FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC SITE NO. E932132

Prepared for:

Town of Lockport
6560 Dysinger Road
Lockport, New York

Prepared by:

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ENGINEERING • LAND SURVEY • MAPPING • ENVIRONMENTAL

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1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This document is required as an element of the remedial program at the Former Electruk Battery Site (hereinafter referred to as the "Site") under the New York State (NYS) Environmental Restoration Program (ERP) administered by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with the State Assistance Contract (SAC) No. C303480, Site No. E932132 which was executed on September 4, 2007.

1.1.1 General

Town of Lockport entered into a SAC with the NYSDEC to remediate a 1.4-acre property located in the Town of Lockport, in Niagara County, New York. This SAC requires the Town of Lockport to investigate and remediate contaminated media at the Site. A map showing the location of the Site is provided in Figure 1 and the boundaries of this 1.4-acre Site are provided in Figure 2. The boundaries of the Site are more fully described in the metes and bounds site description included as Appendix B. The Environmental Easement for the Site has not yet been prepared; however, it will be included as Appendix C once it is prepared.

After completion of the Interim Remedial Measures (IRMs) described in the Record of Decision (ROD), some contamination was left in the surface at this Site, which is hereafter referred to as 'remaining contamination'. This Site Management Plan (SMP) was prepared to manage remaining contamination at the Site in perpetuity or until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by TVGA Consultants (TVGA), on behalf of Town of Lockport, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2002, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) that are required by the Environmental Easement for the Site.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. Institutional Controls have been incorporated into the site remedy to provide proper management of remaining contamination in the future to ensure protection of public health and the environment. An Environmental Easement

will be granted to the NYSDEC, and recorded with the Niagara County Clerk, will require compliance with this SMP and all Institutional Controls placed on the Site. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ICs. This SMP specifies the methods necessary ensure compliance with all ICs required by the Environmental Easement for contamination that remains at the Site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all Institutional Controls; and (2) performance of periodic inspections and submittal of Periodic Review Reports.

To address these needs, this SMP includes an Institutional Control Plan for implementation and management of ICs, which includes a reporting plan for the submittal of data, information, recommendations, and certifications to NYSDEC.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, and certification to the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of Environmental Conservation Law and the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of 6NYCRR Part 375 and the SAC No. C303480 (Site No. E932132) for the Site, and thereby subject to applicable penalties.

At the time the SMP was prepared, the SMP and all site documents related to Remedial Investigation and Remedial Action were maintained at the NYSDEC Region 9 office in Buffalo, New York.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

1.2.1 Site Location and Description

The site is located in the Town of Lockport County of Niagara, New York and is identified as Block 0001 and Lot 055 on the Town of Lockport Tax Map. The site is an approximately 1.4-acre area bounded by undeveloped land and commercial business to the north and west, Enterprise Drive to the south, Polycom-Huntsman Inc. to the east across IDA Drive (see Figures1 and 2). The boundaries of the site are more fully described in Appendix B - Metes and Bounds.

1.2.2 Site History

Operational History

The Site was first developed as the Electruk Battery Enterprises site that manufactured lead acid batteries from 1990 to 1996. The facility was damaged by a six-alarm fire in January 1995, which caused a significant disruption to the business. As a result, Electruk Battery was not able to recover from the damages and was forced into Chapter 7 bankruptcy in October 1996. In early October 1996, Key Bank was permitted by order of the US Bankruptcy Court to secure the site to preserve the assets and collateral in which it had security interests. Electruk Battery then abandoned the Site, leaving behind numerous drums of acids, lead components, and solvents.

The County commenced an in rem tax foreclosure proceeding in July 2003 and subsequently took ownership of the Site. The Town filed and was granted a Notice of Motion in the Niagara County Courthouse to obtain temporary incidents of ownership of the Site for the sole purpose of entering the Site and conducting on environmental remedial investigation. Following the completion of the RI/AA and subsequent remedial tasks, if any, the County has agreed to transfer title to the Site free of any tax liens to the Town.

Investigation History

In October 1996, Key Bank retained an environmental consultant to perform a Phase I Environmental Site Assessment (ESA) at the Site. A Phase II ESA was then performed in June 1997 by the same consultant on behalf the Town of Lockport Industrial Development Agency. The Phase II ESA revealed approximately twenty 55-gallon drums and two vats identified as containing lead sludge located outside of the building which were left open to the elements along with four 30-gallon drums of sulfuric acid, one of which was cracked and only half full. The interior of the building was found to be covered with lead dust and several areas of lead contaminated surface soil were documented. The 1995 fire had exacerbated the spread of lead contamination throughout the facility, which

likely had already been contaminated with lead from the battery manufacturing process. Inside the building were drums of methyl ethyl ketone, sulfuric acid, and xylene along with many smaller containers of paint related items. Two bulk acid storage tanks were also present.

In June 1998, the Niagara County Health Department requested that the NYSDEC consider the site for an emergency removal action under the State superfund program. In July 1998, the NYSDEC requested that the U.S. Environmental Protection Agency (EPA) perform an emergency removal at the Site. Under Superfund, EPA is charged with responding to the release or threatened release of contamination into the environment with enforcement responsibilities, including the recovery of costs associated with its response. After performing a removal assessment in August 1998, EPA confirmed the presence of hazardous materials on the Site.

EPA subsequently commenced a Superfund removal action to address the contamination. That action was completed in June 1999. The removal action included the identification, removal, and disposal of all hazardous wastes from the Site, with the exceptions noted below. Material removed from the Site included 24 roll-off containers (695 cubic yards) of building debris and contaminated equipment, 99 drums of miscellaneous wastes, nine roll-off containers (180 cubic yards) of lead contaminated soil, three tanker loads (8,634 gallons) of hazardous liquids, 21 pallets (27.45 tons) of batteries and battery components and 3 cubic yards of spent sorbent and personal protective equipment. All materials were transported to permitted off-site disposal facilities.

Wipe sampling data collected by EPA after the decontamination of the building floor and ceiling beams confirmed the removal of gross contamination. However, some residual lead concentrations that meet EPA's removal criteria but exceed the residential guidelines used by the U.S. Department of Housing and Urban Development remain on the floor and ceiling beams. The lead concentrations remaining are indicative of lead bonded to surfaces in a manner that would require extensive, repetitive cleaning for removal or encapsulation prior to reuse of the building. It was therefore recommended that potential buyers or renters be informed that these surfaces should be encapsulated (e.g., by application of paint and/or insulation on the ceiling beams and either painting the floor or covering it with a fresh layer of concrete or other material) prior to utilizing the building.

EPA's action level for excavation of lead-contaminated soil at industrial sites was 750 parts per million (ppm). Although EPA removed all identified lead contaminated soil with concentrations above that level. Lead contamination at concentrations exceeding the NYSDEC's soil cleanup objective for Unrestricted Use, which is 63 ppm, remains in the on-site soils. The highest levels remaining

are found against the building foundation and concrete storage pad. Figure 3 depicts the locations and analytical results of the post excavation sampling performed by the EPA. After reviewing the July 22, 1999 *Delineation of Lead Contamination by X-Ray* Fluorescence letter report prepared by Roy F. Weston Inc., the NYS Department of Health (NYSDOH) concluded that the remaining lead levels should not pose any exposure problems as long as the Site remains in its current intended use (commercial/industrial) and the areas remain undisturbed. Because the lead concentrations remain above Unrestricted Use cleanup guidelines, the NYSDOH also recommended the placement of a formal deed restriction on the property to prevent the use of the site for residential or day care purposes.

EPA determined that no further Superfund action by EPA was needed and that it would not seek to recover the costs incurred while performing the removal action from the Town of Lockport.

1.2.3 Geologic Conditions

The results of the remedial investigation indicate that soil/fill overlies the native soil across the entire Site. The overburden stratigraphy can be divided into three significant units, which in descending order and include a soil/fill material; a rework native material; and native material.

A thin layer of soil/fill material that ranges in thickness from less than one inch to two feet was typically present as the uppermost overburden layer throughout the Site. The soil/fill material primarily consists of two types of material that include topsoil and gravel. The topsoil, which ranged in thickness from less than one inch to a foot, generally consisted of dark brown clayey silt with varying amounts of organic material and was observed generally in high grass areas located throughout the site. Additionally, plastic pieces and pieces of metal siding were encountered within the topsoil layer in the southwest portion of the site. In areas not overlain by topsoil, the uppermost soil/fill material consisted of a thin layer of gray gravel. This material was located in low areas surrounding the concrete pad and near the driveway area along IDA Park Drive.

A layer of reworked native material was encountered immediately below the soil/fill material in the more than half of the test pits. It was determined that this material was native material based on comparisons to subsurface soil encountered at greater depths and was determined to be reworked based on the chaotic layering and the presence of anthropogenic materials (viz., concrete block, gravel, wood, metal, broken PVC pipes and floor mats). This material ranges in thickness from 0.2 to 1 foot and primarily consists of the native soils described in the following section, which were encountered during the subsurface investigation.

Native soil underlies the reworked native material or soil/fill material (where reworked native material was not present) and consists of red to brown and sometimes gray silty clay with varying amounts of sand and/or gravel. The native material was found across the Site and was encountered at the majority of the subsurface sampling locations.

Generally, the groundwater was present in the native soils at depths 1 to 2 feet below the existing ground surface. Static water levels in the wells were measured on April 30, 2008. These measurements and resulting groundwater contours are shown on Figure 4. The groundwater elevation data indicates that the groundwater flow direction is generally to the southwest.

1.3 Summary of Remedial Investigation Findings

A Remedial Investigation program (RI) was performed to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the *Final Remedial Investigation/Alternatives Analysis (RI/AA) Report*, TVGA Consultants January 2009.

The RI confirmed the presence of contaminated surface soil above NYSDEC's December 2006 6NYCRR Part 375 Residential Use Soil Cleanup Objectives (SCOs) (Part 375 - Subpart 6.8) and sediment within on-site trenches above the Commercial Use SCOs. Additionally, contaminants were detected in the surface water within the trenches at concentrations exceeding NYSDEC's June 1998 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations in the Technical and Operational Guidance Series (TOGS) 1.1.1. Contaminants detected in the surface soil were limited to lead, while the contaminants of concern in the trench sediment included one or more of the eight RCRA metals. Elevated lead within the surface water of one of the trenches was the contaminant of concern in this media.

Below is a summary of site conditions when the RI was conducted. Table 1 summarizes the degree of contamination for the contaminants of concern and compares the data with the Standards Criteria and Guidance values (SCGs) applicable to each medium sampled. The locations of surface and subsurface media sampled during the RI are shown in Figures 5 and 6. The approximate location and the estimated areal extent of contaminated surface soil as well as the locations of the trenches addressed during the IRM are depicted on Figure 7.

Soil

Surface Soil

Lead was detected in the surface soil samples at concentrations well below the Residential Use SCOs. The slightly elevated lead

concentrations in several of these samples is likely related to historical operations involving lead-acid battery manufacturing and releases caused by a combination of the 1995 fire and poor housekeeping practices.

The results of the 221 post excavation samples collected by the EPA following the 1999 removal action were also reviewed. This review revealed that lead was detected in the surface soil at concentrations exceeding the Residential Use SCO but below the Commercial Use SCO. Verification sample SS-10, collected from 9 to 12 inches below the ground surface at the same location and depth as the EPA's post excavation sample CC3, revealed a lead concentration well below the Residential Use SCO. The locations and analytical results of the post excavation sampling performed by the EPA are depicted on Figure 3.

Subsurface Soil

Although a few VOCs and SVOCs were detected, which consisted primarily of tentatively identified compounds (TICs), they were detected at concentrations well below Residential Use SCOs. The concentrations of metals were below the applicable SCGs. Lastly, no PCBs or pesticides were detected in the subsurface soil samples.

Site-Related Groundwater

No pesticides or PCBs were detected in the groundwater samples. One or more VOCs were detected in each of the groundwater samples; however, only the concentrations of benzene and toluene detected in MW-2 minimally exceeded the applicable SCGs. The only two SVOCs detected were 3+4-methylphenol, detected in MW-1 at a concentration slightly above the applicable SCG, and bis(2-ethylhexyl)phthalate, detected in MW-3 at a concentration below the applicable SCG.

The concentrations of metals were well below the applicable SCGs.

Site-Related Soil Vapor Intrusion

Soil vapor samples were not collected as part of the RI conducted at the Site.

Underground Storage Tanks

No underground structures such as tanks, foundations, or vaults are known to exist in the subsurface of the Site.

Surface Water

VOCs, pesticides and PCBs were not detected in any of the surface water samples. SVOCs consisting of TICs were identified in SW-1, SW-2 and SW-3 at concentrations below applicable SCGs. With the exception of lead in SW-4, which was detected at a concentration more than six times the applicable SCG, the concentrations of metals in the surface water samples were well below the applicable SCGs.

Sediments

No pesticides or PCBs were detected in the sediment samples. VOCs were detected in SED-2 and SED-5, however; the concentrations were well below the Residential Use SCOs. Each of the sediment samples contained one or more SVOCs, which consisted primarily of TICs, however; the detected concentrations were well below Residential Use SCOs.

The concentrations of metals in SED-1 and SED-3, collected from the exterior ditches, were well below the Residential Use SCOs. The concentrations of arsenic, barium and lead in SED-2, SED-4 and SED-5 exceeded Commercial Use SCOs, while the concentrations of cadmium, chromium and mercury in these three samples exceeded Residential Use SCOs. The elevated metals concentrations, specifically lead, are likely related to historical operations involving lead-acid battery manufacturing and releases caused by a combination of the 1995 fire and poor housekeeping practices. The results of the TCLP analysis revealed that SED-5 contained a hazardous concentration of lead.

Sub-Slab Soil

Four sub-slab soil samples were collected from the locations adjacent to the trenches and were analyzed for total lead. As reflected in Table 1 the concentrations of lead detected the sub-slab soil samples were well below the Residential Use SCO.

1.4 Summary of Remedial Actions

The Site was partially remediated in accordance with the NYSDEC-approved Interim Remedial Measure Work Plan that was prepared in December 2008 to describe the specific remedial activities that would be implemented at the Site.

The following is a summary of Remedial Action preformed at the site:

- Removal and proper disposal of contaminated water found in the three on-site concrete trenches,

- Removal and proper disposal of contaminated sediments found in the three on-site concrete trenches,
- Pressure washing the concrete surfaces of the three on-site concrete trenches, and
- Filling the concrete trenches with a flowable fill to prevent re-accumulation of water and sediment.

Remedial activities were completed at the site in January 2009.

1.4.1 Removal of Contaminated Materials from the Site

As previously indicated the SCGs applicable to this project are as follows:

- Soil/Fill: NYSDEC's December 2006 6NYCRR Part 375 Residential and Commercial Use Soil Cleanup Objectives (SCOs) (Part 375 - Subpart 6.8)
- Groundwater: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations in the Technical and Operational Guidance Series (TOGS) 1.1.1
- Soil/Fill analyzed by TCLP: 40 CFR Part 261

A vacuum truck was used to remove all standing water from Trenches 1 and 3. The remaining sediment and ice within these trenches were removed with shovels and placed into 55-gallon drums.

Based on the hazardous concentration of lead in the sediment in Trench 2, an electric drum vacuum (i.e. a wet/dry vacuum connected to a 55-gallon drum) was used to remove the water and sediment from this trench.

Following the removal the water and sediment, the exposed surfaces within the trenches were cleaned utilizing high pressure power washing equipment. Upon completion, the wash water was removed with the vacuum truck or drum vacuum. All solids and water were disposed off-site.

A total of 1,414 gallons of water was removed from Trenches 1 and 3 for disposal as non-hazardous liquid waste. Additionally, the following materials were removed the trenches:

- Trench 1: Three 55-gallon drums of hazardous ice/sediment/wash water.
- Trench 2: One 55-gallon drum of hazardous ice/sediment/wash water.
- Trench 3: Eight 55-gallon drums non-hazardous ice/sediments/wash water.

The non-hazardous liquids and solids were disposed at the EPS facility in Syracuse, New York and the hazardous liquids and solids were disposed at the Cycle Chem Inc. facility in Lewisberry, Pennsylvania.

A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) and applicable land use for this site is provided in Table 1.

1.4.2 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy.

1.4.3 Remaining Contamination

The remaining contamination left on the Site encompasses surface soil/fill areas across the Site. The analytical results indicate that the contaminant of concern in the surface soil is lead. Concentrations ranged from 19.4 to 1,180 ppm. The locations of the sample with the concentration of 1,180 ppm was detected in EPA sample CC3 which was collected from 9 to 12 inches below the ground surface in the north east corner of the site. However, sample SS-10 collected August 2008 from the same location and depth as CC3 attempted to identify and verify the reported lead concentration, revealed a lead concentration of 48.4 ppm, below the Unrestricted Use SCO. Therefore, while lead concentrations in the surface soil exceed the Residential Use SCO, these concentrations are below the Commercial Use SCO. The extent of lead contaminated surface soil based on the EPA and NYSDEC investigations exceeding the Residential Use SCO are depicted in Figure 7.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Since remaining contaminated soil exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 Engineering Controls

The site remedy does not rely on a soil cover system or any mechanical systems to protect the public health and the environment. Therefore, Engineering Controls are not included in this SMP.

2.3 Institutional Controls

A series of Institutional Controls is required by the ROD to: (1) prevent future exposures to remaining contamination by controlling disturbances; and (2) limit the use and development of the Site to commercial or industrial uses only. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement by the Grantor and the Grantor's successors and assigns with all elements of this SMP;
- Limit the use and development of the property to commercial or industrial uses only;
- Restrict use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the New York State Department of Health;
- Require the property owner to complete and submit to the NYSDEC an Institutional Control certification on a periodic basis determined by the Department; and

- Data and information pertinent to Site Management for the Site will be reported at the frequency and in a manner defined in this SMP.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of Institutional Controls in the form of site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The use of groundwater underlying the property is prohibited without treatment, rendering it safe for intended use;
- All future activities on the property that would disturb remaining contaminated material must be conducted in accordance with this SMP;
- The property may be used for commercial or industrial use, provided that the long-term Engineering and Institutional Controls included in this SMP are employed;
- The property may not be used for a higher level of use, such as unrestricted or residential, use without additional remediation and amendment of the Environmental Easement by the Commissioner of NYSDEC;
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Site at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted in a period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable; and
- Vegetable gardens and farming on the property are prohibited

2.3.1 Excavation Work Plan

The site remedy allows for commercial or industrial use. Any future intrusive work that will penetrate, encounter or disturb the remaining contamination will be performed in compliance with this Excavation Work Plan (EWP). Intrusive construction work must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP is attached as Appendix D to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926,

and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in the Excavation Work Plan (Appendix A) section A-1. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Periodic Review Report as outlined in Section 5.3.

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

The potential for soil vapor intrusion (SVI) was not indentified during the remedial investigation at the site. Therefore an SVI evaluation will not be necessary prior to any construction on the project site.

2.4 Inspection and Notifications

2.4.1 Inspections

A comprehensive site-wide inspection will be conducted annually. The inspections will determine and document the following:

- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- If site records are complete and up to date; and

The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen incident that affects the site, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the ICs implemented at the site by a qualified environmental professional as determined by the NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the State Assistance Contract (SAC), 6NYCRR Part 375, and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the State Assistance Contract (SAC), and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to Marc Smith: Town Supervisor. These emergency contact lists must be maintained in an easily accessible location at the site.

Table 2: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Table 3: Contact Numbers

Marc Smith: Town Supervisor	(716) 439-9520

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 4922 IDA Park Drive, Town of Lockport, NY 14094

Nearest Hospital Name: Lockport Memorial Hospital

Hospital Location: 521 East Avenue, Lockport, NY 14094

Hospital Telephone: (716) 514-5700

Directions to the Hospital:

1. Head north on IDA Park Drive
2. Turn right at NY-93 Upper Mountain Rd.
3. Turn left at NY-31 West Ave.
4. Turn left at NY-31 Washburn St.
5. Turn right at NY-31 East Ave.
6. End at 521 East Ave.

Total Distance: 4.9 miles

Total Estimated Time: 13 min.

Map Showing Route from the site to the Hospital:

Map of route to form the site to the hospital is provided as Figure 1 in the Sample Health and Safety Plan as Appendix D.

2.5.3 Response Procedure

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 2). The list will also posted prominently at the site and made readily available to all personnel at all times.

Spill procedure and other emergency procedures are described in the Sample Health and Safety Plan in Appendix D. An Excavation Work Plan is also provided as Appendix A.

3.0 MONITORING PLAN

3.1 Introduction

The remedy for this site does not require any engineering controls; therefore no monitoring plan has been established in this SMP.

4.0 OPERATION AND MAINTENANCE PLAN

4.1 Introduction

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 Site Inspections

5.1.1 Inspection Frequency

The remedy for this site does not require any engineering controls; therefore, no inspections of the site will be required.

5.1.2 Inspection Forms

Because inspections are not required this section is not applicable.

5.1.3 Evaluation of Records and Reporting

Because inspections are not required this section is not applicable.

5.2 Certification of Institutional Controls

For each institutional identified for the site, I certify that all of the following statements are true:

- The institutional control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- The information presented in this report is accurate and complete; and
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Marc Smith, of 6560 Dysinger Road, Lockport, New York, am certifying as Owner's Designated Site Representative: I have been authorized and designated by all site owners to sign this certification for the site.

The signed certification will be included in the Periodic review report described blow.

5.3 Periodic Review Report

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Regional 9 Office and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

TABLES

TABLE 1
Nature and Extent of Contamination

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	pH	6.8 – 7.7		
	Lead (RI Samples)	19.4 – 296	400	0/10
	Lead (EPA samples)[c]	93 to 1,1180	400	42/221

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Carbon Disulfide	ND - 13	100	0/4
	TICs	13 - 41	NS	
Semivolatile Organic Compounds (SVOCs)	TICs	160 - 770	NS	
Metals	Arsenic	3.1 – 4.2	16	0/4
	Barium	78.9 - 161	350	0/4
	Chromium	9.3 – 27.4	36	0/4
	Lead	7.8 – 12.9	400	0/4
	Mercury	0.014 – 0.039	.81	0/4
	Selenium	ND – 3.1	36	0/4
pH	pH	7.2 - 8		

SEDIMENTS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Carbon Disulfide	ND - 13	200	0/5
	Methylene Chloride	ND - 32	.05	0/5
	TICs	ND – 46	NS	
Semivolatile Organic Compounds (SVOCs)	Acetophenone	ND - 210	500	0/5
	Benzaldehyde	ND - 320	500	0/5
	bis(2-ethylhexyl)phthalate	ND - 15,000	500	0/5
	Dimethylphthalate	ND - 560	500	0/5
	Fluoranthene	ND - 180	100	0/5
	Phenol	ND - 140	0.33	0/5
	Pyrene	ND - 140	100	0/5
	TICs	390 – 10,820	NS	
Metals	Arsenic	3 – 77.5	13	3/5
	Barium	90.5 - 839	350	3/5
	Cadmium	.614 – 6.54	2.5	3/5
	Chromium	14.8 – 91.3	30	3/5
	Lead	39.5 – 74,900	63	3/5
	Mercury	0.019 – 2.6	0.18	3/5
	Selenium	ND – 12.8	3.9	1/5
	Silver	ND – 11.7	2	2/5
	Lead (TCLP)	ND – 64.4	5	1/2
pH	pH	6.5 – 8.8		

SURFACE WATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	TICs	ND – 23.6	NS	
Metals	Barium	15.1 – 31.4	1,000	0/4
	Chromium	1.4 – 4.22	50	0/4
	Lead	7.4 - 302	50	1/4
	Silver	ND – 8.26	50	0/4
pH	pH	6.88 – 8.24		

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Acetone	ND - 22	50	0/3
	Benzene	ND – 4.2	1	1/3
	Bromodichloromethane	ND - 0.75	50	0/3
	Chloroform	ND - 6.1	7	0/3
	2-Butanone	ND – 4.2	50	0/3
	Cyclohexane	ND – 1.8	NS	0/3
	Toluene	ND - 6	5	1/3
	m/p-Xylenes	ND – 3.2	5	0/3
	o-Xylene	ND – 1.4	5	0/3
Semivolatile Organic Compounds (SVOCs)	3+4-Methylphenols	ND – 2.5	1	1/3
	Bis(2-ethylhexyl)phthalate	ND – 4.1	5	0/3
	TICs	ND - 23	NS	

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Metals	Barium	43.7 - 87	1,000	0/3
	Chromium	2.56 – 2.87	50	0/3
	Lead	ND – 6.74	25	0/3
	Silver	ND – 2.42	50	0/3
pH	pH	7.11 – 7.97		

SUB-SLAB	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Metals	Lead	12.1 - 174	400	0/4

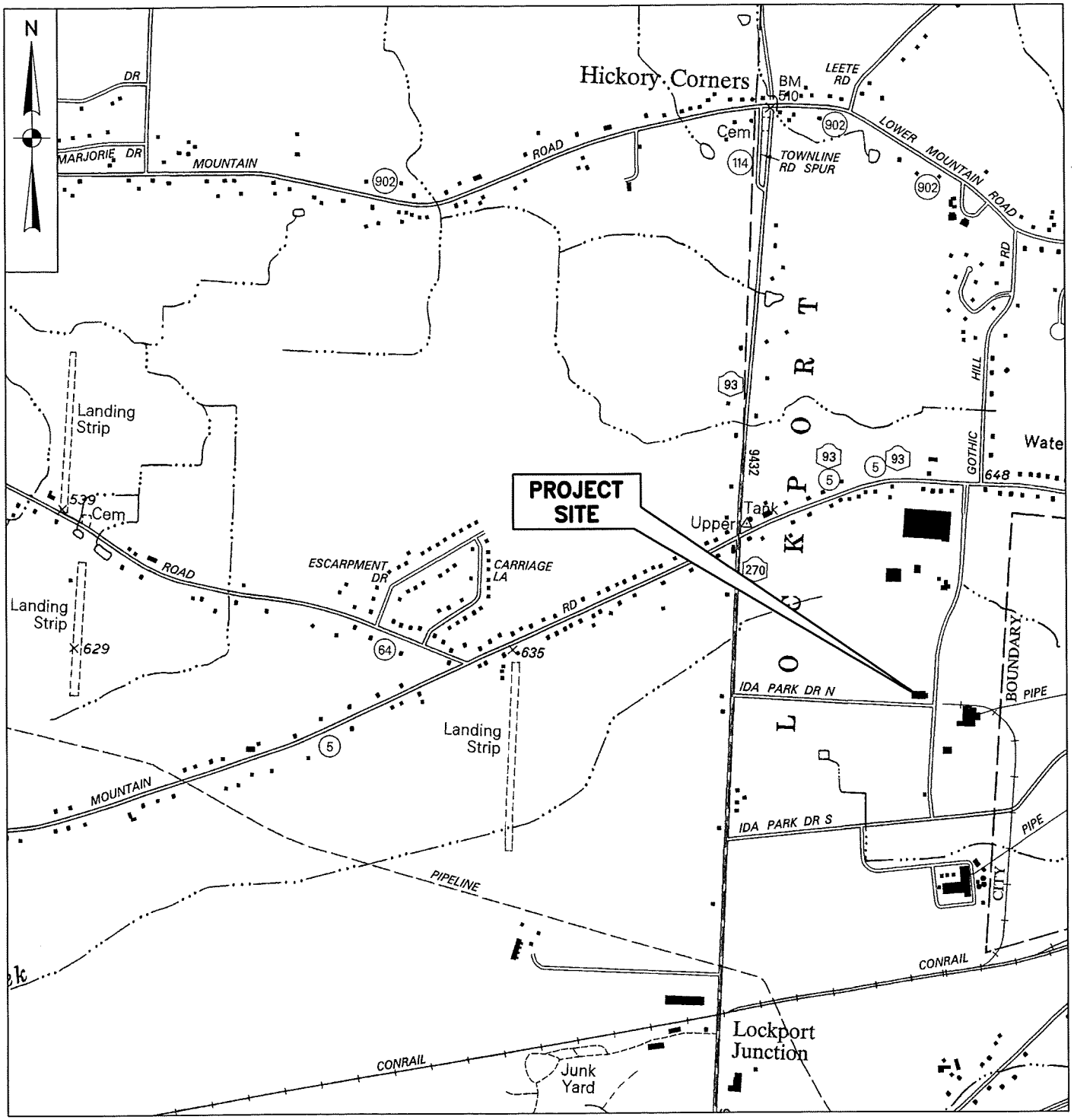
[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values for surface and sub-surface soil are from 6NYCRR Part 375.68(b) Environmental Remediation Programs December 2006 Edition using the Residential Soil Cleanup Objective while the sediment samples were compared to Commercial Soil Cleanup Objectives, SCG for groundwater were derived from NYS Ambient Water Quality Standards TOGS 1.1.1 (Source of Drinking Water, Groundwater); for soil samples analyzed for TCLP metals 40 CRF Part 261.24 is the source of the regulatory value, which lists the maximum contaminant levels for the toxicity characteristic for determining if a solid waste is defined as a hazardous waste.

[c] The EPA sample results were obtained from July 22, 1999 *Delineation of Lead Contamination by X-Ray Fluorescence* letter report prepared by Roy F. Weston Inc.

ND Compound not detected
NS No Standard

FIGURES



U.S.G.S LOCKPORT QUADRANGLE
CAMBRIA QUADRANGLE

PROJECT SITE LOCATION MAP

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F. 716.655.0937
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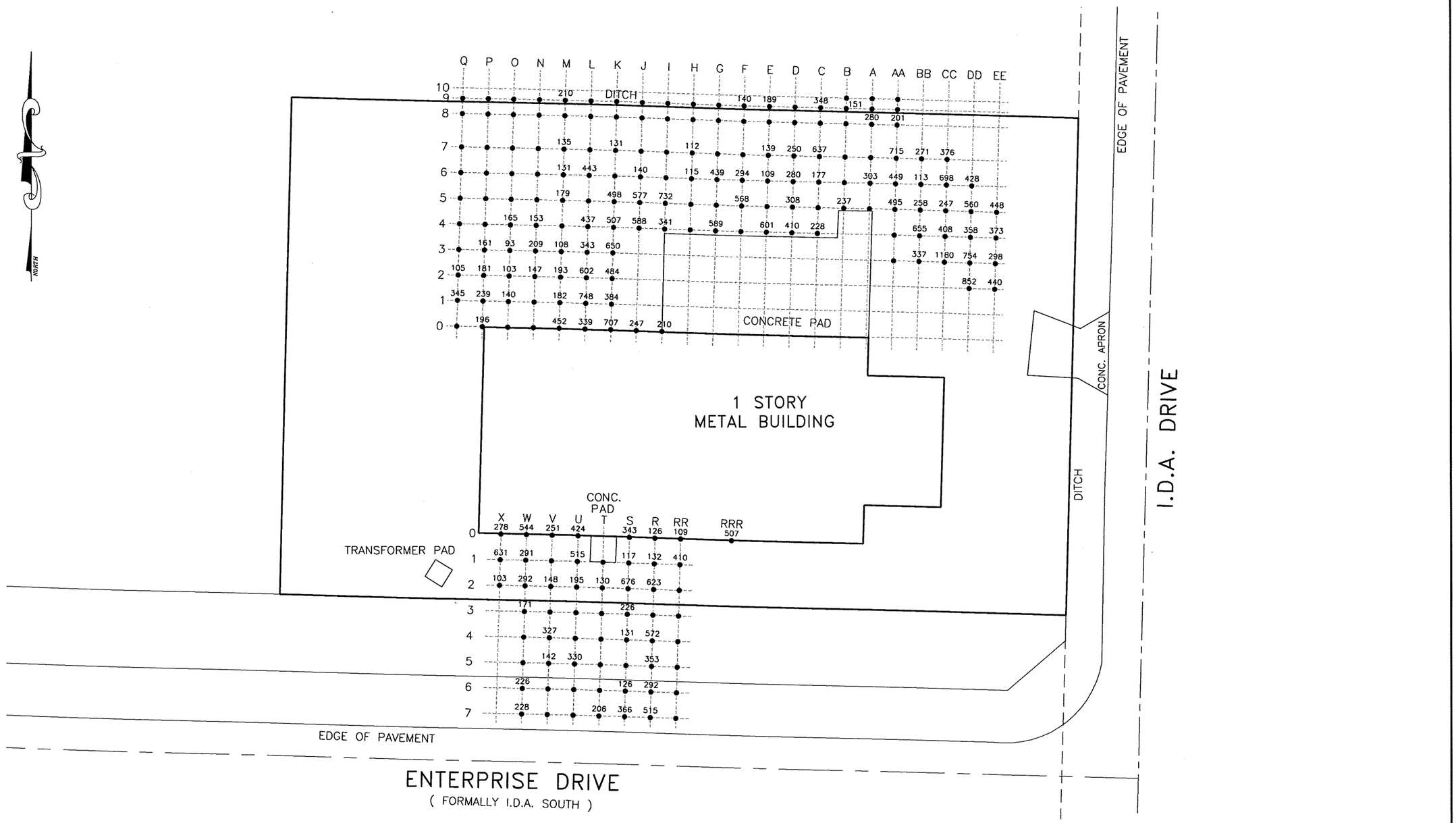
SITE MANAGEMENT PLAN
FORMER ELECTRUK BATTERY SITE
4922 IDA DRIVE
LOCKPORT, NEW YORK 14094

PROJECT NO. 2007.0262.00	SCALE: 1" = 500'	DATE: AUGUST 2009	FIGURE NO. 1



LEGEND

228 ● SAMPLE LOCATION AND LEAD CONCENTRATION (PPM)

NOTE:

SAMPLE LOCATIONS WITHOUT A LISTED CONCENTRATION WERE DETECTED BELOW THE DETECTION LIMIT OF 92 PPM.

1999 USEPA REMOVAL ACTION POST EXCAVATION SAMPLING RESULTS

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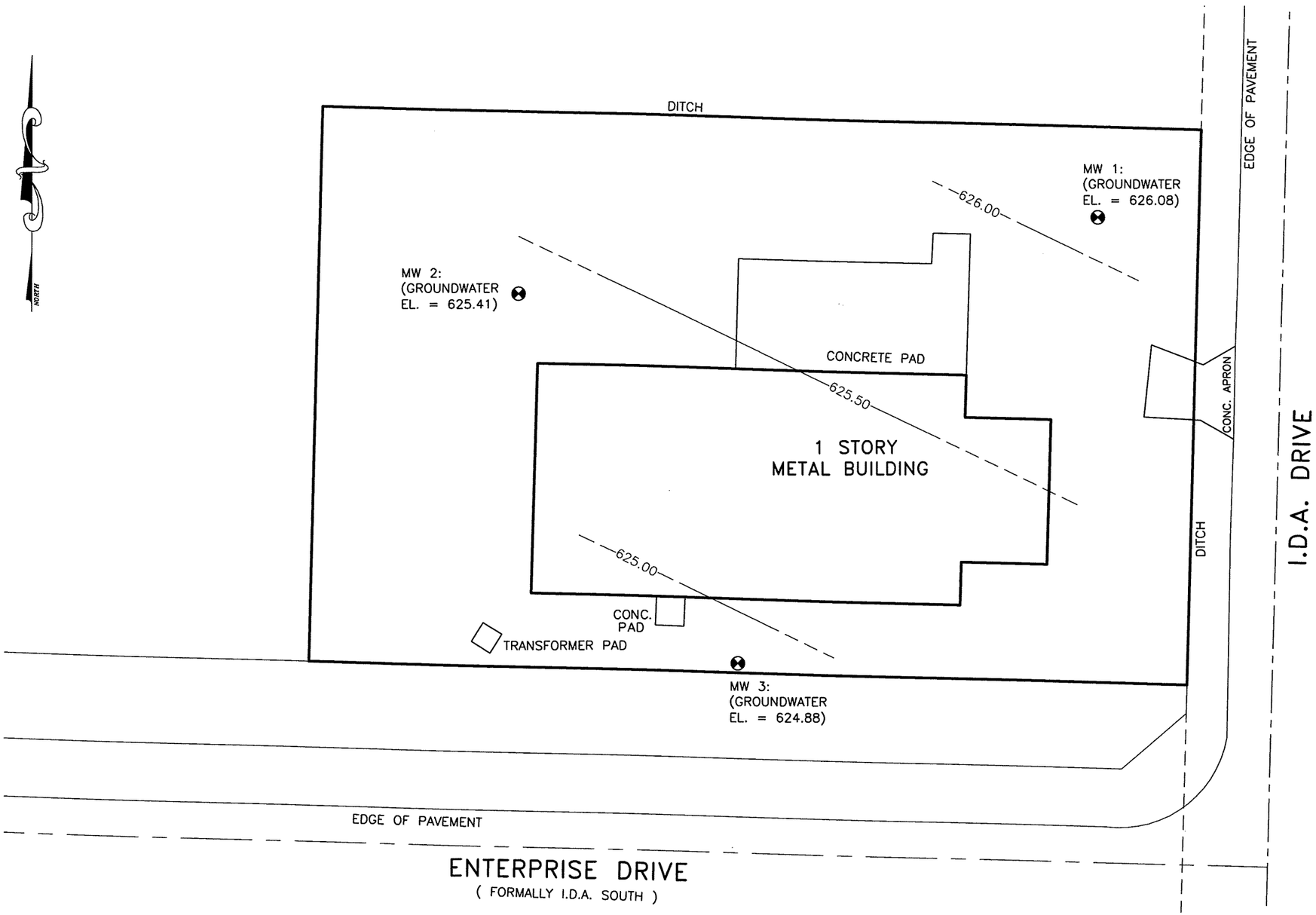
PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: AUGUST 2009	FIGURE NO. 3



LEGEND

- ⊗ MONITORING WELL (GW) LOCATION
- —626.00— GROUNDWATER COUNTOUR LINE

NOTE:

GROUNDWATER ELEVATIONS ARE BASED ON NAVD88 DATUM. BENCHMARK DESCRIPTION NORTH BONNETT BOLT OF FIRE HYD AT SOUTHWEST CORNER OF I.D.A. DRIVE AND ENTERPRISE DRIVE. ELEVATION = 630.34'. THE GROUNDWATER ELEVATIONS ARE MEASURED FROM THE TOP OF THE PVC RISER PIPE BY SUBTRACTING THE DEPTH TO GROUNDWATER.

MONITORING WELL LOCATION AND GROUNDWATER CONTOUR MAP

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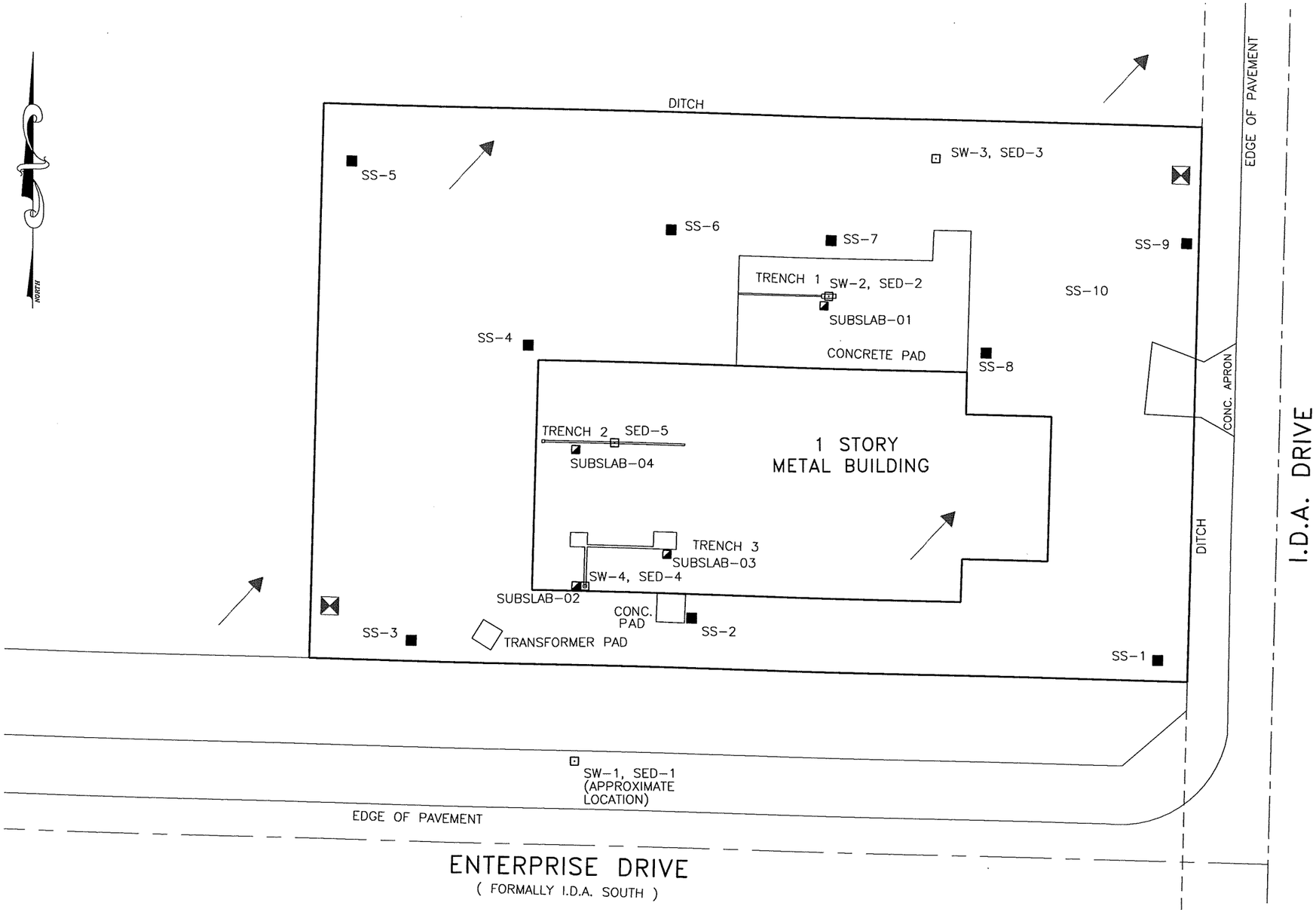
PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: AUGUST 2009	FIGURE NO. 4



LEGEND

- ■ SURFACE SOIL (SS) LOCATION
- ⊡ SURFACE WATER (SW) / SEDIMENT (SED) LOCATION
- ◪ SUBSLAB SOIL (SUBSLAB) LOCATION
- ⊠ AIR SAMPLING STATION LOCATIONS
- → PREVAILING WIND DIRECTION

NOTE: THE SPECIFIC LOCATIONS OF THE AIR SAMPLING STATIONS WILL BE BASED ON THE LOCATION OF INVASIVE ACTIVITIES AND PREVAILING WINDS AT THE TIME THE WORK IS PREFORMED.

SURFACE INVESTIGATION MAP

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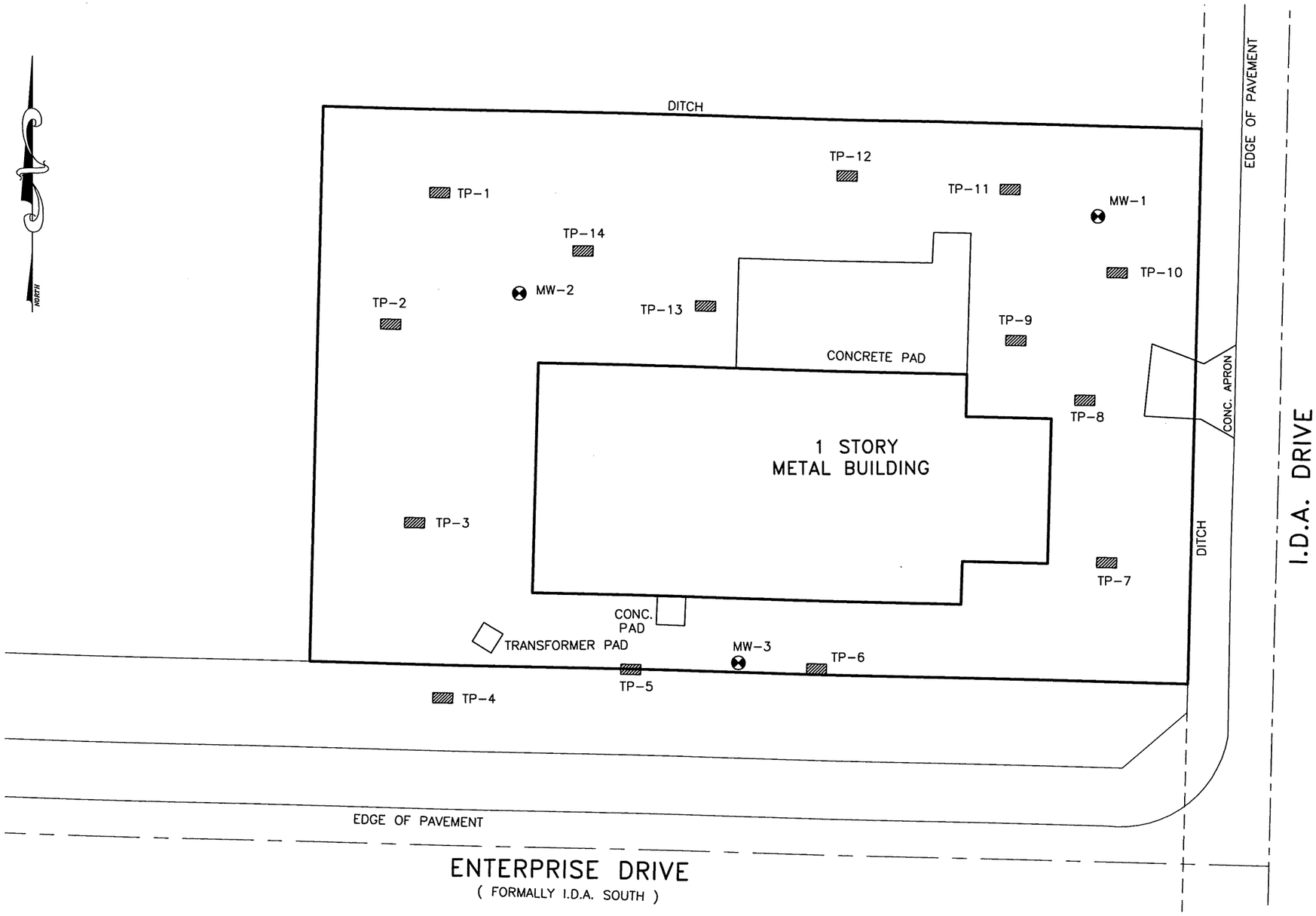
PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: AUGUST 2009	FIGURE NO. 5



LEGEND

- TEST PIT (TP) LOCATION
- MONITORING WELL (MW) LOCATION

SUBSURFACE INVESTIGATION MAP

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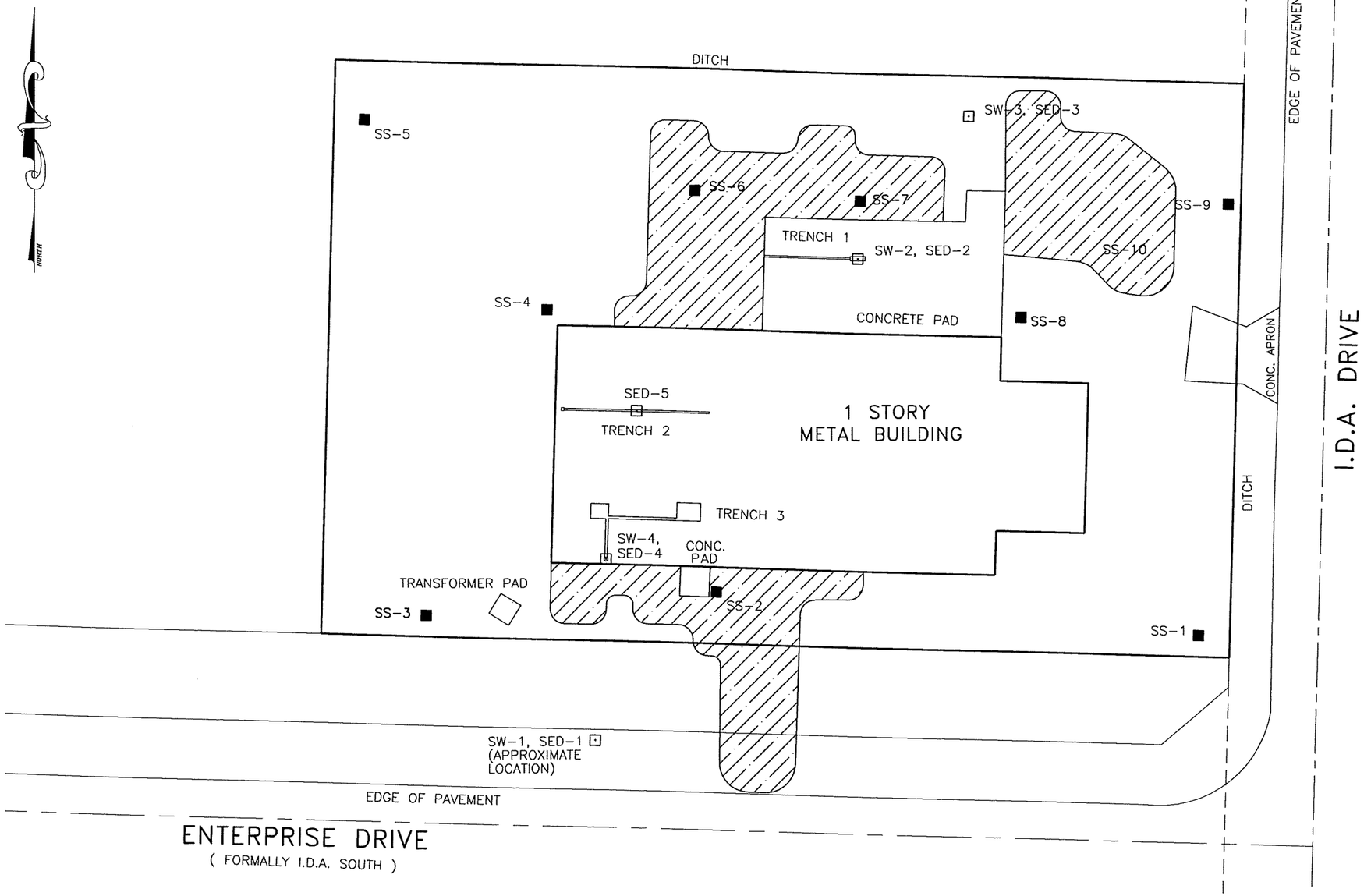
PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: AUGUST 2009	FIGURE NO. 6

File: N:\2007.0262.00-SOO for Electruck Site Grant Application\Engineering\CADD\SMP\FIGURE 6 SUBSURFACE.dwg, Plot Date: 8/6/2009, By: BENKLEMAN ANDREW T., Plot Style: FULL-BLACK.CTB



LEGEND

- ■ SURFACE SOIL (SS) LOCATION
- ⊡ SURFACE WATER (SW) / SEDIMENT (SED) LOCATION
- ▨ HATCHED AREAS REPRESENT AREAL EXTENT OF SUSPECTED SURFACE SOIL CONTAMINATION

NOTES:

- SOIL RESULTS ARE REPRESENTED IN mg/Kg,
- THE AERIAL EXTENT OF SUSPECTED SURFACE SOIL CONTAMINATION ARE BASED ON THE RESULTS OF THE 1999 USEPA REMOVAL ACTION SAMPLING INCLUDED IN FIGURE 4.

AREAS OF REMAINING CONTAMINATION

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PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: AUGUST 2009	FIGURE NO. 7

File: N:\2007.0262.00-SOO for Electruck Site Grant Application\Engineering\CADD\SMP\FIGURE 7 REMAINING CONTAMINATION.dwg, Plot Date: 8/6/2009, By: BENKLEMAN ANDREW T., Plot Style: HALF-BLACK.CTB

APPENDIX A

EXCAVATION WORK PLAN

FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

EXCAVATION WORK PLAN

NYSDEC SITE NO. E932132

Prepared for:

Town of Lockport
6560 Dysinger Road
Lockport, New York

Prepared by:

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2007.0262.00

August 2009

FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

EXCAVATION WORK PLAN

TABLE OF CONTENTS

APPENDIX A - EXCAVATION WORK PLAN

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is reasonably anticipated to encounter remaining contamination, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Michael Hinton, P.E., Environmental Engineer II
270 Michigan Avenue
Buffalo, NY 14203-2999
(716)851-7220

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, or any work that may impact an engineering control;
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EP and 29 CFR Part 1910.120;
- A copy of the contractor's health and safety plan, in electronic format;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

A scientist or engineer with experience in environmental site investigation and remediation will inspect soil/fill all excavations or disturbances on behalf of the Site owner. The excavated soil/fill will be inspected for staining or discoloration, and will be field screened for the presence of VOCs with a photoionization detector (PID) that is calibrated as per the manufacturer's requirements. Excavated soil/fill that is visibly stained, discolored, or produces elevated PID readings (i.e., sustained readings of 5 parts per million (ppm) above background or greater) will be stockpiled in accordance with the methods identified in Section A-3 below in an area away from the primary work activities. Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing,

material that can be returned to the subsurface, and material that can be used as cover soil.

The stockpiled material will be sampled in accordance with the protocols delineated in Section A-7 for reuse or off-site disposal. The length of time that potentially impacted soil can be temporarily stockpiled while awaiting analytical results shall be limited to 90 days. Analyzed soil/fill that is determined to contain one or more constituents in excess of the Part 375-6.8(b) Residential Use Soil Cleanup Objectives (SCOs) shall be treated on-site according to an NYSDEC-approved treatment plan or transported off-site to a permitted waste management facility for disposal. Soil/fill that exhibits no staining, discoloration, or elevated PID readings, or soil/fill that has been analyzed and found to be within the SCOs may be reused on-site as subgrade backfill. No excavated soil/fill may be removed from the Site except for off-site disposal as defined in Section A-6.

A-3 STOCKPILE METHODS

An important element of soil and fill management on the Site is the mitigation and control of surface erosion from storm water runoff. For this reason, a Master Erosion Control Plan (MECP) to be used by all contractors and developers has been prepared and incorporated as Appendix E. The MECP describes the erosion and sedimentation controls for handling material stockpiles on the Site. A summary of key elements of stockpile handling include:

- Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

- Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

- Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the Site.

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking. The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded. Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used. All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Truck transport routes are as follows: Head east on IDA Park Dr. N. to NY-290 Lockport Junction Rd., a map is provided as Figure A-1. All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; [(g) community input [where necessary]]

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

Except as provided in Section A-7 below, all soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, construction and demolition debris recycling facility, etc.). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste pursuant to 6NYCRR Part 360-1.2. Material that does not meet the lower of the SCOs for residential use or groundwater protection will not be taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility) without a beneficial use determination issued by NYSDEC.

A-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Excavated soil/fill that is visibly stained, discolored, or produces elevated PID readings will be sampled and classified for reuse, treatment, or off-site disposal. A tiered approach based upon the volume of soil/fill being excavated will be used to determine the frequency of sampling. A minimum of one composite sample will be collected for each 500 cubic yards up to 1,000 cubic yards of material excavated. If more than 1,000 cubic yards of soils are excavated from the same general vicinity and all samples of the first 1,000 cubic yards meet the Residential Use Allowable Constituent Levels for Imported Fill or Soil (ACL) in Table A-1, the sample collection frequency may be reduced to one composite for each additional 2,500 cubic yards of soil from the same general vicinity, up to 5,000 cubic yards. For excavations that generate greater than 5,000

cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, providing all earlier samples met the SCOs.

A minimum of five grab samples will be collected for each composite sample. Approximately equal fractions of the grab samples will be composited in the field using a stainless steel trowel and bowl. The trowel and bowl shall be decontaminated with alconox or liquinox and potable water mixture, then triple-rinsed with deionized water between sampling locations. The composite sample will be analyzed by a NYSDOH ELAP certified laboratory for Target Compound List (TCL) VOCs, SVOCs, and PCB/pesticides, as well as the metals listed on Table A-1. In addition, one sample jar will be filled and sent to the laboratory for possible characterization analysis, as described below. All analyses shall be performed using methods acceptable to NYSDEC at the time of analysis.

VOCs may be excluded from the analysis provided that the soil/fill does not exhibit elevated PID readings. Any excavated soil that produces elevated PID readings will be separately stockpiled in 1,000 cubic yard or smaller piles. A single grab sample will be collected from the stockpile from the zone displaying the most elevated field PID reading. The grab sample will be analyzed by a NYSDOH ELAP-certified laboratory for TCL VOCs using a method acceptable to NYSDEC at the time of analysis. If the analysis of the soil/fill samples reveals concentrations greater than one or more of the SCOs, then a duplicate sample will be extracted using the Toxicity Characteristic Leaching Procedure (TCLP) method for analysis of the particular contaminant in question to determine the appropriate off-site disposal method. If the TCLP hazardous waste characteristic values are exceeded, the soil/fill will be disposed of in a permitted hazardous waste disposal facility. If the TCLP analytical results are below the hazardous waste characteristic values, the soil/fill will be disposed of off-site in accordance with Section A-6.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

Depending on the time of the year that site redevelopment activities are performed, the management of water may be a necessary component of any invasive work conducted. Water management may be required for dewatering during the excavation activities, utility installations and subsurface remedial areas that may be identified during site redevelopment.

Contractors performing subsurface work at the Site will be required to provide temporary dewatering to handle groundwater and storm water run-in to excavations during invasive activities. Dewatering methods may include the use of sumps, pumps, or the installation of well points. The water will be pumped or hauled from the collection points to the ground surface at on-site locations downgradient of the excavation, where it will be allowed to infiltrate back into the porous soil/fill. No water that is collected will be allowed to run off or be discharged off-site (i.e. no water will be discharged to the storm sewers or surface water bodies located on or adjacent to the Site). Additionally, it should be noted that there are currently no active sanitary systems on the Site.

If the groundwater or storm water that collects in the excavations exhibits evidence of contamination (i.e., sheen, odor, etc.), it may be necessary to treat the water prior to surface discharge or discharge the water into the sanitary sewer system. This would likely involve pumping the water into clean holding tanks and analyzing the water for contamination. Based on the analytical results, the water may be discharged directly to the surface or into sanitary sewer system. Alternately, the water may require some type of treatment (i.e., activated carbon) prior to discharge. Any treatment plans and/or discharges to the sanitary sewer system will not be performed without prior NYSDEC approval. Additionally, all liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations.

Discharge of water generated during large-scale construction activities to surface waters will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

A cover system is not part of the remedy for this site.

A-10 BACKFILL FROM OFF-SITE SOURCES

Subgrade material from off-site sources used to backfill excavations or placed to increase site grades or elevation shall meet the following criteria:

- All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP, applicable regulations (6NYCRR 375-6.7(d)) and guidance (DER-10) prior to receipt at the site.
- Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site
- All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use,

protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards for imported backfill are listed in Table A-1.

- Off-site borrow soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products.
- Off-site soils intended for use as site backfill cannot otherwise be defined as a solid waste in accordance with 6NYCRR Part 360-1.2(a).
- If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use.
- Virgin soils should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, and PCBs, plus the metals listed in Table A-1. The soil will be acceptable for use as backfill provided that all parameters meet the maximum concentration limits listed in this table.
- Non-virgin soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin soil source area and both samples of the first 1,000 cubic yards meet the maximum contaminant concentrations listed in Table A-1, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the maximum contaminant concentrations listed in Table A-1.
- Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

Stormwater management is an important component of the remedial construction at the project site. Therefore, the following Stormwater Pollution Prevention Plan (SWPPP) to control runoff and pollutants from the Site during construction activities was developed as part of this SMP. The following subsections comprise the SWPPP, which was developed in accordance with the requirements listed the NYSDEC's *Instruction Manual for Stormwater Construction Permit*, July 2004. All work will comply with applicable local, state, and federal regulations including, but not limited to, the provisions set forth in the NYSDEC, SPDES General Permit for Stormwater Discharge GP-08-01.

A-11.1 Stormwater Management Objectives

The principal objective of this SWPPP is to comply with the NYSDEC SPDES Stormwater Permit for construction activities by planning and implementing the following practices:

- Reduction and/or elimination of erosion and sediment loading to waterbodies during construction; and
- Maintenance of stormwater controls during construction.

Based on the fact that the ultimate design for site redevelopment has not yet been established, the design of permanent stormwater management facilities has not been incorporated into this plan.

A-11.2 Post-Remediation Conditions

The IRM activities performed at the Site left it generally unchanged. No changes were made to the existing topography and drainage characteristics of the site. Based on the fact that the ultimate design for site redevelopment has not yet been established, stormwater drainage issues relating to site redevelopment will be addressed during the design of the redevelopment in accordance with all applicable regulations.

A-11.3 Erosion and Sediment Controls

Every effort will be made to minimize erosion and sediment runoff during construction. Measures described in the MECP, included as Appendix E will be implemented to control the migration of both contaminated and non-contaminated sediment off of the Site. Key elements of the MECP include the following:

- Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.
- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.
- Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain

whether erosion control measures are effective in preventing significant impacts to receiving waters

- Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. Soil/fill contamination may be encountered during intrusive activities associated with site maintenance or reconstruction including infrastructure construction (i.e. roads, waterlines, sewers, electric cables, etc.) or foundation excavation and site grading. Therefore, the excavation, handling, analytical and backfilling requirements as well as the notification/reporting requirements and the appropriate control measures will be conducted in accordance with Sections A-1 through A-10 of this Excavation Work Plan.

Any water encountered on the Site will be handled in accordance with procedures identified in Section A-8. The removal of other fluids from any tanks or other containers that may be identified during intrusive would be dependent upon the type, quantity and location of the encountered fluid. However, removal methods could employ the use of vacuum trucks or drum vacuums.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in daily and periodic electronic media reports.

A-13 COMMUNITY AIR MONITORING PLAN

Real time air monitoring will be performed at downwind locations during site redevelopment activities. A Community Air Monitoring Plan (CAMP) is included as Appendix F. This plan is consistent with the requirements for community air monitoring at remediation sites as outlined in NYSDOH's generic Community Air Monitoring Plan

(June 20, 2000) and NYSDEC TAGM 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites presented in Appendix G.

A map showing the location of air sampling stations based generally on prevailing wind conditions in Lockport, NY is shown in Figure 5. The actual locations of air sampling stations will be based on the locations of invasive activities as well as generally prevailing wind conditions at the time the work is performed. Locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. While there will be no specific odor control methods used on a routine basis, monitoring for VOCs and particulates will be performed during all intrusive activities (i.e., excavations, utility installations, etc.). If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-15 DUST CONTROL PLAN

Particulate monitoring will be performed along the downwind perimeter of the site during subgrade excavation, grading, and handling activities in accordance with the Community Air Monitoring Plan (Appendix F) as well as in accordance with NYSDEC

TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites) presented in Appendix G.

Dust suppression techniques will be employed as necessary to mitigate fugitive dust from unvegetated or disturbed soil/fill to the extent practicable during post-remediation construction and redevelopment. Such techniques shall be employed even if the community air monitoring results indicate particulate levels are below action levels Fugitive dust suppression techniques will include the following minimum measures:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with water cannon capable of spraying water directly onto off-road areas including excavations, equipment and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Excavated stockpiles from intrusive activities that generate unacceptable dust levels will be seeded, covered with synthetic materials (e.g., tarps, membranes, etc.), or watered to reduce dust generation to acceptable levels.
- Stockpiles of soil/fill from intrusive activities that are potentially contaminated (i.e. are visually stained, discolored or produce elevated PID readings) and awaiting analytical results should be covered with tarps or polyethylene membranes at the end of each day's work activities.
- All fill materials leaving the site will be hauled in properly covered containers or trucks.

Additional dust suppression efforts may be required as discussed in the CAMP included in Appendix F.

TABLES

Table A-1

Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from the soil cleanup objective tables in 6NYCCR375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent[1]	1 [3]	19	19	19	1 [3]
Chromium, Trivalent[1]	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 [3]	1.8	8.9	17	0.0033 [3]
4,4'-DDT	0.0033 [3]	1.7	7.9	47	0.0033 [3]
4,4'-DDD	0.0033 [3]	2.6	13	14	0.0033 [3]
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 [4]
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 [4]
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4[2]	4.8	24	102	NS
Endosulfan II	2.4[2]	4.8	24	102	NS
Endosulfan sulfate	2.4[2]	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

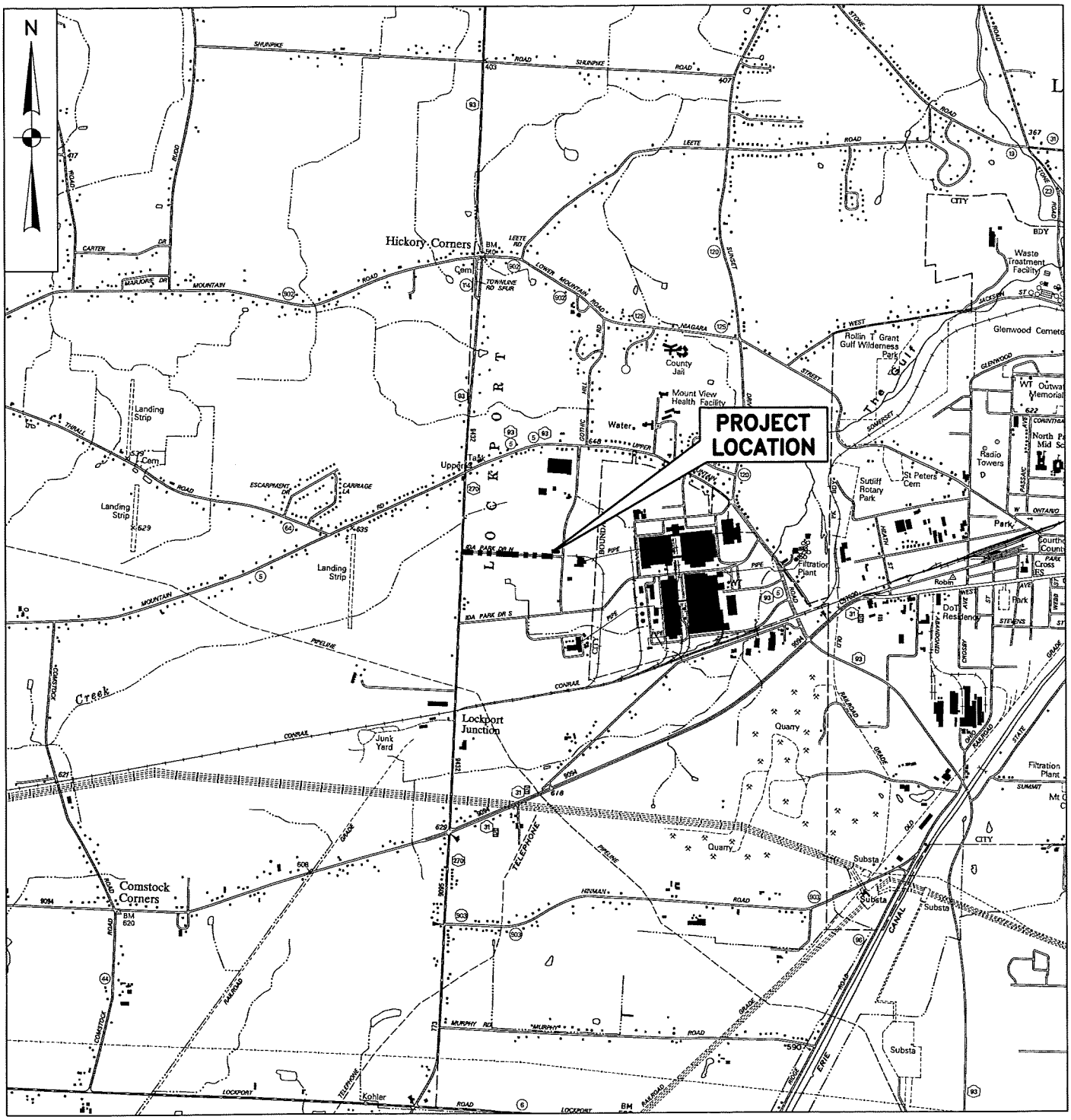
Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semivolatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 [3]	0.33 [3]	0.33 [3]	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]
Phenanthrene	100	100	100	500	NS
Phenol	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 [3]	0.1 [3]	0.1 [3]	0.1 [3]	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 [3]	0.33 [3]	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:
[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.
[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.
[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.
[4] This SCO is derived from data on mixed isomers of BHC.

FIGURES



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EXCAVATION WORK PLAN
FORMER ELECTRUK BATTERY SITE
4922 IDA DRIVE
LOCKPORT, NEW YORK 14094

PROJECT NO. 2007.0262.00	SCALE: 1" = 1,000'	DATE: AUGUST 2009	FIGURE NO. A-1

APPENDIX B

METES AND BOUNDS DESCRIPTION

TICOR TITLE INSURANCE COMPANY

SEARCH NO. 5209-00718

PARCEL "A"

All that tract or parcel of land, situate in the Town of Lockport, County of Niagara and State of New York, being part of Lot 12, Township 14, Range 7 of the Holland Land Company's Survey, bounded and described as follows: Beginning at a point in the west line of lands dedicated to the Town of Lockport by instrument recorded in Liber 1868 of Deeds at page 268, distant 10 feet northerly from the intersection with the north line of lands dedicated to the Town of Lockport by instrument recorded in Liber 2287 of Deeds at page 49; thence northerly along the west line of I.D.A. Drive, a distance of 193.99 feet to a point; thence westerly at right angles, a distance of 308.25 feet to a point; thence southerly at an interior angle of 89° 51' 06", a distance of 193.99 feet to a point; thence easterly at an interior angle of 90° 08' 54" and parallel with the north line of the lands dedicated by the latter dedication hereinabove described, a distance of 307.75 feet to the point or place of beginning

APPENDIX C

ENVIRONMENTAL EASEMENT

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 22nd day of December, 2011, between Owner(s) TOWN OF LOCKPORT, a municipal corporation organized and existing under the Laws of the State of New York and having its place of business at 6560 Dysinger Road, Town of Lockport, County of Niagara, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 4922 I.D.A. Park Drive in the Town of Lockport, County of Niagara and State of New York, known and designated on the tax map of the County Clerk of Niagara as tax map parcel numbers: Section 108.00 Block 1 Lot 55, being the same as that property conveyed to Grantor by deed dated May 26, 2011 and recorded on May 27, 2011 in the Niagara County Clerk's Office in Instrument Number 2011-08929. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.37 +/- acres, and is hereinafter more fully described in the Land Title Survey dated July 15, 2009 and revised September 8, 2011 prepared by Douglas R. Hager, P.L.S. of TVGA Consultants, which will be attached to the Site Management Plan. The Controlled Property description and survey is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of State Assistance Contract Number: C303480, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP.

(4) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(5) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(6) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(7) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.

(8) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP.

(9) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: E932132
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

TOWN OF LOCKPORT :

By: _____

Print Name: MARC R. SMITH

Title: Supervisor, Town of Lockport Date: 9/13/11

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF NIAGARA)

On the 13th day of Sept., in the year 20 11, before me, the undersigned, personally appeared Marc R. Smith, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Cindy L. Meal
Notary Public - State of New York

CINDY L. MEAL
Notary Public, State of New York
Qualified in Niagara County
My Commission Expires November 27, 2014

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner.

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 22nd day of December, in the year 2011, before me, the undersigned, personally appeared Dale A. Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SCHEDULE "A" PROPERTY DESCRIPTION

Address of Property: 4922 I.D.A. Park Drive, Lockport, New York
Tax Map: 108.00-1-55

All that tract or parcel of land, situate in the Town of Lockport, County of Niagara and State of New York, being part of Lot 12, Township 14, Range 7 of the Holland Land Company's Survey, bounded and described as follows:

Beginning at a point in the west line of lands dedicated to the Town of Lockport by instrument recorded in Liber 1868 of Deeds at Page 268, distance 10 feet northerly from the intersection with the north line of lands dedicated to the Town of Lockport by instrument recorded in Liber 2287 of Deeds at Page 49;

Thence northerly along the west line of I.D.A. Drive, a distance of 193.99 feet to a point;

Thence westerly at right angles, a distance of 308.25 feet to a point;

Thence southerly at interior angle of 89°51'06". A distance of 193.99 feet to a point;

Thence easterly at interior angle of 90°08'54" and parallel with the north line of lands dedicated by the latter dedication hereinabove described, a distance of 307.75 feet to the point of beginning.

Containing 1.37 acres more or less.

SURVEY

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

THE ENGINEERING AND INSTITUTIONAL CONTROLS for the Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

ENGINEERING / INSTITUTIONAL CONTROLS

Please show location of engineering controls with measurements in survey drawing with corresponding keys and decription of all Engineering Controls and Institutional Controls covering subject site (see example attached) (subject to Project Manager's comments)

- Soil Cover – Any breach of the natural site cover, including for the purposes of construction or utilities work, must be replaced or repaired according to the Site Management Plan (SMP). Site soil excavated and removed from the property must be managed, characterized, and properly disposed of in accordance with the NYSDEC regulations and directives. Guidelines for management of subsurface soils/fill and long-term maintenance of the natural site cover is provided in the SMP.
- Land Use – The use and development of the site is limited to Commercial and Industrial uses only.

ENVIRONMENTAL EASEMENT AREA ACCESS

THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT.

SCHEDULE 'A' - DEED DESCRIPTION & ENVIRONMENTAL EASEMENT AREA DESCRIPTION

CHICAGO TITLE INSURANCE COMPANY, COMMITMENT NO. 1115-25074
DATED AUGUST 5, 2011.

ALL THAT TRACT OR PARCEL OF LAND, SITUATE IN THE TOWN OF LOCKPORT, COUNTY OF NIAGARA AND STATE OF NEW YORK, BEING PART OF LOT 12, TOWNSHIP 14, RANGE 7 OF THE HOLLAND LAND COMPANY'S SURVEY, BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE WEST LINE OF LANDS DEDICATED TO THE TOWN OF LOCKPORT BY INSTRUMENT RECORDED IN LIBER 1868 OF DEEDS AT PAGE 268, DISTANCE 10 FEET NORTHERLY FROM THE INTERSECTION WITH THE NORTH LINE OF LANDS DEDICATED TO THE TOWN OF LOCKPORT BY INSTRUMENT RECORDED IN LIBER 2287 OF DEEDS AT PAGE 49;

THENCE NORTHERLY ALONG THE WEST LINE OF I.D.A. DRIVE, A DISTANCE OF 193.99 FEET TO A POINT;

THENCE WESTERLY AT RIGHT ANGLES, A DISTANCE OF 308.25 FEET TO A POINT;

THENCE SOUTHERLY AT INTERIOR ANGLE OF 89°51'06". A DISTANCE OF 193.99 FEET TO A POINT;

THENCE EASTERLY AT INTERIOR ANGLE OF 90°08'54" AND PARALLEL WITH THE NORTH LINE OF LANDS DEDICATED BY THE LATTER DEDICATION HERINABOVE DESCRIBED, A DISTANCE OF 307.75 FEET TO THE POINT OF BEGINNING.

CONTAINING 1.37 ACRES MORE OR LESS.

GENERAL NOTES

1. ALL ELEVATIONS BASED ON NAVD88 DATUM. BENCHMARK DESCRIPTION NORTH BONNET BOLT OF FIRE HYD AT SOUTHWEST CORNER OF I.D.A. DRIVE AND ENTERPRISE DRIVE. ELEVATION = 630.34 SEE MAP FOR LOCATION.

2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED THOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF EXCAVATION.

3. NO ENVIRONMENTAL ENGINEERING CONTROLS PROPOSED FOR SUBJECT PROPERTY.

CERTIFICATION

TO: THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH ITS COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

THE TOWN OF LOCKPORT

CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NPS IN 2005. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION AS A LAND SURVEYOR REGISTERED IN THE STATE OF NEW YORK, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

DATE OF SURVEY: JULY 15, 2009
LAST REVISION: SEPTEMBER 8, 2011

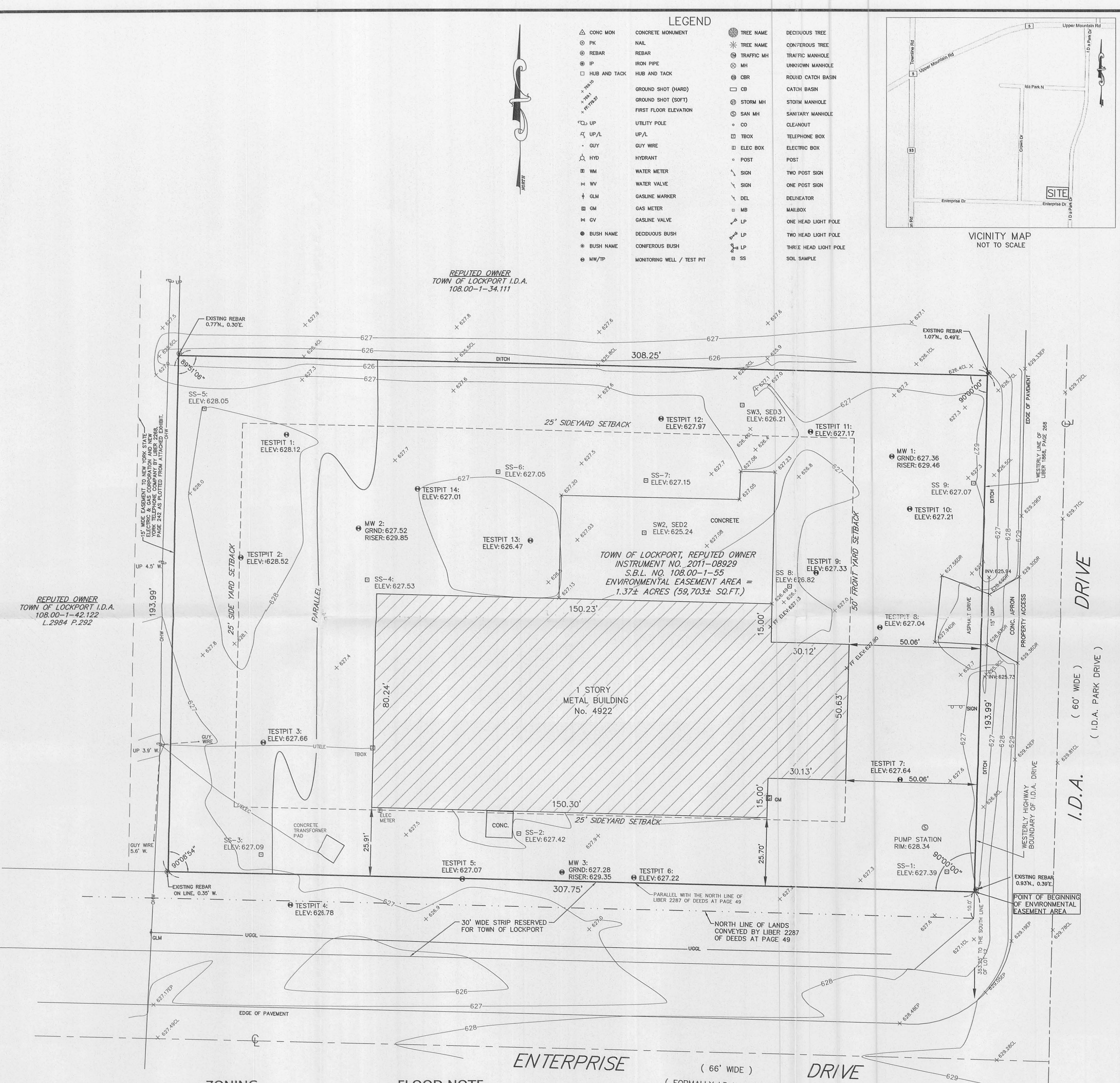
DOUGLAS R. HAGER, P.L.S. NEW YORK STATE LICENSE NO. 050204

FORMER ELECTRUK BATTERY
ERP SITE # E932132
4922 I.D.A. DRIVE
LOCKPORT, NEW YORK

EASEMENTS OF RECORD

THIS SURVEY HAS BEEN REVISED WITH THE BENEFIT OF ABSTRACT SEARCH NO.1115-00450 DATED MAY 27, 2011, AND TITLE REPORT COMMITMENT NO. 1115-25074 DATED AUGUST 5, 2011 AS PREPARED BY CHICAGO TITLE INSURANCE COMPANY.

THE ITEMS IN SCHEDULE B AFFECT THE PARCEL SHOWN HEREON:
ITEM 3: 15' UTILITY EASEMENT TO NEW YORK STATE ELECTRIC & GAS AND NEW YORK TELEPHONE BY LIBER 2268 OF DEEDS AT PAGE 242 AS SHOWN.



(66' WIDE)
(FORMALLY I.D.A. SOUTH)

ZONING

ZONED INDUSTRIAL

MINIMUM LOT AREA:	1 ACRE
MINIMUM LOT WIDTH:	200 FEET
FRONT SETBACK:	50 FEET
SIDE YARD SETBACK:	25 FEET
SIDE YARD SETBACK: (ABUTTING TO NON-INDUSTRIAL DISTRICT)	50 FEET
REAR SETBACK:	10 FEET
REAR SETBACK: (ABUTTING TO NON-INDUSTIAL DISTRICT)	100 FEET
DRIVEWAYS FROM SIDE:	10 FEET
MAXIMUM HEIGHT OF BUILDINGS:	50 FEET
MAXIMUM LOT COVERAGE:	85%

FLOOD NOTE

ZONE 'X' (DETERMINED TO BE OUTSIDE THE 500 YEAR FLOODPLAIN)

REFERENCE: F.I.R.M. (WWW.FEMA.GOV)
COMMUNITY PANEL NO. 36013 0012 D
EFFECTIVE DATE: OCTOBER 4, 2002

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

TBM
ELEV. 630.34'
NORTH BOLT OF HYD.

TOWN OF LOCKPORT — NIAGARA COUNTY — NEW YORK

ALTA/ACSM LAND TITLE SURVEY
4922 I.D.A. DRIVE LOCKPORT, NEW YORK
PART OF LOT 12, TOWNSHIP 14, RANGE 7 OF THE HOLLAND LAND COMPANY'S SURVEY
SITE E932132

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.0937
www.tvga.com

Designed by: DRT	Field Date: 5/13/08 Office Date: 7/15/09
Drawn by: RJN	Job No. 2007.0262.00
Checked by: WNW	Book: 391 Page: 123 Map: 59773
Dwg Scale: Horiz: 1"=20 Vert:	File Name: 59773-ALTA.dwg

MAP NUMBER:
59773
Sheet 1 of 1

NIAGARA COUNTY CLERK
WAYNE F. JAGOW

RECEIPT

Create Time: 1/6/2012 2:22:26 PM
RECEIPT # 2012105215

Recording Clerk: TH
Account: cash2
Rec'd Frm: JUSTINE - CHICAGO
By Mail/In Person (M/P): P

Instr#: 2012-00373
DOC: EASEMENT
DEED STAMP: 2194
OR Party: TOWN OF LOCKPORT
EE Party: PEOPLE OF THE STATE OF NEW

DEEDTP

Cover Page	1	$8.00
Recording Fee	19	$62.00
Cultural Ed	1	$14.25
Records Management - County	1	$1.00
Records Management - State	1	$4.75
TP584-2 (Public Utilities)	1	$1.00

Transfer Tax

Transfer Tax	$0.00

Receipt Summary

TOTAL RECEIPT: ---->	$91.00
TOTAL RECEIVED: ---->	$91.00
Cash Back	$0.00

PAYMENTS

Check # 17093 ->	$91.00

SEAMAN JONES HOGAN & BROOKS

P.O. Box 461, Lockport, New York 14095-0461 Phone (716) 439-7022 FAX (716) 439-7066

APPENDIX D

SAMPLE HEALTH AND SAFETY PLAN

SITE MANAGEMENT PLAN
FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

SAMPLE HEALTH AND SAFETY PLAN

NYSDEC SITE NO. E932132

Prepared for:

Town of Lockport
6560 Dysinger Road
Lockport, New York

Prepared by:

TVGA CONSULTANTS

ENGINEERING • LAND SURVEY • MAPPING • ENVIRONMENTAL

WE DESIGN WITH CONSCIENCE. WE ACT WITH PURPOSE.

One Thousand Maple Road • Elma, NY 14059-9530 • P.716.655.8842 • F.716.655.0937 • www.tvga.com

2007.0262.00

August 2009

DISCLAIMER

This Health and Safety Plan has been written for the exclusive use of TVGA and its employees. Properly trained and experienced TVGA subcontractors may also use it as a guideline document. However, TVGA does not guarantee the health and safety of any person entering the site.

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

TVGA claims no responsibility for the use of this Plan by others. The Plan is written for the specific site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

SITE MANAGEMENT PLAN OF FORMER ELECTRUK BATTERY SITE
(NYSDEC Site No. E932132)
4922 IDA PARK DRIVE, TOWN OF LOCKPORT
NIAGARA COUNTY, NEW YORK

FINAL HEALTH AND SAFETY PLAN

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

TVGA Consultants, on behalf of the Town of Lockport and Niagara County, will provide engineering and environmental services associated with the Remedial Investigation/Alternatives Analysis (RI/AA) program to be implemented at the Former Electruk Battery Site located in the Town of Lockport, Niagara County, New York. The project site has a history of industrial/manufacturing use, having been utilized to manufacture lead acid batteries from 1990 to 1996. The sources of environmental concern at this site include the presence of surface soil, subsurface soil, surface water and/or groundwater contaminated lead and/or solvents and the potential for residual with lead contamination on building surfaces. These concerns arise from the site's historical use as well as a 1996 fire that caused significant damage to the on-site building.

This Health and Safety Plan (HASP) has been developed to govern all field investigation work at the Former Electruk Battery Site. This plan is intended to ensure that the procedures used during planned field investigation activities meet reasonable professional standards to protect human health and safety of workers and the surrounding community. This Plan incorporates, by reference, the applicable requirements of the Occupational Safety and Health Administration in 29 CFR Parts 1910 and 1926.

The requirements and guidelines in the HASP are based on a review of available site specific information and an evaluation of potential hazards. These requirements can and will be modified by Senior Level Management (SLM), the Project Team Leader (PTL), the Site Safety Officer (SSO) or the Work Party Personnel (WPP), if necessary.

All field personnel working on this project must familiarize themselves with this HASP and abide by its requirements. Since every potential health and safety hazard encountered at a site cannot be anticipated, it is imperative that personnel are equipped and trained to respond promptly to a variety of possible hazards. Adherence to this HASP will minimize the possibility that personnel at the site and the public will be injured or exposed to significant health hazards. Information on potential health, safety and environmental hazards is discussed in conjunction with appropriate protective measures including assignment of responsibility, personal protective equipment (PPE) requirements, work practices, and emergency response procedures.

In general, contractors and subcontractors are responsible for complying with the HASP, as well as all Federal, State and local regulations pertaining to their work. With TVGA's permission, a contractor should modify this HASP to address activities of their employees within the scope-of-work this Plan addresses. These changes to the HASP by the contractor must be approved by TVGA. TVGA personnel can and must stop work by a TVGA contractor who is not following the health and safety procedures required by

this HASP. However, the contractor/subcontractor expressly retains all responsibility for the safety of their personnel while working on this site.

This HASP is specifically intended for those personnel who will be conducting activities within the defined scope of work in specified areas of the site. Specific tasks covered by this HASP may include, but are not limited to:

- Performing inspections to characterize environmental hazards;
- Conducting non-intrusive inspections and instrument surveys;
- Excavating earthen materials, fill, debris, etc.;
- Collecting soil samples from soil probes and test borings;
- Surface water/sediment sampling;
- Installation and sampling of groundwater monitoring wells;
- Installation and sampling of soil vapor probes; and
- Decontaminating personnel and equipment.

2.0 KEY PERSONNEL

2.1 Off-Site Personnel

Title: Principal
Description: Responsible for defining project objectives, allocating resources, determining the chain of command, and evaluating program outcome.
Contact: Robert R. Napieralski, TVGA, (716) 655-8842

Title: Project Manager
Description: Reports to upper level management, has authority to direct response operations, assumes total control over site activities.
Contact: Daniel E. Riker, TVGA, (716) 655-8842

2.2 On-Site Personnel

Title: Site Safety Officer
Description: Advises the field team on all aspects of health and safety issues, recommends stopping work if any operation threatens worker or public health and safety.
Contact: James C. Manzella, TVGA (716) 655-8842

Title: Project Team Leader
Description: Responsible for field team operations.
Contact: James C. Manzella, TVGA (716) 655-8842

Title: Work Party Personnel
Description: Performs field operations
Contact: TVGA personnel, Town of Lockport personnel, and subcontractor personnel.

2.3 Personnel Responsibilities

The primary safety personnel include the Project Team Leader (PTL), the Site Safety Officer (SSO) and the Work Party Personnel (WPP). For this project, the PTL and the SSO will be the same individual. Additionally, Senior Level Management (SLM) has the responsibility to ensure all project personnel are aware of the requirements of the HASP. The SLM may also recommend policy changes on safety matters including work practices, training and response actions and will provide the necessary resources to conduct the project safely. The PTL is responsible for the implementation of the HASP. The PTL is also responsible for conducting the initial on-site training.

The SSO is responsible for the day-to-day implementation of the HASP. The SSO will assist the PTL in providing initial training for all project personnel and for providing additional training in the form of safety meeting to discuss changed site conditions or upgrade training on an as needed basis. The SSO is also responsible for daily calibration of real-time air monitoring equipment and will ensure that all personnel assigned to operate the instrumentation are properly trained in its use and maintenance.

The SSO has the following specific responsibilities:

- Assuring that a complete copy of this HASP is at the site prior the start of field activities and that all workers are familiar with the document;
- Conducting training and briefing sessions if appropriate, prior to the start of field activities at the site and repeat sessions as necessary;
- Ensuring the availability, use, and proper maintenance of specified personal protective, decontamination, and other health and safety equipment;
- Maintaining a high level of safety awareness among team members and communicating pertinent matters to them promptly;
- Assuring that all field activities are performed in a manner consistent with Company policy and the HASP;
- Monitoring for dangerous conditions during field activities;
- Assuring proper decontamination of personnel and equipment;
- Preparing all health and safety documentation;
- Coordinating with emergency response personnel and medical support facilities, and representatives of the NYSDEC;
- Initiating immediate corrective actions in the event of an emergency or

unsafe condition;

- Notifying the SLM and PTL promptly of an emergency, unsafe condition, problem encountered, or significant exceptions to the requirements in this HASP;
- Recommending improved health and safety measures to the SLM, or the PTL.

The SSO has the authority to:

- Suspend field activities or otherwise limit exposures if the health and safety of any persons appears to be endangered;
- Direct Company or contractor personnel to alter work practices that are deemed not properly protective of human health of the environment; and
- Suspend an individual from field activities for significant infraction of the requirements in this HASP.

The WPP is responsible for providing air monitoring during intrusive activities at the site. The WPP is directly responsible to the SSO and will assist the SSO in the day-to-day implementation of the HASP.

Site personnel are responsible for following the requirements of the HASP. They should become thoroughly familiar with the requirements of exposures that may adversely affect the health and safety of on-site personnel, off-site population, or the environment.

3.0 SITE ENTRY

3.1 Objectives

The objectives of the site entry will initially focus on determining the nature and extent of contamination associated with environmental media. The investigation of subsurface conditions will be completed through the excavation of test pits; hollow-stem auger drilling and spilt-spoon sampling; and groundwater monitoring well installation, development, and sampling. The investigation of surface conditions will be completed by collecting surface soil samples from suspect areas, and field screening of soils and fill with a photoionization detector (PID).

3.2 Safety Meetings

To ensure that the HASP is being followed, the Project Team Leader (PTL) shall conduct a safety meeting prior to initiating any site activity.

3.3 Safety Training

The SSO will confirm that every person assigned to a task has had adequate training for that task and that the training is up-to-date by checking with the TVGA Human Resources Office. TVGA and subcontractor personnel working on the site shall have a minimum of at least 24 hours of classroom-style health and safety training and 3 days of on-site training, as required by OSHA 29 CFR 1910.120. All training will have been conducted and certified in accordance with OSHA regulations outlined in 29 CFR 1910.120.

3.4 Medical Surveillance

All TVGA and subcontractor personnel working on this investigatory project will have had a medical surveillance physical consistent with OSHA regulations in 29 CFR 1910.120, and performed by a qualified occupational health physician. The SSO shall confirm prior to initiation of work on this site that every person assigned to a task has had an annual physical, has passed the medical examination, and has been determined medically fit by the occupational health physician for this type of work.

3.5 Site Mapping

A map of the site showing all areas to be accessed during the environmental investigation is depicted on Figure 4 of the Work Plan. A map showing the route from the site to the nearest hospital has been included as Figure 1.

3.6 Meteorological Data

Fieldwork is expected to be completed March through June 2008. Average temperatures for these months are expected to reach highs of approximately 70°F and lows of 15°F. Precipitation for these months is likely to be in the form of rain and or snow. Prior to each day's activities, the daily forecast should be monitored for indications of adverse work conditions.

4.0 HAZARD EVALUATION

4.1 Physical Hazards

Physical hazards such as the following may be encountered on site:

- Slippery surfaces - trip/fall
- Electrical - shock, fire
- Mechanical/Large Equipment - cuts, amputation, trauma
- Uneven Terrain/Excavations/Soil piles/Sink Holes - trip/fall

The planned test pit and drilling investigations also presents hazards specific to working with heavy equipment. Personnel working on or around the drill rig trucks, or backhoes should be aware of the precautions listed below. The practices are meant to be guidelines, and are not all-inclusive of the safety measures necessary while performing intrusive activities.

Utility Clearance

Personnel involved in intrusive work shall determine the minimum distance from marked utilities which work can be conducted with the assistance of the locator line service.

- Elevated superstructures (e.g., drill rig, backhoe, etc) shall remain a distance of 10 feet away from utility lines and 20 feet away from power lines.
- During all intrusive activities (e.g., drilling, excavating, probing), the locator line service should be contacted to mark underground lines before any work is started.

Drilling Safety

TVGA personnel working in the vicinity of drilling or direct-push soil probing rigs shall adhere to the following practices:

- The drilling site should be inspected before the start of work to identify unsafe conditions or operations that the subcontractor may not be aware of.
- TVGA personnel monitoring the drilling activity and inspecting the environmental samples will attend the contractor's daily safety briefing.
- Before the mast is raised, check for overhead obstructions.
- Remind drill rig personnel of their responsibility to safely fill or cover any open borehole or excavation left unattended for any period of time.
- Personnel shall wear steel-toed shoes, safety glasses, hearing protection and hard hats during drilling operations.
- The area shall be roped off, marked or posted, to keep the area clear of pedestrian traffic or spectators.
- All personnel should be instructed in the use of the emergency kill switch on the drill rig.

Heavy Equipment Operations

Working around heavy equipment can be dangerous because of the size and power of the equipment, the limited field of vision of the operator and the noise levels that can be produced by the equipment. Heavy equipment to be utilized at the site may include drill rigs, trucks and backhoes.

To ensure the safety of TVGA personnel in the work area, the following safety procedures regarding heavy equipment must be reviewed prior to and followed during work activities:

- Personnel should never approach a piece of heavy equipment without the operators' acknowledgment and stoppage of work or yielding to the employee.
- Never walk under the load of a bucket or stand beside an opening truck bed.
- Maintain visual contact with the operator when in close proximity to the heavy equipment.
- Wear hearing protection while on or around heavy equipment, when normal conversation cannot be heard above work operations.

Steel-toed shoes, safety glasses, and a hard hat shall be worn for all work conducted near heavy equipment.

4.2 Chemical Hazards

Known and suspected sources of contamination include potential past spills and releases of chemicals and wastes used, generated and/or stored on-site; and past discharges and spills of untreated process wastewater. Potential chemical hazards, which could be encountered during the site investigation, include, but are not limited to:

- Solvents
- Acids
- Metals
- Residual lead contamination on building surfaces
- Lead contaminated soil, sediment, groundwater and surface water

4.3 Exposure Limits

Recommended Exposure Limits (RELs), and OSHA Permissible Exposure Limits (PELs) for several of the above chemical hazards are listed below. A complete list

of the compounds detected on-site will be available upon completion of sampling and laboratory analysis. The RELs and PELs for the compounds listed below can be found in the NIOSH Guide to Chemical Hazards.

CHEMICAL	REL [1]	PEL [2]
Lead	0.05 mg/m³	0.05 mg/m³
Sulfuric Acid	1 mg/m³	1 mg/m³
Cadmium	CA	0.005 mg/m³
Nickel (Ca)	0.015 mg/m³	1.0 mg/m³
Silver	0.01 mg/m³	0.01 mg/m³
Arsenic (Ca)	0.002 mg/m³ (15 minutes)	0.01 mg/m³
Chromium	0.5 mg/m³	1.0 mg/m³
Selenium	0.2 mg/m³	0.2 mg/m³
Mercury	0.05 mg/m³	0.1 mg/m³
Trichloroethylene (Ca)	CA	100 ppm
Tetrachloroethylene (Ca)	CA	100 ppm
Stoddard solvent	350 mg/m³	500 ppm

1 REL = NIOSH recommended exposure limits, up to 10 hour work day exposure limit, 40 hours/week. REL in mg/m³ = (REL in ppm x molecular weight) / 24.45.

2 PEL = OSHA permissible exposure limit, 8 hour exposure limit, 40 hours/week, OSHA 29 CFR 1910.1000. REL in mg/m³ = (REL in ppm x molecular weight) / 24.45.

OSHA = Occupational Safety and Health Agency

NIOSH = National Institute for Occupational Safety and Health

N.A. = no applicable value available

CA = NIOSH recommends the substance be treated as a potential human carcinogen

4.4 Dispersion Pathways

Potential exposure mechanisms that can transport particulate and organic compounds from the areas of investigation to other areas of the site as well as beyond the boundaries of the site are:

- Volatilization and wind transport
- Surface water runoff from contaminated areas
- Groundwater flowing beneath the site

4.5 Potential IDLH and Other Dangerous Conditions

The Immediately Dangerous to Life and Health (IDLH) levels for chemicals potentially on-site and their IDLH level are listed below.

CHEMICAL	IDLH Level
Lead	100 mg/m^3
Sulfuric Acid	15 mg/m^3
Cadmium	9 mg/m^3
Nickel (Ca)	10 mg/m^3
Silver	10 mg/m^3
Arsenic (Ca)	50mg/m^3
Chromium	250 mg/m^3
Selenium	1 mg/m^3
Mercury	10 mg/m^3
Trichloroethylene (Ca)	1000 ppm
Tetrachloroethylene	150 ppm
Stoddard solvent	20,000 mg/m^3

CA = NIOSH recommends the substance be treated as a potential human carcinogen

The IDLH level is defined only for the purpose of respirator selection. The IDLH level represents a maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.
Visible indicators of potential IDLH conditions as well as other dangerous conditions are listed below.

- Confined spaces
- Unstable overhead structures
- Unusually colored solid or liquid wastes
- Containers or accumulation structures (e.g., drums, pits, sumps, etc.), the contents of which are unknown
- Potentially explosive or flammable situations indicated by bulging drums, gas generation, effervescence, or instrument readings
- Extremely hazardous materials such as cyanide, phosgene
- Visible vapor clouds
- Biological indicators such as dead animals, stressed vegetation

5.0 MONITORING AND ACTION LEVELS

5.1 Air Monitoring

The following environmental monitoring instruments and methods shall be used on site during the RI/AA program at the specified intervals. Due to the limited potential for dust generation during the RI/AA activities, dust will not be monitored during the RI/AA.

Photoionization Detector (PID)

A PID shall be used continuously at the downwind perimeter of the work area, during sampling of soils and sediments and the installation of the test borings, and advancement of soil probes to monitor for volatile organic compounds. The PID shall be calibrated daily following manufacturers' recommendations (see Section 6.0 of the Field Sampling Plan). Readings and calibration data shall be recorded in daily logs by the SSO.

Temperature

Ambient temperature should be monitored throughout the work day for potential heat or cold stress conditions.

5.2 Action Levels

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the site. The action levels for this project are as follows:

- Volatile organic compounds (PID monitor): consistent readings of greater than 5 ppm above background levels in the breathing zone.
- Temperature: ambient air temperature below 36°F for cold stress, and above 90°F for heat stress.

Vapor Emission Response Plan

If the organic vapor level decreases below 5 ppm above background, work activities can resume. 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 (while using the appropriate PPE) 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.

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 SSO 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 Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background 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 levels persist above 5 ppm above background 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 levels greater than 5 ppm above background persist for more than 30 minutes in the 20-Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect. The Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels in the 20-Foot Zone are greater than 10 ppm above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- All Emergency Response Contacts as listed in the HASP be contacted.
- The local police authorities will be immediately contacted by the SSO and advised of the situation.
- 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 Site Safety Officer.

6.0 SITE CONTROL MEASURES

Maintaining specific work zones both on-site and off-site, along with other precautionary measures outlined throughout this HASP will help control site access.

6.1 On-Site Control Measures

Temporary fencing or caution tape around the perimeter of the work areas will provide a suitable measure to control access to the work areas and to prevent unauthorized access to on-site work zones.

The SSO will establish and clearly mark the following areas with consultation of the PTL:

Exclusion Zone (EZ)

This will be the actual work area where potential contamination may exist. An outer boundary will be established and clearly marked. The area of the EZ will be established based on site work conditions, exposure monitoring, etc. In general, the EZ will incorporate the area being probed or drilled and a 50-foot radius around the area.

- Access to the EZ will be limited to employees and visitors who have a minimum 24-Hour Hazardous Site Worker training, protective equipment and responsibilities for work in the EZ. The entry of unauthorized personnel into the EZ will be prohibited.

- The Exclusion Zone will be in areas of intrusive activities such as drilling, installation of monitoring wells, excavating and sampling. The limits of the zone will change, as necessary, depending on the SSO's judgment regarding work conditions, air sampling, etc.

- Drilling or excavation activities inside the EZ will commence at Level D. Air monitoring will be performed while drilling or excavating proceeds using a photoionization detector (PID) and a particulate monitor.

Contamination Reduction Zone (CRZ)

An area between the actual work site (EZ) and Support Zone (SZ) will be established to facilitate employee and equipment decontamination, protective equipment storage and supply, and employee rest areas.

- The location of the CRZ will be established in an area offering minimal contamination and will be subject to change based on the SSO's

judgments considering work conditions, air monitoring, etc.

- The CRZ will contain a boot wash with brushes and soap, a source of wash water for washing equipment and hands, and plastic garbage bags to contain disposable protective equipment.

Support Zone (SZ)

An area free from contamination will be identified and clearly marked where administrative or other support functions (not requiring entrance to the EZ or CRZ) can be performed. The actual siting of the SZ will be established by the PTL and SSO by considering distance from the EZ, visibility, accessibility, air monitoring data, etc.

All personnel working in the study area will enter their names in a site log, which will be maintained in the SZ. Personnel will only enter an EZ after proceeding through a designated entry / checkpoint at the CRZ. Before engaging in any site work, all personnel involved in such work will be briefed on the following:

- Identity of PTL/SSO
- Boundaries, exit and entry point locations of the Exclusion Zone
- Decontamination procedures when required
- Chemical, radiological and physical hazards suspected of being in the EZ and their signs and symptoms of exposure
- Location of first aid equipment and qualified personnel
- Procedures to be used in contacting emergency personnel, including potential site evacuation procedures in case of emergencies
- Location of emergency equipment
- Location of emergency meeting point
- Contractor staff person in charge;
- Activities taking place that day
- Location of emergency eyewash station
- Heat or cold stress symptoms. All personnel will be advised to watch for signs of stress in staff working in EZ. Symptoms are defined in Attachment E
- Personnel protective equipment requirements and limitations

6.2 Off-Site Control Measures

Although the majority of the site investigation activities will be conducted within the interior area of the project site, background surface soil samples will be collected from separate off-site locations. Residential properties and public roads may be adjacent to a few of the proposed sample locations. Accordingly,

the following control measures will be instituted to protect the public from physical and chemical hazards associated with this off-site sampling:

- A localized contaminant reduction zone (CRZ) shall be established at the periphery of the EZ toward the site interior, if possible, to regulate flow of personnel and equipment into and out of the zone.
- Only properly trained and certified project personnel will be permitted to enter the CRZ and EZ.
- The SSO or other member of the WPP will be present throughout the duration of sampling activities to monitor the work zone and prevent unauthorized parties from entry.

7.0 HAZARD COMMUNICATION

In compliance with 29 CFR 1910.1200, any hazardous materials brought on site by any personnel (TVGA or contractors) shall be accompanied with the material's MSDS. The SSO shall be responsible for maintaining the MSDSs on site, reviewing them for hazards that working personnel may be exposed to, and evaluating their use on site with respect to compatibility with other materials including personal protective equipment, and their hazards. Should the SSO deem the material too hazardous for use on site, the party responsible for bringing the material on site shall remove it from the site. No other hazardous materials are expected to be used during the environmental investigation at the site.

8.0 CONFINED SPACE ENTRY

No confined space entry by TVGA personnel is anticipated during the completion of this project. Should a potential confined space hazard exist, all proper confined space entry procedures, techniques, and equipment shall be consistent with OSHA regulations in 29 CFR 1910.146.

9.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on evaluation of the potential hazards for the site, the initial levels of PPE have been designated as modified Level D for all site activities which is addressed below. No changes to the specified levels of PPE shall be made without the approval of the SSO and the PTL. If action levels are reached, work shall cease and further evaluations shall be performed by the SSO and advisors.

Modified Level D Protection

- Safety glasses with side shields
- Chemical resistant gloves
- Steel-toe and shank boots

- Hard hat
- Neoprene or butyl rubber outer boots

For the protection of site personnel, organic gas/vapor emissions will be continuously monitored during ground intrusive operations, and the required level of protection upgraded if action levels warrant. If an upgrade in PPE is warranted, Level C Protection including full face air-purifying respirators with appropriate cartridges will be implemented.

Level C Protection

Level C Protection, the maximum level likely to be needed at this site, includes the following;

- Full-face air purifying respirators with NIOSH/MSHA - approved high efficiency (HEPA) canisters for acid mists/organic vapors (half-face respirators may be substituted for certain tasks, by approval of the SSO)
- Chemical-resistant (Poly-Tyvek) clothing, one piece, long sleeved
- Outer and inner gloves. Inner gloves to be tight-fitting latex or vinyl. Outer gloves of neoprene or nitrile
- Steel-toe and shank boots (chemical resistant);
- Disposable Tyvek "booties"
- Neoprene or butyl rubber outer boots
- Gloves and boots taped
- Hard hat

For all personnel that may be required to wear full-face respirators (all persons working near a borehole, for example), only NIOSH/MSHA - approved respirators will be used. These will contain cartridges approved for removal of organic vapors/acid mists and particulate. All team members will be fit-tested for respirators. Due to possible difficulties in achieving a proper seal between face and mask, persons with facial hair will not be fitted for respirators, nor will they be allowed to work in areas requiring respiratory protection. Unless the SSO directs otherwise, when respirators are used, the cartridges should be replaced after eight hours of use, or at the end of each shift, or when any indication of breakthrough or excess resistance to breathing is detected.

Donning PPE

The following procedures should be followed when donning protective equipment.

- Inspect all equipment to ensure it is in good condition
- Don protective suit and gather suit around waist
- Put on outer boots over feet of the suit and tape at boot/suit junction

- Don inner gloves
- Don top half of protective suit and seal (as necessary)
- Don respirator protection (if necessary)
- Don outer gloves and tape at glove/suit junction (as necessary)
- Have assistant check all closures and observe wearer to ensure fit and durability of protective gear

10.0 DECONTAMINATION

Level C or higher PPE utilized during site operations warrants the institution of decontamination procedures.

Contaminated material must be either decontaminated or isolated immediately. All materials brought into the Exclusion Zone are presumed contaminated. Alconox and water shall be used as the decontamination solution. Decontamination equipment consisting of large wash tubs, scrub brushes, plastic sheeting, distilled water, plastic garbage bags, trash barrel, and respirator wipes will be used.

Protective clothing, especially reusable boots and gloves, will be decontaminated before leaving the Exclusion Zone by a thorough soap-and-water wash on the decontamination pad. Washing and rinsing solutions will be disposed on site in areas where test pits were excavated unless elevated levels are detected with a PID. If elevated levels are detected, it may be necessary to dispose of decon solutions in a drum or an approved containment tank. Solid waste materials (disposable gloves and garments, tape, plastic drop cloths, etc.) will be containerized for proper disposal. Personnel will be advised that all clothing worn under protective clothing (underwear, shirts, socks, trousers) on-site should be laundered separately from street clothing before redressing. If protective clothing is breached and personal clothing becomes contaminated, the personal clothing will be disposed.

Use of disposable sampling equipment will limit decontamination requirements. The need for widespread vehicle decontamination will be limited by keeping to a minimum the number of vehicles entering the Exclusion Zone. Vehicles leaving the Exclusion Zone must be decontaminated by high pressure and temperature water.

Personal Decontamination

The following steps must be taken to decontaminate personnel leaving a Level B or C work area.

- Place equipment and sample containers that must be decontaminated on a plastic drop cloth;
- Place disposable supplies and equipment in a labeled drum;
- Scrub non-disposable gloves and outer boots (if used) with a brush in a

detergent water, then rinse in clean water;

- Remove outer gloves and boot covers;
- Remove protective garments, safety boots and hard hat;
- Wash inner gloves;
- Remove and wash respiratory protection (if worn);
- Remove inner clothing (as necessary for Draft decontamination at end of shift);
- Thoroughly wash face, hands and body; and
- Redress.

Equipment Decontamination

Personnel must take the following steps to decontaminate equipment and sample containers leaving Level A, B, or C work areas:

- Don protective equipment at Modified Level D;
- Wash reusable equipment in detergent solution and/or an appropriate solvent, or steam clean;
- Dry sample containers, etc., with paper towels (if necessary) and place on a clean drop cloth;
- Remove and discard used respirator cartridges. Wash respirators in fresh detergent water, rinse in clean water, and disinfectant. Store in a closed plastic bag, away from sources of contamination; and
- Launder clothing before reuse (or place in appropriate labeled impervious containers for transport to laundry).

Organic vapor/HEPA cartridges are the appropriate canisters for use with the involved substances. All respirators used shall be NIOSH and/or MSHA approved and their use shall be consistent with OSHA regulations in 29 CFR 1910.134. All on-site personnel wearing a respirator shall have respirator clearance from a qualified occupational health physician. In addition, the respirator wearers on site shall perform qualitative fit tests to ensure proper fit of the face seal of the respirator. Filter cartridges used shall be of the same manufacturer as the respirator and shall be changed on a daily basis at a minimum and/or if breathing becomes difficult.

11.0 EMERGENCY PROCEDURES

Prior to entering the site, all personal will complete the attached emergency data sheet. On-site personnel will abide by the following emergency procedures.

- The SSO shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate measures are followed.
- Non-emergencies will be treated on site, documented and the injured party will be directed to seek further medical attention.

- All occupational injuries and illnesses will be reported, recorded, and investigated.

11.1 Communication

The SSO will have a cellular-type telephone on-site at all times for direct outside communications with emergency response organizations.

11.2 Personnel Injury

Upon notification of personnel injury the SSO will assess the nature of the injury. The appropriate first aid shall be initiated and, if necessary, contact shall be made for an ambulance and with the designated medical facility. If the injury increases the risk to others, activities on site will stop until the added risk is removed or minimized.

11.3 Fire/Explosion

Upon notification of fire or explosion, the designated emergency signal shall be sounded and all site personnel shall assemble at a safe distance upwind of the involved area. The SSO shall alert the appropriate fire department through the 911 emergency reporting system.

11.4 PPE Failure

If any site worker experiences a failure or alteration of PPE that affects the protection factor, that person and his or her buddy shall immediately exit the work area. Reentry and resuming work activities shall not be permitted until the equipment has been repaired or replaced.

11.5 Other Equipment Failure

If any equipment on site fails to operate properly, the Field Team Leader and the SSO shall be notified and will determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the remediation tasks, all personnel shall leave the work zone until the situation is evaluated and appropriate actions taken.

11.6 Spill Containment

Should a release of a chemical material occur on site, the SSO shall contain the spill to the extent immediately possible by the use of absorbent booms, pigs, pads, etc. The SSO shall contact appropriate spill response public departments (local or state) and a hazardous materials response contractor for further containment (refer to Section 12.0).

12.0 EMERGENCY MEDICAL CARE

12.1 Hospital

Name: Lockport Memorial Hospital
Address: 521 East Ave, Lockport, NY
Hospital #: (716)-514-5700
Emergency Room #: (716)-434-9110
Directions from site: Start out going north on IDA Park Drive to Upper Mountain Road. Turn right on Upper Mountain Road (NY 93) turn left on to Saunders Settlement Road (NY 31). Continue on Saunders Settlement Road and turn left on to Washburn Street (also NY 31) until East Avenue. Turn right on to East Avenue (also NY 31) and hospital is on the north side of East Avenue. Estimated drive time is 11 minutes and it is 4.8 miles.

12.2 Emergency Notification Numbers

Fire Department: 911
Police Department: 911
Department of Emergency Services: 911

Niagara County Health Department, Environmental Division:
5467 Upper Mountain Rd., Suite 100, Lockport, NY14094
Environmental Health
439-7453

Niagara County Emergency Services:
5526 Niagara St. Ext., Box 496, Lockport, NY 14095-0496
438-3471
911 (24-Hour Emergency Number)

NYSDEC Spill Response Unit: (716) 851-7220
NYSDEC Spill Hotline: 800-457-7362
NYSDOH Division of Environmental Health Assessment: (716) 847-4385

13.0 STANDARD OPERATING PROCEDURES

- Restricted areas are not to be accessed.
- Avoid unrestricted areas that seem questionable or unsafe.
- Minimize contact with hazardous substances.
- Use remote sampling, handling, and/or container-opening techniques whenever possible.
- Protect monitoring and sampling instruments by bagging, if necessary.

- Wear disposable outer garments and use disposable equipment where appropriate.
- All PPE and skin surfaces should be checked for cuts and/or punctures.
- Do not eat, smoke, or drink within the exclusion or contamination reduction zones.
- Due to the potential for the absorption, inhalation, or ingestion of toxic substances, those personnel required to take prescription drugs should not enter this site until their medication program is reviewed and approved for site access by a qualified physician.
- All personnel must be familiar with Client's operating safety procedures.
- The buddy system must always be used and enforced.
- No workers with beards or heavy sideburns are allowed to wear respirators.
- Use of contact lenses is prohibited on site.
- All heavy equipment involved should be equipped with available back-up signals.
- Eating, drinking, chewing gum or tobacco, smoking, or any similar practice is prohibited
- Hands and face must be thoroughly washed upon leaving the Exclusion Zone
- Whenever decontamination procedures for outer garments are in effect, it is recommended that the entire body should be thoroughly washed, as soon as possible, after the protective garment is removed. Thorough showers are required of all personnel at the completion of the workday.
- No excessive facial hair, which interferes with a satisfactory fit of the mask-to-face seal, is allowed for personnel required to wear respiratory protective equipment.
- Medicine and alcohol can exaggerate the effects from exposure to toxic chemicals.
- Fluids will be provided to staff to replace perspiration and will be sealed in containers. All fluids for ingestion will be kept in the Support Zone.
- Due to the effects of protective outer wear decreasing body ventilation, there exists an increase in the potential for heat casualties.
- All field personnel should check for any personal habit, which may allow contaminated soil or water onto or into the body. Jewelry, including watches, shall not be worn within the Exclusion Zone.
- All first aid treatments will be reported to the SSO, who will record each incident.

14.0 COMMUNITY HEALTH AND SAFETY PLAN

14.1 Potential Impacts

Potential hazards to the general public and surrounding community posed by this site investigation plan relate primarily to fugitive dust (particulate) emissions, organic contaminants and physical hazards associated with the operation of heavy equipment and open excavations. Potential exposure mechanisms that can

transport particulates, both contaminated and non-contaminated, and volatile organic compounds beyond the site boundary include:

- Contaminated dust transported by wind erosion; and
- Volatile organic compounds transmitted by wind currents.

The site is located in an area that consists mainly of commercial properties. Commercial properties are primarily located west and north of the site, and are of a sufficient separation distance that it is unlikely that they will be adversely impacted by the site investigation activities.

Limiting potential exposure mechanisms that can transport contaminants beyond the site boundary will be completed by implementation of an air monitoring plan, maintaining site control, the use of engineering controls and following emergency procedures.

14.2 Monitoring Plan

The drilling and test pit excavation activities are not expected to produce measurable fugitive dust. Probing activities generally do not produce fugitive dust. The hollow stem auger drilling will produce limited auger spoils, which will likely be damp, therefore limiting the amount of dust produced. The air monitoring program will measure VOCs at the sampling locations on a continuous basis.

Should action levels be encountered, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in personal protection equipment shall be mandated by the SSO, or operations shall cease in that portion of the site. The action levels for this project and the response measures to be implemented to protect the community in the event that these action levels are exceeded are presented in Section 4.2.

14.3 Site Control

During the implementation of the investigation, TVGA will block the access into the site to the extent practicable using posts, cones rope and/or caution tape. Access to the working area will be restricted via the site control measures detailed in Section 6.0.

14.4 Engineering Controls

In the event measurable dust levels are detected during the drilling of test borings or excavation of test pits, then standard dust suppression techniques may be utilized, including the following:

- Wetting excavation faces, and equipment during excavation.
- Restricting vehicle speeds to 10 mph.
- Postponing excavation activities during severe winds.
- Covering excavated areas and material after excavation activity ceases.
- Decreasing the number and size of excavations.

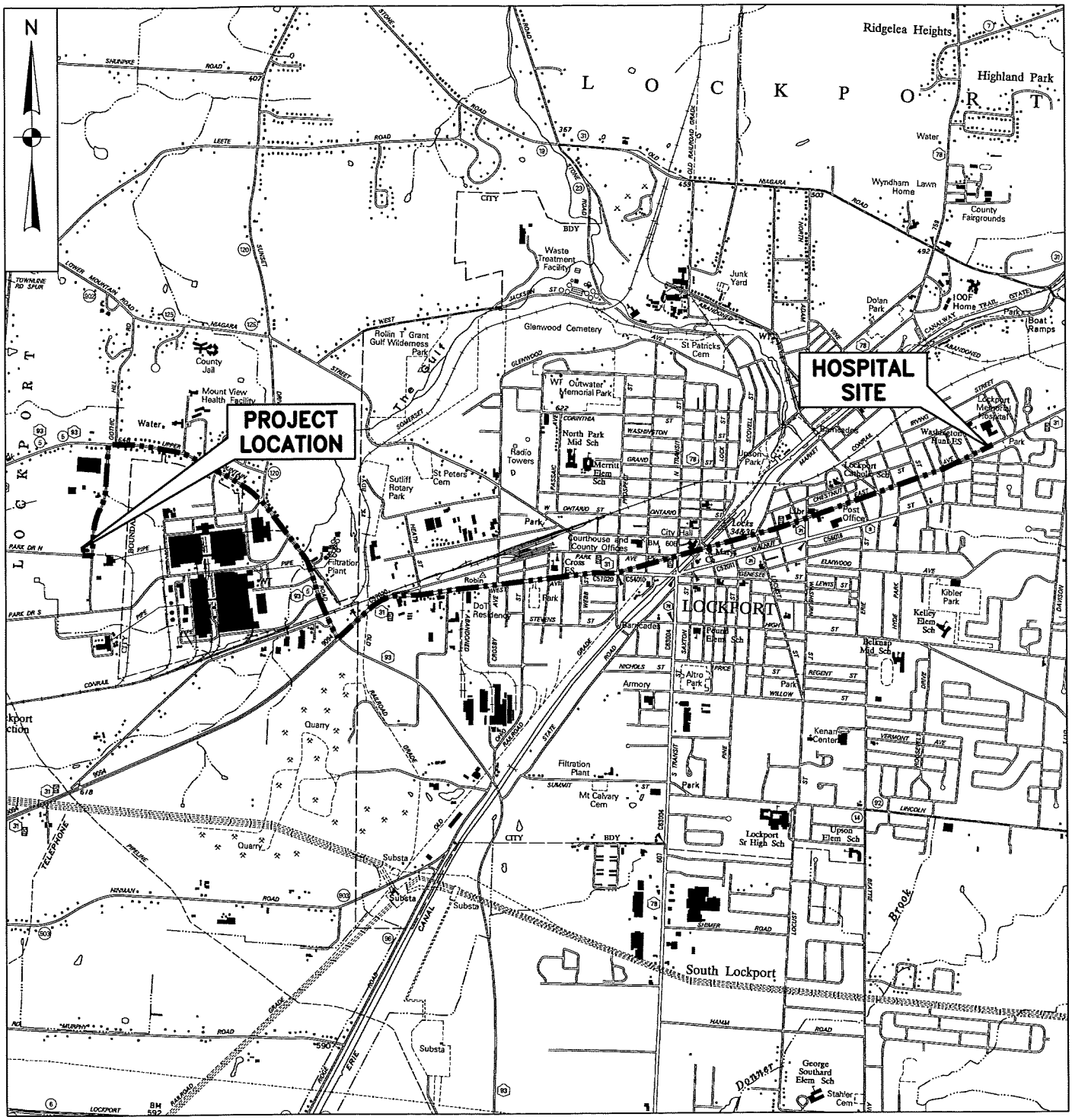
If the dust suppression techniques being utilized do not reduce airborne particulate then investigation activities will be suspended, until a review of the engineering controls can be completed.

14.5 Emergency Notification

This HASP has been developed to include details on emergency coordination and notification procedures to be implemented during an incident. The procedures for specific emergencies are outlined in Section 11.0 and the contact information for local emergency personnel is included in Section 12.0. In the event community health and safety is in question, dialing 911 will summon Fire and Police personnel which can take appropriate actions as necessary.

FIGURE 1

MAP TO HOSPITAL



U.S.G.S LOCKPORT QUADRANGLE
CAMBRIA QUADRANGLE

MAP TO HOSPITAL

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.0937
www.tvga.com

HEALTH AND SAFETY PLAN
FORMER ELECTRUK BATTERY SITE
4922 IDA DRIVE
LOCKPORT, NEW YORK 14094

PROJECT NO. 2007.0262.00	SCALE: 1" = 1,000'	DATE: AUGUST 2009	FIGURE NO. 1

N:\2007.0262.00-SOQ for Electruck Site Grant Application\Engineering\CADD\SMP\TO HOSPITAL MAP.dwg, 8/6/2009 4:04:19 PM, \\tvgadc01\SAVIN MLP35n PCL 5e

ATTACHMENT A

CERTIFICATION

TVGA
CONSULTANTS

SITE MANAGEMENT PLAN OF FORMER ELECTRUK BATTERY SITE

CERTIFICATION

PROJECT LOCATION: Former Electruk Battery Site, 4922 IDA Park Drive, Town of Lockport, Niagara County, NY
PROJECT NO. 2007.0262.00

Senior Level Management shall sign this form after she/he has conducted a pre-entry briefing.

Each employee conducting field work shall sign this form after the pre-entry briefing is completed and prior to commencing work on site. A copy of this signed form shall be kept at the site, and the original sent to the PTL, for inclusion into the project file.

Site Personnel Sign-off

☐ I have received a copy of the Site-Specific Health and Safety Plan.

☐ I have read the Plan and will comply with the provisions contained therein.

☐ I have attended a pre-entry briefing outlining the specific health and safety provisions on this site.

Name: _____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____
_____ Date: _____

TVGA Project Team Leader

☐ A pre-entry briefing has been conducted by myself on _____.

☐ I deferred the pre-entry briefing responsibility to the Site Health and Site Safety Officer (SSO).

Name: _____ Date: _____.

ATTACHMENT B

MEDICAL DATA SHEET

TVGA
CONSULTANTS

MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all personnel potentially working on-site and will be kept in the Support Zone during the performance of site operations. This data sheet will accompany any personnel when medical assistance is needed or if transport to the hospital facilities is required:

Site: _____

Name: _____ Home Telephone _____

Address: _____

_____

Age: _____ Height: _____ Weight: _____

Person to Contact in Case of Emergency:

_____ Phone No. _____

Drug or other Allergies: _____

_____

Particular Sensitivities: _____

Do You Wear Contacts? YES NO

Provide a Checklist of Previous Illnesses or Exposures to Hazardous Chemicals:

_____

_____

_____

What Medications are you presently using? _____

_____

Do you have any Medical Restriction? _____

_____

_____

Name, Address, and Phone Number of Personal Physician: _____

_____

_____

ATTACHMENT C

DIRECT READING AIR MONITORING FORM

TVGA
CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE:_____
PROJECT: Former Electruk Battery Site
PROJECT #: 2007.0262.00
WEATHER CONDITIONS:_____
WIND DIRECT/SPEED: _____

USER: _____
CALIBRATION: _____
CALIBRATED BY: _____
COMMENTS: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

ATTACHMENT D

HEAT AND COLD STRESS SYMPTOMS

Hazard Alert

Heat Stress in Construction

Heat is a serious hazard in construction. Your body builds up heat when you work and sweats to get rid of extra heat. But sometimes your body may not cool off fast enough. This can happen, say, if you are up on a roof pouring hot asphalt or you are lifting heavy loads.

Too much heat can make you tired, hurt your job performance, and increase your chance of injury. You can get skin rash. You can also get:

- **Dehydration.** When your body loses water, you can't cool off fast enough. You feel thirsty and weak.
- **Cramps.** You can get muscle cramps from the heat even after you leave work.
- **Heat exhaustion.** You feel tired, nauseous, headachy, and giddy (dizzy and silly). Your skin is damp and looks muddy or flushed. You may faint.
- **Heat stroke.** You may have hot dry skin and a high temperature, Or you may feel confused. You may have convulsions or become unconscious. **Heat stroke can kill you** unless you get emergency medical help.

The Risk of Heat Stress

Your risk of heat stress depends on many things. These include:

- Your physical condition
- The weather (temperature, humidity)
- How much clothing you have on
- How fast you must move or how much weight you must lift
- If you are near a fan or there is a breeze
- If you are in the sun.

If there is an industrial hygienist on your work site, ask the hygienist about the Wet-Bulb Globe Temperature Index. It is a more precise way to estimate the risk of heat stress.

Protect Yourself

Try to do these things:

- **Drink a lot of cool water all day — before you feel thirsty.** Every 15 minutes, you may need a cup of water (5 to 7 ounces).

(Please turn the page.)

• **Keep taking rest breaks**. Rest in a cool, shady spot. Use fans.
• **Wear light-colored clothing,** made of cotton.
• **Do the heaviest work in the coolest time of the day**.
• **Work in the shade**.
• **For heavy work in hot areas,** take turns with other workers, so some can rest.
• **If you travel to a warm area for a new job,** you need time for your body to get used to the heat. Be extra careful the first 2 weeks on the job.
• **If you work in protective clothing,** you need more rest breaks. You may also need to check your temperature and heart rate. On a Superfund site where the temperature is 70 degrees or more, the U.S. Environmental Protection Agency (EPA) says a health professional should monitor your body weight, temperature, and heart rate.
• **If you think someone has heat stroke, call emergency services (or 911).** Immediately move the victim to the shade. Loosen his/her clothes. Wipe or spray his/her skin with cool water and fan him/her. You can use a piece of cardboard or other material as a fan.

OSHA does not have a special rule for heat. But because heat stress is known as a serious hazard, workers are protected under the **General Duty Clause** of the Occupational Safety and Health Act. The clause says employers must provide "employment free from recognized hazards causing or likely to cause physical harm."

For more information, call your local union, the Center to Protect Workers' Rights (CPWR) (301-578-8500 or www.cpwr.com), the National Institute for Occupational Safety and Health (1-800-35-NIOSH or www.cdc.gov/niosh), or OSHA (1-800-321-OSHA or www.osha.gov). Or check the website www.elcosh.org

The Center to Protect Workers' Rights is the research and development institute of the Building and Construction Trades Dept., AFL-CIO: CPWR, Suite 1000, 8484 Georgia Ave., Silver Spring, MD 20910. (Edward C. Sullivan is president of the Building and Construction Trades Department and CPWR.) Production of this flyer was supported by grants UO2/310982 and UO2/312014 from the National Institute for Occupational Safety and Health (NIOSH). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NIOSH.

Heat Stroke–A Medical Emergency

What are the symptoms?

DRY, PALE SKIN WITH NO SWEATING; HOT, RED SKIN THAT LOOKS SUNBURNED; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; SEIZURES OR FITS; AND UNCONCIOUSNESS WITH NO RESPONSE

What should you do?

- Call 911 for emergency help immediately.
- Move the victim to a cool, shaded area. Don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from the person if symptoms include seizures or fits. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or wiping the victim with a wet cloth or covering him or her with a wet sheet.
- Place ice packs under the armpits and groin area.

How can you protect yourself and your coworkers?

- Learn the signs and symptoms of heat-induced illnesses and how to respond.
- Train your workforce about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Build up tolerance to the heat and the work activity slowly. This usually takes about 2 weeks.
- Use the buddy system, with people working in pairs.
- Drink plenty of cool water, about a cup every 15 to 20 minutes.
- Wear light, loose-fitting, breathable clothing, such as cotton.
- Take frequent, short breaks in cool, shaded areas to allow the body to cool down.
- Avoid eating large meals before working in hot environments.
- Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.

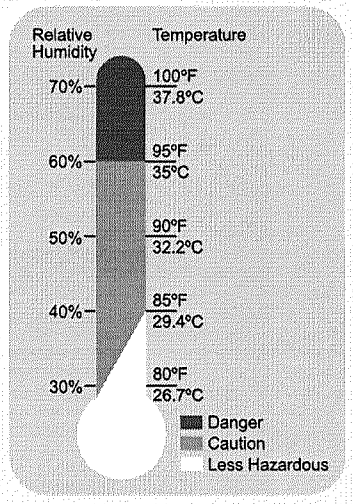
What factors put you at increased risk?

- Taking certain medications. Check with your health-care provider or pharmacist to see if any medicines you are taking affect you when working in hot environments.
- Having a previous heat-induced illness.
- Wearing personal protective equipment such as a respirator or protective suit.

The Heat Equation

HIGH TEMPERATURE + HIGH HUMIDITY
+ PHYSICAL WORK = HEAT ILLNESS

When the body is unable to cool itself through sweating, **serious** heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If left untreated, **heat exhaustion** could progress to **heat stroke** and possible **death**.



U.S. Department of Labor
Occupational Safety and Health Administration
OSHA 3154
2002

Heat Exhaustion

What are the symptoms?

HEADACHES; DIZZINESS OR LIGHTHEADEDNESS; WEAKNESS; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; UPSET STOMACH; VOMITING; DECREASED OR DARK-COLORED URINE; FAINTING OR PASSING OUT; AND PALE, CLAMMY SKIN

What should you do?

- Act immediately. If not treated, heat exhaustion may advance to heat stroke or death.
- Move the victim to a cool, shaded area to rest. Don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.

Surviving the Cold Weather

Prolonged exposure to low temperatures, wind and/or moisture can result in cold-related injury from frostbite and hypothermia. Here are some suggestions on how to keep warm and avoid frostbite and hypothermia.

Dress properly

Wear several layers of loose-fitting clothing to insulate your body by trapping warm, dry air inside. Loosely woven cotton and wool clothes best trap air and resist dampness.

The head and neck lose heat faster than any other part of the body. Your cheeks, ears and nose are the most prone to frostbite. Wear a hat, scarf and turtleneck sweater to protect these areas.

Frostbite: What to look for

The extent of frostbite is difficult to judge until hours after thawing. There are two classifications of frostbite:

- Superficial frostbite is characterized by white, waxy or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff and underlying tissue feels soft when depressed.
- Deep frostbite is characterized by waxy and pale skin. The affected parts feel cold, hard, and solid and cannot be depressed. Large blisters may appear after rewarming.

What to do

1. Get the victim out of the cold and to a warm place immediately.
2. Remove any constrictive clothing items that could impair circulation.
3. If you notice signs of frostbite, seek medical attention immediately.
4. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together.
5. Slightly elevate the affected part to reduce pain and swelling.
6. If you are more than one hour from a medical facility and you have warm water, place the frostbitten part in the water (102 to 106 degrees Fahrenheit). If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

What not to do

1. Do not use water hotter than 106 degrees Fahrenheit.
2. Do not use water colder than 100 degrees Fahrenheit since it will not thaw frostbite quickly enough.
3. Do not rub or massage the frostbite area.
4. Do not rub with ice or snow.

Hypothermia

Hypothermia occurs when the body loses more heat than it produces. Symptoms include change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature.

Severe hypothermia may cause rigid muscles, dark and puffy skin, irregular heartbeat and respiration, and unconsciousness.
Treat hypothermia by protecting the victim from further heat loss and seeking immediate medical attention. Get the victim out of the cold. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. Replace wet clothing with dry clothing. Handle the victim gently because rough handling can cause cardiac arrest. Keep the victim in a horizontal (flat) position.
Finally, the best way to avoid frostbite and hypothermia is to stay out of the cold. Read a book, clean house or watch TV. Be patient and wait out the dangerous cold weather.

How to Prevent Frostbite and Hypothermia

Prolonged exposure to low temperatures, wind or moisture - whether it be on a ski slope or in a stranded car - can result in cold-related illnesses such as frostbite and hypothermia. The National Safety Council offers these tips to help you spot and put a halt to these winter hazards.

How to detect and treat cold-related illnesses

Frostbite is the most common injury resulting from exposure to severe cold. Superficial frostbite is characterized by white, waxy, or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff but underlying tissue feels soft and pliable when depressed. Treat superficial frostbite by taking the victim inside immediately. Remove any constrictive clothing items that could impair circulation. If you notice signs of frostbite, immediately seek medical attention. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together. Slightly elevate the affected part to reduce pain and swelling. If you are more than one hour from a medical facility and you have warm water, place the frostbitten part in the water (102 to 106 degrees Fahrenheit). If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

Deep frostbite usually affects the feet or hands and is characterized by waxy, pale, solid skin. Blisters may appear. Treat deep frostbite by moving the victim indoors and immediately seek medical attention.

Hypothermia occurs when the body's temperature drops below 95 degrees Fahrenheit. Symptoms of this condition include change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature. Severe hypothermia may produce rigid muscles, dark and puffy skin, irregular heart and respiratory rates, and unconsciousness.

Treat hypothermia by protecting the victim from further heat loss and calling for immediate medical attention. Get the victim out of the cold. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. Replace wet clothing with dry clothing. Handle the victim gently because rough handling can cause cardiac arrest. Keep the victim in a horizontal (flat) position. Give artificial respiration or CPR (if you are trained) as necessary.

How to prevent cold-related illnesses

Avoid frostbite and hypothermia when you are exposed to cold temperatures by wearing layered clothing, eating a well-balanced diet, and drinking warm, non-alcoholic, caffeine-free liquids to maintain fluid levels.
Avoid becoming wet, as wet clothing loses 90 percent of its insulating value.

12/22/1998 - Protecting Workers in Cold Environments

Fact Sheets (Program Highlights) - Table of Contents

U.S. Department of Labor
Occupational Safety and Health Administration

Fact Sheet No. OSHA 98-55

Protecting Workers in Cold Environments

December 1998

As the weather becomes "frightful" during winter months, workers who must brave the outdoor conditions face the occupational hazard of exposure to the cold. Prolonged exposure to freezing temperatures can result in health problems as serious as trench foot, frostbite, and hypothermia. Workers in such industries as construction, commercial fishing and agriculture need to be especially mindful of the weather, its effects on the body, proper prevention techniques, and treatment of cold-related disorders.

The Cold Environment

An individual gains body heat from food and muscular activity and loses it through convection, conduction, radiation and sweating to maintain a constant body temperature. When body temperature drops even a few degrees below its normal temperature of 98.6°F (37°C), the blood vessels constrict, decreasing peripheral blood flow to reduce heat loss from the surface of the skin. Shivering generates heat by increasing the body's metabolic rate.

The four environmental conditions that cause cold-related stress are low temperatures, high/cool winds, dampness and cold water. Wind chill, a combination

of temperature and velocity, is a crucial factor to evaluate when working outside. For example, when the actual air temperature of the wind is 40°F (4°C) and its velocity is 35 mph, the exposed skin receives conditions equivalent to the still-air temperature being 11°F (-11°C)! A dangerous situation of rapid heat loss may arise for any individual exposed to high winds and cold temperatures.

Major Risk Factors for Cold-Related Stresses

- Wearing inadequate or wet clothing increases the effects of cold on the body.
- Taking certain drugs or medications such as alcohol, nicotine, caffeine, and medication that inhibits the body's response to the cold or impairs judgment.
- Having a cold or certain diseases, such as diabetes, heart, vascular, and thyroid problems, may make a person more susceptible to the winter elements.
- Being a male increases a person's risk to cold-related stresses. Sad, but true, men experience far greater death rates due to cold exposure than women, perhaps due to inherent risk-taking activities, body-fat composition or other physiological differences.
- Becoming exhausted or immobilized, especially due to injury or entrapment, may speed up the effects of cold weather.
- Aging -- the elderly are more vulnerable to the effects of harsh winter weather.

Harmful Effects of Cold

Trench Foot is caused by long, continuous exposure to a wet, cold environment, or actual immersion in water. Commercial fisherman, who experience these types of cold, wet environments daily, need to be especially cautious.

Symptoms:

Symptoms include a tingling and/or itching sensation, burning, pain, and swelling, sometimes forming blisters in more extreme cases.

Treatment:

Move individuals with trench foot to a warm, dry area, where the affected tissue can be treated with careful washing and drying, rewarming and slight elevation. Seek medical assistance as soon as possible.

Frostbite occurs when the skin tissue actually freezes, causing ice crystals to form between cells and draw water from them, which leads to cellular dehydration. Although this typically occurs at temperatures below 30°F (-1°C), wind chill effects can cause frostbite at above-freezing temperatures.

Symptoms:

Initial effects of frostbite include uncomfortable sensations of coldness; tingling, stinging or aching feeling of the exposed area followed by numbness. Ears, fingers, toes, cheeks, and noses are primarily affected. Frostbitten areas appear white and cold to the touch. The appearance of frostbite varies depending on whether rewarming has occurred.

Deeper frostbite involves freezing of deeper tissues (muscles, tendons, etc.) causing exposed areas to become numb, painless, hard to the touch.

Treatment:

If you suspect frostbite, you should seek medical assistance immediately. Any existing hypothermia should be treated first (See **Hypothermia** below). Frostbitten parts should be covered with dry, sterile gauze or soft, clean cloth bandages. Do not massage frostbitten tissue because this sometimes causes greater injury. Severe cases may require hospitalization and even amputation of affected tissue. Take measures to prevent further cold injury. If formal medical treatment will be delayed, consult with a licensed health care professional for training on rewarming techniques.

General Hypothermia occurs when body temperature falls to a level where normal muscular and cerebral functions are impaired. While hypothermia is generally associated with freezing temperatures, it may occur in any climate where a person's body temperature falls below normal. For instance, hypothermia is common among the elderly who live in cold houses.

Symptoms:

The first symptoms of hypothermia, shivering, an inability to do complex motor functions, lethargy, and mild confusion, occur as the core body temperature decreases to around 95°F (35°C).

As body temperature continue to fall, hypothermia becomes more severe. The individual falls into a state of dazed consciousness, failing to complete even simple motor functions. The victim's speech becomes slurred and his or her behavior may become irrational.

The most severe state of hypothermia occurs when body temperature falls below

90°F (32°C). As a result, the body moves into a state of hibernation, slowing the heart rate, blood flow, and breathing. Unconsciousness and full heart failure can occur in the severely hypothermic state.

Treatment:

Treatment of hypothermia involves conserving the victim's remaining body heat and providing additional heat sources. Specific measures will vary depending upon the severity and setting (field or hospital). Handle hypothermic people very carefully because of the increased irritability of the cold heart. Seek medical assistance for persons suspected of being moderately or severely hypothermic.

If the person is unresponsive and not shivering, assume he or she is suffering from severe hypothermia. Reduction of heat loss can be accomplished by various means: obtaining shelter, removal of wet clothing, adding layers of dry clothing, blankets, or using a pre-warmed sleeping bag.

For mildly hypothermic cases or those more severe cases where medical treatment will be significantly delayed, external rewarming techniques may be applied. This includes body-to-body contact (e.g., placing the person in a prewarmed sleeping bag with a person of normal body temperature), chemical heat packs, or insulated hot water bottles. Good areas to place these packs are the armpits, neck, chest, and groin. It is best to have the person lying down when applying external rewarming. You also may give mildly hypothermic people warm fluids orally, but avoid beverages containing alcohol or caffeine.

Preventing Cold-Related Disorders

Personal Protective Clothing is perhaps the most important step in fighting the elements is providing adequate layers of insulation from them. Wear at least three layers of clothing:

-- An outer layer to break the wind and allow some ventilation (like Gore-Tex® or nylon);

-- A middle layer of wool or synthetic fabric (Qualofil or Pile) to absorb sweat and retain insulation in a damp environment. Down is a useful lightweight insulator; however, it is ineffective once it becomes wet.

-- An inner layer of cotton or synthetic weave to allow ventilation.

Pay special attention to protecting feet, hands, face and head. Up to 40 percent of body heat can be lost when the head is exposed. Footgear should be insulated to protect against cold and dampness. Keep a change of clothing available in case work garments become wet.

Engineering Controls in the workplace through a variety of practices help reduce the risk of cold-related injuries.

- Use an on-site source of heat, such as air jets, radiant heaters, or contact warm plates.
- Shield work areas from drafty or windy conditions.
- Provide a heated shelter for employees who experience prolonged exposure to equivalent wind-chill temperatures of 20°F (-6°C) or less.
- Use thermal insulating material on equipment handles when temperatures drop below 30°F (-1°C).

Safe Work Practices, such as changes in work schedules and practices, are necessary to combat the effects of exceedingly cold weather.

- Allow a period of adjustment to the cold before embarking on a full work schedule.
- Always permit employees to set their own pace and take extra work breaks when needed.
- Reduce, as much as possible, the number of activities performed outdoors. When employees must brave the cold, select the warmest hours of the day and minimize activities that reduce circulation.
- Ensure that employees remain hydrated.
- Establish a buddy system for working outdoors.
- Educate employees to the symptoms of cold-related stresses -- heavy shivering, uncomfortable coldness, severe fatigue, drowsiness, or euphoria.

The quiet symptoms of potentially deadly cold-related ailments often go undetected until the victim's health is endangered. Knowing the facts on cold exposure and following a few simple guidelines can ensure that this season is a safe and healthy one.

APPENDIX E

MASTER EROSION CONTROL PLAN

FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

MASTER EROSION CONTROL PLAN

NYSDEC SITE NO. E932132

Prepared for:

Town of Lockport
6560 Dysinger Road
Lockport, New York

Prepared by:

TVGA CONSULTANTS

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2007.0262.00

August 2009

MASTER EROSION CONTROL PLAN

FORMER ELECTRUK BATTERY SITE
(NYSDEC SITE NO. E932132)
TOWN OF LOCKPORT, NY

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1.0 INTRODUCTION

1.1 Background

The Former Electruk Battery Site is located along the western side of IDA Park Drive in the Town of Lockport, New York and occupies approximately 1.4 acres in the Lockport Industrial Park.

1.2 Purpose and Scope

A Site Management Plan (SMP) was prepared that describes protocols for the proper handling of project site soil/fill during intrusive activities. The property owner at the time of development will be responsible for all monitoring, implementation, and reporting requirements of the SMP. Since erosion control will be a critical component of preventing the potential migration of contaminants onto developed property or off-site during intrusive activities at the project site, this Master Erosion Control Plan (MECP) was prepared to provide guidance to owners and developers during build-out activities on the project site. This MECP is a critical component of the SMP. This document is generic in nature and provides minimum erosion control practices to be utilized by the site owner and/or developer. More specific plans may be developed by the property owner(s) after the long-term development approach for the property has been finalized.

2.0 GENERAL PERMIT REQUIREMENTS

The State Assistance Contract that the Town of Lockport entered into for the former Electruck Battery site precludes the need for State required permits that would typically be applicable to remedial and/or activities, such as the State Pollution Discharge Elimination System (SPDES) Permit. However, the conditions of this program must be adhered to during the remedial construction activities and site redevelopment, and therefore Section 2.4.11 of the SMP addresses the management of stormwater during remedial activities and site redevelopment. Following the completion of remedial activities the owner/developer of the project site must comply with the applicable local, state and federal stormwater management and erosion control guidelines and regulations. Additionally, redevelopment efforts at the project site may require other applicable state and local permits. These activities also be completed in accordance with the SMP.

3.0 POTENTIAL EROSION AND SEDIMENT CONTROL CONCERNS

Following remedial activities, redevelopment activities will proceed for commercial and light industrial uses of the project site. Site-specific design

measures for erosion and sediment control may need to be determined at that time after the development approach for the project site has been determined.

Potential areas and items of concern during project site intrusive activities include the following:

- All portions of the project site not covered by buildings, sidewalks, roadways, parking areas, or other structures will be required to be covered with 12 inches of "clean" soils to limit exposure to remaining subsurface soil/fill materials. The transportation and placement activities associated with this work will require erosion and sediment controls to prevent the surface soil from being washed off the area subject to intrusive activities;
- Remediated areas or off-site properties adjacent to unremediated areas of the project site need protection so that they do not become impacted by site operations;
- Storm water inlets will require protective measures to limit sediment transfer to storm sewers;
- Runoff from soil stockpiles will require erosion controls;
- Surface slopes need to be minimized as much as practical to control sediment transfer; and
- Soil/fill excavated during development will require proper handling and disposal.

4.0 EROSION AND SEDIMENT CONTROL MEASURES

4.1 Background

Standard soil conservation practices must be incorporated into the construction and development plans to mitigate soil erosion damage, off-site sediment migration, and water pollution from erosion. These practices combine vegetative and structural measures, many of which will be permanent in nature and become part of the complete project (i.e., drainage channels and grading). Other measures will be temporary and serve only during the construction stage. Selected erosion and sediment control measures will meet the following criteria:

- Minimize erosion through project design (minimum slopes, phased construction, etc.);
- Incorporate temporary and permanent erosion control measures; and
- Remove sediment from sediment-laden storm water before it leaves the site.

4.2 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be utilized during intrusive activities. They will be installed by the contractor or site developer and will be maintained until they are either no longer needed or until such time as permanent measures are installed and become effective. At a minimum, the following temporary measures will be used:

- Silt fencing;
- Straw/hay bales;
- Temporary vegetation/mulching;
- Temporary sedimentation basins; and
- Cautious placement, compaction, and grading of stockpiles.

4.2.1 Silt Fencing

Intrusive activities could potentially result in surface water flow to drainage ditches and swales, storm sewers, Hyde Creek, and adjacent properties. Silt fencing will be the primary sediment control measure used in these areas. Prior to extensive soil excavation or grading activities, silt fences will be installed along the perimeter of all construction areas. The orientation of the fencing will be adjusted as necessary as the work proceeds to accommodate changing site conditions.

Intermediate silt fencing will be utilized as necessary, upgradient of the perimeter fencing to help lower surface water runoff velocities and reduce the volume of sediment to perimeter fencing. Stockpiles will also be surrounded with silt fencing.

As sediment collects, the silt fences will be cleaned as necessary to maintain their integrity. Removed sediment will be utilized elsewhere on-site as general fill. All perimeter silt fences will remain in place until intrusive activities in an area are completed and vegetative cover has been established. Silt fences will be installed in accordance with the details presented in Attachment D-1.

4.2.2 Straw and/or Hay Bales

Straw and/or hay bales will be used to intercept sediment laden storm water runoff in drainage channels during construction. The use of either hay or straw will be based on the availability of materials at the time of intrusive activities.

Bales will be placed in swales and ditches where the anticipated flow velocity is not expected to be greater than 5 feet/second (fps). Intermediate bales will be placed upgradient of the final barrier to reduce flow velocities and sediment loadings where higher velocities are anticipated.

As with silt fencing, sediment will be removed as necessary from behind the bales and disposed of on-site. Bales that have become laden with sediment or that have lost their structural integrity or effectiveness will be replaced. Bales should be installed in accordance with the details presented in Attachment D-1.

4.2.3 Temporary Vegetation and Mulching

Intermediate areas where remedial and/or development activities will not occur or resume for an extended period of time (greater than 90 days) will be seeded with a quick germinating variety of grass or covered with a layer of mulch to control fugitive dust and erosion. Soil/fill stockpiles that will not be utilized for an extended period of time will also be either vegetated or covered.

4.2.4 Temporary Sedimentation Basins

Temporary sedimentation basins will be constructed as necessary upgradient of storm water inlets to reduce the volume of sediment laden runoff from the project site. The basins can be as simple as a small excavated area along the alignment of a storm water ditch or as elaborate as a full-scale sedimentation basin with outlet structures designed for certain storm events from a given area of the project site. The basins will be cleaned as necessary and the removed sediment utilized elsewhere on-site as subgrade fill material.

4.2.5 Cautious Placement of Stockpiles

As remediation and/or development occurs, intrusive activities will produce stockpiles of soil and subgrade fill materials. Careful placement and construction of stockpiles will be required to control erosion. Stockpiles will be placed no closer than fifty feet from Hyde Creek, storm water inlets, and parcel boundaries. Additionally, stockpiles will be graded and compacted as necessary for positive surface water runoff and dust control. Also, the stockpiles will be kept covered at all times with appropriately anchored tarps, which will be routinely inspected and replaced if found to be damaged.

4.3 Permanent Control Measures During Site Redevelopment

Permanent erosion and sedimentation control measures will be installed as soon as practical during construction for long-term erosion protection. Since the detailed development approach for the site has not been determined, specific design features are yet to be selected. Examples of permanent erosion control measures could include:

- Utilizing minimum slopes in erosion prone areas to limit erosion;

- Minimizing the potential contact with, and migration of, subsurface soil/fill through the placement of a "clean" soil cover system in all areas not covered with structures, roads, parking areas, sidewalks, etc;
- Construction of permanent storm water detention ponds where appropriate;
- Planting and maintaining vegetation;
- Limiting runoff flow velocities to the extent practical; and
- Lining collection channels with riprap, erosion control fabric, vegetation, or similar materials.

5.0 CONSTRUCTION MANAGEMENT PRACTICES

5.1 General

The following general construction practices should be evaluated for erosion and sedimentation control purposes during remedial and/or site development activities:

- Clearing and grading only as much area as is necessary to accommodate the construction needs in order to minimize disturbance of areas subject to erosion (i.e., phasing the work);
- Covering exposed or disturbed areas of the site as quickly as practical;
- All erosion and sediment control measures should be installed prior to disturbing the site subgrade; and
- Both on-site and off-site tracking of soil by vehicles should be minimized by utilizing routine entry/exit routes.

6.0 EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE

All erosion and sedimentation controls described in this Plan will be inspected by a qualified representative of the remedial contractor and/or site developer within 24 hours of a heavy rainfall event and repaired or modified as necessary to effectively control erosion of turbidity problems. Inspections should include areas under construction, areas subjected to intrusive activities, stockpile areas, erosion control devices, (i.e. silt fences, hay bales, etc.) and locations where vehicles enter and leave the site. Routine inspections of the entire site should also be made on a monthly basis during remedial and/or development activities.

If inspections indicate problems, corrective measures should be implemented within 24 hours. A report summarizing the scope of the inspection, name of the inspector, date, observations made, and a description of the corrective actions take should be completed. Examples of inspection forms to be completed are included in Attachment D-2.

6.1 Implementation

The remedial contractor and/or site developer at this site shall at all times properly construct, operate and maintain all erosion controls and features, as part of intrusive activities, in accordance with regulatory requirements, and with good engineering and construction practices. Erosion control measures and activities will be in accordance with currently accepted Best Management Practices (BMPs). These erosion control monitoring, inspection, and maintenance activities have been developed to achieve compliance with the requirements of the master erosion control plan. The key elements of the monitoring effort include the following:

- Site Inspections and Maintenance;
- BMPs Monitoring;
- Recordkeeping;
- Review and Modifications; and
- Certification of Compliance.

6.2 Site Inspections and Maintenance Practices

The temporary erosion control features installed by the remedial contractor and/or site developer will be maintained until no longer needed or permanent erosion control methods are installed.

Site inspections are required every seven days or within 24 hours of a rainfall of 0.5 inches or greater. All disturbed areas, areas for material storage, locations where vehicles enter or exit the site, and all of the erosion and sediment controls that are identified as part of this site's construction storm water and erosion control plan must be inspected. Controls must be in good operating condition until the affected area they protect has been completely stabilized and the construction activity is complete. If a repair is necessary, it must be completed within seven calendar days of receipt of a report or notice, if practical. Inspection for specific erosion and sediment controls will include the following:

- Silt fence will be inspected to determine the following:
  - depth;
  - condition of fabric;
  - that the fabric is attached to the posts; and
  - that the fence posts are firmly in the ground;
- Diversion berms, if used, will be inspected and any breaches promptly repaired;
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and other potential erosion control problems;

- The remedial contractor and/or site developer shall designate individual(s) that will be responsible for erosion control, maintenance, and repair activities. The designated individual will also be responsible for inspecting the project site and filling out the inspection and maintenance report; and
- Personnel selected for inspection and maintenance responsibilities will receive appropriate training in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

The individual inspecting the project site must record any damages or deficiencies on an inspection form, and an example Inspection and Maintenance Report Form is attached (Attachment D-2) to record the inspection and assessment. These forms can be used to request maintenance and/or repair and to document inspection of maintenance activities. Damages or deficiencies must be corrected as soon as possible after the inspection. Any changes that may be required to correct deficiencies in the MECP should also be made as soon as possible, but in no case later than seven days after the inspection.

6.3 Recordkeeping

A copy of the MECP and inspection and maintenance records must be kept at the project site from the time intrusive activities begin until the project site is stabilized. The MECP and related records will be made available upon request to any regulatory agency representatives.

6.4 Modifications to the Master Erosion Control Plan

During the course of remedial and/or redevelopment activities, unanticipated changes may occur which affect the MECP such as schedule changes, phasing change, staging area modifications, offsite drainage impacts, and repeated failures of designed controls. Any changes to the activities and controls identified in this plan must be documented and the MECP revised accordingly. Certification of revisions to the MECP shall be included at the end of the document.

ATTACHMENT E-1

EROSION CONTROL DETAILS

EROSION CONTROL DETAILS

1. Silt Fence
2. Straw Bale Dike
3. Perimeter Dike/Swale
4. Temporary Swale
5. Filter Fabric Drop Inlet Protection

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition

A temporary barrier of geotextile fabric (filter cloth) used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used.

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence are:

Slope Steepness	Maximum Slope Length (Ft)
2:1	50
3:1	75
4:1	125
5:1	175
Flatter than 5:1	200

2. Maximum drainage area for overland flow to a silt fence shall not exceed 1/2 acre per 100 feet of fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

Design Criteria

Design computations are not required. All silt fences shall be placed as close to the area as possible, and the area below the fence must be undisturbed or stabilized.

A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:

1. The type, size, and spacing of fence posts.
2. The size of woven wire support fences.
3. The type of filter cloth used.
4. The method of anchoring the filter cloth.
5. The method of fastening the filter cloth to the fencing support.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. See Figure 5A.9 on page 5A.20 for details.

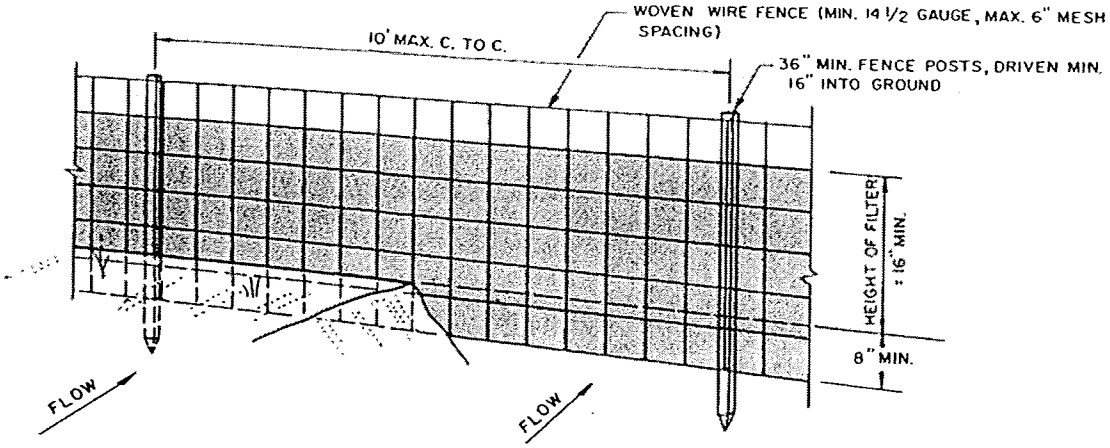
Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance. Statewide acceptability shall depend on in field and/or laboratory observations and evaluations.

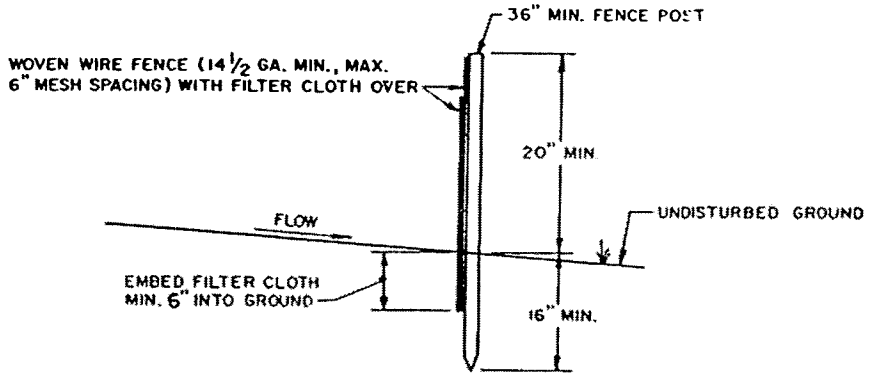
Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.
3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 in. mesh opening, or as approved.
4. Prefabricated Units: Envirofence or approved equal may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.9.

Figure 5A.9
Silt Fence Details



PERSPECTIVE VIEW



SECTION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

POSTS: STEEL EITHER "T" OR "U" TYPE OR 2" HARDWOOD

FENCE: WOVEN WIRE, 14 1/2 GA. 6" MAX. MESH OPENING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	SILT FENCE	STANDARD SYMBOL

STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE

Definition

A temporary barrier of straw or similar material used to intercept sediment laden runoff from small drainage areas of disturbed soil.

Purpose

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

Conditions Where Practice Applies

The straw bale dike is used where:

1. No other practice is feasible.
2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits.

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
2 -1/2:1	40	50
3:1	33	75
3-1/2:1	30	100
4:1	25	125

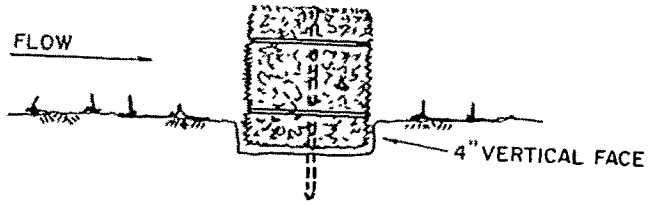
Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage area in this instance shall be less than one acre and the length of slope above the dike shall be less than 200 feet.

Design Criteria

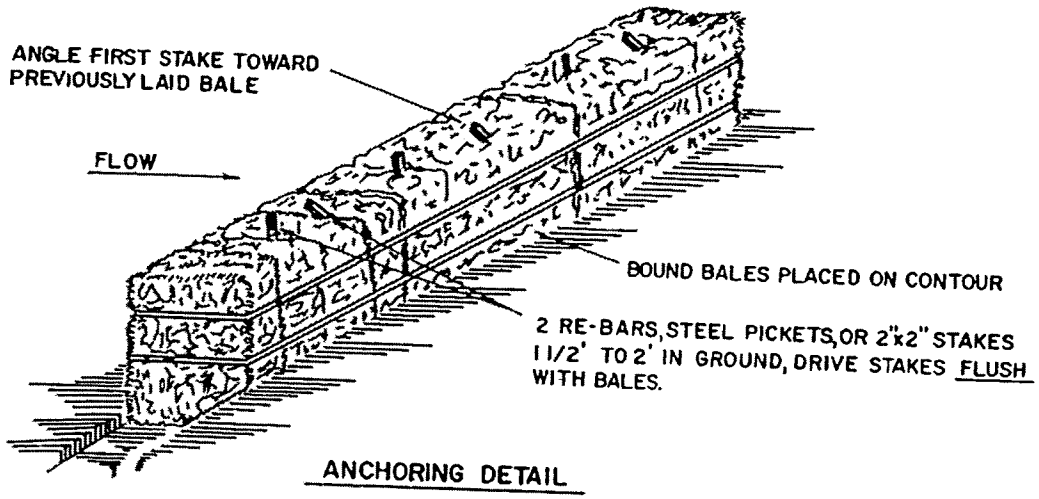
A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.8 on page 5A.18 or details.

Figure 5A.8
Straw Bale Dike Details



BEDDING DETAIL

DRAINAGE AREA NO MORE THAN 1/4 ac. PER 100 FEET OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	STRAW BALE DIKE	STANDARD SYMBOL SBD

STANDARD AND SPECIFICATIONS FOR PERIMETER DIKE/SWALE

Definition

A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area.

Purpose

The purpose of a perimeter dike/swale is to prevent off site storm runoff from entering a disturbed area and to prevent sediment laden storm runoff from leaving the construction site or disturbed area.

Conditions Where Practice Applies

Perimeter dike/swale is constructed to divert flows from entering a disturbed area, or along tops of slopes to prevent flows from eroding the slope, or along base of slopes to direct sediment laden flows to a trapping device.

The perimeter dike/swale shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.3 on page 5A.6 for details.

The perimeter dike/swale shall not be constructed outside the property lines without obtaining legal easements from effected adjacent property owners. A design is not required for perimeter dike/swale. The following criteria shall be used:

Drainage area - Less than 2 acres (for drainage areas larger than 2 acres but less than 10 acres see earth dike; for drainage areas larger than 10 acres, see standard and specifications for diversion).

Height - 18 inches minimum from bottom of swale to top of dike evenly divided between dike height and swale depth.

Bottom width of dike - 2 feet minimum.

Width of swale - 2 feet minimum.

Grade - Dependent upon topography, but shall have positive drainage (sufficient grade to drain) to an adequate outlet. Maximum allowable grade not to exceed 20 percent.

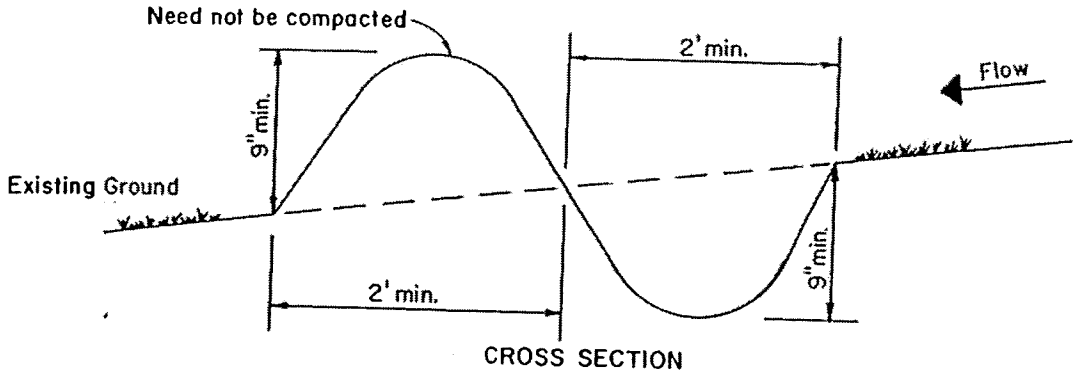
Stabilization - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

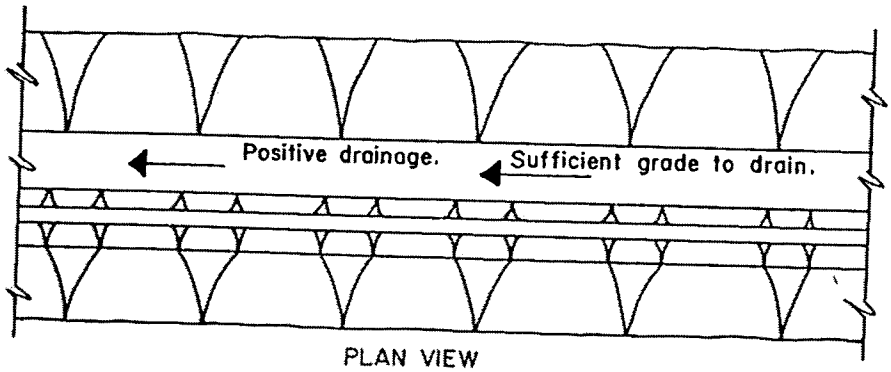
1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap, sediment basin, or to an area protected by any of these practices.
4. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 5A.3
Perimeter Dike/Swale Details

not to scale



CROSS SECTION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTRUBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BE DONE IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

Max. Drainage Area Limit: 2 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	PERIMETER DIKE/SWALE	STANDARD SYMBOL —PD—

STANDARD AND SPECIFICATION FOR TEMPORARY SWALE

Definition

A temporary excavated drainage way.

Purpose

The purpose of a temporary swale is to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet or to intercept sediment laden water and divert it to a sediment trapping device.

Conditions Where Practice Applies

Temporary Swales are constructed:

1. To divert flows from a disturbed area.
2. Intermittently across disturbed areas to shorten overland flow distances.
3. To direct sediment laden water along the base of slopes to a trapping device.
4. To transport offsite flows across disturbed areas such as rights-of-way.

Swales collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 5A.2 on page 5A.4 for details.

	Swale A	Swale B
Drainage Area	<5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft	6 ft
Depth of Flow Channel	1 ft	1 ft
Side Slopes	2:1 or Flatter	2:1 or Flatter
Grade	0.5% Min. 20% Max.	0.5% Min. 20% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Waterways on page 5B.11.

Stabilization

Stabilization of the swale shall be completed within 10 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel A(<5 Ac)	Flow Channel B(5-10 Ac)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with Jute or Excelsior; Sod, or lined with 2 in. stone
3	5.1-8.0%	Seed and cover with Jute or Excelsior, Sod line with 2 in. stone	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]
4	8.1-20%	Line with 4-8 in. stone or Recycled Concrete Equivalent[2]	Engineering Design

[1] In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.

[2] Recycled Concrete Equivalent shall be concrete broken into the required size, and shall contain no steel reinforcement.

Outlet

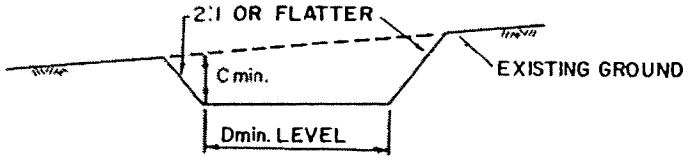
Swale shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin until the drainage area above the swale is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet condition.

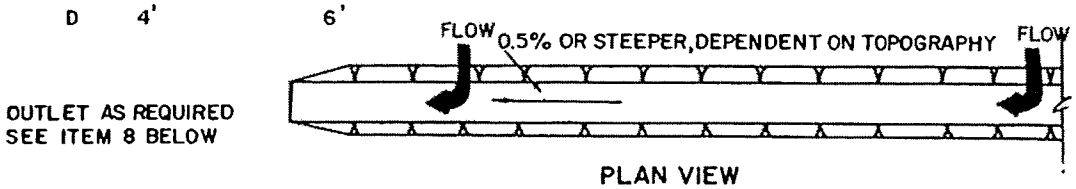
If swale is used to divert flows from entering a disturbed area, a sediment trapping device may not be needed.

Figure 5A.2
Temporary Swale Details



CROSS SECTION

	SWALE A	SWALE B
C	1'	1'
D	4'	6'



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

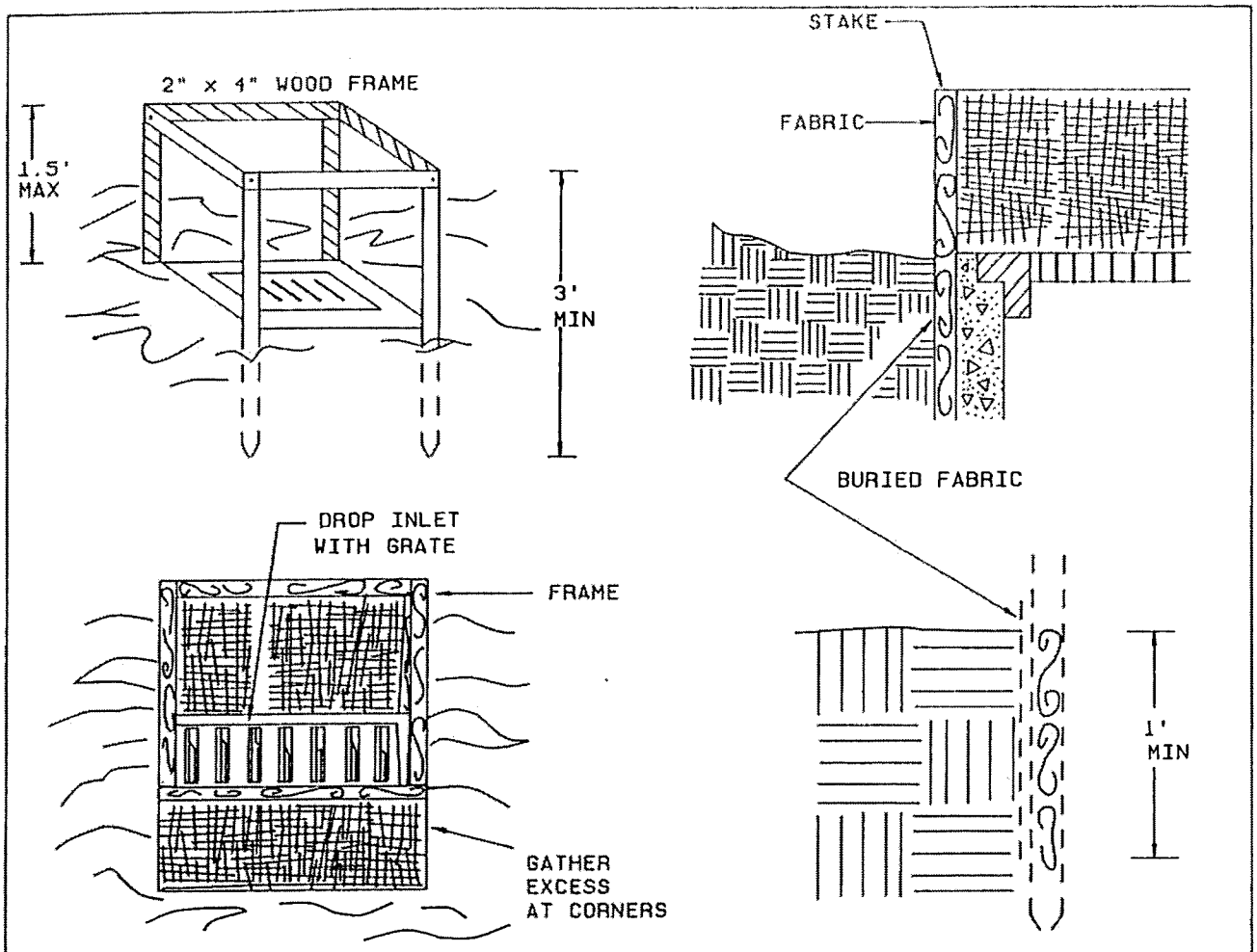
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	TEMPORARY SWALE	STANDARD SYMBOL A-2 / B-3

Figure 5A.13
Filter Fabric Drop Inlet Protection Details



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SYRACUSE, NEW YORK	FILTER FABRIC DROP INLET PROTECTION	STANDARD SYMBOL

ATTACHMENT E-2

EROSION CONTROL MONITORING INSPECTION AND MAINTENANCE REPORT FORM

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Regular Inspector: _____ Rainfall Event Inspector: _____ Rainfall (inches): ____

Contractor Activities	**OK**	**NO**	**N/A**	**Notes**
Are construction onsite traffic routes, parking, and storage of equipment and supplies restricted to areas specifically designated for those uses?				
Are locations of temporary soil stock piles of construction materials in approved areas?				
Is there any evidence of spills and resulting cleanup procedures?				
General Erosion & Sediment Controls				
Are sediment and erosion BMPs installed in the proper location and according to the specifications set out in the MECP? Are all operational storm drain inlets protected from sediment inflow? Do any seeded or landscaped areas require maintenance, irrigation, fertilization, seeding or mulching? Is there any evidence that sediment is leaving the site? Is there any evidence of erosion or cut fill slopes?				
Perimeter Road Use				
Does much sediment get tracked on to the perimeter road? Is the gravel clean or is it filled with sediment? Does all traffic use the perimeter road to leave the site? Is maintenance or repair required for the perimeter road?				

_____ _____

Inspected by (Signature) Date

EROSION CONTROL MONITORING, INSPECTION, AND MAINTENANCE REPORT FORM

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Inspector:_____

STABILIZATION MEASURES					
Area	Date Since Last Distributed	Date of Next Disturbance	Stabilized? Yes/No	Stabilized with	Condition

Stabilization Required: _____

_____

_____

_____

_____

_____

To be performed by: _____ On or before: _____

APPENDIX F

COMMUNITY AIR MONITORING PLAN

FORMER ELECTRUK BATTERY SITE
4922 IDA PARK DRIVE
TOWN OF LOCKPORT, NIAGARA COUNTY, NEW YORK

COMMUNITY AIR MONITORING PLAN

NYSDEC SITE NO. E932132

Prepared for:

Town of Lockport
6560 Dysinger Road
Lockport, New York

Prepared by:

TVGA CONSULTANTS

ENGINEERING • LAND SURVEY • MAPPING • ENVIRONMENTAL

WE DESIGN WITH CONSCIENCE. WE ACT WITH PURPOSE.

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August 2009

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COMMUNITY AIR MONITORING PLAN

FORMER ELECTRUK BATTERY SITE
TOWN OF LOCKPORT, NY

TABLE OF CONTENTS

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) presents requirements for real-time community air monitoring and responses during invasive activities at the Former Electruk Battery Site located in the Town of Lockport, New York. This plan is generally consistent with the requirements for community air monitoring at remediation sites as established by the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC). It follows procedures and practices outlined under the NYSDOH's generic Community Air Monitoring Plan dated June 20, 2000 and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

This CAMP requires real-time monitoring for particulates (i.e., dust) and volatile organic compounds (VOCs) at the downwind perimeter of each designated work area when certain activities are in progress at the project site. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community from potential airborne contaminant releases as a direct result of remedial, redevelopment or post-remediation monitoring and maintenance activities. The community, as referenced in this document, includes off-site residences, public buildings and grounds, and commercial or industrial establishments on or adjacent to the project site. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the implementation of this CAMP will help to document that on-site work activities have not introduced contamination into the surrounding community.

2.0 MONITORING AND MITIGATION REQUIREMENTS

Real-time air monitoring for particulate levels and organic vapors at the perimeter of the work area will be necessary. Periodic monitoring will be required for all ground intrusive activities. Ground intrusive activities include, but are not limited to, subgrade soil/fill excavation, grading and transporting soil/fill, and trench excavation and backfill.

"Periodic" monitoring will reasonably consist of taking at least one reading immediately following the initiation of the above-referenced activities and taking at least one reading during intrusive activities. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during invasive activities. Examples of such situations include any subgrade excavation and backfilling within 100 feet of occupied structures or publicly accessible locations.

2.1 Organic Vapors

Real-time air monitoring for VOCs at the perimeter of the work area will be performed for all ground intrusive activities with a hand-held photoionization detector (PID). If a sustained reading of 5 ppm above background or greater is

registered by the PID at the perimeter of the work area or adjacent to a soil/fill stockpile area, the provisions in the following subsections will be implemented. Additionally, while it is anticipated that known sources of organic vapors will have been removed during remedial activities, monitoring for organic vapors will continue to be required during post-remedial redevelopment activities.

2.1.1 Vapor Emission Response Plan

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm), work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the sources and vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level at the "downwind hot zone" below 5 ppm over background.

The "downwind hot zone" is defined as 200 feet downwind of the work area or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, (but in no case less than 20 feet).

If the organic vapor level is above 25 ppm at the perimeter of the project site, the Site Safety and Health Officer will determine when re-entry of the work area is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified under the Major Vapor Emission Monitoring program described below. All readings will be recorded over 15-minute time periods and be made available for State (NYSDEC and NYSDOH) personnel to review.

2.1.2 Major Vapor Emission Monitoring

If the organic vapor level is greater than 5 ppm over background at the "downwind hot zone," all work activities must be halted. If, following the cessation of the work activities or as the result of an emergency, organic levels persist above 5 ppm above background at the "downwind hot zone", then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site receptor (20-foot zone).

If efforts to abate the emission source are unsuccessful and if organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, than the Major Vapor Emission Response Plan will automatically be placed into effect.

2.1.3 Major Vapor Emission Response Plan

Upon activation of Major Vapor Emission Response Plan, the following activities will be undertaken:

1. All Emergency Response Contacts as listed below and in the Site-Specific Health and Safety Plan will be contacted.
2. The local police authorities will be immediately contacted by the Site Safety and Health Officer and 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 Site Safety and Health Officer.
4. The Site Safety and Health Officer will determine if project site workers can safely undertake source abatement measures. Abatement measures may include covering the source area with clean fill or plastic sheeting, or consolidating contaminated materials to minimize surface area. The Site Safety and Health Officer will adjust worker personal protective equipment as necessary to protect workers from over-exposure to organic vapors.

The following organizations are to be notified by the Site Safety and Health Officer in the listed sequence if the Major Vapor Emission Response Plan is activated:

Contact	**Phone**
Police/Fire Department	911
New York State Dept. of Health	(716) 847-4502
New York State Dept. of Environmental Conservation	(716) 851-7220
State Emergency Response Hotline	(800) 457-7362

In addition, the Site Safety and Health Officer will provide these authorities with a description of the apparent source of the contamination and abatement measures being taken by the contractor, if any.

2.2 Airborne Particulates

Fugitive dust suppression and airborne particulate monitoring shall be performed during any remedial, redevelopment or post-remediation activities involving the disturbance or handling of site soil/fill. Fugitive dust suppression techniques will include the following minimum measures:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations, equipment and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Excavated stockpiles from intrusive activities that generate unacceptable dust levels will be seeded, covered with synthetic materials (e.g., tarps, membranes, etc.), or watered to reduce dust generation to acceptable levels;
- Stockpiles of soil/fill from intrusive activities that are potentially contaminated (i.e. are visually stained, discolored or produce elevated PID readings) and awaiting analytical results should be covered with tarps or polyethylene membranes at the end of each day's work activities; and
- All fill materials leaving the site will be hauled in properly covered containers or trucks.

Additional dust suppression efforts may be required as discussed below.

2.2.1 Particulate Monitoring

Particulate concentrations should be monitored by temporary particulate monitoring stations periodically (i.e., not less than two times per day) at the upwind and downwind perimeters of the work zone during all work activities. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind perimeter) for the 15-

minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures, such as those described in Section 2.2.3, are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

2.2.2 Visual Assessment

In conjunction with the real-time monitoring program, the remedial contractor, site developer, property owner(s) or their agents will be responsible for visually assessing fugitive dust migration from the project site. If airborne dust is observed leaving undeveloped portions of the project site (i.e., migrating onto off-site properties or redeveloped areas of the project site), the work will be stopped and supplemental dust suppression techniques will be employed.

2.2.3 Supplemental Dust Suppression

Supplemental dust suppression techniques may include but are not necessarily limited to the following measures:

- Reducing the excavation size, number of excavations or volume of material handled;
- Restricting vehicle speeds;
- Applying water on buckets during excavation and dumping;
- Wetting haul roads;
- Restricting work during extreme wind conditions; and
- Using a street sweeper on paved haul roads, where feasible.

Work can resume using supplemental dust suppression techniques provided that the measures are successful in reducing the downwind particulate concentration to below 150 ug/m^3 above background, and in preventing visible dust migration off-site.

3.0 MONITORING EQUIPMENT

3.1 Organic Vapor Monitoring Equipment

Organic vapor monitoring will be performed using a photoionization detector (PID). The device will be calibrated on a daily basis or as necessary. Minimum equipment specifications are:

Minimum Operating Range:	0.5 ppm
Accuracy:	± 10%, or ± 2 ppm
Precision:	1% of calibration to 100 ppm
Response Time:	Less than 3 seconds to 90%
UV Lamp (PID):	10.6 eV
Battery Rating:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.1.

3.2 Particulate Monitoring Equipment

Particulate monitoring will be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM-10) with the following minimum performance standards:

Size Range:	<0.1 to 10 microns
Sensitivity:	1 ug/m^3
Range:	0.001 to 10 mg/m^3
Overall Accuracy:	± 10% as compared to gravimetric analysis of stearic acid or reference dust
Battery Ratings:	8-hour continuous operation
Operating Conditions:	
Temperature:	0-40°C
Humidity:	0-99% relative humidity

The device will be fitted with a microprocessor capable of calculating 15-minute moving average concentrations. An adjustable audible alarm will be provided to indicate exceedance of the action levels prescribed in Section 2.2.1.

4.0 QA/QC REQUIREMENTS

Quality Assurance/Quality Control (QA/QC) requirements for the particulate meter and organic vapor monitoring equipment include instrument calibration, training, and documentation/record keeping.

4.1 Instrument Calibration

Instrument calibration shall be performed in accordance with the manufacturer's instructions at the beginning of each workday. Following calibration and initial (upwind) measurement of background conditions, audio alarms shall be set to activate at the appropriate action levels based on a 15-minute moving average (i.e., short term exposure limit) concentration.

4.2 Training

All persons responsible for calibrating, handling and/or interpreting the meters or meter output data should be experienced with such work. As a minimum, the following training and experience will be required:

- 24-hour OSHA Hazwoper Training per 29 CFR 1910.120(e)(3) and 1910.120.(e)(8);
- Site-specific training, as required by the Site Health and Safety Plan; and
- Prior field experience in the operation of same or similar equipment.

The Site Safety and Health Officer will designate the person(s) responsible for performing air-monitoring work. Construction activities involving disruption or handling of site fill soils will not be performed unless a qualified individual is available on site to perform the community air monitoring specified in this document.

4.3 Documentation and Reporting

Documentation of community air monitoring information will be required to provide written record of the air monitoring results and response actions taken, and to allow for verification that the program was followed in accordance with this Community Air Monitoring Plan. Monitoring information will be recorded on form presented in Attachment A4-1 or on similar loose-leaf forms to facilitate photocopying. The following documentation schedule will be followed during typical site conditions (i.e., organic vapor and particulate concentrations below action levels).

Item	Documentation Schedule
Instrument Calibration Results	Whenever calibration is performed (minimum once daily).
Background Monitoring Results	At beginning of work day and once every 4 hours thereafter.
Downwind Monitoring Results (15-minute moving average)	Hourly

All documentation records will be maintained in the project file for inspection by the NYSDEC and/or the NYSDOH upon request. The NYSDEC will be provided copies of the monitoring results recorded during intrusive activities upon substantial completion of said activities.

During intrusive activities, NYSDEC and NYSDOH will be contacted if major vapor emissions occur as stipulated under the Major Vapor Emission Response Plan. In addition, the NYSDEC Division of Air Resources will be contacted in writing within five days of exceeding the 150 ug/m^3 respirable dust action level. These notifications will include a description of the control measures implemented to prevent further exceedances.

ATTACHMENT F-1

COMMUNITY AIR MONITORING DOCUMENTATION FORM

TVGA CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE: _____ USER: _____

PROJECT: _____ CALIBRATION TIME: _____

PROJECT #: _____ CALIBRATED BY: _____

WEATHER CONDITIONS: _____ COMMENTS: _____

WIND DIRECT/SPEED: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

APPENDIX G

NYSDEC TAGM 4031 - FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

Fugitive Dust Suppression and Particulate Monitoring Program (TAGM - 4031)

Issuing Authority: Michael J. O'Toole, Jr.
Title: Director, Division of Environmental Remediation
Date Issued: Oct 27, 1989

1. Introduction

Fugitive dust suppression, particulate monitoring, and subsequent action levels for such must be used and applied consistently during remedial activities at hazardous waste sites. This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2. Background

Fugitive dust is particulate matter--a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles, liquid droplets or solids, over a wide range of sizes--which becomes airborne and contributes to air quality as a nuisance and threat to human health and the environment.

On July 1, 1987, the United States Environmental Protection Agency (USEPA) revised the ambient air quality standard for particulates so as to reflect direct impact on human health by setting the standard for particulate matter less than ten microns in diameter (PM_{10}); this involves fugitive dust whether contaminated or not. Based upon an examination of air quality composition, respiratory tract deposition, and health effects, PM_{10} is considered conservative for the primary standard--that requisite to protect public health with an adequate margin of safety. The primary standards are 150 ug/m^3 over a 24-hour averaging time and 50 ug/m^3 over an annual averaging time. Both of these standards are to be averaged arithmetically.

There exists real-time monitoring equipment available to measure PM_{10} and capable of integrating over a period of six seconds to ten hours. Combined with an adequate fugitive dust suppression program, such equipment will aid in preventing the off-site migration of contaminated soil. It will also protect both on-site personnel from exposure to high levels of dust and the public around the site from any exposure to any dust. While specifically intended for the protection of on-site personnel as well as the public, this program is not meant to replace long-term monitoring which may be required given the contaminants inherent to the site and its air quality.

3. Guidance

A program for suppressing fugitive dust and monitoring particulate matter at hazardous waste sites can be developed without placing an undue burden on remedial activities while still being protective of health and environment. Since the responsibility for implementing this program ultimately will fall on the party performing the work, these procedures must be incorporated into appropriate work plans. The following fugitive dust suppression and particulate monitoring program will be employed at hazardous waste sites during construction and other activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation, grading, or placement of clean fill, and control measures therefore should be considered.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

   Object to be measured: Dust, Mists, Aerosols
   Size range: <0.1 to 10 microns
   Sensitivity: 0.001 mg/m^3
   Range: 0.001 to 10 mg/m^3
   Overall Accuracy: ±10% as compared to gravimetric analysis of stearic acid or reference dust

   Operating Conditions:
   Temperature: 0 to 40°C
   Humidity: 10 to 99% Relative Humidity

   Power: Battery operated with a minimum capacity of eight hours continuous operation

   Automatic alarms are suggested.

   Particulate levels will be monitored immediately downwind at the working site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task; the P-5 Digital Dust Indicator as manufactured by MDA Scientific, Inc. or similar is appropriate.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the entity operating the equipment to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a

record keeping plan.

5. The action level will be established at 150 ug/m^3 over the integrated period not to exceed 15 minutes. While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m^3, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 100 ug/m^3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m^3 be exceeded, the Division of Air Resources must be notified in writing within five working days; the notification shall include a description of the control measures implemented to prevent further exceedences.
6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM_{10} at or above the action level. Since this situation has the potential to migrate contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.
7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:
    1. Applying water on haul roads.
    2. Wetting equipment and excavation faces.
    3. Spraying water on buckets during excavation and dumping.
    4. Hauling materials in properly tarped or watertight containers.
    5. Restricting vehicle speeds to 10 mph.
    6. Covering excavated areas and material after excavation activity ceases.
    7. Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason as not to create excess water which would result in unacceptable wet conditions, the chance of exceeding the 150 ug/m^3 action level at hazardous waste site remediations is remote. Using

atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. If the dust suppression techniques being utilized at the site do not lower particulates to an acceptable level (that is, below 150 ug/m^3 and no visible dust), work must be suspended until appropriate corrective measures are approved to remedy the situation. Also, the evaluation of weather conditions will be necessary for proper fugitive dust control--when extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended.

There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require appropriate toxics monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX H

ANNUAL INSTITUTIONAL / ENGINEERING CONTROL CERTIFICATION FORM

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

SITE DETAILS

SITE NO. **E 932132**

SITE NAME **FORMER ELECTRUK BATTERY SITE**

SITE ADDRESS: 4922 IDA PARK DRIVE ZIP CODE: 14094

CITY/TOWN: TOWN OF LOCKPORT, NEW YORK

COUNTY: NIAGARA

CURRENT USE:

CURRENT CERTIFICATION FREQUENCY: EVERY __1__ YEAR(S)

VERIFICATION OF SITE DETAILS

		YES	NO
1.	Are the SITE DETAILS above, correct?	☐	☐
	If NO, are changes handwritten above or included on a separate sheet?		☐
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
4.	Has a change-of-use occurred since the initial/last certification?		☐
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
5.	Has any new information come to your attention to indicate that assumptions made in the qualitative exposure assessment for offsite contamination are no longer valid (applies to non-significant threat sites subject to ECL 27-1415.7(c))?		☐
	If YES, is the new information or evidence that new information has been previously submitted included with this certification?	☐	
6.	Are the assumptions in the qualitative exposure assessment still valid (must be certified every five years for non-significant threat sites subject to ECL 27-1415.7(c))?		☐
	If NO, are changes in the assessment included with this certification?	☐	

Description of Institutional/Engineering Control	Control Certification
ENVIRONMENTAL EASEMENT	Check boxes will appear here for each specific Control associated with the general categories on the left.
DEED RESTRICTIONS	
OTHER CONTROLS	

CONTROL CERTIFICATION STATEMENT

For each institutional or engineering control listed above, I certify by checking "Yes" that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this site is unchanged from the date the control was put in-place, or last approved by the Department;

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control; and

(d) access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control.

(e) if a financial assurance mechanism is required under the remedial work plan for the site, the mechanism remains valid and sufficient for their intended purpose under the work plan.

CONTROL CERTIFICATIONS
SITE NO. E 932132

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____(print name), _____

(print business address), am certifying as _____ (Owner or Owner's Designated Site Representative (if the site consists of multiple properties, I have been authorized and designated by all site owners to sign this certification) for the Site named in the Site Details section of this form.

_____ _____

Signature of Site Owner or Representative Rendering Certification | Date

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information and statements in this Certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____(print name), _____

(print business address), am certifying as a Qualified Environmental Professional for the_____

_____ (Owner or Owner's Representative) for the Site named in the Site Details section of this form.

_____ _____ _____

Signature of Qualified Environmental Professional, for the Owner or the Owner's Representative, Rendering Certification | Stamp (if Required) | Date

Enclosure 2

Certification of Institutional Controls/ Engineering Controls (ICs/ECs)
Step-by-Step Instructions, Certification Requirements and Definitions

The Site owner, or site owner's representative, and when necessary, a Professional Engineer (P.E.), or the Qualified Environmental Professional (QEP), must review and complete the IC/EC Certification Form, sign it, and return it, along with the Periodic Site Management Report, within 45 days of the date of this notice.

Institutional Controls (defined below) are organized into 4 categories: Governmental Controls (e.g., groundwater-use restrictions), Proprietary Controls (e.g., Environmental Easements), Enforcement and Permit Tools (e.g., Consent Orders), and Informational Devices (e.g., State Registries of Inactive Hazardous Waste Sites). The Certification Form shows the Control information the Department has for this Site. Please use the following instructions to complete the IC/EC Certification.

I. Verification of Site Details (First and Second Boxes):

1. Verify the accuracy of information in the **Site Details** section by answering the 6 questions. If necessary, you and/or your P.E. or QEP may handwrite changes and submit supporting documentation.

II. Verification of Institutional / Engineering Controls (Third and Fourth Boxes)

1. Review the listed Institutional / Engineering Controls and select "YES" or "NO" for **Control Certification** for each IC/EC, based on Sections (a)-(d) of the **Control Certification Statement**.

2. If you cannot certify "Yes" for each Control, please continue to complete the remainder of this **Control Certification** form. Attach supporting documentation that explains why the **Control Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Control Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted.

   If the Department concurs with the explanation, the corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued. If the Department has any questions or concerns regarding the completion of the certification, the Project Manager will contact you.

III. Certification by Signature (Fifth and Sixth Boxes)**:**

1. WHY IC/EC Certification is required:
   The Section of the New York Environmental Conservation Law that includes the requirement of a periodic certification of IC(s) and EC(s) is as follows:

   For Environmental Restoration Projects: N.Y. Envtl Conserv.Law Section 56-0503 (Environmental restoration projects; state assistance)

   For State Superfund Projects: Envtl Conserv.Law Section 27-1318. (Institutional and engineering controls)

   For Brownfields Cleanup Program Projects: Envtl Conserv.Law Section 27-1415. (Remedial program requirements)

   Voluntary Cleanup Program: Applicable program guidance.

2. To determine WHO signs the **Control Certification,** please use the following table:

Signature Requirements for IC/EC Certification Form		
Type of Control	**Example of IC/EC**	**Required Signatures**
IC	Environmental Easement Deed Restriction.	Site Owner or their designated representative, e.g., a Property Manager.
EC with no treatment system, or engineered caps.	Fence, Clean Soil Cover.	Site Owner or their designated representative, and QEP. (P.E. license not required)
EC that includes treatment systems, or engineered caps.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	Site Owner or his designated representative, and QEP with P.E. License.

3. WHERE to mail the signed Certification Form within 45 days of the date of the notice:

[generated from UIS]
New York State Department of Environmental Conservation
Division of Environmental Remediation
Central Office or Regional Address
City Name, NY Zipcode
Attn: _____, Project Manager

Please note that extra postage may be required.

IV. Definitions:

"Engineering Control" (EC), means any physical barrier or method employed to actively or passively contain, stabilize, or monitor any hazardous waste or petroleum waste to ensure the long-term effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or to eliminate potential exposure pathways to any such hazardous waste or petroleum waste. Engineering Controls include, but are not limited to: pavement, caps, covers, subsurface barriers and slurry walls; building ventilation systems; fences, other barriers and access controls; and provision of alternative water supplies via connection to an existing public water supply, addition of treatment technologies to an existing public water supply, and installation of filtration devices on an existing private water supply.

"Institutional Control" (IC), means any non-physical means of enforcing a restriction on the use of real property, that limits human or environmental exposure to any hazardous waste or petroleum waste, restricts the use of groundwater; provides notice to potential owners, operators, or members of the public; or prevents actions that would interfere with the effectiveness of an inactive site remedial program or brownfield site remedial program or environmental restoration project, or with the effectiveness and/or integrity of Site Management activities at or pertaining to any site.

"Professional Engineer" means a person, including a firm headed by such a person, who holds a current New York State Professional Engineering license or registration, and has the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this Control Certification.

"Property Owner" means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the certification.

"Oversight Document" means any document the Department issues pursuant to each Remedial Program (see below) to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples for the various programs are as follows:

BCP (after approval of the BCP application by DEC) - Brownfield Site Cleanup Agreement.
ERP (after approval of the ERP application by DEC) - State Assistance Contract.
Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA.
Oil Spill Program - Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the New York Environmental Conservation Law).
State Superfund Program - Administrative Consent Order.
VCP (after approval of the VCP application by DEC) - Voluntary Cleanup Agreement.
RCRA Corrective Action Sites- Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

"Qualified Environmental Professional" (QEP), means a person, including a firm headed by such a person, who possesses sufficient specific education, training, and experience necessary to exercise professional judgment, to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this guidance (DER10 Technical Guide).

1. Such a person must:
   i. Hold a current Professional Engineering or a Professional Geologist license or registration, and have the equivalent of three (3) years of full-time relevant experience in site investigation and remediation of the type detailed in this guidance; or
   ii. Be a site remediation professional licensed or certified by the federal government, a state; or a recognized, accrediting agency, to perform investigation or remediation tasks identified by this guidance, and have the equivalent of three (3) years of full-time relevant experience. Examples of such license or certification include, but are not limited to, the following titles:
      - Licensed Site Professional, by the State of Massachusetts
      - Licensed Environmental Professional, by the State of Connecticut
      - Qualified Environmental Professional, by the Institute of Professional Environmental Practice
      - Certified Hazardous Materials Manager, by the Institute of Hazardous Materials Management

2. The definition of QEP provided above does not preempt State Professional licensing or registration requirements such as those for a Professional Geologist, Engineer, or Site Remediation Professional. Before commencing work, a person should determine the applicability of State professional licensing or registration laws to the activities to be undertaken pursuant to section 1.5 (DER10 Technical Guide).

3. A person who does not meet the above definition of a QEP under the foregoing definition may assist in the conduct of all appropriate investigation or remediation activities in accordance with this document if such person is under the supervision or responsible charge of a person meeting the definition provided above.

"Remedial Party" means any person or persons, as defined in 6NYCRR 375, who executes, or is otherwise subject to, an oversight document (State Superfund, BCP, ERP or VCP Program). For purposes of this guidance, remedial party also includes:

1. Any person or persons who is performing the investigation and/or remediation, or has control over the person (for example, contractor or consultant) who is performing the investigation and/or remediation, including, without limitation, an owner, operator or volunteer; and

2. The DER for State-funded investigation and/or remediation activities.

"Site Management" (SM) means the activities included in the last phase of the remediation of a site, in accordance with a Site Management Plan, which continue until the remedial action objectives for the project are met and the site can be closed-out. Site Management includes the management of the institutional and engineering controls required for a site, as well as the implementation of any necessary long-term monitoring and/or operation and maintenance of the remedy. (Formerly referred to as Operation and Maintenance (O&M)).

"Site Management Plan" (SMP) means a document which details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 (DER10 Technical Guide).

"Site Owner" means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

"Site Owner's Designated Representative" means a person, including a firm headed by such a person, who has been designated in writing by the Site Owner(s) to complete and sign the Institutional and Engineering Controls Certification Form.