ALPHA GEOSCIENCE

Geology
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Water Supply

April 10, 2007

Mr. Brian Jankauskas, Project Manager
Division of Environmental Remediation
NYSDEC Central Office
625 Broadway
Albany, New York 12233

Re: Work Plan for Soil Vapor and Ground Water Remediation
Former Camarota Cleaners
327 Park Avenue, Mechanicville, New York

Dear Mr. Jankauskas:

Thank you for meeting with us on March 21, 2007, regarding the conceptual plan that Alpha Geoscience (Alpha) submitted to address the soil vapor concerns identified by the NYSDEC and NYSDOH at the Former Camarota Cleaners, 327 Park Avenue, Mechanicville, New York (site). Alpha's conceptual plan dated March 21, 2007 provided site background information and an outline for performing a Supplemental Site Characterization (SSC) and Interim Remedial Measure (IRM) on site.

This letter is a follow up to our meeting and presents the enclosed Work Plan to be implemented by Royal R. Dyer Construction Co. Inc. (Dyer Construction) to remediate on-site ground water and soil vapor. The Work Plan is modified from the conceptual plan, and is based on the historical site characterization data collected on behalf of the City of Mechanicville (former site owner), and the NYSDEC in 2006, which was summarized by others and reviewed by Alpha.

If you have questions regarding this Work Plan, please contact me at telephone 518-348-6995, or email address jneubeck@alphageoscience.com. Thank you.

Sincerely,
Alpha Geoscience

Jean M. Neubeck
Hydrogeologist

JMN:bms

cc: Royal R. Dyer Construction Co., Inc., c/o Dorine Dyer
Kevin M. Young, Esq.
Michael D. DiFabio, Esq.
Gary Litwin, NYSDOH, BEEI
Christopher H. Horan, NYSDEC, DEE

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WORK PLAN FOR SUPPLEMENTAL SITE CHARACTERIZATION AND INTERIM REMEDIAL MEASURES

Former Camarota Cleaners
327 Park Avenue
Mechanicville, New York 12118

Prepared for:

Royal R. Dyer Construction Co., Inc.
159 South Pearl Street
Mechanicville, New York 12118

April 11, 2007

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Work Plan for Supplemental Site Characterization and Interim Remedial Measures

Former Camarota Cleaners
327 Park Avenue
Mechanicville, New York 12118

Prepared for:

Royal R. Dyer Construction Co., Inc.
159 South Pearl Street
Mechanicville, New York 12118

Prepared by:

Alpha Geoscience
679 Plank Road
Clifton Park, New York 12065

April 11, 2007

TABLE OF CONTENTS

1.0 INTRODUCTION AND GOALS

This Work Plan was prepared on behalf of the current property owner to describe the Supplemental Site Characterization (SSC) and Interim Remedial Measures (IRMs) to be implemented at the former Camarota Dry Cleaners site, 327 Park Avenue, Mechanicville, New York. The goals of this Work Plan are to provide and implement reasonable measures to stop the continuing release of soil vapors off site, to prevent or limit the potential future release of vapors, and prevent or limit human and environmental exposure to the dry-cleaning substances that were previously released by others. The target compounds of concern are tetrachloroethene (PCE) and trichloroethene (TCE) vapors in the unsaturated soil (vadose zone) and low concentrations of PCE and TCE in the shallow ground water.

The Work Plan goals will be achieved by installing a sub-slab depressurization system (SSDS) and planting hybrid poplar trees (phytoremediation) on-site. It is anticipated that the SSDS will prevent or limit existing and future soil vapor intrusion in the building area, and that the poplar trees will prevent or limit the future migration of impacted ground water and remediate the low levels of dissolved chlorinated solvents that are the source of the soil vapors.

2.0 SUPPLEMENTAL SITE CHARACATERIZATION

This SSC includes installing four ground water monitoring wells within the saturated soil. The wells will be installed near the site boundaries to monitor trends in ground water quality and measure water levels to interpret ground water flow in the saturated soil. Figure 1 shows the locations of the ground water wells, which may be modified, based on the location of utilities.

2.1 Drilling, Soil Screening, and Monitoring Well Installation

A “geoprobe”, direct-push drilling unit will be used to advance soil borings to refusal, estimated at 10 to 12 feet below ground surface (bgs) based on the previous investigations by others. Soil core samples will be collected continuously and examined by an onsite geologist or hydrogeologist, who will prepare a geologic log to describe and record each soil boring.

The monitoring wells will be constructed of 1-inch diameter, 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 to accommodate the standpipe and bentonite seal above the screen, depending on the total boring depth. The annular space will be filled with an appropriate sand pack. A hydrated, bentonite seal will be installed above the sand pack, and the remainder of the borehole annular space will be grouted to the surface with a cement-bentonite mixture. A flush-mounted, steel, protective casing will be cemented over each well for protection.

The results of soil analyses from previous investigations indicate that site soil quality is within the NYSDEC criteria for the compounds of concern; therefore, the small volume of soil that is generated from each boring will be spread at the surface next to the respective well location.

An experienced geologist or hydrogeologist will supervise the drilling and monitoring well installations, and will record the soil and ground water observations, PID screening results, and monitoring well constructions.

2.2 Monitoring Well Development

The new monitoring wells will be developed to, 1) reduce residual silts and clays, thereby reducing turbidity during sampling that could potentially interfere with chemical analysis; and, 2) increase the hydraulic communication between the saturated zone and the well and improve the well yield. Well development will be accomplished manually by using a dedicated, disposable, bailer or dedicated "WaTerra" tubing to evacuate the well casings. Well development will continue until at least five wells volumes are removed, or the turbidity is visually reduced. Water generated during well development will be allowed to seep into the ground surface at each respective well location, due to the small volume of ground water within the one-inch diameter well casings (0.04 gallons per foot).

2.3 Ground Water Sampling and Analysis

Appendix A contains the protocol for collecting ground water samples for analysis of volatile organic compounds (VOCs). Samples will be analyzed by a NYSDOH-approved laboratory for VOCs using EPA Method 8260. The laboratory will report the full list of 8260 volatiles for the initial sampling event. Ground water samples collected thereafter will be analyzed for chlorinated VOCs. Laboratory reports will be provided for all analyses; however, laboratory data packages will not be requested and data validation will not be performed until the analyses indicate that concentrations of compounds of concern are at or below the NYSDEC standards. The monitoring plan for the Interim Remedial Measure contains a schedule to monitor ground water.

2.4 Surveying and Locations of Monitoring Wells

The locations of the monitoring wells will be field-surveyed by measuring and recording the distances from the well to fixed structures, such as building corners. The well locations will be shown on a scaled map that is based on the survey that was prepared by a NYS-licensed land surveyor in 2001 (Appendix B).

The monitoring wells will be surveyed by Alpha relative to an arbitrary datum established on site to establish the relative top-of-casing elevations. The elevation of each well will be measured to the nearest 0.01 foot. The top-of-casing elevations will be used with the depth to water measurements to calculate relative ground water elevations. The data will be used to prepare a contour map that represents pre-remedial (pre-IRM) ground water conditions.

3.0 INTERIM REMEDIAL MEASURES

The IRM will focus on hydraulic control of ground water flow and remediating shallow ground water to remove the source of soil vapors, thereby preventing potential, future, vapor intrusion and potential migration issues. Existing soil vapor intrusion will be controlled or eliminated by extracting soil vapors beneath the building using a sub-slab depressurization system. A

phytoremediation component will control ground water migration, and breakdown and remove volatile organic compounds from shallow ground water along the site boundaries.

The conceptual IRM presented in March 2007 included a soil vapor extraction system surrounding the building and a small phytoremediation buffer. The IRM described herein is modified from the conceptual plan and includes an on-site SSDS and an increased scale of phytoremediation.

The modified IRM is based on hydrogeologic conditions and site constraints recently evaluated by Alpha. The adjacent properties immediately surrounding the site are grass covered and represent leakage boundaries for subsurface air flow. The surface and subsurface conditions restrict the likely influence of any soil vapor extraction system to the former Camarota site, and preclude installing an SVE system that would be effective off site without extensive modification to adjacent private and public properties.

In addition, the geologic data collected by others indicates a high water table and soil that contains appreciable silt and/or clay. Underground utilities include sanitary sewer, water, and electric services entering the property along the west and south sides of the building. A subsurface, natural gas line runs north-south, near the eastern property boundary (Figure 1). The utilities may provide preferential pathways for air flow.

3.1 Sub-Slab Depressurization System

The property dimensions are small (100 feet in length and 50 feet in width), and the approximately 2000 square-foot building covers much of the surface. The site building is currently, and is expected to remain, unoccupied. Modifications to the system described herein may be necessary should the building become occupied before soil vapor concentrations beneath the slab decrease to acceptable levels.

A sub-slab depressurization system will be designed and installed on-site by a NYS-licensed, professional engineer, to extract existing vapors and remove future soil vapors that migrate and collect beneath the building. The engineer/contractor will design and install the sub-slab system in general accordance with the criteria established by the USEPA (December 4, 2002 [Folkes]), and the recent NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH Guidance). The general SSDS described herein was prepared by Alpine Environmental Services, Inc. (Alpine), and is summarized by Alpha for this Work Plan. Alpine will prepare an "as-built" diagram to document the SSDS installation and describe deviations from standard construction practice, if any.

The system design will include installing a main trunk (pipe) in the building interior. The trunk line will penetrate the concrete slab floor and will exit the indoor space near the ceiling, where a fan will be mounted. All suction lines will be constructed of PVC piping and fittings. A minimum of Schedule 20 pipe wall will be used, except Schedule 40 will be used in areas that are exposed to weather. All piping connections will be cemented, with the exception of the fan connection which will be secured with flexible PVC, screw tightened, couplings. Suction points will be sealed in the concrete floor with a floor flange, and sealed air tight with polyurethane caulk.

Horizontal pipe lengths will be pitched to the nearest inline suction hole at slopes that are based on the pipe diameter and designed air flow. Vertical piping to individual suction points will be constructed of PVC piping that is at least 2 inches in diameter. The individual lines will be fitted with damper(s) and/or ball valves for system balancing. The system exhaust will be located a minimum of 10 feet above grade, and away from any intakes or openings. A hanger will secure the horizontal pipe lengths, as needed.

The main trunk line will be fitted with a pressure sensor to maintain a real-time pressure measurement that will be recorded periodically during routine visits. A pressure sensor with a status indicator light will be installed on the system to identify if pressure drops below the set point.

Diagnostics are performed during and after the installation of each suction point, individually and following system completion. Test fans will be connected to the pipes that rise through the floor during the installation and diagnostics, and the static pressures of the fans are checked under actual operating conditions. The model of fan to be used will be verified/modified based on the field data collected.

Once the appropriate fan has been selected, the system will be balanced utilizing dampers/valves to control the pressure field extension (PFE). The PFE will be verified by drilling 3/8"-daimeter test holes, through the floor. A micro manometer will be used to verify negative pressure extension and adjust dampers/valves for a consistent PFE distribution. The test locations and results will be documented. Test holes will be sealed with polyurethane caulk when completed. System airflow and pressure will be checked in the trunk line following installation to verify the system is operating within the fan manufacturer's operating requirements. Additional suction points will be added, if necessary to meet the manufacturers operating requirements, or to achieve complete sub-slab depressurization based on the PFE results.

3.2 SSDS Monitoring

The SSDS will be monitored during periodic site visits. The building currently is vacant and the owner has no plans at this time to finish the interior space for occupancy; therefore, monitoring will include verifying that the fan is operating and checking the fan manometer to document that the system is operational. A sub-slab sample will not be collected until the field and laboratory data outside the building indicate that ground water is controlled or remediated. The sub-slab soil vapor sample will be collected in accordance with the NYSDOH Guidance.

The soil vapor sample will be submitted to York Laboratory, a New York State Department of Health (NYSDOH)-approved laboratory for analysis of volatile organic compounds by Method TO-15. The laboratory will report only the chlorinated VOCs that are associated with the historical dry cleaning operation.

3.3 Ground Water Remediation by Phytoremediation

Phytoremediation by hybrid poplar trees has been documented as an effective method to remediate chlorinated solvents in ground water. The ground water uptake by the tree roots and microbial activity in the root zone breaks down and removes the solvent compounds. The volume of water used by these species has been demonstrated to provide hydraulic control and reduce the potential for ground water migration. The site conditions are amenable to phytoremediation due to the high water table and relatively low levels of PCE and TCE in the ground water.

Hybrid poplars will be provided by Ecolotree® (Iowa) who also will provide support for soil analyses and planting. Hybrid poplars will be planted near the north, south, and east boundaries of the site by a NYS-certified landscaping contractor with technical assistance from Ecolotree®. It is anticipated that a mix of poplar hybrids DN24 and DN31 will be planted. These species are characteristically fast-growing and can survive the winter air temperatures encountered in this region. Ecolotree® anticipates that based on their experience, the trees will become established during the first growing season, and that the effects of hydraulic control and ground water remediation will be evident during subsequent seasons.

Approximately 30 to 34 trees will be planted six feet apart, in the approximate configuration shown on Figure 1. The trees will be 12 to 14 feet in height, including the roots. The roots of the poplars will be effective in the high water table and are expected to reach to the shallow bedrock. The trees also are expected to provide hydraulic control by locally lowering the ground water on site which will limit ground water migration. Approximately 30 additional poplar "whips" that are 5 to 7 feet in height will be planted between the larger trees. The whips will provide additional biomass to establish a buffer and may replace the larger trees that do not survive.

It is anticipated that the chlorinated solvents in the ground water will be remediated during biotransformation by the subsurface biomass and associated microbes established in the root zone. The closely spaced tree roots also control ground water flow by intercepting and

withdrawing the impacted ground water, limiting ground water flow and migration. The tree roots and biomass will enhance microbial activity in the root zone, and are expected to continue breaking down (de-chlorinating) the solvents to remediate ground water quality throughout the year, when the growing season is ended.

Ground water was encountered approximately 7 to 8 feet below grade. The trees and whips will be planted approximately six feet below grade, or as deep as practical. Dyer Construction will excavate the trenches for planting, and the landscaper will add compost and soil amendments to the base of the trench beneath each tree and whip, as recommended by the supplier and based on the initial soil profile testing by a laboratory that is experienced in agronomy testing. The trenches will be backfilled with excavated soil where possible.

The results of soil analyses from previous investigations indicates that site soil quality is within the NYSDEC criteria for the compounds of concern; however, excavated soil that cannot be returned to the trenches will be staged on plastic sheeting, if the soil registers greater than 5 ppm based on PID field-screening. The soil will be allowed to aerate on-site, and will be screened a second time within 30 days to confirm that the segregated soil registers less than 5 ppm. It is anticipated that the soil will be spread on-site, following aeration, if necessary.

4.0 GROUND WATER MONITORING FOR IRM PROGRESS

The four ground water monitoring wells will be sampled in spring 2007, and at the end of the growing season in late fall 2007. Ground water samples during the following two years will be collected in early spring and late fall, before and after the growing season. Annual sampling will be performed thereafter in the fall, or until ground water quality meets NYSDEC standards. Ground water monitoring during the remainder of the year will consist of measuring ground water levels and interpreting the data on a quarterly basis.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

All routine laboratory samples collected for ground water and air quality analyses during the SSC, and for IRM monitoring, will be analyzed by a NYSDOH-ELAP-approved and ASP-certified laboratory for the specific analytical methods performed. Analytical results will not be validated independently until the results indicate that detected concentrations are at or below the applicable standards or criteria, and to support removing or modifying the remedial systems.

Confirmatory samples will be documented by laboratory data packages that will contain the results for batch matrix spike/matrix spike duplicates, method blanks, and blank spikes, as required by the laboratory-referenced protocol. Quantitation reports will be provided for each sample and laboratory standard, as required. A qualified and experienced data validator who is not associated with the laboratory will review the analyses and prepare a Data Usability Summary Report, when the results indicate that chlorinated volatile compounds are not detected or are detected at concentrations below the applicable standards or criteria.

6.0 PROJECT TEAM

The key project team members identified below are qualified and experienced in their respective disciplines. Additional information can be provided upon request.

Project Manager/On-Site Geologist: Jean M. Neubeck, Hydrogeologist, Alpha Geoscience, Clifton Park, New York

Project Advisor: Thomas M. Johnson, C.P.G., Hydrogeologist, Alpha Geoscience

Data Validator: Donald C. Anné, Environmental Chemist, Alpha Geoscience

Sub-Slab System Contractor: Alpine Environmental Services, Inc., Albany, NY; Mark W. Schnitzer, P.E. (NY No. 077506)

Phytoremediation Advisor and Supplier: Ecolotree®, North Liberty, Iowa; Louis Licht, Ph.D. (P.E. Agriculture and Environmental Engineering, Oregon No. 10822)

Landscaper: Surroundings Landscape & Design, Mechanicville, NY; David Mastropietro, NYS Certified Landscaper

Drilling Contractor: Aquifer Drilling & Testing, Inc., Troy, NY; NYS Registered Well Driller No. 10053

7.0 PROJECT STATUS AND SCHEDULE

7.1 SSC: Monitoring Wells

The drilling and installation of ground water wells is scheduled on April 17, 2007. It is anticipated that the initial ground water quality sampling event will be performed by middle May 2007.

7.2 IRM: Phytoremediation Planning and Soil Characterization

Two test pits were excavated on the south and west sides of the building on April 5, 2007, to observe soil stratigraphy and ground water conditions in the upper six to eight feet. Representative soil samples were collected from three horizons in each test pit, and were submitted to A&L Laboratory, Atlanta, Iowa, for soil analyses and texture related to agronomy characteristics. The results will be used to evaluate what soil amendments may be needed to promote tree growth and survival. It is anticipated that the phytoremediation component of the IRM will be implemented during late April through early May 2007. This schedule has very little flexibility because the trees must be planted by mid-May to establish a poplar buffer this growing season.

7.3 IRM: Sub-Slab Depressurization System

The installation date for the SSDS has not yet been scheduled; however, the engineer/contractor is prepared to initiate work with two weeks of authorization. It is anticipated that the system will be installed and active in May 2007. The NYSDEC will be notified in writing as soon as the IRM work is scheduled to install the SSDS and to initiate planting for phytoremediation.

8.0 REPORTING

Alpha will prepare and submit reports to document the supplemental site characterization results and IRM installations. A combined SSC and IRM summary report will be submitted due to the close scheduling of the SSC and IRM. An annual monitoring and status report also will be submitted at the end of each calendar year to summarize the remedial progress.

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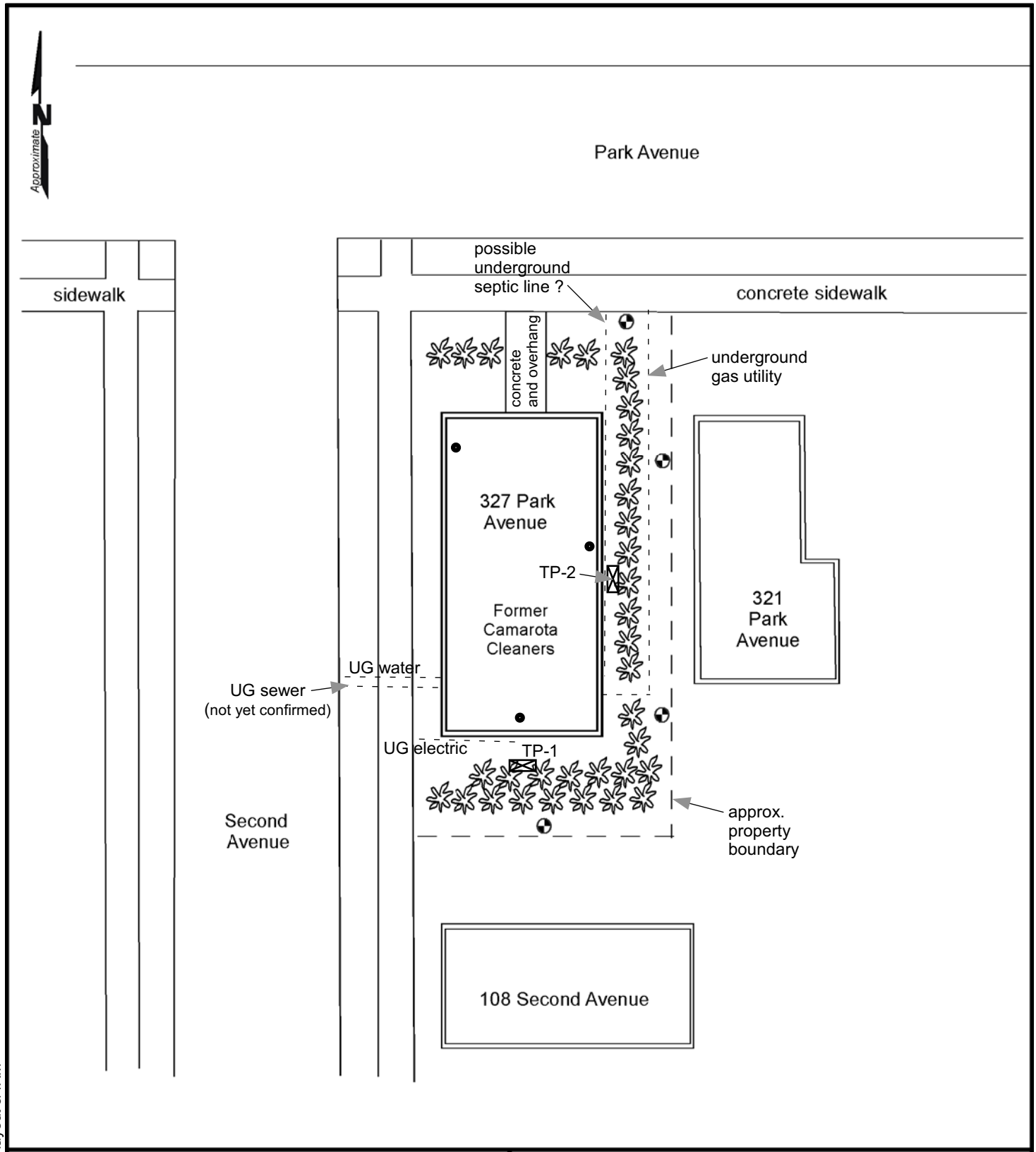

LEGEND

- typical sub-slab extraction point (locations to be determined)
- test pit location
- ground water monitoring well
- hybrid poplar tree, with smaller whips (not shown)

0 10 20 40

Approximate Scale in Feet

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FIGURE 1
SITE LAYOUT AND INTERIM REMEDIAL MEASURES

Former Camarota Cleaners
327 Park Avenue

Alpha Project No. 07108

07108\Maps&Figures\Figure 1- Site layout & IRM

Based on Survey by F.J. Metzger, LLS, 2001, and Air Photo from Google Earth

APPENDIX A

Ground Water Sampling Protocol

Alpha Geoscience
Ground Water Sampling Protocol

1. Measure the depth to water and the depth to the bottom of the well. Calculate the volume of standing water in the well casing, based on the well diameter and measured height of the water column. Account for the diameter of the borehole and saturation of the sand pack when calculating the well volume within a geologic unit of low permeability such as silt or clay. Record the information on a Ground Water Sampling Record. Decontaminate the measuring device between each well, as necessary.

2. Perform well purging and sample collection starting at the least impacted location and progressing to increasing concentrations, if historical data is available. Purge three to five well volumes or until dry, using a dedicated disposable bailer, or clean dedicated tubing. If necessary to confirm that purging is complete, measurement pH, temperature, and specific conductivity during purging and/or sampling. Decontaminate the monitoring probes or instrumentation between each well use, as necessary. Record the purge start and stop time, and actual volume removed from well. Don new latex gloves for each well, or more frequently, as necessary. Use a clean ground cover of plastic at each well, if appropriate.

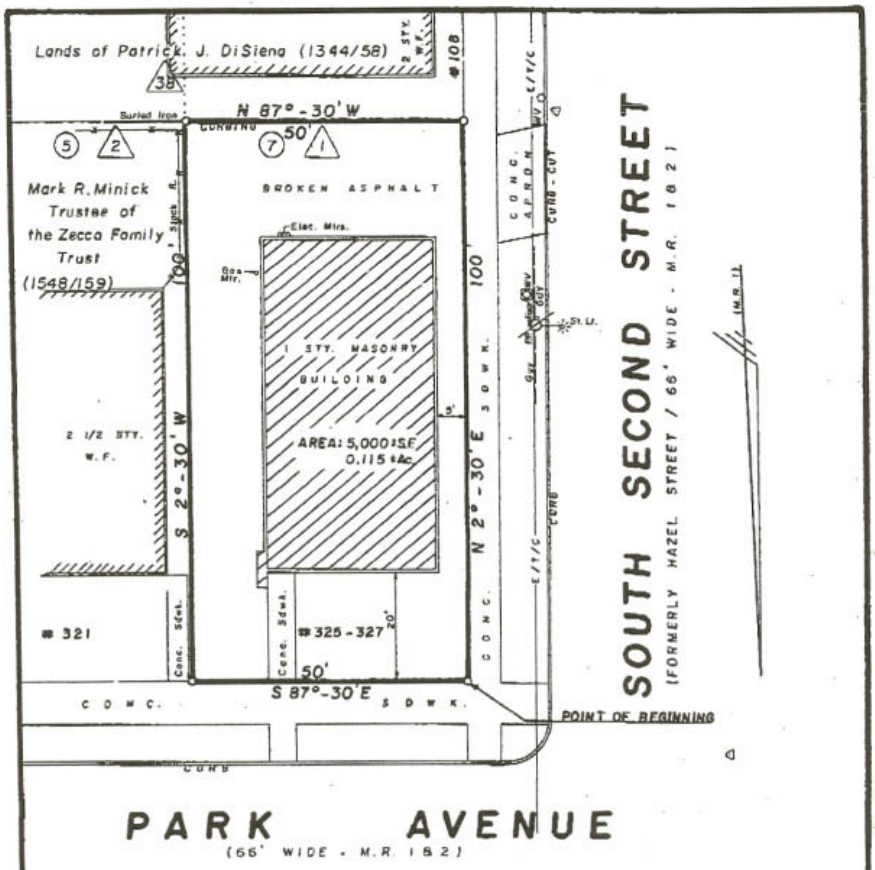
3. Allow the ground water level to recover to 90% of the original depth to water, or for a maximum of two (2) hours prior to sample collection. Document the condition(s) for sampling prior to 90% recovery, if necessary. Measure and record depth to water at the time of sampling.

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, laboratory-supplied container, with appropriate preservative, again minimizing agitation. For volatile samples, ensure that no air bubbles are present in the container. Record the sample time, description (i.e., color, turbidity, odor, sheen, etc.), and type of analysis required.

5. Immediately place labeled sample container(s) in a chilled cooler and keep properly preserved until delivery to the laboratory, or as required for the scheduled analysis. Complete the chain of custody form to accompany all samples during transport.

APPENDIX B

Site Survey



DEED REFERENCE:

1. The City of Mechanicville to Royal R. Dyer Construction Co., Inc., dated October 20, 2000 and recorded in Book-1564 / Page-285.

MAP REFERENCES:

1. "Map of Hazelwood Park and Building Sites owned by W. C. Tallmadge", prepared by R.M. Hasbrouck, C.E., dated May 1, 1871, and Filed May 25, 1874 on Card: 1, Pocket: 12, Folder: 2.
2. "Map of Hazelwood Park and Building Sites owned by W. C. Tallmadge", prepared by R.M. Hasbrouck, C.E., dated 1871, and Filed May 1, 1893 on Card: 1, Pocket: 12, Folder: 2.
3. City of Mechanicville Tax Map # 262.61-4- 1

LEGEND:

E/T/C	Ovhd. Elec./Tel./Cable Lines
P.P.	Power Pole
△	Transit Station
1/7	Tax Map Parcel Number Subdivision Map No. (MR 1)
D.R.	Deed Reference
M.R.	Map Reference
×—×	Fence
C.L.F.	Chain Link Fence
I.B.F.	Iron Bolt Found
I.P.F.	Iron Pipe Found
.....	Subdiv. Lot Line

STATE OF NEW YORK FREDERICK J. METZGER 49517 LICENSED LAND SURVEYOR

"Unauthorized alteration or addition to a survey map bearing a licensed land surveyor's seal is a violation of section 7209, sub-division 2, of the New York State Education Law."

SURVEY OF #325-327 PARK AVENUE

City: Mechanicville	County: Saratoga	State of New York
Scale: 1" = 20'	Date: March 15, 2001	
Prepared for: Royal R. Dyer Construction Co., Inc.		

FREDERICK J. METZGER N.Y.S.L.L.S. No. 49517
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