpiled at least 2 feet from the edge of the trench?				

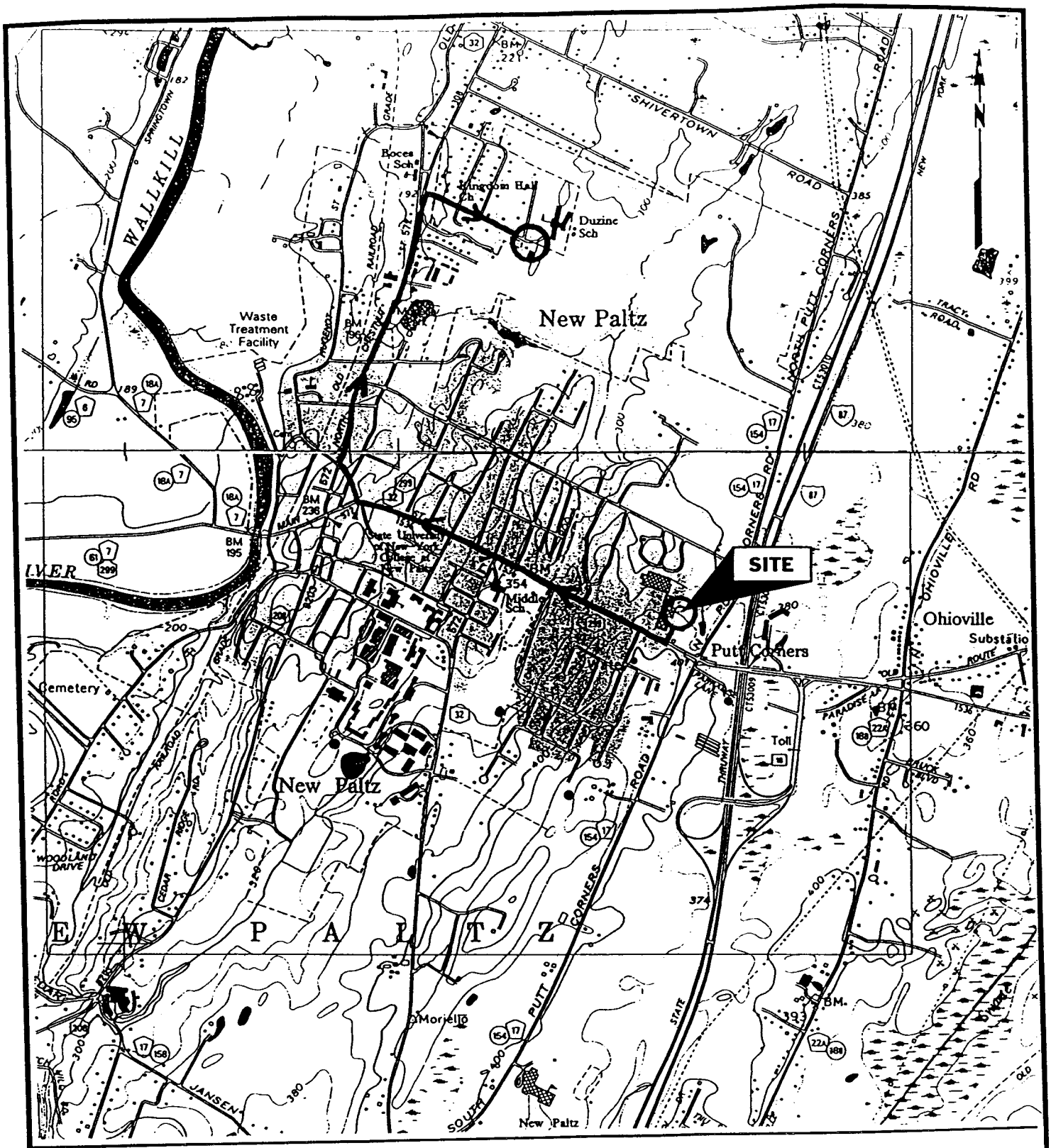
Check one of the following:

	A	B	C	N/A
104. Laser warning signs in place?				
105. Adequate ventilation in pipe?				
106. Traffic control adequate?				
107. Sides of excavation for building shored or protected?				
108. Oxygen level tested in manholes, trenches, or confined space greater than 5 feet deep?				
109. Public protected from exposure to open excavation?				
N. Miscellaneous				
110. Procedures established to handle toxic and carcinogenic materials?				
111. Fall protection being used on steel erection?				
112. Walls properly braced (concrete and block construction)?				
113. Guards in place and used on wood-working machines?				
114. Explosives being used, transported, and stored in compliance with regulations?				
115. Belts, pulleys, shafts, gears, and chains guarded on all machinery and equipment?				
116. Masonry saws grounded and personal protective equipment being used?				
O. Confined Spaces				
117. Supervisor has inspected site for confined spaces?				
118. Confined space entry permit is utilized?				
119. Atmosphere is monitored for O^2/LEL and toxic gases?				
120. Personnel have been trainedin confined space entry?				
121. Does standby personnel have CPR training?				
P. Hazardous Waste Operations				
122. SSHP available on-site and current?				
123. Project staff have 40-hr/8-hr Hazwoper Training?				
124. Subcontractors provided proof of appropriate training?				
125. Respirators worn per Action Level Table Criteria?				
126. Is PPE worn as required?				
127. Are hardhats being worn?				
128. Is instrumentation calibrated prior to use?				
129. Is direct reading instrument data recorded on form provided for this purpose?				
130. Is personnel/equipment decontamination performed?				
131. Are MSDS's available for hazardous materials?				
132. If toxic fumes, vapors, dusts present, is ventilation adequate?				
133. Is hospital route map posted on site?				
134. Is first aid kit available on site?				

* This checklist does not include hazards on every site but is intended to remind you of the most common hazards.

ATTACHMENT 3

HOSPITAL ROUTE MAP



ALPHA GEOSCIENCE

HOSPITAL ROUTE MAP

Revonak Dry Cleaners
Site No. 356021

ATTACHMENT 4

EMERGENCY AND MEDICAL RESOURCES

Emergency/Medical Resources

Ambulance	914-255-1323
Local Fire	914-255-1323
Local Police	914-255-1323
Poison Center	800-336-6997
Hospital	Well Care Family Emergency 40 Sunset Ridge Road New Paltz, New York 12401 (914) 255-1220
National Response Center	1-800-424-8802
EPA (Information Line)	1-800-424-9346
Chemtrec	1-800-424-9300
Dig Safe	1-800-962-7962