THIS REPORT WAS PREPARED FOR THE NEW YORK STATE DEPARTMENT OF STATE WITH FUNDS PROVIDED UNDER TITLE 11 OF THE ENVIRONMENTAL PROTECTION FUND ACT

August 23, 2005

Brownfield Cleanup Program Soil Management Plan

Former Canadian Pacific Rail Yard Site (BCP Site #C510022) Dock Street City of Plattsburgh Clinton County, New York

Prepared for:

CITY OF PLATTSBURGH
OFFICE OF COMMUNITY DEVELOPMENT
41 City Hall Place
Plattsburgh, New York 12901

Prepared by:

C.T. MALE ASSOCIATES, P.C.
50 Century Hill Drive
P.O. Box 727
Latham, New York 12110
(518) 786-7400
FAX (518) 786-7299

C.T. Male Project No: 02.8112

BROWNFIELD CLEANUP PROGRAM
SOIL MANAGEMENT PLAN
FORMER CANADIAN PACIFIC RAIL YARD
CITY OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

TABLE OF CONTENTS

Page

BROWNFIELD CLEANUP PROGRAM
SOIL MANAGEMENT PLAN
FORMER CANADIAN PACIFIC RAIL YARD
CITY OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

TABLE OF CONTENTS

FIGURES

APPENDICES

BROWNFIELD CLEANUP PROGRAM
SOIL MANAGEMENT PLAN
FORMER CANADIAN PACIFIC RAIL YARD
CITY OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

TABLE OF CONTENTS

EXHIBITS

1.0 INTRODUCTION

1.1 Program Modification

The City of Plattsburgh Office of Community Development (City) submitted an application to the New York State Department of Environmental Conservation (NYSDEC) for participation in the New York State Voluntary Cleanup Program (VCP) in 2003 and subsequently executed a Voluntary Cleanup Agreement with NYSDEC on August 13, 2003 to investigate and remediate the project site known as the Former Canadian Pacific (CP) Rail Yard Site.

Due to unplanned circumstances, the City recognized the benefits to leaving the VCP and jointly applied for eligibility in the Brownfield Cleanup Program (BCP) with Valcour Island, LLC (Valcour), the developer of the site. The City and Valcour were approved by NYSDEC to participate in the BCP on August 4, 2005.

As this document was originally prepared as a function of the VCP there is reference to the VCP throughout this document and attachments. As the BCP is the successor to the VCP, the technical requirements for this document have not changed and therefore the references herein to VCP were not edited to BCP. It should be noted that the work completed under the VCP was referenced under the VCP site number V-00637-5 and the work to be completed under the BCP will be referenced under the site number C510022.

1.2 Background

The site, which is the subject of New York State Voluntary Cleanup Program (VCP) activities, consists of 12 acres and is located north of Dock Street in the City of Plattsburgh, Clinton County, New York. The site has been environmentally characterized through completion of several previous investigations. The user should refer to the previous investigation reports and referenced documents for more detail, as needed. Site reports and documents may be obtained at the City of Plattsburgh Office or New York State Department of Environmental Conservation (NYSDEC) Region 5 Office. The site number, as established by NYSDEC under the VCP, is V-00637-5. The site is generally defined as the area between Bridge and Dock Streets, the Plattsburgh Water Pollution Facility and Lake Champlain's Cumberland Bay. A site location map

prepared using a New York State Department of Transportation 7.5-minute series quadrangle, depicts the site and surrounding areas, and is provided as Figure 1.

The City of Plattsburgh currently owns the subject site. The redevelopment of the site will be initiated in 2005. The site development will include a hotel conference center, paved parking and a public park. Figure 2 depicts the planned site development in a Preliminary Layout Plan prepared by QPK Design of Syracuse, New York, dated September 7, 2004.

The VCP activities were conducted so that the site could be investigated and remediated to a suitable level for redevelopment and use under a restricted residential NYSDEC classification. The planned site development may be constructed at one time or may be a phased approach whereby each phase will build upon the previous to accomplish the overall site development goal. The first phase is expected to be construction of the parking lot in the western and central portions of the site. The second phase is expected to be the construction of the hotel conference center in the central portion of the site. The third and final stage is expected to be construction of a park in the eastern portion of the site. Residual soil contamination may be encountered during construction or other subsequent site activities which disturb site surface and subsurface soils. Therefore, this Soil Management Plan (SMP) is intended to outline standard procedures to be implemented and followed during redevelopment activities, and for management of the site's acceptable surface cover materials.

1.3 Purpose and Objectives

The purpose of the SMP is to mitigate potential impacts to human health and the environment during construction activities and at any time in the future when site acceptable cover materials may be excavated or otherwise disturbed. The site has been investigated as part of the VCP activities in accordance with the NYSDEC and New York State Department of Health (NYSDOH) approved VCP Site Investigative Work Plan (June 2003). In consideration of the contemplated future use of the site (restricted residential) the remedial approach for addressing site soil contamination will be to establish and maintain a barrier to contact with soils which may be contaminated above Standards, Criteria and Guidance (SCGs). The SMP will become part of an environmental easement so that the transfer of responsibilities can occur with transfer of property ownership.

The objective of this SMP is to describe requirements for management of soil material during future activities that would breach the cover system at the site. The SMP also presents site specific SCGs (Section 2.0) as determined through the site investigation and remedial action work plan phases of the Voluntary Cleanup Agreement.

The SMP is a portion of the overall remedy that addresses future disturbance/use of contaminated soil remaining on the site after other elements of the remedy have been implemented. A Remedial Action Work Plan (RAWP) for the site has been prepared and must be followed in conjunction with the SMP. The RAWP presents specific areas of the site requiring remedial action and defines the proper soil and waste management in those areas based on the level of existing concentrations.

This SMP and RAWP will be reviewed and approved by NYSDEC as shown in Exhibit 1. This SMP is not intended to serve as a design document for construction activities relating to redevelopment activities. It is the developer's responsibility to prepare a design that incorporates the requirements for acceptable cover and soil management as set forth in this SMP.

1.4 Site History

The site has been operated as a rail yard since the 1852. The main building at the site was formerly used as a railway machine and repair shop. A roundhouse and turntable previously existed to the east of the main building. The main building and roundhouse was reportedly used for maintenance and servicing locomotive engines that appear to have in part caused environmental impacts to the site. Other site impacts are likely associated with the overall use of the site as a rail yard for nearly 150 years. Historical use of the site has included placement of fill soils from off-site locations. The fill soils placed on site include cinder, slag and ash and appear to be residually impacted. A more detailed description of the site history is provided in the February 2005 Site Investigation Report prepared by C.T. Male Associates, P.C.

1.5 Previous Investigations

Several environmental investigations have been performed at the property since 2002 by various consultants. C.T. Male completed a VCP site investigation of the subject site in accordance with a NYSDEC and New York State Department of Health (NYSDOH) approved VCP Site Investigation Work Plan dated February 4, 2004.

C.T. Male also completed a June 28, 2002 Phase I Environmental Site Assessment (ESA) of the site for the City of Plattsburgh Community Development Office. In general, the ESA determined the subject site was used as a rail yard and roundhouse before the turn of the 20th Century.

Based on the findings and conclusions of the June 28, 2002 Phase I ESA, a Phase II ESA of the site was completed to address the issues identified in the Phase I ESA report. The Phase II ESA (September 19, 2002) included the completion of ten test borings/monitoring wells, the collection of soil and groundwater samples, and the analysis of select soil and groundwater samples for volatile and semi volatile organic compounds and the eight RCRA metals. The Phase II ESA investigation identified low level metal and volatile/semi-volatile organic concentrations in the soil and groundwater at select boring and monitoring well locations, some of which exceeded their NYSDEC regulatory standard and/or guidance values.

Other consultants have completed investigative activities and reports prior to the City's involvement with the VCP. The findings of previous investigations were reviewed and considered in the preparation of the Site Investigation Report and this SMP. These investigation reports include the following:

- September 2001 Phase I ESA by Griffin International
- November 2001 Phase I ESA by Malcolm Pirnie, Inc.
- April 2002 Phase 1A Literature Review and Archeological Sensitivity Assessment and Phase 1B Archeological Field Reconnaissance by Hartgen Archeological Associates, Inc.
- November 2002 Focused Phase II Site Assessment by Malcolm Pirnie, Inc.

The findings of these past site investigations were presented and discussed within C.T. Male's February 2005 VCP Site Investigation Report, and were the basis for the preparation of this Soil Management Plan (SMP).

1.6 Nature and Extent of Contamination

Based on site specific sampling and analysis of surface soil/fill and subsurface soil/fill throughout the site, contaminants of concern (COCs) have been identified as semi-volatile organic compounds and metals in soil/fill at concentrations exceeding NYSDEC standards, criteria and guidance (SCGs). There were no volatile organic

compounds, pesticides or PCBs detected in surface soil/fill or subsurface soil/fill at concentrations exceeding SCGs.

Semi-volatile organic compounds and metals are likely present within site surface and subsurface soil/fill as a result of historical site use. These uses have included a rail car maintenance facility, a coal yard/coal elevator, on site placement of cinders and ash from coal fired locomotives and building furnaces, placement of off site materials to expand the northern portions of the site, and to a lesser extent due to the use/storage of petroleum products.

Based on the findings of the site investigation, select semi-volatile organic compounds and metals were identified as COCs within surface soil/fill. The numbers in parentheses represent the number of samples where the COC was detected within the group of samples analyzed. The semi volatile organic compounds identified as COCs are: benzo(a)anthracene (13 of 20), benzo(a)pyrene (20 of 20), benzo(b)fluoranthene (10 of 20), benzo(k)fluoranthene (3 of 20), chrysene (13 of 20), dibenzo(a,h)anthracene (14 of 20), and indeno(1,2,3-cd)pyrene (1 of 20). These compounds were detected sporadically across the site, and not all of the samples contained each of the listed COCs. The metal COCs in surface soil/fill are: arsenic (3 of 20), beryllium (2 of 20), cadmium (2 of 20), copper (15 of 20), iron (10 of 20) mercury (1 of 20), nickel (3 of 20), selenium (3 of 20) and zinc (13 of 20).

Based on the findings of the site investigation, the semi-volatile organic compounds identified as COCs in the subsurface soil/fill are similar to those detected in surface soil/fill and include: 2-methylnaphthalene (1 of 28), benzo(a)anthracene (11 of 28), benzo(a)pyrene (14 of 20), benzo(b)fluoranthene (8 of 28), benzo(k)fluoranthene (7 of 28), chrysene (14 of 28), dibenzo(a,h)anthracene (9 of 28), dibenzofuran (1 of 28), fluoranthene (1 of 28), fluorene (1 of 28), indeno(1,2,3-cd)pyrene (1 of 28), naphthtalene (2 of 28), phenanthrene (1 of 28) and pyrene (2 of 28). The majority of elevated semi-volatile organic compounds were found within the central portion of the site near the site building, roundhouse and oil cistern. The perimeter areas of the site show little to no semi-volatile organic compounds in subsurface soil/fill at concentrations above SCGs. The metal COCs in subsurface soil/fill are: arsenic (6 of 28), barium (1 of 28), beryllium (17 of 28), calcium (1 of 28), copper (17 of 28), iron (28 of 28), lead (1 of 28) mercury (5 of 28), nickel (14 of 28), selenium (15 of 28) and zinc (18 of 28).

Groundwater samples were collected as part of the VCP site investigation from existing site monitoring wells installed in 2002 and from new site monitoring wells installed in 2004. The laboratory results for the groundwater samples indicate volatile and semi-volatile organic compounds, pesticides, and PCBs were not detected above SCGs. Several metals were detected in groundwater above their respective SCGs. The numbers in parentheses represent the number of samples where the COC was detected within the group of samples analyzed. These metals are: antimony (2 of 14), cobalt (2 of 14), iron (14 of 14), lead (2 of 8), magnesium (2 of 8), manganese (8 of 14), sodium (12 of 14) and thallium (4 of 14).

Soil gas samples were collected from locations within the footprint of proposed buildings. The analytical results detected several volatile organic compounds at relatively low to moderate concentrations. Currently, there are no promulgated regulatory values for comparison.

1.7 Contemplated Use and Property Use Limitations

The contemplated use of the subject site under the VCP is restricted residential. Restricted residential is defined as: "residential uses such as homes, apartments, mobile home parks, dormitories, schools, and day-care facilities are allowed, but require engineering and/or institutional controls for the use to be protective".

Property use limitations for this contemplated use, as described in the Voluntary Cleanup Agreement (VCA), will be established in deed restrictions for the property as filed with the City of Plattsburgh clerk and/or the Clinton County clerk. Deed restrictions are applicable to successors and assigns of the property. Proposed restrictions are listed within the VCA, which generally include the following. The Final Declaration of Covenants and Restrictions should be reviewed for exact listing of the restrictions for the property.

- There shall be no construction, use or occupancy of the Property that results in the disturbance or excavation of the property which threatens the integrity of the acceptable surface cover, or which results in unacceptable human exposure to contaminated soils unless prior written approval is provided by the Relevant Agency or shall the Relevant Agency no longer exist.

- The owner of the Property shall maintain the cap covering the Property by maintaining its acceptable surface cover or, after obtaining the written approval of the Relevant Agency, by capping the Property with another material.

- The owner of the property shall prohibit the Property from ever being used for purposes other than Restricted Residential without the express written waiver of such prohibition by the Relevant Agency.

- The owner of the property shall prohibit the use of groundwater underlying the Property without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Relevant Agency.

- The property owner shall continue in full force and effect any institutional and engineering controls required under the Agreement and maintain such controls unless the owner first obtains permission to discontinue such controls from the Relevant Agency.

- The Declaration of Covenants and Restrictions shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the Property, and shall provide that the owner and its successors and assigns consent to enforcement by the Relevant Agency or the prohibitions and restrictions that Paragraph X of the Agreement to be recorded, and hereby covenant not to contest the authority of the Relevant Agency to seek enforcement.

- Any deed of conveyance of the Property, or any portion thereof, shall recite, unless the Relevant Agency has consented to the termination of such covenants and restrictions, that said conveyance is subject to the Declaration of Covenants and Restrictions.

- Any future construction of occupied structures at the Property shall include the installation of a vapor barrier to mitigate the potential for soil vapors from entering those structures.

1.8 Summary of the Remedy

The contaminants of concern (COCs) for soil and groundwater have been identified in section 1.5 of this document. The identification of the remedial action objectives for the site are based primarily on the human health and environmental risks posed by the site as identified in the Site Investigation Report prepared by C.T. Male. Based on the restricted residential contemplated use of the property, the remedial action objectives

for the site are to minimize potential exposure to on-site surface soil, subsurface soil, and ground water and to prevent releases from the petroleum impacted soils.

To achieve the remedial action objectives, the petroleum impacted soils will be removed, a surface cover system will be placed over the entire property, and groundwater use restrictions will be placed. The surface cover system will be placed directly on top of the re-graded on-site soil/fill material and will consist of the materials described in Section 3.2. The scope of work for the selected remedy for the site is described in detail in the NYSDEC approved Remedial Action Work Plan (RAWP).

1.9 Soil Management Program Responsibility

The developer and future property owners will be responsible for implementing and monitoring the requirements of the NYSDEC approved SMP. The developer and owner will not authorize their employees, agents, or assigns to disturb site soils, except in accordance with the NYSDEC approved SMP and RAWP. The developer or property owner will be responsible for proper notification and reporting to regulatory agencies (i.e., NYSEC Region 5) prior to and following site development as described in Section 4.1.

It is expected that NYSDEC will provide periodic construction oversight and monitoring during site redevelopment activities to document that the requirements of this SMP are followed.

2.0 STANDARDS, CRITERIA AND GUIDANCE

In order to identify which site soils require special handling and management standards, criteria and guidance (SCGs) need to be determined for the site. SCGs are promulgated requirements and non-promulgated guidance that govern site activities. Based on the contemplated use of restricted residential, discussions with NYSDEC and NYSDOH, and as presented in the Remedial Action Work Plan, the site SCGs to be used for this project are NYSDEC TAGM #4046 Recommended Soil Cleanup Objective values (January 24, 1994).

For completion of this project, it was not cost effective to complete the site investigation in a manner that would differentiate between commingled contaminates (i.e., metals and semi-volatile organic compounds) in soil within all areas of the site. Therefore, for the remedial measures and future soil/fill handling on-site, it has been assumed that the soil within the boundaries of the subject site contains concentrations of metals and semi-volatile organic compounds above SCGs. As such, all of the site soils must be handled in accordance with this Soil Management Plan. Disposition of soil/fill (i.e., natural soils mixed with non-native materials) and native soils will be managed in accordance with the following general guidelines:

- Soil/fill which exists on-site with low level metals and semi-volatile organic compounds above site SCGs which will not be disturbed as part of site development will be required to be covered with an acceptable surface cover system.

- Soil/fill which exists on-site with low level metals and semi-volatile organic compounds above site SCGs, and are disturbed can be reused on-site, provided it is placed beneath an acceptable surface cover system.

- Soil/fill which exists on-site with low level metals and semi-volatile organic compounds above site SCGs that can not be managed on-site will be required to be properly transported and disposed at a disposal/treatment facility permitted to accept such material.

- Soil/fill which exists on-site with low level metals and semi-volatile organic compounds below site SCGs can be reused on-site as general fill, provided it is

placed beneath an acceptable surface cover system, or may be transported off-site provided the proposed disposal location is approved by NYSDEC prior to disposal.

- Native soils which have not been commingled with non-native materials, and do not reveal subjective evidence of contamination (i.e., staining or odors) do not require special handling or management.

- Soil/fill which exists on-site with petroleum contaminants above site SCGs will be transported off-site at a disposal/treatment facility permitted to accept such material.

- Soil/fill which exists on-site with petroleum contaminants below site SCGs can be used on-site as general fill, provided it is placed beneath an acceptable surface cover system, or can be transported off-site, provided the proposed disposal location is approved by NYSDEC prior to disposal.

3.0 SURFACE COVER SYSTEM

3.1 Purpose

The purpose of the surface cover system is to mitigate the potential for human contact with site soils containing COCs above SCGs and mitigate the potential for contaminated runoff from the property. Soils will be managed at the subject site by removal and off-site disposal of petroleum impacted soils that exceed site SCGs from the Remedial Measure Areas, and by placing acceptable surface cover materials (as described in Section 3.2) over remaining site soil / fill.

Upon completion of remedial activities, areas of the site which contain a surface cover system over soils with concentrations exceeding site SCGs must be protected and maintained in accordance with this SMP. These areas will generally consist of the entire site, but will be defined in the Remedial Action Report upon completion of the remedy.

3.2 Acceptable Surface Cover Materials

In general, no area of the site will be put to its contemplated use until an effective surface cover or cap is placed over soils containing COCs at concentrations above site SCGs.

The acceptable surface cover will consist of one of the following types of material.

- Soil: Twelve inches of vegetated soil cover. The soil must be below the site SCGs or Eastern USA Background for COCs on a total basis. A demarcation layer will underlie the soil as an indicator of surface cover breakdown in designated soil encapsulation areas. A demarcation layer will consist of a material or materials, which upon observation or excavation, readily demarcate the acceptable surface cover from underlying soils.

- Asphalt: a minimum of six inches of material (asphalt and subbase) in areas that will become roads, sidewalks, and parking lots. Type and thickness of the asphalt and subbase material will be designed based on the intended use of the area.

- Concrete: a minimum of six inches of material (concrete and subbase) in areas that will become slab-on-grade structures or for roads, sidewalks, and parking lots in

lieu of asphalt. Type and thickness of the concrete and subbase material will be designed based on the intended use of the area. For slab-on-grade habitable structures, a vapor barrier will be designed and constructed beneath the concrete slab to prevent soil vapors from entering site structures.

The topsoil used for final soil cover shall be capable of sustaining plant growth, and free of extraneous material harmful to plant growth. Grassed areas will be seeded with a sustainable perennial mixture with appropriate erosion control measures taken until the perennial grasses are established.

To reduce the disturbance of soil cover material, clean soil berms will be constructed in areas where shallow-rooted trees and shrubs will be planted. The berms will be of sufficient thickness to allow the excavation of only clean fill deep enough to plant the tree or shrub root ball. The berm material will contain sufficient organic material to allow tree and/or shrub growth, and will be of sufficient strength to support trees and/or shrubs at their maximum height.

4.0 SUB-SLAB VAPOR BARRIER SYSTEM

4.1 General

As required by NYSDEC and NYSDOH, an active mitigation system will be designed and constructed beneath the concrete slab of habitable site structures to prevent soil vapors from entering site structures. Mitigation systems must be designed and installed by a professional engineer or environmental professional acceptable to the State. The design and installation of the mitigation system will be documented and reported to NYSDEC and NYSDOH. As applicable, an information package on the mitigation system's operation, maintenance and monitoring will be given to the appropriate personnel (i.e., building owner, building tenant, etc.).

4.2 Design/Installation Requirements

The goal of the mitigation systems is to minimize and possibly eliminate the infiltration of subsurface organic vapors into habitable site buildings. Mitigation systems should be designed and installed in accordance with the following:

- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, February 2005 (Public Comment Draft)
- USEPA Radon Mitigation Standards, EPA 402-R-93-078, Revised April 1994
- USEPA Model Standards and Techniques for Control of Radon in New Residential Buildings EPA 402-R-94-009, March 1994

5.0 MANAGEMENT OF SOILS BELOW SURFACE COVER SYSTEM

The purpose of this section is to provide environmental guidelines for management of site soils before, during and after installation of the surface cover system. The repair/replacement of the surface cover system during future intrusive site work should also follow these guidelines.

5.1 General Guidelines

The following are general guidelines for management of surface and subsurface soils at the site containing COCs above Site SCGs.

- Any breach of the site's surface cover system, including for the purposes of construction or utilities work, must be replaced or repaired in accordance with the approved SMP.

- Control surface erosion and run-off of the entire property at all times, including during construction activities (refer to Section 4.7). This includes proper maintenance of the vegetative cover established on the property.

- Site soils excavated may be reused as backfill material or relocated on-site provided it contains no visual or olfactory evidence of contamination and it is placed beneath an acceptable surface cover material that meets the definition as described in Section 3.2. Hazardous soils (on the basis of TCLP testing) will not be allowed to be placed on-site, but will be required to be disposed off-site at a permitted waste disposal facility.

- Site soils should not be reused as acceptable surface cover material unless analytical testing is performed to determine the contaminants are equal to or below site SCGs.

- Site soils that are excavated and intended for removal from the property must be characterized, managed and properly disposed of in accordance with NYSDEC regulations and directives.

- Prior to construction activities, workers are to be notified of the site conditions with respect to the COCs. The scope of work to be implemented must be reviewed and approved by the Owner or its designated representative. Invasive work must be

performed in accordance with all applicable local, state and federal regulations to protect worker health and safety. The work must also be performed in conformance with the requirements of the NYSDEC approved SMP and RAWP.

5.2 Excavation and Grading Prior to Placement of Surface Cover

As part of site development plans, the site may require grading prior to placement of acceptable surface cover. The site soils and any soil piles generated during intrusive activities will be graded to the surface required for redevelopment. Trees, shrubs, roots brush, masonry, rubbish, scrap, debris, pavement, curbs, fences, etc., if present, will be removed and properly disposed off-site or temporarily stockpiled in accordance with applicable solid waste regulations. Efforts will be made to remove excess soil from tree roots, brush or fence posts, as applicable, prior to off-site disposal or stockpiling. Only exempt materials as defined in 6NYCRR Part 360-7.1(b)(1) such as recognizable uncontaminated concrete and concrete products (including steel or fiberglass reinforcing rods that are embedded in the concrete), asphalt pavement, brick, glass, rock, trees and stumps are allowed for stockpiling. Prior to placement or replacement of surface cover, protruding materials will be removed from the ground surface.

5.3 Potentially Contaminated Soil

Based on the site investigation, soils within the site include fill composed of cinder, slag and ash, which vary in color and appearance. Soil that is unnaturally discolored, tinted, dyed, and has an unnatural sheen and exhibits petroleum or chemical odors and/or produces elevated Photo-ionization Detector (PID) readings (i.e., sustained 5 ppm or greater) will be considered potentially contaminated and stockpiled on the property for further assessment. The property owner will be notified and will retain a qualified consultant to observe excavation activities, field screen soil samples to determine level of excavation required to remove the observed contamination and, as necessary, collect samples for laboratory analysis. The potentially contaminated soil will be stockpiled on two layers of 6-mil polyethylene sheeting. The stockpiled, potentially contaminated soil will also be completely covered using polyethylene sheeting to reduce the infiltration of precipitation and the migration of dust. Sampling and analysis will be completed in accordance with applicable NYSDEC guidance documents for reuse, treatment, or disposal determination. Soil that exhibits elevated PID readings containing one or more

constituents in excess of site SCGs for volatile and semi-volatile organic compounds, will be transported off-site to a permitted waste management facility.

5.4 Underground Storage Tanks and Buried Drums

Buried drums and underground storage tanks at the subject site have not been identified nor are expected to be present. If buried drums or tanks are encountered during construction, excavation activities must cease and the property owner and NYSDEC will be notified. The drums and tanks will be handled, removed and cleaned by appropriately trained personnel in accordance with all applicable federal, state and local regulations. The contents of the drums and/or tanks will be characterized and properly disposed off-site. Soils surrounding the tanks and drums will be assessed for impacts in accordance with applicable guidance documents (i.e., PBS regulations, NYSDEC TAGMs, etc.).

5.5 Excavated Soil Reuse and Disposal

Excavated soil may be used on-site below the surface cover system. Soil that is excavated as part of development that can't be used as fill below the surface cover system will be characterized prior to transportation off-site for disposal at a permitted facility or otherwise NYSDEC approved location. The frequency and parameters of the characterization will be based on the desired disposal facility. The soil analyses will be performed by a NYS Department of Health (DOH), Environmental Laboratory Assurance Program (ELAP) certified analytical laboratory.

Soil that exhibits elevated PID readings may also be used on-site as fill below the surface cover system if characterized and found to contain volatile and semi-volatile organic compounds less than site SCGs. This soil may not be used as acceptable surface cover material, or as backfill in landscape areas for the planting of trees and shrubs.

5.6 Subgrade Soils

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

- Any site soils not exhibiting elevated PID readings.

- Off-site borrow soils that are documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes products, chemical products or petroleum products.

- Off-site soil that does not meet the definition of solid waste in accordance with 6NYCRR Part 360-1.2(a).

- Virgin soil (i.e., derived from a natural pit) that is documented in writing to be native soil material from areas not having supported any known prior historical industrial, commercial development, or agricultural use. Virgin soil will be subject to collection of one representative composite sample per source. The sample should be analyzed for the Target Compound List (TCL) volatile organic compounds, semi-volatile organic compounds, pesticides, PCBs, and metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and cyanide). The soil will be acceptable for use as backfill provided that all parameters are equal to or below site SCGs.

- Non-virgin soils (i.e., not derived from a natural pit) that will be analyzed at a frequency of one composite sample for every 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 for the first 1,000 cubic yards meet site SCGs, the sample collection frequency will be reduced to one composite sample 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 for every 5,000 cubic yards, provided previous samples met site SCGs.

5.7 Erosion Controls

All erosion & sediment control measures and pollution prevention measures will be evaluated, designed and implemented by the contractor in compliance with the "New York Guidelines for Urban Erosion and Sediment Control" and the "New York State Stormwater Management Design Manual".

5.8 Dust Controls

Soil handling, depending on the moisture content of the soil, has the potential for generating dust or particles in which COCs, if present, may be adhered to and released into the environment. Dust suppression techniques will be employed as necessary to prevent, control and mitigate fugitive dust during remediation and post-remediation construction and redevelopment. All reasonable attempts will be made to keep visible and/or fugitive dust to a minimum. Techniques to be utilized may include one or more of the following:

- Applying water to access roads.
- Restricting construction and other vehicle speeds on-site.
- Hauling materials in tarped containers or construction vehicles.
- Spraying or misting excavations and equipment prior to and during soil disturbances.
- Tarping or applying spray type cover to subgrade areas left exposed for greater than 90 days.
- Establishing vegetative cover immediately after placement of acceptable surface soil cover.

5.9 Dust Control Monitoring

Visual assessment for visible/respirable dust must be implemented during ground intrusive activities completed after remedial actions are complete. Misting/wetting the area must be performed, as needed, on the basis of the visual assessment to assure no visible dust migrates beyond the immediate work area. If dust does not appear to be controlled by this or other typical construction methods, dust monitoring would be required to determine if particulate action levels are being exceeded. Particulate monitoring should be performed in accordance with the applicable sections of the NYSDOH Generic Community Air Monitoring Plan (Appendix A) and NYSDEC TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites (Appendix B).

5.10 Construction Water Management

Due to the subsurface soil conditions observed during previous investigations, groundwater infiltration may be significant and will require management if excavations reach five to eight feet below grade. Water pumped from excavations, if any, will be managed properly in accordance with all applicable federal, state and local regulations.

If any sheens are observed on the water surface, the water will be pumped from the excavations and containerized and analyzed in general accordance with Surface Water and Groundwater Standards set forth in 6NYCRR Part 703.5 and applicable local sewer authority discharge requirements. If the water meets the water quality standards, it may be discharged to the ground surface or publicly owned treatment works. If the water does not meet the water quality standards, the water will be discharged to the local sewer under the necessary permits, treated and discharged under proper permitting, or properly disposed off-site.

5.11 Access Controls

Access to the soil on the property will be controlled until the final cover system is in place to prevent direct contact with site soils. Excavated site soils that are stockpiled on-site, that are not within the limits of the temporary construction fencing, will be temporarily covered to limit access to the material. Types of fencing will include orange construction fencing or other means to prevent and control access to the construction areas. Fencing will be posted with "No Trespassing" signs.

5.12 Management and Long-term Maintenance of Surface Cover System

The purpose of this section is to provide environmental guidelines for management of subsurface soils and the long-term maintenance of surface cover system during any future intrusive work which breaches the acceptable surface cover. Maintenance of the surface cover at the site will be the responsibility of the property owner, or its successors and assigns.

- Control surface erosion and run-off of the entire property at all times, including during construction activities. This includes proper maintenance of the vegetative cover established on the property which is not disturbed during development activities.

- Replace or repair any breach of the surface cover system, including the installation of utilities and construction work, using an acceptable surface cover material, as defined in Section 3.2. A certification that work required to replace or repair the surface cover system was performed in conformance with the NYSDEC approved SMP will be required in the annual reporting for the year it was completed.

- Annually inspect the final surface cover system for sloughing, cracks, settlement, erosion, distressed vegetation, damage or other items that affect the integrity of surface cover system.

- Repair any deficiencies observed in the final surface cover in a timely manner.

- Prepare and submit to the Department an Annual Report by January 15th of each year. The Annual Report shall contain certification by a P.E. that the institutional controls put in place, pursuant to the NYSDEC approved SMP and VCA, are still in place, have not been altered and are still effective; that the remedy and protective cover have been maintained throughout the year; and that the conditions of the site remain protective of human health and the environment.

6.0 NOTIFICATION AND REPORTING REQUIREMENTS

6.1 Notification

There shall be no construction, use or occupancy of the property that results in the disturbance or excavation of the property, which threatens the integrity of the acceptable surface cover system or which would result in human exposure to contaminated soils, unless prior written approval by the NYSDEC is obtained. Therefore, notification of NYSDEC at the address listed below should precede any such work by at least 60 days, to allow time for review and any necessary revisions of a work plan, if applicable.

- Mr. Russell Huyck, P.E.
  NYS Department of Environmental Conservation (Region 5 Office)
  Route 86, P.O. Box 296
  Ray Brook, New York 12977-0296
  Telephone No.: (518) 897-1242

Small scale projects, as defined in Section 4.7.2 do not require the above described notification and reporting. For emergency repairs or alterations that require excavation at the site, notification and reporting will occur in a timely manner after completion of work.

Other notification requirements for this site include the following:

- NYSDEC will be immediately notified if buried drums or underground storage tanks are encountered during soil excavation activities.

- Under State Law, all petroleum and most hazardous material spills must be reported to NYSDEC Hotline (1-800-457-7362) within New York State. Petroleum spills must be reported to DEC unless they meet all of the following criteria; the spill is known to be less than 5 gallons; the spill is contained and under the control of the spiller; the spill has not and will not reach the State's water or any land; and the spill is cleaned up within 2 hours of discovery. For spills not deemed reportable, it is recommended that the facts concerning the incident be documented by the spiller and a record maintained for one year.

6.2 Reporting

The following minimum reporting requirements shall be followed by the owner prior to and following site development, as appropriate:

The Owner shall complete and submit to the Department an Annual Report by January 15th of each year. The Annual Report shall contain certification that the institutional controls put in place, pursuant to the NYSDEC approved SMP and VCA, are still in place, have not been altered and are still effective; that the remedy and protective cover have been maintained throughout the year; and that the conditions of the site remain protective of human health and the environment.

If the surface cover system has been breached during the year covered by that Annual Report, the Owner of the property shall include the following in such Annual Report:

- A certification that work was performed in conformance to the NYSDEC approved SMP.
- Plans showing areas and depth of fill removal.
- Copies of daily observation reports for soil related issues.
- Description of erosion and or dust control measures.
- A text narrative describing the excavation activities performed, health and safety monitoring performed, quantities and locations of soil/fill excavated and disposed on-site, sampling locations and results, if any, description of problems encountered, location and acceptability of test results for backfill sources, if any, and other pertinent information necessary to document that the site activities were properly performed.

If the disturbed area exceeds one acre, the following may also be required in the annual certification.

- Plans showing before and after survey elevations on a 100-foot grid to document the thickness of acceptable surface cover material (soil only).

6.3 Analytical Data

All characterization sampling and other necessary sampling during site redevelopment activities will be conducted in accordance with the most recent NYSDEC Analytical Services Protocol (ASP), and in part consistent with Section 2 of Draft DER-10 Technical Guidance for Site Investigation and Remediation. The laboratory utilized for laboratory analyses will be certified through the NYSDOH Environmental Laboratory Approval Program (ELAP) to perform Contract Laboratory Program (CLP) analysis and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled. The laboratory will maintain these certifications for the duration of the project.

Procedures for chain of custody, laboratory instrumentation calibration, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per NYSDEC ASP and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike / matrix spike duplicate shall be performed at a rate of 5% (1 per up to 20 samples) and will be used to assess the quality of the data. The laboratory's in-house quality assurance / quality control limits will be utilized whenever they are more stringent than those suggested by the EPA methods.

7.0 HEALTH AND SAFETY PROCEDURES

7.1 General

Invasive work at the property will be performed in accordance with applicable local, state, and federal regulations to protect worker health and safety. If intrusive work is expected to breach the surface cover system at the property after remedial actions (as defined in the Remedial Action Work Plan) are completed, contractors performing redevelopment or maintenance activities will be required to prepare and follow a site specific, activity specific, Health and Safety Plan (HASP). The HASP will also include provisions for protection of the community (i.e., Community Air Monitoring Plan). The HASP will be prepared in accordance with the regulations contained in OSHA 29CFR 1910.120 and inclusive of the components of the NYSDOH Generic Community Air Monitoring Plan and in part NYSDEC TAGM 4031.

7.2 Construction Personnel

Contractors engaged in subsurface construction or maintenance activities (e.g., utility workers) will be required to implement appropriate health and safety procedures for handling site soils. These procedures may involve, donning adequate personal protective equipment, performing appropriate air monitoring, and implementing other engineering controls as necessary to mitigate potential ingestion, inhalation and contact with residual constituents in the soils. Recommended health and safety procedures include, but may not be limited to, the following:

- While conducting invasive work at the Site, the Contractor shall provide safe and healthful working conditions. The Contractor shall comply with all New York State Department of Labor regulations and published recommendations and regulations promulgated under the Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and with laws, rules, and regulations of other authorities having jurisdiction. Compliance with governmental requirements is mandated by law and considered only a minimum level of safety performance. The Contractor shall insure that all work is performed in accordance with recognized safe work practices.

- The Contractor shall be responsible for the safety of the Contractor's employees and the public. The Contractor shall be solely responsible for the adequacy and safety of all construction methods, materials, equipment and the safe prosecution of the work.

- The Contractor is responsible to ensure that all project personnel have been trained in accordance with 29 CFR 1910.120, if required.

- The Contractor shall have a site specific HASP, written in accordance with 29 CFR 1926.65, prepared, signed and sealed by a safety professional; a safety professional and / or a trained safety representative(s) active on the job whenever the work is in progress; an effective and documented safety training program; and a safety work method check list system.

- Recognition as a safety professional shall be based on a minimum of certification by the Board of Certified Safety Professionals as a Certified Safety Professional and 5 years of professional safety management experience in the types of construction and conditions expected to be encountered on the Site.

- All personnel employed by the Contractor or his subcontractors or any visitors whenever entering the job site, shall be required to wear appropriate personal protection equipment required for that area.

FIGURE 1

SITE LOCATION MAP

MAP REFERENCE :
NYSDOT C52 7.5 MINUTE SERIES QUADRANGLE

Date	RECORD OF WORK	Appr.

Drafter: JAM	Checker: KM
Appr. by:	Proj. No. 02.8112

FIGURE 1 – SITE LOCATION MAP
VCP INVESTIGATION WORK PLAN
FORMER CANADIAN PACIFIC RAIL
DOCK STREET

CITY OF PLATTSBURGH	CLINTON COUNTY, NEW YORK

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 * FAX 518.786.7299
Architecture & Building Systems Engineering * Civil Engineering
Environmental Services * Survey & Land Information Services

SCALE: NOT TO SCALE	DATE: APRIL 23, 2004

NO XREFS

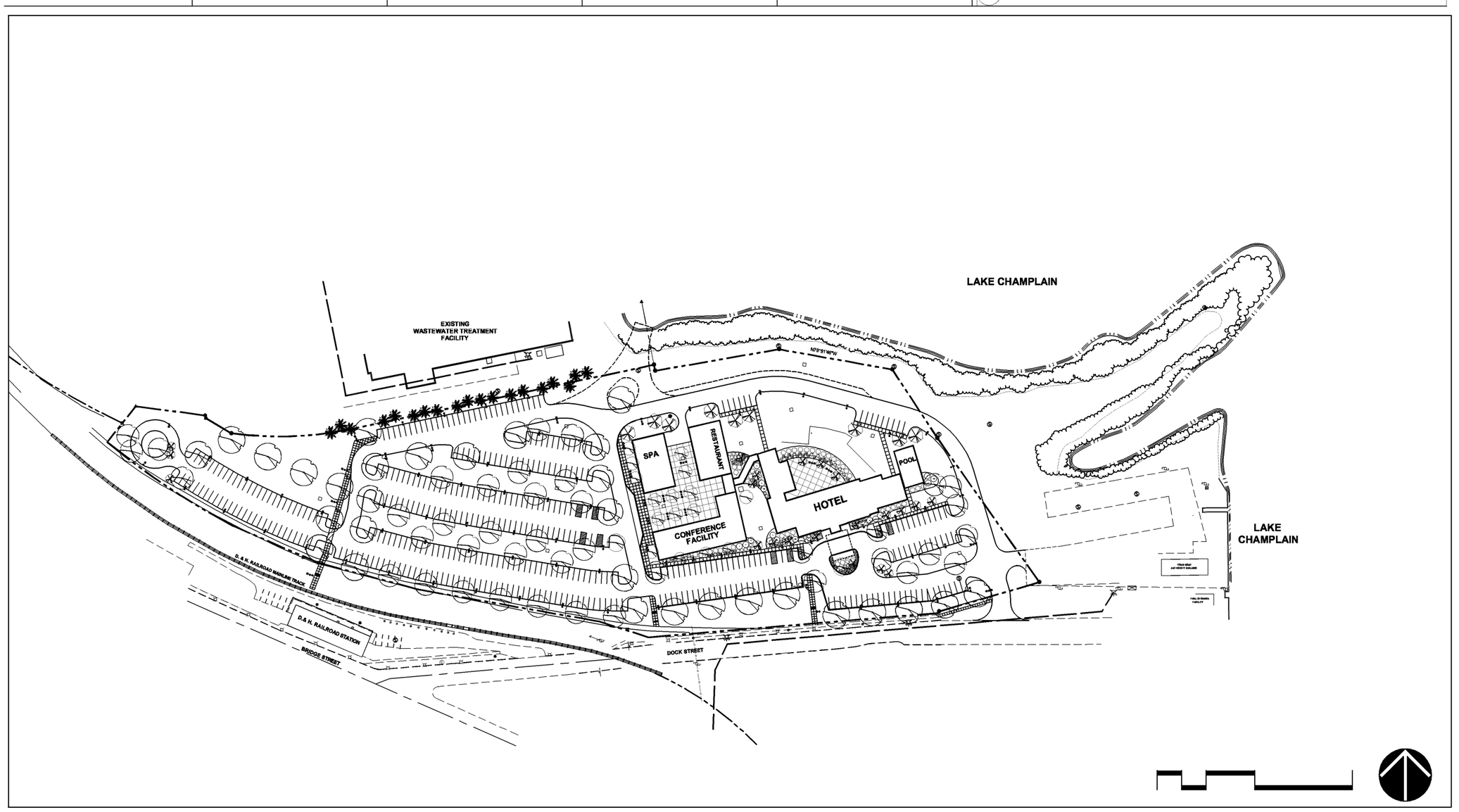
DWG. NO. 03-320

CAD DWG. FILE NAME: AERIAL SITE MAP.DWG

FIGURE 2

PRELIMINARY LAYOUT PLAN PREPARED BY BY QPK DESIGN OF SYRACUSE, NEW YORK

DESCRIPTION	EXISTING	NEW	DESCRIPTION	EXISTING	NEW



QPK
DESIGN
ARCHITECTURE
ENGINEERING
SITE & PLANNING

450 SO. SALINA STREET
SYRACUSE, NEW YORK
TEL 315.472.7806

P.O. BOX 29
13201-0029
FAX 315.472.7806

PLATTSBURGH HOTEL

DOCK STREET
CITY OF PLATTSBURGH, NEW YORK

204268.00

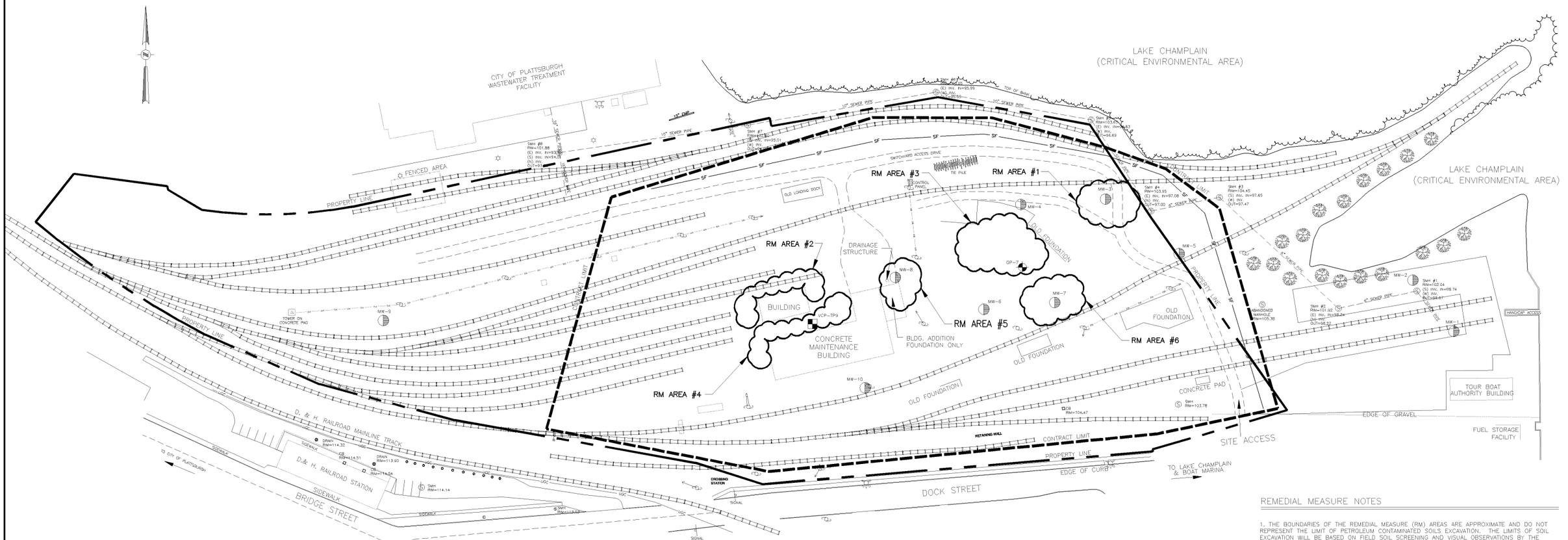
SEPTEMBER 7, 2004

PRELIMINARY
LAYOUT PLAN

L-1

FIGURE 3

APPROXIMATE LOCATION OF REMEDIAL MEASURE AREAS



LEGEND

MW-1	APPROXIMATE LOCATION AND ID OF 1.25-INCH DIAMETER MONITORING WELL.
VCP-TP9	APPROXIMATE LOCATION OF EXPLORATORY TEST PIT LOCATION.
GP-7	APPROXIMATE LOCATION OF EXPLORATORY TEST BORING (NO WELL) LOCATION.
SF	APPROXIMATE LOCATION OF SILT FENCE TO BE INSTALLED BY THE CONTRACTOR.
CONTRACT LIMIT	APPROXIMATE LOCATION OF CONTRACT LIMITS.

REMEDIAL MEASURE NOTES

1. THE BOUNDARIES OF THE REMEDIAL MEASURE (RM) AREAS ARE APPROXIMATE AND DO NOT REPRESENT THE LIMIT OF PETROLEUM CONTAMINATED SOILS EXCAVATION. THE LIMITS OF SOIL EXCAVATION WILL BE BASED ON FIELD SOIL SCREENING AND VISUAL OBSERVATIONS BY THE ENGINEER AND THE ACTUAL LIMITS OF EXCAVATION (HORIZONTALLY AND VERTICALLY) WILL BE DETERMINED BY THE ENGINEER.

2. INSTALL SILT FENCE ACCORDANCE WITH DETAIL 1/ENV1. MAINTAIN SILT FENCE AND STORMWATER CONTROLS THROUGHOUT THE DURATION OF THE PROJECT.

3. PROTECT ALL MONITORING WELLS FROM DAMAGE. CONTRACTOR WILL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH REPLACEMENT OF DAMAGED MONITORING WELLS.

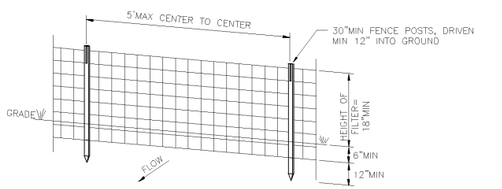
4. REPAIR SITE ACCESS ROAD TO ORIGINAL CONDITION IMMEDIATELY UPON COMPLETION OF REMEDIAL MEASURES.

5. BACKFILL EXCAVATIONS AT THE END OF EACH WORK DAY OR PROTECT THE OPEN EXCAVATION WITH ORANGE CONSTRUCTION FENCE.

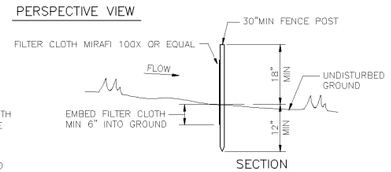
GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



PERSPECTIVE VIEW



SECTION

SILT FENCE DETAIL NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOODEN STAKES
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIALS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

1 / ENV1 **SILT FENCE DETAIL**
SCALE: NONE
CROSS REFERENCE: NONE

GENERAL NOTES:
1.) THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.

MAP REFERENCE:
1.) DRAWING NAMES 02047.DWG AND 02047SITE_A.DWG, PREPARED BY R.M. SUTHERLAND, P.C. OF PLATTSBURGH, NEW YORK, DATED 3-19-02.

2.) PRELIMINARY LAYOUT PLAN, SHEET L-1, PLATTSBURGH HOTEL, PREPARED BY OPK DESIGN OF SYRACUSE, NEW YORK, DATED SEPTEMBER 7, 2004.

DATE	REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			

DESIGNED :
DRAFTED : J.MARX
CHECKED : KM
PROJ. NO: 02.8112
SCALE : ±1"=60'
DATE : JAN. 6, 2005

APPROXIMATE LOCATION OF REMEDIAL MEASURE AREAS

CANADIAN PACIFIC RAIL YARD SITE
NYS VOLUNTARY CLEANUP PROGRAM PROJECT

CITY OF PLATTSBURGH — CLINTON COUNTY, NEW YORK

C.T. MALE ASSOCIATES, P.C.
50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110
518.786.7400 • FAX 518.786.7299
ARCHITECTURE & BUILDING SYSTEMS ENGINEERING • CIVIL ENGINEERING
ENVIRONMENTAL SERVICES • SURVEY & LAND INFORMATION SERVICES

ENV1
SHEET 1 OF 1
DWG. NO: 05-0191

CAD DWG. FILE NAME: RM PLANLOWG

APPENDIX A

NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. 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 (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all <u>ground intrusive</u> activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, 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 or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of 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 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring partculate 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 (mcg/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 mcg/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 mcg/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 and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

H:\Southern\gCAMPr1.doc

APPENDIX B

NYSDEC TAGM #4031, FUGITIVE DUST AND PARTICULATE MONITORING PROGRAM AT INACTIVE HAZARDOUS WASTE SITES

Technical and Administrative Guidance Memorandum #4031

Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites

More information from this division:

Division of Environmental Remediation
More TAGMs

To:	Regional Hazardous Waste Remediation Engrs., Bur. Directors & Section Chiefs
From:	Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation (signed)
Subject:	Technical and Administrative Guidance Memorandum -- Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites
Date:	Oct 27, 1989

1. Introduction

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

2. Background

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

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

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

3. Guidance

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

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Such activities shall also include the excavation,

grading, or placement of clean fill, and control measures therefore should be considered.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM_{10}) with the following minimum performance standards:

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

   Operating Conditions:

   Temperature: 0 to 40^oC
   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.

Back to top of page

EXHIBIT 1

NYSDEC SMP & RAWP APPROVAL LETTERS