REMEDIAL ACTION WORK PLAN
FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

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1.0 INTRODUCTION

1.1 Overview

The former Roblin Steel site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park. Since the early 1990's, the former Roblin Steel site has been vacant. However, private interest in the redevelopment of the property has prompted Chautauqua County to complete the investigation and remediation of the site. A Site Investigation/Remedial Alternatives Report (SI/RAR) was completed for the project site, which identified seven media groups that require remediation. Based on the results of the SI/RAR, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) that prescribed the remedial activities that will address these impacted media groups. This Remedial Action Work Plan (RAWP) describes the specific remedial activities that will be implemented at the project site to complete the remediation in accordance with the ROD.

1.2 Purpose

Chautauqua County has retained TVGA Consultants (TVGA) to plan and implement the remediation program at the project site in accordance with the ROD in preparation for redevelopment. The remedial activities are being completed pursuant to the Environmental Restoration Program (ERP) component of Title 5 of the Clean Water/Clean Air Bond Act of 1996, which is administered by the NYSDEC. Chautauqua County has received an ERP grant for the planning and implementation of the remedial activities. Because the ERP requires a ten percent match, the County also applied for and received a brownfield cleanup grant from the United States Environmental Protection Agency (USEPA).

TVGA has prepared this RAWP on behalf of Chautauqua County to describe the remedial activities that will be implemented at the project site to render the site suitable for redevelopment, and to protect human health and the environment during redevelopment activities and future use. This RAWP includes a plan for the remedial activities that will address each of the media groups identified during the site investigation, including soil excavation and the placement of clean cover material (i.e. soil or pavement) over the entire project site. This document also establishes the procedures necessary to protect workers during remediation activities.

This RAWP also includes a Site Management Plan (SMP), which establishes the protocols to be followed during the excavation and handling of the soil/fill material during subsequent redevelopment or routine maintenance activities at the project site as well as the plans for the operation, monitoring, and maintenance of the remedial controls that will remain at the project site in perpetuity. Additionally, the SMP identifies use restrictions on development and groundwater use on the project site. Lastly, the SMP requires the annual certification of the institutional and engineering controls put in place at the project

site. The process will include annual inspections and, if necessary, maintenance, and the certification that the institutional and engineering controls are functioning as designed. An environmental professional approved by the NYSDEC will complete the inspection and certification.

1.3 Site Description

The project site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park. The project site contains a former facility building that encompasses approximately 88,500 square feet. Chautauqua County acquired the parcels that contain the project site via tax foreclosure on December 20, 2001. The adjoining properties located in this industrial park include the former Alumax Extrusions site and the Edgewood Warehouse site. In 1910, all three of these sites were developed as part of the larger industrial complex operated by the American Locomotive Company (ALCO). The project site was later used for steel reclamation, and these operations ceased in 1987. Following this closure, salvage operations dismantled and partially demolished the on-site structures in the late 1980's and early 1990's. Since that time, the former Roblin Steel site has been vacant.

Presently, the project site is located in an area that is zoned for industrial use. A mixture of commercial, industrial and residential properties comprise the land use in the project site's vicinity. The project site is bounded to the north by an active CSX rail yard; to the east by active Norfolk Southern railroad tracks; to the south by the former Alumax Extrusions site; and to the west by the Edgewood Warehouse site. Residential properties are situated to the northwest and south of the project site beyond the adjoining properties. Additionally, mixed commercial and light industrial properties are located to the north and west of the project site, while an undeveloped wooded area and Hyde Creek are located to the east.

1.4 Intended Future Use of the Project Site

Significant interest in the redevelopment of the project site, once it has been remediated, has been expressed by several local companies. Chautauqua County's discussions with one of these companies, a locally headquartered, national food processor that is the nation's largest private label juice manufacturer, lead to the formulation of a redevelopment concept that would involve the investment of approximately $10,000,000 to redevelop the project site and an adjoining privately owned brownfield site to accommodate a major expansion of its nearby operation. This potential redevelopment project would encompass approximately 30 acres and approximately 200,000 square feet of building space, and would feature the following:

- Rehabilitation of the existing building on the project site for cold storage, distribution, and near-site vendor manufacturing;

- Construction of paved truck/employee parking facilities on the remainder of the project site;
- Adaptive reuse of the manufacturing building on the adjacent former Alumax site for warehousing and distribution;
- Conversion of an existing office building into research and design facilities;
- Linking the project site to the existing food processing facility via the conversion or modification of an existing railroad bridge; and
- Connecting the redevelopment site with the Chadwick Bay Industrial Park.

Although not yet fully defined, redevelopment interests expressed by other local companies would likely also involve the rehabilitation of the existing on-site structure and linkage with the existing Chadwick Bay Industrial Park.

1.5 Site Investigation / Remedial Alternatives Report

Chautauqua County entered into a State Assistance Contract with the NYSDEC to complete a Site Investigation/Remedial Alternatives Report (SI/RAR) for the project site in 2002. A site investigation (SI) consisting of a multi-phased investigation process was performed in 2002 and 2003. The initial SI identified multiple areas of concern on the project site, and a Supplemental SI (SSI) was performed to further define the vertical and lateral extent of contamination in several of the areas of concern. On behalf of Chautauqua County, TVGA prepared and issued a Site Investigation (SI) Report to NYSDEC which provided a detailed description of the SI and SSI.

As part of the SI, a qualitative risk assessment was performed to assess the potential human health and environmental risks associated with the contaminants detected on the project site. During the risk assessment, it was determined that, based on the intended use of the project site for commercial or light industrial purposes, the NYSDEC recommended cleanup levels for soil/fill set forth in TAGM No. 4046 were not appropriate. Therefore, Site-Specific Cleanup Levels (SSCLs) for contaminants of concern detected in surface and subsurface soil/fill, sediment, and sludge were developed for the project site.

Under the intended future use scenario for the project site, the primary consideration used during the determination of acceptable clean-up levels is the potential risk to human health posed by residual chemical constituents in the soil/fill and groundwater. The approach taken to develop SSCLs is detailed in the Qualitative Risk Assessment Report included as Appendix J of the SI Report. The following table summarizes the SSCLs developed during the SI and established in the ROD.

SITE SPECIFIC CONTAMINANT LEVELS (SSCLs)

PARAMETER	MAXIMUM CONCENTRATION IN SOIL/FILL (mg/kg) [1]
Individual VOC[2]	1
Total VOCs	10
Individual SVOCs	50
Total SVOCs [2]	500
Total cPAHs [3]	10
Arsenic	50
Barium	1000
Cadmium	20
Chromium	1000
Lead	1000
Zinc	85,000
Selenium	50
Silver	10
Beryllium	5
Copper	250
PCBs	10 [4]

(1) Analyses shall be performed per NYSDEC Analytical Services Protocol (ASP), June 2000 methodology or other methods acceptable to NYSDEC.

(2) Target Compound List (TCL) VOCs and SVOCs.

(3) Carcinogenic polycyclic aromatic hydrocarbons (i.e., benzo(a)anthracene, benzo(a)pyrene, dibenzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-c,d)pyrene.

(4) Subsurface soil limit set in TAGM 4046.

Following the completion of the SI Report, a Remedial Alternatives Report (RAR) was prepared to describe the process used to develop and evaluate alternatives for addressing the contaminated media at the project site. The Final RAR was submitted to the NYSDEC in December 2004. Following the acceptance of the RAR, the NYSDEC prepared a Proposed Remedial Action Plan (PRAP) that was finalized in the March 2005 Record of Decision (ROD) following the receipt of the public's input on the PRAP. The ROD presents the remedies that were selected by the NYSDEC and the New York State Department of Health (NYSDOH) to address the contamination identified during the SI. The ROD also includes the use of the SSCLs developed during the risk assessment.

1.6 Remedial Action Objectives

Remedial Action Objectives (RAOs) for the Media Groups (MGs) and contaminants of concern were identified in the SI Report. The RAOs take into consideration the contaminant and media of interest, the exposure pathways, and the remediation goals that will allow the project site to be redeveloped. The RAOs for the project site necessitate the implementation of remedial measures not only to protect human health and the environment, but also to mitigate potential short-term impacts to construction

workers and the surrounding community during the redevelopment period. The RAOs for each MG are discussed in subsequent sections of the RAWP.

1.7 General Scope of Work

The ROD identified 14 specific areas of contamination at the project site that require remedial action. During the remedial alternatives analysis process, these 14 areas were consolidated into seven Media Groups (MGs). The following table identifies the specific areas of contamination and the corresponding MG into which each was consolidated.

Consolidated Media Groups

Area of Contamination	Media Group
Area 1 : VOCs in Subsurface soil	**MG #2 :** Subsurface Soil/Fill Impacted with Chlorinated VOCs
Area 2 : VOCs in Site Groundwater	**MG #7 :** Groundwater Impacted with VOCs
Area 3a & b : Metals in Surface Soil in Former Bag House Areas	**MG #1 :** Surface Soil/Fill and Debris Piles
Area 4 : SVOCs in Surface Soils	**MG #1 :** Surface Soil/Fill and Debris Piles
Area 5 : PCB-Contaminated Concrete	**MG #6 :** Concrete and Surface Soils Impacted with Polychlorinated Biphenyls (PCBs)
Area 6 : Demolition Debris Piles	**MG #1 :** Surface Soil/Fill and Debris Piles
Area 7 : Interior Building Sumps	**MG #4 :** Drainage Features and Contents
Area 8 : Wooden Floor Blocks	**MG #1 :** Surface Soil/Fill and Debris Piles
Area 9 : Former East End Tank Farm	**MG #3 :** Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics
Area 10 : Hyde Creek Outfall Pipe removal	**MG #4 :** Drainage Features and Contents
Area 11 : Building Asbestos Removal	**MG #5 :** Building Components
Area 12 : Building Light Fixtures	**MG #5 :** Building Components
Area 13 : Subsurface Soil in Former Oil Cellar	**MG #3 :** Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics
Area 14 : Metals in Surface Soil	**MG #1 :** Surface Soil/Fill and Debris Piles

This RAWP identifies each MG and discusses the remedial tasks to be completed prior to the redevelopment of the project site. The seven impacted MGs, and the corresponding planned remedial activities include the following:

- MG #1 Surface Soil/Fill and Debris Piles: Disposal of surface debris and excavation and off-site disposal of surface soil/fill that exceeds the SSCLs and

containment through the installation of asphalt pavement or contingency soil cover for remaining soil/fill that exceeds TAGM values.

- MG #2 Subsurface Soil/Fill Impacted with Chlorinated VOCs: Excavation and off-site disposal of subsurface soils that exceed SSCLs and containment through the installation of asphalt pavement or contingency soil cover for remaining soil/fill that exceeds TAGM values.

- MG #3 Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics: Containment through the installation of asphalt pavement or contingency soil cover.

- MG #4 Drainage Features and Contents: Removal and off-site disposal of sediments from interior Sump Nos. 1 through 8 and closure in place. Removal and off-site disposal of the accessible sediment from the Hyde Creek outfall without entering the pipe and closure of the pipe in place. Removal and off-site disposal of accessible sediment from the catch basin and end of sewer pipe from the discharge location of the sewer line along the southern portion of the building and closure of the pipe in place.

- MG #5 Building Components: Removal and off-site disposal of friable asbestos, non-friable asbestos and electrical components.

- MG #6 Concrete and Surface Soils Impacted with Polychlorinated Biphenyls (PCBs): Excavation and off-site disposal of concrete and soil/fill above guidance levels (TAGM 4046/TSCA).

- MG #7 Groundwater Impacted with VOCs: Engineering controls consisting of a sub-slab vapor venting system for the existing building, air monitoring, enhanced natural attenuation, and long-term groundwater monitoring.

The United States Environmental Protection Agency (USEPA) completed remedial activities at the project site in 2004 that included the delineation, excavation and off-site disposal of the concrete and surface soils within MG #6. The USEPA also performed remedial activates addressing a portion of the contaminated surface soils within MG #1. Remedial activities associated with MG #1 included the delineation, excavation and off-site disposal of surface soil contaminated with metals located in the western portion of the project site north of the building, and in the eastern portion of the project site in the area of the former baghouses. Figure 5 depicts the areal extent of these remedial activities. Finally, the USEPA examined the potentially PCB-containing High Intensity Discharge (HID) light fixtures associated with MG #5, which were located throughout the existing building. The USEPA concluded that the ballasts do not contain PCBs, but that the potential presence of mercury in the light bulbs necessitated their removal. Therefore, the USEPA removed all of the HID light bulbs with the exception of the lights located in the high bay area. In addition, a number of fluorescent lights remain on-site,

and these may contains PCBs. The total reduction to the budget in the ROD due to the USEPA's work is approximately $40,000.

The RAWP also addresses the engineering and institutional controls that will be implemented during the remedial and project site redevelopment activities to ensure the safety of the construction workers and the surrounding public. Engineering and institutional controls include:

- Implementing a Site Management Plan;
- Placing a final surface cover over the entire project site that includes a minimum of twelve inches of vegetated soil cover, six inches of asphalt pavement, buildings, and/or six inches of concrete as a pre-condition of occupancy;
- Implementing erosion and dust control measures;
- Implementing a Community Air Monitoring Plan;
- Erecting temporary fencing around the project site or areas undergoing remedial measures or redevelopment;
- Instituting health and safety procedures for construction activities and protection of the surrounding community;
- Adhering to NYSDEC/NYSDOH notification and reporting requirements; and
- Limiting property use through an environmental easement and zoning restrictions.

2.0 PLANNED REMEDIAL ACTIONS

As described in the SI Report, the historical use of the former Roblin Steel site for industrial purposes has resulted in the historical release of heavy metals, petroleum products, solvents, and PCBs to surface and subsurface soils, as well as into the on-site storm sewer system. The ROD identified the areas that contain contaminants that must be remediated and specifies the remedy for each. The planned remedial actions include containment, excavation, treatment, off-site disposal, and institutional controls. The following subsections describe each MG; summarize the contaminants of concern; list the RAOs; and summarize the planned remedial action. The approximate location and the estimated areal extent of excavation, when applicable, for the seven MGs are shown on Figure 4. The RAOs are based on the findings of the SI as well as the anticipated future use of the project site for light industrial and warehousing purposes.

Preliminary quantities associated with implementing the RAWP and estimated costs have been developed and are summarized in Table 1. The estimated costs should only be used as a budgetary guideline. These costs are based upon related project experience and anticipated field conditions without the formal solicitation of contractor bids. Project-specific unit rates, which may differ from those provided herein, will be obtained through a formal bid process after regulatory review and approval.

2.1 General Procedures for Remedial Activities

A number of activities associated with the planned remedial program are relevant to more than one MG, and these activities are discussed in the following subsections. The general procedures pertaining to the management of soil/fill during the remedial activities, which also have applicability to multiple MGs, can be found in Section 2.0 of the SMP (Appendix A).

2.1.1 Surveying

Prior to the initiation of the remedial activities, a NYS-licensed land surveyor will stake the limits of each MG to define the extent of the areas to be remediated and to re-establish the project site's grid system.

2.1.2 Permits and Easements

Various permits and easements may be required to complete the remedial actions. The need for permits and easements will be researched and if required, obtained prior to the initiation of fieldwork. These may include but not be limited to an agreement or easement from the adjacent railroad owner that would allow access to the sewer pipe that leads to Hyde Creek so that it can be properly decommissioned and abandoned, and permits required to access the project site from South Roberts Road and/or Middle Road.

2.1.3 Site Control

Site control is an important aspect of this remedial program. In order to safeguard the health and safety of site workers and the general public, access to all remedial work areas will be restricted. Temporary construction fencing will be erected around accessible excavations and staging areas to prevent unauthorized personnel from entering these areas.

2.1.4 Equipment

Major pieces of equipment anticipated to be utilized for this remedial program include a hydraulic excavator or backhoe, bulldozer, dump trucks, hoe ram, and plate tamper. The roles of these pieces of equipment in the remedial program are discussed in the following sections.

2.1.5 Excavated Soil/Fill Staging

The excavation, stockpiling, and characterization of soil/fill material will be completed in accordance with the SMP in Appendix A. Excavated materials generated during the remedial program may temporarily be staged within the existing building while waiting for waste characterization analytical results. All soil placed in a staging area within the

building will be covered with 6-mil polyethylene sheeting to eliminate fugitive dust emissions.

2.1.6 Monitoring Well Decommissioning

Groundwater monitoring wells MW-03; MW-05; MW-06; MW-08; MW-11; and EX-MW-10 will be decommissioned in accordance with the procedures listed in NYSDEC's *Groundwater Monitoring Well Decommissioning Procedure, October 1996.* The decommissioning of these wells will involve:

- Removing the protective casing and the riser pipe;
- Excavating the concrete surface seal;
- Overdrilling the existing borehole using a hollow-stem auger fitted with a plug to remove all well construction materials;
- Grouting the borehole as the augers are removed to a depth of five feet below the existing ground surface;
- Backfilling the upper five feet with clean fill meeting the specifications listed in the SMP; and
- Decommissioning logs will be prepared and submitted to the NYSDEC.

2.1.7 Equipment Decontamination

An equipment decontamination area will be identified prior to the initiation of remedial activities. All equipment that comes in contact with contaminated materials will be decontaminated prior to being used for the handling or transfer of clean backfill, and prior to leaving the project site. Equipment decontamination will be performed on plastic sheeting in the decontamination area using a high pressure steam-generating cleaner. Soil residue removed during decontamination activities will be placed in 55-gallon drums, along with soiled plastic sheeting, for proper disposal, while the water generated during the decontamination will be allowed to infiltrate into the ground surface.

2.1.8 Excavation and Loading

The excavation of contaminated soil/fill will be performed using a hydraulic excavator or backhoe. Excavations in unconsolidated materials will be properly sloped or shored as appropriate to prevent accidental collapse, in accordance with 29 CFR 1926.650, Subpart P.

Excavation is associated with the remedial actions for MG #s 1 and 2. The excavated material from these MGs will either be staged on-site within the building or directly loaded into trucks for immediate transport to the off-site disposal facility.

With the exception of temporary backfilling of excavations for safety reasons, no excavations will be backfilled until achievement of the cleanup levels has been verified by post-excavation sampling, when required.

High visibility construction fencing will be erected as necessary around all unattended excavations to prevent unauthorized access and protect the safety of site workers.

2.1.9 Transportation and Disposal

Contaminated soil/fill excavated during this remedial program will be loaded from the staging area using a front-end loader into dump trailers for transport to an appropriately permitted off-site disposal facility. The transport of contaminated soil and debris will be performed by an appropriately licensed waste hauler. Transport vehicles will access the site from Interstate 90 via NY State Route 60 and use the Middle Road entrance to the project site located in the northeast corner of the site, and will exit the site using the same route and proceed to the appropriate disposal areas. Sufficient area exists on-site to enable the queuing of trucks without disrupting traffic patterns on Middle Road.

2.1.10 Management of Construction Water

Depending on the time of the year that the remedial action activities are performed, the management of water may be a necessary component of the subsurface remedial actions to be conducted. Water management may be required for dewatering during the excavation activities, remedial action activities at the sumps/drains, and during project site redevelopment.

Contractors performing subsurface work at the project site will be required to provide temporary dewatering to handle groundwater and storm water run-in to excavations during the remedial action activities and redevelopment periods 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.

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.

2.2 Remediation Sequence

The remediation program described in this RAWP includes two distinct types of activities: those that are related to the removal or treatment of contaminated material and those that are directly related to the redevelopment and reuse of the project site. The first phase activities will occur in the following order:

- Removal of contaminated subsurface soil;
- Cleaning and filling of drainage features;
- Removal of contaminated surface soil/fill; and
- Treatment of groundwater.

The first remediation phase will be completed as soon as possible following the completion of the contract documents, bidding, and contractor selection.

The design and implementation of the remedial actions that are related to the redevelopment of the project site are dependant on the design and implementation of those redevelopment activities. Therefore, these remedial activities will be completed in the second phase of cleanup. As an example, a sub-slab vapor venting system is planned to be installed in the existing building to protect indoor air quality. The design of this venting system must take into account any flooring penetrations required by the redevelopment for utilities and other such considerations. In addition, the building walls are in disrepair in some portions of the building and must be repaired before the venting system can be keyed into the walls. Other remedial actions directly related to the redevelopment and reuse of the project site include the removal of asbestos-containing materials and the installation of a site-wide cover system.

The second phase activities will be conducted in the following order:

- Removal of asbestos-containing materials;
- Removal of mercury-containing and fluorescent lights;
- Repair of building walls (by developer);
- Installation of sub-slab vapor venting system; and
- Installation of site-wide cover system.

The second phase will be completed concurrently with the redevelopment activities. The County is currently marketing the project site and anticipates that the property will be purchased within a relatively short timeframe. Therefore, it is anticipated that the second phase of remediation will occur within the time allotted by the State Assistance Contract (SAC). However, if there is no interest in redeveloping the project site prior to the expiration of the SAC, then the second phase of remedial actions will be postponed until an interested developer is identified. In this case, fencing will be installed around the project site before the SAC expires to keep trespassers off the property until it can be redeveloped.

2.3 Media Group #1: Surface Soil/Fill, Debris Piles, and Wood Blocks

The ROD identified four areas in which surface soil would require remediation. Additionally, six individual piles of debris/fill and three areas of wood block flooring were identified on the project site. The areas of this impacted surface soil/fill, debris/fill piles and wood block flooring are shown on Figure 4. However, two of the areas with impacts to surface soil/fill, depicted in Figure 5, were addressed by the USEPA in 2004. The remaining areas, the anticipated depth of impacts, and the calculated soil volume include the following:

- 12,300 square feet of surface area, one foot deep, results in approximately 450 cubic yards;
- 102,000 square feet of surface area, three inches deep, results in approximately 950 cubic yards;
- 175 cubic yards of wood block flooring; and
- 1,100 cubic yards of soil/debris piles.

The USEPA's remedial activities associated with MG #1 reduced the volume of soil/fill requiring off-site disposal from 3,175 cubic yard to 2,675 cubic yards. As a result of these reductions, the costs associated with MG #1 are reduced by approximately $21,500.

2.3.1 Contaminants of Concern

The contaminants of concern detected in this MG include non-carcinogenic and carcinogenic polycyclic aromatic hydrocarbons (PAHs) and metals (predominantly lead, chromium, cadmium and silver) in the surface soil/fill that exceed the SSCLs. In addition to the surface soil/fill, various debris piles located north of the existing building are included with this MG. The debris piles consist of a mixture of fill, soil, concrete, wood, brick, metal, construction and demolition debris, and wood block flooring. Some wood block flooring is still in place, while in other areas the wood blocks are in small piles. Samples from the soil piles and wood block flooring were analyzed and determined to be non-hazardous.

2.3.2 Remedial Action Objectives

The RAOs for the protection of human health are to prevent dermal contact with, incidental ingestion of, or inhalation of particulates originating from the contaminated surface soil/fill or debris piles. The RAO for environmental protection is to prevent precipitation from coming into contact with the contaminated surface soil/fill and debris piles causing a potential continuing source of groundwater contamination. Furthermore, this would serve to limit potential contaminated storm water runoff.

2.3.3 Planned Remedial Action

The planned remedial action to meet the RAOs will consist of the removal of contaminated surface soil/fill for proper off-site disposal. An excavator and/or bulldozer will be used to excavate the impacted soil/fill. The area of excavation includes some large concrete floor slabs (i.e., former Building 47 footprint). Where these floor slabs exist, the overlying material will be scraped off for off-site disposal and the excavation activities will cease at the top of the slab. In areas without slabs, the excavations will continue to the depths that are identified in Section 2.3. Specifically, a horizontal line will be projected from the top of a nearby slab to the furthest extent of the planned excavation, and the depth of the excavation will be measured from that projection. The excavated material will either be temporarily staged for later off-site disposal or loaded directly into dump trucks and hauled off-site for disposal.

The debris piles and wood block piles will also be excavated from the project site and properly disposed off-site at a designated landfill facility. Together, the debris piles and wood block flooring consist of an estimated 1,275 cubic yards of material. The remediation of the debris piles and wood block flooring will likely be implemented using either a front-end loader or an excavator to load the piles into dump trucks for off-site disposal at a sanitary landfill.

Analytical data collected during the SI and SSI from areas beneath the identified depths of impacted soil/fill indicate that levels of contamination are below the SSCLs. Therefore, verification sampling will not be required. The results of the toxicity characteristic leaching procedure (TCLP) analysis performed during the SI indicate that this material is suitable for off-site disposal at a sanitary landfill facility.

2.4 Media Group #2: Subsurface Soil/Fill Impacted with Chlorinated VOCs

The contaminated subsurface soil/fill included in this MG encompasses two separate areas (see Figure 4). The first area, located on the south side of the building in the vicinity of SP-46, includes an assumed surface area of approximately 2,200 square feet with a depth of four feet, resulting in approximately 325 cubic yards of impacted soil. A large portion of this area is located within the existing building beneath the concrete floor slab. The portion of this MG in the vicinity of SP-60 includes an approximate 400 square-foot surface area with the impacted zone of soil from four to eight feet below ground surface, resulting in approximately 60 cubic yards of impacted soil.

2.4.1 Contaminants of Concern

The contaminants of concern detected in this MG consist of chlorinated volatile organic compounds (VOCs), mainly trichloroethene (TCE), in the subsurface soil/fill at concentrations that exceed the guidance values at the south side of the existing building and in the vicinity of SP-60 at the north end of the project site. Furthermore, TCLP analyses indicate that the soil in the vicinity of SP-46 is considered a hazardous waste.

Based on the results of the TCLP analysis from the soil sample collected from SP-60, soil in the vicinity of this soil probe is not considered a hazardous waste. Figure 3 depicts the locations in which these samples were collected from.

2.4.2 Remedial Action Objectives

For protection of human health, the RAOs for this MG are to prevent the exposure of construction workers and future site workers to these contaminants via dermal contact, incidental ingestion, or inhalation of organic vapors and/or particulates. The RAO for environmental protection is to prevent these soils from acting as a continuing source of groundwater contamination.

2.4.3 Planned Remedial Action

The planned remediation to meet the RAOs will consist of the removal of the contaminated soils in the two areas for proper off-site disposal. Based on the fact that VOC contamination to the west, northwest and southwest of SP-46 has not been fully defined, on-site screening will be performed during excavation to determine the limits of excavation. A photoionization detector (PID) will be used as a field-screening tool to evaluate the excavated materials and in-place soils for organic vapors. The PID measurements, field observations, and verification sampling results will be used to determine the ultimate limits of excavation. Bedrock will determine the vertical extent of the excavation if encountered before reaching the limits of the contamination within the overburden soil/fill.

A concrete saw and hoe ram will be used to break the concrete in the planned excavation area in the vicinity of SP-46 and the concrete will be staged for later reuse as backfill at the bottom of the excavation. A backhoe or excavator will be used to remove the impacted soil from the two areas. The impacted soil will be temporarily staged on-site for characterization and future off-site disposal, or will be directly loaded into dump trucks and immediately hauled off-site for disposal. The results of the SI indicate that some of the material is suitable for off-site disposal at a sanitary landfill facility. However, the results of the TCLP analysis in the vicinity of SP-46 indicate some of the soil will need to be disposed of at a hazardous waste landfill. Additional soil profiling may be necessary based on the disposal facility requirements. Excavations remaining overnight will be surrounded with temporary construction fencing.

The excavated soil/fill will be screened with a PID to segregate potentially hazardous soil/fill from non-hazardous soil/fill. In addition, soil/fill from the excavation sidewalls and base will be screened prior to post-excavation verification sampling to help determine if the lateral and vertical extents of the excavation are sufficient to meet the SSCLs. As a result of the soil PID screening performed during previous SI and SSI activities, the following methodology was developed. Direct screening of the excavated soil/fill will be conducted throughout the excavation of soil in these areas to determine the possible extent of excavation. As directed by TVGA's on-site representative, samples will be

collected from the sidewalls and base of the excavation for headspace screening to confirm that the possible extent of excavation has been reached. Any soil/fill that demonstrates headspace measurements greater than 50 ppm will be excavated. Additionally, in order to segregate the potentially hazardous soil/fill from the non-hazardous soil/fill, any soil/fill that demonstrates a headspace reading between 50 ppm and 200 ppm will be assumed to be non-hazardous, while any soil/fill that demonstrates a headspace reading of greater than 200 ppm will be assumed to be hazardous. Hazardous and non-hazardous soil/fill will be staged in separate areas within the existing building. The final determination as to whether the soil/fill is hazardous or non-hazardous will be made following the collection and analysis of waste characterization samples from each of the respective piles.

Once the apparent limits of the impacted soils in the two areas have been reached, verification sampling will be performed from the sidewalls and bottom of the excavations. A TVGA representative will collect the samples for submission to the laboratory for analysis of Target Compound List (TCL) VOCs.

If the verification sampling confirms that the remaining soils meet the SSCLs, soil that meets the criteria outlined in Section 2.1 of the SMP will be used to backfill the excavated areas. If the sample results exceed the SSCLs, the excavation will be enlarged in the direction of the sample to remove the remaining contamination, and will be subjected to another round of post-excavation sampling and analysis.

MW-09 is located within the anticipated excavation area in the vicinity of SP-46 and will have to be decommissioned during the excavation activities in this area. This well is included as a monitoring location for the long-term groundwater monitoring program. In order to comply with the requirements listed in the OM&M Plan, this well must be reinstalled following the completion of remedial activities at this location. A new interface monitoring well will be installed directly adjacent to MW-09 using the same procedures utilized during the SI.

2.5 Media Group #3: Subsurface Soil/Fill with PAH and Metals Impacts and/or Petroleum Nuisance Characteristics

This MG encompasses subsurface soil across the entire project site. The analytical results for the subsurface soil/fill samples collected from the areas in this MG did not exceed the SSCLs but did exceed the recommended soil clean-up objectives listed in TAGM 4046. Additionally, visual and olfactory observations revealed petroleum odors and stained soils (nuisance characteristics) in the northeast corner of the project site (former location of three 157,000-gallon fuel oil above ground storage tanks (ASTs)). This area encompasses approximately 12,800 square feet of surface area (Figure 4). Approximately four feet of non-impacted soil (approximately 1,900 cubic yards) is situated above the impacted soils, which are also approximately four feet thick, resulting in approximately 1,900 cubic yards of soils with petroleum-related nuisance characteristics.

2.5.1 Contaminants of Concern

The contaminants of concern identified in this MG consist of PAHs, metals, and petroleum nuisance characteristics (i.e. odor and visual staining) in the subsurface soils. The highest concentrations of impacts appear to be present within the fill-type soils.

2.5.2 Remedial Action Objectives

The RAOs for protection of human health are to prevent the exposure of construction workers and future site workers to these contaminants via dermal contact, incidental ingestion, or inhalation of organic vapors and/or particulates. The RAO for environmental protection is to prevent these soils from acting as a continuing source of groundwater contamination.

2.5.3 Planned Remedial Action

The planned action to meet the RAOs consists of placing a cover system over the entire project site. The cover system consists of either 12 inches of clean soil/fill conforming to the requirements listed in Section 2.1 of the attached SMP or six inches of asphalt and/or concrete pavement. This cover system will be installed during the second phase of remedial activities to be performed in conjunction with site redevelopment. It is anticipated that a private entity will purchase the project site and perform redevelopment activities, which would include the placement of the site cover. However, if the transfer and redevelopment of the project site does not occur within a reasonable timeframe, then interim fencing which surrounds the entire project site will be constructed.

Prior to placement of the soil/fill cover, rough grading will be performed using a bulldozer for positive drainage. To place the 12-inch soil/fill cover, the soil/fill will be imported from an approved source and documentation will be provided to demonstrate that the soil conforms to all of the requirements of the SMP. The soil/fill will be dumped, spread with a bulldozer, and properly compacted in order to minimize future settling.

In the case of the asphalt/concrete pavement, the subgrade will first be prepared by rough grading with a bulldozer. A proof roller will also be used to smooth the subgrade prior to paving. Once the subgrade is prepared, a gravel sub-base will be placed using a bulldozer to provide stability for construction and limit subsidence. Asphalt conforming to NYSDOT standards will be hauled in on trucks, dumped into a paving machine, and installed to achieve a minimum asphalt paving thickness of six inches, which will be installed in lifts not to exceed four inches. A vibratory and proof roller will work simultaneously to compact and smooth the final asphalt surface.

Following placement of the cover, annual inspections will be conducted in accordance with the site management plan, included as Appendix A.

2.6 Media Group #4: Drainage Features

Sediment with contaminant concentrations above the SSCLs was documented in interior Sump Nos. 1 through 8, the Hyde Creek outfall, and at the catch basin and end of the sewer pipe along the southern portion of the building. An estimated 45 cubic yards of impacted sediment is located within the sumps, and approximately 700 gallons of water overlie the sediments within the sumps. Additionally, the Hyde Creek outfall and the catch basin and end of the sewer pipe along the southern portion of the building are each estimated to contain ½ cubic yard of sediments.

2.6.1 Contaminants of Concern

The contaminants of concern identified in this MG include:

- Metals, PAHs, VOCs, and PCBs at concentrations that exceed the SSCLs in the sediments located within a series of eight sumps within the existing building (interior Sump Nos. 1 through 8).
- Metals and PAHs that exceed the SSCLs in the sediments within the Hyde Creek outfall; and
- VOCs and semi-volatile organic compounds (SVOCs) that exceed the SSCLs in the sediments at the catch basin and end of the sewer pipe from the discharge location from the sewer line located along the south side of the existing building.

2.6.2 Remedial Action Objectives

The RAOs for protection of human health are to prevent dermal contact with, incidental ingestion of, or inhalation of organic vapors and/or particulates originating from the contaminated sediment. The RAO for environmental protection is to prevent the release of contaminated sediments from the sumps through remaining undocumented outfall pipes or through the off-site sewer locations.

2.6.3 Planned Remedial Action

The planned remedial action to meet the RAOs will consist of the removal and off-site disposal of contaminated sediments within sumps, the storm sewer pipe, the Hyde Creek outfall, and the catch basin located along the south side of the existing building. Each structure will then be closed in place.

The remedial action associated with the sumps will involve removing the water, sediments and sludges within each of the sumps, plugging inlet and outlet pipes and backfilling the sumps with flowable fill. Water in the sumps will be pumped or hauled from the sumps to the ground surface at on-site locations downgradient of the sumps, 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. The saturated sediments or sludges contained within the sumps will be solidified by adding an absorbent material. This will

limit the number of waste streams. The solidified material will be removed from the sumps through the use of mechanical means and/or hand labor. Proper OSHA procedures for confined space entry will be implemented for all personnel entering the sumps to perform the remedial work. The removed materials will be loaded on trucks and disposed off-site or temporarily staged for later off-site disposal. Because all materials will be removed from the sumps, verification sampling will not be required.

Following the removal of the materials from the sumps, the inlet and outfall pipes will be plugged. The sumps will then be backfilled with a flowable fill.

The remedial action for the Hyde Creek outfall includes the removal of the backflow prevention gate through the use of mechanical means and/or hand labor. The sediment that is accessible without entering the pipe will be removed and staged or directly loaded into dump trucks, and hauled off-site for proper disposal. The end of the pipe will be plugged with a water tight sealant (i.e., cement or grout). Forms will be placed in the end of the pipe to retain the sealant material in place so that it can set.

The remedial action associated with the catch basin and end of the sewer pipe along the southern portion of the building will be initiated by temporarily diverting the upstream water flow. In addition to the inactive storm sewer lines flowing from the project site, there are active storm sewer lines flowing from the Alumax site to the south. Storm water flow from the Alumax site must be maintained during and after remedial activities. Accessible sediments will be removed from the catch basin and end of the inactive sewer pipe originating from the project site, staged or directly loaded into dump trucks, and hauled off-site for proper disposal. The end of the inactive sewer pipe will be plugged with a water tight sealant (i.e., cement or grout). Forms will be placed in the end of the pipe to retain the sealant material in place so that it can set.

The results of the TCLP analysis conducted on the samples collected from the structures associated with this MG indicate that the material is suitable for off-site disposal at a sanitary landfill facility. However, additional analytical testing may be necessary based on the requirements of the disposal facility.

2.7 Media Group #5: Building Components

Asbestos-containing materials were identified throughout the building. The type and quantity of ACMs identified in the on-site structure is described in the Pre-Demolition Asbestos Survey Report included as Appendix I of the SI Report. The USEPA evaluated the HID lights during its 2004 removal event, and concluded that these lights do not contain PCBs. However, the USEPA concluded that the light bulbs likely contain mercury and removed all of the bulbs except those in the high bay area. Additionally, approximately 20 fluorescent lights that were not evaluated by the USEPA, including potentially PCB-containing ballasts, remain on-site. The USEPA's work associated with the light fixtures within the building reduced the costs for this MG by approximately $3,100.

Because an end-user has not yet been identified, concern exists for the implementation of asbestos removal during the first phase of the remediation. Therefore, the asbestos abatement of the window and roof systems would be completed during the second phase of remediation in order to protect the integrity of the structure until the time of rehabilitation/redevelopment.

2.7.1 Contaminants of Concern

The contaminants of concern identified for this MG consist of limited quantities of friable and substantial quantities of non-friable ACMs identified throughout the on-site building. The potential occurrence of PCBs associated with the fluorescent lights and mercury associated with the HID light bulbs also exist in the light fixtures.

2.7.2 Remedial Action Objectives

The RAOs for protection of human health are to prevent the inhalation or incidental ingestion of asbestos fibers, as well as dermal contact with contaminants originating from the light fixtures. The RAO for environmental protection is to prevent the release of contaminants from the light fixture ballasts and HID light bulbs.

2.7.3 Planned Remedial Action

The planned remedial action to meet the RAOs will consist of asbestos abatement and the removal and off-site disposal of the HID light bulbs and fluorescent light ballasts. These actions will be required prior to, or concurrent with, building rehabilitation or demolition. As described in Section 2.2, this remedial action will occur during the second phase of remediation, which would occur at the time of the rehabilitation of the building. A certified asbestos removal subcontractor will be utilized to remove the identified ACM. ACM generated during the abatement program will be handled according to regulatory requirements and disposed of off-site in accordance with State and Federal regulatory requirements. The HID bulbs and light fixture ballasts will be handled and disposed of off-site in accordance with applicable regulatory requirements.

2.8 Media Group #6: Concrete and Surface Soils Impacted with PCBs

The USEPA completed remedial activities at the project site in 2004 that included the delineation, excavation and off-site disposal of the PCB-impacted concrete and surface soils within this MG. Figure 5 shows the approximate extent of these excavations. Post-excavation soil samples verified that all PCB-contaminated material within this MG was removed. Therefore, no further action for this MG is warranted. By completely addressing this MG, the USEPA eliminated the estimated cost in the ROD of $10,750 for this MG.

2.9 Media Group #7: Groundwater Impacted with VOCs

Volatile organic compounds were detected within the site-wide groundwater at concentrations in excess of the WQS. Substantially elevated levels of VOCs were detected in the groundwater along the southern project site boundary in the vicinity of well EX-MW-11. The elevated levels in this area are attributed to contaminant trespass from a documented source area on the adjacent Alumax property to the south.

2.9.1 Contaminants of Concern

The contaminants of concern detected in this MG consist of chlorinated and aromatic hydrocarbons in the site-wide groundwater at concentrations that exceed the WQS. Figure 6 shows the distribution of the primary contaminants of concern in the groundwater.

2.9.2 Remedial Action Objectives

The RAO for protection of human health is to prevent on-site construction workers, future site workers and off-site utility workers from being exposed to the groundwater contaminants via dermal contact or inhalation of organic vapors. The RAOs for environmental protection are to eliminate further degradation of groundwater quality and to eliminate the potential impacts to surface water quality.

2.9.3 Planned Remedial Action

The planned remedial action to meet the RAOs consists of enhanced natural attenuation to reduce the toxicity of the existing groundwater and installation of a sub-slab vapor venting system to prevent future occupants of the building from exposure to organic vapors. The removal of the on-site sources of groundwater contamination is discussed in other MG #2.

The enhanced natural attenuation will take place through the injection of Hydrogen Releasing Compound (HRC) or Zero Valent Iron (ZVI) in the vicinity of MW-09 and MW-07 (Figure 3). Following the excavation activities, the HRC or ZVI will be spread over the base of the excavations. It is assumed that the excavations will intersect the water table based on the results of the SI.

A sub-slab vapor venting system will be installed within the existing building to transmit organic vapors away from the occupied building for dispersion into the atmosphere. The system will be comprised of perforated High Density Polyethylene (HDPE) piping installed above the existing concrete floor, and the floor will be raised as part of redevelopment of the project site. The entire sub-slab piping system will be encased in crushed stone, and a geotextile and geomembrane layer will be placed over the stone.

Ultimately, installation and design of the sub-slab vapor venting system will be dependent upon the intended redevelopment of the existing building. Therefore, the installation and final design of this system will be completed during the second phase of remediation and will occur concurrently with the building redevelopment. However, the general sequence of installation will be initiated by using dump truck to deposit a base layer of stone across the entire floor surface and a small dozer or skid steer to spread out the stone. The HDPE perforated pipe network will then be placed on top of a base stone layer by hand laborers and an overlying stone layer will be deposited as the piping is installed.

Above the crushed stone layer, a cushion geotextile layer will be installed under a linear-low density polyethylene (LLDPE) geomembrane, which will be overlain by a second cushion geotextile layer. The geomembrane will serve to block the passage of organic vapor into the building interior and will be keyed to the interior building walls. The geotextile fabric on the top and bottom will serve to protect the geomembrane from damage and provide geotechnical stability to the overlying slab.

Following the installation of the sub-slab vapor venting system, the Operation, Maintenance and Monitoring (OM&M) Plan in the SMP will be updated to include the sub-slab vapor venting system as constructed. The OM&M of the sub-slab vapor venting system will be conducted in conjunction with the groundwater monitoring program for 30 years. This will involve semi-annual monitoring until groundwater and air quality stabilizes according to the NYSDEC.

Long-term groundwater monitoring will be performed in accordance with the SMP to evaluate the progress of the enhanced natural attenuation, and will include the collection of groundwater samples from four downgradient monitoring wells (MW-01, MW-04, MW-12 and EX-MW-12) and the two areas of groundwater with elevated concentrations of chlorinated VOCs (MW-09 and MW-07). Samples will be analyzed for TCL VOCs. Monitoring of the sub-slab vapor venting system will involve the collection of one air sample from each stack and three air samples from the interior of the building during each monitoring event. All five air samples will be analyzed for benzene, toluene, ethylbenzene, xylenes, TCE, 1,2-dichlorethene (1,2–DCE) and vinyl chloride. Reports to document these monitoring events will be prepared and submitted to the NYSDEC following each sampling event.

3.0 COMMUNITY AIR MONITORING

Real time air monitoring will be performed at downwind locations during remedial action activities. A Community Air Monitoring Plan (CAMP) is included as Attachment A4 to the SMP (Appendix A). 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.

4.0 EROSION AND DUST CONTROLS

As part of the remedial actions to be performed at the project site and as an important element to the SMP, measures will be needed to limit erosion and dust generation. A Master Erosion Control Plan that will be used by subcontractors working at the project site as well as future developers of the project site has been prepared and incorporated as Attachment A2 to the SMP (Appendix A). Erosion control and dust suppression techniques will be employed as necessary to limit erosion and mitigate fugitive dust in disturbed areas during remediation and redevelopment activities. Such techniques will be employed even if the community air monitoring results indicate that particulate levels are below action levels. Techniques may include but are not limited to the following:

- Use of silt fencing, hay bails, and/or mulching;
- Applying water on haul roads;
- Wetting equipment and excavation surfaces;
- Transporting materials in covered containers or vehicles;
- Limiting vehicle speed on the project site;
- Covering excavated areas and materials following excavation; and
- Limiting the size of excavations.

5.0 STORM WATER MANAGEMENT

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 project site during remedial construction activities was developed as part of this RAWP. 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 New York State Department of Environmental Conservation (NYSDEC), SPDES General Permit for Stormwater Discharge GP-02-01.

5.1 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 remedial construction; and
- Maintenance of stormwater controls during remedial construction.

Based on the fact that the areal extent of impervious surfaces is not changing nor are any stormwater outfalls being constructed as a result of remedial actions, the design of permanent stormwater management facilities is not required.

5.2 Pre-Remediation Conditions

The project site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park. Figure 2 shows the configuration of project site and the building and concrete slabs that remain. The site in bounded to the north by an active CSX railroad, to the south by a former Alumax manufacturing facility, to the west by a functioning truck depot, and to the east by open, partially wooded land. Generally the site drains from south to north to the railroad; however, due to poor grading following historical demolition and the presence of impervious surfaces associated with historical structures, surface water ponding is quite prevalent.

Subsurface investigations conducted by TVGA Consultants during the Site Investigation indicate fill material comprises the majority of the uppermost layer of subsurface soil. This fill material consists mostly of dark sand with 10 to 50 percent gravel. In areas not overlain by impervious surfaces this fill material appears to drain surface water effectively.

5.3 Proposed (Post-Remediation) Conditions

Following site remediation, the project site will remain generally unchanged. Minor grade changes will occur as contaminated surface soil/fill is removed. Subsurface soil/fill that is removed will be backfilled to the existing grade with material that has similar drainage characteristics. The remainder of the site topography and drainage characteristics will remain generally unchanged. Stormwater drainage issues relating to site redevelopment will be addressed during the design of the redevelopment in accordance with all applicable regulations.

5.4 Erosion and Sediment Controls

Every effort will be made to minimize erosion and sediment runoff during construction. Measures described in Section 4.0 of this document will be implemented to control the migration of both contaminated and non-contaminated sediment off of the project site.

5.5 Water Quantity and Quality Control

The scope of the remedial construction will not increase in the quantity of impervious surface nor will it effect the site topography or drainage characteristics. Therefore, no permanent water quantity or quality controls are proposed.

6.0 HEALTH AND SAFETY

A site-specific Health and Safety Plan (HASP) complying with 29 CFR 1910.120 has been prepared for TVGA personnel for implementation prior to the commencement of remedial

activities and is included as Appendix B. The HASP provides background discussion of the project site and describes personnel responsibilities, protective equipment, health and safety procedures and protocols, decontamination procedures, personnel training, and the type and extent of necessary medical surveillance. Procedures for protecting third parties, such as visitors or the surrounding community, are also specified in the HASP. TVGA's HASP is provided for informational purposes only. Prime contractors and subcontractors will be required to develop a HASP that is equal to, or exceeds, the stringency of TVGA's HASP.

7.0 POST – REMEDIATION REQUIREMENTS

A Site Management Plan (SMP) is incorporated as Appendix A to this RAWP in order to address potentially contaminated soil/fill that may be excavated, encountered, or handled subsequent to the remedial actions during the construction phase or other redevelopment activities. The plan includes but is not limited to the following elements:

- Excavation, grading, sampling, and handling techniques for on-site soils;
- Requirements for backfill soils allowed for use at the project site;
- Erosion and dust control measures;
- Fencing and other access controls;
- Health and Safety procedures involving subsurface soil work;
- Acceptability of cover soils and vegetative cover;
- Environmental easement;
- Program responsibilities; and,
- Certifications and reporting requirements.

Any remedial action or site redevelopment activity that is inconsistent with this RAWP and the SMP will void New York State's release from liability.

An Operation Maintenance and Monitoring (OM&M) Plan is incorporated as Attachment A5 to the SMP that outlines the conditions and procedures for maintaining the long-term components of the completed remedial action. The remedial activities associated with MG #3 included the installation of a cover system across the entire project site. In order to verify that the cover system has remained in good condition the cover system will be inspected and certified by the property owner on an annual basis. A certification form to document this verification is included as an attachment to the OM&M Plan.

The remedial action for MG #7 consists of enhanced natural attenuation to reduce the toxicity of the existing groundwater and the installation of a sub-slab vapor venting system (SSVVS) to prevent future occupants of the building from exposure to organic vapors. To monitor the progress of the enhanced natural attenuation, groundwater samples will be collected from several groundwater monitoring wells across the project site. Additionally, to ensure that the SSVVS is operating properly and that occupants of the building are not being exposed to organic vapors, air samples will be collected from each of the venting stacks associated with the SSVVS as well as

from locations within the interior of the building. The OM&M Plan of the sub-slab vapor venting system will be conducted in conjunction with the groundwater monitoring program and will be conducted for a period of no less than 30 years unless otherwise specified by the NYSDEC. The property owner shall submit annual inspection reports to the NYSDEC.

8.0 RECORDKEEPING AND REPORTING

The documentation of field activities will entail the recording of project information, observations, and measurements in a field logbook; the completion of applicable field log forms; and the compilation of a photographic record of project site conditions and the remedial activities.

8.1 Record Keeping

Pertinent remedial activities and sampling information shall be recorded in a logbook during each day of the field activity. A logbook will be assigned to each field task and will have a unique document control number. No general rules can specify the extent of information that must be entered in a logbook. However, logbooks shall contain sufficient information so that someone can reconstruct the field activity without relying on the memory of the field crew.

A Daily Field Report Form shall be completed for each day of field activities. The form shall be filled out with relevant information in the appropriate space on the form. A Daily Field Report Form is included as Appendix C.

8.2 Reporting

A Post-Remedial Action Report documenting the remedial action activities will be prepared and submitted to the NYSDEC and NYSDOH. The report will be prepared in general accordance with the requirements set forth in DER-10 Technical Guidance for project Site Investigations and Remediation and will include the following:

- A summary of the remedy;
- A summary by MG of remedial actions completed, that includes:
  - A description of problems encountered during construction and their resolution;
  - A description of changes to the design documents and why the changes were made;
  - Quantities and concentrations of contaminants removed or treated; and,
  - A listing of the waste streams, quantity of materials disposed of and where they were disposed.
- A list of the remediation standards applied to the remedial actions;
- Tables and figures containing pre-remedial and post-remedial data keyed appropriately so that completion of the remedial action is documented. The

figures should clearly indicate the volume of contaminated material that was remediated;

- The results of verification sampling;
- A detailed description of project site restoration activities;
- A detailed description of source and quality of backfill materials utilized at the project site;
- A detailed report of actual costs including bid tabulations and change orders, as State funding is provided;
- Record drawings which include:
  - Permanent structures which will remain in place after completion of the remedial action, as well as areas of changed conditions or removals;
  - Soil removals, indicating the surveyed limits of the excavation and location of final confirmatory samples;
  - Permanent survey markers for horizontal and vertical control for the project site's long-term maintenance as defined by Section 6 of DER-10.
- Fully executed manifests documenting off-site transport of waste material; and,
- A filed copy of engineering or institutional controls that are required.

9.0 CITIZEN PARTICIPATION PLAN

A Citizen Participation Plan (CPP) is presented as Appendix D of this plan. The CPP describes the types of information to be provided to the public and outlines the opportunities for community comment and input during the remedial action process. This Plan includes a preliminary list of potentially interested parties, a list of information repositories, community outreach, and other appropriate citizen participation activities. Furthermore, the CPP will describe the procedures to be used to ensure that:

- Pertinent documents will be readily available to the public;
- Communication with the public takes place at critical decision points in the remedial program;
- Informational notices are mailed out and/or announced in the local media;
- Project staff are identified and made accessible to the public; and,
- Interested and/or affected parties are identified.

10.0 PROJECT SCHEDULE

Remedial activities will be initiated following the acceptance of the RAWP by NYSDEC. The remedial field activities are tentatively planned to be completed in 2006. The following provides a general sequencing of the major milestones associated with implementing the remedial action program. Additionally, a schedule of the proposed remedial activities is provided as Figure 7.

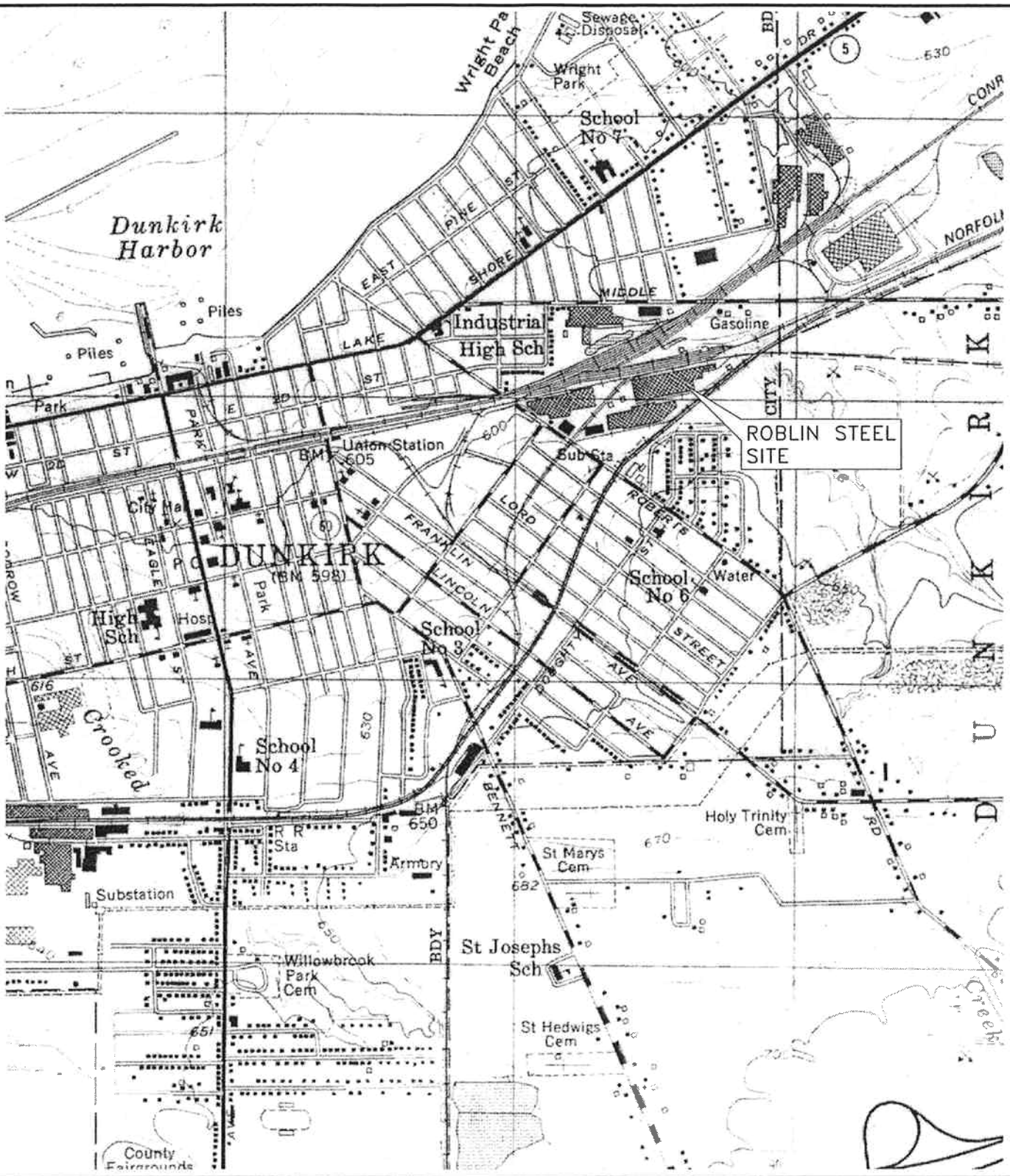
- Submit Draft RAWP to NYSDEC;

- Incorporate comments and issue Final RAWP;
- Develop remedial contract documents including design drawings and specifications;
- Submit contract documents to NYSDEC for approval;
- Obtain bids from remedial contractors;
- Award Contract(s);
- Perform Remedial Construction;
    - Phase I
        - Decommissioning of the groundwater monitoring wells that will not be part of the long-term groundwater monitoring program;
        - Removal and off-site disposal of potentially PCB-contaminated and mercury-containing lighting within the building interior;
        - Addressing the drainage features in MG #4;
        - Excavation and the temporary staging on-site or off-site disposal of VOC-contaminated soil associated with MG # 2;
        - Deposition of the HRC or ZVI materials into the excavations created by removal of subsurface soil impacted with VOCs in MG #2; and
        - Excavation and the temporary staging on-site or off-site disposal of the debris piles and surface soils associated with MG #1, followed by rough grading of exterior portions of the project site.
        - Re-installation of MW-09.
    - Phase II (If concurrent with redevelopment efforts)
        - Abatement of asbestos which will occur concurrently with the redevelopment of the existing building;
        - Installation of the sub-slab vapor venting system, which will occur concurrently with the redevelopment of the existing building; and
        - Installation of the site wide cover system, which will occur concurrently with the redevelopment of the exterior portions of the project site or if there is no interested party construct interim fencing which surrounds the entire project site.
    - Phase II (If redevelopment efforts will not occur after expiration of SAC)
        - Installation of fencing around perimeter of project site.
- Prepare Post-Remedial Reporting; and
- Transfer and redevelop project site.

11.0 PROJECT COST ESTIMATE

A detailed cost estimate has been prepared for the remediation action and is included as Table 1. As described in Section 2.0, the estimated costs should only be used as a budgetary guideline. Because they are based upon related project experience and anticipated field conditions without the formal solicitation of contractor bids. Project-specific unit rates, which may differ from those provided herein, will be obtained through a formal bid process after regulatory review and approval.

FIGURES



SITE LOCATION MAP

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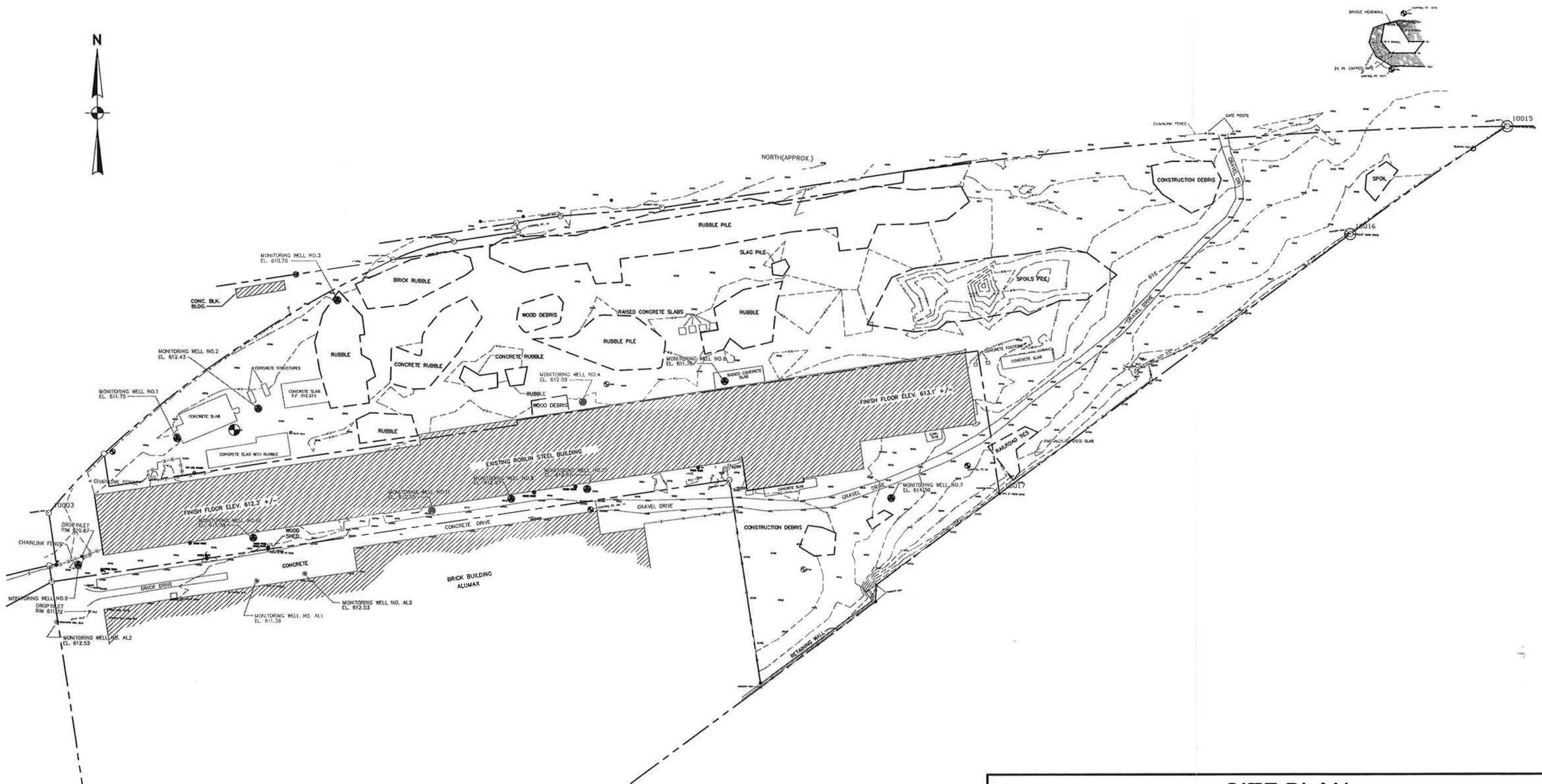
REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 2000'	DATE: 07/21/2005	FIGURE NO. 1

M:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RemedialAction\FIGURE 1.dwg 7/21/2005 2:16:19 PM EDT



GENERAL NOTES

1. BOUNDARY INFORMATION SHOWN ON THIS DOCUMENT WAS SURVEYED BY MICHAEL J. RODGERS LAND SURVEYOR, PC, ON NOVEMBER 28, 2001 AND PROVIDED TO TVGA BY CHAUTAUQUA COUNTY.

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SITE PLAN

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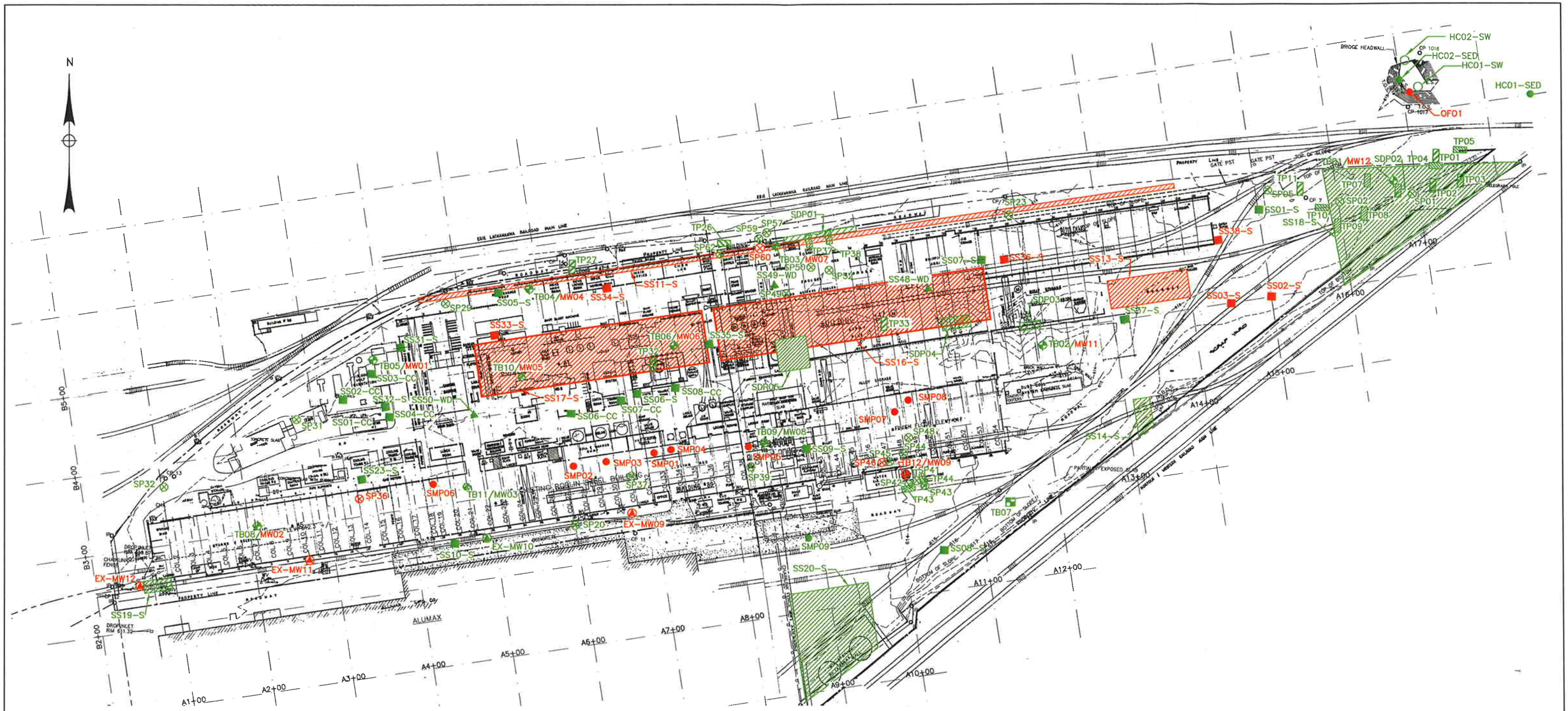
REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: 07/21/2005	FIGURE NO. 2

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RemedialAction\FIGURE 2.dwg 7/21/2005 2:34:11 PM EDT



LEGEND

———	BUILDING LINE
— — —	PROPERTY LINE
— · — · —	SAMPLING GRID SYSTEM
A1+00 B1+00	SAMPLING GRID SYSTEM STATIONING
OF01 ●	OUTFALL SAMPLING LOCATION
TB01 ⊕	TEST BORING COMPLETED WITH INTERFACE GROUNDWATER MONITORING WELL
TP05 ▨	TEST PIT SAMPLE LOCATION
SS42-S ■	GRAB SURFACE SOIL SAMPLE LOCATION
EX-MW10 ⊕	EXISTING GROUNDWATER MONITORING WELL
MW03 ⊕	BEDROCK GROUNDWATER MONITORING WELL
MW01 ⊕	INTERFACE GROUNDWATER MONITORING WELL
▨	SS01-S COMPOSITE SURFACE SOIL SAMPLE
SP16 ⊗	SUBSURFACE SOIL PROBE SAMPLED FOR CHEMICAL ANALYSIS
SDP01 THRU SDP05 ▨	SOIL/DEBRIS PILES
SMP01 THRU SMP08 ●	SUMP SAMPLING LOCATION
SS49-WD ▲	WOOD FLOOR BLOCKS

* NOTE:
SAMPLE LOCATIONS COLORED RED INDICATE EXCEEDANCES OF SSCL'S.

* NOTE:
SAMPLE LOCATIONS COLORED GREEN INDICATE PAPAMETERS WERE BELOWS SSCL'S.

SAMPLE LOCATION PLAN

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REMEDIAL ACTION WORK PLAN
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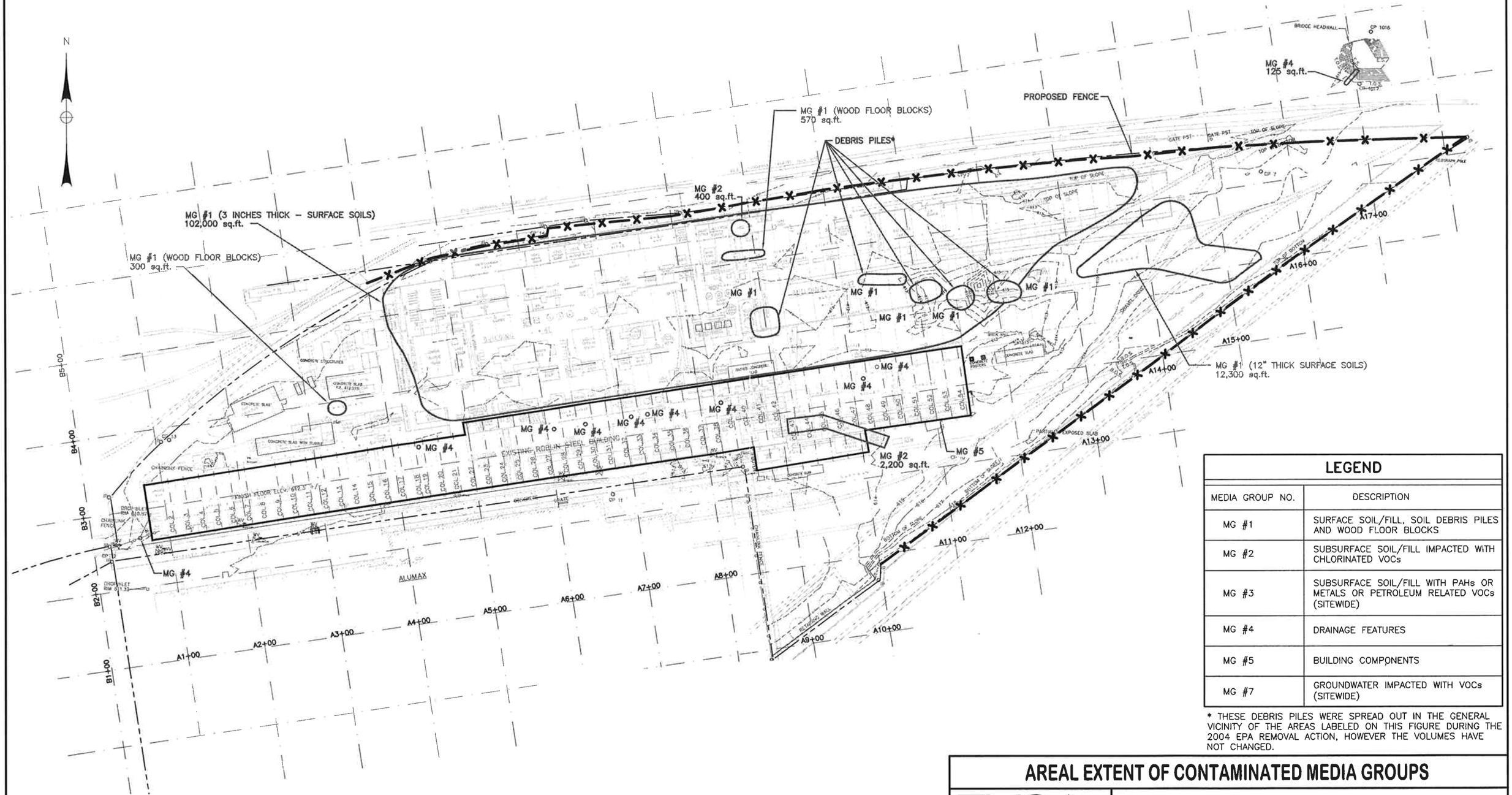
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: 07/21/2005	FIGURE NO. 3

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RAWP\FIGURE 3.dwg 9/22/2005 11:32:34 AM EDT



LEGEND

MEDIA GROUP NO.	DESCRIPTION
MG #1	SURFACE SOIL/FILL, SOIL DEBRIS PILES AND WOOD FLOOR BLOCKS
MG #2	SUBSURFACE SOIL/FILL IMPACTED WITH CHLORINATED VOCs
MG #3	SUBSURFACE SOIL/FILL WITH PAHs OR METALS OR PETROLEUM RELATED VOCs (SITEWIDE)
MG #4	DRAINAGE FEATURES
MG #5	BUILDING COMPONENTS
MG #7	GROUNDWATER IMPACTED WITH VOCs (SITEWIDE)

* THESE DEBRIS PILES WERE SPREAD OUT IN THE GENERAL VICINITY OF THE AREAS LABELED ON THIS FIGURE DURING THE 2004 EPA REMOVAL ACTION, HOWEVER THE VOLUMES HAVE NOT CHANGED.

AREAL EXTENT OF CONTAMINATED MEDIA GROUPS

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REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
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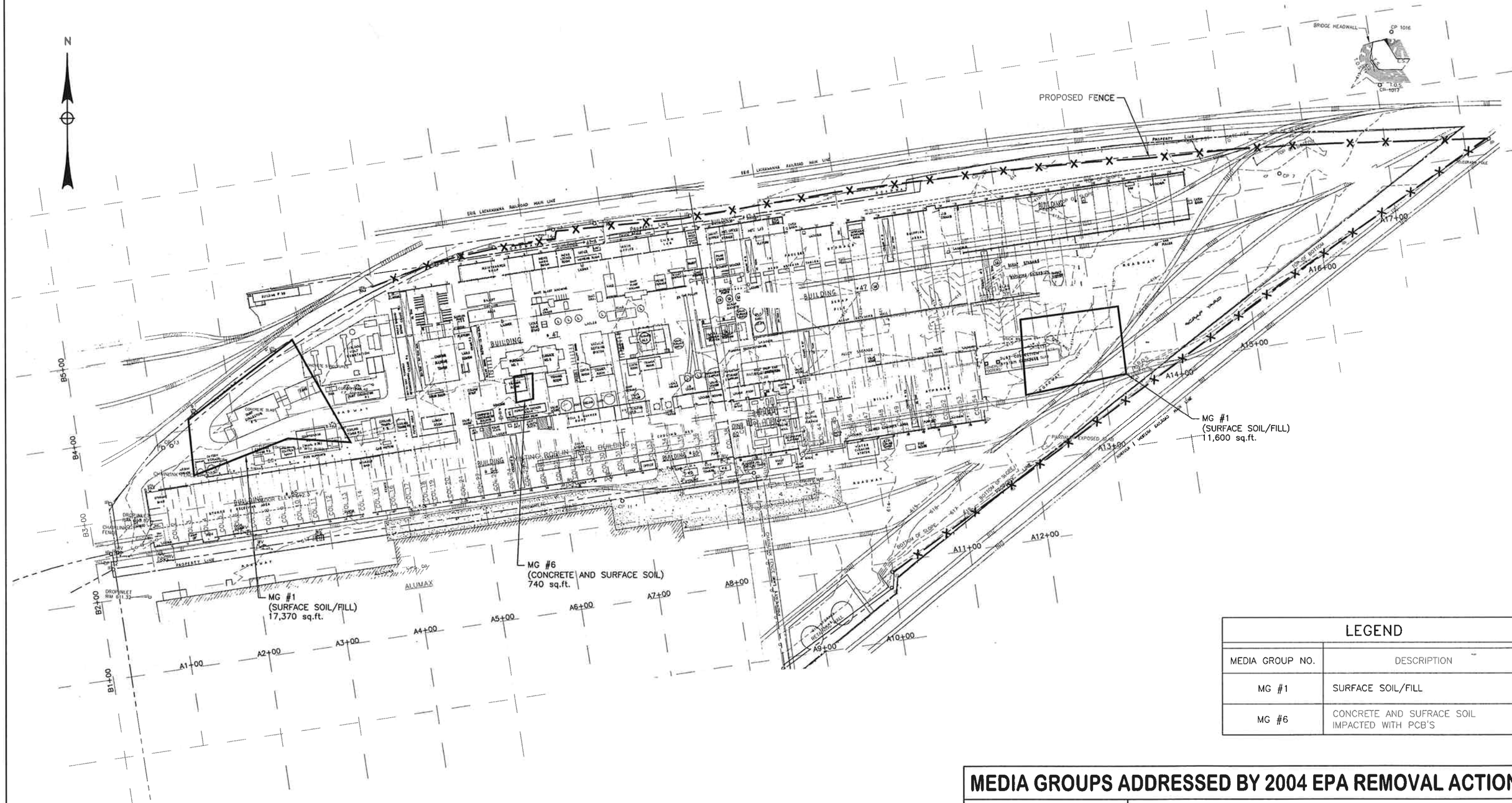
PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: 02/13/2006	FIGURE NO. 4

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RAWP\FIGURE 4.dwg 2/13/2006 3:32:48 PM EST



LEGEND	
MEDIA GROUP NO.	DESCRIPTION
MG #1	SURFACE SOIL/FILL
MG #6	CONCRETE AND SUFRACE SOIL IMPACTED WITH PCB'S

MEDIA GROUPS ADDRESSED BY 2004 EPA REMOVAL ACTION

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REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
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PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: 02/13/2006	FIGURE NO. 5

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RAWP\FIGURE 5.dwg 2/13/2006 3:53:11 PM EST

N

MW05	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	1 J
BENZENE	**73**
ETHYLBENZENE	**8 J**
TOLUENE	**68**
TOTAL XYLENES	**49**
TRICHLOROETHENE	**8 J**
VINYL CHLORIDE	< 10

MW04	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	**6 J**
ETHYLBENZENE	2 J
TOLUENE	< 10
TOTAL XYLENES	**10**
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW06	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	1 J
BENZENE	**72**
ETHYLBENZENE	**15**
TOLUENE	**99**
TOTAL XYLENES	**61**
TRICHLOROETHENE	< 10
VINYL CHLORIDE	2 J

MW07	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	**15**
1,2–DICHLOROETHENE (TOTAL)	**1,500 D**
BENZENE	**10**
ETHYLBENZENE	4 J
TOLUENE	**12**
TOTAL XYLENES	**23**
TRICHLOROETHENE	**56**
VINYL CHLORIDE	**330 D**

MW01	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	1 J
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	4 J
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW12	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	**11**
ETHYLBENZENE	**7 J**
TOLUENE	**27**
TOTAL XYLENES	**31**
TRICHLOROETHENE	3 J
VINYL CHLORIDE	< 10

MW11	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

MW09	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	3 J
1,2–DICHLOROETHENE (TOTAL)	**380 D**
BENZENE	**35**
ETHYLBENZENE	**12**
TOLUENE	**74**
TOTAL XYLENES	**75**
TRICHLOROETHENE	**450 D**
VINYL CHLORIDE	**34**

MW08	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	1 J
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

EX–MW11	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10,000
1,2–DICHLOROETHENE (TOTAL)	**41,000**
BENZENE	< 10,000
ETHYLBENZENE	< 10,000
TOLUENE	< 10,000
TOTAL XYLENES	< 10,000
TRICHLOROETHENE	**150,000 B**
VINYL CHLORIDE	**9,800 J**

MW03	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	1 J
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

EX–MW09	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 50
1,2–DICHLOROETHENE (TOTAL)	**550**
BENZENE	< 50
ETHYLBENZENE	< 50
TOLUENE	< 50
TOTAL XYLENES	< 50
TRICHLOROETHENE	< 50
VINYL CHLORIDE	**320**

EX–MW12	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	**150 D**
BENZENE	1 J
ETHYLBENZENE	1 J
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	**200**

MW02	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	**88**
BENZENE	**18**
ETHYLBENZENE	3 J
TOLUENE	**24**
TOTAL XYLENES	**11**
TRICHLOROETHENE	**32 B**
VINYL CHLORIDE	**31**

EX–MW10	
PARAMETER	CONCENTRATION ug/L
1,1–DICHLOROETHENE	< 10
1,2–DICHLOROETHENE (TOTAL)	< 10
BENZENE	< 10
ETHYLBENZENE	< 10
TOLUENE	< 10
TOTAL XYLENES	< 10
TRICHLOROETHENE	< 10
VINYL CHLORIDE	< 10

LEGEND

EX–MW10 — EXISTING GROUNDWATER MONITORING WELL

MW03 — BEDROCK GROUNDWATER MONITORING WELL

MW01 — INTERFACE GROUNDWATER MONITORING WELL

BOLD CONCENTRATIONS EXCEED THE WATER QUALITY STANDARDS

GROUNDWATER SAMPLING WAS PERFORMED ON OCTOBER 10, 2002

GROUNDWATER ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS OF CONCERN

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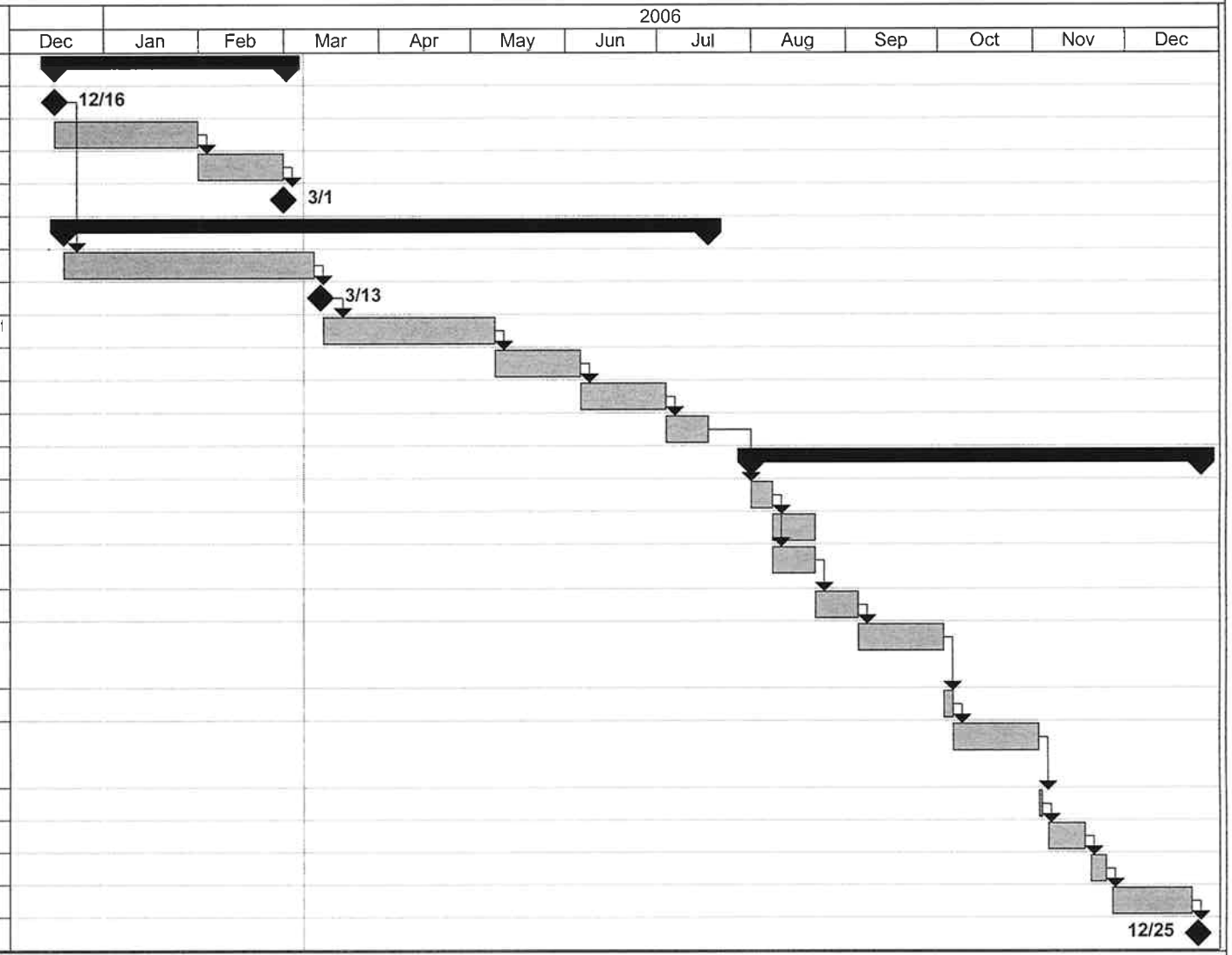
REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00 | SCALE: 1" = 120' | DATE: 02/13/2006 | FIGURE NO. 6

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RAWP\FIGURE 6.dwg 2/13/2006 3:55:22 PM EST

FIGURE 7
ROBLIN STEEL REMEDIAL ACTION WORK PLAN
PROJECT SCHEDULE

ID	Task Name
1	**REMEDIAL ACTION WORK PLAN**
2	Submittal of Draft Work Plan to NYSDEC
3	NYSDEC Work Plan Review
4	Finalize Work Plan
5	Submittal of Final Work Plan to NYSDEC
6	**CONTRACT DOCUMENTS**
7	Development of Remedial Contract Documents
8	Submittal of Contract Documents to NYSDEC
9	NYSDEC and County Review of Contract Document
10	Finalize Contract Documents
11	Obtain Bids from Remedial Contractors
12	Award Contract(s)
13	**REMEDIAL CONSTRUCTION - PHASE I**
14	Mobilization
15	Decomission Monitoring Wells
16	Remove and Dispose of PCB and Mercury Containing Lights
17	Address Drainage Features in MG #4
18	Excavate and Stage Subsurface Soil in MG #2 for Subsequent Characterization and Off-Site Disposal
19	Deposition of HRC or ZVI in MG #2 Excavations
20	Excavate and Stage Surface Soil in MG #1 for Subsequent Characterization and Off-Site Disposal
21	Re-install MW-09
22	Rough Grading of Site Exterior
23	Demobilization
24	Prepare Construction Certification Report
25	Submit Construction Certification Report



Roblin Steel RAWP
Date: Tue 3/7/06

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

TABLES

Table 1
Former Roblin Steel Site
Remediation Cost Estimate

Item	Note	Unit	Quantity	Cost/Unit	Cost
Institutional Controls (MG Nos. 1 through 7)					
Deed Restrictions	Implementation	ls	1	$ 5,000.00	$5,000
Excavation/Off-Site Disposal (MG No. 1)					
Clear and Grub	Clear, Grub and haul	acres	2	$ 7,556.90	$15,114
Soil Excavation/Loading	1.5 CY Track-Mounted Excavator	cy	2,675	$ 2.25	$6,019
Soil/C&D Excavation/Loading	3 CY Wheel-Mounted Loader	cy	2,675	$ 1.00	$2,675
Soil/C&D/Concrete Transport	Trucking	cy	2,675	$ 21.50	$57,513
Non-Haz Soil/C&D Disposal	Disposal at County Landfill	ton	4,280	$ 11.50	$49,220
Excavation/Off-Site Disposal (MG No. 2)					
Demo Concrete Slab	6" thick	cy	50	$ 63.60	$3,180
Soil Excavation/Loading	1.5 CY Track-Mounted Excavator	cy	385	$ 2.25	$866
Post Excavation Sampling	8 Confirmatory Samples	event	1	$ 720.00	$720
Soil/C&D Excavation/Loading	3 CY Wheel-Mounted Loader	cy	385	$ 1.00	$385
Soil Transportation	Trucking	cy	385	$ 21.50	$8,278
Non-Haz Soil Disposal	Disposal at County Landfill	ton	355	$ 11.50	$4,083
Haz Soil Disposal	Disposal at County Landfill	ton	260	$ 200.00	$52,000
Backfill	Sand and Gravel	cy	335	$ 14.69	$4,921
Drainage Features (Hyde Creek Outfall) (MG No. 4)					
Remove Gate/Sediments/ Grout In-Place	Three man crew	day	1	$ 1,331.22	$1,331
Plug Inlet/Outfall Pipes	Materials	ea	1	$ 500.00	$500
Soil Transportation	Trucking	cy	1	$ 21.50	$22
Non-Haz Soil Disposal	Disposal at County Landfill	ton	1	$ 11.50	$12
Drainage Features (South Sewer) (MG No. 4)					
Remove Sediments/Grout In-Place	Three man crew	day	2	$ 1,331.22	$2,662
Water Diversion	Upgradient access, removal of piping, & water diversion	ls	1	$ 1,300.00	$1,300
Plug Inlet/Outfall Pipes	Materials	ea	1	$ 500.00	$500
Soil Transportation	Trucking	cy	1	$ 21.50	$22
Non-Haz Soil Disposal	Disposal at County Landfill	ton	1	$ 11.50	$12
Drainage Features (interior Sumps 1 through 8) (MG No. 4)					
Remove/dispose water	vacuum truck	event	1	$ 2,500.00	$2,500
Solidification of Sludge	absorbent material	cy	18	$ 10.27	$185
Drain/Sump Cleaning/Close-in place	Three man crew	day	7	$ 1,331.22	$9,319
Sediment Transportation	Trucking	cy	45	$ 21.50	$968
Non-Haz Soil Disposal	Disposal at County Landfill	ton	70	$ 11.50	$805
Plug Inlet/Outfall Pipes	Materials	ea	16	$ 200.00	$3,200
Fracture Sump Bottoms/backfill	Hoe Ram Equip/Crew	day	2	$ 837.43	$1,675
Backfill	Sand and Gravel	cy	45	$ 14.69	$661

Table 1
Former Roblin Steel Site
Remediation Cost Estimate

Item	Note	Unit	Quantity	Cost/Unit	Cost
Asbestos Removal (MG No. 5)					
Walls	Gray Window Caulk and Glaze	sf	6,000	$ 2.00	$12,000
Exterior Window Covering	Gray Transite Panels	sf	600	$ 2.00	$1,200
Interior/Exterior Walls and Ceilings	Black Tar Paper	sf	31,850	$ 1.50	$47,775
Windows	Gray Caulk and Glaze	sf	15,960	$ 2.00	$31,920
Walls	Gray Transite Panels	sf	23,365	$ 2.00	$46,730
Roof	Gray Transite Panels	sf	30,340	$ 2.00	$60,680
Boiler Room	Black Roof Tar	sf	30,000	$ 1.50	$45,000
Boiler Room	White Canvas Cloth (F)	sf	80	$ 12.00	$960
S. Side Room	Black Mastic	sf	35	$ 4.00	$140
Project/Air Monitoring	Air monitoring and project oversight	day	20	$ 450.00	$9,000
Electrical Component Removal (MG No. 5)					
Removal of HID Lights/Ballasts	Removal only from 50' ceiling with man-lift	ea	20	$ 10.00	$200
Removal of Fluorescent Lights/Ballasts	Removal only from 20' ceiling with man-lift	ea	10	$ 10.00	$100
Bulb Disposal	HID bulb recycle/disposal	ea	20	$ 7.50	$150
Bulb Disposal	4' Fluorescent bulbs	ea	10	$ 2.00	$20
Disposal/Recycling	PCB and non-PCB containing ballasts	drums	4	$ 250.00	$1,000
Sub Slab Vapor Venting System (MG No. 7)					
Crushed Stone	Below, surrounding and above PVC (16" thick)	cy	4,350	$ 15.04	$65,428
Sub-slab/stack piping	4" PVC piping	lf	2,680	$ 22.09	$59,193
Cushion Layer	Geotextile below and above geomembrane	sf	177,000	$ 0.45	$79,650
Geomembrane	60 mil	sf	88,500	$ 0.75	$66,375
Blower/Knockout Tank	2 HP Blower and condensation collection tank	ea	6	$ 7,800.00	$46,800
Connections	Mechanical/Electrical	ls	1	$ 5,000.00	$5,000
Concrete Slab	Assumed to be installed during redevelopment	sf	88,500	$ -	$0
Groundwater Treatment (MG No. 7)					
Zero Valent Iron or HRC Injection		ls	1	$ 26,400.00	$26,400

Table 1
Former Roblin Steel Site
Remediation Cost Estimate

Item	Note	Unit	Quantity	Cost/Unit	Cost
Interim Soil Cover (MG Nos. 1 through 3)					
Low Permeability Soil	Clay Two 6" Lifts,	cy	16,000	$ 29.50	$471,952
Topsoil	4" Thick	cy	5,400	$ 36.19	$195,437
Seeding	Mechanical Seeding	acre	10	$ 4,712.50	$47,125
Interim Access Controls (MG Nos. 1 through 7)					
Site Fencing	Six foot high	lf	2,375	$ 30.77	$73,081
Site Gates	Six foot high swing gate, 12' double	ea	2	$ 1,046.50	$2,093
Long-Term OM&M (Groundwater, Sub-Slab Vapor Venting System (MG No. 7) and Cover System (MG Nos. 1 through 3)) (30 years)					
Collection	Labor/Equipment	event		$ 1,310.00	$25,810
Analytical	Water/Air Samples	event		$ 2,210.00	$43,541
Evaluation	Annual Reporting	ea		$ 1,920.00	$29,515
Electricity Costs	Blower operation (30 years)	KW-hr/yr	13,000	$ 1,690.00	$25,980
Capital Costs (subtotal)					$1,631,053
Mob/Demob/Decon	5% of Capital Costs				$81,553
Contingencies	15% of Capital Costs				$244,658
Engineering/Oversight	10% of Capital Costs				$163,105
Total Capital Costs					$2,120,369
OM&M (present worth)					$124,846
Project Present Worth (Total)					**$2,245,215**

Notes:

Sources include:

2004 RS Means Environmental Remediation Cost Data-Assemblies 10th Edition (unit prices include a 30% markup for overhead and profit).

2004 RS Means Heavy Construction Cost Data 16th Edition.

Engineer's Estimate.

Present Worth is the amount of money that must be invested today to cover future costs and is calculated by applying a present worth factor which is based on a 5% interest rate over the given time period.

ea = each
cy = cubic yard
lf = linear foot
sf = square foot
ls = lump sum
ton = 2,000 pounds

APPENDIX A

SITE MANAGEMENT PLAN

SITE MANAGEMENT PLAN
FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2005.0308.00

FEBRUARY 2006

SITE MANAGEMENT PLAN
FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NY

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Background

The Roblin Steel site has been the subject of multiple environmental site investigations, including a Site Investigation/Remedial Alternatives Reporting (SI/RAR) program. The results of these investigations confirmed the presence of contaminated fill, soil, and groundwater on the project site. Contaminants detected in the soil/fill above Site-Specific Cleanup Levels (SSCLs) included volatile organic compounds (VOCs); polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); and heavy metals. Contaminants of concern detected in the groundwater consist primarily of VOCs, including chlorinated and aromatic hydrocarbons. Based on the results of the May 2003 Site Investigation Report, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) in March 2005 that identified the remedial program that must occur on the project site before the State will grant liability release and allow redevelopment.

1.2 Purpose and Scope

The purpose of this Site Management Plan (SMP) is to protect both the environment and human health during intrusive activities implemented at the site. While an assessment of surface and subsurface soil/fill and groundwater at the project site has been performed, characterization information is never 100 percent complete or accurate, especially on a site that has been used for industrial purposes for almost 100 years. As such, it is not unreasonable to anticipate the possibility that some quantity of subsurface soil/fill contamination may be encountered after completion of the remedial activities. In particular, 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.

Compliance with this SMP is required to properly manage subsurface soil/fill contamination. This SMP was developed with the express purpose of addressing unknown subsurface contamination if and when encountered, thus maintaining the liability limitation identified in ECL 56-0509. The SMP also facilitates the transfer of responsibilities with property ownership.

This SMP was developed to address:

- Excavation, grading, sampling, and handling of site soils;
- Acceptability of soil/fill from off-site sources for backfill or subgrade fill;
- Erosion and dust control measures;
- Fencing and other access controls;
- Health and safety procedures for subsurface construction work and the protection of the surrounding community;
- Acceptability and placement of final soil and vegetative cover;

- An Environmental easement;
- Rezoning of the property;
- Program responsibilities;
- Notification and reporting requirements; and
- Plans for the operation, monitoring, and maintenance (i.e. OM&M Plan) of the remedial controls that will remain at the project site which include the requirements for the annual Institutional / Engineering Control Certification.

1.3 Site Management Program Responsibility

The site developer and the property owner(s) will be responsible for all monitoring, implementation, and reporting requirements of the SMP. The developer and owner(s) will not perform, nor contract, nor permit their employees, agents, or assignees to perform any excavations or disturbance of site soils, except as delineated in Section 2.0 of this document. Any excavation regrading or disturbance of on-site soils inconsistent with the provisions of Section 2.0 may be grounds for the NYSDEC to void its liability limitation related to the site owner(s), successor(s), or assignees for environmental conditions on the project site. Such nonconformance with this SMP may also void or limit environmental insurance protection of the owner(s) and their successors and assignees in accordance with policy terms and conditions. The property owner(s) or their agents will be responsible for proper notification and reporting to regulatory agencies as described in Section 2.8 (i.e., NYSDEC Region 9, Division of Environmental Remediation and NYS Department of Health) prior to site development.

The NYSDEC will provide periodic monitoring of construction and/or intrusive activities to verify that the requirements of this SMP are adhered to.

2.0 SOIL/FILL MANAGEMENT

The following sections detail the procedures for the management of soil/fill resulting from disturbances to the soil cover and/or underlying soil/fill.

2.1 Excavation and Handling of On-Site Soil/Fill

A scientist or engineer with experience in environmental site investigation and remediation will inspect soil/fill excavations or disturbances on behalf of the subject property 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 ppm above background or greater) will be stockpiled in an area away from the primary work activities and sampled for reuse, treatment, or disposal. The length of time that potentially impacted soil can be temporarily stockpiled while awaiting analytical results shall be limited to 90 days. Sampling and analysis will be completed in accordance with

the protocols delineated in Section 2.3. Analyzed soil/fill that is determined to contain one or more constituents in excess of the SSCLs shown in Table 2-1 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 TAGM 4046 guidance values may be reused on-site as subgrade backfill. No excavated soil/fill may be removed from the project site except for off-site disposal at a permitted waste management facility.

TABLE 2-1

PARAMETER	MAXIMUM CONCENTRATION IN SOIL/FILL (mg/kg) [1]
Individual VOC[2]	1
Total VOCs	10
Individual SVOCs	50
Total SVOCs [2]	500
Total cPAHs [3]	10
Arsenic	50
Barium	1000
Cadmium	20
Chromium	1000
Lead	1000
Zinc	85,000
Selenium	50
Silver	10
Beryllium	5
Copper	250
PCBs	10 [4]

(1) All analyses shall be performed per NYSDEC Analytical Services Protocol (ASP), June 2000 methodology or other methods acceptable to NYSDEC.

(2) Target Compound List (TCL) VOCs and SVOCs.

(3) Carcinogenic polycyclic aromatic hydrocarbons (i.e., benzo(a)anthracene, benzo(a)pyrene, dibenzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene.

(4) Subsurface soil limit set in TAGM 4046.

An equipment decontamination area will be identified prior to the initiation of intrusive activities. All equipment that comes in contact with contaminated materials will be decontaminated prior to being used for the handling or transfer of clean backfill, and prior to leaving the project site. Equipment decontamination will be performed on plastic sheeting in the decontamination area using a high pressure steam-generating cleaner.

Soil residue removed during decontamination activities will be contained and placed in 55-gallon drums, along with soiled plastic sheeting, for proper disposal. Decontamination water will be allowed to infiltrate in the soil surface in the vicinity of the soil/fill disturbance.

2.2 Subgrade Material

Subgrade material used to backfill excavations or to increase site grades or elevations shall meet the following criteria:

- Excavated on-site soil/fill meeting the requirements of Section 2.3.1;
- On-site soil/fill treated in accordance with a NYSDEC-approved treatment plan and tested to meet the SSCLs; or
- Off-site soil/fill meeting the requirements of Section 2.3.2.

2.3 Soil/Fill Sampling and Analysis Protocol

2.3.1 Excavated On-Site Soil/Fill

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 250 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 SSCLs in Table 2-1, the sample collection frequency may be reduced to one composite for each additional 1,000 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 SSCLs.

A minimum of four 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 TCL SVOCs, and PCB/pesticides, as well as the metals listed on Table 2-1. In addition, one sample jar will be filled and sent to the laboratory for possible characterization analysis, as described below.

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 in accordance with ASP 2000. If the analysis of the soil/fill samples reveals concentrations greater than one or more of the SSCLs, 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 a permitted sanitary landfill.

2.3.2 Off-Site Soil Sources

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

- 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 2-1. The soil will be acceptable for use as backfill provided that all parameters meet the SSCLs.
- 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 SSCLs, 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 SSCLs.

2.4 Final Surface Coverage

Twelve inches of soil cover or other surface coverage (e.g., asphalt, buildings, concrete, etc.) will be required over the entire redevelopment area as a precondition of occupancy. This cover will eliminate the potential for contact with, or inhalation of on-site soil/fill. It has been assumed that the site developer will construct the site cover during redevelopment. However, Chautauqua County plans to construct fencing around the

perimeter of the project site under the Environmental Restoration Program (ERP) if it appears that the redevelopment will not occur prior to the expiration of the State Assistance Contract (SAC).

If redevelopment activities disturb the final cover material, the developer or property owner will repair the damage immediately upon completion of the redevelopment activities. The final soil cover shall meet the specifications listed in Attachment A1. In addition, the cover will be inspected annually, as discussed in the Operation, Maintenance, and Monitoring Plan.

2.5 Erosion Controls

An important element of soil and fill management on the project site is the mitigation and control of surface erosion from storm water runoff. For this reason, a Master Erosion Control Plan to be used by all contractors and developers has been prepared and incorporated as Attachment A2.

2.6 Dust Controls

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 further discussed in Section 4.0 and Attachment A4 as well as in accordance with NYSDEC TAGM 4031 (Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites) presented in Attachment A3.

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

- Applying water on haul roads;
- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped containers or vehicles;
- Restricting vehicle speeds on-site;
- Covering excavated areas and materials after excavation activity ceases; and
- Reducing the excavation size and/or number of excavations.

2.7 Fencing and Access Control

A chain link fence currently surrounds portions of the project site. Temporary fencing shall be erected and maintained as necessary during invasive activities to limit the potential for someone to enter the excavation. In addition, if it appears that redevelopment activities, including placement of the soil cover, are delayed and will not

occur within the term of the SAC, an interim fence will be installed around the perimeter of the project site to control access to the site. This fencing will be six-foot chain-link fence with barbed-wire at the top. All fencing around undeveloped areas will be posted with "No Trespassing" signs.

2.8 Notification and Reporting Requirements

The following minimum notification and reporting requirements shall be followed by the property owner prior to and following intrusive activities, as appropriate:

- The NYSDEC and NYSDOH will be notified that subgrade activities are being initiated a minimum of five working days in advance of construction;
- A construction certification report stamped by a NYS-licensed Professional Engineer, will be prepared and submitted to the NYSDEC and NYSDOH within 90 days after intrusive activities at the project site. At a minimum, the report will include:
    - An area map showing the portion of the project site that was subjected to intrusive activities;
    - A topographic map of the developed property showing actual building locations and dimensions, roads, parking areas, utility locations, berms, fences, property lines, sidewalks, green areas, contours, and other pertinent improvements and features;
    - Plans showing areas and depth of fill removal;
    - Copies of daily inspection reports;
    - Description of erosion control measures;
    - A text narrative describing the excavation activities performed, health and safety monitoring performed (both site-specific and Community Air Monitoring), quantities and locations of soil/fill excavated, disposal locations for the soil/fill, soil sampling locations and results, a description of any problems encountered, location and acceptability test results for backfill sources, and other pertinent information necessary to document that the site activities were carried out properly;
    - Plans showing existing and as-built survey elevations on a 100-foot grid system to document the thickness of the cover system where it's been affected by excavation activities; and
    - A certification that all work was performed in conformance with the SMP.
- The owners of the property shall complete and submit to the New York State Department of Environmental Conservation, an Annual Report by January 31st the following year. This report shall contain certification that the institutional controls put in place pursuant to the SMP are still in place, have not been altered, and are still effective. The requirements of this reporting are discussed in greater detail in the Operations, Maintenance and Monitoring Plan.

3.0 POST-REMEDIATION SITE MANAGEMENT

3.1 Soil/Fill Management

While remedial activities will address the contaminated media on the project site identified during the site investigation, there is the potential for residual contamination to remain following remedial activities. 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 Section 2.0 of this SMP.

3.2 Environmental Easement and Property Use Limitations

Requirements for surface coverage over the project site and limitations placed on the type of buildings to be constructed will be enforced through the issuance of building permits by the City of Dunkirk. Obtaining a building permit from the City will be contingent upon agreeing to implement and comply with this SMP. Site limitations will be enforced through an environmental easement, which shall be applicable to successors and assignees of the property. Specifically, the environmental easement will be recorded with the Chautauqua County Clerk and:

1. Shall prohibit any area of the project site from being used for purposes other than for industrial and/or commercial uses. All uses of the project site shall be designed to preclude contact with contamination by humans without the express written waiver of such prohibition by the NYSDEC (Department), or if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department;
2. Shall prohibit the use of the groundwater underlying any area of the project site for drinking water, industrial use, or other purposes;
3. Shall require the owner(s) of the project site and their successors and assignees to continue in full force and effect any institutional controls, operation and maintenance, and/or soils management required by the Section 2.0 of this plan;
4. Shall provide that the owner(s), on behalf of themselves and their successors and assignees, consent to the enforcement by the Department, or if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department, of the prohibitions and restrictions that the deed requires and thereby covenant not to contest such enforcement;
5. The prohibitions described in the deed shall be for the duration provided in that document and shall be enforceable only by the Department, or, if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department, but shall not be enforceable by any other party; and

6. If there is performed on the project site an additional response action acceptable to the Department, or, if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department, such as to allow it to be used for residential or other purposes, the Department or its successor shall execute a document in recordable form terminating that portion of the instrument relating to the matter identified in the deed for the area in the project site which the Department has determined may be used for residential purposes.

The industrial/commercial use of the project site will also be controlled by the City through zoning restrictions. The responsibility for groundwater monitoring shall remain with the property owner and/or their successors or assignees. Said responsibilities will be clearly described in any purchase or sale agreements between Chautauqua County and possible future property owner(s).

Certain stormwater system design criteria will also be required to be implemented during site development. In areas with known groundwater impacts, subsurface injection of storm water from building and parking area stormwater systems could mobilize additional contaminants. In these areas, stormwater injection (drywells) will be prohibited on the project site and stormwater conveyance pipes will be required to have gasketed joints for water tightness to prevent the infiltration of impacted groundwater into the collection systems.

3.3 Operations Maintenance and Monitoring

An Operations Monitoring and Maintenance (OM&M) Plan that describes the conditions and procedures for maintaining the physical components of the completed remedial action at the project site was developed as part of this SMP and is included as Attachment A5. The OM&M Plan includes the procedures for the long-term groundwater monitoring program, the annual inspection of the site-wide cover system and the monitoring and maintenance associated with the sub-slab vapor venting system. The requirements of the OM&M Plan must be completed in order to maintain the State's release from liability.

4.0 HEALTH AND SAFETY PROCEDURES

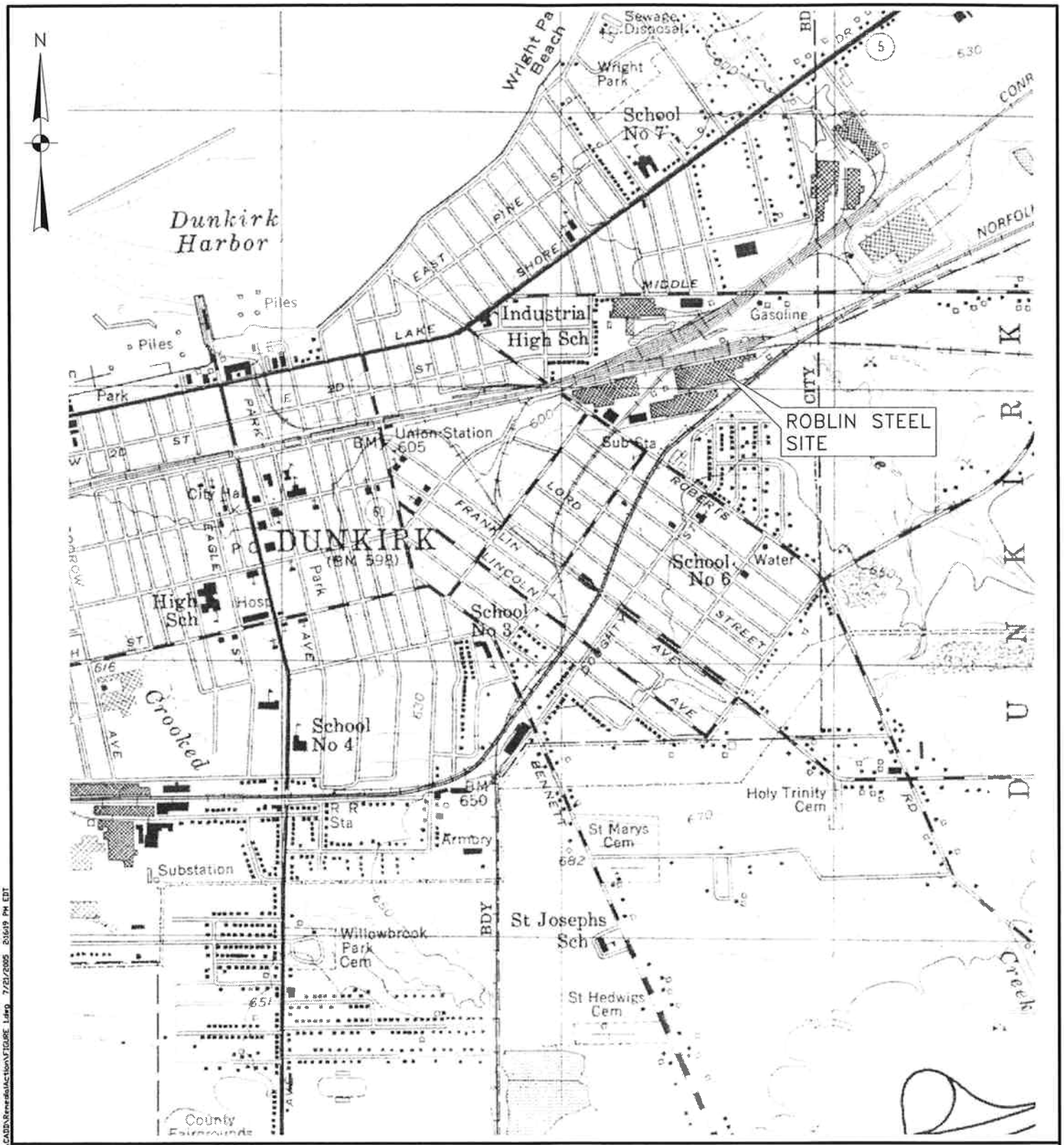
During remedial and/or redevelopment activities, the developer shall be responsible for implementing suitable procedures to prevent both site construction workers and the community from adverse exposure to residual parameters of concern and other potential hazards posed by intrusive activities. This will be accomplished through adherence to a written, site-specific worker Health and Safety Plan (HASP), prepared in accordance with the regulations contained in OSHA 29CFR 1910.120 and the Community Air Monitoring Plan (CAMP) included as Attachment A4.

Although remedial actions are anticipated to reduce the potential for encountering contaminants of concern above site-specific cleanup levels, intrusive activities governed by this SMP are a required element of the State financial assistance provided under Title 5 of the Clean Water/Clean Air Bond Act of 1996. This includes the requirement for preparation and implementation of a site-specific worker HASP addressing the following items:

- A safety and health or hazard analysis for each site task and operation;
- Employee training requirements;
- Personal protective equipment (PPE) to be used by employees for the site tasks;
- Medical surveillance requirements;
- Frequency and type of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of equipment;
- Site control measures;
- Decontamination procedures;
- An emergency response plan;
- Confined space entry procedures; and
- A spill containment program.

As an integral component of the health and safety activities, the developer or site owner will be responsible for implementing a Community Air Monitoring Plan designed to prevent the surrounding community from adverse exposures due to potential release/migration of airborne particulates or vapors. The community, as referenced herein, includes potential receptors located off-site (e.g., neighboring residents or businesses) as well as on-site receptors not directly involved in intrusive activities (e.g. other occupants of the project site). The CAMP presented as Attachment A4 will be implemented during all intrusive activities involving disturbance or handling of project site fill soils. The CAMP includes appropriate monitoring, mitigation, and response measures consistent with NYSDOT and NYSDEC guidelines. The results of the implementation of the CAMP must be documented to the NYSDEC as described in Section 2.8.

FIGURES

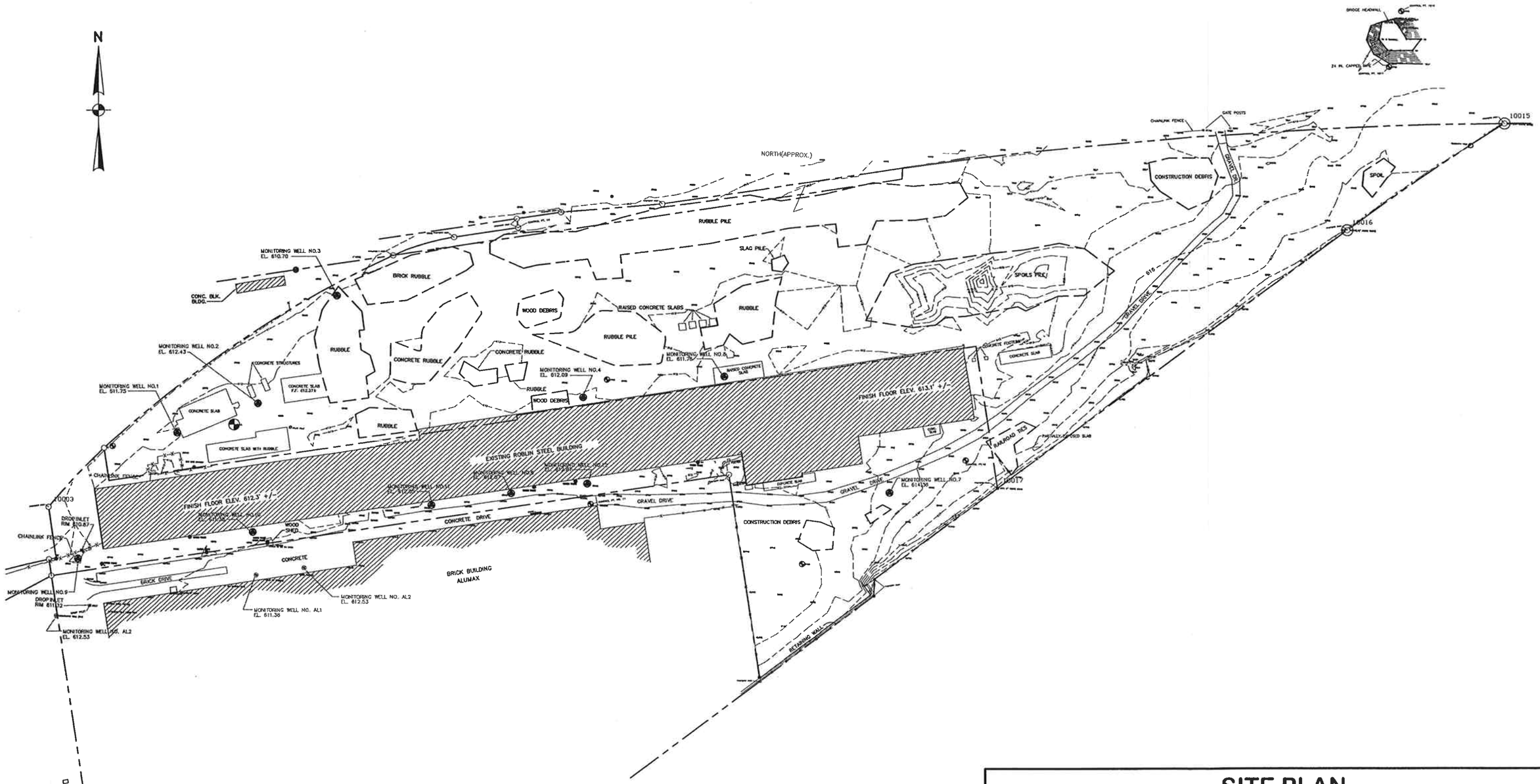


SITE LOCATION MAP

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

REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 2000'	DATE: 07/21/2005	FIGURE NO. 1



GENERAL NOTES

1. BOUNDARY INFORMATION SHOWN ON THIS DOCUMENT WAS SURVEYED BY MICHAEL J. RODGERS LAND SURVEYOR, PC, ON NOVEMBER 28, 2001 AND PROVIDED TO TVGA BY CHAUTAUQUA COUNTY.

2. TOPOGRAPHIC INFORMATION SHOWN ON THIS DOCUMENT WAS SURVEYED BY CHAUTAUQUA COUNTY DEPT. OF PUBLIC WORKS, ON JANUARY 14, 2002 AND PROVIDED TO TVGA BY CHAUTAUQUA COUNTY.

N:\2005.0308.00-Roblin Remedial Design and Oversight\Engineering\CADD\RemedialAction\FIGURE 2.dwg 7/21/2005 2:34:11 PM EDT

SITE PLAN

TVGA CONSULTANTS
1000 MAPLE ROAD
ELMA, NEW YORK 14059-9530
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REMEDIAL ACTION WORK PLAN
FORMER ROBLIN STEEL SITE
DUNKIRK, CHAUTAUQUA CO., N.Y.

PROJ. NO. 2005.0308.00	SCALE: 1" = 120'	DATE: 07/21/2005	FIGURE NO. 2

ATTACHMENT A1

SMP TECHNICAL SPECIFICATIONS

SELECT GRANULAR FILL

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Contractor shall provide all labor, materials, equipment, and services necessary for and incidental to the installation of select granular fill.

1.2 SUBMITTALS

A. The Contractor shall submit verification to the Engineer that the select granular fill was tested and conforms to the gradation specified in Part 2.1.

1.3 QUALITY ASSURANCE

A. If the select granular fill is furnished from a stone or gravel quarry approved by the Engineer, chemical analysis is not required.

B. If the select granular fill is furnished from a source not approved by the Engineer, chemical analysis will be required as follows:

1. The services of a testing laboratory approved by the Engineer shall be engaged by the Contractor to perform and determine that acceptability of the soil material as listed below.
2. The costs for all soils testing shall be the responsibility of the Contractor.
3. The collection of soil samples shall be witnessed by the Engineer.
4. Perform chemical testing and submit test result reports for each sample collected as specified in Part 2.1 B of this Section.
5. Chemical tests shall analyze material for TAGM 4046 contaminant levels listed in Table 1 attached to these specifications.

PART 2 - PRODUCTS

2.1 SELECT GRANULAR MATERIAL

A. Select granular material shall be sound, durable, sand, gravel, stone or blends with these materials, free from organic, frozen, or other deleterious materials, conforming to the requirements of NYSDOT Section 304 and meeting the following approximate gradation requirements (NYSDOT Type 4):

Sieve	Percent Passing
2"	100
¼"	20-65
No. 40	5-40
No. 200	0-10

B. Select granular material shall be tested via collection of one composite sample per 500 cubic yards of material. 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 TAGM 4046, 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 TAGM 4046.

C. Select granular material shall be free of debris, waste, frozen materials, vegetable and other organic matter and other deleterious materials.

PART 3 – EXECUTION

3.1 SELECT GRANULAR FILL INSTALLATION

A. Select granular fill shall be installed in excavations within the building area to the depth of the existing surface.

3.2 COMPACTION

A. Compaction of soil shall be performed with equipment suitable for the type of material being placed. The Contractor shall select equipment that is capable of providing the minimum densities required by these Specifications and shall submit a description of the type of equipment he proposed to the to the Engineer for approval. Heavy rubber-tired rollers or sheepsfoot rollers are suitable for compaction. Lift thickness, water content of the fill, weight of the compactor, and the number of passes of the compacting equipment shall be adjusted as required to obtain the minimum specified density.

B. If the field and laboratory tests indicate unsatisfactory compaction, the Contractor shall provide the additional compaction necessary to obtain the specified degree of compaction. All additional compaction work shall be performed by the Contractor at no additional cost to the Owner until the specified density is obtained.

C. Imported cover system soil shall be compacted to 85 percent of the modified proctor density.

END SECTION

SOIL COVER SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope of Work

The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to the installation of the soil cover system.

B. Definitions

Imported Soil: Soil meeting the requirements of this section that originates from an off-site source.

Virgin Soil: Soil that has not been disturbed from its original position.

1.2 SUBMITTALS

A. The Contractor shall submit verification of the nature of imported fill in accordance with Part 2 of this Section.

1.3 QUALITY ASSURANCE

A. Tests

1. The services of a testing laboratory approved by the Engineer shall be engaged by the Contractor to perform and determine that acceptability of the soil material as listed below.
2. The costs for all soils testing shall be the responsibility of the Contractor.
3. The collection of soil samples shall be witnessed by the Engineer.

B. Submit copies of the following reports directly to Engineer from the testing laboratories.

1. Chemical test reports as specified in Part 2.1 D of this Section.
2. Optimum Moisture/Maximum Density curve (ASTM D 1557) and Particle Size Analysis (ASTM D422) from each material source and material type used.

C. Testing Frequency

1. Chemical tests as specified in Part 2.1 D of this Section.
2. Soil Characterization tests shall be performed at a rate of one composite sample per every 5000 cubic yards of material that is utilized or a minimum of one sample per source.
3. Compaction Testing During Placement: As directed by the Engineer.

1.4 PROJECT REQUIREMENTS

A. If an off-site borrow source is used to excavate virgin soil material, the Contractor shall comply with all requirements of the NYSDEC.

1. Specific attention is called to the requirements for stormwater pollution prevention. If the off-site borrow source disturbs more than one acre of

land, coverage will be required under the SPDES General Permit for Storm Water Discharges from Construction Activity (GP-02-01).

PART 2 – MATERIALS

2.1 IMPORTED SOIL

A. All imported soil shall conform to the following approximate gradation:

Sieve Size Designation	Percent Minimum Passing By Weight
4 inch	100
No. 4	85
No. 200	50
0.002 mm	25

B. Imported soil material shall be free of debris, waste, frozen materials, vegetable and other organic matter and other deleterious materials.

C. If the Contractor designates the source as "virgin" soil, it shall be further documented in writing to be material from areas not having supported any known prior industrial or commercial development or agricultural use.

D. Cover soil shall contain no contaminants exceeding the TAGM 4046 guidance values as listed in Table 1 attached to these specifications.

1. Virgin soils shall be subject to collection of one representative composite sample per source. The soil will be tested and determined acceptable for use as cover soil provided that all parameters meet the TAGM 4046 guidance values.

2. Non-virgin soils shall be tested via collection of one composite sample per 500 cubic yards of material. 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 TAGM 4046, 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 TAGM 4046.

PART 3 – EXECUTION

3.1 GENERAL

A. Prevent surface and subsurface water from ponding on the project site. Develop positive drainage through the use of temporary swales. Maintain temporary swales and/or alter drainage paths as work progresses.

B. Stockpile imported materials where directed, until required for the cover system. Place, grade, and shape all stockpiles for proper drainage.

C. Dispose of excess soil material and waste materials off-site.

D. A minimum 8-inch compacted thickness of imported soil shall be placed in all areas where there are no buildings, parking lots, or roadways.

E. Existing building floor slabs where no building, parking lot, or roadway exists shall also be covered by soil.

3.2 PROTECTION OF WORK IN PROGRESS:

It is the responsibility of the Contractor to protect all work in progress from damage due to extremes of cold, moisture, or drying, or mechanical damage from equipment traffic or foot traffic. Alert the Engineer to the presence or likelihood of conditions that may adversely affect the quality of the work, the physical structure of soils, or migration (due to erosion) of site soils off-site.

A. Do not work frozen soils.

B. Apply supplemental moisture to overly dry soils.

C. Do not operate heavy equipment near excavations where trench wall or slope failures may result.

3.3 IMPORTING SOIL

A. Imported soil shall be hauled to the project site on trucks approved for hauling material according to local traffic laws. All local traffic laws and permit requirements shall be followed by the Contractor and all subcontractors.

B. Trucks shall limit their travel to designated hauling routes as specified by local law.

C. The parking lot, driveway, and all public streets will be cleaned from soil tracked by truck tires as necessary.

3.4 GRADING

A. Uniformly grade areas within the project limits including adjacent transition areas. Smooth finished surface within specified tolerances. Finish surfaces shall be free from irregular surface changes.

B. All grading shall promote positive drainage. Low spots that cause ponding water will be filled in.

3.5 COMPACTION

A. Compaction of soil shall be performed with equipment suitable for the type of material being placed. The Contractor shall select equipment that is capable of providing the minimum densities required by these Specifications and shall submit a description of the type of equipment to the to the Engineer for approval. Heavy rubber-tired rollers or sheepsfoot rollers are suitable for compaction. Lift thickness, water content of the fill, weight of the compactor, and the number of passes of the compacting equipment shall be adjusted as required to obtain the minimum specified density.

B. If the field and laboratory tests indicate unsatisfactory compaction, the Contractor shall provide the additional compaction necessary to obtain the specified degree of compaction. All additional compaction work shall be performed by the

Contractor at no additional cost to the Owner until the specified density is obtained.

C. Imported cover system soil shall be compacted to 85 percent of the modified proctor density.

D. Moisture Control

1. Where the sub-grade or a lift of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
2. Before compaction, moisten or aerate each layer as necessary to provide optimum content. Compact each layer to required percentages of maximum dry density or relative dry density for each area classification.
3. Do not perform compaction operations on excessively wetted soils. Any material found too wet for compaction shall be allowed to dry before being rolled.
4. The in-place moisture content shall be between -2 and +5 percent of the optimum moisture content as measured in the modified Proctor Test (ASTM D1557)

END SECTION

TOPSOIL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work

The Contractor shall furnish all labor, materials, equipment, and incidentials required to furnish and install topsoil for the project site.

1.2 SUBMITTALS

A. Before delivery of topsoil, provide a written statement giving the location of the properties from which the topsoil is to be obtained, the names and addresses of the suppliers, the depth to be stripped and the crops grown during the past 2 years.

B. Provide manufacturer's specifications and application instructions for all soil amendments required for the topsoil.

1.3 QUALITY ASSURANCE

A. Tests

1. The services of a testing laboratory approved by the Engineer shall be engaged by the Contractor to perform and determine that acceptability of the soil material as listed below.
2. The costs for all soils testing shall be the responsibility of the Contractor.
3. The collection of soil samples shall be witnessed by the Engineer.

B. Submit copies of the following reports directly to Engineer from the testing laboratories.

1. Chemical test reports as specified in Part 2.1 B of this Section.
2. Topsoil pH (ASTM D4972), Organic Matter (ASTM D2974), Soluable Salt (ASTM D4542) and Particle Size Analysis (ASTM D422) from each material source.

C. Testing Frequency

1. Chemical tests as specified in Part 2.1 B of this Section.
2. Soil Characterization tests shall be performed at a rate of one composite sample per every 5000 cubic yards of material that is utilized or a minimum of one sample per source.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Topsoil to be supplied by the Contractor from an off-site source.

B. Topsoil shall contain no contaminants exceeding the TAGM 4046 guidance values. TAGM 4046 guidance values, reflecting consideration of site background levels for heavy metals are listed in Table 1 of these specifications. Testing shall occur as follows:

1. Virgin soils shall be subject to collection of one representative composite sample per source. The soil will be tested and determined acceptable for use as cover soil provided that all parameters meet the TAGM 4046 guidance values.

2. Non-virgin soils shall be tested via collection of one composite sample per 500 cubic yards of material. 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 TAGM 4046, 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 TAGM 4046.

C. Fertile, friable, natural loam surface soil, capable of sustaining plant growth, free of clods of hard earth, plants or roots, sticks or other extraneous material harmful to plant growth. Supply topsoil with the following approximate analysis:

Sieve Size	% Passing by Weight
3-inch	100
No. 4	75
No. 200	45
0.002 mm	10

1. pH 5.5 to pH 7.6. If approved by Engineer, natural topsoil not having the specified pH value may be amended by the Contractor at his own expense.
2. Minimum organic content of 2.5 percent as determined by ignition loss.
3. Soluble salt content not greater than 500 ppm.

D. Soil Amendments

1. Lime: Natural limestone containing not less than 85 percent of carbonates, ground so that not less than 90 percent passes a 10-mesh sieve and not less than 50 percent passes a 100-mesh sieve.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Topsoil

1. Place no topsoil until quality assurance testing results are determined to be acceptable to the Engineer.
2. Place and spread topsoil in one lift: minimum depth of 4-inches.
3. Do not spread topsoil while in a frozen condition or when moisture content is so great that excessive compaction will occur nor when so dry that dust will form in the air or that clods will not break readily.
4. Lightly compact the soil to prevent settling.
5. After topsoil is spread, remove all large, stiff clods, rocks, roots or other foreign matter over 3-inches from the surface.
6. Apply soil amendments as required, by machine over all areas receiving topsoil, to bring the soil to a neutral pH. Work lightly into the top 3-inches of topsoil at least five days before applying the commercial fertilizers.
7. Manipulate topsoil to attain a properly drained surface.
8. Grade topsoil areas to smooth, even surface with loose, uniform, fine texture.
9. Roll and rake and remove ridges and fill all depressions, ruts, low spots or unsuitable areas which result after settlement so that the area is suitable to the Engineer's satisfaction.

END OF SECTION

TURF ESTABLISHMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work

The Contractor shall furnish all labor, materials, equipment, and incidentials required to provide turf establishment for the project site.

1.2 SUBMITTALS

A. Product certificates signed by manufacturers certifying that their products comply with specified requirements.

1. Manufacturer's certified analysis for standard products.
2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
3. Label data substantiating that plants, trees, shrubs, and planting materials comply with specified requirements.

B. Before delivery of topsoil, provide a written statement giving the location of the properties from which the topsoil is to be obtained, the names and addresses of the suppliers, the depth to be stripped and the crops grown during the past 2 years.

1. Manufacturer's specifications and application instructions for all soil amendments required for the topsoil.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

1.5 COORDINATION AND SCHEDULING

A. Scheduling Seeding

1. Seeding shall be permitted only between April 15 and May 30 for spring seeding and August 15 and September 15 for fall seeding. No seeding shall be done during high winds or when the ground surface is too wet for proper working.

1.6 MAINTENANCE

A. Begin maintenance of grass immediately after each area is planted and continue until acceptable vegetation is established, but for not less than the following periods:

1. Seeded Areas: 60 days after substantial completion.

a. When full maintenance period has not elapsed before end of planting season, or if grass is not fully established at that time, continue maintenance during next planting season.

B. Maintain and establish grass by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn.

C. Watering: Provide and maintain temporary piping, hoses, and watering equipment to convey water from sources and to keep grassed areas uniformly moist to a depth of 4 inches (100 mm).

D. Mow grass as soon as height reaches six inches with mower set at three inches. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.

E. Postfertilization: Apply fertilizer to lawn after first mowing and when grass is dry.

1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. of lawn area.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Grass Seed for Lawn Areas

1. Seed shall be fresh, clean, new crop seed composed to the following varieties mixed in the proportions by weight as shown, and testing the minimum percentage of purity and germination indicated:

Seeds NYSDOT Specification Section 713-04

Detail Specifications for Seeds
A - Minimum Germination
B - Pounds Pure Seed/Acre

Name	Variety	A	B
Red Rescue (Festuca rubra)	Commercial	85	40
Perennial Ryegrass (Lolium perenne)	Commercial	90	20
Kentucky Bluegrass (Poa pratensis)	Commercial	75	30

Total Pounds Pure Live Per Acre = 90

Fertilizer: 713-03 Type No. 2 (1-1-1)
Mulch: 713-11 Wood Fiber, 713-19 Straw or 713-18 Hay
Mulch Anchorage: 713-11 Wood Fiber or 713-12 Mulch Anchorage

RATES
Fertilizer: 100 Lbs. Nitrogen per acre

Seed:	90 Lbs. Pure live seed per acre
Mulch:	3 Tons per Acre to Cover Ground A. O. B. E.
Mulch Anchorage:	Manufacturer's recommended rate
Wood Fiber:	One-half manufacturer's recommended rate

GROUND PREPARATION AND SEEDING
Method No. 2 shall apply in all grass areas.

B. Mulching

Wood fiber mulch may be used if seeding is performed during the following period unless otherwise approved by the Regional Landscape Architect:

Spring: April 20- May 20
Fall: August 20 - September 20

PART 3 - EXECUTION

3.1 INSTALLATION

A. Seeding

1. After the topsoil has been spread and the final grades established in accordance with the Contract Specifications, the entire area shall be fine graded by discing or tilling to a depth of four inches. After discing or tilling, the area shall be dragged with a plant float so as to develop a smooth, even surface. Power equipment may be used, but in areas that are too small for power equipment to operate the above operations shall be done with the use of hand tools.
2. Grass seed shall be hydroseeded at the minimum rate of 90 lbs per acre with mulch applied at a minimum rate of 3 tons per acre.
3. After the sowing of the seed, the area shall be lightly raked or dragged, and then rolled with a 200 lb roller.

END OF SECTION

SITE MANAGEMENT
TECHNICAL SPECIFICATIONS
TABLE 1
TAGM 4046 REGULATORY VALUES **

PARAMETER	REGULATORY VALUE
TAL - Metals (ppm) *	
Aluminum *	10,800
Antimony *	0.94
Arsenic *	12.70
Barium	300
Beryllium *	0.56
Cadmium	1.00
Calcium *	3,000
Chromium *	29.40
Cobalt	30.00
Copper	25.00
Iron *	26,300
Lead *	188
Magnesium *	2,890
Manganese *	430
Mercury	0.10
Nickel *	27.30
Potassium *	1,100
Selenium	2.00
Silver *	0.14
Sodium *	111
Thallium *	1.00
Vanadium *	150
Zinc	274
Volatiles (ppb)	
1,1,1-Trichloroethane	800.00
1,1,2,2-Tetrachloroethane	-
1,1,2-Trichloroethane	-
1,1-Dichloroethane	200.00
1,1-Dichloroethene	400
1,2-Dichloroethane	100
1,2-Dichloroethene (Total)	300
1,2-Dichloropropane	-
2-Butanone	300
2-Hexanone	-
4-Methyl-2-pentanone	1,000
Acetone	200
Benzene	60
Bromodichloromethane	-
Bromoform	-
Bromomethane	-
Carbon Disulfide	2,700
Carbon Tetrachloride	600
Chlorobenzene	1,700
Chloroethane	1,900
Chloroform	300
Chloromethane	-
cis-1,3-Dichloropropene	-
Dibromochloromethane	-
Ethylbenzene	5,500
Methylene chloride	100
Styrene	-
Tetrachloroethene	1,400
Toluene	1,500
Total Xylenes	1,200
trans-1,3-Dichloropropene	-
Trichloroethene	700
Vinyl chloride	200
Total VOCs (ppb)	**10,000**
Pesticides / PCBs (ppb)	
4,4'-DDD	2,900
4,4'-DDE	2,100
4,4'-DDT	2,100
Aldrin	41
alpha-BHC	110
alpha-Chlordane	540
Aroclor 1016	10,000
Aroclor 1221	10,000
Aroclor 1232	10,000
Aroclor 1242	10,000
Aroclor 1248	10,000
Aroclor 1254	10,000
Aroclor 1260	10,000
beta-BHC	200
delta-BHC	300
Dieldrin	44
Endosulfan I	900
Endosulfan II	900
Endosulfan Sulfate	1,000
Endrin	100
Endrin aldehyde	-
Endrin ketone	-
gamma-BHC (Lindane)	60.00
gamma-Chlordane	540.00
Heptachlor	100.00
Heptachlor epoxide	20.00
Methoxychlor	-
Toxaphene	-
Leachable pH	-
Total Pesticides (ppb)	**10,000**

PARAMETER	REGULATORY VALUE
Semi-Volatiles (ppb)	
1,2,4-Trichlorobenzene	3,400.00
1,2-Dichlorobenzene	7,900.00
1,3-Dichlorobenzene	1,600.00
1,4-Dichlorobenzene	8,500.00
2,2'-Oxybis(1-Chloropropane)	-
2,4,5-Trichlorophenol	100
2,4,6-Trichlorophenol	-
2,4-Dichlorophenol	400
2,4-Dimethylphenol	-
2,4-Dinitrophenol	200
2,4-Dinitrotoluene	-
2,6-Dinitrotoluene	1,000
2-Chloronaphthalene	-
2-Chlorophenol	800
2-Methylnaphthalene	36,400
2-Methylphenol	100
2-Nitroaniline	430
2-Nitrophenol	330
3,3'-Dichlorobenzidine	-
3-Nitroaniline	500
4,6-Dinitro-2-methylphenol	-
4-Bromophenyl phenyl ether	-
4-Chloro-3-methylphenol	240
4-Chloroaniline	220
4-Chlorophenyl phenyl ether	-
4-Methylphenol	900
4-Nitroaniline	-
4-Nitrophenol	100
Acenaphthene	50,000
Acenaphthylene	41,000
Anthracene	50,000
Benzo(a)anthracene	224
Benzo(a)pyrene	61
Benzo(b)fluoranthene	1,100
Benzo(ghi)perylene	50,000
Benzo(k)fluoranthene	1,100
Bis(2-chloroethoxy) methane	-
Bis(2-chloroethyl) ether	-
Bis(2-ethylhexyl) phthalate	50,000
Butyl benzyl phthalate	50,000
Carbazole	-
Chrysene	400
Dibenzo(a,h)anthracene	14
Dibenzofuran	6,200
Diethyl phthalate	7,100
Dimethyl phthalate	2,000
Di-n-butyl phthalate	8,100
Di-n-octyl phthalate	50,000
Fluoranthene	50,000
Fluorene	50,000
Hexachlorobenzene	410
Hexachlorobutadiene	-
Hexachlorocyclopentadiene	-
Hexachloroethane	-
Indeno(1,2,3-cd)pyrene	3,200
Isophorone	4,400
Naphthalene	13,000
Nitrobenzene	200
N-Nitroso-Di-n-propylamine	-
N-nitrosodiphenylamine	-
Pentachlorophenol	1,000
Phenanthrene	50,000
Phenol	30
Pyrene	50,000
Total SVOCs (ppb)	**500,000**

* Site background values have been substituted for regulatory values where appropriate

** List includes TAGM 4046 guidance values for only those analytes listed on the EPA TCL

Note: Where no value regulatory value is listed, consult the Engineer to determine a proper value

ATTACHMENT A2

MASTER EROSION CONTROL PLAN

MASTER EROSION CONTROL PLAN

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)
DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

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2005.0308.00

FEBRAURY 2006

MASTER EROSION CONTROL PLAN

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)
DUNKIRK, NY

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Background

The Former Roblin Steel Site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive 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 Chautauqua County entered into for the former Roblin Steel 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 therefore Section 5.0 of the RAWP addresses the management of stormwater during remedial activities. 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 A2-1.

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 A2-1.

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.

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 A2-2.

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 A2-2) 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.

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ATTACHMENT A2-1

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.

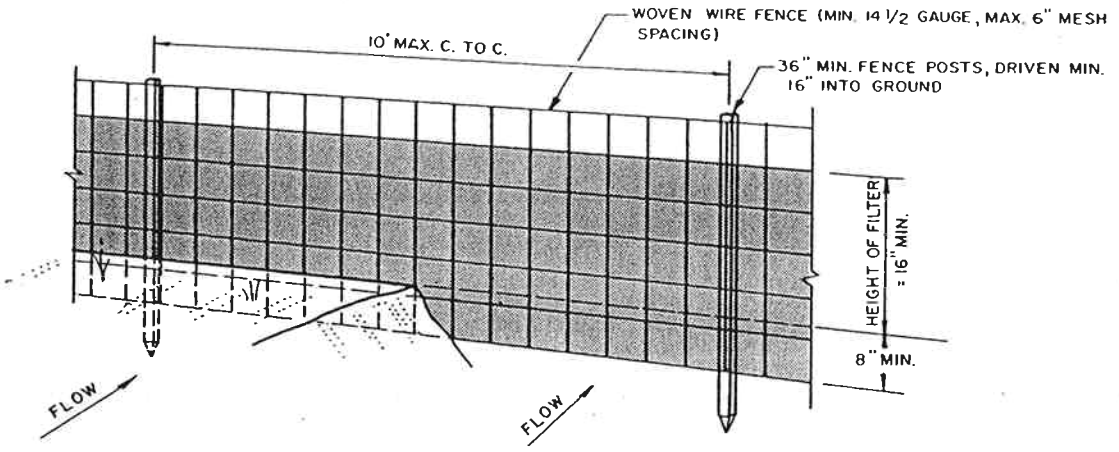
Criteria for Silt Fence Materials

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.

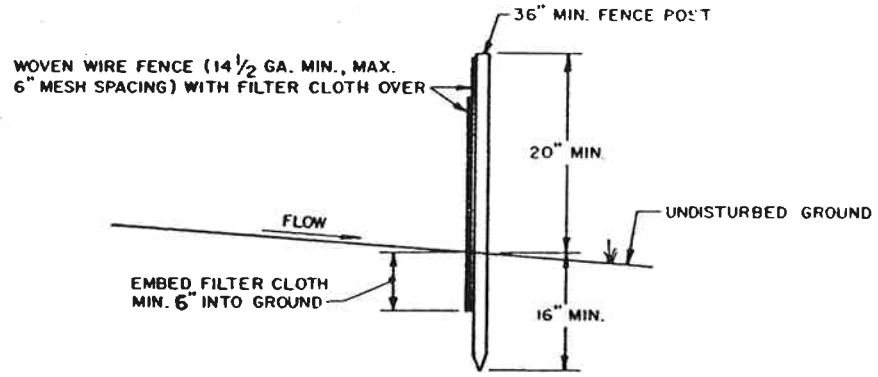
Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve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

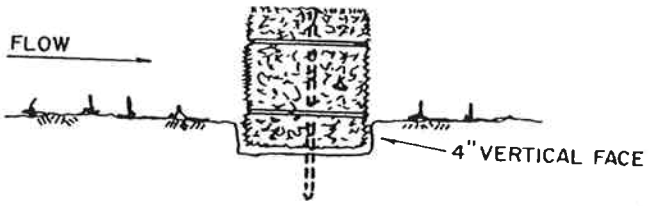
Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

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

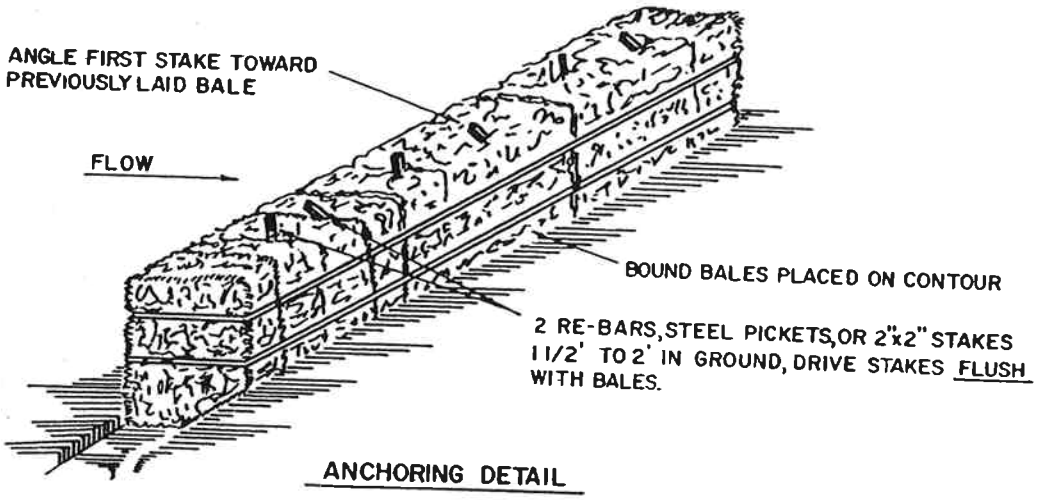
A design is not required. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.8 on page 5A.18 or details.

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.

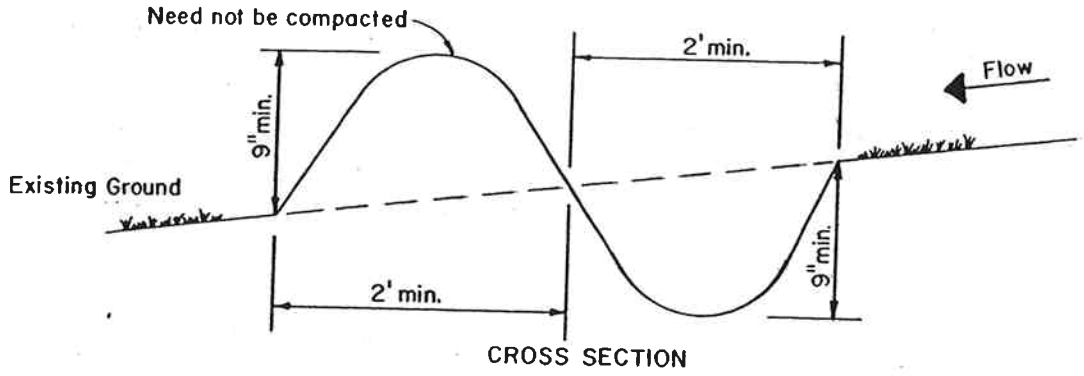
Stabilization - The disturbed area of the dike and swale shall be stabilized within 10 days of installation, in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in the seeding season.

Outlet

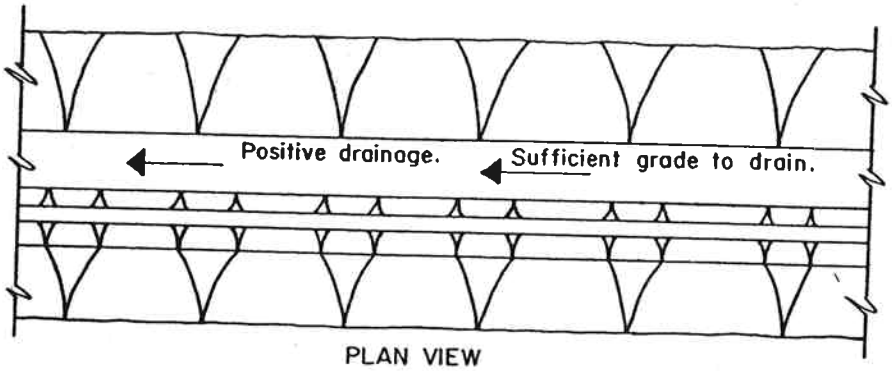
1. Perimeter dike/swale shall have an outlet that functions with a minimum of erosion.
2. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area.
3. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping 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

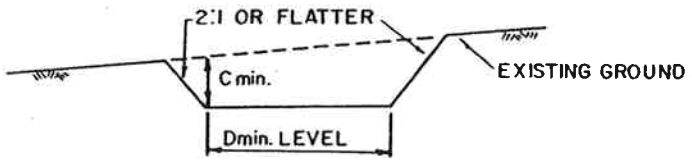
Swale shall have an outlet that functions with a minimum of erosion, and dissipates runoff velocity prior to discharge off the site.

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.

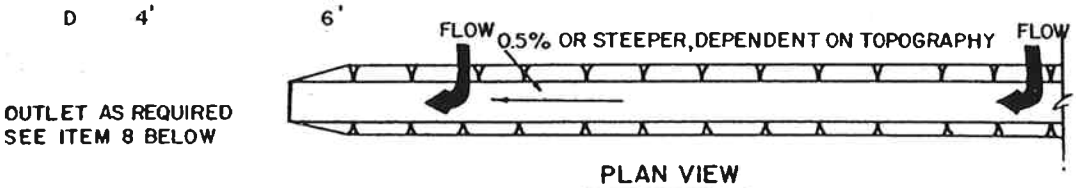
If swale is used to divert flows from entering a disturbed area, a sediment trapping device may not be needed.

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:

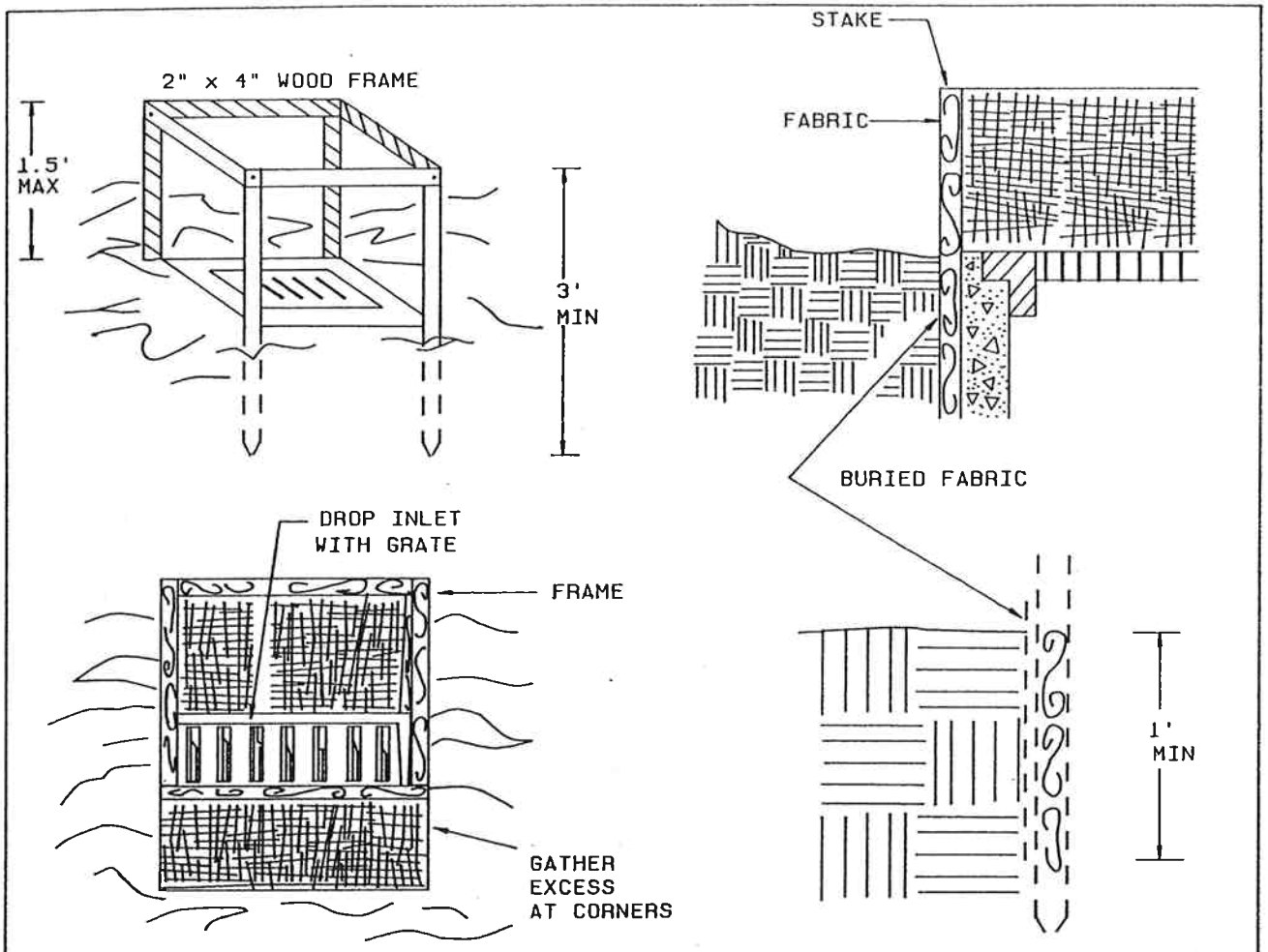
FLOW CHANNEL STABILIZATION

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 A2-2

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: _____

ATTACHMENT A3

NYSDEC - TAGM #4031

New York State Department of Environmental Conservation

TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM #4031

FUGITIVE DUST SUPPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

TO: Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs

FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation

SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM -- FUGITIVE DUST SUPRESSION AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

DATE: Oct 27, 1989

Michael J. O'Toole, Jr. (signed)

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.

ATTACHMENT A4

COMMUNITY AIR MONITORING PLAN

COMMUNITY AIR MONITORING PLAN
FOR THE
FORMER ROBLIN STEEL SITE
DUNKIRK, NEW YORK

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2005.0308.00

FEBRUARY 2006

COMMUNITY AIR MONITORING PLAN

FORMER ROBLIN STEEL SITE
DUNKIRK, NY

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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 Roblin Steel Site located in Dunkirk, 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:

- 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 A4-1

COMMUNITY AIR MONITORING DOCUMENTATION FORM

TVGA CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE: _____

PROJECT: _____

PROJECT #: _____

WEATHER CONDITIONS: _____

WIND DIRECT/SPEED: _____

USER: _____

CALIBRATION TIME: _____

CALIBRATED BY: _____

COMMENTS: _____

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

ATTACHMENT A5

OPERATIONS, MAINTENANCE AND MONITORING PLAN

OPERATION, MONITORING AND MAINTENANCE PLAN

FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
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2005.0308.00

FEBRUARY 2006

OPERATION, MONITORING AND MAINTENANCE PLAN
FORMER ROBLIN STEEL SITE

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ATTACHMENTS

1.0 INTRODUCTION

This Operation, Monitoring and Maintenance (OM&M) Plan has been prepared for the former Roblin Steel Site pursuant to the Environmental Restoration, or Brownfield Program, component of Title 5 of the Clean Water/Clean Air Bond Act of 1996, which is administered by the New York State Department of Environmental Conservation (NYSDEC). The former Roblin Steel site has been the subject of multiple environmental site investigations, including a recent Site Investigation/Remedial Alternatives Reporting (SI/RAR) program. Based on the results of the SI/RAR, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) in March 2005 that identified the remedial program that must occur on the project site before the state would grant liability release and allow redevelopment. The ROD requires that the property owner maintain the institutional and physical components that shall comprise the completed remedial action. This OM&M Plan describes the conditions and procedures for maintaining the physical components of the completed remedial action. The work described herein must be completed in order to maintain the State's release from liability.

The property owner should evaluate the criteria presented in this plan and should recommend changes to the NYSDEC, as appropriate, depending on actual post-remediation site conditions. As a minimum, this plan should be reviewed annually during the post- remediation period and updated when necessary.

Prior to the initiation of the OM&M Plan, the property owner shall prepare and submit appropriate organizational documents to the NYSDEC for review and approval. The organizational documents shall include:

- An organizational chart outlining the responsible party's personnel (with qualifications) who will be responsible for implementing the post-closure operation, maintenance and monitoring program.
- A health and safety plan.
- Example inspection report forms.
- A schedule for the semi-annual/annual inspections and annual reporting.

2.0 BACKGROUND

Presently, the project site is located in an area that is zoned for industrial use. A mixture of commercial, industrial, and residential properties comprises the land use in the project site's vicinity. The project site is bounded to the north by an active CSX rail yard; to the east by active Norfolk Southern railroad tracks; to the south by the former Alumax Extrusions property; and to the west by the Edgewood Warehouse property. Residential properties are situated to the northwest and south of the project site beyond the adjoining properties. Additionally, mixed commercial and light industrial properties are located to the north and west of the project site, while an undeveloped wooded area and Hyde Creek are located to the east.

3.0 REMEDIAL ACTIONS AND OM&M REQUIREMENTS

A Remedial Action Work Plan (RAWP) was prepared in accordance with the ROD to describe the remedial actions to be undertaken at the former Roblin Steel site. The RAWP breaks down the site into discrete Media Groups (MGs) that require remediation, and describes the remedial actions that will be implemented at each of the Media Groups (MGs). Due to the nature of the remediation, two of the MGs will require long-term monitoring, and it is these two MGs that are the subject of this OM&M Plan.

3.1 Media Group #3: Subsurface Soil/Fill w/ PAH and Metals Impacts and/or Petroleum Nuisance Characteristics

This MG encompasses subsurface soil across the entire projects site. The analytical results for the subsurface soil/fill samples collected from the areas in this MG did not exceed the Site-Specific Action Levels (SSCLs) but did exceed the recommended soil clean-up objectives listed in TAGM 4046. Additionally, visual and olfactory observations revealed petroleum odors and stained soils (nuisance characteristics) in the northeast corner of the project site.

In order to meet the remedial action objective (RAO) of preventing the exposure of future site workers to the contaminants of concern in this MG via dermal contact, incidental ingestion, or inhalation of organic vapors and/or particulates, the entire project site will be covered as part of site redevelopment. The cover system will be placed directly on top of the re-graded on-site soil/fill material and will include clean soil for outdoor, vegetated areas, asphalt for roads and parking lots, or concrete for sidewalks, buildings and heavy use areas. Surface coverage over the entire redeveloped project site will be required as a pre-condition of occupancy. The RAWP includes a Site Management Plan (SMP) that details the requirements for the surface cover as well as describes the handling of any excavated soil/fill at the project site.

It will be the responsibility of the property owner to annually verify that the cover has remained in good condition. The Cover Inspection Form (Attachment A5-1) should be used during the annual inspection. Any deficiencies in the cover system must be repaired within 30 days of the inspection in order to maintain the State's release of liability. Any required maintenance will adhere to the requirements of this OM&M Plan and the SMP, and the requirements are discussed below.

3.1.1 Soil

In areas that will not receive significant equipment or vehicular use, the cover system will be composed of clean soil from a NYSDEC-approved borrow source, which will be tested in accordance with Section 2.3.2 of the SMP. Soil identified as 'clean' is that which is found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046.

3.1.2 Asphalt

The cover system in areas that will become roads, sidewalks, and parking lots will consist of a minimum of six inches of asphalt and gravel subbase that will be placed over the soil/fill material at the project site. The asphalt will be placed on the gravel subbase to provide stability for construction and to limit subsidence. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a regular surface.

3.1.3 Concrete

The cover system in areas that will become structures will consist of a minimum of six inches of concrete and gravel subbase that will be placed above the soil/fill material. The concrete will be placed on a gravel subbase to provide stability for construction and to limit subsidence. Concrete may also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material will be removed from the ground surface and the area re-graded to a sufficient regular surface.

3.2 Media Group #7: Groundwater Impacted with VOCs

Volatile organic compounds were detected within the site-wide groundwater at concentrations in excess of the water quality standards. Substantially elevated concentrations of VOCs were detected in the groundwater along the southern project site boundary in the vicinity of well EX-MW-11. The elevated levels in this area are attributed to contaminant trespass from a documented source area on the adjacent Alumax property to the south.

The remedial action for this MG was developed to meet the RAOs for human health, which includes the prevention of on-site construction workers, future site workers and off-site utility workers from being exposed to the groundwater contaminants via dermal contact or inhalation of organic vapors. The RAOs for environmental protection are to eliminate further degradation of groundwater quality and to eliminate the potential impacts to surface water quality. The remedial action consists of enhanced natural attenuation to reduce the toxicity of the existing groundwater and installation of a sub-slab vapor venting system (SSVVS) to prevent future occupants of the building from exposure to organic vapors.

The SSVVS will be installed within the existing building that will consist of a vapor venting system that will transmit organic vapors away from the occupied building and disperse into the atmosphere. The system will be comprised of perforated High Density Polyethylene (HDPE) piping installed above the existing concrete floor, and the floor will be raised as part of redevelopment of the project site. The entire sub-slab piping system will be encased in crushed stone, and a geotextile and geomembrane layer will be placed over the stone.

Ultimately, installation and design of the SSVVS will be dependent upon the intended redevelopment of the existing building. Therefore, the installation and final design of this system will be completed during the second phase of remediation and will occur concurrently with the building redevelopment. However, the general sequence of installation will be initiated by using dump truck to deposit a base layer of stone across the entire floor surface and a small dozer or skid steer to spread out the stone. The HDPE perforated pipe network will then be placed on top of a base stone layer by hand laborers and an overlying stone layer will be deposited as the piping is installed.

Above the crushed stone layer, a cushion geotextile layer will be installed under a linear-low density polyethylene (LLDPE) geomembrane, which will be overlain by a second cushion geotextile layer. The geomembrane will serve to block the passage of organic vapor into the building interior and will be keyed to the interior building walls. The geotextile fabric on the top and bottom will serve to protect the geomembrane from damage and provide geotechnical stability to the overlying slab.

Any potentially new structures constructed on the project site as part of site redevelopment may also be equipped with a SSVVS, if warranted. While the deign of any additional SSVVS will be dependant upon the size and configuration of any newly constructed building, the system will likely designed, installed and monitored in general accordance with the SSVVS described herein.

3.3 Fencing and Access Control

A chain link fence currently surrounds portions the project site. Although it is anticipated that redevelopment of the site will occur shortly after the implementation of the remedial measures, if these redevelopment efforts are significantly delayed, fencing will be installed around the perimeter of the project site to limit the potential for human contact with the soil/fill present at the project site prior to the expiration of the State Assistance Contract. All fencing around undeveloped areas will be posted with "No Trespassing" signs. It will be the responsibility of the owner to annually certify that fences, gates and signs are in place and that access is restricted, to the best of the owner's ability.

4.0 INSPECTION, SAMPLING AND CERTIFICATION PROCEDURES

A qualified representative of the property owner (or its delegated agent) shall annually perform the site inspection. The inspector should be, at minimum, a certified industrial hygienist or a person with a four-year college degree in environmental sciences. The inspection will be coordinated with facility personnel at least one week prior to ensure that most, if not all, of the project site will be accessible for inspection. The annual inspection shall include, but not be limited to, those matters set forth on the Cover Inspection Form (Attachment A5-1). If the inspection reveals that maintenance is necessary, the owner shall notify the NYSDEC, and arrange to complete the repairs. The owner shall also inform the NYSDEC when repairs are complete.

4.1 Cover System

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. Indoors, specifically in office spaces with floor coverings, the inspection should at minimum make note of areas with settled or uneven surfaces, seepage or flooding. It is anticipated that some maintenance activities will be necessary during the closure period. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing
- Cracks
- Settlement
- Erosion features
- Distressed vegetation/turf
- Damaged fencing, gates and signs

The following sections describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described. These activities will be conducted in accordance with the requirements of the RAWP and the SMP.

4.1.1 Sloughing

Sloughing of the soil cover may occur. Maintenance activities to repairs areas where sloughing has occurred will include the replacement of the cover as well as the placement of any additional erosion controls to limit the potential for future sloughing.

4.1.2 Cracks

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The inspector will determine the appropriate maintenance procedure. Small, shallow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

4.1.3 Settlement

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction.

4.1.4 Erosion Features

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector. Additional erosion controls may be installed to limit potential future erosion features.

4.1.5 Distressed Vegetation/Turf

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from site maintenance activities and other unintended uses.

4.1.6 Damage to Access Controls

If interim fencing and access controls are required, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

4.2 Long-Term Groundwater Monitoring

Long-term groundwater monitoring will be performed to evaluate the progress of the enhanced natural attenuation, and will include the collection of groundwater samples from four downgradient monitoring wells (MW-01, MW-04, MW-12 and EX-MW-12) and the two areas of groundwater with elevated chlorinated VOCs (MW-09 and MW-07). Samples will be analyzed for volatile organic compounds (VOCs) appearing on the USEPA Target Compound List (TCL).

4.2.1 Monitoring Well Purging

To collect representative groundwater samples, groundwater wells must be adequately purged prior to sampling. Purging requires the removal of at least one well volume of water from wells with slow recharge rates or the removal of three to five volumes of standing water in rapidly recharging wells.

Procedure

- Remove and unlock the well cover and J-Plug carefully to avoid foreign material from entering the well.
- The interior of the riser pipe should be monitored for organic vapors with a PID. If a measurement greater than 5 ppm is recorded, allow the well to vent until levels drop below 5 ppm before proceeding with purging.
- Using an electronic water level indicator, determine the static water level below the top of the riser according to the procedure detailed in Section 4.2.2.
- Determine the depth of the monitoring well and subtract the depth to the water level to determine the length of the water column.
- Determine the volume of water in the monitoring well by multiplying the length of the water column by the appropriate conversions found on the Well Sampling Log (Attachment A5-2).
- Calibrate the field water quality meter in accordance with the manufacturer's procedures.
- Using a dedicated, disposable HDPE bailer with a one-liter capacity and a new section of nylon rope, initiate the purging process.
- Pour the water from the first bailer into a container, and place the field water quality meter in the container to measure the pH, temperature, conductivity, salinity and turbidity.
- Record the field parameter measurements on the Well Sampling Log.
- Continue purging, and pour purge water into graduated five-gallon buckets to assist in measuring volumes removed.
- Measure pH, temperature, conductivity, salinity, and turbidity periodically during purging using the field water quality meter.
- Record the volume removed and associated field parameter measurements on the Well Sampling Log form.
- Purging shall continue until three to five well volumes of water have been removed, or, in the case of wells with slow recharge rates, until the well is evacuated to dryness.
- In the event a monitoring well is purged to dryness, then purging should be stopped and the well allowed to recharge to static water levels to the extent practicable before sampling.
- All well purging data shall be recorded on a Well Sampling Log.

4.2.2 Water Level Monitoring

The groundwater levels measured in the monitoring wells will be used to determine the volume of standing water in the wells and to characterize the groundwater flow direction. Water levels in all monitoring wells will be measured using an electronic water level indicator. The following procedures apply to each of the monitoring wells.

Procedure

- Pre-clean water level probe and lower portion of cable using deionized water and alconox or liquinox followed by a rinsing the cable and probe with deionized water.
- Test water level meter to check batteries and adjust sensitivity.
- Lower probe slowly into monitoring well until the audible alarm sounds, indicating that the probe is in contact with water.
- Read depth to the nearest 0.01 foot from the graduated cable using a surveyed mark on the monitoring well riser as a reference point.
- Repeat the measurement for confirmation and record the water level.
- Remove the cable and probe from the monitoring well, drying the cable and probe with a clean paper towel or disposable wipe.
- Replace J-Plug, protective casing cap or casing lid and lock.

4.2.3 Groundwater Sampling

Groundwater sampling should be performed as soon as practicable after purging has been completed and the well has recovered sufficiently to sample, or within 24 hours after evacuation if the well recharges slowly. If a well does not contain or yield sufficient volume for all required laboratory analytical testing, a decision will be made to prioritize analyses.

Procedure

- Using an electronic water level indicator, determine the static water level below the top of the riser according to the procedure detailed in Section 4.2.2.
- Slowly submerge a disposable, single check valve HDPE bailer into the water column.
- Allow sufficient time for the bailer to sink and fill with water, and then retrieve it to the surface in a manner that minimizes sample agitation.
- Utilize the bailer to collect a groundwater sample and pour the first bailer into a container. Place the field water quality meter in the container to measure the pH, temperature, conductivity, salinity and turbidity.
- Compare the resulting measurements with those taken at the conclusion of purging to ensure that representative groundwater samples are being collected.
- Continue the careful collection of groundwater and pour the sample from the bailer directly into the appropriate sample containers in a manner that minimizes agitation and aeration of the sample to the greatest extent possible.
- Carefully pour the groundwater into verifiably clean sample bottles (containing preservatives when required) provided by the laboratory.

- The analytical laboratory contracted to perform the analysis of the samples should provide the required sample containers, as well as specify the appropriate sample volumes.
- All sample bottles will be labeled in the field using a waterproof permanent marker following the procedures outlined in Section 4.4.
- Sample handling, labeling, custody and shipping shall be in accordance with the procedures outlined in Section 4.4.
- After all sample containers have been filled at the well location, measure and record the field parameters within the well using the field water quality meter to ensure that representative groundwater samples have been collected.
- Record all sampling data on the Well Sampling Log.

4.3 Long-Term Air Sampling

To ensure that the SSVVS is operating properly and that occupants of the building are not being exposed to organic vapors, up to two air samples will be collected from the venting stacks associated with the SSVVS as well as from three locations within the interior of the building during each monitoring event. Prior to sample collection, field screening will be performed. Analysis of the air samples will include benzene, toluene, ethylbenzene, and xylenes (BTEX), trichloroethene (TCE), 1,2-dichlorethene (1,2-DCE) and vinyl chloride. The samples will be collected and analyzed as discussed below, while the frequency of sampling is listed in Section 5.0.

4.3.1 Field Screening for Organic Vapors

Prior to collecting the air samples, VOCs will be monitored at the exhaust points of the SSVVS as well as at locations within the building using a photoionization detector (PID). The locations from within the building should be collected at points throughout the building with a focus on locations within the building occupied by site workers. The results of this field screening will assist in selecting the vent stack and indoor air sampling locations as well as aiding in the determination of the appropriate health and safety considerations for the sampling personnel. The field screening with the PID will be performed in accordance with the procedures outlined below.

Procedure

Upon successful unit zeroing and calibration in accordance with the manufacturer's instructions, the PID is ready for use. For the screening activities, the following actions will be taken:

- Background readings should be determined upwind of the sampling area by holding the probe tip at shoulder level and noting any readings on the

digital meter. In the case of the indoor samples, background readings should be 0 ppm.

- Record any sustainable background readings noted on the Direct Air Monitoring Form included as Attachment A5-3.
- Readings over the action levels (which should be established in a site-specific health and safety plan) should be recorded the Direct Air Monitoring Form and the health and safety procedures listed in the site specific health and safety plan should be implemented.

4.3.2 Air Sampling

Air samples will be collected from the vents associated with the SSVVS as well as from locations within the interior of the building during each monitoring event. The locations from within the building will dependent upon the uses within the building following redevelopment. Samples should be collected from areas where the highest concentrations of site personnel will be within the building. Air samples will be collected utilizing the procedures listed below, while the frequency of sampling is listed in Section 5.0.

Procedures

- Prior to collecting indoor samples, a pre-sampling inspection should be performed to evaluate the physical layout and conditions of the building being investigated, to identify conditions that may affect or interfere with the proposed sampling. Items to be included in the building inventory include the following:
    - The inspection should evaluate the type of structure, floor layout, air flows and physical conditions of the building(s) being studied;
    - Construction characteristics, including foundation cracks and utility penetrations or other openings that may serve as preferential pathways for vapor intrusion;
    - Recent renovations or maintenance to the building (e.g., fresh paint, new carpet or furniture);
    - Mechanical equipment that can affect pressure gradients (e.g., heating systems, clothes dryers or exhaust fans);
    - Use or storage of petroleum products (e.g., fuel containers, gasoline operated equipment and unvented kerosene heaters); and
    - Recent use of petroleum-based finishes or other products containing volatile chemicals.
- Samples should be collected from the lowest level living space (in centrally-located, high activity use areas) at a height approximately three to five feet above the floor to represent a height at which occupants normally are seated and/or working.

- During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time.
- The sampling duration should reflect the exposure scenario being evaluated without compromising the detection limit or sample collection flow rate (e.g., an eight-hour sample from a workplace with a single shift versus a 24-hour sample from a workplace with multiple shifts). To ensure that air is representative of the locations sampled and to avoid undue influence from sampling personnel, samples should be collected for at least one hour.
- Personnel should avoid lingering in the immediate area of the sampling device while samples are being collected.
- To avoid potential interferences and dilution effects, every effort should be made to avoid the following for 24 hours prior to sampling:
    - Opening any windows, fireplace dampers, openings or vents;
    - Operating ventilation fans unless special arrangements are made;
    - Smoking in the building;
    - Painting;
    - Using a wood stove, fireplace or other auxiliary heating equipment (e.g., kerosene heater);
    - Allowing containers of gasoline or oil to remain within the building;
    - Cleaning, waxing or polishing furniture, floors or other woodwork with petroleum- or oil-based products;
    - Using air fresheners, scented candles or odor eliminators;
    - Engaging in any activities that use materials containing volatile chemicals;
    - Lawn mowing, paving with asphalt, or snow blowing;
    - Applying pesticides; and
    - Using building repair or maintenance products, such as caulk or roofing tar.
- Samples should be collected utilizing Summa canisters that are certified clean by the laboratory, utilizing the procedures outlined in Attachment A5-4.
- The field sampling team must maintain a sample log sheet summarizing the following:
    - Sample identification,
    - Date and time of sample collection,
    - Sampling height,
    - Identity of samplers,
    - Weather conditions (e.g., precipitation, indoor and outdoor temperature, and barometric pressure) and ventilation conditions (e.g., heating system active and windows closed);

- Any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppbRAE, Jerome Mercury Vapor Analyzer, etc.),
- Vacuum of Summa canisters before and after samples are collected, and
- Chain-of-custody protocols and records used to track samples from sampling point to analysis.

- Sample handling, labeling, custody and shipping shall be in accordance with the procedures outlined in Section 4.4.

4.4 Sample Handling

Proper sample labeling, handling, packing and shipping will help ensure collected samples are accurate, secure and intact when they arrive at the laboratory for analysis. The following techniques should be implemented.

4.4.1 Sample Labeling

Proper labeling is required to prevent sample misidentification of samples collected in the field and will be performed using the procedures detailed below.

Procedure

- Affix a non-removable (when wet) label to each sample container.
- Cover the label with two-inch cellophane or mylar tape.
- Write the following information on the label with a permanent waterproof marker:

  - Project Site Name
  - Sample Identification Code
  - Project Number
  - Date/Time
  - Sampler's Initials
  - Sample Preservative
  - Analysis Required

- Each sample of each matrix will be assigned a unique alphanumeric identification code consisting of four sequential components: (1) project site code, (2) sample location, (3) sample matrix, and (4) sample type. Each of these components is defined below:

  1. Project Site Code: __ (Use a two to three capitol letter ID and ensure that the same ID is used throughout the duration of the 30 year sampling period)

2. Sample Location:

Monitoring Well Designation: MW#
= Well Number

Indoor Air Sample: IAS#
= Indoor Air Sample Number

Stack Air Sample: SAS#
= Stack Air Sample

3. Sample Matrix:
GW = Groundwater
AS = Air Sample

4. Sample Type:
O – Original
FD – Field Duplicate
TB – Trip Blank

- Examples of this code are provided below

1. RSS-MW4-GW-O
RSS = Roblin Steel Site
MW4 = Monitoring Well No. 4
GW = Groundwater Sample
O = Original

2. RSS-IAS5-AS-O
RSS = Roblin Steel Site
IAS5 = Indoor Air Sample No. 5
AS = Air Sample
O = Original

4.4.2 Chain-Of-Custody

The documentation of sample collection and the method used to standardize the action is referred to as a chain-of-custody (COC). The COC is a legally defensible document that may be utilized as evidence in litigation or administrative hearings by regulatory agencies. The COC procedure is based on the American Standards and Testing Materials (ASTM) Standard Guide for Sampling Chain-of-Custody Procedures (ASTM D 4840-95).

Procedure

COC procedures are essential for the presentation of sample analytical chemistry in the form of an analytical report. Proper COC procedures will minimize the loss or misidentification of samples and may ensure unauthorized persons do not tamper with collected samples.

- The COC should be filled out with all relevant information in the appropriate space on the form.
- Information required at a minimum:

  1. Project site name;
  2. Sample identification;
  3. Project number;
  4. Date and time;
  5. Sampler's signature,
  6. Sample preservation; and,
  7. Required analysis.

- COCs should be completed in indelible ink.
- The COC is typically a carbon copy, which requires the preparer to apply sufficient pressure to mark all other pages.
- The top copy, usually a white original, should be sent to the laboratory with the samples.
- The preparer should retain the bottom copy, and any other carbon copies should be sent to the laboratory with the samples.
- The top copy of the COC should be placed in a zip-type plastic bag and placed in the cooler along with the samples and sealed according to the procedure outlined in next section.

4.4.3 Sample Shipping

The proper shipping of samples will help ensure sample security, by limiting access, integrity, by avoiding breakage, and validity, by maintaining temperature conditions.

Procedure

- Mark the volume level on groundwater sample bottles with a grease pencil.
- Place approximately three inches of cushioning material in the bottom of the cooler.
- Separate bottles with cardboard or bubble-wrap plastic.
- Pack top of bottles with ice in plastic zip-type bags. Ice should originate from a potable water source.

- Place additional cushioning material in cooler as needed.
- Place COC in zip-type plastic bag inside cooler on to the top of packing material and sample bottles.
- Wrap cooler with strapping tape at two locations and secure lid, complete with two custody labels on the cooler.
- Be sure any drain plugs on cooler are closed and sealed with tape.
- Place "this side up" and "fragile" labels on cooler
- Samples should be shipped on the same day as they are collected to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for analysis.

4.5 Annual Institutional Control / Engineering Control Certification

The owner of the project site will prepare an Institutional Control / Engineering Control Certification which will be prepared by a professional engineer or environmental professional acceptable to the NYSDEC annually (Attachment A5-5). The certification will certify that the IC/EC's put in place, are unchanged from the previous certification and nothing has occurred that will impair that will impair the ability of the controls to protect public health, the environment or constitute a violation or failure to comply with the SMP or this OM&M plan. This certification will be included as an attachment to the annual report prepared as part of the cover system and the long-term groundwater monitoring.

5.0 INSPECTION AND SAMPLING SCHEDULE

Inspections of the cover will occur on an annual basis for a minimum of 30 years. It is expected that the cover system inspection will occur during the spring to examine the impact that may have occurred from the previous winter. The OM&M of the sub-slab vapor venting system will be conducted in conjunction with the groundwater monitoring program and will be conducted for 30 years. This will involve semi-annual monitoring for the first five years followed by annual monitoring for the remaining 25 years. It is expected that the semi-annual sampling will occur during the spring and fall of each year until groundwater and air quality stabilizes according to the NYSDEC.

6.0 INSPECTION REPORTING

The property owner shall submit annual inspection reports to the NYSDEC within 45 days of the inspection. Analytical data gathered during the course of the inspection or corrective action shall also be included with the inspection report. The inspection reports will be submitted by the property owner with an attached Annual Certification form, signed and notarized by the property owner, certifying that the specified engineering and institutional controls are in place and functioning. The owner shall keep these inspection reports on file.

If the inspection finds that corrective action is required, a follow up inspection will be made after the repairs have been completed. If the inspector determines that correction action is required, the Corrective Action Form (Attachment A5-6) will be included with the inspection report, confirming that the repairs were completed, and in accordance with the Remedial Action Work Plan.

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ATTACHMENT A5-1

COVER INSPECTION FORM

COVER INSPECTION FORM
Former Roblin Steel Site

Property Name: Former Roblin Steel Site Inspection Date:

Property Address: 320 South Roberts Road

City: Dunkirk State: NY Zip Code: 14048

Property ID: (Tax Assessment Map)

Section: 30 Block: 1 Lot(s): 7.2.2, 8 and 10.1

Total Acreage: 16.5 acres

Weather (during inspection): Temperature: _____ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: _____ Date: _____

Next Scheduled Inspection Date: _____

SECURITY AND ACCESS

	Yes	No
1. Access controlled by perimeter fencing?	_____	_____
Are there sections of the fence material damaged or missing?	_____	_____
Are the fence or gate post foundations structurally sound?	_____	_____
2. "No Trespass" signs posted in appropriate languages?	_____	_____
Are the signs securely attached to the fencing or posts?	_____	_____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	_____	_____
3. Is there evidence of trespassing?	_____	_____
Is there evidence of illegal dumping?	_____	_____

COVER & VEGETATION

4. Final cover in acceptable condition?	_____	_____
Is there evidence of sloughing, erosion, ponding or settlement?	_____	_____
Is there evidence of unintended traffic; rutting?	_____	_____
Is there evidence of distressed vegetation/turf?	_____	_____

	Yes	No
5. Final cover sufficiently covers soil/fill material?	_____	_____
Are there cracks visible in the soil or pavement?	_____	_____
Is there evidence of erosion in the stormwater channels or swales?	_____	_____
Is there damage to the synthetic erosion control fabric in the channels or swales?	_____	_____

ACTIVITY ON SITE

6. Any activity on site that mechanically disturbed soil cover?	_____	_____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

ATTACHMENT A5-2

MONITORING WELL SAMPLING LOG

TVGA CONSULTANTS

MONITORING WELL SAMPLING LOG

MW NO:

Project Name: _____ Project No: _____

Project Location: _____ Date: _____

Screen Length: _____

Purge Information:

(1) Depth to Bottom of Well: _____ (from TOC)

(2) Depth to Water: _____ ft (from TOC)

(3) Column of Water: _____ (#1 - #2)

(4) Casing Diameter: 2 in

(5) Volume Conversion: 0.163 gal/ft

(6) 1 Vol. of Well: _____ gal

Method of Purging: WaTerra/Bailer/Submersible/Other: _____

Volume Conversion:

2" = 0.163 4" = 0.653 6" = 1.469 8" = 2.611 10" = 4.08

Field Analysis:

Vol Purged (gal)								
Time								
ORP/EH (MV)								
pH								
Cond. (MS/CM)								
Turb. (NTU)								
Salinity (%)								
D.O. (mg/l)								
Temp. (°C)								

Total Volume Purged: _____ gal Total Purge Time: _____

Sampling Info:

Sample Method: _____

No. of Bottles: _____

Sample Time: _____

Sample Analyses: _____

Comments: _____

_____

_____

Logged By:

ATTACHMENT A5-3

DIRECT AIR MONITORING FORM

TVGA
CONSULTANTS

DIRECT READING AIR MONITORING FORM

DATE:_____
PROJECT:_____
PROJECT #:_____
WEATHER CONDITIONS:_____
WIND DIRECT/SPEED: _____

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

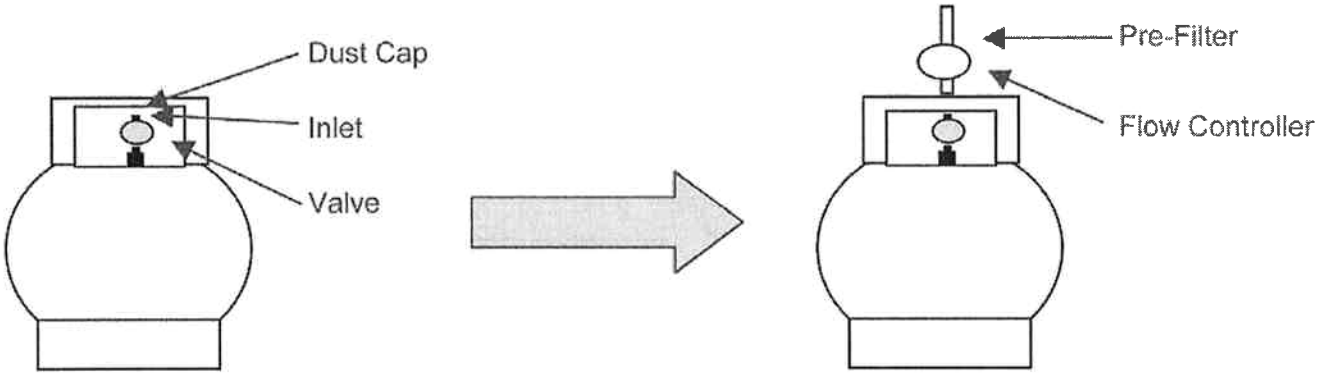
ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

ATTACHMENT A5-4

SOP FOR THE COLLECTION OF AIR SAMPLES WITH A SUMMA CANISTER

SEVERN TRENT STL

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
865-291-3000



The canisters in your sampling kit have been cleaned, certified, leak tested, and evacuated to >28" Hg.
If you are taking a time intergrated sample, one flow controller with pre-filter is included with each canister.
Flow controllers are not to be adjusted in the field. They have been cleaned and preset for your sampling event.

1. Remove the dust cap from the valve of the canister. (If taking a grab sample, go to step 4).
2. Attach the flow controller (1/4" female swagelock fitting) to the canister inlet (1/4" male swagelock fitting), turning the threaded nut until it is hand tight.
3. Use a 9/16 inch wrench to tighten the flow controller: 1/4 to 1/2 turn beyond hand tight is sufficient.
4. Check the initial vacuum of the canister with the gauge provided and complete the sample label tag that is attached to the canister.
   If using your own label, please do not affix to the canister, cover up or remove the canister certification information.
5. To start sampling, turn the canister valve counter clockwise, one and 1/2 or two turns. Note the start time on the canister tag.
6. To stop sampling, note the stop time, check and note the final vacuum, and close the canister valve at the end point, e.g. 2, 4, 6, 8 or 24 hours, by turning clockwise until snug. If the valve is not closed at the end point the canister will eventually go to ambient pressure.
7. After closing the valve, remove the flow controller from the canister, replace the dust cap and return both to the laboratory in the containers
   which they were received in, along with your completed Chain of Custody form.

Please call your STL project manager at 865-291-3000 with any questions regarding the above information.

ATTACHMENT A5-5

ANNUAL INSTITUTIONAL / ENGINEERING CONTROL CERTIFICATION FORM

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

SITE DETAILS

SITE NO. B-00173-9

SITE NAME FORMER ROBLIN STEEL SITE

SITE ADDRESS: 320 SOUTH ROBERTS ROAD ZIP CODE: 14048

CITY/TOWN: CITY OF DUNKIRK, NEW YORK

COUNTY: CHAUTAUQUA

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. B-00173-9

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.

ATTACHMENT A5-6

CORRECTIVE ACTION FORM

CORRECTIVE ACTION FORM
FORMER ROBLIN STEEL SITE

Property Name: _____

Property Address:

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

An inspection of the subject property on (date) identified the need for corrective action.

CORRECTIVE ACTION TAKEN

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: _____Date: _____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

APPENDIX B

HEALTH AND SAFETY PLAN FOR REMEDIAL MEASURES

HEALTH AND SAFETY PLAN
FOR REMEDIAL MEASURES
FOR THE
FORMER ROBLIN STEEL SITE

(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2005.0308.00

FEBRUARY 2006

DISCLAIMER

This Health and Safety Plan has been written for the use of TVGA Consultants (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 project site conditions, purpose, dates, and personnel specified and must be amended if these conditions change.

HEALTH AND SAFETY PLAN
FOR REMEDIAL MEASURES
FOR THE
FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

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1.0 INTRODUCTION

TVGA, on behalf of the Chautauqua County Department of Public Facilities, will provide engineering and environmental services associated with the remedial program to be implemented at the former Roblin Steel Site located at 320 South Roberts Road in the City of Dunkirk, Chautauqua County, New York. The sources of environmental concern at this site include the documented presence of soil and groundwater contamination resulting from the historical use of the property and surrounding properties for industrial purposes for almost 100 years. Additionally, asbestos containing materials (ACMs) and potentially polychlorinated biphenyl (PCB) containing florescent light ballasts have also been identified within the former facility building.

This Health and Safety Plan (HASP) has been developed to govern all field work conducted during remedial activities at the former Roblin Steel Site. This plan is intended to ensure that the procedures used during planned remedial 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 project site as well as 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 may adopt this HASP for activities within the scope-of-work this Plan addresses. Any 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 project site. Specific tasks covered by this HASP may include, but are not limited to:

- Monitoring the removal of PCB-containing light fixtures;
- Monitoring the activities of the asbestos removal contractor;
- Inspecting the decommissioning of sumps and drains;
- Observing the excavation of earthen materials, sediment fill, debris, concrete, wooden floor blocks, etc.;
- Collecting environmental soil/fill samples;
- Observing loading and backfilling operations;
- Sampling groundwater monitoring wells;
- Decontaminating personnel and equipment; and
- Performing air monitoring.

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, C.P.G., TVGA, (716) 655-8842

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

2.2 On-Site Personnel

Title: Site Health & 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: Field Team Leader
Description: Responsible for field team operations.
Contact: David L. McCoy, TVGA, (716) 487-3133

Title: Work Party
Description: Performs field operations
Contact: TVGA 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). 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 to 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; and
- 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 or 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 project 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 remedial program outlined herein consists of the excavation of contaminated surface and subsurface soils, removal of PCB-containing materials, removal of asbestos-containing building materials (ACM), cleaning and closure of on-site sumps/drains, the abandonment of components of on-site sewer piping, and groundwater treatment and monitoring. This HASP has been developed for submittal to and review by the NYSDEC in order to ensure that the remedial program will satisfy applicable regulatory requirements.

3.2 Safety Meetings

To ensure that the HASP is being followed, the PTL shall conduct a safety meeting prior to initiating any site activities.

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.

An Environmental Protection Agency (EPA) and New York State Department of Labor (NYSDOL) certified asbestos removal contractor will complete asbestos abatement at the project site. Asbestos technicians in New York State will be trained to comply with applicable provisions of 40 CFR Part 61 (NESHAPS) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.

3.4 Medical Surveillance

All TVGA and subcontractor personnel working on this remedial program 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 the project 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

Maps of the site and areas to be remediated are included in the Remedial Action Work Plan (RAWP). A map showing the route from the site to the nearest hospital has been included as Figure 1.

4.0 SITE CHARACTERIZATION

4.1 Site Description

The project site is located along the eastern side of South Roberts Road in the City of Dunkirk, New York and occupies approximately 12 acres of an inactive industrial park. The project site contains a former facility building that encompasses approximately 88,500 square feet (SF). The former process equipment has been removed from the project site; however, a number of steel storage bins, wooden pallets, a dilapidated dump truck, and various wood and metal scraps remain inside the building. The external areas of the project site consist of a mixture of fill; soil, concrete, wood, brick, metal and construction and demolition debris piles; and concrete foundations.

4.2 Neighboring Properties

The project site is located in an area that is zoned for industrial use. Land use in the project site vicinity is characterized by a mixture of commercial, industrial, and residential uses. The project site is bounded to the north by an active CSX rail line; to the east by abandoned railroad tracks, to the south by the former Alumax Extrusions site, and to the west by the Edgewood Warehouse site. Located further from the project site, beyond the adjoining properties, are residential properties situated to the northwest and south of the project site. Mixed commercial, industrial properties are located to the north and west of the project site and to the east is a wooded area and Hyde Creek.

4.3 Site Topography

The topography of the majority of the site is flat with a gentle slope to the north. The site has an elevation that ranges between 600 and 605 feet above mean sea level (AMSL), based upon the USGS topographic mapping of the area.

4.4 Site Geology and Hydrology

The physical characteristics of the project site (e.g. subsurface stratigraphy, groundwater, surface water, building and infrastructure) are discussed in detail in Section 3.0 of the Draft Site Investigation Report.

4.5 Meteorological Data

Field work is expected to be completed during Spring 2006. Average temperatures for these months are expected to reach highs of approximately 70°F and lows of 30°F. Prior to each day's activities, the daily forecast should be monitored for indications of adverse work conditions.

5.0 HAZARD EVALUATION

5.1 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 - trip/fall; and
- Unstable overhead structures - cuts, trauma.

The planned soil boring, excavation, loading, and backfilling activities also present hazards specific to working with heavy equipment. Personnel working on or around the drill rig or earthmoving equipment 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.

5.1.1 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, dump trucks, scaffolding, ladders, cranes) shall remain a distance of 10 feet away from utility lines and 20 feet away from power lines. The distance from utility lines may be adjusted by the SSO depending on actual voltage of the lines.

- During all intrusive activities (e.g., direct push soil borings, excavating, backfilling, etc.), Dig Safely New York should be contacted (1-800-962-7962) to mark underground lines before any work is started.

5.1.2 Drilling Safety

Personnel working in the vicinity of drilling shall adhere to the following practices:

- Equipment should be inspected daily by the operator to ensure that there are no operational problems;
- Before leaving the controls, shift the transmission controlling the rotary drive into neutral and place the feed level in neutral. Before leaving the vicinity of the drill, shut down the drill engine;
- Do not drive the drill rig with the mast in the raised position;
- Before raising the mast, check for overhead obstructions;
- Before the mast of a drill rig is raised, the drill rig must first be leveled and stabilized with leveling jacks and/or cribbing. Re-level the drill rig if it settles after initial set up. Lower the mast only when the leveling jacks are down, and do not raise the leveling jack pads until the mast is lowered completely;
- Employees involved in the operation shall not wear any loose-fitting clothing that has the potential to be caught in moving machinery;
- During freezing weather, do not touch any metal parts of the drill rig with exposed flesh. Freezing of moist skin to metal can occur almost instantaneously;
- Adequately cover or protect all unattended boreholes to prevent drill rig personnel or site visitors from stepping or falling into the borehole;
- 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 and/or spectators; and
- All personnel should be instructed in the use of the emergency kill switch on the drill rig.

5.1.3 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 will include drill rigs, excavators, and trucks.

Operators shall follow the following practices when using heavy equipment:

- Equipment should be inspected daily by the operator to ensure that the equipment is in safe operating condition;
- When not in use, hydraulic components should be left in down or "dead" position;
- Roll-over protection shall be provided on hilly sites;
- No riding on vehicles or equipment except in fixed seats;
- Seat belts should be worn at all times;
- Backup alarms, automatically activated and loud enough to be heard above background noise are required on all heavy equipment;
- Parking brakes should always be applied on parked equipment;
- Equipment should never be operated closer than 10 feet from utility lines; and
- Windshields must be maintained clean and free of visual obstructions.

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

- Ensure that equipment operators are trained and/or experienced in the operation of the specific equipment;
- 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; and
- Steel-toed shoes, safety glasses, and a hard hat shall be worn for all work conducted near heavy equipment.

5.2 Chemical Hazards

Known and suspected sources of contamination include:

- Past spills and releases of chemicals and wastes used, generated and/or stored on-site; past discharges and spills of untreated process wastewater;
- Leaking underground piping;

- Past discharges and spills of fuel oil; industrial fill;
- PCB-containing electrical equipment; and
- Asbestos-containing building materials.

Potential chemical hazards, which could be encountered during the site investigation include, but are not limited to:

- Chlorinated and aromatic hydrocarbons (i.e., trichloroethene (TCE), and benzene toluene, ethylbenzene, and xylenes (BTEX);
- Polycyclic aromatic hydrocarbons (PAHs);
- PCBs;
- Metals;
- Friable Asbestos;
- Lead-Based Paint;

5.3 Exposure Limits

Recommended Exposure Limits (RELs), and OSHA Permissible Exposure Limits (PELs) for several of the above chemical hazards are listed below. The RELs and PELs for the compounds listed below can be found in the NIOSH Guide to Chemical Hazards.

CHEMICAL	REL [1]	PEL [2]
Benzene	0.1 ppm	1 ppm
Toluene	100 ppm	200 ppm
Ethylbenzene	100 ppm	100 ppm
Mixed xylenes	100 ppm	100 ppm
Vinyl Chloride	CA	1 ppm
Trichloroethlene	25 ppm	100 ppm
Tetrachloroethlene	CA	100 ppm
Stoddard solvent	350 mg/m^3	500 ppm
Polycyclic Aromatic Hydrocarbons (used oil and fuel oil)	0.2 mg/m^3	0.2 mg/m^3
Cadmium (emission control dust)	CA	0.005 mg/m^3
Hexavalent Chromium (emission control dust)	0.001 mg/m^3	0.1 mg/m^3
Lead (emission control dust)	0.1 mg/m^3	0.05 mg/m^3
PCB (Multiple Aroclors) [3]	0.001 mg/m^3	0.5 mg/m^3
Asbestos	0.1 $fiber/cm^2$	0.1 $fiber/cm^2$

1 REL = NIOSH recommended exposure limits, up to 10 hour work day exposure limit, 40 hours/week. REL in mg/m^3 = (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/m^3 = (REL in ppm x molecular weight) / 24.45.

3 The NIOSH REL for Aroclor 1254 also applies to other PCBs, including the other Aroclors which were identified on-site.

TWA = time weighted average
OSHA = Occupational Safety and Health Agency
ACGIH = American Conference of Governmental Industrial Hygienists
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

5.4 Dispersion Pathways

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

- Dust and asbestos fibers projected by wind;
- Contaminated dust blown by wind;
- Volatilization and wind transport of organic compounds;
- Surface water runoff from contaminated areas;
- Storm water flowing within the storm sewer system;
- Groundwater flowing beneath the site; and
- Surface water flowing in Hyde Creek.

5.5 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
Benzene	500 ppm
Toluene	500 ppm
Ethylbenzene	800 ppm
Mixed xylenes	900 ppm
Vinyl Chloride	ND
Trichloroethlene	1000 ppm (CA)
Tetrachloroethlene	150 ppm
Stoddard solvent	20,000 mg/m^3
Polycyclic Aromatic Hydrocarbons (used oil and fuel oil)	N.A.
Cadmium (emission control dust)	9 mg/m^3

Hexavalent Chromium (emission control dust)	15 mg/m^3
Lead (emission control dust)	100 mg/m^3
PCB (Multiple Aroclors)[3]	5 mg/m^3
Asbestos	CA

N.A. = No IDLH assigned
CA = NIOSH recommends the substance be treated as a potential human carcinogen
ND = indicated IDLH has not yet been determined

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, radiation;
- Visible vapor clouds; and
- Biological indicators such as dead animals or stressed vegetation.

6.0 MONITORING AND ACTION LEVELS

6.1 Air Monitoring

The following environmental monitoring instruments and methods shall be used on site at the specified intervals.

6.1.1 Photoionization Detector (PID)

A PID shall be used continuously at the downwind perimeter of the work area during any remedial activity that involves the disturbance or handling of project site soil/fill to monitor for volatile organic compounds. The PID shall be calibrated daily following manufacturers' recommendations. Readings and calibration data shall be recorded in daily logs by the SSO.

6.1.2 Temperature

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

6.1.3 Dust

A real-time particulate monitor shall be used continuously in the vicinity of the work area, during the installation of the test borings, and during excavation, backfilling, loading and trucking operations to monitor for particulate matter less than ten microns (PM-10). The particulate monitor will be able to continuously monitor particulate concentrations. An audible alarm will be provided to indicate exceedances of the action levels. The particulate meter shall be calibrated daily following manufacturers' recommendations. Readings and calibration data shall be recorded in daily logs by the SSO.

6.1.4 Asbestos Particulates

An asbestos monitoring plan that complies with applicable state and federal regulations will be developed and implemented by the asbestos abatement contractor.

6.2 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 project site. The action levels for this project are as follows:

- Volatile organic compounds (PID monitor) = consistent readings greater than 5 ppm above background levels in the breathing zone;
- Temperature = ambient air temperature of less than 36°F for cold stress, and greater than 90°F for heat stress;
- Dust = consistent downwind readings that are 150 ug/m^3 greater than background (i.e. upwind); and
- Asbestos = per applicable state and federal regulations.

Additional responses are described below. It should be noted that the following responses are in accordance with the Community Air Monitoring Plan.

6.2.1 Vapor Emission Response Plan

If the organic vapor level decreases below 5 ppm above background, after engineering controls are instituted, 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 at the "downwind hot zone" is 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 work area, activities must be shutdown. When a 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.

6.2.2 Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified within 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 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 are greater than 10 ppm above background.

6.2.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- All Emergency Response Contacts as listed in section 13.0 of the HASP will be contacted;
- The local police authorities will be immediately contacted by the SSO and advised of the situation; and
- 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 SSO.
- 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.

6.2.4 Particulate Emission Response Plan

If the downwind PM-10 particulate level is 100 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 should be examined. Work may continue with dust suppression techniques provided they 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.

6.2.5 Dust Suppression Techniques

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

- Reducing the number of areas subject to intrusive investigation, and limiting the number of exposed soil areas;
- Restricting vehicle speeds;
- Applying water on buckets during excavation and on exposed soil surfaces;
- Wetting equipment used in intrusive activities;
- Restricting work during extreme wind conditions; and
- Using a street sweeper on paved roads, where feasible.

7.0 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.

7.1 On-Site Control Measures

Temporary fencing will be installed as appropriate around work areas to control access to the project site and to prevent unauthorized access to on-site work zones. During asbestos abatement by authorized personnel, no other persons are to be present in the vicinity of abatement area.

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

7.1.1 Exclusion Zone (EZ)

This will be the actual work area where remedial activities will take place. 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 excavated 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 soil borings, 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 advancing soil borings or excavating using a photoionization detector (PID) and a particulate monitor.

7.1.2 Contamination Reduction Zone (CRZ)

An area between the 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.

7.1.3 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 project site 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 the EZ; and
- Personnel protective equipment requirements and limitations.

7.2 Off-Site Control Measures

Although the majority of the remedail activities will be conducted within the interior fenced area of the site, the abandonment of the storm sewer pipe to Hyde Creek will occur outside the boundaries of the project site. No residential properties or public roads exist adjacent to this location, therefore only minimal control measures to protect the public from physical and chemical hazards associated with these off-site activities will be necessary including the following:

- 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; and
- The SSO or other member of the WPP will be present throughout the duration of remedial activities to monitor the work zone and prevent unauthorized parties from entry.

8.0 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 Material Safety Data Sheet (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. Hazardous materials are not expected to be used during remedial activities at the project site.

9.0 CONFINED SPACE ENTRY

Confined space entry by TVGA personnel is not expected during the completion of remedial activities. 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.

10.0 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 with the exception of asbestos abatement 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.

10.1 Modified Level D Protection

- Safety glasses with side shields;
- Chemical resistant gloves (during sampling activities);
- Steel-toe and shank boots; and
- Hard hat.

For the protection of site personnel, organic gas/vapor emissions, and particulate levels will be continuously monitored during soil boring and excavation 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. All asbestos abatement activities conducted by EPA and NYSDOL Certified Persons will be conducted under Level C Protection.

10.2 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; and
- Hard hats.

For all personnel that may be required to wear full-face respirators (all persons working near an excavation, for example, or conducting asbestos abatement), only NIOSH/MSHA approved respirators will be used. These will contain cartridges approved for removal of organic vapors/acid mists and particulates. 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.

10.3 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); and
- Have assistant check all closures and observe wearer to ensure fit and durability of protective gear.

11.0 DECONTAMINATION

Level C or higher PPE utilized during site operations warrants the institution of decontamination procedures. All asbestos abatement activities will be conducted in Level C protection.

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 excavations occur unless elevated VOC 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 and heavy equipment decontamination will be limited by keeping to a minimum the number of vehicles entering the Exclusion Zone.

11.1 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 final decontamination at end of shift);
- Thoroughly wash face, hands and body; and
- Redress.

11.2 Equipment Decontamination

TVGA 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 contaminates of concern. 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.

Equipment and vehicles leaving potentially contaminated areas will pass over one or more anti-tracking pads. These areas are comprised of NYSDOT #3 gravel to a depth of at least 4 inches, overlaying a filter fabric sheet to retain contaminated soil. The anti-tracking pads are at least 50 feet in length and 15 feet wide. These pads are intended to remove potentially contaminated soil from tires and wheels. Vehicles will not be permitted to enter or exit without traveling across one of the pads.

The locations of the anti-tracking pads will be determined prior to initiating, field activities. The locations will be adjusted as necessary to ensure that adjacent property and public roads are kept free from cross-contamination.

Construction equipment will be thoroughly decontaminated by the Contractor using a power washer prior to being removed from the project site. In addition, all construction equipment will undergo gross decontamination with a power washer as necessary to prevent dust generation.

12.0 EMERGENCY PROCEDURES

Prior to entering the project site, all personnel 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; and
- All occupational injuries and illnesses will be reported, recorded, and investigated.

12.1 Communication

The SSO will have a cellular-type telephone on-site at all times for direct outside communications with emergency response organizations. The SSO will also maintain communication with each WPP performing work on the project site through the use of two-way radios.

12.2 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.

12.3 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.

12.4 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.

12.5 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.

12.6 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 13.0).

13.0 EMERGENCY MEDICAL CARE

13.1 Hospitals

Name: Brooks Memorial Hospital
Address: 529 Central Avenue, Dunkirk
Emergency Room #: (716) 366-1111 Ext. 4414
Directions from site: Head north on South Roberts Road approximately 400 feet to Talcott Road. Proceed south (left) on Talcott to Maple Road. Proceed north on Maple Road and make a left onto West Sixth Street. Proceed west (right) on West Sixth Street to Central Avenue. Estimated drive time is 10 minutes. A map showing the route from the site to the nearest hospital has been included as Figure 1.

13.2 Emergency Notification Numbers

Fire Department: 911
Police Department: 911
Department of Emergency Services: 911
Chautauqua County Health Department, Environmental Division: (716) 366-8831
Chautauqua County Hazardous Material Team: (716) 753-4233 (24-Hour Emergency Number)
NYSDEC Spill Response Unit: (716) 851-7220
NYSDEC Spill Hotline: 800-457-7362
NYSDOH Division of Environmental Health Assessment: (716) 847-4502

14.0 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.
- Prescription drugs should not be taken by personnel where potential for absorption, inhalation, or ingestion of toxic substance exists unless specifically approved by a qualified physician. Alcoholic beverage intake is prohibited.
- 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.
- 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.

15.0 COMMUNITY HEALTH AND SAFETY PLAN

15.1 Potential Impacts

A Community Air Monitoring Plan that will require real-time monitoring for volatile organic compounds and particulates at the downwind perimeter of each designated work area will be implemented when remedial activities are in progress at the project site. Potential hazards to the general public and surrounding community posed by this site investigation plan relate primarily to fugitive dust (particulate) emissions, asbestos fiber release, and/or organic contaminants in on-site soil and sediment, 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, asbestos fibers, and volatile organic compounds beyond the project site boundary include:

- Dust projected by wind erosion;
- Asbestos projected by wind;
- Contaminated dust projected by wind erosion; and
- Volatile organic compounds transmitted by wind currents.

The project site is located in an area that consists mainly of industrial/manufacturing properties. Residential properties are primarily located northwest and south of the project site, and are of a sufficient separation distance that it is unlikely that they will be adversely impacted by the project site remediation activities.

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

15.2 Monitoring Plan

The excavation activities are not expected to produce measurable fugitive dust. The excavations will occur with a backhoe and/or excavator. The excavations will vary in size depending on the remediation at the media groups that will be subject to excavation activities.

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 project 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 6.2.

15.3 Project Site Control

Portions of the project site are currently enclosed by a six-foot tall chain link fence. Access to other portions of the project site, however, are not controlled. Vehicular access to the project site is monitored by a security guard posted at the Roberts Road entrance, and no unauthorized vehicles will be permitted to enter. During work hours, the main entrance gate will be opened to allow authorized personnel access. The gate will then be closed to deter unauthorized vehicles from entering the project site.

15.4 Engineering Controls

In the event measurable dust levels are detected during the remedial activities, then standard dust suppression techniques may be utilized, including the following:

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

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

In the event visible dust levels are identified during the abatement of ACMs, then the asbestos removal contractor will be required to amend his procedures per applicable state and federal regulations to limit dust levels. Abatement techniques that minimize the potential for fiber releases will be employed. This may include, but is not limited to the following:

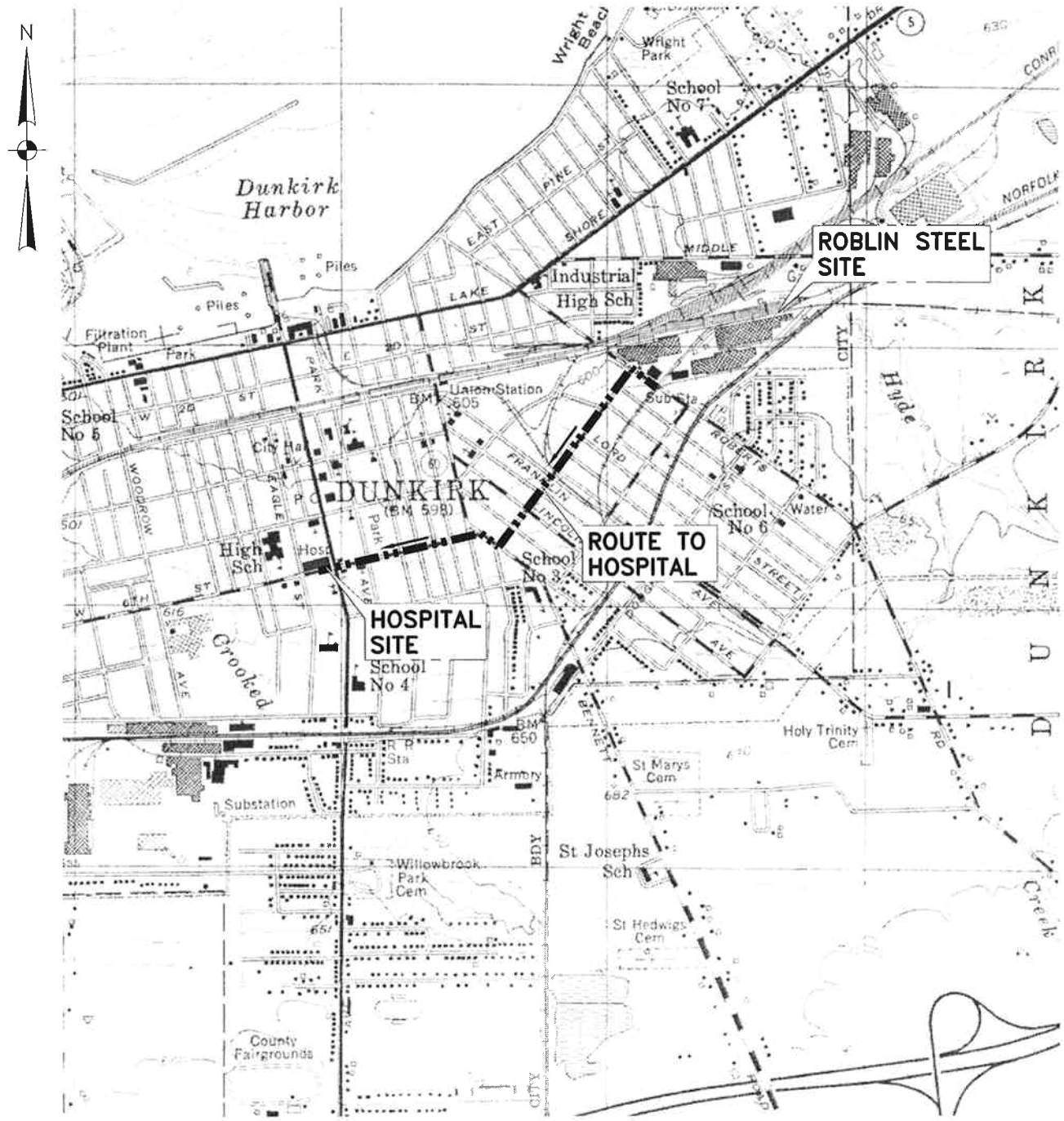
- Remove ACMs in a manner to cause the least amount of dust;
- Do not make unnecessary cuts while removing ACMs;
- Use sufficient water to wet areas designated for asbestos abatement;
- Make sure disposal containers are tightly sealed; and
- Use sufficient material to encapsulate areas where ACMs are being removed.

15.5 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 12.0 and the contact information for local emergency personnel is included in Section 13.0. In the event community health and safety is in question, dialing 911 will summon Fire and Police personnel that can take appropriate actions as necessary.

FIGURES



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 ROBLIN STEEL SITE
320 SOUTH ROBERTS ROAD
DUNKIRK, NEW Y ORK

PROJECT NO. 2005.0308.00	SCALE: 1" = 2000'	DATE: 09/15/05	FIGURE No. 1

ATTACHMENT B-1

FORMER ROBLIN STEEL SITE

CERTIFICATION

PROJECT LOCATION: 320 SOUTH ROBERTS ROAD, DUNKIRK,NY
PROJECT NO. 2005.0308.00

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-2

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 B-3

DIRECT READING AIR MONITORING FORM

DATE: _____
PROJECT: _____
PROJECT #: _____
WEATHER CONDITIONS: _____
WIND DIRECT/SPEED: _____

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

ACTIVITY	INSTRUMENT	WORKING RANGE	TIME	READING	COMMENTS

APPENDIX C

INSPECTOR'S DAILY REPORT FORM

TVGA
CONSULTANTS

INSPECTOR'S DAILY REPORT

JOB TITLE: _____ **DATE:** _____

TVGA JOB NO.: _____ **Day of Week: S M T W T F S**

CLIENT: _____ **I.R. No.:** _____

CONTRACTOR: _____ **Sheet No.** _____ **of** _____

Contractor Hours Worked:

VISITORS: _____ _____ **AM** _____ **PM**

_____ **Inspector Hours Worked:**

_____ _____ **AM** _____ **PM**

PHOTOS TAKEN: _____ **Weather:**

_____ _____ **AM** _____ **PM**

Temperature:

_____ **AM** _____ **PM**

DESCRIPTION OF WORK PERFORMED AND INSPECTED

Specify for each operation: Item No., Sub-Contractor (if any), Location and Nature of Work

ITEM NO.	INTERIM QUANT.	FINAL QUANT.	EST. NO.	DESCRIPTION OF WORK

The above described work was incorporated into this project and was inspected by:

_____ Reviewed by: _____

_____ Inspector's Signature

☐ **REVERSE SIDE USED FOR ADDITIONAL REMARKS AND SKETCHES.**

MANPOWER						EQUIPMENT				
TYPE	PRIME					TYPE	PRIME			
Foreman										
Operators										
Laborers										

APPENDIX D

CITIZEN PARTICIPATION PLAN

CITIZEN PARTICIPATION PLAN
FOR THE
FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

Prepared for:

Chautauqua County Department of Public Facilities
454 North Work Street
Falconer, New York

Prepared by:

TVGA CONSULTANTS

One Thousand Maple Road
Elma, NY 14059-0264

(716) 655-8842
(fax) (716) 655-0937

2005.0308.00

FEBRUARY 2006

CITIZEN PARTICIPATION PLAN
FOR THE
FORMER ROBLIN STEEL SITE
(NYSDEC SITE NO. B-00173-9)

320 SOUTH ROBERTS ROAD
CITY OF DUNKIRK, NEW YORK

TABLE OF CONTENTS

1.0 INTRODUCTION

The site-specific Citizen Participation Plan (CPP) described herein follows guidelines set forth by the New York State Department of Environmental Conservation in their Citizen Participation in New York's Hazardous Waste Site Remediation Program, and has been tailored to the particular needs of the Former Roblin Steel Site project. The CPP establishes a framework of activities to provide a context in which two-way communication between Chautauqua County and the community can be attained. The CPP will be proactive and ongoing throughout the duration of the project site activities. Based upon the specific characteristics, size, and scope of the project, the CPP will include:

- A project mailing list;
- Identification of a local document repository;
- Fact sheets;
- Meetings; and
- Receipt and consolidation of public comments.

2.0 PROJECT MAILING LIST

For the purpose of informing the public of all relevant project activities, a mailing list was compiled during the SI/RAR and is regularly updated by the County. The list will be updated prior to the issuance of fact sheets or the performance of any public meetings. For these purposes, the term "public" includes area residents, government officials, media, business interests, environmental and civic groups, and other interested parties. A list of adjacent property owners was compiled utilizing Section, Block, and Lot (SBL) numbers and their corresponding tax payer information. This portion of the list is maintained in confidence and will not be included as part of the CPP available at the document repository (described below).

Appropriate media outlets including local newspapers, radio, and television stations are part of the project mailing list. In addition, existing mailing lists comprised of local elected officials, businesses, and other civic and environmental groups have been identified and compiled. The mailing list will be updated throughout the project as necessary. Enhanced outreach will be conducted to ensure that all parties, including the project staff, with information about the project site are included on the master list.

3.0 IDENTIFICATION OF A LOCAL DOCUMENT REPOSITORY

As a result of discussions with local area leaders and government officials, the Dunkirk Free Library, located at 536 Central Avenue was identified as the document repository. The repository is situated in a geographic location that is in close proximity to the project site and surrounding area, provides for handicapped accessibility, and is open to the public outside normal business hours. The repository helps ensure that pertinent documents and other project information are readily available to the public.

4.0 FACT SHEETS

A series of fact sheets will be produced and distributed at major milestones within the project. Fact sheets will be made available through direct mail to all individuals and organizations included on the mailing list. Major milestones within the project include:

- Prior to initiation of the remedial activities; and
- Completion of the Remedial Closeout Report.

Fact Sheets will be two-color, double-sided 8½" x 11" documents, in which two pages of text and graphics will be displayed.

5.0 MEETINGS

Given the size and nature of the former Roblin Steel Site remedial activities, it is anticipated that two public meetings may be conducted by the County. The meetings will be conducted at major milestones in the project and will likely correspond to the distribution of fact sheets as previously described. The meeting date, time and location will be announced via a press release to local media outlets, and notices will be sent to all individuals included on the project mailing list.

6.0 RECEIVE AND CONSOLIDATE PUBLIC COMMENTS

All agency and citizen inquiries and comments received shall be maintained as part of the project mailing list database. It is further recommended that all citizen inquiries be acknowledged and responded to. This feedback loop is a particularly important piece of any public involvement program in that it helps to build and maintain trust that later becomes critical to public buy-in. This individual attention is seen as a minimal investment in terms of the return that the project will gain by understanding wide-spread concerns and issues long before the completion of the remedial program.