FINAL
SITE MANAGEMENT PLAN
34 Freeman's Bridge Road Site
Site # 4-47-028
Soil Remediation Project

Work Assignment No.
D004445-3

Prepared for:

SUPERFUND STANDBY PROGRAM
New York State
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1.0 INTRODUCTION

This Site Management Plan (SMP) has been prepared for the 34 Freemans Bridge Road Site (Site), located in the Town of Glenville, New York (Site # 4-47-028). The Site location is shown on Figure 1. This work is being performed under Work Assignment No. D004445-3 of the State Superfund Standby Contract between New York State Department of Environmental Conservation (NYSDEC) and Earth Tech Northeast, Inc. (Earth Tech).

This SMP has been prepared in accordance with 6 NYCRR Part 375 and includes an Engineering Control/Institutional Controls (EC/IC) plan, a Groundwater Monitoring Plan, Soil Vapor Monitoring Plan and a Maintenance Plan. This SMP has been prepared to document the requirements and procedures for the Engineering Controls (ECs) and Institutional Controls (ICs) for the remediated portion of the 34 Freemans Bridge Road Site as shown in Figure 2. This SMP does not supersede any federal, state, or local statutes, regulations, or ordinances pertaining to the environment, and current and future holders of interests of property within the Site will remain obligated to comply with the same. This SMP will be used to facilitate the redevelopment of the Site and has been prepared to outline general soil management practices for redevelopment of the Site and future management thereof.

The NYSDEC, its agents, employees, or other representatives of New York State government may enter and inspect the Site in a reasonable manner and at reasonable times to assure compliance with the above-stated requirements.

This SMP has been prepared as a mechanism to assure that consistent and effective inspection and maintenance and enforcement activities are occurring and will occur in the future throughout the Site. These objectives and those detailed below will be achieved primarily through the implementation of EC/ICs, the groundwater monitoring plan and the maintenance practices defined in this SMP. Future owners of any portion of the Site will be bound by the provisions of this SMP relevant to the portion of the property they own or control on the Site.

1.1 OBJECTIVES

The specific objectives of this SMP are as follows:

- To describe the binding and enforceable ECs/ICs to be implemented that will facilitate future construction activities on the Site while at the same time maintaining the short-term and long-term effectiveness of the remedy established in the Record of Decision (ROD).

- To establish controls on any construction-related activities (deep excavations, borings, or foundations) impacting the defined area of the Site.

- To establish controls on groundwater use.

- To establish the requirements through which disturbance will be allowed.

- To identify the specific mechanisms that will be used to establish and enforce the ECs/ICs contained in this SMP.
- To define the monitoring requirements.
- To outline the maintenance requirements for the Site.

2.0 SITE SUMMARY

2.1 BACKGROUND INFORMATION

The Freeman's Bridge Site is located at 34 Freeman's Bridge Road in the City of Scotia, Schenectady County (Figure 1) and occupies approximately 13 acres, 7.5 acres of which were actively involved in the remedial action (Figure 2). The Site is bordered to the south and east by the Delaware and Hudson Railroad and Niagara Mohawk power line right-of-ways. Warner Creek forms the northern border with Maple Avenue and, to the west, the Site is bordered by Freeman's Bridge Road. The Mohawk River runs south of the Site and approaches to within 300 feet at its closest point. A mix of residential and commercial properties exist to the north and west of the Site with the nearest residential dwelling located approximately 450 feet west of the Site. Warner Creek, a Class A designated tributary of the Mohawk River drains the southeastern portion of the Site. The property is generally flat with an upward change in grade approaching the power and railroad right of ways.

The Freeman's Bridge property was used as a drum recycling facility as far back as the late 1950's when the Kitchton Company occupied the Site, taking in used 55-gallon drums, emptying residuals into pits and on the ground surface, cleaning the drums, and painting and recycling them for reuse. The property was later purchased in 1978 by Lyon Ventures, Inc. who also stored drummed waste on site, and received tons of fill and C&D (construction and debris) materials that were spread on at least 4 of the 7.5 acre parcel south of Warner Creek. The depth of the fill and debris was estimated to range up to approximately 6 to 8 feet, as seen in low laying areas in the southeastern portion of the Site. Large pieces of concrete and asphalt were visible at the fill boundary along the power right-of-way. Nearly all areas where residual materials were disposed of by the Kitchon Company were buried beneath the six to eight foot layer of C&D debris disposed of on-site by Lyons Ventures, Inc. Most recently, the Site was used as a surplus and salvage business dealing mostly with used office furniture which was stored in the on site building.

Intentional or incidental release of residual wastes from drum recycling and fill disposal activities at this Site have contaminated soil and shallow groundwater with significant levels of various solvents and polychlorinated biphenyls (PCBs) exceeding applicable standard and guidance values. Several investigations, with NYSDEC participation, occurred at the Site over the past fifteen years and have revealed, to some extent, the contamination at the Site.

- In 1984 and 1985 the Site was first listed on the Registry of Inactive Hazardous Waste Sites as a class 5 site due to the presence of drummed wastes. An emergency removal of 12 55-gallon drums was conducted after an April 1989 inspection of the property revealed some 80 55-gallon drums of waste. The Site was then taken back off the registry.

- In 1996, the property was considered for a voluntary clean-up program. Subsequent investigation work, including digging 30 test pits, by Touhey Associates and their consultant, The Environmental Design Partnership, revealed contamination present on

four of the 7.5 acre parcel, including PCBs in the sub-surface soils in excess of 100 parts per million (ppm).

- In 1996, New York State Department of Health (NYSDOH) sampled four residential and one commercial drinking well for volatile contamination. Results were non-detectable for the volatile compounds analyzed.

- In May 1999, NYSDEC observed three soil borings being drilled during construction activities for a new sewer line project. Borings contained gravel to approximately five feet followed by clay to a depth of thirteen feet. Samples taken from borings in front of the Site reported PCB levels less than 5 ppm and benzene, toluene, ethylbenzene, xylene (BTEX) constituents.

- In June, 1996, NYSDEC issued an Immediate Investigation Work Assignment that revealed surface and subsurface soil PCB concentrations at levels up to 33 ppm and 980 ppm respectively. Parsons Engineering Science, Inc., contractor to NYSDEC, installed 7 monitoring wells and numerous soil gas monitoring points as part of their investigation. Twenty-five surface and twenty-five sub-surface soil samples were collected and analyzed. Soil samples reported benzene (53 ppm), toluene (6,300 ppm), ethylbenzene (2,500 ppm), xylene (16,000 ppm), phenol (330 ppm). Groundwater at the Site was found to contain significant levels of dichloroethylene, benzene (150 ppb), toluene (1200 ppb), ethylbenzene (400 ppb), xylene (2000 ppb), phenol (12,000 ppb), and semi-volatile compounds. PCBs in groundwater were reported at levels up to 280 ppb. Free product was reported in one monitoring well (MW-4, 4 inches of NAPL). The investigation identified two areas with PCB surface soil levels greater than 1 ppm; 0.25 acre north of MW-6 and 0.33 acre east of MW-5.

- In December 1996, the Site was re-listed as a Class 2 Inactive Hazardous Waste Site by NYSDEC. Disposal of wastes on site as a result of previous activities are documented in the registry as benzene (D018), xylene (F003), toluene (F005), phenol (U188), ethylbenzene (F003) and PCBs.

- In 1997, the NYSDEC Division of Environmental Enforcement, which identified Lyons Ventures, Inc, completed a Potentially Responsible Party (PRP) search and 'all those associated' as the PRP's for the Freeman's Bridge Site.

Due to the nature of the on-site activities, and lack of record keeping, the following potentially hazardous substances (and potential sources/uses) appear to have been stored, used, and disposed of on the property at various times:

- Petroleum derived fuels and oils (lubricants, generators, equipment operations, stored drummed waste, drum recycling operations).

- Chlorinated solvents (cleaning agents, painting operations, stored drummed waste, drum recycling operations).

- PCBs (hydraulic oils, roadway oils and debris, stored drummed waste, drum recycling operations).

- Phenols (stored drum waste, drum recycling operations).

Based on the disposal and/or storage of some or all of these materials over the extensive period of active operation of this facility, the potential for release of one or more of these substances was considered high. NYSDOH identified the potential for exposure to contaminants in on-site soils at levels which pose a public health concern. Dense NAPL was reported in several on-site monitoring wells.

Based upon the data previously collected, the fill brought in by Lyon Ventures, Inc. has contributed to the previous owner's contribution of hazardous waste to the Site. Surficial and sub-surface soil sampling data indicated wide spread PCB contamination on-site. Shallow soils and fill at the Site were reported to be moderately permeable and presented a potential for contaminant migration. Historic aerial photographs indicated substantial activity around the building, and around an old loop road along the western side of the property. The shallow groundwater (groundwater table is approximately 3-8 feet below grade) was in contact with impacted fill materials containing BTEX and PCBs and created a potential contaminant transport pathway to nearby residential wells and possibly to the Mohawk River. Downgradient monitoring points installed by others reported Site contaminants. Prior hydrogeologic data supports localized shallow groundwater direction toward the north.

2.2 REMEDIAL OBJECTIVES

Section 6.0 of the ROD describes the remediation goals for the Site as stated in 6 NYCRR Part 375-1.10. It states, that at a minimum, the selected remedy "must eliminate or mitigate all significant threats to the public health and/or the environment presented by the hazardous waste disposed at the Site through the proper application of scientific and engineering principles."

It further states that the following remediation goals for the Site, as taken directly from the ROD:

To eliminate or reduce to the extent practicable:

- Exposures of persons at or around the Site to polychlorinated biphenyls, volatile and semi-volatile compounds, and metals in wastes, contaminated surface soil, subsurface soil, soil vapor, groundwater, and non-aqueous phase liquids;

- The release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards;

- The release or migration of contaminants from Site soils and wastes into groundwater, surface water, and ambient air.

Further, the remediation goals for the Site include:

- Attaining to the extent practicable, ambient groundwater and surface water quality standards and applicable cleanup criteria and guidelines for soil.

- Eliminating, to the extent practicable, any potential for contaminated groundwater which does not meet NYSDOH Part 5 Drinking Water Quality Standards, to be used as a drinking water supply.

As soils and waste materials are the primary contaminated media at the site, site-specific and contaminant-specific cleanup goals were established. The specific goals are listed below:

Total Carcinogenic SVOCs in soil – 10 ppm
Total SVOCs in soil – 500 ppm
Total VOCs in soil – 10 ppm
Total PCBs in surface soil – 1 ppm
Total PCBs in subsurface soil – 10 ppm
Lead in soil – 1200 ppm
Total Chromium in soil – 50 ppm
Mercury in soil – 2 ppm

2.3 PREVIOUS INVESTIGATIONS

The following is the history of investigations and reports prepared for the Site and upon which the NYSDEC ROD was based:

- Immediate Investigation Work Assignment (No. D002478-43) Letter Report (Parsons, July 1996);
- Remedial Investigation Work Plan - 34 Freeman's Bridge Road Site (Earth Tech, March 2000);
- Remedial Investigation Report, (Earth Tech, February 2004);
- Feasibility Study Report (Earth Tech, February 2004).

2.4 DESCRIPTION OF THE SELECTED REMEDY FROM THE ROD

The NYSDEC's March 31, 2004 ROD for the 34 Freemans Bridge Road Site includes the following remedial components:

- Excavation, on-site low temperature thermal treatment, and on-site stabilization of approximately 71,000 tons of contaminated soils, wastes and debris.

- Collection and treatment of contaminated groundwater from the main contaminated area.

- Site restoration using treated and stabilized soils as backfill.
- Institutional controls and restrictions on the use of the property and future use of groundwater.
- Monitoring of remaining groundwater contamination to confirm success of source area remedy.

2.5 REMEDIAL ACTION

The remediation was performed pursuant to the NYSDEC ROD for the 34 Freeman's Bridge Site, dated March 31, 2004. The basis of the ROD is the Remedial Investigation (RI) Report (January 2004) and Feasibility Study Report (February 2004).

In April 2006, Earth Tech prepared bid documents and provided bid support for the selected remedy. Remedial construction of the preferred alternative was awarded to DA Collins Environmental (DAC) (Contractor) in June 2006 and required a substantial completion date of October 7, 2007. DAC subcontracted ESMI of New York to supply direct thermal treatment of non-hazardous soils and TD*X Associates to supply in-direct thermal treatment of TSCA regulated wastes. Dual thermal units were mobilized to the site, where extensive performance testing, required under New York State's Interstate Regulatory Review Committee (ITRC) and United States Environmental Protection Agency (USEPA) TSCA regulations, was performed to obtain operational approval.

The thermal desorption Proof of Performance (POP) tests were conducted under direct oversight and coordination with the USEPA, NYSDEC and NYSDOH. The performance testing goals were developed and achieved to assure that each thermal unit could operate at full capacity under a safe condition with no adverse impact to both the health and safety of the public or the environment. Shakedown and performance testing was conducted during February and March 2007. Each unit completed their respective POP tests successfully. However, shortly after the TD*X POP test was completed, but before the test results had been received, TD*X experienced a system failure and subsequent shut down. Analysis of the situation revealed that certain areas of the site contained a significant quantity of solid phase organic chemicals in the form of asphalt and roofing material. Since the TD*X design was intended to address soil contaminated with organic compounds that are liquids at room temperature, the semi-solid tar restricted and eventually ceased the flow of gasses and liquids through portions of the system. This condition created a significant production of unmanageable condensate within the in-direct thermal unit impacting both the treatment unit production rate and operating costs. Due to this complication, the alternative remedy – off-site disposal of TSCA contaminated soils at an approved landfill – was selected.

An extensive community air monitoring program was designed and implemented to assure public protection and detection of any off-site air-borne contaminants. In addition to treating over 75,000 tons of hazardous and non-hazardous soils, over 9 million gallons of groundwater from the Site operations was treated by the on-site waste water treatment plant and discharged as per

the NYSDEC approved site Dewatering Plan to the Warner's Creek. This process was monitored daily to ensure no adverse effects to the environment would be realized due to Site construction activities.

The Final Remediation Report documents construction activities for the Soil Remediation Contract and provides certification that the construction, excavation, treatment and backfill activities associated with the soil remediation at the Site were performed in substantial conformance with the contract documents. The report includes as-built drawings prepared by the Contractor, as well as transporter and disposal manifests for waste removed, analytical data, copies of daily field reports and photographs, and other detailed information.

No treatment systems or other facilities were left in place at the completion of the project, and the site was restored as an open, grass-covered field, except for a gravel drive and parking area.

3.0 ENGINEERING AND INSTITUTIONAL CONTROLS

3.1 ENGINEERING CONTROLS

Engineering Controls (ECs) are physical mechanisms which restrict access to the Site and Site contaminants. Engineering Controls include any physical barrier or methods employed to actively or passively contain, stabilize, or monitor hazardous waste, restrict the movement of hazardous waste to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to hazardous waste.

Engineering controls for this site include, but are not limited to:

- Site Access Controls – The existing six foot high chain link fence will be maintained as part of the engineering control plan. Future modifications to the exact location of the chain link fence will be allowed during Site construction until the time of development for commercial and/or industrial purposes.

- Signage – "Posted" signs will be placed on the perimeter fence to notify the community that the Site has restricted access and that no trespassing is allowed until the time of development for commercial and/or industrial purposes.

- Monitoring Well Replacement – The monitoring wells decommissioned during the Site remediation have been replaced and additional wells installed to monitor the effectiveness of the remedial program on the groundwater at the Site.

- Areas with SCG Exceedences: As part of the excavation process at the Site, several areas that did not meet SCG guidelines were left in place since further excavations were limited due to access, engineering limitations, and intrusion into the semi-confining clay unit between the lower and upper aquifer at the site. These areas are marked on Figure 2 and presented in Table 1. Any side wall areas that had sample results that exceeded SCG guidelines and could not be further excavated were lined with poly-coated plastic as a marker, then backfilled over the liner.

3.2 INSTITUTIONAL CONTROLS

Institutional controls are non-physical mechanisms which restrict the use of a site, limit human exposure, and prevent any actions which would threaten the effectiveness or operation and maintenance of a remedy at or pertaining to the site. Under NYSDEC policy, institutional controls apply when contaminants remain at a site at levels above the SCGs that would otherwise allow unrestricted human use of the property. Institutional controls may include restrictions on the use of structures, land and groundwater as well as deed notices and covenants.

Institutional controls to protect human health and the environment will be implemented at the Site through an Environmental Easement prepared by the NYSDEC and presented in Appendix A. The following institutional controls will be implemented and enforced through a

deed restriction associated with the Environmental Easement and approved by the NYSDEC:

1. Site Use Restriction. The owner of the Site will be prohibited from using it for purposes other than for commercial and/or industrial use and the services associated with such use. Future use of the Site is expected to be commercial in nature. The Environmental Easement shall be binding on all future owners of the property and will consign consent to enforcement by the NYSDEC of all prohibitions and restrictions and agreement not to contest the authority of the NYSDEC to seek enforcement.

2. Soil Management Plan. Further excavation of soils at the property or removal of soil from the property will not be conducted unless undertaken in accordance with a Soil Management Plan as prepared by the developer, to be submitted to and approved by the NYSDEC prior to initiating any soil excavations. This will describe procedures for soil excavation and removal of soils from the property that are designed to protect human health and the environment. This plan will include, at minimum:

- A provision for prior notification and approval of NYSDEC and NYSDOH for any intrusive activities that could result in exposure to subsurface soils, using Figure 2 and Table 1 as a guideline in determining where contamination is still present on the Site. In addition, data from any post excavation monitoring efforts are to be reviewed prior to any intrusive activities.

- Protocols and procedures for sampling soils to determine the concentration of contaminants.

- A description of health and safety requirements and general procedures to be followed during any Site excavation of soils. This should be designed to minimize the possibility that personnel at the facility and the surrounding community will be exposed to Site contaminants during the excavation of soil.

- In the case of off-site soil disposal, a hazardous waste determination protocol to verify whether deposition into a secure hazardous waste landfill or a solid waste landfill is necessary.

- A provision for a submittal of a construction completion report to the NYSDEC for all activities conducted pursuant to the Soil Management Plan.

3. Groundwater Use Restriction. The use of groundwater underlying the Site will be prohibited until deemed acceptable by the NYSDEC as determined by long term monitoring.

4. Groundwater Monitoring. The Site owner will monitor groundwater quality at each of the Site monitoring wells until data indicate that groundwater standards have been achieved. Each of the Site wells are proposed to be sampled quarterly during the first two years, to obtain a post-remediation baseline data set, and annually thereafter. After achieving groundwater standards for two consecutive years, NYSDEC will evaluate the need for continuing annual monitoring.

5. Notification: An IC notification in accordance with the Soil Management Plan will

be made to the NYSDEC whenever intrusive activities are to be performed on the Site area that requires contaminated soil to be disturbed. The purpose of the IC notification is to notify the NYSDEC of any intrusive activities that will be performed on Site and to ensure that the controls remain effective over time.

6. Annual Certification Report: The Site owner will certify on a yearly basis that the institutional controls are in place and remain effective for the protection of public health and the environment. The Site owner will identify any activities undertaken pursuant to the SMP during the past year, and identify anticipated forthcoming activities that may require implementation of the SMP.

- The annual certification report will be prepared by a professional engineer or other qualified environmental professional, which must certify that the institutional controls and/or engineering controls employed are unchanged from the previous certification, unless otherwise approved by the Department; in place and effective; performing as designed; and that nothing has occurred that would impair the ability of the controls to protect the public health and environment; or constitute a violation or failure to comply with any maintenance plan for such controls. The report will include:

1. Groundwater monitoring and any other analytical results
2. Analysis of groundwater contamination concentrations, fate and transport
3. Description of site conditions and maintenance activities
4. Recommendations for any corrective measures or changes in the Site Maintenance Plan.

The certification report will be distributed to:

NYSDEC
Michael Mason
Project Manager
625 Broadway – 12th Floor
Albany, New York 12233

Town of Glenville
Division of Public Works
375 Vley Road
Glenville, New York 12302

Mr. Bruce Donovan
New York State Department of Health
Capital District Regional Office, Environmental Health Program
One Fulton Street
Troy, NY 12180

After NYSDEC completion of the Environmental Easement, it will be recorded and filed with the Schenectady County Clerk, and proof of the recording and filing will be submitted to the NYSDEC within thirty days of the NYSDEC's completion of the Environmental Easement.

4.0 MONITORING PLAN

4.1 GROUNDWATER MONITORING

To monitor the effectiveness of the remedial action and the Site's groundwater quality, each of the Sites monitoring wells will be sampled quarterly during the first two years of the monitoring plan, and annually thereafter. During the remediation process, a total of 24 monitoring wells were decommissioned due to their locations being within the limits of work (ie. soil excavation). All wells that were decommissioned during the remediation process were decommissioned in conformance with ASTM D 5299 – Standard Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities. Grout was added to the borehole at the same time as the casing was being pulled, letting the grout fill in any created space. Any waste generated from the decommissioning of the wells was properly disposed of off-site.

A total of 20 wells will be used for long-term monitoring of the groundwater: seven pre-existing wells and 13 new monitoring wells. The seven pre-existing site-monitoring wells designated to be sampled include MW-12, MW-18, MW-21D, well nest MW-16 and MW-16D, and well nest MW-19 and MW-19D. In addition, nine of the new wells were installed for the replacement of nested pairs decommissioned during the remediation process The nine replacement wells are as follows:

- Well nest MW-15 and MW-15D, located in the far northwest corner of the Site property, near the intersection of Garmin Road and Freemans Bridge Road.
- Well nest MW-20 and MW-20D, located just south of the northern Site border, directly south of the Veterinary Clinic.
- Well nest MW-23 and MW-23D, located in the northeast portion of the Site property, adjacent to Warner Creek.
- Well nest MW-11 and MW-11D to monitor the deep aquifer at the eastern edge of the Site.
- MW-21, reinstalled because it was decommissioned during the soil remediation while the deeper nested well (MW-21D) remained.

In addition to the wells being replaced, three additional shallow wells were installed in the areas of the Site excavation where NAPL was observed during the remediation process. These three wells are 4-inch PVC wells with a 10-ft screen interval installed 1 foot into the silt/clay layer. The locations of these wells are presented on Figure 3 and are located in cells J13 (MW-30), I16 (MW-31), and I7 (MW-32) as designated on the excavation grid from the remedial action.

A shallow well (MW-33) is also placed in the location where the highest groundwater contamination was noted prior to Site remediation (the former MW-8).

The deep wells were screened at the approximate same depth as the deep wells installed during the RI, ranging from 30 feet below ground surface (bgs) to 65 feet bgs. If there were no deep wells in that area, then they were screened 1 foot below the silt/clay layer, as determined by split spoon sampling, and in most cases having 10 feet of screen. The shallow wells were screened 1 foot above the silt/clay layer. Since this layer varies across the site, continuous split spoon samples were collected during well installation to verify the elevation and thickness of the silt/clay layer.

After completion of well installation and development, the well locations and construction details (grade elevation, measuring point elevation, and top of protective casing elevation) were surveyed and added to the site map (See Figure 3). Details of the monitoring well installations will be presented in the first Annual Certification Report.

4.2 GROUNDWATER SAMPLING AND ANALYSIS

To evaluate the impact of the remedial actions at the Site, groundwater monitoring will be done at the 20 monitoring wells identified in Section 4.1 and shown in Figure 3. Groundwater monitoring will include the collection of a full round of groundwater level measurements with an oil/water interface probe. The groundwater levels will be used to develop a potentiometric map for both the shallow and deep groundwater zones to determine the groundwater flow pathways. The monitoring will also determine if NAPL exists in any of the wells. If NAPL is encountered, then the NAPL will be recovered (e.g., hand bailing, placement of adsorbent socks).

Following collection of the water level measurements, groundwater samples will be collected from the seven existing site wells and 13 newly installed monitoring wells. Prior to sampling, the wells will be opened and allowed to equilibrate. The wells will then be purged with a peristaltic pump using new dedicated Teflon tubing until a minimum of three well volumes have been removed from each well. Purge water is permitted by the NYSDEC to be disposed of on Site.

Groundwater samples will be collected from the wells by using a peristaltic pump or dedicated bailer, taking care to cause minimal agitation or turbulence. Upon retrieval, the samples will be transferred immediately to the appropriate laboratory-supplied containers. Once filled, the containers will be placed immediately in ice-filled coolers for shipment to the laboratory. No filtered groundwater samples will need to be collected.

The samples will be submitted to a NYSDOH Environmental Laboratory Approval Program (ELAP) approved laboratory under standard chain of custody procedures along with a blind field duplicate, trip blank and a temperature blank, as well as sufficient sample quantity for site specific matrix spike/matrix spike duplicate analysis. All groundwater field samples and quality control samples will be submitted for Target Compound List (TCL) VOCs (ASP, CLP Method 95-1), TCL SVOCs (ASP, CLP Method 95-2), Target Analyte List (TAL) Metals plus Cyanide (ASP, CLP Method 95-5), and PCBs and pesticides (ASP, CLP Method 95-3), with Full NYSDEC Category B deliverables for all analyses. Groundwater samples collected will be shipped, following QA/QC procedures to a NYSDOH certified laboratory following the NYSDEC Analytical Protocols.

Each of the site wells will be sampled quarterly during the first two years, to obtain a post-remediation baseline data set, and annually thereafter. The analytical parameters will be changed if deemed appropriate by the NYSDEC. Based on analytical results, select wells may be chosen to be sampled at a more frequent interval. After achieving groundwater standards for two consecutive years, NYSDEC will evaluate the need for continued annual monitoring.

To facilitate Plume Management Monitoring (PMM) and evaluate the results of the remedial action, groundwater elevations will be contoured for both the shallow and deep site aquifers during each sampling event and presented in the annual report. Data from the quarterly/annual samplings will be used to evaluate the post remedial aquifer conditions and determine the primary direction of groundwater flow.

In addition, analytical data for the contaminants of concern in the groundwater at the site will tabulated and graphed to assess the effectiveness of the monitored natural attenuation remedy for the groundwater. Any increasing or decreasing trends will be noted and related to the site groundwater flow conditions. Due to the varying nature of the flow at the site, analytical groundwater flow and solute fate and transport modeling is not recommended for evaluating the effectiveness of the remediation, due to the highly disturbed nature of the overburden aquifer. Statistical analysis will be performed instead to evaluate spatial and temporal trends. The analysis will include, at a minimum, an areal distribution of contaminants and geochemical parameters for both the shallow and deep groundwater aquifer units and the vertical distribution of contaminants and geochemical parameters along the primary groundwater flow path extending from an upgradient well pair, through the Site and terminating at the groundwater discharge location (ie., Mohawk River to the south or Warner Creek to the east, depending on the groundwater flow path). All monitoring data will be evaluated in regards to the NYSDOH Part 5 Drinking Water Quality Standards. The results of this analysis will assist in determining the effectiveness of the remedial action and provide the basis for future recommendations (ie. No Further Action, continued monitoring, or if additional remedial measures are required).

4.3 SOIL VAPOR COLLECTION AND ANALYSIS

Earth Tech is proposing the installation of approximately 20 temporary soil vapor sampling points, using the grid pattern set for the soil remediation at the Site as guidance, as shown in Figure 4. Based on NYSDOH suggestions, the proposed soil vapor locations are situated along the perimeter of the site, primarily in areas where there is neighboring development (residential/commercial/industrial). Several points are proposed for within the grid to gauge post-remediation soil vapor concentrations in areas with residual contamination. The actual locations of the soil vapor points will be dependant on field conditions at the time of installation. See Figure 4 for the proposed locations.

The installation of the temporary soil vapor probes and collection of soil vapor samples will be conducted in accordance with the NYSDOH Final Draft Guidance for Evaluating Soil Vapor Intrusion (October 2006/February 2005). All soil vapor gas samples will be analyzed by an ELAP certified lab for volatiles using EPA Method TO-15. A minimum reporting limit of 1 microgram per cubic meter (ug/m^3) will be achieved for all analytes, as feasible based on dilution

requirements, and all results will be reported in ug/m^3.

After samples are collected, the soil vapor locations will be surveyed by Earth Tech and results of the analysis reported in a letter report following the vapor study and in the Annual Certification Report.

5.0 MAINTENANCE PLAN

This maintenance plan (MP) is intended to serve as a summary and guide for all the post-closure monitoring, inspection and maintenance at the Site. All aspects of the Site inspection and maintenance procedures shall be performed in accordance with this MP until the NYSDEC approves site closeout, even after 34 Freemans Bridge Road property ownership is transferred and the property developed.

5.1 MAINTENANCE ACTIVITIES

The existing site perimeter fencing, including gates and signs, shall be inspected annually to ensure security until the site is transferred to new owners and the property developed. Any damage that is observed shall be recorded and repaired immediately by restoring or replacing the damaged materials.

In addition, all monitoring wells will be inspected annually, until NYSDEC approved site closeout. If there is any damage to the casings or well, this will be repaired.

5.2 REPORTING

All data generated during the reporting periods will be sent to NYCDEC in digital format in accordance to the NYSDEC database standard.

A letter report shall be generated within 90 days of completion of each monitoring event which will summarize the groundwater analytical results. Monitoring reports shall present a comparison of the latest groundwater conditions with the New York State groundwater quality regulations. Additionally, all current and historical data generated in association with this SMP shall be presented in graphical and/or tabular format to highlight any groundwater quality trends that may arise.

The annual certification report will be generated that summarizes the results of the long-term monitoring program and confirms that the conditions of the IC/ECs are being met. An inspection form will be developed for the site for the assessment of overall site conditions or IC/EC's conditions, such as monitoring well and fence conditions. This completed form will be included with each annual report. The first annual report shall be submitted 90 days following the completion of the fourth quarter groundwater sampling event.

5.3 SITE CLOSEOUT

Site close out will occur when all remediation has been completed and NYSDEC no longer has any oversight responsibility for the site in accordance with section 1.2(b) of DER-10 (NYSDEC, 2001). Site closeout needs to have two conditions met: PMM is no longer required and that ICs/ECs are no longer necessary.

The decision to discontinue PMM is appropriate when the following conditions have been met:

- Contaminant levels in the sentinel wells have not exceeded groundwater cleanup levels at any time during the monitoring program;

- The contaminant plume length has been demonstrated to be stable or shrinking; and

- The contaminant concentrations along the centerline of the plume have been demonstrated to be sufficiently decreasing.

If the above criteria have been met, then, at the approval of the NYSDEC, PMM of the Site will be terminated.

Institutional controls or engineering controls are no longer necessary when the last annual project evaluation demonstrates that the requirements of the ROD have been met. Specifically, the project evaluation should show that:

- No further exposures of persons at or around the site to polychlorinated biphenyls, volatile and semi-volatile organic compounds, and metals in contaminated residual subsurface soil, soil vapor, groundwater, and non-aqueous phase liquids exists;

- No further release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards exists; and

- No further release or migration of contaminants from site soils into groundwater, surface water and ambient air exists.

Site closeout will consist of conducting a final project evaluation and preparing a final report consistent with an annual project evaluation. The final report shall include data tables and graphs which illustrate that the requirements of the ROD have been met. If all the necessary requirements have been met, then upon approval by the NYSDEC, the remedial process can be discontinued and the site is considered closed out.

TABLES

Table 1
34 Freeman's Bridge Road
NYSDEC Site # 4-47-028

Verification Soil Sample Failure Summary

	Site Specific Cleanup Criteria Established											
	Analyte	Total VOC	Total SVOC	Total C.SVOC	Total PCBs	Aroclor 1248	Aroclor 1254	Mercury	Lead	Chromium	Pass/Fail	Corrective Action
Grid	Units	µg/Kg-dry	µg/Kg-dry	µg/Kg-dry	µg/Kg-dry	µg/Kg-dry	µg/Kg-dry	µg/g-dry	µg/g-dry	µg/g-dry		
Location	SCG	10,000	500,000	10,000	1,000 Surf/10,000 S-Surf	1,000 Surf/10,000 S-Surf		2.0	1200.0	50.0		
A3	VER A3 SW 071907	9070	49900	ND	***7300***	***7300***	ND	ND	55.6	16.2	**Fail**	**Further excavation not possible due to proximity of gas main.**
D11	VER D11SW 081307	31	157250	***53300***	***1090***	560	530	0.12	80.7	20.3	**Fail**	**Edge of site. Poly sidewall before backfill.**
D17	VER D17 SW 050407	10	22900	***10300***	ND	ND	ND	0.262	480	10.1	**Fail**	**Edge of site. Poly sidewall before backfill.**
E2	VER E2 SW 052507	30	46,810	***21,260***	480	140	340	0.28	72.1	16.7	**Fail**	**Further excavation not possible due to Proximity of Road.**
E13	VER E13 SW 042307	ND	***546700***	***169000***	***8700***	***8700***	0	0.501	509	***75.5***	**Fail**	**Edge of site. Poly sidewall before backfill.**
I3	VER I3A SW 083007	33	ND	ND	***1600***	ND	ND	ND	3.5	10.2	**Fail**	**Additional excavation not possible due to proximity of power poles.**
J13	VER J13A 080207	***1144000***	4940	ND	ND	ND	ND	0.03	8.47	8.42	**Fail**	**Further excavation not possible due to water interface.**

Additional Areas where NAPL/DNAPL was visually observed during excavation:

Grid Location: F16, G3, G6, G15, G16, G17, H6, H7, I6, I7, I16, I17, J12

FIGURES

MAP REFERENCE:
U.S.G.S. 7.5 MINUTE SERIES, SCHENECTADY

0' 2000' 4000'

JUNE 2005 SCALE 83060

N

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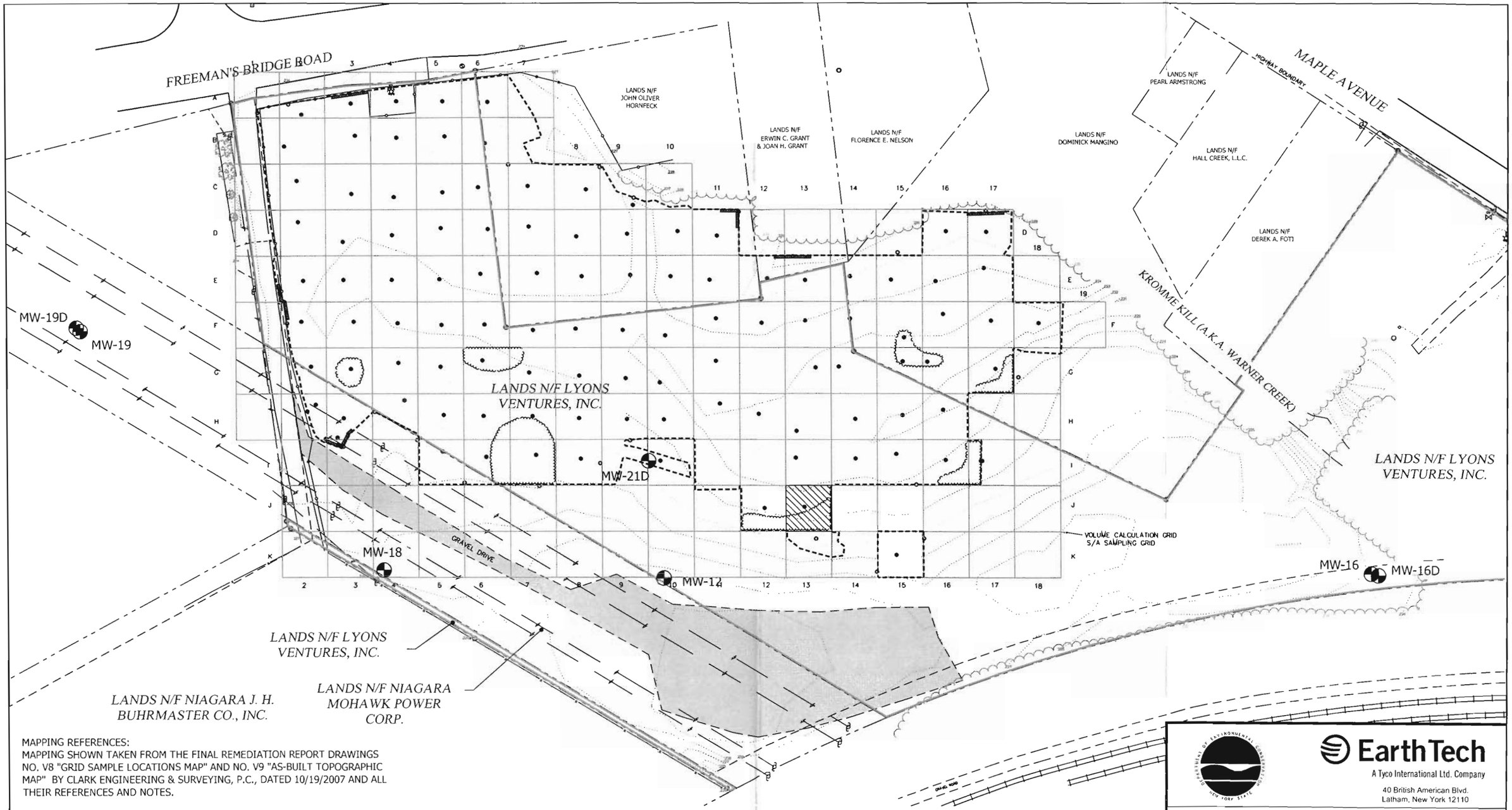
Figure 1
SITE LOCATION MAP
New York State Department of Environmental Conservation
Freeman's Bridge Road Site
Scotia, New York



MAPPING REFERENCES:
MAPPING SHOWN TAKEN FROM THE FINAL REMEDIATION REPORT DRAWINGS NO. V8 "GRID SAMPLE LOCATIONS MAP" AND NO. V9 "AS-BUILT TOPOGRAPHIC MAP" BY CLARK ENGINEERING & SURVEYING, P.C., DATED 10/19/2007 AND ALL THEIR REFERENCES AND NOTES.

LEGEND

- MW-19D — EXISTING MONITORING WELL LOCATION
- EXCAVATION LIMITS
- SIDEWALL SAMPLE LOCATION
- BOTTOM SAMPLE LOCATION
- APPROXIMATE OBSERVED NAPL
- SIDEWALL SAMPLE VOC VALUE OVER CLEAN-UP OBJECTIVE LEVEL
- BOTTOM SAMPLE VOC VALUE OVER CLEAN-UP OBJECTIVE LEVEL

PLAN

Scale in Feet
0 50' 100'

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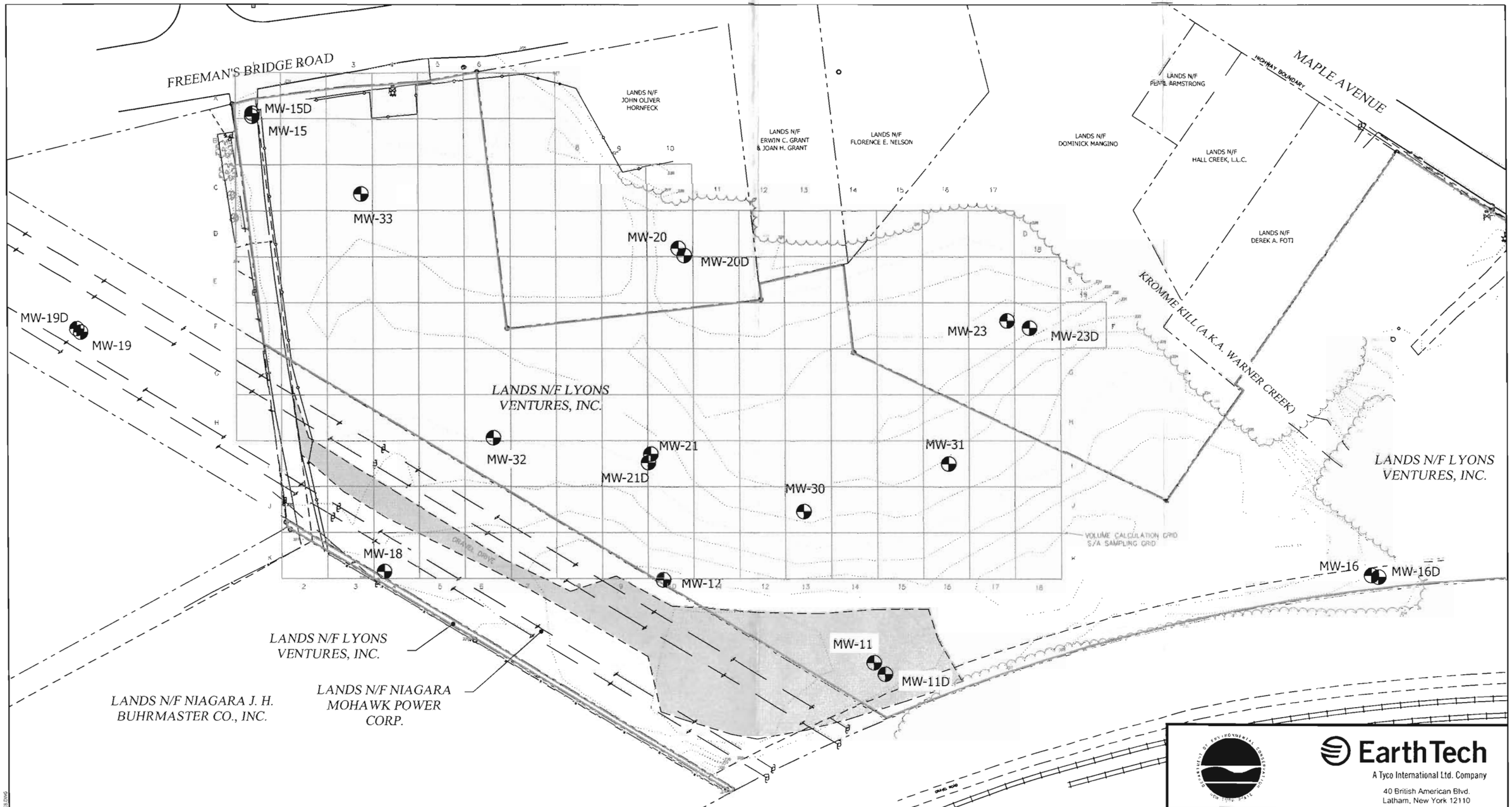
FIGURE 2
AREA OF REMAINING CONTAMINATION

SITE MANAGEMENT PLAN
34 Freeman's Bridge Road Site
Site # 4-47-028
Soil Remediation Project

Town of Glenville — Schenectady County, New York

DATE: DECEMBER, 2007	SCALE: 1"=100'
PROJECT NO.: 93693	FIGURE 2



LEGEND

MW-19D — MONITORING WELL LOCATION

PLAN

Scale in Feet

0 50' 100'

MAPPING REFERENCES:
1) MAPPING SHOWN TAKEN FROM THE FINAL REMEDIATION REPORT DRAWINGS NO. V8 "GRID SAMPLE LOCATIONS MAP" AND NO. V9 "AS-BUILT TOPOGRAPHIC MAP" BY CLARK ENGINEERING & SURVEYING, P.C., DATED 10/19/2007 AND ALL THEIR REFERENCES AND NOTES.

2) MONITORING WELL LOCATIONS BY SURVEY PERFORMED BY EARTH TECH, MAY 8, 2008

FILE NAME = V:\WORK\93693\CAD\SITE MANAGEMENT PLAN\MAP FIGURES.DWG

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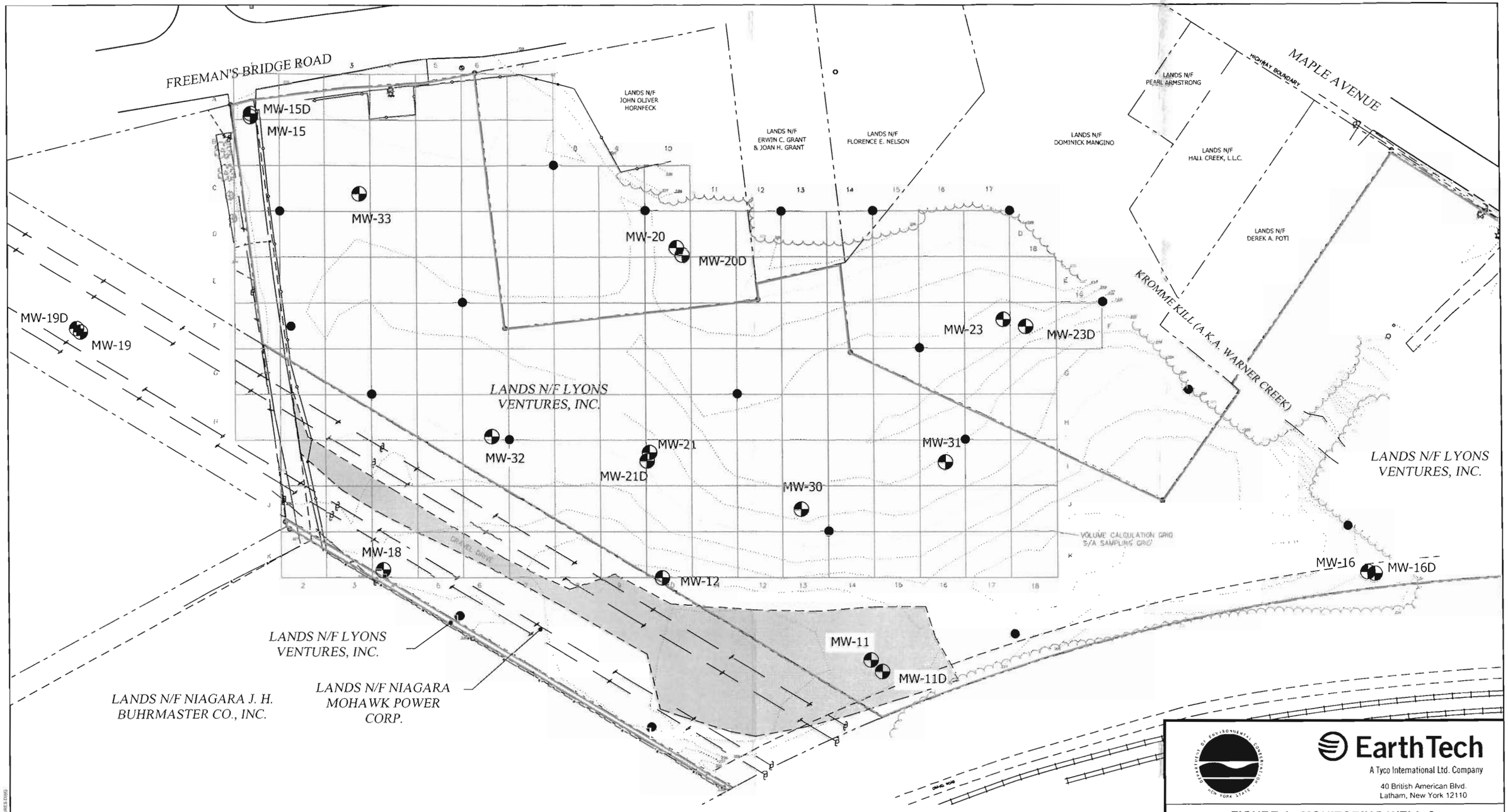
FIGURE 3
MONITORING WELL LOCATIONS

SITE MANAGEMENT PLAN
34 Freeman's Bridge Road Site
Site # 4-47-028
Soil Remediation Project

Town of Glenville	Schenectady County, New York
DATE: MAY, 2008	SCALE: 1"=100'
PROJECT NO.: 93693	FIGURE 3



LEGEND

MW-19D — MONITORING WELL LOCATION

PROPOSED VAPOR POINT LOCATION

PLAN

Scale in Feet

0 50' 100'

MAPPING REFERENCES:
1) MAPPING SHOWN TAKEN FROM THE FINAL REMEDIATION REPORT DRAWINGS NO. V8 "GRID SAMPLE LOCATIONS MAP" AND NO. V9 "AS-BUILT TOPOGRAPHIC MAP" BY CLARK ENGINEERING & SURVEYING, P.C., DATED 10/19/2007 AND ALL THEIR REFERENCES AND NOTES.

2) MONITORING WELL LOCATIONS BY SURVEY PERFORMED BY EARTH TECH, MAY 8, 2008

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FIGURE 4 - MONITORING WELL & PROPOSED VAPOR POINT LOCATIONS

SITE MANAGEMENT PLAN
34 Freeman's Bridge Road Site
Site # 4-47-028
Soil Remediation Project

Town of Glenville — Schenectady County, New York

DATE: MAY, 2008	SCALE: 1"=100'
PROJECT NO.: 93693	FIGURE 3

APPENDIX A

Environmental Easement