GeoLogic NY, Inc.

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INVESTIGATION WORK PLAN
BINGHAMTON REALTY
FORMER TRIPLE CITIES METAL FINISHING FACILITY
4 NOWLAN ROAD
HILLCREST, NEW YORK

Prepared For:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Prepared By:

Binghamton Realty, Inc.

and

GeoLogic NY, Inc.

January 2005

PROJECT NO. 99011A

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1 INTRODUCTION

Binghamton Realty and GeoLogic NY, Inc. (GeoLogic) have developed this Work Plan for the investigation and the implementation of an interim remedial measure of reported detection of chlorinated compounds in soil vapor underlying the former Triple Cities Metal Finishing (Triple Cities Metal) facility at 4 Nowlan Road in Hillcrest, New York. As a Volunteer to a Brownfield Cleanup Program Application ("Application") signed June 2, 2004, and a prospective signatory to a Brownfield Site Cleanup Agreement ("Agreement"), Binghamton Realty proposes to define the nature and extent of contamination and implement appropriate remedial measures necessary to address hazardous constituents detected on-site that have the potential to adversely affect human health or cause significant off-site impact.

1.1 SITE DESCRIPTION

Triple Cities Metal manufactured products with decorative, functional and corrosion-resistant finishes that included zinc, chrome and nickel for the military, aerospace and automotive industries from 1953 to 1999. All facility processes were terminated at the Nowlan Road facility in 1999; the building is currently vacant. The site, consisting of two adjacent parcels, encompasses 0.88 acres, and is bordered on the south by Beckwith Avenue, and on the east by the B. W. Elliot Manufacturing Company (former CAE Electronics facility), on the west by two commercial properties and a residence and on the north by Nowlan Road. Further south, west and north are residential properties (Drawing No. 1).

The 27,000-square foot industrial building is located on a 0.62-acre parcel and the office building (former residential structure) is located on a 0.26-acre parcel. The industrial building was used primarily for production work with offices in the northern portion of the building. The former residential structure housed the corporate offices.

1.2 SITE HISTORY

The site has been used for commercial purposes since the 1930's. The first known commercial use of the 4 Nowlan Road property was by a metal plating shop. Several additions have been made to the original (circa 1930's) structure with the last additions constructed in the late 1980's.

All facility processes were terminated over four years ago. Triple Cities Metal submitted a Part A application for interim status when the hazardous waste regulations were first enacted, and although it did not utilize interim status, and operated as a generator, it has been subject to corrective action under the hazardous waste regulations.

1.3 PREVIOUS INVESTIGATIONS

Investigations and studies that have been completed at Triple Cities Metal have included:

- A facility assessment for the USEPA to gather information on, and evaluate the potential for releases to the environment from solid and hazardous waste handling practices, "Preliminary RCRA Facility Assessment" (November 1993, ERM);
- Air emissions testing assessing the 1998 emissions levels at Triple Cities Metal, "Air Emission Study" (September 1999, ERM and NYSDEC);
- Surface soil sampling at Triple Cities Metal and within the Hillcrest community, and catch basin sediment sampling, "RCRA Phase I Sampling" (August 1999, GeoLogic);
- Evaluation of subsurface soil and groundwater at the site that included analyses of interior concrete flooring and underlying soils, "RCRA Phase II Subsurface Investigation" (May 2000, GeoLogic);
- Evaluation of groundwater and subsurface soils under the building, at site boundaries and off-site, "Continuing Phase II Subsurface Investigation" (May 2002, GeoLogic); and
- Corrective Action Study, (May 2003, GeoLogic).

Recently, as part of a NYSDEC Soil Vapor Investigation in Hillcrest, sub-slab soil vapor samples and groundwater samples were taken at the Triple Cities Metal facility by URS Corporation. Sampling locations are shown on Drawing No. 2. Although other compounds were detected during the sampling, trichloroethene concentrations were highest at the site. The soil vapor samples taken by URS Corporation revealed the following concentrations:

Sample ID	Location	Trichloroethene Concentration
TCMF-1	Sub-Slab Soil Vapor In the former Barrel Room Area	1.8 mg/m^3 1,800 $\mu g/m^3$ 0.33 ppm **
TCMF-2	Sub-Slab Soil Vapor In the former Plating Room Area	0.35 mg/m^3 350 $\mu g/m^3$ 0.06 ppm
TCMF-3	Sub-Slab Soil Vapor In the former Warehouse Area – East Addition	13.0 mg/m^3 13,000 $\mu g/m^3$ 2.4 ppm

** ppm – parts per million

Monitoring was not conducted inside the building structure, but instead samples were collected from the fill soils underlying the building's slab.

1.4 SUMMARY OF ENVIRONMENTAL CONDITIONS

1.4.1 Nature and Extent of Contamination

During the course of the evaluations completed for Triple Cities Metal to date, eleven soil borings using conventional soil sampling drill rigs and nineteen direct-push sampling points have been advanced. Six monitoring wells, three on the Triple Cities Metal property and three off-site, have been installed. Trace to no volatile organic solvent compounds were detected in the soils collected at Triple Cities Metal, and the concentrations in groundwater were similar to or lower than upgradient concentrations. Concentrations of trichloroethene in the groundwater have been measured:

Trichloroethene Concentrations in ug/L

Date	MW-1 (D)	MW-2 (D)	MW-3 (C)	MW-4 (D)	MW-5 (D)	MW-6 (D)	MW-18 (U)
2/5/2002	9	14	-	-	-	-	25
4/5, 7 & 8/2004	13	-	14	18	13	-	16

(U) – Hydraulically upgradient of Triple Cities Metal
(D) – Hydraulically downgradient of Triple Cities Metal
(C) – Hydraulically crossgradient of Triple Cities Metal
'-' – Not Sampled

The contaminants of concern identified at the site through the previous investigations were heavy metals with a focus on the eight RCRA metals.

1.4.2 Hydrogeologic Setting

At the adjacent CAE Electronics facility, groundwater elevation data has been collected at its facility and in the neighboring community for over 15 years. At the CAE Electronics wells (MW-16 and MW-18) located near the Triple Cites Metal east property boundary, groundwater has been historically encountered in the lower portion of the surficial outwash sand and gravel unit. Groundwater levels in these CAE Electronics wells have fluctuated generally less than 5 feet over this 15-year period.

Groundwater elevation data collected at the wells installed by Triple Cities Metal have reported fluctuations in groundwater levels of less than 1.0 foot over the period between February 2000 and March 2003.

Given the historical fluctuations noted through CAE Electronics investigations, depth to groundwater at the Triple Cities Metal properties could range from 18 to 33 feet below ground surface.

Based on the data collected in the wells that are monitored by Triple Cities Metal, direction of groundwater flow at the site is from east to west.

2 PROPOSED INVESTIGATION

2.1 AREA AND CONTAMINANT OF CONCERN

The proposed investigation will begin with the area that the Triple Cities Metal building encompasses, along the periphery of the property, and at three adjacent properties; Panko Electric (1080 Chenango Street), Hillcrest Auto Center (1092 Chenango Street), and a residence (1090 Chenango Street).

The contaminants of concern for this investigation will include the compounds on the EPA Method TO-15 list for Polar and Non-Polar Compounds. The detection limit for the samples collected off-site at Panko Electric, Hillcrest Auto Center and at the residence will be 1 part per billion by volume (ppbv).

Once site parameters are established, a reduced list of TO-15 compounds may be performed.

2.2 SUMMARY OF PROPOSED WORK

2.2.1 Task #1 - Obtain Samples Below the Triple Cities Metal Building Concrete Floor Slabs

Purpose: Determine whether there are elevated volatile contaminant concentrations underlying the concrete floor of the Triple Cities Metal buildings. The results of this sampling will provide information about current sub-slab vapor concentrations and if elevated levels are identified in a particular area, may be able to localize contamination.

Obtain sub-slab soil vapor samples from up to ten locations within the former industrial building and the corporate office building (former residence). Proposed locations for the first ten sampling points are shown on Drawing Nos. 2 and 3. Three of the ten locations will be placed at the locations of the three previous sub-slab samples collected by NYSDEC. Up to six others will be placed spatially through the industrial building, and one sample will be collected below the basement sub-slab in the office building.

Based on field observations from the sampling locations, additional sampling points may be advanced. Additional sampling locations will depend upon encountering elevated volatile compounds (VC) readings (>5 ppm). If area(s) with readings in excess of 5 ppm

are encountered, this may indicate the presence of an area of contamination under the building and additional hole(s) may be advanced nearby in an attempt to define and determine extent of elevated readings.

Method for Sub-Slab Sampling:

A concrete drill will be used to drill holes through the floors in the buildings. A temporary sealed portal through the concrete floor using beeswax will be installed to extract the sub-slab vapors. The annular space of each hole and tubing will be evacuated one volume at a rate of approximately 0.2 liter/minute prior to the collection of the soil vapor sample from below the sub-slab. Immediately after purging, the tubing will be connected to the 400-cc canister with flow controller valves pre-calibrated at a flow rate of 0.2 liter/minute at the laboratory. The samples will be collected over approximately a one-hour period and analyzed by EPA TO-15 with a Limit of Quantitation (LOQ) of one microgram per cubic meter ($\mu g/m^3$).

After the collection of the soil vapor sample, soil vapor from below the concrete slabs will be directly screened with a detector capable of measuring in both the parts per billion range (ex. ppbRAE volatile compound (VC) detector, range 0-999 ppb) and parts per million range (ex. Photovac PID, range 0.1 to 2,000 ppm).

The holes made through the concrete floor will be plugged with sealant.

2.2.2 Task #2 - Obtain Soil Vapor Samples Below Concrete Floor Slab at Adjacent Properties

Purpose: Investigate the presence of chlorinated compounds in properties adjacent to Triple Cities Metal.

Method: One sub-slab soil vapor sample will be collected from below the basement floor at the one residence, two below the slab-on-grade at the Panko Electric building, and one below the slab-on-grade at the Hillcrest Auto Center building. These properties are adjacent and directly west of Triple Cities Metal.

Binghamton Realty will seek the consent of the adjacent property owners to access the properties. If consent is denied, the assistance of NYSDEC will be sought.

Sampling methodology will be the same as described in Section 2.2.1.

The holes through the concrete floors will be plugged with a sealant after sample collection.

2.2.3 Task #3 - Obtain Soil Samples and Install Permanent Sub-slab and Subsurface Soil Vapor Monitoring Points Inside Triple Cities Metal Building

Purpose: Further evaluate elevated volatile contaminant concentrations in soil (horizontally and vertically) in order to maximize efficiency of soil vapor extraction system and to assess possible on-site source(s) of any contaminants observed in the soil vapor samples collected from below the building floor slab.

Method for Subsurface Sampling:
The data collected under Task #1 will guide placement of the subsurface sampling locations. Locations with the highest concentrations determined through laboratory analyses (up to six locations initially) in the industrial building will be further evaluated.

A concrete drill will be used to drill the holes through the floors in the industrial building. The soil vapor from below the concrete slabs will be initially screened and recorded using VC detectors capable of measuring in both the parts-per-billion and parts-per-million ranges.

A truck-mounted Geoprobe® will be used to advance the subsurface sampling points. Soil samples will be obtained with a 2-inch diameter, 4-foot steel tube sampler (macrocore). The sampler has single-use acetate liners for sample collection. Continuous soil sampling will be attempted to depths of 16 to 20 feet below the floor slab.

Soil samples will be scanned with a VC detector. Soil samples will be placed in zip-lock plastic bags and allowed to equilibrate for 10 minutes where room temperature is approximately 70 (F) degrees before screening with a VC detector. The soil sample with the highest PID reading and a soil sample below the soil sample with the highest PID reading that exhibits a lower (or non-detect) PID reading from each location will be analyzed. The soils will be place in laboratory supplied sample jars for laboratory and held at 4° C in a cooler. Single-use latex or vinyl gloves will be used during sample handling. The soil samples will be analyzed for volatile organics concentration verification using EPA Method 8260 and site-related heavy metals.

In consultation with the State, permanent subsurface soil vapor implants at depths to be determined from observations and data collected from the sampling points will be installed inside the industrial building. The installation of four implant clusters is anticipated. The anticipated depths of the clusters are one within the first 6 inches of material encountered below the floor slab, one between 8 to 10 feet and one between 16 and 18 feet below floor.

Soil vapor implants will be constructed of six-inch long, double woven stainless steel wire screen. The stainless steel implants will be connected to polyethylene tubing. The direct-push sampling rods will be advanced to the determined depths. The soil vapor implant will be placed down through the rods, and then as the rods are withdrawn, the annular space around the implant will be filled with glass beads to a height of six inches above the implant. For the two deeper implants, sand will be placed above the glass beads to a depth of two feet below the floor surface. Hydrated bentonite pellets will be used to seal the upper two feet of the annular space. The polyethylene tubing will extend at least six inches above the floor surface. After installing the implants, the positive or negative pressure at the implants will be recorded using a magnehelic gage capable of measuring to 0.01 inches of water.

To minimize the risk of ambient air being drawn down the borehole and into the implant during sampling, hydrated bentonite will be placed on the concrete floor around the tubing out approximately 9-inches, radially. A 3-foot square piece of plastic sheeting will be placed over the bentonite. On top of the plastic sheeting, another bentonite seal will be placed immediately surrounding where the plastic tubing projects through the plastic sheeting.

Four hundred-cc mini-canisters will be used to collect the soil vapor samples. Before collecting the soil vapor samples, the soil vapor implant and tubing will be purged of one liter of air using a vacuum pump. A tubing pinch valve will be used to seal the end of the tube after the tubing is purged. Immediately after purging, the tubing will be connected to the 400-cc canister and soil vapor samples will be collected directly into the canisters for laboratory analysis. The samples will be collected over approximately a one-hour period and analyzed by EPA TO-15 with a Limit of Quantitation (LOQ) of 1 $\mu g/m^3$.

Permanent implant access entries will be installed in the concrete floor for future access to the sub-slab and subsurface soil vapor implants.

2.2.4 Task #4 - Obtain Soil Vapor Samples at Site Boundaries

Purpose: Investigate levels of contaminants in soil vapor in areas not capped by buildings or other structures.

Method: Soil vapor samples will be obtained from soil vapor implants placed at three locations near site boundaries. Proposed sampling locations are shown on Drawing No. 3. We anticipate using NYSDEC implants cluster TSG-7, TSG-8 and TSG-9 for the investigation. The depths of these implants are 8 feet, 14 feet and 19.5 feet below ground surface (bgs), respectively. Soil gas implant TSG-12 installed to a depth of 8 feet bgs may also be utilized.

A truck-mounted, Geoprobe® will be used to install three clusters of soil vapor implants. The locations of the three clusters are at the northeast corner of the property, one east of the industrial building on the former CAE Link property (and dependent upon approval) and one on the west side of the industrial building. Each cluster will have three soil vapor implants installed to depths of 8 feet and approximately 14 feet and 20 feet bgs at each of the three locations. Soil vapor implants will be constructed of six-inch long, double woven stainless steel wire screen. The stainless steel implants will be connected to polyethylene tubing. The direct-push sampling rods will be advanced to the desired depths. The soil vapor implant will be placed down through the rods, and then as the rods are withdrawn, the annular space around the implant will be filled with glass beads to a height of six inches above the implant. Sand will be placed above the glass beads to a depth of two feet below the ground surface. Hydrated bentonite pellets will be used to seal the upper two feet of the annular space. After installing the implants, the positive or negative pressure at the implants will be recorded using a magnehelic gage capable of measuring to 0.01 inches of water.

The polyethylene tubing will initially extend at least six inches above the ground surface. To minimize the risk of ambient air being drawn down the borehole and into the implant during sampling, hydrated bentonite will be placed on the ground surface around the tubing out approximately 9-inches, radially. A 3-foot square piece of plastic sheeting will be placed over the bentonite. On top of the plastic sheeting, another bentonite seal will be placed immediately surrounding where the plastic tubing projects through the plastic

sheeting.

Sampling methodology will be same as described above in Section 2.2.3.

The implants will be finished with a flush-mounted protective casing.

2.2.5 Task #5 - Soil Vapor Extraction System

Purpose: Provide a mechanism to reduce contaminants in the soil vapor below the industrial building to allow assessment of rebound of soil vapor levels and to provide for long-term control of soil vapor levels to the extent required.

Method: An interim soil vapor extraction system will be installed at the Triple Cities Metal facility to reduce contaminated soil vapor concentrations beneath the building. The interim soil vapor extraction will conceptually consist of at least three sub-slab soil vapor extraction points. The system will not be turned on until Tasks #1 through #4 are completed. The sub-slab extraction points will be 4-inch diameter solid PVC piping placed through the concrete floor and one-foot, or deeper if necessary, into the sub-slab structural sand and gravel fill. The sub-slab piping will be sealed into the floor slab. The sub-slab extraction points will be connected to a blower placed on the roof of the building. The exhaust pipe from the blower will extend above the roofline.

A pre-start up sample will be taken at the exhaust pipe discharge of the blower. The airflow rate for a period of 30 minutes will be recorded prior to effluent sample collection.

Two, one-hour samples will be collected in sequence and analyzed by EPA Method TO-15. The first sample will be analyzed. The second sample will be a matrix spike sample that will be spiked by the laboratory at one-half the average concentration.

The blower will remain in operation after sampling. An Air Facility Registration Form will be submitted to the NYSDEC with the sample results. NYSDEC Air Guide-1, dated 1995 will be used to calculate the emission concentrations and the emissions will be compared to the Short-term Guidance Concentrations.

After NYSDEC issues the Air Facility Registration, the system will be turned on. One hour after starting up the system, the positive or negative pressure at the interior and exterior

soil vapor implants will be recorded using a magnehelic gage capable of measuring to 0.01 inches of water. These measurements will be compared to those recorded prior to start-up to assist in determining the effectiveness of the soil vapor extraction system.

2.2.6 Task #6 - Post SVE System Start-Up Evaluation

Purpose: To evaluate the effectiveness of the soil vapor extraction system.

Method: Air discharge samples for the purpose of evaluating the effectiveness of the extraction system will be collected one week after turning on the system and then monthly thereafter for three months. These samples are not part of any sampling requirements set forth in the Air Facility Registration. The samples will be collected into 3-liter tedlar bags and analyzed using NYSDOH Method 311-6 for volatile organic compounds.

Within the first week of operation, the positive or negative pressure at the interior and exterior soil vapor implants will be recorded using a magnehelic gage capable of measuring to 0.01 inches of water. Also, at this time, a PID will also be connected to each of the interior implants, and the total VC will be measured. These measurements will assist in evaluating the effectiveness of the soil vapor extraction system.
To the extent only low levels of contaminants are detected in the effluent air stream, the soil vapor extraction system will be shut off for a period of time to permit evaluation of the potential for vapor concentrations to rebound. At the time that the effluent discharge samples are collected, the pressure will be measured at the each of interior soil vapor implants.

Approximately one month of starting the soil vapor extraction system, soil vapor samples will be collected from the exterior SVE implants. The sampling methodology will be the same as discussed in Section 2.2.3.

2.2.7 Task #7 - Sample Monitoring Wells

Purpose: Evaluate groundwater quality upgradient, downgradient and beneath the site.

Method: As part of a recent study, NYSDEC collected and analyzed groundwater samples. To further evaluate the presence of solvent constituents in groundwater, water samples will be collected from the monitoring wells (MW-1 through MW-6 and MW-18) including the appropriate QA/QC samples, and depths to water will be recorded. Sampling is scheduled to be completed six months after the startup of the soil vapor extraction system.

If the water levels in the wells are within 20 feet of the ground surface, wells will be purged and water samples taken using a low-flow peristaltic pump. New polyethylene tubing will be used to purge and sample each well. If the water level is more than 20 feet below the ground surface, a single-use polyethylene disposable bailer with new nylon rope will be used to purge the wells and obtain the water samples.

The wells will be purged of at least three well volumes prior to sampling. Temperature, pH, conductivity and turbidity measurements will assist in determining when the wells have been sufficiently purged. The sampler will wear single-use latex or vinyl gloves during purging and sampling. Samples will be collected directly into laboratory-provided containers and held in a 4°C-maintained cooler. Samples will be submitted for volatile organic analysis by EPA 8260 and analysis of the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver).

2.2.8 Task #8 - Prepare Investigation Report

Purpose: Summarize data collected during the investigation and develop recommendations for the need for any additional data or remedial measures.

Method: The need for any additional data and the need for additional remedial action will be evaluated after the completion of the work proposed in this Work Plan. A Work Plan (if warranted) to address additional data gathering or remediation options will be submitted to NYSDEC for approval.

3 HEALTH AND SAFETY PLAN

A Health and Safety Plan (HASP) prepared for personnel protection (both site workers and community), and safety practices and procedures for the field activities proposed under Section 2.2

Summary of Proposed Work, is attached. A generic Community Air Monitoring Program (gCAMP) is included in Section 6.2 of the Health & Safety Plan.

Components of the monitoring will include work zone monitoring, community air monitoring, and vapor emission response plan. Real-time air monitoring for volatile organic compounds at the perimeter of the work areas will be performed.

4 QUALITY ASSURANCE/QUALITY CONTROL

Sampling will be performed by a geologist or chemist from GeoLogic. Chain-of-custody procedures will be followed from sample acquisition through to sample disposal. Sample analyses will be as follows:

- Task #1 –Soil vapor samples will be analyzed for the polar and non-polar volatile organic compounds on the EPA TO-15 list. The limit of quantitation (LOQ) for the volatile organics to be analyzed is 1 $\mu g/m^3$. The laboratory that will perform the analyses is Centek Laboratories, LLC (Centek) approved under the NELAP program by the NYSDOH for performing EPA TO-15 analysis.

- Tasks #2, #3, and #4 - Soil vapor samples will be analyzed by Centek for the polar and non-polar volatile organic compounds on the EPA TO-15 list. The LOQ for the volatile organics to be analyzed is 1 $\mu g/m^3$. The appropriate QA/QC samples (one field duplicate per sample set) will be collected for analysis.

- Task #3 - Soil samples will be analyzed for volatile organic compounds by EPA Method 8260 and for site-related metals. The laboratory that will perform the analyses is Life Science Laboratory, a NYSDOH ELAP-CLP Certified Laboratory. The appropriate QA/QC samples (one matrix spike, one matrix spike duplicated and one field duplicate) will be collected for analysis.

- Task #5 – The SVE emission discharge samples will be analyzed by Centek using for the polar and non-polar volatile organic compounds on the EPA TO-15 list.

- Task #6 – The discharge samples for the post SVE system evaluation will be analyzed by Centek using NYSDOH Method 311-6 for the volatile chlorinated organic compounds of concern.

- Task #7 –Water samples will be submitted to Life Science Laboratory for TCL volatiles by EPA Method 8260 and for site-related metals. The appropriate QA/QC samples (one matrix spike, one matrix spike duplicate, one field duplicate and one trip blank) will be collected for analysis. A DUSR will be prepared.

The probing equipment will be cleaned with a liquinox and water solution before starting work at the site and between each probe hole to minimize the possibility of cross contamination. Decontamination water will be collected and disposed of properly.

The volatile compound (VC) detectors that will be used for the field screening of soils will be a Photovac Model 2020 equipped with 10.6 eV lamp and the ppbRAE. The instruments will be calibrated in accordance with manufacturer's instructions in the field prior to commencing work. Should the VC detector display not return to zero, the instrument will be cleaned and re-calibrated. The pH, conductivity, turbidity and temperature meters will be calibrated in accordance to manufacturer's instructions prior to each daily use.

Excess soil from the probe holes will be collected and staged temporarily on-site. VC readings taken during soil sampling will be used to evaluate the need for analysis. Soil samples from the excess stockpile soils will be placed in zip-lock plastic bags and allowed to equilibrate with the atmosphere for 10 minutes before screening with a PID. If all VC readings from the excess soils are less than 1 ppm above background, soil will be reused on-site. If any VC readings are greater than 1 ppm above background, the soil sample with the highest PID reading will be analyzed for chlorinated organics using EPA Method 8260 to evaluate appropriate disposal options. These samples will not be analyzed using ASP Category B deliverables.

PROPOSED SAMPLING CHART
TRIPLE CITIES METAL FACILITY
HILLCREST, NEW YORK

Sample Location	Matrix	No. of Samples	Analysis
Task #1			
Triple Cities Metal Building – Sub-Slab Soil Vapor	Air	Up to 10	EPA TO-15, LOQ 1 µg/m^3
Triple Cities Metal Building – Sub-Slab Soil Vapor	Air	3	EPA TO-15, LOQ 1 µg/m^3
Field Duplicate		1	EPA TO-15, LOQ 1 µg/m^3
Task #2			
Adjacent Properties – Sub-Slab	Air	4	EPA TO-15, LOQ 1 µg/m^3
Field Duplicate	Air	1	EPA TO-15, LOQ 1 µg/m^3
Task #3			
Beneath Floor Slab of Triple Cities Metal Building	Soil	8	EPA Method 8260
Lab QA/QC Samples	Soil	3	EPA Method 8260
Triple Cities Metal Building – Sub-Slab Implants	Air	12	EPA TO-15, LOQ 1 µg/m^3
Field Duplicate	Air	1	EPA TO-15, LOQ 1 µg/m^3
Task #4			
Property Boundary Implants	Air	9	EPA TO-15, LOQ 1 µg/m^3
Field Duplicate	Air	1	EPA TO-15, LOQ 1 µg/m^3
Task #5			
SVE System Effluent Emission	Air	2	EPA TO-15, LOQ 1 µg/m^3
Task #6			
Post SVE System Evaluation	Air	3	NYSDOH Method 311-6
Task #7			
Monitoring Wells	Water	7	EPA Method 8260 and Metals
Lab QA/QC Samples	Water	3	EPA Method 8260 – DUSR

5 SCHEDULE AND REPORTING

Fieldwork for the investigation will begin within two weeks of receiving written approval from the NYSDEC of this Work Plan. It is anticipated that the investigation fieldwork, excluding Task #7, will be completed within nine to twelve weeks in six stages:

- Stage No. 1 - Tasks #1 and #2 - collect sub-slab samples on-site and off-site;
- Stage No. 2 - Task #3 - perform subsurface investigation below industrial building, and install soil vapor implant inside the industrial building;
- Stage No. 3 - Task #4 - install exterior soil vapor implants;
- Stage No. 4 - Task # 5 - install the conceptual SVE system, start-up sampling, and submittal and approval of the Air Facility Registration Form; and
- Stage No. 5 - Task #6 –collect post-SVE discharge samples and post-system start-up soil vapor samples.

Status reports will be forwarded to NYSDEC after completing Task #1 and #2, and after completing Task #3 to assist in the discussion of the placement of the interior and exterior soil vapor implants. Another status report will be submitted after completing Task #6. The total anticipated time for completing the work included in this Work Plan, excluding Task #7, is approximately four months.

Task #7, sampling monitoring wells, is anticipated to be completed six months after the startup of the SVE system. The status report with the results will be submitted within one month after receiving the final Data Package.

The final report incorporating all work completed under this Work Plan will be submitted approximately five weeks after the completion of Task #7. After the final report is approved by NYSDEC, the final report will be submitted electronically within 30 days of the approval.

6 PROJECT ORGANIZATION

Property Owner: Binghamton Realty, 349 Industrial Park Drive, Binghamton, NY 13904. Contact: Joseph Morgan Sr., 607-722-3431.

Environmental Consultant for Binghamton Realty: GeoLogic NY, Inc., P.O. Box 350, 37 Copeland Avenue, Homer, New York 13077. Contact: Marjory Rinaldo-Lee, Principal-in-Charge; Susan M. Cummins, Project Manager and Health & Safety Officer; Joshua Sandberg, field supervision, sample collection; Joseph Menzel, remediation system installation, 607-749-5000.

7 ATTACHMENTS

A. Drawings

1. Site Location Plan
2. Sample Location Plan
3. Sample Location Plan

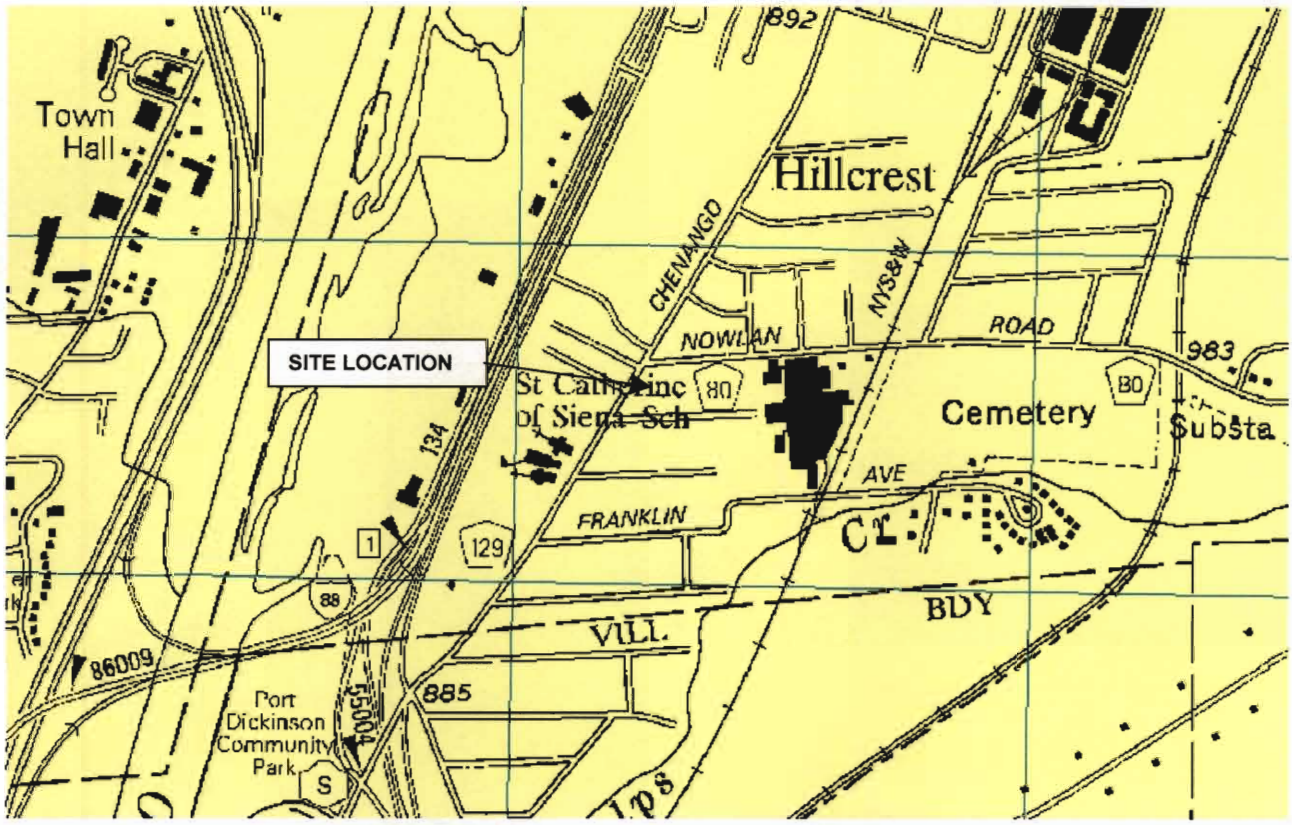
B. Health & Safety Plan

GeoLogic NY, Inc.

PO Box 350, Homer, NY 13077, 607-749-5000, Fax: 607-749-5063

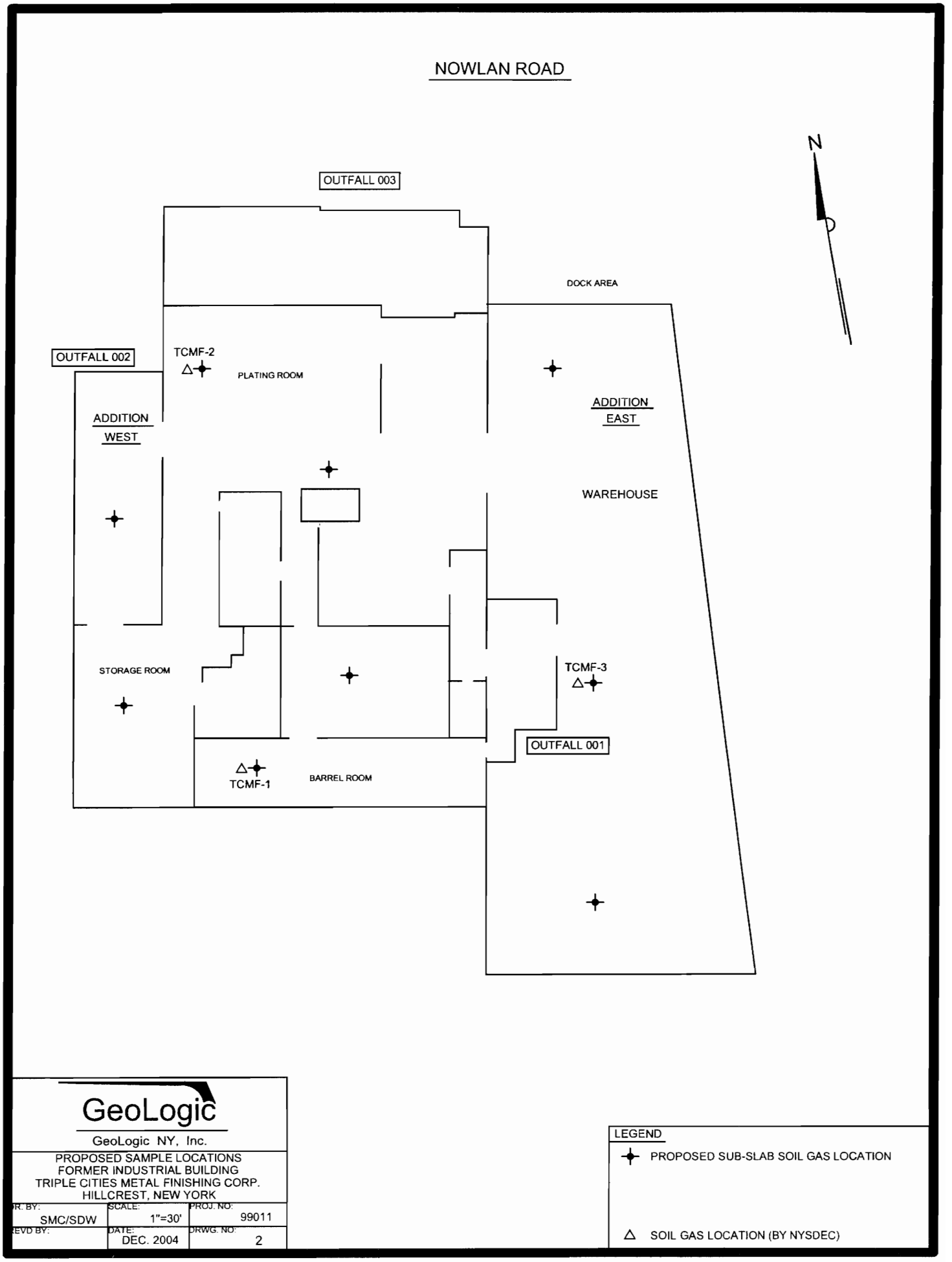
APPENDIX A

DRAWINGS



Source: www.nysgis.state.ny.us

SITE LOCATION PLAN
FORMER TRIPLE CITIES METAL FINISHING CORPORATION
NOWLAN ROAD
COMMUNITY OF HILLCREST
BROOME COUNTY, NEW YORK
Drawing No. 1



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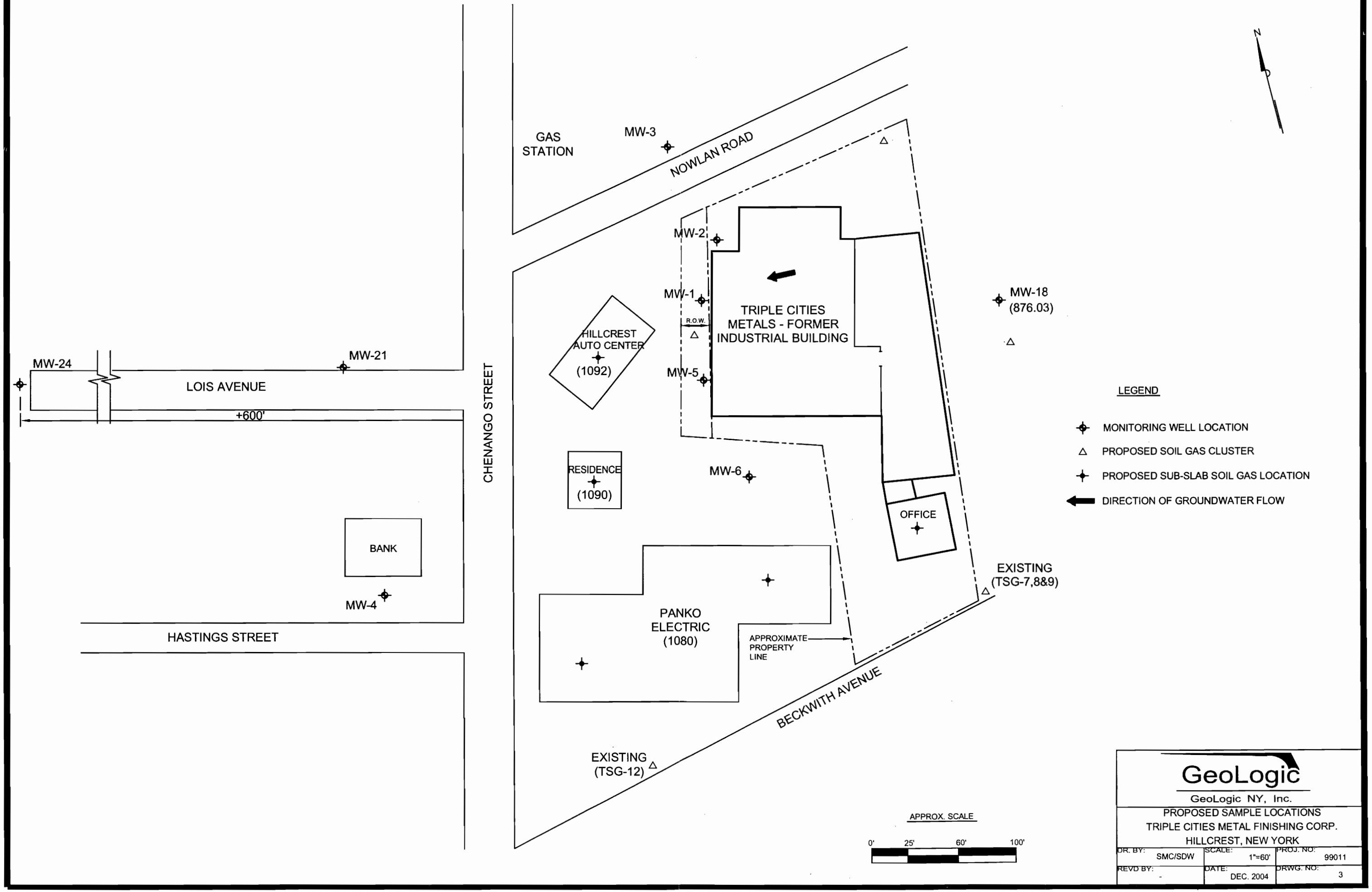
PROPOSED SAMPLE LOCATIONS
FORMER INDUSTRIAL BUILDING
TRIPLE CITIES METAL FINISHING CORP.
HILLCREST, NEW YORK

DR. BY:	SCALE:	PROJ. NO:
SMC/SDW	1"=30'	99011
REVD BY:	DATE:	DRWG. NO:
	DEC. 2004	2

LEGEND

PROPOSED SUB-SLAB SOIL GAS LOCATION

SOIL GAS LOCATION (BY NYSDEC)



GeoLogic

GeoLogic NY, Inc.

PROPOSED SAMPLE LOCATIONS
TRIPLE CITIES METAL FINISHING CORP.
HILLCREST, NEW YORK

DR. BY:	SCALE:	PROJ. NO:
SMC/SDW	1"=60'	99011
REVD BY:	DATE:	DRWG. NO:
-	DEC. 2004	3

GeoLogic NY, Inc.

PO Box 350, Homer, NY 13077, 607-749-5000, Fax: 607-749-5063

APPENDIX B

HEALTH & SAFETY PLAN

GeoLogic NY, Inc.

PO Box 350, Homer, NY 13077, 607-749-5000, Fax: 607-749-5063

HEALTH AND SAFETY PLAN

FOR THE

INVESTIGATION WORK PLAN

At

BINGHAMTON REALTY
FORMER TRIPLE CITIES METAL FINISHING FACILITY
4 NOWLAN ROAD
HILLCREST, NEW YORK

Prepared By:
GeoLogic NY, Inc.
January 2005

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1. INTRODUCTION

These health and safety guidelines are an accompaniment to GeoLogic NY, Inc.'s Health and Safety Policies that have been provided to all employees.

The Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by all GeoLogic NY, Inc. (GNY) Employees that will be participating in the work set forth in the Work Plan. A Site Location Map and a Site Plan are attached.

It is expected that officials from NYSDEC and NYSDOH will be visiting the site during site activities. GNY does not guaranty the health and/or safety of any person entering this site. Due to the potential hazards of this site and the activities 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 may not eliminate, the potential for injury at this site. The health and safety guidelines in this plan were prepared specifically for this site and should not be used on any other site. Copies are to be provided to NYSDEC and NYSDOH personnel prior to commencing field activities.

The HASP takes into account the specific hazards inherent to this project and presents procedures that are to be followed by GNY Employees. The objective of this project is to perform a subsurface evaluation in order to determine the extent of any soil, groundwater, and/or soil vapor contamination from past use or disposal of dry cleaning solvents.

The HASP is applicable to the following site activities:

- subsurface soil sampling
- subsurface air sampling
- real time air monitoring
- groundwater sampling

This Health and Safety Plan covers all employees of GNY who visit and/or work at this site.

2. SITE DESCRIPTION

2.1 Physical Description and Site History

The former Triple Cities Metal manufacturing facility is located at 4 Nowlan Road in the community of Hillcrest, Binghamton, New York. All facility processes were terminated at the Nowlan Road facility in the winter of 1999-2000; the building is currently vacant. The site, consisting of two adjacent parcels, encompasses 0.88 acres, and is bordered on the south by Beckwith Avenue, and on the east by the B. W. Elliot Manufacturing Company (former CAE Link facility), on the west by two commercial properties and a residence and on the north by Nowlan Road. Further south, east and north are residential properties.

As part of a NYSDEC Soil Vapor Investigation in Hillcrest, sub-slab air samples were taken at the Triple Cities Metal Facility on February 25, 2004 by URS Corporation. Sampling locations are shown on Drawing No. 2. The air samples taken by URS Corporation revealed the following concentrations:

Sample ID	Location	Trichloroethene Concentration
TCMF-1	Sub-Slab Soil Vapor In the former Barrel Room Area	1,800 ug/m^3 0.33 ppm
TCMF-2	Sub-Slab Soil Vapor In the former Plating Room Area	350 ug/m^3 0.06 ppm
TCMF-3	Sub-Slab Soil Vapor In the former Warehouse Area – East Addition	13,000 ug/m^3 2.4 ppm

2.2 Summary of Major Health and Safety Risks

- Work around hydraulic punch probe, including entrapment, pinch points and electrical shock

- Slip, trips and falls
- Noise

3. EMERGENCY CONTACTS & COMMUNICATIONS

3.1 Communications

GNY field personnel will be equipped with cellular telephones. This will enable field personnel to communicate directly with local emergency support units should an accident or injury occur during field operations.

The safety officer is Susan Cummins. The Principal–in-Charge is Marjory Rinaldo-Lee, President. Both can be contacted at **(607) 749-5000**.

3.2 Emergency Contacts

Emergency Phone Numbers for this site are:

Police	911
Fire	911 - Local
Ambulance	911
Hospital	911
	Binghamton General Hospital
	10 Mitchell Avenue, Binghamton, New York
	607-762-2231 (Emergency Services)

Directions: Exit site and proceed south of Chenango Street for about 1.5 miles, Take entrance onto Route 7 south; proceed 3 miles to the Brandywine Highway (Route 363); stay on Route 363 for about 2 miles; exit onto Route 434 (toward Vestal); take left onto Washington Street, first right onto Vestal Street and first left onto Mitchell; follow signs to Emergency entrance. (Map to hospital is attached).

GNY Office 1-800-836-4401 or 1-607-749-5000

NYSDEC Spill Hotline 1-800-457-7362 (Spills must be reported within 2 hours of their discovery.)

The First Aid Kit provided by GNY must be kept within a reasonable distance of personnel at all times.

3.3 Safety Items

A utility clearance for exterior probing will be arranged by GNY. During the initial site visit, identify and record possible hazards that do, or may, exist at the site.

The safety of employees working around drilling equipment should be maintained at all times.

All accidents or injuries must be reported within a 24-hour period to the Health and Safety Officer (if not available, report to Marjory Rinaldo-Lee or Forrest Earl). This includes even minor cuts and abrasions. Failure to immediately report accidents and injuries sustained on the job may result in the loss of workers compensation and disability benefits. All employees reporting an accident or injury will be required to fill out an accident report form.

All GNY personnel working/visiting the site must sign this plan in the space provided below. A copy of this signed acknowledgement will be kept in each signatories personnel file and in the project file **Job No. 99011A.**

NAME	DATE
NAME	DATE
NAME	DATE
NAME	DATE
NAME	DATE

4. SITE HAZARD ASSESSMENT

4.1 Physical Hazards

The physical hazards associated with the work to be performed by GNY are mainly associated with the operation of the Geoprobe®. Personnel will be experienced in the proper operation of the equipment and familiar with the equipment-specific hazards and the built-in safety mechanism of that equipment.

The hazards involved with the use of a Geoprobe® can be significant and include the hazards of pinch points, entrapment in the machinery, impact from moving parts, fatigue, electrocution of overhead power lines and buried utilities. The operator and operator's helper are the only two people allowed to operate the Geoprobe®. Personnel near the Geoprobe® should be aware of what is overhead during drilling procedures. GNY shall require that other personnel entering the Work Zone make their presence known to the operator and operator's helper, and when possible, maintain visual contact with these persons.

For purposes of this Health and Safety Plan, "Work Zone" will be defined as the area within a 10-foot radius of the Geoprobe®

4.1.1 Manual Lifting

Manual lifting of heavy objects will be required. Failure to follow proper lifting techniques can result in back injuries and strains. Special attention will be given to the lifting and moving of heavy objects (drills, jackhammers, probe equipment and 55-gallon barrels). All personnel will be trained in the proper methods of lifting heavy objects.

4.1.2 Utilities

GNY will be responsible for contacting UFPO to locate public utilities, both underground and aboveground. These locations shall be physically marked in the field. Location of boring points will take into consideration the degree of accuracy of these locations and provide adequate distances from the identified utilities. GNY personnel will have the right to make adjustments to sampling point locations should they feel that there are safety

issues associated with the designated location.

4.1.3 Noise

Noise is a potential health hazard associated with the operation of the drill rig and excavation activities. Physical responses to excessive noise can include an increase in heart rate, blood pressure and respiration rate, muscle tension and fatigue. Excessive noise can inhibit verbal communications between site personnel. Hearing protection will be worn during drilling operations. For other site activities, in the absence of instrumentation, an appropriate rule of thumb is that when normal conversation is difficult at a distance of 2 to 3 feet, hearing protection is required.

4.1.4 Temperature Extremes

The air temperatures are expected to be 0°F to 30°F in the winter. Based on expected temperature conditions, cold stress conditions are anticipated.

4.2 Chemical Hazards

Based on previous investigation at the site by others and the known history of the site, the contaminants of concern are chlorinated compounds and heavy metals. These contaminants may be encountered during the drilling of holes through the floor slab of the building, in the soil or soil vapor in these borings, drilling and sampling of soil vapor implants along the periphery of the property, or during the sampling the groundwater monitoring wells. There are several possible routes of exposure to persons working at the site that include dermal and respiratory routes, ingestion, and eye contact. The personal protection equipment and monitoring to be used at this site is listed in Section 5 and Section 6.

5. LEVELS OF PROTECTION

Since site personnel may be exposed to chemical contaminants released during the sampling activities, various levels of Personal Protection Equipment may be necessary. The monitoring equipment and PPE to be used are determined based on the task being performed. It is anticipated that most work will be performed in Level D, with potential upgrade to Level C. The task specific equipment and PPE are summarized below:

Task: Soil and Soil vapor Sampling Below Floor of Building and along Property Boundaries

The initial PPE to be worn by GNY personnel performing these activities will be at Level D and may include: hardhat, steel-toed boots and OSHA-approved eye, and ear protection. Level C PPE will be immediately available for use, if monitoring results warrants use.

Task: Installation of Soil Vapor Clusters

The initial PPE that will be worn by the Geoprobe® operator and helper during drilling activities will include: steel-toed boots and OSHA-approved eye, and ear protection. The PPE to be used by the supervisor may include: hardhat, and OSHA-approved eye protection and ear protection. Level C PPE will be immediately available for use by the driller, driller's helper and other GNY field personnel, if monitoring results warrant use.

Task: Groundwater Sampling of Monitoring Wells

The PPE to be used during groundwater sampling operations will be contingent upon conditions encountered during drilling. Minimal PPE may include chemically resistant gloves and OSHA-approved eye protection during groundwater sampling.

Task: Installation of SVE system

The PPE that will be worn during the installation of the SVE system will be hearing and eye protection when using power hand tools, and work gloves.

No confined-space entry will be allowed.

6. MONITORING

6.1 Work Zone Monitoring

Volatile compound detectors will be used during the probing and sampling operations in order to determine the approximate concentrations of ionizable vapors emanating from the sampling points. The breathing zones occupied by all workers may be checked with the VC (volatile compounds) detector during soil sample retrieval and/or when solvent-like odors are noticed.

If the concentrations detected by the PID are less than 5 ppm in the breathing zone, no breathing apparatus is necessary. If sustained concentrations are greater than 5 ppm, an air-purifying respirator with the appropriate cartridges must be worn. If the concentrations are greater than 500 ppm, all work must be stopped and the work area must be re-evaluated.

While sampling inside adjacent property buildings, access of building occupants to the immediate area of sample collection will be restricted.

6.2 Community Air Monitoring Plan

During the outdoor probing activities (installation of soil vapor implants) offsite transport of VC is possible. Depending upon site conditions at the time the work is performed and atmospheric conditions, controls may be necessary to reduce the offsite transport of VC. These controls may include wetting soils removed during drilling activities.

Real-time air monitoring for volatile compounds at the perimeter of the work area is necessary. The plan may include the following:

- Volatile organic compounds will be monitored daily at the downwind perimeter of the work area. If total organic vapor levels exceed 5 ppm above background for 15-minute average, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review; and

- Particulate matter less than 10 micrometers in size (PM-10) may be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations. If the downwind particulate level is 150 mcg/m3 greater than the

upwind particulate level for a 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue after dust suppression provided that the downwind particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area. If after implementation of dust suppression, downwind particulate levels are greater than 150 mcg/m3 above upwind levels, work must be stopped and site conditions will be re-evaluated. Work can resume only when the downwind particulate concentrations are within the 150 mcg/m3 of the upwind levels. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

6.3 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume but more frequent intervals of monitoring, as directed by the Safety Officer, must be conducted. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background and;
- more frequent intervals of monitoring, as directed by the Safety Officer, are conducted.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Emission section.

6.4 Major Vapor Emission

If the organic vapor levels greater than 5 ppm over background for the 15-minute average are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic vapor levels persist above 5 ppm above background for a 15-minute average 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-Foot Zone).

If efforts to abate the emission source are unsuccessful, and if any of the unacceptable organic vapor levels (greater than 5 ppm above background for the 15-minute average) persist for more than 30 minutes in the 20-Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background for a 15-minute average.

6.5 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will go into effect.

2. The local police authorities will immediately be contacted by the Safety Officer and be advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

7. SITE CONTROL

It is important to minimize the possibility of human exposure to contamination, further contamination of the surrounding environment, and cross contamination of equipment. Access to portions of the site and proposed work areas are already physically restricted by the site setting. Pylons and caution tape may be used to assist in keeping unauthorized personnel from entering the Work Zone during drilling and sampling activities.

Based on the anticipated levels of contamination to be encountered, the only "work zone" for the work proposed in the Investigation Work Plan will include the work area itself. For purposes of this Health and Safety Plan, the "Work Zone" is defined as the area within a 10-foot radius of the Geoprobe®.

Free phase solvents are not anticipated at this site. However, sorbent pads are to be readily available in case accidental spillage occurs.

A temporary decontamination area will be set up near each of the work areas to collect wash water during decontamination procedures. The liquids will be containerized for disposal in the sanitary sewer. Proper procedures for sampling, decontamination of equipment, disposal of contaminated equipment and disposal of contaminated soil and/or water samples will be followed at all times.

8. DECONTAMINATION

All disposable field equipment and clothing should be disposed of properly on site, if possible, or containerized in disposable plastic bags for disposal at GNY's office dumpster.

All contaminated, reusable equipment and tools will be cleaned on site. Any contaminated equipment returned to the office will be cleaned immediately.

Drilling tools and equipment will be steam cleaned prior to the commencement of drilling operations and after the advancement of each boring (including the last boring drilled at the site).

9. TRAINING

Any GNY personnel working at this site must have completed the basic 40-hour OSHA health and safety training course and, if applicable, the supplemental yearly 8-hour refresher courses.

All GNY personnel who will be working at this site must go over site specific details outlining the field procedures with the project manager prior to visiting and/or working at the site.

GNY personnel authorized to work at this site include:

Susan Cummins – Project Manager, Health & Safety Officer

Marjory Rinaldo-Lee, Partner-in-Charge, Project Oversight

Joseph Menzel - Interim Remedial System Installation, Geoprobe® Operator

Joshua Sandberg – Site Supervision, Sampling, Geoprobe® Operator

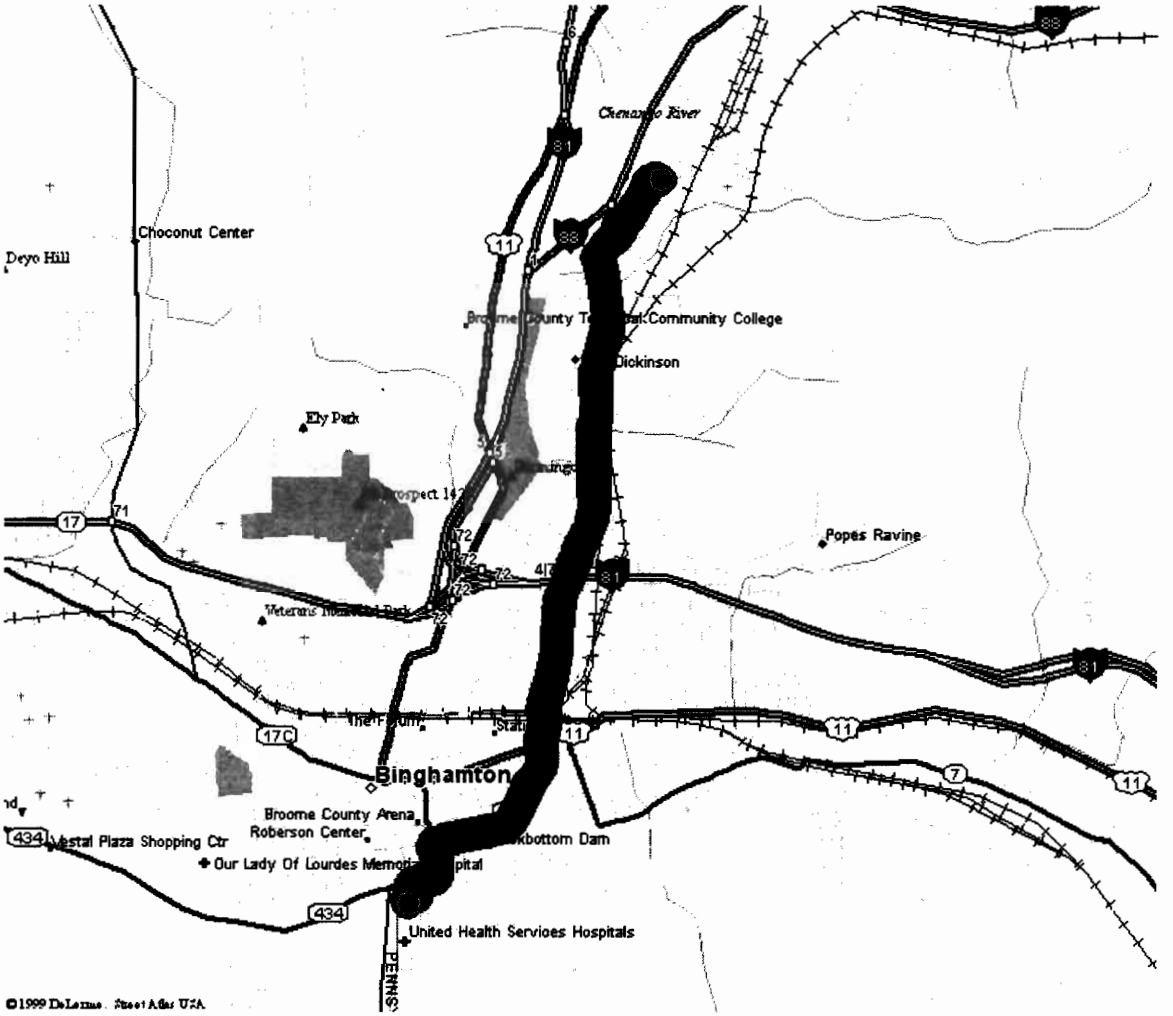
RECOMMENDED PPE
FORMER TRIPLE CITIES METAL FACILITY
NOWLAN ROAD
HILLCREST, NEW YORK

TASK TO BE PERFORMED	Anticipated Level of Protection	Coverall/ Tyvek	Glove In/Out	Air Purifying Respirator Cartridge/Can	Other Personal Protective Equipment
Geoprobe® Operator/Helper	D	Optional	LATEX /VINYL	IF NEEDED	Hardhat, steel-toed boots, eye and hearing protection
Collecting Soil Vapor Samples	D	Optional	LATEX /VINYL	IF NEEDED	
Collecting Groundwater Samples	D	Optional	LATEX /VINYL	IF NEEDED	Eye protection

HAZARD CHARACTERISTICS OF CONTAMINANTS OF CONCERN
POTENTIAL CONTAMINANTS AT FORMER TRIPLE CITIES METAL FACILITY
NOWLAN ROAD
HILLCREST, NEW YORK

Compound	CAS No.	Toxicity	Maximum Identified Concentration, ppbv	Physical Characteristic/Symptoms
Tetrachloroethene	127-18-4	Cancer-causing IDLH 500 ppm PEL 100 ppm 200 ppm ceiling 300 ppm 5-min/3-hour peak	110 ug/m^3 0.1 ppm (sub-slab soil gas)	Colorless liquid; chloroform or sweet ether odor; non-flammable / irritant to mucous membranes; drowsiness, headaches, nausea
Dichloroethene	540-59-0	IDLH 4000 ppm PEL 200 ppm	79 ug/m^3 0.02 ppm (sub-slab soil gas)	Colorless liquid; slight chloroform odor; non-flammable / irritant to mucous membranes, CNS depressant
Trichloroethene	79-01-6	IDLH 1000 ppm PEL 100 ppm 200 ppm ceiling 300 ppm 5-min/3-hour peak	13,000 ug/m^3 (2.4 ppm) (sub-slab soil gas)	Colorless liquid; chloroform odor, / irritant to mucous membranes, skin irritant; headache, nausea, visual disturbance
Vinyl Chloride	75-01-4	IDLH N.D. PEL 1 ppm Ceiling 5 ppm	ND	Colorless liquid with a pleasant odor in high concentrations / frostbite-like skin and eye irritant / weakness, abdominal pain, pallor or cyan of extremities

Map to Hospital



New York State Department of Environmental Conservation
Kirkwood Sub-Office, Region 7
1679 NY Route 11, Kirkwood, New York 13795-1602
Phone: (607) 775-2545 • **FAX:** (607) 775-2019
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

December 7, 2004

Susan Cummins
Geologic NY, Inc.
P.O. Box 350
Homer, New York 13077

Re: Former Triple Cities Metal Finishing Facility, BCP Site No. C704045
Investigation Work Plan.

Dear Ms. Cummins:

The New York State Department of Conservation and the New York State Department of Health have reviewed the document entitled, "Investigation Work Plan, Binghamton Realty, former Triple Cities Metal Finishing Facility, 4 Nowlan Road, Hillcrest, New York" dated June 2004. Based on our review, we have the following comments:

- Section 1, Introduction - the second sentence in this paragraph should be restated to "As a participant to a Brownfield Cleanup Program Application ("Application") signed June 2, 2004, and a perspective signatory to a Brownfield Site Cleanup Agreement ("Agreement"), Binghamton Realty proposes to define the nature and extent of contamination and implement appropriate remedial measures".

- Section 1.3, Previous Investigations - the table in this section should be revised to include the concentrations of the trichloroethene in units of ug/m^3.

- Section 1.4.1, Nature and Extent of Contamination - the third sentence in the first paragraph should be revised to "Trace to no volatile organic solvent compounds were detected in soils collected at Triple Cities Metal, and the concentrations in groundwater were similar to or lower than upgrading concentrations".

  The table titled Trichloroethene Concentrations in ug/L needs to have an explanation for the dash marks shown on the table.

- Section 2.1, Area and Contaminant of Concern - the list of compounds in this section needs to be expanded to include all compounds associated with the TO-15 analysis.

- Section 2.2, Summary of Proposed Work - the 10 proposed sampling locations must be collected in mini-canisters for laboratory analysis.

  Additional sampling locations will depend on encountering elevated volatile compounds with readings greater than 5 ppm, not 100 ppm as stated.

After installation if implants, 1 volume of the sample probe and tube must be purged prior to collecting the samples.

Flow rates for both purging and collecting samples should not exceed 0.2 liters per minute.

Samples collected to determine VOC contamination in the sub-slab will be analyzed in the lab by method TO-15. A detection limit of 5 ppb(v) is acceptable when determining the location of the source area(s).

- Section 2.2.2, Task #2, Obtain Soil Vapor Samples Below Concrete Floor Slab at Adjacent Properties - the first sentence in the fourth paragraph, remove the statement "except mini-canisters with flow controller valves pre-calibrated at the laboratory will be used". This statement is confusing now that mini-canisters will be used for all laboratory analysis.

- Section 2.2.3, Task #3, Obtain Soil Samples and Install Permanent Sub-slab and Subsurface Soil Vapor Monitoring Point Inside Triple Cities Metal Building - Soil samples placed in zip lock plastic bags and allowed to equilibrate for 10 minutes where the room temperature is approximately 70(F) degrees. Permanent subsurface soil vapor implants at depths to be determined from observations and data collected from sampling points will be installed inside the industrial building at locations to be determined in consultation with the State.

  To evaluate the potential for contamination directly beneath the building's foundation, the shallow depth of the sub-slab soil vapor clusters should be immediately (within six inches) below the concrete floor slab rather than one foot.

- Section 2.2.5, Task #5, Soil Vapor Extraction System- the homes requiring sampling and the on-site soil gas collection and analysis must be performed prior to activation of a vapor extraction system(VES).

  An Air Guide 1 Study must be performed on the emissions from the VES. The VES system should continue to run while the emission samples are being analyzed and during DEC's evaluation of the Air Guide 1 analysis provided that the sampling and the Air Guide 1 Study is performed in a timely manner.

  A section should be included to discuss how the performance of a VES system will be determined.

- Section 2.2.6, Task #6, Sample Monitoring Wells - the first sentence in the second paragraph must be deleted.

  Both conductivity and turbidity measurements must be recorded while purging the wells.

- Section 4, Quality Assurance/Quality Control - A Data Usability Summary Report (DUSR) must be prepared for all of the analytical work. Category B deliverables will be required for 10% of the soil and groundwater samples.

When performing indoor air sampling and analysis in the homes and businesses, selective ion methodology (SIM) must be performed to obtain a detection limit of 0.25 ug/m^3 for trichloroethene only. A detection limit of 1 ug/m^3 is acceptable for all of the other TO-15 compounds when sampling indoor air and outdoor ambient air. SIMs is not required for sub-slab and soil gas sampling provided that a detection limit of 1 ug/m^3 is obtained for all TO-15 compounds including TCE.

With regard to excess soil, soils must be tested to determine if the contaminants of concern are at levels less than TAGM 4046. Soils found to be below TAGM levels may be disposed on site. Soils exceeding TAGM levels must be properly contained and disposed off site in accordance with all applicable laws and regulations.

- Appendix B, Section 6.2-6.5 - A Generic Community Air Monitoring Plan (gCAMP) must be implemented during the proposed ground intrusive work. The Community Air Monitoring Plan presented in Appendix B should be revised to include all aspects of NYSDOH's gCAMP.

- Drawing No. 2 - please explain in the text of the work plan the purpose and/or activities occurring at boring location nos. 1-8 on this drawing. If they are not part of the proposed or past site investigations, they should be removed from this figure and legend.

- Drawing No. 3 - please clarify the site boundary on this drawing. It is unclear whether monitoring wells no. 1 and 5 and the proposed soil vapor cluster on the west side of the building are on site or off site.

Please revise the investigation work plan to address these comments and resubmit for approval.

Respectfully,

Thomas S. Suozzo, P.E.
Project Manager

TSS:kr

cc: Mary Jane Peachey
James Burke
P. David Smith
Glen Bailey
Gary Litwin, DOH
Geoffrey Laccetti, DOH
Jennifer Cunningham, DOH
Robert Denz, BCHD