Site Management Plan

14 – 58 Charlotte Street, Rochester, NY
NYSDEC Spill #0070043
NYSDEC Spill #0070044

Prepared By:
City of Rochester Department of Environmental Services
Division of Environmental Quality

March, 2011

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1. Introduction

This site-specific Site Management Plan (SMP) was developed to address residual impacts to soil and groundwater associated with past use(s) of the property, specifically, petroleum underground storage tanks (USTs) and a hydraulic lift, formerly at the property located at 14-58 Charlotte Street, City of Rochester, County of Monroe, New York (Site). The location of the Site is depicted on the project locus map included as Figure 1.

Previous investigations identified and documented the existence of soil and groundwater contamination at the Site and in the right-of-way of Haags Alley north of the Site. In addition, light non-aqueous phase liquid (LNAPL) designated as diesel fuel was detected in a groundwater monitoring well located on the southeast portion of the 14-16 Charlotte Street parcel. Some contaminants detected (e.g., light-weight total petroleum hydrocarbon (TPH) identified as mineral spirits and chlorinated volatile organic compounds) appear attributable to an off-site source located north of Haags Alley.

Interim Remedial Measures (IRMs) and Site Remediation, completed in 2002, successfully addressed most of the LNAPLs and petroleum VOCs at the Site, some residual contamination still exists. This SMP should be implemented when work performed at the Site has the potential to disturb soil/fill and/or groundwater in proximity to the areas of concern identified on Figure 2.

1.1. Statement of purpose

The purpose of this SMP is to address the handling of: (1) soil, fill and groundwater containing petroleum-type contamination, solvent/degreaser-type contamination (e.g., mineral spirits, Stoddard solvent, or paint thinner); (2) fill materials containing elevated concentrations of heavy metals; and/or (3) free petroleum product.

Specifically, this SMP addresses how to identify, characterize, handle, and dispose or re-use these media during construction or post-development activities. The SMP establishes goals, procedures, and appropriate response actions to be used by on-site personnel should contaminated material be encountered and disturbed.

2. Site Description

The Site consists of seven contiguous parcels currently owned by the City of Rochester totaling approximately 1.1 acres (Figure 2). A two-story residential dwelling on the parcel addressed as 26 Charlotte Street and an approximately 1,800-square foot one-story commercial concrete block garage located on the parcel addressed as 42 Charlotte Street were demolished in September 2001. The 48-58 Charlotte Street parcel is actively used as an open parking lot and the remainder of the Site is vacant or unused.

Under current City of Rochester plans, the Site will be redeveloped for residential use. It is currently anticipated that the residential redevelopment will consist of construction of a condominium or apartment complex. It is anticipated that the complex will have a parking garage on the first floor with living quarters on higher floors.

A visual survey of the area immediately surrounding the site identified the following land uses:

North: Haags Alley and Commercial
East: Parking Lot; Pitkin Street
South: Charlotte Street; Commercial
West: Commercial; Scio Street

Drinking water for the area is supplied by the City. Subsurface utilities include natural gas, water, sewer and electric. Additional electric and telephone service is overhead.

3. Summary of Subsurface Investigation(s)

Various environmental studies were performed in an effort to evaluate environmental conditions on the Site and on portions of the adjoining right-of-ways of Haags Alley and Charlotte Street. Table 1 lists the previous investigative reports

Table 1
List of Previous Environmental Investigations

Project #	Title of Document	Date
1274E-07	Phase I Environmental Site Assessment Report 14-58 Charlotte Street	05/15/1997
1427S-97	Supplemental Phase II Study, 48-50 Charlotte Street	12/15/1997
1427S-97	Phase II Study, 48-50 Charlotte Street	09/30/1997
2089S-99	Interim Status Report Supplemental Phase II Environmental Study, 26-42 Charlotte Street	08/2000
2089S-99	Supplemental Phase II Environmental Study, 14-60 Charlotte Street	11/2000
2412S-00	Supplemental Environmental Studies 14-60 Charlotte Street	02/2001
2485R-00	Interim Remedial Measure Report, 14-60 Charlotte St.	10/2002
2485R-00	Corrective Action Plan, 14-60 Charlotte Street	10/2001
3240S-03	Groundwater Monitoring Study, 14-60 Charlotte Street	07/2003

3.1. Summary of Investigative Methods

The procedures used throughout the subsurface investigations were designed to aid in the collection of subsurface information relative to conditions at the site. Specifically, the procedures were designed to identify and delineate any subsurface soil and groundwater contamination at the site.

Investigative activities performed during the course of the listed studies included: advancement of test borings; installation of groundwater monitoring wells; field observations and PID screening on soil and groundwater samples; analytical laboratory testing of soil and groundwater samples; development of groundwater potentio-metric maps; and evaluation of the data collected.

3.2. Summary of Site Conditions

Petroleum contamination fingerprinted as consisting of kerosene, gasoline, diesel fuel, lube oil, mineral spirits or a combination of these petroleum products was detected in soil and groundwater samples at the Site and in the right-of-way of Haags Alley, north of the property. The majority of VOCs and SVOCs detected in soil and groundwater samples appeared to be associated with petroleum products; however, some chlorinated VOCs (e.g., vinyl chloride) that may be associated with dry cleaning solvents and degreasers (and potentially associated with biodegradation of these products) or other activities, were detected in the groundwater in several locations along the northern portion of the Site and in Haags Alley. Free petroleum product identified as diesel fuel was encountered on groundwater in one well (MW-7) located on the 14-16 Charlotte Street parcel.

Fill material generally consisting of sand, gravel and silt with lesser amounts of clay, brick, ash, cobbles, asphalt, metal, coal, rock fragments, cinders, and organics (wood and roots) was generally encountered near the ground surface over most of the Site. Some of the fill material has been determined to contain elevated levels of the heavy metals (e.g., arsenic, arsenic, mercury).

Three underground storage tanks (USTs) and the in-ground portion of one hydraulic lift were also identified on the 14-16 Charlotte Street parcel and closed (i.e., removed) in accordance with applicable regulations.

In April 2000, the City of Rochester notified the New York State Department of Environmental Conservation (NYSDEC) of the preliminary field findings of the environmental studies that were being performed on the Site. The NYSDEC subsequently assigned spill number NYSDEC Spill #0070043 to the parcels addressed as 26-58 Charlotte Street. A separate spill number NYSDEC Spill #0070044 was assigned to the parcel addressed as 14-16 Charlotte Street. These spills currently have an "active" status.

An exposure assessment was performed using the available site data obtained during previous environmental work. The exposure assessment report dated June 2001 concluded that a combination of remedial actions and environmental engineering controls should be implemented if the Site is to be redeveloped for residential and/or commercial uses. Based on the exposure assessment, the site specific target levels (SSTLs) for the highest ("worst case") concentrations of various constituents detected in soil, fill or groundwater at the Site and/or their respective cumulative baseline risk factors were exceeded for one or more of the following exposure pathways:

- surface soil inhalation, ingestion, and dermal contact;
- soil volatilization to indoor air;
- soil volatilization and surface soil particulates to outdoor air; and
- groundwater volatilization to indoor air.

In order to address regulatory cleanup criteria for contamination attributable to on-site sources and to mitigate complete exposure pathways to residual contamination at the Site attributable to on-site or off-site sources Interim Remedial Measures (IRMs) were developed. A corrective action plan (CAP) dated October 2001 was developed by DAY to address the contamination at the Site in a manner that would implement the recommendations set forth above for allowing the residential redevelopment of the Site. The CAP was submitted to the NYSDEC, the Monroe County Department of Health (MCDOH) and the New York State Department of Health (NYSDOH). The CAP included soil removal, which was the focus

of the IRM project. In addition, post-IRM confirmatory sampling and groundwater monitoring for LNAPL was conducted as part of the IRM project.

Between November 13, 2001 and March 28, 2002, IRM activities were performed at the Site. IRM activities included:

- Removal of on-site contaminated soils to the extent practicable.
- Removal of two in-ground hydraulic lifts.
- Removal of an underground storage tank (UST) located on the southwest portion of the Site and the proper disposal of its contents.
- Placement of oxygen release compound (ORC) in excavations in order to assist in the biodegradation of residual contamination in the saturated zone.
- Collection of confirmatory soil samples generally from excavation walls.
- Installation of two new groundwater monitoring wells.
- Backfilling of excavations.
- Post-IRM groundwater monitoring for the presence of LNAPL.

Approximately 200 gallons of liquid petroleum (e.g., fuel oil or diesel fuel) associated with the removed UST was transported off-Site for proper disposal.

A total of 1,887 tons of petroleum-contaminated soil was removed from the Site, and transported off-site to a permitted landfill facility. The Areas of Concern (AOCs) of the Site, where known and/or suspected petroleum or other VOC contamination was addressed, is depicted on Figure 3. With the exception of two areas of the Site (i.e., along the southern property boundary of the 14-16 Charlotte Street parcel and along the northern property boundary of the 42 Charlotte Street parcel), contaminated soil was removed to the top of bedrock or until the seam of soil contamination above the bedrock was less than one foot thick (Figure 4). Removal of contaminated soil was discontinued in these areas due to the proximity of the excavations to street improvements (e.g., sidewalk, paved street) and buried utilities in the right-of-way of Charlotte Street and Haags Alley, and also due to the fact that the soil contamination in Haags Alley appears attributable to an off-site source. The soil contamination left in-place on the southern property line of the 14-16 Charlotte Street parcel appears attributable to the former diesel fuel UST that was removed from this parcel during the IRM.

Prior to backfilling, a total of 23 confirmatory soil samples were collected from the walls of IRM excavations and analyzed for TCL and STARS-list VOCs using USEPA Method 8260, STARS-list SVOCs using USEPA Method 8270, and for TPH using NYSDOH Method 310.13. Based on the analytical laboratory test results, only two soil samples (i.e., Samples A @ 13' and B @ 8.5') collected from the south excavation wall along the southern property line of the 14-16 Charlotte Street parcel contained specific VOCs and/or SVOCs at concentrations above TAGM 4046 recommended soil cleanup objectives.

ORC was placed at the bottom of excavations on the 14-16 Charlotte Street parcel to enhance biodegradation of residual petroleum contamination in the saturated zone. Post-IRM groundwater monitoring on the 14-16 Charlotte Street parcel did not detect the presence of LNAPL on the uppermost groundwater-bearing zone (i.e., overburden/bedrock interface).

The IRM was successful in removing petroleum-contaminated soils from the Site in preparation for future redevelopment. Laboratory sample results summary tables from DAY's 2002 *Interim Remedial Measures Report* are included in Appendix A.

Subsequent to the completion of the IRM, the City authorized DAY to complete a Groundwater Monitoring Study (Study) at the Site on portions of the adjoining right-of-way of Charlotte Street and Haags Alley to evaluate groundwater quality trends at the Site. At the time of the Study, depths to groundwater ranged between 6.61 feet and 7.90 feet below the ground surface, and groundwater elevations were generally highest on the western portion of the Site, and lowest on the eastern portion of the Site. Groundwater appears to flow toward the east. Two (2) previously installed, City monitoring wells, located in Haags Alley were sampled as part of the Study. Sample data from the wells, one located south of a former off-site dry cleaning facility (MW-12), and one located south of a former auto repair and auto painting facility (MW-13) was used to evaluate the potential that the off-site properties were possible sources of the petroleum-based groundwater plume that was impacting the Site. Previous groundwater sampling events confirmed elevated concentrations of contaminants in off-site wells MW-12 and MW-13. Data from monitoring well MW-1, located on the northwest portion of the Site, was also used during the Study where groundwater had historically contained low concentrations the chlorinated VOC tetrachloroethene.

VOCs were detected in the groundwater in wells MW-1, MW-12 and MW-13 at concentrations that exceed groundwater standards and guidance values as established in NYSDEC TOGS 1.1.1. However, the concentrations of VOCs detected in the samples did not exceed residential receptor Site-Specific Target Levels (SSTLs) or adult residential receptor CCLs for the groundwater volatilization to indoor air exposure pathway. Potential presence of LNAPL (slight sheen and thin layer of petroleum) was detected in three of the six wells (i.e., MW-1, MW-12 and MW-13) that were monitored as part of the Study.

Based upon the laboratory analysis results from the May 27, 2003 sampling event, the groundwater is contaminated with light weight TPH (identified as gasoline) and/or medium weight TPH (identified as diesel fuel). There is no NYSDEC groundwater standard or guidance value for TPH; however, the concentrations of medium-weight TPH or light-weight TPH detected in May 2003 groundwater samples from well MW-12 and well MW-13 exceed the residential receptor SSTL for the groundwater volatilization to indoor air exposure pathway.

A review of the cumulative groundwater analytical data from wells MW-1, MW-12 and MW-13 suggests that the types of VOCs detected over time at each well remains similar with some fluctuating increases or decreases in total concentrations. The highest concentration of VOCs and TPH were detected in wells MW-12 and MW-13 located off-site in Haags Alley, indicating a potential off-site source(s) of groundwater contamination.

Previous subsurface studies have documented that a portion of the groundwater plume in Haags Alley appears to have migrated onto and impacted the 14-58 Charlotte Street Site. Since the potential sources of off-site groundwater contamination have not been identified or mitigated, it is anticipated that the groundwater plume in Haags Alley will continue to migrate and impact the Charlotte Street Site. Laboratory sample results summary tables from DAY's 2003 *Groundwater Monitoring Study* are included in Appendix A.

4. Conclusions

Two areas of the Site, along the southern property boundary of the 14-16 Charlotte Street parcel and along the northern property boundary of the 42 Charlotte Street parcel, are impacted by petroleum VOCs and SVOCs where contaminated soil was removed to the top of bedrock or until the seam of soil contamination above the bedrock was less than one foot thick. Removal of the remaining contaminated soil was discontinued in these areas due to the proximity of the excavations to street improvements (e.g., sidewalk, paved street) and buried utilities in the right-of-way of Charlotte Street and Haags Alley, and also due to the fact that the soil contamination in Haags Alley appears attributable to an off-site source. The soil contamination left in-place on the southern property line of the 14-16 Charlotte Street parcel appears attributable to the former diesel fuel UST that was removed from this parcel during the IRM.

Two (2) soil samples collected from the south excavation wall along the southern property line of the 14-16 Charlotte Street parcel contained specific VOCs and/or SVOCs at concentrations above TAGM 4046 recommended soil cleanup objectives.

VOCs were detected in the groundwater in wells MW-1, MW-12 and MW-13 at concentrations that exceed groundwater standards and guidance values as established in NYSDEC TOGS 1.1.1. However, the concentrations of VOCs detected in the samples did not exceed residential receptor Site-Specific Target Levels (SSTLs) or adult residential receptor CCLs for the groundwater volatilization to indoor air exposure pathway.

Based upon the findings of the earlier Phase II Environmental Studies, the contaminated media at the Site were considered non-hazardous material for the parameters tested. However, if this material is disturbed, the New York State Department of Environmental Conservation (NYSDEC) requires that the material be handled, treated or disposed of, in accordance with applicable regulations.

Environmental Engineering Controls (EECs), including soil vapor mitigation systems, may need to be designed and installed at the Site if residential redevelopment is planned. The extent and type of EECs would be dependent upon the construction details and specifications of future structures. EECs may not be warranted if the probable off-site source(s) of contaminants near Haags Alley (e.g., TPH, etc.) is adequately addressed (i.e., remediated). Future redevelopment could also proceed with a combination of remediation of contamination and design and implementation of EECs.

5. Site Management Plan (SMP)

This SMP provides procedures to mitigate exposure to petroleum and chlorinated solvent impacted media that could be encountered during future construction activities or commercial use of the Site. In addition, this SMP provides information on how to identify impacted material, and also provides options for the management, disposal and/or re-use of impacted subsurface material. The procedures presented herein are intended to reduce potential exposure to construction workers and building occupants during future operation of the Site should impacted material be encountered that requires management. A site-specific Health and Safety Plan (HASP) that includes a Community Air Monitoring Program (CAMP) to be implemented during activities that disturb potentially impacted subsurface material is included in Appendix A of this SMP.

During construction activities that have the potential to disturb impacted subsurface materials, an environmental professional must monitor and document the work completed for compliance with the requirements of this SMP. In addition, the New York State Department of Environmental Conservation (NYSDEC) Spills Unit must be notified if residual impacted media is encountered. The owner of the Site is responsible for impacted media unless a different entity acceptable to the NYSDEC is indentified as the responsible party.

5.1 Petroleum Impacted Media

This section describes the impacted media documented at the Site and provides information on the identification, handling, analytical laboratory testing, disposal or re-use of these materials.

5.1.1. Identification of Contaminated Media

Two areas of the Site are impacted by petroleum VOCs and SVOCs (Figure 4). Contaminated soil is present between 8.5 and 13.0 feet bgs along the southern property line of the 14-16 Charlotte Street parcel which contains specific VOCs and/or SVOCs at concentrations above TAGM 4046 recommended soil cleanup objectives. Contaminated soil, fingerprinted as consisting of kerosene, gasoline, diesel fuel, lube oil, mineral spirits or a combination of these petroleum products is also present at the Site and in the right-of-way of Haags Alley, along the northern portion of the property. The majority of VOCs and SVOCs identified appeared to be associated with petroleum products; however, some chlorinated VOCs (e.g., vinyl chloride) that may be associated with dry cleaning solvents and degreasers (and potentially associated with biodegradation of these products) or other activities, were detected at locations along the northern portion of the Site and in Haags Alley. Removal of contaminated soil was discontinued due to the proximity of the excavations to street improvements (e.g., sidewalk, paved street) and buried utilities in the right-of-way, and also due to the fact that the soil contamination in Haags Alley appears attributable to an off-site source.

Contaminated soil and/or fill may appear stained black and/or gray and petroleum-like odors may be detected on the material. Visual and olfactory observations will be made on excavated material for indication of petroleum-related impact or other impact. For purposes of this SMP, soil/fill exhibiting the properties described above should be considered petroleum-impacted, and handled as such unless testing is done to quantify the constituents of this subsurface material.

Groundwater at the Site is contaminated with light weight TPH (identified as gasoline) and/or medium weight TPH (identified as diesel fuel). The highest concentration of VOCs and TPH were detected in wells MW-12 and MW-13 located off-site in Haags Alley, to the north of the property indicating a potential off-site source(s) of groundwater contamination. The measured depths to groundwater ranged between 6.61 feet and 7.90 feet below the ground surface, and groundwater elevations were generally highest on the western portion of the Site, and lowest on the eastern portion of the Site. Groundwater for appears to generally flow toward the east. Previous subsurface studies have documented that a portion of the groundwater plume in Haags Alley appears to have migrated onto and impacted the 14-58 Charlotte Street Site. Since the potential sources of off-site groundwater contamination have not been identified or mitigated, it is anticipated that the groundwater plume in Haags Alley will continue to migrate and impact the Charlotte Street Site.

If groundwater is encountered during construction activities at the Site, it could be impacted by petroleum related constituents. Groundwater impacted with petroleum-related constituents could be characterized by the presence of a rainbow colored sheen, gasoline-type odors, or elevated PID responses.

5.1.2. Handling

Petroleum-impacted soil/fill that is excavated or disturbed should be removed, segregated from non-impacted media, and placed on, and covered with, plastic sheeting. Alternatively, the petroleum-impacted material can be placed in 55-gallon drums or a roll-off disposal container (depending on the quantity of material generated), or the material may be directly loaded onto trucks for off-site disposal (refer to Section 5.1.4.).

Groundwater or standing water removed from excavations containing a measurable amount of free product or sheen must be containerized (i.e., placed in sealed New York State Department of Transportation (NYSDOT)-approved 55-gallon drums or a holding tank) prior to characterization and disposal.

5.1.3. Analytical Laboratory Testing

Based on previous test results for samples from the Site, the recommended analytical laboratory testing program for petroleum and chlorinated VOC impacted media (soil, fill, groundwater) is summarized below:

- NYSDEC Spill Technology and Remediation Series (STARS)-Target Compound List (TCL VOCs) via USEPA Method TCL 8260 + STARS
- NYSDEC STARS-list SVOCs via USEPA Method 8270

The actual analytical laboratory testing program may vary depending on the nature of the soil, fill, and groundwater encountered, and requirements of the disposal facility or publicly-owned treatment works (POTW).

The analytical laboratory test results for characterization of soil and groundwater samples should be compared to the appropriate criteria listed below.

- NYSDEC Part 375 Soil Cleanup Objectives (SCOs) to assist in determining if soil or fill media require removal, off-site disposal and/or treatment, or can be re-used on-site.
- Technical and Operational Guidance Series (NYSDEC TOGS 1.1.1) groundwater standards and guidance values to assist in determining if groundwater: 1) can be discharged on-site; 2) requires pre-treatment and/or can be discharged to the public combined sewer system under a sewer use permit; or 3) requires off-site disposal at a regulated treatment/disposal facility.
- Applicable portions of the Monroe County Pure Waters (MCPW) Rules and Regulations, and Sewer Use Law, to assist in determining if water from the Site (groundwater, excavation water, well water, etc.) requires pre-treatment and/or can be discharged to the public combined sewer under a Sewer Use Permit, or requires off-site disposal at a treatment/disposal facility.

5.1.4. Disposal of Petroleum Impacted Media

Comparison of analytical laboratory test results to the appropriate criteria may indicate that petroleum-impacted soil and/or fill encountered during construction activities at the Site requires disposal off-site in accordance with applicable regulations. In addition, excavated subsurface material may require off-site disposal due to construction requirements (e.g., geotechnical considerations, space available on-site for storage and subsequent re-use, etc.). Based on existing data and information, the petroleum-impacted fill and/or soil that contains VOCs described herein will likely be characterized as non-hazardous waste.

Water (e.g., groundwater, standing water) that is generated/removed during construction activities (if any) that meet TOGS 1.1.1 groundwater standards and guidance values can be discharged on-site. Water that is generated and removed during construction activities at the Site (if any) that does not meet TOGS 1.1.1 groundwater standards and guidance values must be: 1) discharged to the public combined sewer under a sewer use permit; or, 2) transported and disposed off-site at a regulated facility. If the water contains free phase gasoline, petroleum sheen, or a total VOC and SVOC concentration greater than 2.13 mg/l, it should be anticipated that MCPW will require pre-treatment and confirmatory sampling prior to authorizing discharge to the public combined sewer system under a sewer use permit.

Transporters removing contaminated media from the Site must have the appropriate regulatory permits (e.g., NYSDEC Part 364 permit, etc.), and the selected disposal facility of each waste stream (e.g., soil/fill to landfill, water to POTW, etc.) must be approved by the appropriate regulatory agency for accepting the specific waste. This includes contaminated material that may be defined as non-hazardous waste and hazardous waste.

5.1.5. Re-Use of Soil or Fill

Soil or fill material that does not contain petroleum constituents above NYSDEC Part 375 Unrestricted Use SCOs can be left in place, or re-used on or off-site. Any soils to be used off-Site must be approved by the NYSDEC. However, to the extent deemed appropriate, geotechnical properties of the soil or fill should be considered prior to it being re-used on or off-site.

5.2. Health and Safety Monitoring

During future construction work at the Site that has the potential to encounter petroleum impacted media, such as that described in Section 3.1, the site-specific HASP with CAMP included in Appendix A must be implemented. The HASP and CAMP outline policies and procedures to protect workers and the public from potential environmental hazards posed during future site activities, including redevelopment activities.

5.3. Management of Potential Future Disturbances

Workers involved with future on-site work (e.g., new installation/repair of buried utilities, etc.) that have the potential to disturb petroleum-impacted soil, fill and/or groundwater should be made aware of the potential exposure hazards. The owner of the Site will be responsible for notifying future on-site workers of potential exposure hazards. Workers should be provided with the previous reports, the exposure assessment, and this SMP, which includes the associated HASP/CAMP. These documents

contain information on the type and location of petroleum impact encountered at the Site and address how to handle, treat, transport, dispose, or re-use the impacted materials in a manner that precludes exposure. Precautions should be implemented to minimize disturbance of soil or fill that result in air-borne release of particulates. Areas where work has been completed should be repaired (e.g., clean soil/fill re applied, paved, etc.).

6. Engineering Controls

The potential for vapor intrusion in to the existing or future buildings should be evaluated. If vapor intrusion is a concern, engineering controls in the form of a vapor barrier, sub-slab depressurization system, etc., may be warranted in the existing or future buildings as part of the redevelopment of this Site. In the event engineering controls are deemed necessary, the appropriate regulatory agencies (i.e., MCDPH, the NYSDEC, and/or the NYSDOH) should be consulted to approve or accept the proposed controls.

7. Institutional Controls

The Site's location is "flagged" in the City's Activities Use Limitations (AUL) Institutional Controls system requiring DEQ site review prior to the issuance of any building or construction permits.

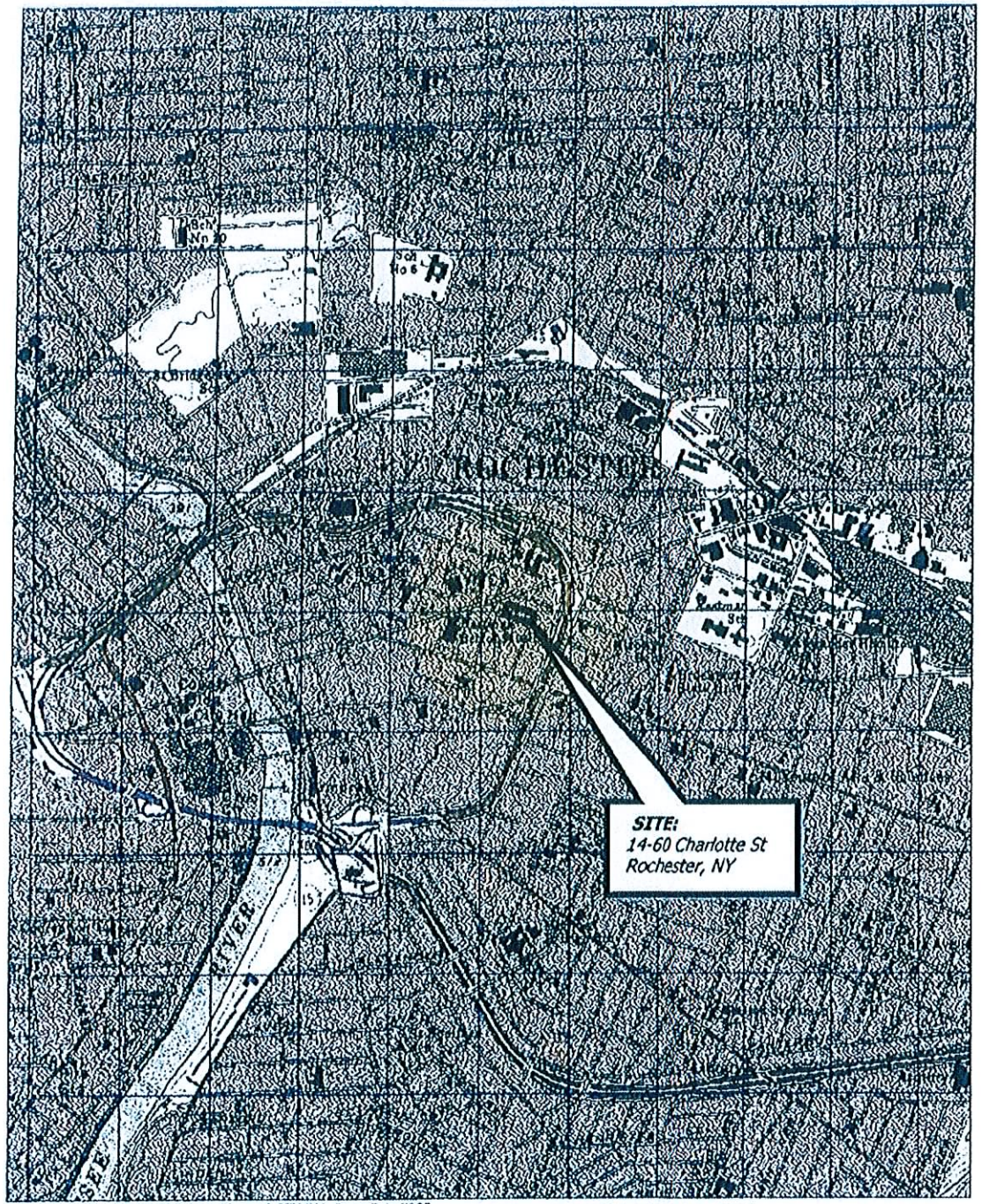
8. Site Contacts

A copy of this SMP has been provided to the NYSDEC and the City DEQ. During future real estate transactions, the current owner will be responsible for providing this SMP to the new owner(s).

NYSDEC Contact: Mike Zamiarski, P.E.
NYSDEC Spill Division
6274 East Avon-Lima Road
Avon, NY 14414
(585) 226-5438
Spills Hotline: (800) 457-7362

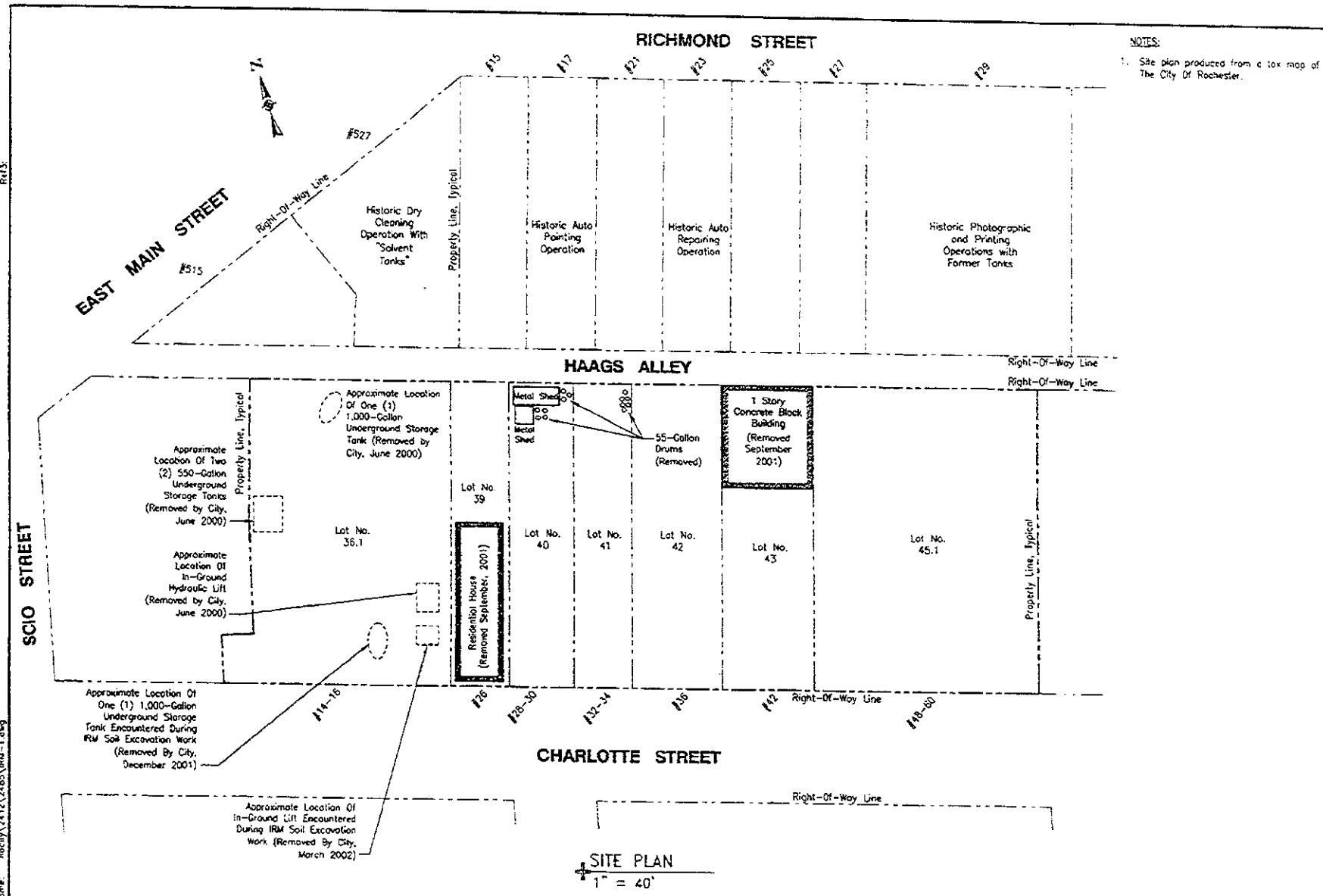
DEQ Contact: Mr. Joseph Biondolillo
City of Rochester - Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-6649

Figures



Drawing Produced From: 3-D TopoQuads, DeLorme Map Co., referencing USGS quad map Rochester East (NY) 1995. Site Lat/Long: N43d-9.50' – W77d-35.90'

DATE 8/12/2002 DRAWN BY Jad SCALE 1" = 2000'	**day** DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE 14-60 CHARLOTTE STREET ROCHESTER, NEW YORK INTERIM REMEDIAL MEASURE DRAWING TITLE PROJECT LOCUS MAP	PROJECT NO. 2485R-00 FIGURE 1



SITE PLAN
1" = 40'

NOTES:

1. Site plan produced from a tax map of The City Of Rochester.

FIELD VERIFIED BY	JAD
DATE	04-2002
DRAWN BY	TWW
DATE DRAWN	04-02-2002
SCALE	1" = 40'
DATE REVISED	04-23-2002

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1006

PROJECT TITLE
14-60 CHARLOTTE STREET
ROCHESTER, NY

INTERIM REMEDIAL MEASURE

DRAWING TITLE
Site Plan

PROJECT NO.
2485R-00

FIGURE 2

Ref1: 2485-21.dwg
Ref2: Sitebase.dwg
Ref3:

Xerox2430ansiB-2; 11 x 17

Time Plotted: Mon Apr 22 21:00 2002
File Name: Rochy\24\2485\IRM-1.dwg

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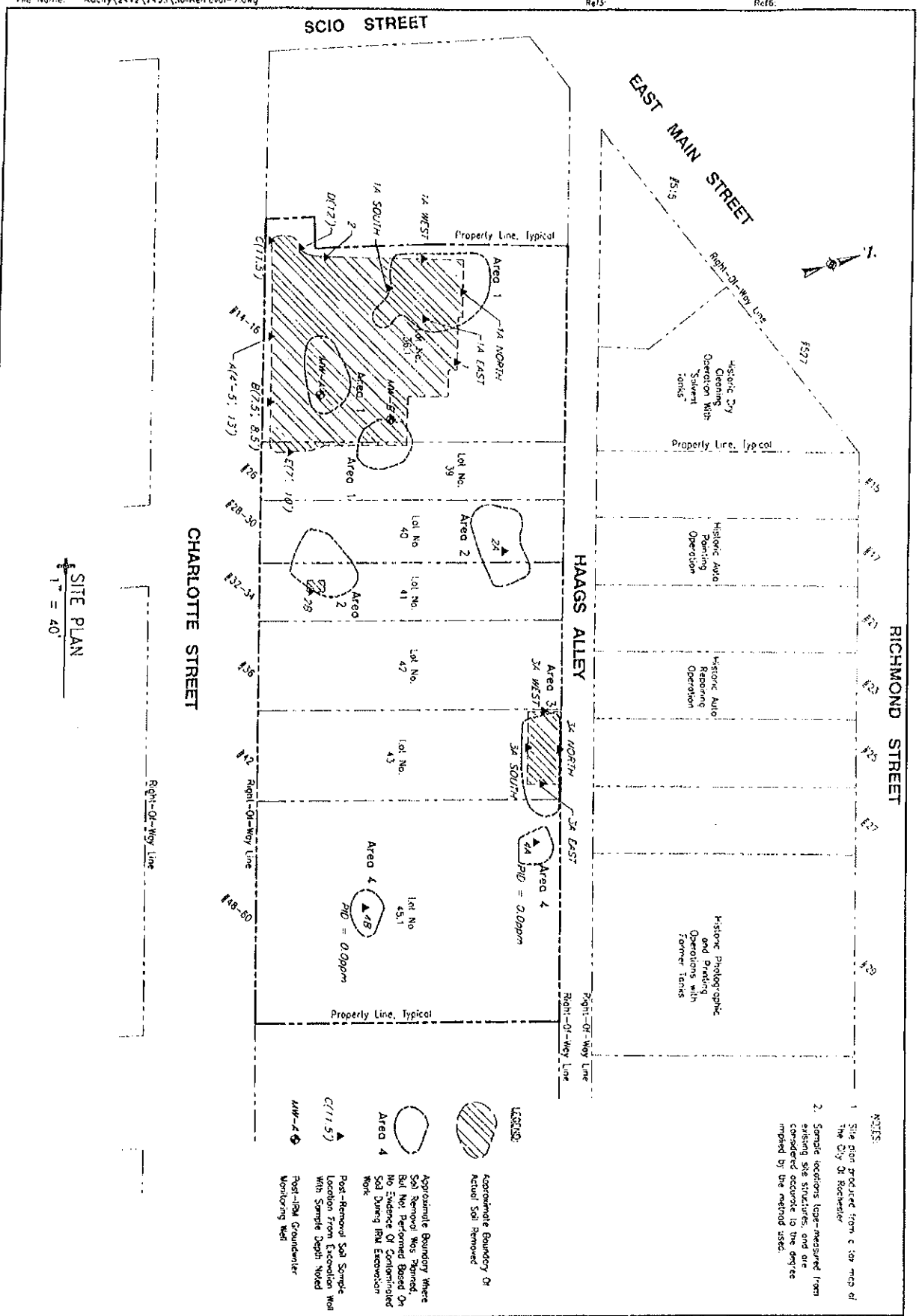


FIGURE 4

2485R-00

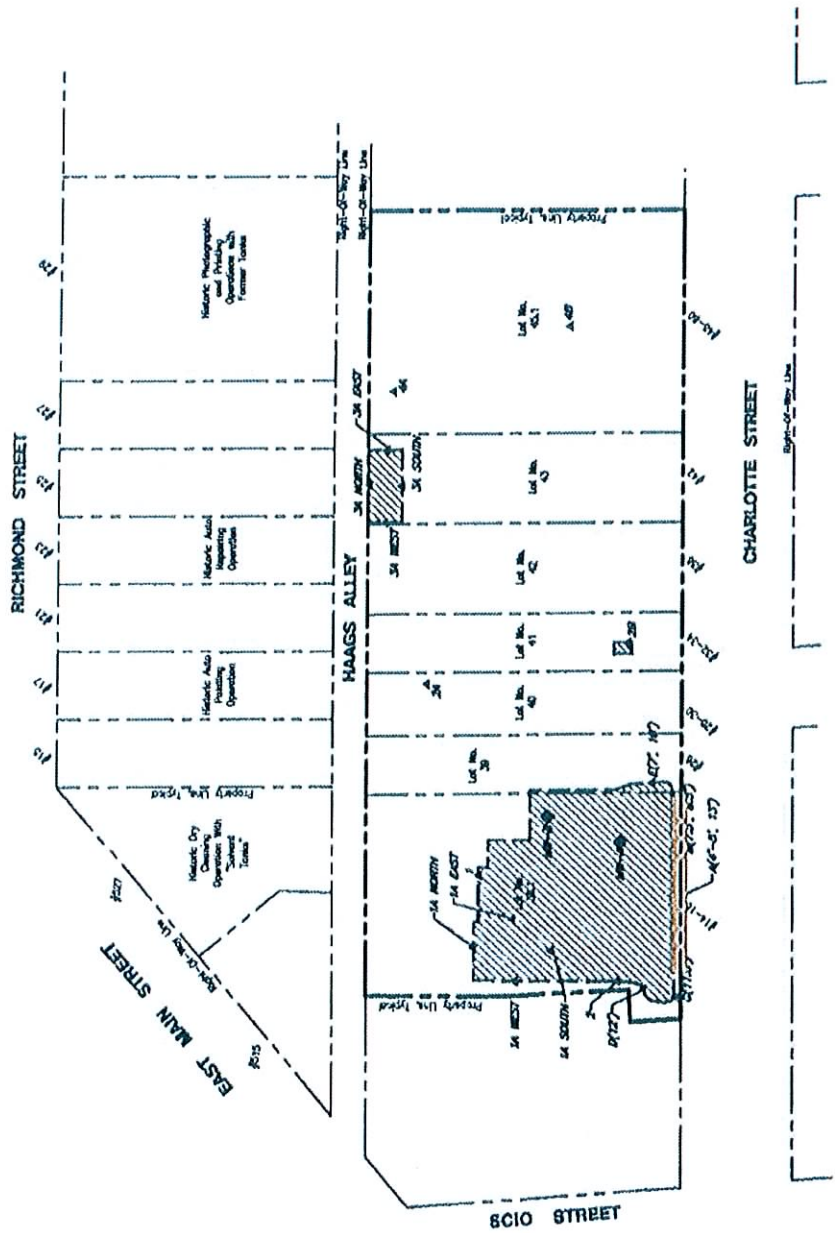
14 - 60 CHARLOTTE STREET
ROCHESTER, NY

INTERIM REMEDIAL MEASURE

Site Plan Depicting Soil Removal Work and Post-Removal Soil Sample Locations

day
DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008

FIELD VERIFIED BY	DATE
JAD	05-2002
DRAWN BY	DATE DRAWN
Tww	05-14-2002
SCALE	DATE ISSUED
1" = 40'	08-30-2002



SITE PLAN
1" = 80'

NOTES:

1. Site plan produced from a tax map of the City Of Rochester.
2. Sample locations tape-measured from existing site structures, and are considered accurate to the degree implied by the method used.

LEGEND

- Approximate Boundary Of Actual Soil Removed
- C(11.5') — Post-Removal Soil Sample Location From Excavation Wall With Sample Depth Noted
- MW-A — Post-IRM Groundwater Monitoring Well
- Remaining Area Of Contaminated Unsaturated Soil Exceeding Cleanup Criteria

DATE: 09-30-2002 DRAWN BY: Tww SCALE: 1" = 80'	day DAY ENVIRONMENTAL, INC. ENVIRONMENTAL CONSULTANTS ROCHESTER, NEW YORK 14614-1008	PROJECT TITLE: 14 - 60 CHARLOTTE STREET ROCHESTER, NY INTERIM REMEDIAL MEASURE DRAWING TITLE: Remaining Area Of Contaminated Unsaturated Soil Exceeding Cleanup Criteria	PROJECT NO.: 2485R-00 FIGURE 5

Ref1: SoilRemoval-8 Ref2: SiteBase-3 Ref3:
Time Printed: Mon Sep 30 18:15 2002 Filename: Rocity\2412\2485\Figure 5.dwg

Appendix A

Laboratory Analysis Results Summary Tables

TABLE 1

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

ANALYTICAL LABORATORY PROGRAM

Sample Number/Location	Date Collected	Matrix	Location	Analysis
#1A / North Wall (CS)	11/14/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#1A / South Wall (CS)	11/14/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#1A / East Wall (CS)	11/14/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#1A / West Wall (CS)	11/14/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#2A (CS)	11/14/01	Soil	28-34 Charlotte Street	8260 / 8270 / 310.13
#2B (CS)	11/14/01	Soil	28-34 Charlotte Street	8260 / 8270 / 310.13
#3A / North Wall (CS)	11/15/01	Soil	42 Charlotte Street	8260 / 8270 / 310.13
#3A / South Wall (CS)	11/15/01	Soil	42 Charlotte Street	8260 / 8270 / 310.13
#3A / East Wall (CS)	11/15/01	Soil	42 Charlotte Street	8260 / 8270 / 310.13
#3A / West Wall (CS)	11/15/01	Soil	42 Charlotte Street	8260 / 8270 / 310.13
Excavation #3A Water (CS)	11/15/01	Liquid	42 Charlotte Street	310.13
MW-13 / Groundwater (CS)	11/15/01	Liquid	Haags Alley	310.13
#4A (CS)	11/15/01	Soil	48-60 Charlotte Street	8260 / 8270 / 310.13
#4B (CS)	11/15/01	Soil	48-60 Charlotte Street	8260 / 8270 / 310.13
#1-1C @ 11.5' (CS)	11/19/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#2-1C @ 11' (CS)	11/20/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
#101-1C @ 11' (CS)	11/20/01	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
1B - UST Contents	11/21/01	Liquid	14-16 Charlotte Street	310.13 / 8082 / 8240 / Ign. / 6010,7471
A @ 4-5' (CS)	3/26/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
A @13' (CS)	3/26/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
B @ 7.5' (CS)	3/27/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
B @ 8.5' (CS)	3/27/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
C @ 11.5' (CS)	3/27/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
D @ 12' (CS)	3/27/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
E @ 7' (CS)	3/28/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13
E @ 10' (CS)	3/28/02	Soil	14-16 Charlotte Street	8260 / 8270 / 310.13

8260 = TCL and STARS volatile organic compounds (VOCs)
8240 = TCL VOCs
8270 = STARS semi-volatile organic compounds (SVOCs)
310.13 = total petroleum hydrocarbons (TPH)
8082 = polychlorinated biphenyls (PCBs)
Ign. = Ignitability
6010,7471 = Total RCRA Metals
UST = Underground Storage Tank
CS = Confirmatory sample from excavation

TABLE 2

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

TOTAL PETROLEUM HYDROCARBONS (TPH)
IN MG/KG OR PARTS PER MILLION (PPM)

SOIL SAMPLES

SAMPLE LOCATION	TPH TEST RESULTS (mg/kg or PPM)	
	TOTAL CONCENTRATION	HYDROCARBON WEIGHT AND IDENTIFICATION
#1A / North Wall	19	19 HW (lube oil)
#1A / South Wall	--	--
#1A / East Wall	8.44	8.44 HW (lube oil)
#1A / West Wall	--	--
#2A	--	--
#2B	--	--
#3A / North Wall	4,640	1,240 LW (mineral spirits*) 3,400 HW (lube oil)
#3A / South Wall	--	--
#3A / East Wall	--	--
#3A / West Wall	12	12 HW (lube oil)
#4A	12.1	12.1 HW (lube oil)
#4B	--	--
#1-1C	--	--
#2-1C	--	--
#101-1C	--	--
A @ 4-5'	--	--
A @ 13'	3,820	3,820 MW (Diesel Fuel)
B @ 7.5'	1,550	1,550 MW (Diesel Fuel)
B @ 8.5'	4,460	4,460 MW (Diesel Fuel)
C @ 11.5'	--	--
D @ 12'	--	--
E @ 7'	--	--
E @ 10'	--	--
NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVE [1]	NL	NL

TPH = Total petroleum hydrocarbon analysis by NYSDOH Method 310.13
-- = Not detected at concentrations above reported analytical laboratory detection limits.
* = Laboratory reported that TPH identified as "mineral spirits" or "stoddard solvent".
LW = Light Weight hydrocarbons (e.g., gasoline)
MW = Medium Weight hydrocarbons (e.g., kerosene)
HW = Heavy Weight hydrocarbons (e.g., lube oil)
NL = Not listed in TAGM 4046.
Note: There currently are no cleanup objectives for TPH in New York State.

TABLE 3 (Page 1 of 4)

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUND (VOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)

SOIL SAMPLES

DETECTED VOCs	SAMPLE AND LOCATION						NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES (PPB)[1]
	#1A North Wall	#1A South Wall	#1A East Wall	#1A West Wall	#2A	#2B	
Ethylbenzene	--	--	--	--	--	--	5,500
Toluene	--	--	--	--	--	--	1,500
Total Xylenes	--	--	--	--	--	--	1,200
n-Propylbenzene	--	--	--	--	--	--	3,700
1,3,5-Trimethylbenzene	--	--	--	--	23.5	--	3,300
1,2,4-Trimethylbenzene	--	--	--	--	24.6	--	10,000
sec-Butylbenzene	--	--	--	--	--	--	10,000
n-Butylbenzene	--	--	--	--	--	--	10,000
Isopropylbenzene	--	--	--	--	--	--	2,300
p-Isopropyltoluene	--	--	--	--	--	--	10,000
tert-Butylbenzene	--	--	--	--	--	--	10,000
Total VOCs	0	0	0	0	48.1	0	10,000
Naphthalene	--	--	--	--	--	--	13,000

-- = Not detected at concentrations above reported analytical laboratory detection limits.
NA = Not available.
(1) = Recommended soil cleanup objectives as referenced in the January 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels as amended by NYSDEC Table 1 dated December, 2000.
Bolded and **underlined** denotes exceedance of the NYSDEC recommended soil cleanup objective.

TABLE 3 (Page 2 of 4)

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUND (VOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)

SOIL SAMPLES

DETECTED VOCs	SAMPLE AND LOCATION						NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES (PPB) (1)
	#3A North Wall	#3A South Wall	#3A East Wall	#3A West Wall	#4A	#4B	
Ethylbenzene	15.1	--	--	--	--	--	5,500
Toluene	--	--	--	--	--	--	1,500
Total Xylenes	31.3	--	--	--	--	--	1,200
n-Propylbenzene	117	--	--	--	--	--	3,700
1,3,5-Trimethylbenzene	--	--	--	--	--	--	3,300
1,2,4-Trimethylbenzene	28.7	--	--	--	--	--	10,000
sec-Butylbenzene	127	--	--	--	--	--	10,000
n-Butylbenzene	--	--	--	--	--	--	10,000
Isopropylbenzene	55.1	--	--	--	--	--	2,300
p-Isopropyltoluene	45.1	--	--	--	--	--	10,000
tert-Butylbenzene	--	--	--	--	--	--	10,000
Total VOCs	419.3	0	0	0	0	0	10,000
Naphthalene	--	--	--	--	--	--	13,000

-- = Not detected at concentrations above reported analytical laboratory detection limits.
NA = Not available.
(1) = Recommended soil cleanup objectives as referenced in the January 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels as amended by NYSDEC Table 1 dated December, 2000.
Bolded and **underlined** denotes exceedance of the NYSDEC recommended soil cleanup objective.

TABLE 3 (Page 3 of 4)

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUND (VOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)

SOIL SAMPLES

DETECTED VOCs	SAMPLE AND LOCATION						NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES (PPB)[1]
	#1 - 1C	#2 - 1C	#101 - 1C	A @ 4-5'	A @ 13'	B @ 7.5'	
Ethylbenzene	--	--	--	--	605	33.5	5,500
Toluene	--	--	--	--	--	--	1,500
Total Xylenes	--	--	--	--	**1,205**	29	1,200
n-Propylbenzene	--	--	--	--	1,080	120	3,700
1,3,5-Trimethylbenzene	--	--	--	--	705	104	3,300
1,2,4-Trimethylbenzene	--	--	--	--	9,750	1,420	10,000
sec-Butylbenzene	--	--	--	--	853	141	10,000
n-Butylbenzene	--	--	--	--	--	--	10,000
Isopropylbenzene	--	--	--	--	431	43.4	2,300
p-Isopropyltoluene	--	--	--	--	1,240	326	10,000
tert-Butylbenzene	--	--	--	--	--	--	10,000
Total VOCs	0	0	0	0	**15,869**	2,216.9	10,000
Naphthalene	--	--	--	--	6,670	257	13,000

-- = Not detected at concentrations above reported analytical laboratory detection limits.
NA = Not available.
(1) = Recommended soil cleanup objectives as referenced in the January 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels as amended by NYSDEC Table 1 dated December, 2000.
Bolded and **underlined** denotes exceedance of the NYSDEC recommended soil cleanup objective.

TABLE 3 (Page 4 of 4)

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUND (VOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)

SOIL SAMPLES

DETECTED VOCs	SAMPLE AND LOCATION					NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES (PPB) (1)
	B @ 8.5'	C @ 11.5'	D @ 12'	E @ 7'	E @ 10'	
Ethylbenzene	584	--	--	--	--	5,500
Toluene	--	--	--	--	--	1,500
Total Xylenes	1,206	--	--	--	--	1,200
n-Propylbenzene	933	--	--	--	--	3,700
1,3,5-Trimethylbenzene	1,540	--	--	--	--	3,300
1,2,4-Trimethylbenzene	**10,600**	--	--	--	--	10,000
sec-Butylbenzene	714	--	--	--	--	10,000
n-Butylbenzene	--	--	--	--	--	10,000
Isopropylbenzene	342	--	--	--	--	2,300
p-Isopropyltoluene	1,610	--	--	--	--	10,000
tert-Butylbenzene	--	--	--	--	--	10,000
Total VOCs	**17,529**	0	0	0	0	10,000
Naphthalene	7,930	--	--	--	--	13,000

-- = Not detected at concentrations above reported analytical laboratory detection limits.
NA = Not available.
(1) = Recommended soil cleanup objectives as referenced in the January 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels as amended by NYSDEC Table 1 dated December, 2000.
Bolded and **underlined** denotes exceedance of the NYSDEC recommended soil cleanup objective.

TABLE 4

INTERIM REMEDIAL MEASURE

14-60 CHALOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
SEMI-VOLATILE ORGANIC COMPOUND (SVOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)
SOIL SAMPLES

SAMPLE AND LOCATION	DETECTED VOCs						
	Naphthalene	Acenaphthene	Phenanthrene	Fluorene	Fluoranthene	Pyrene	Total SVOCs
#1A North Wall	--	--	--	--	--	--	0
#1A South Wall	--	--	--	--	--	--	0
#1A East Wall	--	--	--	--	349	396	745
#1A West Wall	--	--	--	--	--	--	0
#2A	--	--	--	--	--	--	0
#2B	--	--	--	--	--	--	0
#3A North Wall	--	--	--	--	--	589	589
#3A South Wall	--	--	--	--	--	459	459
#3A East Wall	--	--	--	--	--	--	0
#3A West Wall	--	--	--	--	--	--	0
#4A	--	--	--	--	--	--	0
#4B	--	--	--	--	--	--	0
#1 - 1C	--	--	--	--	--	--	0
#2 - 1C	--	--	--	--	--	--	0
#101 - 1C	--	--	--	--	--	--	0
A @ 4-5'	--	--	--	--	--	--	0
A @ 13'	10,400	4,900	15,400	4,850	--	2,270	37,820
B @ 7.5'	--	--	3,230	1,070	--	696	4,996
B @ 8.5'	**18,500**	5,570	18,200	6,030	--	--	48,300
C @ 11.5'	--	--	--	--	--	--	0
D @ 12'	--	--	--	--	--	--	0
E @ 7'	--	--	--	--	--	--	0
E @ 10'	--	--	--	--	--	--	0
NYSDEC TAGM 4046 RECOMMENDED SOIL CLEANUP OBJECTIVES (PPB) (1)	13,000	50,000	50,000	50,000	50,000	50,000	500,000

-- = Not detected at concentrations above reported analytical laboratory detection limits.
NA = Not available.
(1) = Recommended soil cleanup objectives as referenced in the January 1994, Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels as amended by NYSDEC Table 1 dated December, 2000.
Bolded and **underlined** denotes exceedance of the NYSDEC recommended soil cleanup objective.

TABLE 5

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

TOTAL PETROLEUM HYDROCARBONS (TPH)
IN UG/l OR PARTS PER BILLION (PPB)

LIQUID SAMPLES

SAMPLE DESIGNATION	LOCATION	TPH TEST RESULTS (PPB)
Excavation #3A Water	42 Charlotte Street	10,400 MW (mineral spirits) 27,800 HW (lube oil)
MW-13	Haags Alley	1,730 MW (mineral spirits)
1B-UST Contents	14-16 Charlotte Street	Pure Product MW (diesel fuel)

TPH = Total petroleum hydrocarbon analysis by NYSDOH Method 310.13
MW = Medium Weight
HW = Heavy Weight

TABLE 6

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUND (VOC) TEST RESULTS
IN UG/KG OR PARTS PER BILLION (PPB)

SAMPLE OF UST CONTENTS

DETECTED VOCs	SAMPLE 1B UST CONTENTS TEST RESULTS (PPB)
Benzene	28,300
Ethylbenzene	190,000
Toluene	282,000
Total Xylenes	1,184,000
Total VOCs	1,684,300

TABLE 7

INTERIM REMEDIAL MEASURE

14-60 CHALOTTE STREET
ROCHESTER, NEW YORK

FLASHPOINT
SAMPLE OF UST CONTENTS

Field Location	Flashpoint Results (°C)
1B-UST Contents	31

TABLE 8

INTERIM REMEDIAL MEASURE

14-60 CHALOTTE STREET
ROCHESTER, NEW YORK

TOTAL RCRA METALS
IN MG/L OR PARTS PER MILLION (PPM)

SAMPLE OF UST CONTENTS

Sample 1B-UST Contents	
Analyte	**Test Results (mg/L)**
Arsenic	ND (<0.050)
Barium	0.497
Cadmium	ND (<0.050)
Chromium	ND (<0.100)
Lead	ND (<0.050)
Mercury	0.0074
Selenium	ND (<0.050)
Silver	ND (<0.100)

ND = Not detected at concentrations above the analytical laboratory detection limit shown in parentheses

TABLE 9

INTERIM REMEDIAL MEASURE

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

POST IRM GROUNDWATER MONITORING FOR LNAPL

DATE	MW-A Water SWL	MW-A LNAPL	MW-B Water SWL	MW-B LNAPL
4/17/02	8.54	--	8.53	--
4/26/02	9.41	--	DRY	--
4/30/02	8.58	--	DRY	--
5/14/02	7.25	--	7.27	--
5/21/02	8.87	--	8.94	--
5/30/02	7.60	--	7.50	--
6/7/02	9.05	--	9.22	--
6/17/02	8.23	--	8.18	--
7/3/02	9.50	--	DRY	--
8/14/02	DRY*	--	DRY	--

Static water levels (SWL) and light non-aqueous phase liquid (LNAPL) levels measured using : 1) an electronic static water level and visual observations; or 2) a Heron Model HO1.L oil/water interface meter.

-- = Not detected.

* = Well Riser observed to b damaged and gravel observed inside well.

TABLE 1

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

GROUNDWATER ANALYTICAL LABORATORY TESTING PROGRAM

Well Location	Sample Date	Sample Number	Analysis
MW-1	05/27/03	3240-01	8260 / 310.13 / pH
MW-12	05/27/03	3240-02	8260 / 310.13 / pH
MW-13	05/27/03	3240-03	8260 / 310.13 / pH

USEPA Method 8260 used to test for TCL and STARS-list volatile organic compounds.
NYSDOH Method 310.13 used to test for total petroleum hydrocarbons (TPH).

TABLE 2

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

TOTAL PETROLEUM HYDROCARBONS (TPH)
IN UG/L OR PARTS PER BILLION (PPB)

MAY 27, 2003 GROUNDWATER SAMPLES

Sample Location	Sample Designation	TPH Test Results (PPB)	Residential Receptor SSTL for Groundwater Volatilization to Indoor Air (ppb)[1]
MW-1	3240-01	--	
MW-12	3240-02	74,300 - MW (diesel fuel)	22,000 (MW C10-C12 aromatic hydrocarbons)
MW-13	3240-03	1,290 - LW (gasoline); 655 - MW (diesel fuel)	310 (LW C8-C10 aliphatic hydrocarbons) 22,000 (MW C10-C12 aromatic hydrocarbons)

-- = Not detected above reported laboratory detection limit values.
LW = Light Weight
MW = Medium Weight
(1) = Most stringent calculated Site-Specific Target Level for TPH type referenced in June 2001 Exposure Assessment prepared by DAY.

TABLE 3

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

pH ANALYSIS

MAY 27, 2003 GROUNDWATER SAMPLES

SAMPLE LOCATION	SAMPLE DESIGNATION	pH TEST RESULTS
MW-1	3240-01	7.09
MW-12	3240-02	6.72
MW-13	3240-03	6.98

TABLE 4

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

SUMMARY OF DETECTED
VOLATILE ORGANIC COMPOUNDS (VOCs)
IN UG/L OR PARTS PER BILLION (PPB)

MAY 27, 2003 GROUNDWATER SAMPLES

DETECTED VOCs	3240-01/ MW-1	3240-02/ MW-12	3240-03/ MW-13	NYSDEC TOGS 1.1.1 GW Standards and Guidance Values (ppb) [1]	Residential Receptor SSTL for GW Vol. to IA - (ppb)[2]	Adult Residential Receptor CCLs for GW Vol. to IA (ppb) [3]
Benzene	--	8.24	3.84	1	24	49.6
Ethylbenzene	--	7.04	10.7	5	77,000	152000
Total Xylenes	--	5.37	14.58	5	>200,000	55,000
Isopropylbenzene	--	10.6	58.6	5	NA	NA
n- Butylbenzene	--	--	14.0	5	NA	NA
n-Propylbenzene	--	17.2	99.0	5	NA	NA
1,2,4-Trimethylbenzene	--	42.7	266	5	NA	38,000
p-Isopropyltoluene	--	5.58	3.91	5	NA	NA
sec-Butylbenzene	--	17.3	28.3	5	NA	NA
Naphthalene	--	130	--	10	>31,000	7,420
Tetrachloroethene	14.8	--	--	5	160	NA
cis-1,2-Dichloroethene	--	2.30	3.10	5	NA	NA
Total VOCs	14.8	246.33	502.03	NA	NA	NA

-- = Not detected above reported laboratory detection limit value.
NA = Not available.
IA = Indoor Air
GW = Groundwater
Vol. = Volatilization
(1) = Groundwater Standards and Guidance Values referenced in June 1998 NYSDEC Division of Water TOGS (1.1.1) Ambient.
(2) = Site-Specific Target Levels referenced in June 2001 Exposure Assessment prepared by DAY.
(3) = Contaminant Concentration Limits referenced in NYSDEC document titled "Guidelines for Petroleum Spill Inactivation dated February 23, 1998.

TABLE 5

14 – 60 CHARLOTTE STREET
ROCHESTER, NEW YORK

GROUNDWATER ELEVATION DATA FOR MAY 27, 2003

WELL ID	CURB BOX ELEVATION (FT)	ELEVATION OF PVC WELL CASING (FT)	STATIC WATER LEVEL (SWL) MEASUREMENT (FT)	GROUNDWATER ELEVATION (FT)
MW-1	100.93	100.65	7.31	93.34
MW-4	97.66	97.36	6.31	91.05
MW-5	97.60	97.41	6.43	90.98
MW-12	99.67	99.32	7.01	92.31
MW-13	98.10	97.84	6.86	90.98
MW-14	101.29	101.00	7.61	93.39

NOTES: Elevations based on assumed Project Benchmark elevation of 100.00 feet
Free oil product was not detected in any of the wells during measurements taken on May 27, 2003 using an oil/water interface probe

TABLE 6

14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK

CUMULATIVE GROUNDWATER TEST RESULTS
IN UG/L OR PARTS PER BILLION (PPB)

MONITORING WELLS MW-1, MW-12 & MW-13

Sample Location	TPH				Total VOCs			
	May 2000	August 2000	December 2000	May 2003	May 2000	August 2000	December 2000	May 2003
MW-1	--	NC	--	--	17	NC	15.6	14.8
MW-12	NC	490 LW (gasoline)	--	74300 MW (diesel fuel)	NC	268.39	129	246.33
MW-13	NC	NC	2040 LW (gasoline)	1290 LW (gasoline); 655 MW (diesel fuel)	NC	NC	743.7	502.03

-- = Not detected above reported analytical laboratory detection limit values.
LW = Light Weight
MW = Medium Weight
TPH = Total petroleum hydrocarbons
VOCs = Volatile organic compounds
NC = Not collected

Appendix B

Health and Safety Plan & Community Air Monitoring Plan

HEALTH AND SAFETY PLAN

14-60 Charlotte Street
Rochester, New York
NYSDEC SPILL # 0070043 and # 0070044

Prepared By: City of Rochester
Division of Environmental Quality
30 Church Street
Rochester, New York 14614

Date: April, 2011

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

This Health and Safety Plan (HASP) outlines the policies and procedures to protect workers and the public from potential environmental hazards posed during site activities that encounter and/or disturb petroleum-impacted soil or groundwater that was discovered at 14-60 Charlotte Street, City of Rochester, County of Monroe, New York (Site). Redevelopment and construction activities that involve the disturbance of subsurface petroleum impacted soil/fill material and groundwater will be conducted in accordance with the Site Management Plan (SMP), a separate related document. In addition to the requirements outlined in the SMP and this HASP, work shall be conducted in a manner to reduce the probability of injury, accident, or incident occurrence.

1.1 Site History/Overview

The Site consists of seven contiguous parcels currently owned by the City of Rochester totaling approximately 1.1 acres (Figure 2). A two-story residential dwelling on the parcel addressed as 26 Charlotte Street and an approximately 1,800-square foot one-story commercial concrete block garage located on the parcel addressed as 42 Charlotte Street were demolished in September 2001. The 48-60 Charlotte Street parcel is actively used as an open parking lot and the remainder of the Site is vacant or unused.

Previous investigations conducted between 2001 and 2003, identified and documented the existence of soil and groundwater contamination at the Site and in the right-of-way of Haags Alley north of the Site. In addition, light non-aqueous phase liquid (LNAPL) designated as diesel fuel was detected in a groundwater monitoring well located on the southeast portion of the 14-16 Charlotte Street parcel. Some contaminants detected (e.g., light-weight total petroleum hydrocarbon (TPH) identified as mineral spirits and chlorinated volatile organic compounds) appear attributable to an off-site source located north of Haags Alley. As a result of the petroleum-impacted media, the New York State Department of Environmental Conservation (NYSDEC) generated spill files #0070043 and #0070044 for the Site.

1.2 Planned Activities Covered by HASP

This HASP is to be implemented when petroleum-impacted soil, fill material, and groundwater will be disturbed. This HASP is not intended to cover general health and safety regulations that are associated with normal construction activities. The owner of the property, its contractors, and other site workers will be responsible for the development and/or implementation of health and safety provisions associated with normal construction activities or other site activities.

2.0 ENVIRONMENTAL PROJECT MONITOR

The owner of the Site, or the entity that will be performing intrusive work, must designate an environmental project monitor. The environmental project monitor is responsible for implementing and administering the HASP relative to Site activities, and will be in the field while site activities associated with the disturbance of petroleum-impacted soil, fill material, and groundwater are in progress. The environmental project monitor's operational responsibilities will be monitoring, including personal and environmental monitoring, establishing and ensuring compliance with Site control areas and procedures, and identification of protection levels. The air monitoring data obtained by the environmental project monitor must be available for review by others involved with the project.

3.0 SAFETY RESPONSIBILITY

Contractors, consultants, subcontractors, State or local agencies, other parties, their employees, and on-site personnel involved with construction activities or other activities that disturb petroleum impacted soil, fill material and groundwater will be responsible for their own safety while on-site. These entities and their employees will be required to understand the information contained in this HASP, and must follow the recommendations that are made in this document. As an alternative, contractors, consultants, state or local agencies, other parties, and their employees involved with this project can utilize their own health and safety plan for intrusive activities at this Site as long as it is found acceptable to appropriate regulatory agencies and the City DEQ.

4.0 JOB HAZARD ANALYSIS

This HASP discusses some of the anticipated environmental hazards for this Site that are specifically associated with the management of petroleum-impacted soil, fill material, and groundwater during future redevelopment and construction-related activities.

4.1 Chemical Hazards

Chemical substances can enter the unprotected body by inhalation, skin absorption, ingestion, or through a puncture wound (injection). A contaminant can cause damage to the point of contact or can act systemically, causing a toxic effect at a part of the body distant from the point of initial contact.

Some samples of soil, fill or groundwater contained petroleum-related VOCs at concentrations that exceeded various regulatory criteria, and to a lesser degree, Petroleum Spill Site Inactivation (PSSI) exposure assessment criteria.

Presented below is a list of select petroleum-related constituents that have been previously detected in soil, fill and/or groundwater at the Site during the studies conducted to date. This list also presents the available OSHA permissible exposure limits (PELs), the available levels that are considered immediately dangerous to life and health (DLH), as well as National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs). Constituents listed in Bold were encountered at the Site at concentrations in excess of one or more Commercial Worker or Construction Worker receptor value as defined in the NYSDEC document titled "Guidelines for Petroleum Spill Site Inactivation" (PSSI), dated February 23, 1998.

CONSTITUENT	OSHA PEL	NIOSH REL	IDLH
1,2,4-Trirnethylbenzene	25 ppm	25 ppm	N/A
1,3,5-Trimethylbenzene	25 ppm	25 ppm	N/A
n-Propylbenzene	N/A	N/A	N/A
Ethylbenzene	100 ppm	100 ppm	800 ppm
Isopropylbenzene	50 ppm	50 ppm	900 ppm
Sec-Butylbenzene	N/A	N/A	N/A
Xylenes	100 ppm	100 ppm	900 ppm
p-Isopropyltoluene	N/A	N/A	N/A
Naphthalene	10 ppm	10 ppm	250 ppm
Acenaphthene	N/A	N/A	N/A
Phenanthene	N/A	N/A	N/A
Flourene	0.1 ppm	0.1 ppm	25 ppm
Floranthene	N/A	N/A	N/A
Pyrene	0.1 ppm	0.1 ppm	25 ppm

Notes: PEL = OSHA Permissible Exposure Limits [time-weighted average (TWA) for 8-hour day]
IDLH = Immediately Dangerous To Life Or Health
REL NIOSH Recommended Exposure Limits (TWA for up to a 10-hour work day)
NA = Not Available

The potential routes of exposure for these contaminants include inhalation, ingestion, absorption and skin/eye contact. The potential for exposure through any one of these routes will depend on the activity conducted. It is anticipated that inhalation, absorption and skin contact would be the most likely routes of exposure if groundwater is encountered and/or during disturbance of soil or fill material at the Site.

During project activities that involve the removal and/or disturbance of petroleum-impacted soil, fill material, or groundwater, the worker's breathing zone must be monitored for VOCs using a photoionization detector (PD) and/or for dusts and particulates using a real-time aerosol monitor (RTAM) in accordance with the provisions set forth in Section 8.0.

4.2 Physical Hazards

There are physical hazards associated with this project, which might compound the chemical hazards. Hazard identification, training, adherence to the redevelopment or work plans, and careful housekeeping can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this project and suggested preventative measures include:

- Slip/Trip/Fall Hazards - Some areas may have wet surfaces that will greatly increase the possibility of inadvertent slips. Caution must be exercised when using steps and stairs due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices are essential to minimize the trip hazards.

- Small Quantity Flammable Liquids - If small quantities of flammable liquids are brought onsite, they will be stored in "safety" cans and labeled according to contents.

- Electrical Hazards - Electrical devices and equipment shall be de-energized prior to working near them. All extension cords will be kept out of water, protected from crushing, and inspected regularly to ensure structural integrity. Temporary electrical circuits will be protected with ground fault circuit interrupters. Only qualified electricians are authorized to work on electrical circuits. Heavy equipment (e.g., backhoe, excavator) shall not be operated within 10 feet of high voltage lines.

- Noise - Work around large equipment often creates excessive noise. The effects of noise can include:

    - Workers being startled, annoyed, or distracted.
    - Physical damage to the ear resulting in pain, or temporary and/or permanent hearing loss.
    - Communication interference that may increase potential hazards due to the inability to warn of danger and proper safety precautions to be taken.

If employees are subjected to noise exceeding an 8-hour time weighted average sound level of 90 d(B)A (decibels on the A-weighted scale), feasible administrative or engineering controls shall be utilized. In addition, whenever employee noise exposures equal or exceed an 8-hour,

time weighted average sound level of 85 d(B)A, employers shall administer a continuing, effective hearing conservation program as described in OSHA Regulation 29 CFR Part 1910.95.

- Heavy Equipment - Each morning before start-up, heavy equipment will be observed to ensure safety equipment and devices are operational and ready for immediate use.

- Subsurface and Overhead Hazards - Before any excavation activity, efforts will be made to determine whether underground utilities and potential overhead hazards will be encountered. Underground utility clearance must be obtained prior to subsurface work.

4.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, and irritant plants can pose a hazard when performing outdoor tasks. Reasonable efforts will be made to alleviate these hazards should they arise.

4.3.1 Heat Stress

The combination of warm ambient temperature and protective clothing increases the potential for heat stress. In particular:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

Site workers will be encouraged to increase consumption of water and electrolyte-containing beverages when the potential for heat stress exists. In addition, workers are encouraged to take rests whenever they feel adverse effects that may be heat-related.

4.3.2 Exposure to Cold

With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Protective clothing greatly reduces the possibility of hypothermia and frostbite in workers. However, personnel will be instructed to wear warm clothing and to stop work to obtain more clothing if they become too cold. Site Workers will be encouraged to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

5.0 SITE CONTROLS

To prevent migration of petroleum-related constituents caused through tracking by personnel or equipment, work areas, and PPE staging/decontamination areas will be clearly specified prior to beginning operations.

5.1 Site Zones

In areas where soil, fill material or groundwater presents a potential for worker exposure (work zone), personnel entering the area must wear the mandated level of protection for the area. A "transition zone" shall be established where personnel can begin personal and equipment decontamination procedures. This can reduce potential off-site migration of contaminants. If petroleum-impacted soil, fill material and/or groundwater are encountered and equipment or clothing becomes contaminated, they will not be allowed outside the transition zone (e.g., on clean portions of the Site). Operational support facilities will be located outside the transition zone (i.e. in a "support zone"), and normal work clothing and support equipment are appropriate in this area. If possible, the support zone should be located upwind of project activities.

5.2 General

The following items will be requirements to protect the health and safety of workers during implementation of project activities that disturb petroleum-impacted soil, fill material, and groundwater.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contaminants shall not occur in the work zone and/or transition zone during disturbance of potentially impacted soil, or fill material and/or groundwater.
- Personnel admitted in the work zone shall be properly trained in health and safety techniques and equipment usage.
- No personnel shall be admitted in the work zone without the proper safety equipment.
- Proper decontamination procedures shall be followed before leaving the Site.

6.0 PROTECTIVE EQUIPMENT

This section addresses the various levels of personal protective equipment (PPE) that are or may be required at this job site. Personnel entering the work zone and transition zone shall be trained in the use of the anticipated PPE to be utilized.

6.1 Anticipated Protection Levels

The following table summarizes the protection levels (refer to Section 6.2) anticipated for various tasks to be implemented during redevelopment and construction related activities that involve disturbing petroleum-impacted soil, fill material, or groundwater.

TASK	PROTECTION LEVEL	COMMENTS/ MODIFICATIONS
Site mobilization	D	
Site Preparation	D	
Extrusive Work (ie. surveying, etc.)	D	
Intrusive Work (ie. grading, excavating, trenching, utility repair, etc.)	D, Modified D, or C	Based on air monitoring and worker discretion
Support Zone	D	
Site Breakdown & Demobilization	D	

During disturbance of petroleum-impacted soil, fill material, and groundwater, air in the worker's breathing zone and on the Site (upwind, downwind, etc.) shall be monitored for:

- Dusts, aerosols, particulates, etc. using a RTAM, and
- VOCs using a PID.

The air monitoring program in Section 8.0 will be used to assist in determining the level of PPE. It is anticipated that work conducted as part of this project will be performed in Level D or modified Level D PPE. If conditions are encountered that require higher levels of PPE (e.g., Level C, B, or A), the work will immediately be stopped and the proper health and safety measures will be implemented (e.g., develop and implement engineering controls, upgrade in PPE, etc.).

6.2 Protection Level Descriptions

This section lists the minimum requirements for each protection level. Modifications to these requirements can be made upon approval of the environmental project monitor. If Level A, Level B, and/or Level C PPE is required, Site personnel that enter the work zone and/or transition zone must be properly trained in the use of those levels of PPE.

6.2.1 Level D

Level D consists of the following:

- Safety glasses
- Hard hat when working with heavy equipment
- Steel-toed or composite-toed work boots

- Protective gloves during handling of petroleum-impacted media
- Work clothing as prescribed by weather

6.2.2 Modified Level D

Modified Level D consists of the following:

- Safety glasses with side shields
- Hard hat
- Steel-toed or composite-toed work boots
- Work gloves
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and polyvinyl chloride (PVC) acid gear will be required when workers have a potential to be exposed to impacted liquids or impacted particulates].

6.2.3 Level C

Level C consists of the following:

- Air-purifying respirator with appropriate cartridges
- Outer protective wear, such as Tyvek coverall [Tyveks (Sarans) and PVC acid gear will be required when workers have a potential to be exposed to impacted liquids or particulates].
- Hard hat
- Steel-toed or composite-toed work boots
- Nitrile, neoprene, or PVC over-boots, if appropriate
- Nitrile, neoprene, or PVC gloves, if appropriate
- Face shield (when projectiles or splashes pose a hazard)

Level C PPE is not anticipated to be required during this project. If the need for level C PPE becomes evident, the Site activities will be ceased until Site conditions are further evaluated, and any necessary modifications to the HASP have been addressed. Subsequently, the appropriate safety measures (including Level C PPE) must be implemented prior to commencing Site activities involving petroleum-impacted media.

6.2.4 Level B

Level B protection consists of the items required for Level C protection with the exception that an air-supplied respirator is used in place of the air-purifying respirator. Level B PPE is not anticipated to be required during this project. If the need for level B PPE becomes evident, the Site activities will be ceased until Site conditions are further evaluated, and any necessary modifications to the HASP have been addressed. Subsequently, the appropriate safety measures (including Level B PPE) must be implemented prior to commencing Site activities involving petroleum-impacted media.

6.2.5 Level A

Level A protection consists of the items required for Level B protection with the addition of a fully encapsulating, vapor-proof suit capable of maintaining positive pressure. Level A PPE is not anticipated to be required during this project. If the need for level A PPE becomes evident, the Site activities will be ceased until Site conditions are further evaluated, and any necessary modifications to the HASP have been addressed. Subsequently, the appropriate safety measures (including Level A PPE) must be implemented prior to commencing Site activities involving petroleum-impacted media.

6.3 Respiratory Protection

Any respirator used will meet the requirements of OSHA 29 CFR 1910.134. Both the respirator and cartridges specified shall be fit-tested prior to use in accordance with 051-IA regulations (29 CFR 1910). Air purifying respirators shall not be worn if contaminant levels exceed designated use concentrations. The workers will wear respirators with approval for: organic vapors <1,000 parts per million (ppm); and dusts, fumes and mists with a TWA <0.05 mg/m 3.

No personnel who have facial hair, which interferes with the respirator's sealing surface, will be permitted to wear a respirator and will not be permitted to work in areas requiring respirator use. Only workers who have been certified by a physician as being physically capable of respirator usage shall be issued a respirator. Personnel unable to pass a respiratory fit test or without medical clearance for respirator use will not be permitted to enter or work in areas on-site that require respirator protection.

7.0 DECONTAMINATION PROCEDURES

This section describes the procedures necessary to ensure that both personnel and equipment are free from contamination when they leave the work Site.

7.1 Personnel Decontamination

As deemed necessary by the environmental project monitor, personnel involved with activities that involve disturbing petroleum-impacted soil, fill material, or groundwater will follow the decontamination procedures described herein to ensure that materials which workers may have contacted in the work zone and/ or transition zone do not result in personal exposure and are not spread to clean areas of the Site. This sequence describes the general decontamination procedure. The specific stages can vary depending on the Site, the task, the protection level, etc.

1. Leave work zone and go to transition zone
2. Remove soil/ debris from boots and gloves
3. Remove boots
4. Remove gloves
5. Remove Tyvek suit and discard, if applicable
6. Remove and wash respirator, if applicable
7. Go to support zone

7.2 Equipment Decontamination

If equipment becomes contaminated, it shall be decontaminated in the transition zone before leaving the Site. Decontamination procedures can vary depending upon the contaminant involved, but may include sweeping, wiping, scraping, hosing, or steam cleaning the exterior of the equipment. Personnel performing this task will wear the proper PPE.

7.3 Disposal

Disposable clothing will be treated as contaminated waste or solid waste and be disposed of in accordance with applicable regulations. Liquids (e.g., decontamination water, etc.), if generated by project activities, will be disposed of in accordance with applicable regulations.

8.0 AIR MONITORING

During activities that disturb petroleum-impacted soil, fill material, or groundwater, air monitoring will be conducted in order to determine airborne particulate and potential contaminant levels. This ensures that respiratory protection is adequate to protect personnel against the contaminants, and that contaminants are not migrating off-site. Additional air monitoring may be conducted at the discretion of the environmental project monitor.

The following chart describes the direct reading instrumentation that will be utilized, the currently anticipated action levels, and the anticipated response actions.

Monitoring Device	Action Level	Action/ Level of PPE
RTAM Particulate Meter	< 150 ug/m^{3}over an integrated period not to exceed 15 minutes.	Continue working
	> 150 ug/m^{3}over an integrated period not to exceed 15 minutes.	Cease work, implement dust suppression, change in way work performed, etc. If levels cannot be brought below 150 ug/m^3, then upgrade PPE to Level C.
PID Volatile Organic Compound Meter	< 1 ppm in breathing zone, sustained 5 minutes	Level D
	1-25 ppm in breathing zone, sustained 5 minutes	Level C, monitor air for VOCs using chemical-specific drager tubes.
	26-250 ppm in breathing zone, sustained 5 minutes	Level B, Stop work, evaluate the use of engineering controls
	>250 ppm in breathing zone	Level A

8.1 Particulate Monitoring

During activities that disturb petroleum-impacted soil, fill material or groundwater, air monitoring will include RTAM monitoring for particulates using a RTAM particulate meter at the perimeter of the work zone in accordance with the 1989 NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4031, titled *"Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites"*. The TAGM uses an action level of 150 ug/m^3 over an integrated period, not to exceed 15 minutes. If the action level is exceeded, or if visible dust is encountered, then work shall be discontinued until corrective actions are implemented. Corrective actions may include dust suppression, change in the way work is performed, upgrade of PPE, etc. Readings will be recorded and be available for review.

8.2 Volatile Organic Compound Monitoring

During activities that disturb petroleum-impacted soil, fill material, or groundwater, a PD will be used to monitor total VOC content of the ambient air. The PD will prove useful as a direct reading instrument to aid in determining if current respiratory protection is adequate or needs to be upgraded. The environmental project monitor will take measurements before operations begin in an area to determine the amount of VOCs naturally occurring in the air. This is referred to as a background level. Levels of VOCs will periodically be measured in the air at active work sites, and at the transition zone when levels are detected above background in the work zone. If VOC concentrations are detected, appropriate response actions should be taken and appropriate protective gear utilized as specified in the preceding table in Section 8.0.

8.3 Community Air Monitoring Plan

During activities that disturb petroleum-impacted soil, fill material or groundwater, a Community Air Monitoring Plan (CAMP) will be implemented. The CAMP includes RTAM monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when activities with the potential to release VOCs or dust are in progress at the Site. This CAMP is based on the New York State Department of Health (NYSDOH) Generic CAMP document titled *"Generic Community Air Monitoring Plan"* (Appendix A). 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 project work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shut down. Additionally, the CAMP helps to confirm that work activities did not spread contaminants off-site through the air. Reliance on the CAMP should not preclude simple, common sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Continuous monitoring will be conducted during ground intrusive activities involving petroleum-impacted soil, fill material or groundwater. Ground intrusive activities include, but are not limited to, excavation, grading, handling, etc.

Periodic monitoring for VOCs will be conducted during non-intrusive activities involving petroleum-impacted soil, fill material or groundwater when deemed appropriate (e.g., during collection of background data, during worker breaks, etc.).

8.3.1 VOC Monitoring, Response Levels, and Actions

VOCs must be monitored at the downwind perimeter of the immediate work area (i.e., the work 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 (such as a PID equipped with a 10.6 eV lamp). 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 ppm above background for the 15-minute average, work activities must be temporarily halted and monitoring must be 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 or 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 shut down.

Total Organic Vapor readings must be recorded and made available for review.

8.3.2 Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the work zone at temporary particulate monitoring stations. The particulate monitoring should be performed using RTAM monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-b) 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 work activities that have the potential to disturb petroleum-impacted media.

- If the downwind PM-b 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-b 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, the downwind PM-10 particulate level is greater than 150 ug/m^3 above the up-wind 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-b particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Particulate readings must be recorded and made available for review.

9.0 EMERGENCY CONTINGENCY PLAN

To provide first-line assistance to field personnel in the case of illness or injury, the following items will be made immediately available on the Site:

- First-aid kit;
- Portable emergency eye wash; and
- Supply of clean water.

9.1 Emergency Telephone Numbers

The following telephone numbers are listed in case there is an emergency at the Site:

Fire/Police Department:	911
Poison Control Center:	(800) 222-1222
NYSDEC, Mike Zamiarski, P.E.	(585) 226-5438
NYSDEC Spills Hotline	(800) 457-7362
City of Rochester, Joseph Biondolillo	(585) 428-6649
Nearest Hospital	Highland Hospital 1000 South Avenue Rochester, New York 14620 (585) 473-2200

Directions to the Hospital (refer to Figure 1):
1. Start out going EAST on CHARLOTTE Street towards MATTHEWS Street
2. Turn RIGHT onto PITKIN Street
3. Take the INNER LOOP West ramp
4. Merge onto INNER LOOP
5. Take the CLINTON Avenue exit toward Route 15/ SOUTH Avenue
6. Turn RIGHT onto BRYON Street
7. Turn LEFT onto SOUTH Avenue
8. 1000 South Avenue is on the LEFT.

9.2 Evacuation

During activities involving disturbance of petroleum-impacted soil, fill material or groundwater, a log of each individual entering and leaving the Site will be kept for emergency accounting practices. Although unlikely, it is possible that a site emergency could require evacuating personnel from the site. If required, the environmental project monitor will give the appropriate signal for site evacuation (i.e., hand signals, alarms, etc.).

Personnel shall exit the site and shall congregate in an area designated by the environmental project monitor. The environmental project monitor shall ensure that personnel are accounted for. If someone is missing, the environmental project monitor will alert emergency personnel. The appropriate government agencies will be notified as soon as possible regarding the evacuation, and any necessary measures that may be required to mitigate the reason for the evacuation.

9.3 Medical Emergency

In the event of a medical emergency involving illness or injury to one of the on-site personnel, Emergency Medical Service (EMS) and the appropriate government agencies should be notified immediately. The area in which the injury or illness occurred shall not be entered until the cause of the illness or injury is known. The nature of injury or illness shall be assessed. If the victim appears to be critically injured, administer first aid and/ or cardio-pulmonary resuscitation (CPR) as needed. If appropriate, real time air monitoring shall be done in accordance with air monitoring outlined in Section 8.0 of this HASP.

9.4 Contamination Emergency

It is unlikely that a contamination emergency will occur; however, if such an emergency does occur, the specific work area shall be shut down and immediately secured. If an emergency rescue is needed, notify Police, Fire Department and EMS units immediately. Advise them of the situation and request an expedient response. The appropriate government agencies shall be notified immediately. The area in which the contamination occurred shall not be entered until the arrival of trained personnel who are properly equipped with the appropriate PPE and monitoring instrumentation as outlined in Section 8.0 of this HASP.

9.5 Fire Emergency

In the event of a fire on-site, non-essential site personnel shall be evacuated to a safe, secure area. The Fire Department will be notified immediately, and advised of the situation and the identification of any hazardous materials involved. The appropriate government agencies shall be notified as soon as possible.

The four classes of fire along with their constituents are as follows:

Class A: Wood, cloth, paper, rubber, many plastics, and ordinary combustible materials.

Class B: Flammable liquids, gases and greases.

Class C: Energized electrical equipment.

Class D: Combustible metals such as magnesium, titanium, sodium, and potassium.

Small fires on-site may be actively extinguished; however, extreme care shall be taken while in this operation. Approaches to the fire shall be done from the upwind side if possible. Distance from on site personnel to the fire shall be close enough to ensure proper application of the extinguishing material, but far enough away to ensure that the personnel are safe. The proper extinguisher shall be utilized for the Class(s) of fire present on the site. If possible, the fuel source shall be cut off or separated from the fire. Care must be taken when performing operations involving the shut-off of valves and manifolds, if present.

Examples of proper extinguishing agent as follows:

Class A:	Water
	Water with 1% AFFF Foam (Wet Water)
	Water with 6% AEFF or Fluorprotein Foam
	ABC Dry Chemical
Class B:	ABC Dry Chemical
	Purple K
	Carbon Dioxide
	Water with 6% AFFF Foam
Class C:	ABC Dry Chemical
	Carbon Dioxide
Class D:	Metal-X Dry Powder

No attempt shall be made against large fires. These shall be handled by the Fire Department.

9.6 Spill or Air Release

In the event of spills or air releases of hazardous materials on-site, the specific area of the spill or release shall be shut down and immediately secured. The area in which the spills or releases occurred shall not be entered until the cause can be determined and site safety can be evaluated. All non-essential site personnel shall be evacuated to a safe and secure area. The appropriate government agencies shall be notified as soon as possible. The spilled or released materials shall be immediately identified and appropriate containment measures shall be implemented, if possible. Real time air monitoring shall be implemented as outlined in Section 8.0 of this HASP. If the materials are unknown, Level B protection is mandatory. Samples of the materials shall be acquired to facilitate identification, if deemed necessary.

9.7 Locating Containerized Waste and/or Underground Storage Tanks

In the event that unanticipated containerized waste (e.g., drums) and/or underground storage tanks are located during the project, the work will be stopped in the specific area until site safety can be evaluated and addressed. Non-essential Site personnel shall not work in the immediate area until conditions, including possible exposure hazards, are addressed. The appropriate government agencies shall be notified as soon as possible. The environmental project monitor shall monitor the area as outlined in Section 8.0 of this HASP.

Prior to any handling, unanticipated containers will be visually assessed by the environmental project monitor to gain as much information as possible about their contents. As a precautionary measure, personnel shall assume that unlabelled containers and/or tanks contain hazardous materials until their contents are characterized. To the extent possible based upon the nature of the containers encountered, actions may be taken to stabilize the area and prevent migration (e.g., placement of berms, etc.). Subsequent to initial visual assessment and any required stabilization, properly trained personnel will sample, test, remove, and dispose of any containers and/or tanks, and their contents. After visual assessment and air monitoring, if the material remains unknown, Level B protection is mandatory.

10.0 ABBREVIATIONS

CAMP	Community Air Monitoring Program
CPR	Cardio-Pulmonary Resuscitation
d(B)A	Decibels on the A-Weighted Scale
DEQ	City of Rochester Department of Environmental Services Division of Environmental Quality
EMS	Emergency Medical Service
HASP	Health and Safety Plan
IDLH	Immediately Dangerous to Life or Heath
NIOSH	National Institute for Occupational Health and Safety
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PIP	Photoionization Detector
PM-10	Particulate Matter less than 10 micrometers in diameter
PPE	Personal Protective Equipment
ppm	Parts Per Million
PSSI	NYSDEC Guidelines for Petroleum Spill Site Inactivation
PVC	Polyvinyl Chloride
REL	NIOSH Recommended Exposure Limits (TWA for up to a 10-hour work day)
RTAM	Real-Time Aerosol Monitor
SMP	Site Management Plan
SVOC	Semi-Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memorandum
TWA	Time-Weighted Average
ug/m^3	Micrograms Per Meter Cubed
UST	Underground Storage Tank
VOC	Volatile Organic Compound

Total Travel Estimate: **2.22 miles - about 6 minutes**

APPENDIX 1A

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 ground intrusive 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 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 (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.

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be predetermined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m3 or less at. the monitoring point.

- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored, Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work With Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/ occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.