

# **Soil and Groundwater Management Plan**

**38 Reynolds Street, Rochester, NY  
NYSDEC Spill #0170133**

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

February 9, 2011

## Table of Contents

1.0	Introduction.....	3
1.1.	Statement of Purpose .....	3
2.0	Site Description .....	3
3.0	Summary of Subsurface Investigation.....	4
3.1.	Summary of Investigation Methods.....	4
3.2.	Summary of Site Conditions.....	4
4.0	Conclusions.....	6
5.0	Site Management Plan (SMP) .....	6
5.1.	Petroleum Impacted Media.....	6
5.1.1.	Identification of Contaminated Media.....	7
5.1.2.	Handling .....	7
5.1.3.	Analytical Laboratory Testing.....	7
5.1.4.	Disposal of Petroleum Impacted Media .....	8
5.1.5.	Re-Use of Soil or Fill.....	8
5.2.	Health and Safety Monitoring .....	8
5.3.	Management of Potential Future Disturbances.....	9
6.0	Engineering Controls .....	9
7.0	Institutional Controls .....	9
8.0	Site Contacts .....	9

### **Figures**

Figure 1	Site Location Map
Figure 2	Sample Locations and Headspace Reading Map
Figure 3	Sanborn Fire Insurance Map (1971)

### **Tables**

Table 1	Soil Sample Results
Table 2	Groundwater Sample Results

### **Appendices**

Appendix A	Soil Boring Logs
Appendix B	Laboratory Analytical Results
Appendix C	Health and Safety Plan & Community Air Monitoring Plan

## 1. Introduction

This site-specific Site Management Plan (SMP) was developed to address residual impacts from an unidentified source at the property located at 38 Reynolds 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. Laboratory testing of subsurface investigation soil and groundwater samples collected from Geoprobe borings and Microwells in 2001, documented the presence of residual volatile organic compounds (VOCs) characteristic of medium and heavy weight petroleum products, diesel and lube oil, respectively. It is assumed the contamination was caused by a former heating oil tank or discharges to a garage floor drain formerly located on the property.

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 area of impact identified on Figure 2.

### 1.1. Statement of purpose

The purpose of this SMP is to provide protocols for managing soil/fill and/or groundwater impacted with residual petroleum constituents identified on Figure 2, should such impacts be encountered during future construction activities at the Site. This SMP establishes goals, procedures, and appropriate response actions to be used by on-site personnel for handling and disposal/reuse of the residual petroleum impacted media.

## 2. Site Description

The parcel of land at 38 Reynolds Street is a vacant lot at the northeast corner of the intersection of Reynolds Street and Clifton Street. The parcel is located in a residential area within the City of Rochester limits and is approximately 0.13 acres in size. The Site is zoned R-2 (Residential) and is currently classified as 311- Residential Vacant Land according to the NYS Office of Real Property Services. The site was originally intended for redevelopment as part of the City of Rochester's Home Expo 2001 campaign.

City records indicate the parcel was occupied by two (2) structures. A 2 1/2 story frame structure, located on the west side of the parcel, was used as a multi-family residence. The second structure, an unattached garage, was located on the northeast corner of the parcel and was constructed in 1916. Both structures were demolished in 1998. The 1971 Sanborn Fire Insurance, included as Figure 3, illustrates the configuration of the structures formerly occupying the site. No evidence of underground petroleum storage tanks associated with the property was indicated in the City permit records or the Sanborn Maps.

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

North: Residential  
East: Vacant; Residential  
South: Residential  
West: Residential

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

In May 2001, the City of Rochester (City) began excavation of a basement foundation for construction of a new home at 38 Reynolds Street (Figure 1). During excavation, elevated levels of petroleum vapors were detected in soils removed from the hole. Construction on the parcel was suspended, and the hole was backfilled and a subsurface investigation was completed on May 30 and 31, 2001. Geoprobe soil borings were advanced at locations across the site for soil sampling and analysis and to determine the nature and extent of contamination at the Site. No source soils were removed from the Site at the time of the investigation.

#### 3.1. Summary of Investigative Methods

The procedures used throughout the subsurface investigation were designed to aid in the collection of subsurface information relative to the overburden materials at the site. Specifically, the procedures were designed to identify and delineate any subsurface contamination at the site.

The Geoprobe subsurface investigation was conducted by MARCOR Remediation, Inc (MARCOR) in conjunction with City of Rochester DEQ personnel on May 30 and 31, 2001. Additional Geoprobe point locations were advanced on the eastern adjacent property (24 Clifton Street) on June 18, 2001 to further delineate subsurface contamination. Prior to the commencement of the investigation all underground utilities were cleared by the Underground Utilities Protective Organization (UFPO) or marked by utilities personnel.

A total of twenty-eight (28) Geoprobe borings were advanced at the 38 Reynolds Street property and seven (7) Geoprobe points were advanced on the Clifton Street property. Borings were advanced to depths ranging from 6.5 to 16 feet below ground surface (bgs) using a Geoprobe 5400 truck mounted unit (Figure 2). Soils were continuously sampled from 48" Macro-Core acetate liners. Soils were characterized and visual observations were recorded on Soil Boring Logs. A copy of the Boring Logs is included as Appendix A. Headspace analysis was performed on each sample in the field using a portable Microtip 2000-HL photoionization detector (PID). Soil samples exhibiting the highest headspace elevations from each boring were retained for possible laboratory analysis. Groundwater was encountered in several of the borings throughout the investigation at approximately eight (8) feet bgs. Four (4) groundwater samples were obtained for laboratory analysis from a Microwells installed at GP16, GPC-2, GPC-3 and GPC-7.

#### 3.2. Summary of Site Conditions

The geology of the site consists of unconsolidated glacial soils overlying carbonate bedrock. Geologic maps of the Rochester region indicate that the unconsolidated glacial soils consist of lucustrine silt and clay deposited in the late Pleistocene. The bedrock under the site is Lockport Dolomite consisting of dolomitic limestone and shale. The depth to bedrock is estimated at 15 to 20 feet below ground surface (bgs).

Accurate stratification of soil types was unable to be determined at portions of the Reynolds Street parcel due to the recent excavation and backfilling operations at the site. Soil samples from the property

extremes were glacio-luustrine in nature, consisting predominantly of brown sandy silts with smaller amounts of coarse to fine gravels and traces of larger cobbles. Although the soils at the center of the site had been mixed, the content appeared to be consistent with the undisturbed soils from the property extremes. Macrocore samples from borings at the Clifton Street property were undisturbed and confirmed the characterization of the Reynolds Street subsurface as brown sandy silts with smaller amounts of coarse to fine gravels and traces of larger cobbles. Bedrock was not encountered at any of the boring locations. Groundwater was encountered at approximately eight (8) feet bgs.

Borings on both sites were advanced at irregular intervals across the site to provide for more complete coverage. Most borings were advanced to between 6.5 to 16 feet bgs. Borings located on the western side of the Reynolds site were advanced to an average depth of 6.5 to 8.0 feet bgs due to interference from the remains of the previous structure's foundation.

Elevated headspace concentrations (10+ ppm) in the soil were encountered throughout the Reynolds site at various depths. The highest concentrations were detected in soils from the southern portion of the site from four to eight (4 to 8) feet bgs. Gray to black staining of the soil was also apparent from the southern samples. No staining or other evidence of a significant source of contamination was apparent from the samples obtained from the east, north and west sides of the site, and elevated headspace concentrations are likely attributable to soil mixing during the backfilling operations. Elevated headspace concentrations from the Clifton site were encountered in boring locations GPC-2 and GPC-6. Figure 3 illustrates the headspace concentrations recorded for each soil sample. Copies of the subsurface logs are included as Appendix A of this report.

Soil samples from six (7) locations (GP1a, GP8, GP16, GP19, GP21, GP23 and GPC-6) at various depth intervals were selected and submitted to Paradigm Environmental Services, Inc. (NYS ELAP ID No. 10958) for laboratory analysis. Samples were analyzed for Volatile Aromatic Compounds (VOCs) by NYSDEC S.T.A.R.S. 8021 B full list and, with the exception of sample GPC-6, for Total Petroleum Hydrocarbon fingerprinting by TPH 310.13 methodologies. Four (4) groundwater samples were also submitted for analysis by NYSDEC S.T.A.R.S. 8021 B full list and for Total Petroleum Hydrocarbon fingerprinting by TPH 310.13 methodologies.

VOC Contaminant levels for all soil samples were found to be below NYSDEC Part 375 *Unrestricted Use* Cleanup Objectives. TPH fingerprint analysis of GP19, GP21 and GP23 showed detectable levels of hydrocarbons characteristic of heavy weight lube oils. TPH fingerprint analysis identified measurable concentrations of medium weight petroleum hydrocarbons consistent with diesel fuel or heating oil at borings GP8 and GP16. TPH for petroleum hydrocarbons was below detectable limits for the GP1a sample. Table 1 illustrates the soil sample laboratory analysis results in comparison to NYSDEC Part 375 *Unrestricted Use* Soil Cleanup Objectives. A copy of the soil laboratory analysis results is included in Appendix B.

Groundwater laboratory analysis results indicated VOC contaminant concentrations were below NYSDEC T.O.G.s 1.1.1 Guidance Values for all sampled wells with the exception of Microwell GP-16. Groundwater was detected in GP-16 at approximately 8.0 feet below ground surface (bgs). The total VOC contaminant concentration level at Microwell GP-16 was 5,287 ppb total. Contaminants from GP16 were identified as medium weight petroleum diesel fuel. Table 2 illustrates the groundwater sample laboratory analysis results in comparison to NYSDEC TOGs 1.1.1 Guidance values. A copy of the groundwater laboratory analysis results is included in Appendix B.

#### 4. Conclusions

Based on the results of the Subsurface Investigation, including: field observations, soil headspace analysis results and laboratory sample results, petroleum impacted soils and groundwater exist at the site. Heavy weight petroleum contamination characteristic of lube oils was detected in soils underlying the northeast corner of the parcel directly below the former garage and extending in a southeasterly direction onto the Clifton Street property. No immediate source of the contamination was observed during the subsurface investigation; however, it is likely that the source originated from years of automobile fluids leaking directly onto the ground surface or into garage floor drains. The topography of the area and the delineation of the contaminant plume support a southeasterly groundwater flow direction.

Medium weight petroleum hydrocarbon contamination was identified from soil samples from the south central portion of the site. All constituent concentrations in the soil were below the NYSDEC Part 375 *Unrestricted Use* SCOs. No immediate source of the contamination was observed during the subsurface investigation, however, it is likely that the source is a former or yet to be discovered leaking underground heating oil tank. The horizontal and vertical limits of contamination have not been fully identified.

Groundwater at the Site exhibited elevated VOC concentrations above the NYSDEC TOGs 1.1.1 guidance values. There are currently no potable water sources in the area of the site to be impacted by contaminant leachate. However, seasonal fluctuations in local groundwater are unknown at the site and the water table may rise to encounter residual contaminants in the subsurface.

#### 5. Site Management Plan (SMP)

This SMP provides procedures to mitigate exposure to petroleum-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 C 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 petroleum-impacted media is encountered. The owner of the Site is responsible for petroleum 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 petroleum-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

During the subsurface investigation, soils exhibiting elevated headspace concentrations (10+ ppm) were encountered throughout the Reynolds site at various depths. The highest concentrations were detected in soils from the southern portion of the site from four to eight (4 to 8) feet bgs. Gray to black staining of the soil was also apparent from the southern samples. 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.

The studies conducted to date have identified groundwater within the overburden at the location of monitoring well GP-16 at depth of approximately 8.0 feet bgs. If groundwater is encountered during construction activities at the Site, it could be impacted by petroleum related constituents (e.g., VOCs). 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-impacted media (soil, fill, groundwater) is summarized below:

- NYSDEC Spill Technology and Remediation Series (STARS)-list VOCs via United States Environmental Protection Agency (USEPA) Method 8260
- 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.

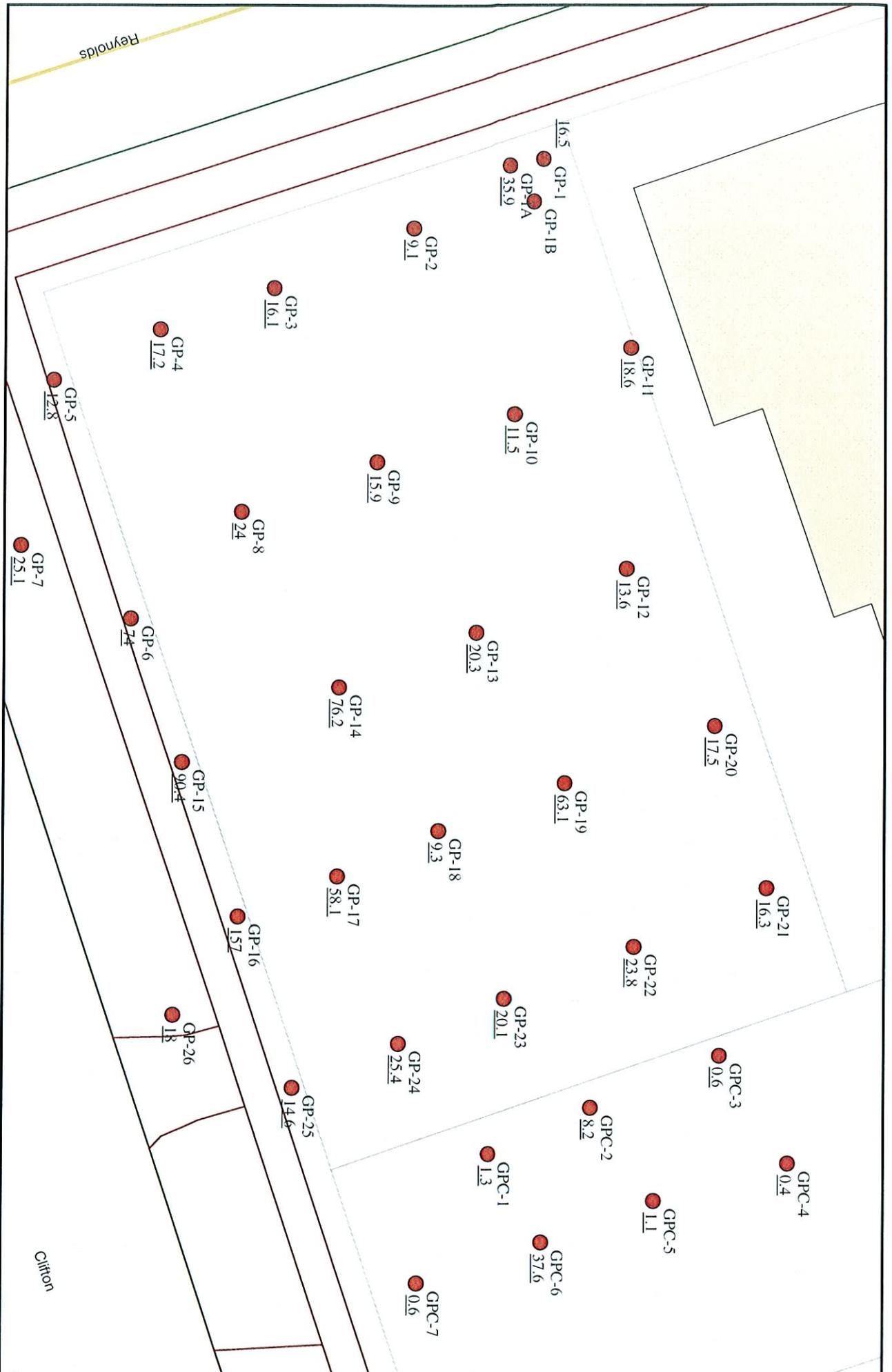
### 8. Site Contacts

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: Ms. Jane Forbes  
City of Rochester - Department of Environmental Services  
Division of Environmental Quality  
30 Church Street, Room 300B  
Rochester, NY 14614  
(585) 428-7892





**Legend**

● GP\_Locations

2.8 Max\_Headspace

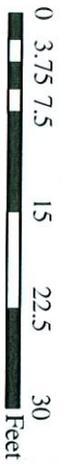


Figure 2  
 Sample Location & Soil Headspace Concentration Map  
 June 2001

ROCHESTER, N.Y. MAP 1-13  
**35S**



SCALE OF FEET  
COPYRIGHT BY SANBORN MAP COMPANY, INC.



### The Sanborn Library, LLC

This Sanborn Map™ is a certified copy produced by Environmental Data Resources, Inc. under arrangement with The Sanborn Library, LLC. Information on this Sanborn Map™ is derived from Sanborn field surveys conducted in:

Copyright © 1971 The Sanborn Library, LLC  
Year JW  
EDR Research Associate

Reproduction in whole or in part of any map of The Sanborn Library, LLC may be prohibited without prior written permission from The Sanborn Library, LLC.

**Table 1**  
**City of Rochester - Division of Environmental Quality**  
**38 Reynolds Street - Rochester, NY**  
**(results in ug/Kg or ppb)**

Analysis Method	Constituent	Soil Sample Results June 1, 2001							NYSDEC Part 375 Unrestricted Use SCOs
		GP1a (4-8')	GP8 (4-8')	GP16 (4-8')	GP19 (8-12')	GP21 (0-4')	GP23 (8-12')	GPC-6	
8021 B Full *	(MTBE)	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	930
	Benzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	60
	Toluene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	700
	Ethylbenzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	1000
	Mixed Xylene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	260
	Isopropylbenzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	N/A
	n-Propylbenzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	3900
	1,3,5-Trimethylbenzene	ND(7.7)	182.1	148.8	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	8400
	tert-Butylbenzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	5900
	1,2,4-Trimethylbenzene	ND(7.7)	216.7	105.1	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	3600
	sec-Butylbenzene	ND(7.7)	36.2	17.8	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	11000
	p-Isopropyltoluene	ND(7.7)	280.6	220.8	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	N/A
	n-Butylbenzene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	12000
	Naphthalene	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	N/A
Chloroform	ND(7.7)	ND(9.7)	ND(11.8)	ND(10.6)	ND(8.2)	ND(8.8)	ND(8.8)	370	
TPH 310.13	Petroleum Hydrocarbons	ND(7890)	632,000	1,120,000	25,900	28,600	58,500	NA	
	As...		med. weight	med. weight	heavy weight	heavy weight	heavy weight		
			diesel	diesel	lube oil	lube oil	lube oil		

\* - Only STARS 8021 compounds and compounds exhibiting concentrations above laboratory detectable levels listed.

**Table 2**  
**City of Rochester - Division of Environmental Quality**  
**38 Reynolds Street - Rochester, NY**  
**(results in µg/L or ppb)**

<b>Groundwater Sample Results</b>					
<b>Volatiles</b>		<b>Protection of Public Health</b>			
Parameter	T.O.G.s 1.1.1 Guidance Values	GPC-2	GPC-3	GPC-7	GP-16
		6/21/2001	6/21/2001	6/21/2001	6/1/2001
Benzene	1	ND (2.0)	ND (2.0)	ND (2.0)	ND (20.0)
Chloroform	7	3.28	ND (2.0)	ND (2.0)	ND (20.0)
Isopropylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>129</b>
p-Isopropyltoluene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>388</b>
n-Butylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (20.0)
Ethylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>137</b>
Methyl tert-butyl Ether	10	ND (2.0)	ND (2.0)	ND (2.0)	ND (20.0)
Naphthalene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>1,370</b>
n-Propylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>280</b>
sec-Butylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>199</b>
tert-Butylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (20.0)
Toluene	5	ND (2.0)	ND (2.0)	ND (2.0)	ND (20.0)
1,2,4-Trimethylbenzene	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>1,620</b>
1,3,5-Trimethylbenzene	5	2.42	ND (2.0)	ND (2.0)	<b>534</b>
Xylenes (mixed)	5	ND (2.0)	ND (2.0)	ND (2.0)	<b>630</b>

Project No: DEQ-01058

**Borehole #: GP-1**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Silty SAND</b> Topsoil to 4", Brown Silty SAND, little cmf Gravel, dry, No Petroleum Odor.	0						
1			1						
2			2	S1	MC		36"		5.9
3			3						
4			4						
5		<b>Silty SAND</b> Similar Soil, gray and red limestone layer at 5.5' bgs, moist at 7.0' bgs, refusal at 7.0' bgs, No Petroleum Odor.	5	S2	MC		24"		16.5
6			6						
7		End Borehole @ 7.0'	7						
8			8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

Borehole #: GP-1a

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface <b>Not Characterized</b> Not Characterized.	0						
1			1						
2			2	S1	MC		0"		N/A
3			3						
4			4						
5			5						
6		<b>Silty SAND</b> Brown Silty SAND, moist @ 7.0', No Petroleum Odor.	6	S2	MC		36"		35.9
7			7						
8		<b>Similar Soil</b> Similar Soil, Refusal @ 8.5', No Petroleum Odor.	8	S3	MC		6"		15.2
9		End Borehole @ 8.5'	9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

Drill Method: Geoprobe 5400

Drill Date: May 30, 2001

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Datum:

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-1b**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Topsoil/ Organics</b> Topsoil and Organic material to 8" bgs grading to Brown Sandy SILT, little cmf Gravel, trace Clay, dry, No Petroleum Odor.	0						
1			1						
2			2	S1	MC		10"		12.9
3			3						
4			4						
5			5						
6		<b>Silty SAND</b> Brown Silty SAND, little cmf Gravel, trace Cobbles, moist @ 7.0', No Petroleum Odor.	6	S2	MC		18"		23.9
7			7						
8		End Borehole @ 8.0'	8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-2**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT with cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	1						
2			2	S1	MC		30"		8.2
3			3						
4			4						
5		<b>Similar Soil</b> Similar Soil, some Cobbles, moist @ 6.0', Refusal @ 6.0', No Petroleum Odor.	5	S2	MC		20"		9.1
6		End Borehole @ 6.0'	6						
7			7						
8			8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1



**Project No:** DEQ-01058  
**Project:** 38 Reynolds Street  
**Client:** City of Rochester  
**Location:** Rochester, New York  
**Borehole #: GP-1**  
**Well Diameter**  
**Logged By:** JMHF

SUBSURFACE PROFILE		SAMPLE			
Depth	Symbol	Description	Depth/Elev.	Number	Type
0		Ground Surface	0		
0		<b>Silly SAND</b> Topsoil to 4", Brown Silty SAND, little cmf Gravel, dry, No Petroleum Odor.	0	S1	MC
0		<b>Silly SAND</b> Similar Soil, gray and red limestone layer at 5.5' bgs, moist at 7.0' bgs, refusal at 7.0' bgs, No Petroleum Odor.	0	S2	MC
7		End Borehole @ 7.0'	7		
0			0		36"
0			0		24"
0			0		20
0			0		40
0			0		60
0			0		80
		Shear Strength blows/ft			
		Well Data			
		HeadSPACE Readings (ppm)			
					5.9
					16.5

**Drilled By:** MARCOR Remediation, Inc  
**City of Rochester - DEQ**  
**30 Church Street Room 300B**  
**Rochester, New York 14614**  
**Datum:**  
**Hole Size:** 2" Macro Core  
**Drill Method:** Geoprobe 5400  
**Drill Date:** May 30, 2001  
**Sheet:** 1 of 1

Project No: DEQ-01058

**Borehole #: GP-4**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT, little cmf Gravel, dry, No Petroleum Odor.	1							
2			2	S1	MC		40"			17.2
3			3							
4			4							
5		<b>Similar Soil</b> Similar Soil, Red and Gray limestone layer @ 6.5', Refusal @ 6.5', dry, No Petroleum Odor.	5	S2	MC		24"			13.0
6			6							
7		End Borehole @ 6.5'	7							
8			8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-5**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT, trace Clay, little cmf Gravel, dry, No Petroleum Odor.	1						
2			2	S1	MC		40"		10.3
3			3						
4			4						
5		<b>Similar Soil</b> Similar Soil, dry, No Petroleum Odor. Refusal @ 7.0'.	5						
6			6	S2	MC		24"		12.8
7		End Borehole @ 7.0'	7						
8			8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15		15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-6**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT, little cmf Gravel, dry, No Petroleum Odor.	0							
1			1							
2			2	S1	MC		36"			22.6
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil to 5.0', moist @ 5.5' with Gray and Black staining and Strong Petroleum Odor.	6	S2	MC		36"			74.0
7			7							
8			8							
8		End Borehole @ 8.0'	8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-7**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Topsoil and organics to 1.0' grading to Brown Sandy SILT, little cmf Gravel, trace Cobbles moist at 4.0', No Petroleum Odor.	1							
2			2	S1	MC		36"			6.4
4			4							
5		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor. Refusal @ 6.5'.	5	S2	MC		24"			25.1
6			6							
7		End Borehole @ 6.5'	7							
8			8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-8**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Brown Sandy SILT, little cmf Gravel, trace Cobbles moist at 4.0', No Petroleum Odor.	1							
2			2	S1	MC		36"			14.6
3			3							
4			4							
5		<b>Similar Soil</b> Similar Soil, some Cobbles, moist, Black staining and Moderate Petroleum Odor. Refusal @ 7.0'.	5							
6			6	S2	MC		24"			24.0
7		End Borehole @ 7.0'	7							
8			8							
9			9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-9**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT, with cmf Gravel, trace Cobbles, dry, Slight Petroleum Odor.	0						
1			1						
2			2	S1	MC		18"		15.3
3			3						
4			4						
5		<b>Similar Soil</b> Brown Sandy SILT with cmf Gravel and Cobbles, dry, No Petroleum Odor. Refusal @ 7.0'.	5						
6			6	S2	MC		18"		15.9
7		End Borehole @ 7.0'	7						
8			8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-10**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled material, Topsoil and Organics to 8", Brown Sandy SILT with cmf Gravel, trace Cobbles, moist, No Petroleum Odor.	1							
1			2	S1	MC		18"			11.0
2			3							
3			4							
4			5							
5			6	S2	MC		48"			11.5
6		<b>Similar Soil</b> Similar Soil, moist, Slight Petroleum Odor.	7							
7			8							
8		End Borehole @ 8.0'	9							
9			10							
10			11							
11			12							
12			13							
13			14							
14			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

Borehole #: GP-11

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Sandy SILT</b> Backfilled material, Brown Sandy SILT, little cmf Gravel, little Organics, trace Cobbles, moist, No Petroleum Odor.	0						
1			1						
2			2	S1	MC		48"		10.3
3			3						
4			4						
5			5						
6		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor.	6	S2	MC		48"		18.6
7			7						
8		End Borehole @13.5'	8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						
16			16						
17			17						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-12**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>No Recovery</b> No Recovery, Fill Space.							
1			1						
2			2	S1	MC		0"		N/A
3			3						
4			4						
5			5						
6		<b>Sandy SILT</b> Brown Sandy SILT, little cmf Gravel, some Cobbles, gray limestone layer @ 7.0', moist, No Petroleum Odor.	6	S2	MC		36"		4.8
7			7						
8		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor. Refusal @ 8.5'.	8	S3	MC		6"		13.6
9		End Borehole @ 12'	9						
10			10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-13**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, some cmf Gravel, little Cobbles, dry, No Petroleum Odor.	1							
2			2	S1	MC		18"			2.6
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil, trace Wood and Brick, dark Gray and Black staining @ 5.5', moist, No Petroleum Odor.	6	S2	MC		12"			20.3
7			7							
8			8							
9		<b>Similar Soil</b> Similar Soil, Black and Gray staining from 8.5 to 9.0', wet, Strong Petroleum Odor. Refusal @ 10.0'.	9	S3	MC		18"			15.2
10			10							
11		End Borehole @ 12'	11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-14**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, Slight Petroleum Odor @ 4.0'.	1						
2			2	S1	MC		30"		48.2
4			4						
5			5						
6		<b>Similar Soil</b> Brown and Gray Sandy SILT with cmf Gravel, little Cobbles, moist to wet @ 7.0', Moderate Petroleum Odor.	6	S2	MC		30"		76.2
7			7						
8			8						
9		<b>Similar Soil</b> Similar Soil, moist to wet, Strong Petroleum Odor. Refusal @ 9.5'.	9	S3	MC		24"		61.8
10		End Borehole @ 12'	10						
11			11						
12			12						
13			13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-15**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, trace Clay, dry, No Petroleum Odor.	1							
2			2	S1	MC		24"			15.0
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil, Gray staining, moist, Moderate Petroleum Odor.	6	S2	MC		24"			90.4
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist to wet, Moderate Petroleum Odor throughout.	10	S3	MC		24"			40.8
11			11							
12		End Borehole @ 12'	12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 30, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-16**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	0							
1			1							
2			2	S1	MC		40"			12.7
3			3							
4			4							
5			5							
6		<b>Sandy SILT</b> Similar Soil to 6.5' grading to Gray stained f SAND, moist, Strong Petroleum Odor.	6	S2	MC		40"			157.0
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil stained to 10.0' grading to Brown Sandy SILT, moist to wet, Moderate Petroleum Odor decreasing with depth.	10	S3	MC		40"			69.1
11			11							
12			12							
13		<b>Similar Soil</b> Similar Soil to 13.0' grading to Brown SILT, little mf Gravel, saturated, Slight Petroleum Odor. Refusal @ 14.5'.	13	S4	MC		24"			35.5
14			14							
15		End Borehole @ 12'	15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-17**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles grading to Gray stained Similar Soil @ 3.0', dry, Slight Petroleum Odor.	1						
2			2	S1	MC		40"		46.3
3			3						
4			4						
5		<b>Sandy SILT</b> Similar Soil, dry, No Petroleum Odor.	5						
6			6	S2	MC		40"		49.7
7			7						
8			8						
9		<b>Sandy SILT</b> Dark Brown Sandy SILT grading to Black stained Similar Soil @ 9.5', little cmf Gravel, trace Cobbles, saturated @ 10.0', stained to 11.5', Strong Petroleum Odor.	9						
10			10	S3	MC		40"		58.1
11			11						
12			12						
13		<b>Sandy SILT</b> Brown and Black Sandy SILT with cmf Gravel and Cobbles, saturated @ 13.0', Moderate Petroleum Odor decreasing with depth.	13						
14			14	S4	MC		36"		14.9
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

Borehole #: GP-18

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT with cmf Gravel, some Cobbles, trace Clay, Cinders and Ash, dry, No Petroleum Odor.	1							
2			2	S1	MC		38"			8.7
3			3							
4			4							
5			5							
6		<b>Sandy SILT</b> Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	6	S2	MC		38"			9.3
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist to wet @ 9.0', No Petroleum Odor.	10	S3	MC		42"			5.5
11			11							
12			12							
13		<b>Similar Soil</b> Similar Soil, saturated @ 12.5', No Petroleum Odor. Refusal @ 13.0'	13	S4	MC		18"			3.3
14		End Borehole @ 12'	14							
15			15							

Drilled By: MARCOR Remediation, Inc

Drill Method: Geoprobe 5400

Drill Date: May 31, 2001

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Datum:

Sheet: 1 of 1

Project No: DEQ-01058

Borehole #: GP-19

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles and Cinders, dry, No Petroleum Odor.	0							
1			1							
2			2	S1	MC		38"			34.7
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil, moist @ 8.0', Slight Petroleum Odor.	6	S2	MC		40"			25.1
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist to wet, Moderate Petroleum Odor.	10	S3	MC		36"			63.1
11			11							
12		<b>Similar Soil</b> Similar Soil, Moderate Petroleum Odor. Refusal @ 13.0'	12	S4	MC		12"			N/A
13		End Borehole @ 12'	13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

Borehole #: GP-20

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	1						
2			2	S1	MC		36"		17.5
3			3						
4		<b>Similar Soil</b> Similar Soil, dry, No Petroleum Odor.	4						
5			5						
6			6	S2	MC		40"		17.4
7		<b>Sandy SILT</b> Similar Soil, some cmf Gravel, little Cobbles, moist @ 8.0' No Petroleum Odor.	7						
8			8						
9			9						
10		<b>Sandy SILT</b> Similar Soil, some cmf Gravel, little Cobbles, moist @ 8.0' No Petroleum Odor.	10	S3	MC		36"		11.8
11			11						
12			12						
13		End Borehole @ 12'	13						
14			14						
15			15						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-21**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	1						
2			2	S1	MC		24'		51.1 ?
3			3						
4		<b>Similar Soil</b> Similar Soil, moist @ 7.0', No Petroleum Odor. Refusal @ 7.5'	4						
5			5						
6			6	S2	MC		36'		16.3
7		End Borehole @ 7.5'	7						
8			8						
9			9						
10			10						
11			11						
12			12						
13			13						
14			14						
15		15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-22**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.								
1			1							
2			2	S1	MC		36"			13.6
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil grading to f Silt, moist @ 7.0', No Petroleum Odor.	6	S2	MC		36"			23.8
7			7							
8			8							
9			9							
10		<b>Sandy SILT</b> Brown Sandy SILT, little cmf Gravel, little Cobbles, moist @ 10.0', No Petroleum Odor.	10	S3	MC		42"			10.7
11			11							
12		End Borehole @ 12'	12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-23**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, Cinders and Organics, dry, No Petroleum Odor.	0							
1			1							
2			2	S1	MC		24"			18.5
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil grading to f Silt @ 7.0', moist, No Petroleum Odor.	6	S2	MC		46"			6.0
7			7							
8		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor, Refusal @ 8.5'	8	S3	MC		6"			20.1
9		End Borehole @ 8.5'	9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-24**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	0							
1			1							
2			2	S1	MC		30"			10.2
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor.	6	S2	MC		40"			14.2
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist to wet @ 9.0', No Petroleum Odor.	10	S3	MC		40"			25.4
11			11							
12		End Borehole @ 12'	12							
13			13							
14			14							
15			15							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-25**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength				Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery	blows/ft					
								20	40	60	80		
0		Ground Surface	0										
0		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, little cmf Gravel, dry, No Petroleum Odor.	0										
1			1										
2			2	S1	MC		36"						14.6
3			3										
4			4										
5			5										
6		<b>Similar Soil</b> Similar Soil, dry, No Petroleum Odor.	6	S2	MC		48"						5.1
7			7										
8			8										
9			9										
10		<b>Similar Soil</b> Similar Soil, trace Cobbles, moist @ 9.0 to 10.0', No Petroleum Odor.	10	S3	MC		40"						13.2
11			11										
12		End Borehole @ 12'	12										
13			13										
14			14										
15			15										

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GP-26**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Backfilled Material, Brown Sandy SILT, with cmf Gravel, little Cobbles, trace Clay, dry, No Petroleum Odor.	1							
2			2	S1	MC		38"			9.2
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil to 6.0' grading to Brown Silty SAND, dry, No Petroleum Odor.	6	S2	MC		36"			18.0
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist @ 12.0', No Petroleum Odor.	10	S3	MC		40"			8.9
11			11							
12			12							
13		<b>Similar Soil</b> Similar Soil, saturated, No Petroleum Odor. Refusal @ 13.5'	13	S4	MC		18"			6.8
14		End Borehole @ 13.5'	14							
15			15							
16			16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: May 31, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-1**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
0		<b>Silty SAND</b> Topsoil to 4", Brown Silty SAND, little cmf Gravel, trace Cobbles, dry, No Petroleum Odor.	0						
1			1						
2			2	S1	MC		30"		0.9
3			3						
4			4						
5			5						
6		<b>Silty SAND</b> Similar Soil, moist at 6.5 to 8.0' bgs, No Petroleum Odor.	6	S2	MC		48"		1.3
7			7						
8			8						
9			9						
10		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor.	10	S3	MC		48"		1.2
11			11						
12			12						
13		<b>Similar Soil</b> Similar Soil, moist to wet, No Petroleum Odor, Bottom of Boring @ 14.0' bgs.	13	S4	MC		24"		1.2
14		End Borehole @14'	14						
15			15						
16			16						
17			17						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-2**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE			SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft			
0		Ground Surface	0						
1		<b>No Recovery</b> No Recovery. Sample lost in broken Macro Core	1						
2			2	S1	MC				NA
3			3						
4			4						
5		<b>Sandy SILT</b>	5						
6		Brown Sandy SILT, little cmf Gravel, trace Cobbles, Clay and Cinders, Black staining and Petroleum odor @ 5.0 to 7.5' bgs, moist.	6	S2	MC				8.2
7			7						
8			8						
9			9						
10		<b>Similar Soil</b>	10	S3	MC				0.4
11		Similar Soil, moist, wet @10.0' bgs, Slight Petroleum Odor.	11						
12			12						
13		<b>SAND</b>	13	S4	MC				0.6
14		Brown SAND, little mf Gravel, grading to Gray Silt, wet to 13' bgs. Bottom of Boring @ 13.5' bgs.	14						
15		End Borehole @13.5'	15						
16			16						
17			17						

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-3**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>SAND and SILT</b> Brown cmf SAND and SILT, little Gravel trace Cobbles, dry, No Petroleum Odors.	0							
1			1							
2			2	S1	MC					0.4
3			3							
4			4							
5			5							
6		<b>Silty CLAY</b> Brown Silty CLAY, trace mf Gravel grading to Brown Silt, moist @ 7.0' bgs, No Petroleum Odor.	6	S2	MC					0.6
7			7							
8			8							
9			9							
10		<b>Sandy SILT</b> Brown Sandy SILT, trace mf Gravel, trace Cobbles, moist to wet @ 10.0' bgs, No Petroleum Odor.	10	S3	MC					0.3
11			11							
12			12							
13			13							
14		<b>Similar Soil</b> Similar Soil grading to Gray-Red Silt, trace cmf Gravel, trace Cobbles, saturated @ 13.5', No Petroleum Odor.	14	S4	MC					0.5
15			15							
16		End Borehole @ 16'	16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-4**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Brown Sandy SILT, little cmf Gravel, trace Cobbles, Dry, No Petroleum Odor.	1							
2			2	S1	MC					0.3
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil, trace Clay, moist @ 7.0' bgs, No Petroleum Odor.	6	S2	MC					0.4
7			7							
8		<b>No Recovery</b> No Recovery, Refusal @ 8.5' bgs.	8	S3	MC					
9		End Borehole @ 8.5'	9							
10			10							
11			11							
12			12							
13			13							
14			14							
15			15							
16			16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-5**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>SAND and GRAVEL</b> Brown SAND and cmf GRAVEL, little Silt, little Cobbles, dry, No Petroleum Odor.	1							
2			2	S1	MC					0.3
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil grading to Silt @ 6.5' bgs, little mf Gravel, trace Cobbles, trace Clay, moist, No Petroleum Odor.	6	S2	MC					0.9
7			7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, moist, No Petroleum Odor.	10	S3	MC					1.0
11			11							
12			12							
13			13							
14		<b>SAND</b> Brown SAND, trace Silt, saturated @ 13.0' bgs, No Petroleum Odor.	14	S4	MC					1.1
15			15							
16		End Borehole @ 16'	16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-6**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
1		<b>Sandy SILT</b> Brown Sandy SILT, with cmf Gravel, trace Cobbles, Dry, No Petroleum Odors.	1							
2			2	S1	MC					2.4
3			3							
4		<b>Similar Soil</b> Similar Soil to 5.5' bgs grading to Gray Silt, little cmf Gravel, moist, Strong Petroleum Odor.	4							
5			5							
6			6	S2	MC					35.2
7		<b>Similar Soil</b> Similar Soil, with staining to 9.5' bgs, moist, Strong Petroleum Odor decreasing with depth.	7							
8			8							
9			9							
10		<b>Similar Soil</b> Similar Soil, saturated @ 13.0' bgs, Moderate Petroleum Odor.	10	S3	MC					9.8
11			11							
12			12							
13		<b>Similar Soil</b> Similar Soil, saturated @ 13.0' bgs, Moderate Petroleum Odor.	13							
14			14	S4	MC					37.6
15			15							
16		End Borehole @ 16'	16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

Project No: DEQ-01058

**Borehole #: GPC-7**

Project: 38 Reynolds Street

Client: City of Rochester

Well Diameter

Location: Rochester, New York

Logged By: JMHF

SUBSURFACE PROFILE				SAMPLE				Shear Strength blows/ft 20 40 60 80	Well Data	Headspace Readings (ppm)
Depth	Symbol	Description	Depth/Elev.	Number	Type	Blows/ft	Recovery			
0		Ground Surface	0							
0		<b>Sandy SILT</b> Brown Sandy SILT, with cmf Gravel, some Cobbles, Dry, No Petroleum Odors.	0							
1			1							
2			2	S1	MC					0.1
3			3							
4			4							
5			5							
6		<b>Similar Soil</b> Similar Soil grading to Brown-Gray Silty Clay, trace mf Gravel, moist, No Petroleum Odor.	6	S2	MC					0.4
7			7							
8			8							
9			9							
10		<b>Silty CLAY</b> Brown-Gray Silty CLAY, little cmf Gravel, trace Cobbles, moist to wet, No Petroleum Odor.	10	S3	MC					0.1
11			11							
12			12							
13		<b>Similar Soil</b> Similar Soil, saturated @ 13.0' bgs, No Petroleum Odor. Bottom of boring @ 13.5' bgs.	13	S4	MC					0.6
14		End Borehole @13.5'	14							
15			15							
16			16							
17			17							

Drilled By: MARCOR Remediation, Inc

City of Rochester - DEQ  
30 Church Street Room 300B  
Rochester, New York 14614

Hole Size: 2" Macro Core

Drill Method: Geoprobe 5400

Datum:

Drill Date: June 18, 2001

Sheet: 1 of 1

# PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2630 FAX 716-647-3311

## Volatile Laboratory Analysis Report For Soil/Sludge

Client:	<u>City of Rochester</u>	Lab Project No.:	01-1295
Client Job Site:	38 Reynolds St.	Lab Sample No.:	4962
Client Job No.:	DEQ-01058	Sample Type:	Soil
Field Location:	GP1A (4-8')	Date Sampled:	06/01/01
Field ID No.:	N/A	Date Received:	06/04/01
		Date Analyzed:	06/08/01

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 7.7	Benzene	ND< 7.7
Bromomethane	ND< 7.7	Bromobenzene	ND< 7.7
Carbon Tetrachloride	ND< 7.7	n-Butylbenzene	ND< 7.7
Chloroethane	ND< 7.7	sec-Butylbenzene	ND< 7.7
Chloromethane	ND< 7.7	tert-Butylbenzene	ND< 7.7
1,2-Dibromomethane	ND< 7.7	Chlorobenzene	ND< 7.7
Dibromomethane	ND< 7.7	2-Chlorotoluene	ND< 7.7
1,2-Dibromo-3-Chloropropane	ND< 7.7	4-Chlorotoluene	ND< 7.7
1,1-Dichloroethane	ND< 7.7	1,2-Dichlorobenzene	ND< 7.7
1,2-Dichloroethane	ND< 7.7	1,3-Dichlorobenzene	ND< 7.7
1,1-Dichloroethene	ND< 7.7	1,4-Dichlorobenzene	ND< 7.7
cis-1,2-Dichloroethene	ND< 7.7	Ethyl Benzene	ND< 7.7
trans-1,2-Dichloroethene	ND< 7.7	Hexachlorobutadiene	ND< 7.7
1,2-Dichloropropene	ND< 7.7	Isopropylbenzene	ND< 7.7
1,3-Dichloropropane	ND< 7.7	4-Isopropyltoluene	ND< 7.7
2,2-Dichloropropane	ND< 7.7	Naphthalene	ND< 7.7
1,1-Dichloropropene	ND< 7.7	n-Propylbenzene	ND< 7.7
cis-1,3-Dichloropropene	ND< 7.7	styrene	ND< 7.7
trans-1,3-Dichloropropene	ND< 7.7	Toluene	ND< 7.7
Methylene Chloride	ND< 19.1	1,2,3-Trichlorobenzene	ND< 7.7
1,1,1,2-Tetrachloroethane	ND< 7.7	1,2,4-Trichlorobenzene	ND< 7.7
1,1,2,2-Tetrachloroethane	ND< 7.7	1,2,4-Trimethylbenzene	ND< 7.7
Tetrachloroethene	ND< 7.7	1,3,5-Trimethylbenzene	ND< 7.7
1,1,1-Trichloroethane	ND< 7.7	m,p-xylene	ND< 7.7
1,1,2-Trichloroethane	ND< 7.7	o-Xylene	ND< 7.7
Trichloroethene	ND< 7.7		
Trichlorofluoromethane	ND< 7.7		
1,2,3-Trichloropropane	ND< 7.7		
Vinyl Chloride	ND< 7.7		
Bromodichloromethane	ND< 7.7		
Bromoform	ND< 7.7		
Chloroform	ND< 7.7		
Dibromochloromethane	ND< 7.7		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

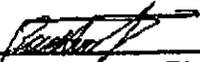
**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
		<b>Lab Sample No.:</b>	4962
<b>Client Job Site:</b>	38 Reynolds St	<b>Sample Type:</b>	Soil
<b>Client Job No.:</b>	DEQ-01058	<b>Date Sampled:</b>	06/01/01
<b>Field Location:</b>	GP1A (4-8')	<b>Date Received:</b>	06/04/01
<b>Field ID No:</b>	N/A	<b>Date Analyzed:</b>	06/08/01

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Petroleum Hydrocarbon	BDL	7,980

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By:   
 Laboratory Director

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report For Soil/Sludge**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
		<b>Lab Sample No.:</b>	4963
<b>Client Job Site:</b>	38 Reynolds St.	<b>Sample Type:</b>	Soil
<b>Client Job No.:</b>	DEQ-01058	<b>Date Sampled:</b>	08/01/01
<b>Field Location:</b>	GP8 (4-8')	<b>Date Received:</b>	06/04/01
<b>Field ID No.:</b>	N/A	<b>Date Analyzed:</b>	06/08/01

VOLATILE HALOCARBOHS		VOLATILE AROMATICS	
	RESULTS (ug/Kg)		RESULTS (ug/Kg)
Bromochloromethane	ND< 9.7	Benzene	ND< 9.7
Bromomethane	ND< 9.7	Bromobenzene	ND< 9.7
Carbon Tetrachloride	ND< 9.7	n-Butylbenzene	ND< 9.7
Chloroethane	ND< 9.7	sec-Butylbenzene	36.2
Chloromethane	ND< 9.7	tert-Butylbenzene	ND< 9.7
1,2-Dibromomethane	ND< 9.7	Chlorobenzene	ND< 9.7
Dibromomethane	ND< 9.7	2-Chlorotoluene	ND< 9.7
1,2-Dibromo-3-Chloropropane	ND< 9.7	4-Chlorotoluene	ND< 9.7
1,1-Dichloroethane	ND< 9.7	1,2-Dichlorobenzene	ND< 9.7
1,2-Dichloroethane	ND< 9.7	1,3-Dichlorobenzene	ND< 9.7
1,1-Dichloroethene	ND< 9.7	1,4-Dichlorobenzene	ND< 9.7
cis-1,2-Dichloroethene	ND< 9.7	Ethyl Benzene	ND< 9.7
trans-1,2-Dichloroethene	ND< 9.7	Hexachlorobutadiene	ND< 9.7
1,2-Dichloropropane	ND< 9.7	Isopropylbenzene	ND< 9.7
1,3-Dichloropropane	ND< 9.7	4-Isopropyltoluene	280.6
2,2-Dichloropropane	ND< 9.7	Naphthalene	ND< 9.7
1,1-Dichloropropene	ND< 9.7	n-Propylbenzene	ND< 9.7
cis-1,3-Dichloropropene	ND< 9.7	styrene	ND< 9.7
trans-1,3-Dichloropropene	ND< 9.7	Toluene	ND< 9.7
Methylene Chloride	ND< 24.2	1,2,3-Trichlorobenzene	ND< 9.7
1,1,1,2-Tetrachloroethane	ND< 9.7	1,2,4-Trichlorobenzene	ND< 9.7
1,1,2,2-Tetrachloroethane	ND< 9.7	1,2,4-Trimethylbenzene	216.7
Tetrachloroethene	ND< 9.7	1,3,5-Trimethylbenzene	182.1
1,1,1-Trichloroethane	ND< 9.7	m,p-xylene	ND< 9.7
1,1,2-Trichloroethane	ND< 9.7	o-Xylene	ND< 9.7
Trichloroethene	ND< 9.7		
Trichlorofluoromethane	ND< 9.7		
1,2,3-Trichloropropane	ND< 9.7		
Vinyl Chloride	ND< 9.7		
Bromodichloromethane	ND< 9.7		
Bromoform	ND< 9.7		
Chloroform	ND< 9.7		
Dibromochloromethane	ND< 9.7		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By:   
 Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14808 716-647-2530 FAX 716- 647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
		<b>Lab Sample No.:</b>	4963
<b>Client Job Site:</b>	38 Reynolds St	<b>Sample Type:</b>	Soil
<b>Client Job No.:</b>	DEQ-01058	<b>Date Sampled:</b>	06/01/01
<b>Field Location:</b>	GP8 (4-8')	<b>Date Received:</b>	06/04/01
<b>Field ID No:</b>	N/A	<b>Date Analyzed:</b>	06/08/01

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Medium Weight PHC as Diesel Fuel	632,000	8,420

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By:   
Laboratory Director

# PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

## Volatile Laboratory Analysis Report For Soil/Sludge

Client: City of Rochester Lab Project No.: 01-1295  
 Lab Sample No.: 4964  
 Client Job Site: 38 Reynolds St.  
 Sample Type: Soil  
 Client Job No.: DEQ-01058 Date Sampled: 06/01/01  
 Field Location: GP18 (4-8') Date Received: 06/04/01  
 Field ID No.: N/A Date Analyzed: 06/08/01

VOLATILE HALOCARBONS		VOLATILE AROMATICS	
	RESULTS (ug/Kg)		RESULTS (ug/Kg)
Bromochloromethane	ND< 11.8	Benzene	ND< 11.8
Bromomethane	ND< 11.8	Bromobenzene	ND< 11.8
Carbon Tetrachloride	ND< 11.8	n-Butylbenzene	ND< 11.8
Chloroethane	ND< 11.8	sec-Butylbenzene	17.8
Chloromethane	ND< 11.8	tert-Butylbenzene	ND< 11.8
1,2-Dibromomethane	ND< 11.8	Chlorobenzene	ND< 11.8
Dibromomethane	ND< 11.8	2-Chlorotoluene	ND< 11.8
1,2-Dibromo-3-Chloropropane	ND< 11.8	4-Chlorotoluene	ND< 11.8
1,1-Dichloroethane	ND< 11.8	1,2-Dichlorobenzene	ND< 11.8
1,2-Dichloroethane	ND< 11.8	1,3-Dichlorobenzene	ND< 11.8
1,1-Dichloroethene	ND< 11.8	1,4-Dichlorobenzene	ND< 11.8
cis-1,2-Dichloroethene	ND< 11.8	Ethyl Benzene	ND< 11.8
trans-1,2-Dichloroethene	ND< 11.8	Hexachlorobutadiene	ND< 11.8
1,2-Dichloropropane	ND< 11.8	Isopropylbenzene	ND< 11.8
1,3-Dichloropropane	ND< 11.8	4-Isopropyltoluene	220.8
2,2-Dichloropropane	ND< 11.8	Naphthalene	ND< 11.8
1,1-Dichloropropene	ND< 11.8	n-Propylbenzene	ND< 11.8
cis-1,3-Dichloropropene	ND< 11.8	styrene	ND< 11.8
trans-1,3-Dichloropropene	ND< 11.8	Toluene	ND< 11.8
Methylene Chloride	ND< 29.6	1,2,3-Trichlorobenzene	ND< 11.8
1,1,1,2-Tetrachloroethane	ND< 11.8	1,2,4-Trichlorobenzene	ND< 11.8
1,1,2,2-Tetrachloroethane	ND< 11.8	1,2,4-Trimethylbenzene	105.1
Tetrachloroethene	ND< 11.8	1,3,5-Trimethylbenzene	148.8
1,1,1-Trichloroethane	ND< 11.8	m,p-xylene	ND< 11.8
1,1,2-Trichloroethane	ND< 11.8	o-Xylene	ND< 11.8
Trichloroethene	ND< 11.8		
Trichlorofluoromethane	ND< 11.8		
1,2,3-Trichloropropane	ND< 11.8		
Vinyl Chloride	ND< 11.8		
Bromodichloromethane	ND< 11.8		
Bromoform	ND< 11.8		
Chloroform	ND< 11.8		
Dibromochloromethane	ND< 11.8		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

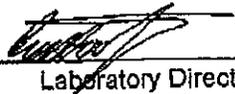
**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
		<b>Lab Sample No.:</b>	4964
<b>Client Job Site:</b>	38 Reynolds St	<b>Sample Type:</b>	Soil
<b>Client Job No.:</b>	DEQ-01058	<b>Date Sampled:</b>	06/01/01
<b>Field Location:</b>	GP16 (4-8')	<b>Date Received:</b>	06/04/01
<b>Field ID No:</b>	N/A	<b>Date Analyzed:</b>	06/08/01

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Medium Weight PHC as Diesel Fuel	1,120,000	8,000

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By:   
Laboratory Director

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report For Soil/Sludge**

Client: City of Rochester Lab Project No.: 01-1295  
 Client Job Site: 38 Reynolds St. Lab Sample No.: 4965  
 Client Job No.: DEQ-01058 Sample Type: Soil  
 Field Location: GP18 (8-12') Date Sampled: 06/01/01  
 Field ID No.: N/A Date Received: 06/04/01  
 Date Analyzed: 06/08/01

VOLATILE HALOCARBOANS		VOLATILE AROMATICS	
	RESULTS (ug/Kg)		RESULTS (ug/Kg)
Bromochloromethane	ND< 10.6	Benzene	ND< 10.6
Bromomethane	ND< 10.6	Bromobenzene	ND< 10.6
Carbon Tetrachloride	ND< 10.6	n-Butylbenzene	ND< 10.6
Chloroethane	ND< 10.6	sec-Butylbenzene	ND< 10.6
Chloromethane	ND< 10.6	tert-Butylbenzene	ND< 10.6
1,2-Dibromomethane	ND< 10.6	Chlorobenzene	ND< 10.6
Dibromomethane	ND< 10.6	2-Chlorotoluene	ND< 10.6
1,2-Dibromo-3-Chloropropane	ND< 10.6	4-Chlorotoluene	ND< 10.6
1,1-Dichloroethane	ND< 10.6	1,2-Dichlorobenzene	ND< 10.6
1,2-Dichloroethane	ND< 10.6	1,3-Dichlorobenzene	ND< 10.6
1,1-Dichloroethene	ND< 10.6	1,4-Dichlorobenzene	ND< 10.6
cis-1,2-Dichloroethene	ND< 10.6	Ethyl Benzene	ND< 10.6
trans-1,2-Dichloroethene	ND< 10.6	Hexachlorobutadiene	ND< 10.6
1,2-Dichloropropane	ND< 10.6	Isopropylbenzene	ND< 10.6
1,3-Dichloropropane	ND< 10.6	4-Isopropyltoluene	ND< 10.6
2,2-Dichloropropane	ND< 10.6	Naphthalene	ND< 10.6
1,1-Dichloropropene	ND< 10.6	n-Propylbenzene	ND< 10.6
cis-1,3-Dichloropropene	ND< 10.6	styrene	ND< 10.6
trans-1,3-Dichloropropene	ND< 10.6	Toluene	ND< 10.6
Methylene Chloride	ND< 26.5	1,2,3-Trichlorobenzene	ND< 10.6
1,1,1,2-Tetrachloroethane	ND< 10.6	1,2,4-Trichlorobenzene	ND< 10.6
1,1,2,2-Tetrachloroethane	ND< 10.6	1,2,4-Trimethylbenzene	ND< 10.6
Tetrachloroethene	ND< 10.6	1,3,5-Trimethylbenzene	ND< 10.6
1,1,1-Trichloroethane	ND< 10.6	m,p-xylene	ND< 10.6
1,1,2-Trichloroethane	ND< 10.6	o-Xylene	ND< 10.6
Trichloroethene	ND< 10.6		
Trichlorofluoromethane	ND< 10.6		
1,2,3-Trichloropropane	ND< 10.6		
Vinyl Chloride	ND< 10.6		
Bromodichloromethane	ND< 10.6		
Bromoform	ND< 10.6		
Chloroform	ND< 10.6		
Dibromochloromethane	ND< 10.6		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
		<b>Lab Sample No.:</b>	4965
<b>Client Job Site:</b>	38 Reynolds St	<b>Sample Type:</b>	Soil
<b>Client Job No.:</b>	DEQ-01058	<b>Date Sampled:</b>	06/01/01
<b>Field Location:</b>	GP19 (8-12')	<b>Date Received:</b>	06/04/01
<b>Field ID No:</b>	N/A	<b>Date Analyzed:</b>	06/08/01

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Heavy Weight PHC as Lube Oil	25,900	7,810

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

**Comments:** BDL denotes Below Detection Limit

**Approved By:**

  
 Laboratory Director

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

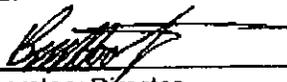
**Volatile Laboratory Analysis Report For Soil/Sludge**

Client: City of Rochester Lab Project No.: 01-1295  
 Lab Sample No.: 4966  
 Client Job Site: 38 Reynolds St.  
 Sample Type: Soil  
 Client Job No.: DEQ-01058 Date Sampled: 06/01/01  
 Field Location: GP21 (0-4') Date Received: 06/04/01  
 Field ID No.: N/A Date Analyzed: 06/08/01

VOLATILE HALOCARBONS	RESULTS (ug/Kg)	VOLATILE AROMATICS	RESULTS (ug/Kg)
Bromochloromethane	ND< 8.2	Benzene	ND< 8.2
Bromomethane	ND< 8.2	Bromobenzene	ND< 8.2
Carbon Tetrachloride	ND< 8.2	n-Butylbenzene	ND< 8.2
Chloroethane	ND< 8.2	sec-Butylbenzene	ND< 8.2
Chloromethane	ND< 8.2	tert-Butylbenzene	ND< 8.2
1,2-Dibromomethane	ND< 8.2	Chlorobenzene	ND< 8.2
Dibromomethane	ND< 8.2	2-Chlorotoluene	ND< 8.2
1,2-Dibromo-3-Chloropropane	ND< 8.2	4-Chlorotoluene	ND< 8.2
1,1-Dichloroethane	ND< 8.2	1,2-Dichlorobenzene	ND< 8.2
1,2-Dichloroethane	ND< 8.2	1,3-Dichlorobenzene	ND< 8.2
1,1-Dichloroethene	ND< 8.2	1,4-Dichlorobenzene	ND< 8.2
cis-1,2-Dichloroethene	ND< 8.2	Ethyl Benzene	ND< 8.2
trans-1,2-Dichloroethene	ND< 8.2	Hexachlorobutadiene	ND< 8.2
1,2-Dichloropropane	ND< 8.2	Isopropylbenzene	ND< 8.2
1,3-Dichloropropane	ND< 8.2	4-Isopropyltoluene	ND< 8.2
2,2-Dichloropropane	ND< 8.2	Naphthalene	ND< 8.2
1,1-Dichloropropene	ND< 8.2	n-Propylbenzene	ND< 8.2
cis-1,3-Dichloropropene	ND< 8.2	styrene	ND< 8.2
trans-1,3-Dichloropropene	ND< 8.2	Toluene	ND< 8.2
Methylene Chloride	ND< 20.5	1,2,3-Trichlorobenzene	ND< 8.2
1,1,1,2-Tetrachloroethane	ND< 8.2	1,2,4-Trichlorobenzene	ND< 8.2
1,1,1,2-Tetrachloroethane	ND< 8.2	1,2,4-Trimethylbenzene	ND< 8.2
Tetrachloroethene	ND< 8.2	1,3,5-Trimethylbenzene	ND< 8.2
1,1,1-Trichloroethane	ND< 8.2	m,p-xylene	ND< 8.2
1,1,2-Trichloroethane	ND< 8.2	o-Xylene	ND< 8.2
Trichloroethene	ND< 8.2		
Trichlorofluoromethane	ND< 8.2		
1,2,3-Trichloropropane	ND< 8.2		
Vinyl Chloride	ND< 8.2		
Bromodichloromethane	ND< 8.2		
Bromoform	ND< 8.2		
Chloroform	ND< 8.2		
Dibromochloromethane	ND< 8.2		

Analytical Method: EPA 8021

NYS ELAP No.: 10956

Approved By:   
 Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

<b>Client:</b>	<b><u>City of Rochester</u></b>	<b>Lab Project No.:</b>	<b>01-1295</b>
<b>Client Job Site:</b>	<b>38 Reynolds St</b>	<b>Lab Sample No.:</b>	<b>4966</b>
<b>Client Job No.:</b>	<b>DEQ-01058</b>	<b>Sample Type:</b>	<b>Soil</b>
<b>Field Location:</b>	<b>GP21 (0-4')</b>	<b>Date Sampled:</b>	<b>06/01/01</b>
<b>Field ID No:</b>	<b>N/A</b>	<b>Date Received:</b>	<b>06/04/01</b>
		<b>Date Analyzed:</b>	<b>06/08/01</b>

<b>Petroleum Hydrocarbon</b>	<b>Result (ug/Kg)</b>	<b>Reporting Limit (ug/Kg)</b>
<b>Heavy Weight PHC as Lube Oil</b>	<b>28,600</b>	<b>7,960</b>

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10956

**Comments:** BDL denotes Below Detection Limit

**Approved By:** \_\_\_\_\_

  
 Laboratory Director

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report For Soil/Sludge**

Client: City of Rochester Lab Project No.: 01-1295  
 Lab Sample No.: 4967  
 Client Job Site: 38 Reynolds St.  
 Sample Type: Soil  
 Client Job No.: DEQ-01058 Date Sampled: 06/01/01  
 Field Location: GP23 (8-12') Date Received: 06/04/01  
 Field ID No.: N/A Date Analyzed: 06/08/01

VOLATILE HALOCARBOANS		VOLATILE AROMATICS	
	RESULTS (ug/Kg)		RESULTS (ug/Kg)
Bromochloromethane	ND< 8.8	Benzene	ND< 8.8
Bromomethane	ND< 8.8	Bromobenzene	ND< 8.8
Carbon Tetrachloride	ND< 8.8	n-Butylbenzene	ND< 8.8
Chloroethane	ND< 8.8	sec-Butylbenzene	ND< 8.8
Chloromethane	ND< 8.8	tert-Butylbenzene	ND< 8.8
1,2-Dibromomethane	ND< 8.8	Chlorobenzene	ND< 8.8
Dibromomethane	ND< 8.8	2-Chlorotoluene	ND< 8.8
1,2-Dibromo-3-Chloropropane	ND< 8.8	4-Chlorotoluene	ND< 8.8
1,1-Dichloroethane	ND< 8.8	1,2-Dichlorobenzene	ND< 8.8
1,2-Dichloroethane	ND< 8.8	1,3-Dichlorobenzene	ND< 8.8
1,1-Dichloroethene	ND< 8.8	1,4-Dichlorobenzene	ND< 8.8
cis-1,2-Dichloroethene	ND< 8.8	Ethyl Benzene	ND< 8.8
trans-1,2-Dichloroethene	ND< 8.8	Hexachlorobutadiene	ND< 8.8
1,2-Dichloropropane	ND< 8.8	Isopropylbenzene	ND< 8.8
1,3-Dichloropropane	ND< 8.8	4-Isopropyltoluene	ND< 8.8
2,2-Dichloropropane	ND< 8.8	Naphthalene	ND< 8.8
1,1-Dichloropropene	ND< 8.8	n-Propylbenzene	ND< 8.8
cis-1,3-Dichloropropene	ND< 8.8	styrene	ND< 8.8
trans-1,3-Dichloropropene	ND< 8.8	Toluene	ND< 8.8
Methylene Chloride	ND< 22.0	1,2,3-Trichlorobenzene	ND< 8.8
1,1,1,2-Tetrachloroethane	ND< 8.8	1,2,4-Trichlorobenzene	ND< 8.8
1,1,2,2-Tetrachloroethane	ND< 8.8	1,2,4-Trimethylbenzene	ND< 8.8
Tetrachloroethene	ND< 8.8	1,3,5-Trimethylbenzene	ND< 8.8
1,1,1-Trichloroethane	ND< 8.8	m,p-xylene	ND< 8.8
1,1,2-Trichloroethane	ND< 8.8	o-Xylene	ND< 8.8
Trichloroethane	ND< 8.8		
Trichlorofluoromethane	ND< 8.8		
1,2,3-Trichloropropane	ND< 8.8		
Vinyl Chloride	ND< 8.8		
Bromodichloromethane	ND< 8.8		
Bromoform	ND< 8.8		
Chloroform	ND< 8.8		
Dibromochloromethane	ND< 8.8		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

Notes: ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Soil/Solid Matrix**

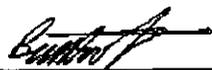
<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1295
<b>Client Job Site:</b>	38 Reynolds St	<b>Lab Sample No.:</b>	4967
<b>Client Job No.:</b>	DEQ-01058	<b>Sample Type:</b>	Soil
<b>Field Location:</b>	GP23 (8-12')	<b>Date Sampled:</b>	06/01/01
<b>Field ID No:</b>	N/A	<b>Date Received:</b>	06/04/01
		<b>Date Analyzed:</b>	06/08/01

Petroleum Hydrocarbon	Result (ug/Kg)	Reporting Limit (ug/Kg)
Heavy Weight PHC as Lube Oil	58,500	7,920

N.Y.D.O.H. Analytical Method: 310.13 modified ELAP ID No.: 10958

**Comments:** BDL denotes Below Detection Limit

Approved By: \_\_\_\_\_



Laboratory Director

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report**

Client: City of Rochester Lab Project No.: 01-1295  
 Lab Sample No.: 4968  
 Client Job Site: 38 Reynolds St.  
 Sample Type: Water  
 Client Job No.: DEQ-01058 Date Sampled: 06/01/01  
 Field Location: GP16 Date Received: 06/04/01  
 Field ID No.: N/A Date Analyzed: 06/08/01

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromochloromethane	ND<20.0	Benzene	ND<20.0
Bromomethane	ND<20.0	Bromobenzene	ND<20.0
Carbon Tetrachloride	ND<20.0	n-Butylbenzene	ND<20.0
Chloroethane	ND<20.0	sec-Butylbenzene	199
Chloromethane	ND<20.0	tert-Butylbenzene	ND<20.0
1,2-Dibromomethane	ND<20.0	Chlorobenzene	ND<20.0
Dibromomethane	ND<20.0	2-Chlorotoluene	ND<20.0
1,2-Dibromo-3-Chloropropane	ND<20.0	4-Chlorotoluene	ND<20.0
1,1-Dichloroethane	ND<20.0	1,2-Dichlorobenzene	ND<20.0
1,2-Dichloroethane	ND<20.0	1,3-Dichlorobenzene	ND<20.0
1,1-Dichloroethene	ND<20.0	1,4-Dichlorobenzene	ND<20.0
cis-1,2-Dichloroethene	ND<20.0	Ethyl Benzene	137
trans-1,2-Dichloroethene	ND<20.0	Hexachlorobutadiene	ND<20.0
1,2-Dichloropropane	ND<20.0	Isopropylbenzene	129
1,3-Dichloropropane	ND<20.0	4-Isopropyltoluene	366
2,2-Dichloropropane	ND<20.0	Naphthalene	1370
1,1-Dichloropropene	ND<20.0	n-Propylbenzene	260
cis-1,3-Dichloropropene	ND<20.0	styrene	ND<20.0
trans-1,3-Dichloropropene	ND<20.0	Toluene	ND<20.0
Methylene Chloride	ND<50.0	1,2,3-Trichlorobenzene	ND<20.0
1,1,1,2-Tetrachloroethane	ND<20.0	1,2,4-Trichlorobenzene	ND<20.0
1,1,2,2-Tetrachloroethane	ND<20.0	1,2,4-Trimethylbenzene	1620
Tetrachloroethene	ND<20.0	1,3,5-Trimethylbenzene	534
1,1,1-Trichloroethane	ND<20.0	m,p-xylene	442
1,1,2-Trichloroethane	ND<20.0	o-Xylene	188
Trichloroethene	ND<20.0		
Trichlorofluoromethane	ND<20.0	<u>Trihalomethanes</u> <u>Result THM</u>	
1,2,3-Trichloropropane	ND<20.0	Bromodichloromethane	ND<20.0
Vinyl Chloride	ND<20.0	Bromoform	ND<20.0
		Chloroform	ND<20.0
		Dibromochloromethane	ND<20.0
		Total THM's	ND<20.0 ug/L

EPA Method 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

ND denotes Not Detected

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Water**

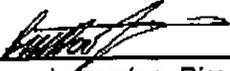
Client:	<u>City of Rochester</u>	Lab Project No.:	01-1295
		Lab Sample No.:	4968
Client Job Site:	38 Reynolds St	Sample Type:	Water
Client Job No.:	DEQ-01058	Date Sampled:	06/01/2001
Field Location:	GP16	Date Received:	06/04/2001
Field ID No:	N/A	Date Analyzed:	06/07/2001

Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Medium Weight PHC as Diesel Fuel	2,390	250

N.Y.D.O.H. Analytical Method: 310.13

ELAP ID No.: 10958

Comments: BDL denotes Below Detection Limit

Approved By:   
 Laboratory Director

# PARADIGM

## CHAIN OF CUSTODY

**ENVIRONMENTAL SERVICES, INC.**  
 179 Lake Avenue  
 Rochester, NY 14608  
 (716) 647-2530 \* (800) 724-1997  
 FAX: (716) 647-3311

PROJECT/CLIENT NAME:  
 38 Reynolds St  
 Dec-01058

REPORT TO: City of Rochester  
 INVOICE TO: ~~City of Rochester~~

COMPANY: City of Rochester  
 ADDRESS: 30 Church Street Rm 300B  
 CITY: Rochester STATE: NY ZIP: 14614

PHONE: 428-7892 FAX: 428-6010

LAB PROJECT #: 01-1295  
 CLIENT PROJECT #:   
 TURNAROUND TIME (WORKING DAYS):   
 1  2  3  5  OTHER

DATE	TIME	COMPOSITE	G R A B	SAMPLE LOCATION/FIELD ID	M A T R I X	C O N T A M I N A T I O N S	8021 B fuel	310.13	REMARKS	PARADIGM LAB SAMPLE NUMBER
6/11/01		X		GP1A (4-8')	Soil	1	X	X		4962
		X		GP8 (4-8')		1	X	X		4963
		X		GP16 (4-8')		1	X	X		4964
		X		GP19 (8-12')		1	X	X		4965
		X		GP21 (0-4')		1	X	X		4966
		X		GP23 (8-12')		1	X	X		4967
		X		GP16	H <sub>2</sub> O	3	X	X		4968

**\*\*LAB USE ONLY\*\***

SAMPLE CONDITION: Check box if acceptable or note deviation:  PRESERVATIONS:  HOLDING TIME:  TEMPERATURE:

Sampled By: Jane M. Forbes Date/Time: 6/11/01 3:00 PM

Relinquished By: [Signature] Date/Time: 6/11/01 9:40 AM

Received By: [Signature] Date/Time: 6/11/01 9:40 AM

Relinquished By: [Signature] Date/Time: 6/11/01 9:40 AM

Received @ Lab By: [Signature] Date/Time: 6/11/01 10:55

Total Cost:   
 P.L.F.   
 WAB 20.00, Soil 23.00

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Water**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1497
<b>Client Job Site:</b>	Reynolds St.	<b>Lab Sample No.:</b>	5590
<b>Client Job No.:</b>	N/A	<b>Sample Type:</b>	Water
<b>Field Location:</b>	GPC-2	<b>Date Sampled:</b>	06/21/2001
<b>Field ID No:</b>	N/A	<b>Date Received:</b>	06/22/2001
		<b>Date Analyzed:</b>	06/27/2001

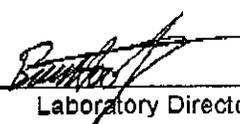
Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Heavy Weight PHC as Lube Oil	334	250

N.Y.D.O.H. Analytical Method: 310.13

ELAP ID No.: 10958

**Comments:** BDL denotes Below Detection Limit

**Approved By:** \_\_\_\_\_

  
 Laboratory Director

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Water**

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1497
<b>Client Job Site:</b>	Reynolds St.	<b>Lab Sample No.:</b>	5591
<b>Client Job No.:</b>	N/A	<b>Sample Type:</b>	Water
<b>Field Location:</b>	GPC-3	<b>Date Sampled:</b>	06/21/2001
<b>Field ID No:</b>	N/A	<b>Date Received:</b>	06/22/2001
		<b>Date Analyzed:</b>	06/27/2001

Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Petroleum Hydrocarbon	BDL	250

N.Y.D.O.H. Analytical Method: 310.13

ELAP ID No.: 10958

**Comments:** BDL denotes Below Detection Limit

**Approved By:**



Laboratory Director

**PARADIGM**  
**Environmental**  
**Services, Inc.**

179 Lake Avenue Rochester, New York 14606 716-647-2530 FAX 716- 647-3311

**Laboratory Analysis For Petroleum Hydrocarbons in Water**

<b>Client:</b>	<b>City of Rochester</b>	<b>Lab Project No.:</b>	01-1497
<b>Client Job Site:</b>	Reynolds St.	<b>Lab Sample No.:</b>	5592
<b>Client Job No.:</b>	N/A	<b>Sample Type:</b>	Water
<b>Field Location:</b>	GPC-7	<b>Date Sampled:</b>	06/21/2001
<b>Field ID No:</b>	N/A	<b>Date Received:</b>	06/22/2001
		<b>Date Analyzed:</b>	06/27/2001

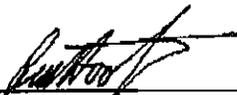
Petroleum Hydrocarbon	Result (ug/L)	Reporting Limit (ug/L)
Petroleum Hydrocarbon	BDL	250

N.Y.D.O.H. Analytical Method: 310.13

ELAP ID No.: 10958

**Comments:** BDL denotes Below Detection Limit

**Approved By:**

  
 Laboratory Director

# PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

## Volatile Laboratory Analysis Report

<b>Client:</b>	<u>City of Rochester</u>	<b>Lab Project No.:</b>	01-1497
		<b>Lab Sample No.:</b>	5590
<b>Client Job Site:</b>	Reynolds St.	<b>Sample Type:</b>	Water
<b>Client Job No.:</b>	N/A	<b>Date Sampled:</b>	06/21/01
<b>Field Location:</b>	GPC-2	<b>Date Received:</b>	06/22/01
<b>Field ID No.:</b>	N/A	<b>Date Analyzed:</b>	06/25/01

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromochloromethane	ND<2.0	Benzene	ND<2.0
Bromomethane	ND<2.0	Bromobenzene	ND<2.0
Carbon Tetrachloride	ND<2.0	n-Butylbenzene	ND<2.0
Chloroethane	ND<2.0	sec-Butylbenzene	ND<2.0
Chloromethane	ND<2.0	tert-Butylbenzene	ND<2.0
1,2-Dibromomethane	ND<2.0	Chlorobenzene	ND<2.0
Dibromomethane	ND<2.0	2-Chlorotoluene	ND<2.0
1,2-Dibromo-3-Chloropropane	ND<2.0	4-Chlorotoluene	ND<2.0
1,1-Dichloroethane	ND<2.0	1,2-Dichlorobenzene	ND<2.0
1,2-Dichloroethane	ND<2.0	1,3-Dichlorobenzene	ND<2.0
1,1-Dichloroethene	ND<2.0	1,4-Dichlorobenzene	ND<2.0
cis-1,2-Dichloroethene	ND<2.0	Ethyl Benzene	ND<2.0
trans-1,2-Dichloroethene	ND<2.0	Hexachlorobutadiene	ND<2.0
1,2-Dichloropropane	ND<2.0	Isopropylbenzene	ND<2.0
1,3-Dichloropropane	ND<2.0	4-Isopropyltoluene	ND<2.0
2,2-Dichloropropane	ND<2.0	Naphthalene	ND<2.0
1,1-Dichloropropene	ND<2.0	n-Propylbenzene	ND<2.0
cis-1,3-Dichloropropene	ND<2.0	styrene	ND<2.0
trans-1,3-Dichloropropene	ND<2.0	Toluene	ND<2.0
Methylene Chloride	ND<5.0	1,2,3-Trichlorobenzene	ND<2.0
1,1,1,2-Tetrachloroethane	ND<2.0	1,2,4-Trichlorobenzene	ND<2.0
1,1,2,2-Tetrachloroethane	ND<2.0	1,2,4-Trimethylbenzene	ND<2.0
Tetrachloroethene	ND<2.0	1,3,5-Trimethylbenzene	2.42
1,1,1-Trichloroethane	ND<2.0	m,p-xylene	ND<2.0
1,1,2-Trichloroethane	ND<2.0	o-Xylene	ND<2.0
Trichloroethene	ND<2.0		
Trichlorofluoromethane	ND<2.0	<u>Trihalomethanes</u>	<u>Result THM</u>
1,2,3-Trichloropropane	ND<2.0	Bromodichloromethane	ND<2.0
Vinyl Chloride	ND<2.0	Bromoform	ND<2.0
		Chloroform	3.28
		Dibromochloromethane	ND<2.0
		.....	
		Total THM's	3.28 ug/L

EPA Method 8021

NYS ELAP No.: 10858

Approved By: 

Laboratory Director

ND denotes Not Detected

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report**

Client: City of Rochester Lab Project No.: 01-1497  
 Lab Sample No.: 5591

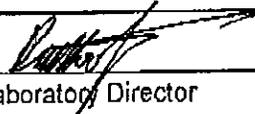
Client Job Site: Reynolds St. Sample Type: Water

Client Job No.: N/A Date Sampled: 06/21/01  
 Field Location: GPC-3 Date Received: 06/22/01  
 Field ID No.: N/A Date Analyzed: 06/26/01

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromochloromethane	ND<2.0	Benzene	ND<2.0
Bromomethane	ND<2.0	Bromobenzene	ND<2.0
Carbon Tetrachloride	ND<2.0	n-Butylbenzene	ND<2.0
Chloroethane	ND<2.0	sec-Butylbenzene	ND<2.0
Chloromethane	ND<2.0	tert-Butylbenzene	ND<2.0
1,2-Dibromomethane	ND<2.0	Chlorobenzene	ND<2.0
Dibromomethane	ND<2.0	2-Chlorotoluene	ND<2.0
1,2-Dibromo-3-Chloropropane	ND<2.0	4-Chlorotoluene	ND<2.0
1,1-Dichloroethane	ND<2.0	1,2-Dichlorobenzene	ND<2.0
1,2-Dichloroethane	ND<2.0	1,3-Dichlorobenzene	ND<2.0
1,1-Dichloroethene	ND<2.0	1,4-Dichlorobenzene	ND<2.0
cis-1,2-Dichloroethene	ND<2.0	Ethyl Benzene	ND<2.0
trans-1,2-Dichloroethene	ND<2.0	Hexachlorobutadiene	ND<2.0
1,2-Dichloropropane	ND<2.0	Isopropylbenzene	ND<2.0
1,3-Dichloropropane	ND<2.0	4-Isopropyltoluene	ND<2.0
2,2-Dichloropropane	ND<2.0	Naphthalene	ND<2.0
1,1-Dichloropropene	ND<2.0	n-Propylbenzene	ND<2.0
cis-1,3-Dichloropropene	ND<2.0	styrene	ND<2.0
trans-1,3-Dichloropropene	ND<2.0	Toluene	ND<2.0
Methylene Chloride	ND<5.0	1,2,3-Trichlorobenzene	ND<2.0
1,1,1,2-Tetrachloroethane	ND<2.0	1,2,4-Trichlorobenzene	ND<2.0
1,1,2,2-Tetrachloroethane	ND<2.0	1,2,4-Trimethylbenzene	ND<2.0
Tetrachloroethene	ND<2.0	1,3,5-Trimethylbenzene	ND<2.0
1,1,1-Trichloroethane	ND<2.0	m,p-xylene	ND<2.0
1,1,2-Trichloroethane	ND<2.0	o-Xylene	ND<2.0
Trichloroethane	ND<2.0		
Trichlorofluoromethane	ND<2.0	<u>Trihalomethanes</u> <u>Result THM</u>	
1,2,3-Trichloropropane	ND<2.0	Bromodichloromethane	ND<2.0
Vinyl Chloride	ND<2.0	Bromoform	ND<2.0
		Chloroform	ND<2.0
		Dibromochloromethane	ND<2.0
		Total THM's	ND<2.0 ug/L

EPA Method 8021

NYS ELAP No.: 10958

Approved By: 

Laboratory Director

ND denotes Not Detected

**PARADIGM**  
**ENVIRONMENTAL**  
**SERVICES, INC.**

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

**Volatile Laboratory Analysis Report**

Client: City of Rochester Lab Project No.: 01-1497  
 Lab Sample No.: 5592  
 Client Job Site: Reynolds St. Sample Type: Water  
 Client Job No.: N/A Date Sampled: 06/21/01  
 Field Location: GPC-7 Date Received: 06/22/01  
 Field ID No.: N/A Date Analyzed: 06/26/01

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromochloromethane	ND<2.0	Benzene	ND<2.0
Bromomethane	ND<2.0	Bromobenzene	ND<2.0
Carbon Tetrachloride	ND<2.0	n-Butylbenzene	ND<2.0
Chloroethane	ND<2.0	sec-Butylbenzene	ND<2.0
Chloromethane	ND<2.0	tert-Butylbenzene	ND<2.0
1,2-Dibromomethane	ND<2.0	Chlorobenzene	ND<2.0
Dibromomethane	ND<2.0	2-Chlorotoluene	ND<2.0
1,2-Dibromo-3-Chloropropane	ND<2.0	4-Chlorotoluene	ND<2.0
1,1-Dichloroethane	ND<2.0	1,2-Dichlorobenzene	ND<2.0
1,2-Dichloroethane	ND<2.0	1,3-Dichlorobenzene	ND<2.0
1,1-Dichloroethene	ND<2.0	1,4-Dichlorobenzene	ND<2.0
cis-1,2-Dichloroethane	ND<2.0	Ethyl Benzene	ND<2.0
trans-1,2-Dichloroethene	ND<2.0	Hexachlorobutadiene	ND<2.0
1,2-Dichloropropane	ND<2.0	Isopropylbenzene	ND<2.0
1,3-Dichloropropane	ND<2.0	4-Isopropyltoluene	ND<2.0
2,2-Dichloropropane	ND<2.0	Naphthalene	ND<2.0
1,1-Dichloropropene	ND<2.0	n-Propylbenzene	ND<2.0
cis-1,3-Dichloropropene	ND<2.0	styrene	ND<2.0
trans-1,3-Dichloropropene	ND<2.0	Toluene	ND<2.0
Methylene Chloride	ND<5.0	1,2,3-Trichlorobenzene	ND<2.0
1,1,1,2-Tetrachloroethane	ND<2.0	1,2,4-Trichlorobenzene	ND<2.0
1,1,2,2-Tetrachloroethane	ND<2.0	1,2,4-Trimethylbenzene	ND<2.0
Tetrachloroethene	ND<2.0	1,3,5-Trimethylbenzene	ND<2.0
1,1,1-Trichloroethane	ND<2.0	m,p-xylene	ND<2.0
1,1,2-Trichloroethane	ND<2.0	o-Xylene	ND<2.0
Trichloroethene	ND<2.0		
Trichlorofluoromethane	ND<2.0	<u>Trihalomethanes</u> <u>Result THM</u>	
1,2,3-Trichloropropane	ND<2.0	Bromodichloromethane	ND<2.0
Vinyl Chloride	ND<2.0	Bromoform	ND<2.0
		Chloroform	ND<2.0
		Dibromochloromethane	ND<2.0
		Total THM's	ND<2.0 ug/L

EPA Method 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

ND denotes Not Detected

# PARADIGM

## CHAIN OF CUSTODY

### ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue  
Rochester, NY 14608  
(716) 647-2530 • (800) 724-1997  
FAX: (716) 647-3311

PROJECT NAME/SITE NAME: Payrid no SF

REPORT TO:

INVOICE TO:

COMPANY: City of Rochester

COMPANY:

ADDRESS:

ADDRESS:

CITY: STATE: ZIP:

CITY: STATE: ZIP:

PHONE: FAX:

PHONE: FAX:

LAB PROJECT #: 01-1497

CLIENT PROJECT #:

TURNAROUND TIME: (WORKING DAYS)

1  2  3  4  5  6

### REQUESTED ANALYSIS

DATE	TIME	C O M P O S I T E	G R A B	SAMPLE LOCATION/FIELD ID	M A T R I X	C O M M U N I T Y	8021 B full	310.13	REMARKS	PARADIGM LAB SAMPLE NUMBER
6/22/01	260		X	GPC-a	H2O	3	X	X		5590
			X	GPC-3		3	X	X		5591
			X	GPC-7		3	X	X		5592

\*\*LAB USE ONLY\*\*

SAMPLE CONDITION: Check box if acceptable or note deviation:

CONTAINER TYPE:

PRESERVATIONS:

HOLDING TIME:

TEMPERATURE:

Total Cost: 260

Sampled By:

JANE MTH FORESES

Date/Time:

6/22/01 300

Relinquished By:

Jane MTH Foreses

Date/Time:

6/22/01 300

Received By:

Jane Foreses

Relinquished By:

Jane Foreses

Date/Time:

6/22/01 300

Received By:

Jane Foreses

Date/Time:

6/22/01 0300 PM

Received @ Lab By:

Jane Foreses

Received By:

Jane Foreses

Date/Time:

6/22/01 0300 PM

Received @ Lab By:

Jane Foreses

Date/Time:

6/22/01 @ 15:40

P.L.E.

Jane Foreses

# PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

## Volatile Laboratory Analysis Report For Soil/Sludge

Client: City of Rochester Lab Project No.: 01-1668  
 Lab Sample No.: 6157  
 Client Job Site: Reynolds Street  
 Sample Type: Soil  
 Client Job No.: DEQ-01058 Date Sampled: 06/20/01  
 Field Location: SBC-6 (12-16') Date Received: 07/12/01  
 Field ID No.: N/A Date Analyzed: 07/20/01

VOLATILE HALOCARBONS		VOLATILE AROMATICS	
	RESULTS (ug/Kg)		RESULTS (ug/Kg)
Bromochloromethane	ND< 9.3	Benzene	ND< 9.3
Bromomethane	ND< 9.3	Bromobenzene	ND< 9.3
Carbon Tetrachloride	ND< 9.3	n-Butylbenzene	ND< 9.3
Chloroethane	ND< 9.3	sec-Butylbenzene	ND< 9.3
Chloromethane	ND< 9.3	tert-Butylbenzene	ND< 9.3
1,2-Dibromomethane	ND< 9.3	Chlorobenzene	ND< 9.3
Dibromomethane	ND< 9.3	2-Chlorotoluene	ND< 9.3
1,2-Dibromo-3-Chloropropane	ND< 9.3	4-Chlorotoluene	ND< 9.3
1,1-Dichloroethane	ND< 9.3	1,2-Dichlorobenzene	ND< 9.3
1,2-Dichloroethane	ND< 9.3	1,3-Dichlorobenzene	ND< 9.3
1,1-Dichloroethene	ND< 9.3	1,4-Dichlorobenzene	ND< 9.3
cis-1,2-Dichloroethene	ND< 9.3	Ethyl Benzene	ND< 9.3
trans-1,2-Dichloroethene	ND< 9.3	Hexachlorobutadiene	ND< 9.3
1,2-Dichloropropane	ND< 9.3	Isopropylbenzene	ND< 9.3
1,3-Dichloropropane	ND< 9.3	4-Isopropyltoluene	ND< 9.3
2,2-Dichloropropane	ND< 9.3	Naphthalene	ND< 9.3
1,1-Dichloropropene	ND< 9.3	n-Propylbenzene	ND< 9.3
cis-1,3-Dichloropropene	ND< 9.3	styrene	ND< 9.3
trans-1,3-Dichloropropene	ND< 9.3	Toluene	ND< 9.3
Methylene Chloride	ND< 23.2	1,2,3-Trichlorobenzene	ND< 9.3
1,1,1,2-Tetrachloroethane	ND< 9.3	1,2,4-Trichlorobenzene	ND< 9.3
1,1,1,2,2-Tetrachloroethane	ND< 9.3	1,2,4-Trimethylbenzene	ND< 9.3
Tetrachloroethene	ND< 9.3	1,3,5-Trimethylbenzene	ND< 9.3
1,1,1-Trichloroethane	ND< 9.3	m,p-xylene	ND< 9.3
1,1,2-Trichloroethane	ND< 9.3	o-Xylene	ND< 9.3
Trichloroethene	ND< 9.3		
Trichlorofluoromethane	ND< 9.3		
1,2,3-Trichloropropane	ND< 9.3		
Vinyl Chloride	ND< 9.3		
Bromodichloromethane	ND< 9.3		
Bromoform	ND< 9.3		
Chloroform	ND< 9.3		
Dibromochloromethane	ND< 9.3		

Analytical Method: EPA 8021

NYS ELAP No.: 10958

Approved By: \_\_\_\_\_

Laboratory Director

Notes: ND denotes Not Detected

# PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue  
Rochester, NY 14608  
(716) 647-2630 • (810) 724-1997  
FAX: (716) 647-3311

## CHAIN OF CUSTODY

PROJECT REQUESTER NAME:  
*Reynolds Street*  
DEQ-01D58

REPORT TO: \_\_\_\_\_ INVOICE TO: \_\_\_\_\_

COMPANY: <i>City of Rochester</i>	ADDRESS: <i>50 Church St-Rm 300B</i>	CITY: <i>Rochester</i>	STATE: <i>NY</i>	ZIP: <i>14614</i>	LAB PROJECT #: <i>01-1608</i>	CLIENT PROJECT #:
PHONE: <i>788-7892</i>	FAX: <i>428-6010</i>	ATTN: <i>Jane Forbes</i>	STATE:	ZIP:	TURNAROUND TIME (WORKING DAYS)	STD <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 5
COMMENTS: <i>Jane Forbes</i>				OTHER		

### REQUESTED ANALYSIS

DATE	TIME	COMPOSITE	GRA B	SAMPLE LOCATION/FIELD ID	MATRIX	COMMENTS	REMARKS	PARADIGM LAB SAMPLE NUMBER
16/20/01	1200		X	SBC-6 (2-16')	Sol	1	8021 B full	6157
2								
3								
4								
5								
6								
7								
8								
9								
10								

NOTE: core hold  
Sample past  
holding time. *(AD)*

\*\*LAB USE ONLY\*\*

SAMPLE CONDITION: Check box if acceptable or note deviation:

CONTAINER TYPE:

PRESERVATIONS:

HOLDING TIME:

TEMPERATURE:

24

Sampled By: <i>Jane Forbes</i>	Date/Time: <i>6/20/01 1200</i>	Relinquished By: <i>Jane Forbes</i>	Date/Time: <i>7/12/01 310</i>
Received @ Lab By: <i>Jane Forbes</i>	Date/Time: <i>7/12/01 @ 10:30</i>	Total Cost:	

HEALTH AND SAFETY PLAN

38 Reynolds Street  
Rochester, New York  
NYSDEC SPILL # 017040

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

Date: February 2011

## TABLE OF CONTENTS

1.0	INTRODUCTION	3
1.1	Site History/Overview	3
1.2	Planned Activities Covered by HASP	3
2.0	ENVIRONMENTAL PROJECT MONITOR	4
3.0	SAFETY RESPONSIBILITY	5
4.0	JOB HAZARD ANALYSIS	6
4.1	Chemical Hazards	6
4.2	Physical Hazards	7
4.3	Environmental Hazards	8
4.3.1	Heat Stress	8
4.3.2	Exposure to Cold	8
5.0	SITE CONTROLS	9
5.1	Site Zones	9
5.2	General	9
6.0	PROTECTIVE EQUIPMENT	10
6.1	Anticipated Protection Levels	10
6.2	Protection Level Descriptions	10
6.2.1	Level D	10
6.2.2	Modified Level D	11
6.2.3	Level C	11
6.2.4	Level B	11
6.2.5	Level A	12
6.3	Respiratory Protection	12
7.0	DECONTAMINATION PROCEDURES	13
7.1	Personnel Decontamination	13
7.2	Equipment Decontamination	13
7.3	Disposal	13
8.0	AIR MONITORING	14
8.1	Particulate Monitoring	14
8.2	Volatile Organic Compound Monitoring	14
8.3	Community Air Monitoring Plan	15
8.3.1	VOC Monitoring, Response Levels, and Actions	15
8.3.2	Particulate Monitoring, Response Levels, and Actions	16
9.0	EMERGENCY CONTINGENCY PLAN	17
9.1	Emergency Telephone Numbers	17
9.2	Evacuation	17
9.3	Medical Emergency	18
9.4	Contamination Emergency	18
9.5	Fire Emergency	18
9.6	Spill or Air Release	19
9.7	Locating Containerized Waste and/or Underground Storage Tanks	19
10.0	ABBREVIATIONS	20

## ATTACHMENTS

Figure 1	Route to Hospital
Appendix A	New York State Department of Health (NYSDOH) <i>Generic Community Air Monitoring Plan</i>

## 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 that was discovered at 38 Reynolds 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

In May 2001, the City of Rochester (City) began excavation of a basement foundation for construction of a new home at 38 Reynolds Street. During excavation, elevated levels of petroleum vapors were detected in soils removed from the hole. Construction on the parcel was suspended, and the hole was backfilled and a subsurface investigation was completed on May 30 and 31, 2001. Geoprobe soil borings were advanced at locations across the site for soil sampling and analysis and to determine the nature and extent of contamination at the Site.

Laboratory analytical results for soil and groundwater samples collected from Geoprobe borings and Microwells, indicated the presence of residual volatile organic compounds (VOCs) characteristic of medium and heavy weight petroleum products, diesel and lube oil, respectively. It is assumed the contamination was caused by a former heating oil tank or discharges to a garage floor drain formerly located on the property. As a result of the petroleum-impacted media, the New York State Department of Environmental Conservation (NYSDEC) generated spill file #0170133.

### 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 (IDLH), 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. These values are more fully discussed in a separate Exposure Assessment.

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

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<sup>3</sup>.

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 <sup>3</sup> over an integrated period not to exceed 15 minutes.	Continue working
	> 150 ug/m <sup>3</sup> 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 <sup>3</sup> , then upgrade PPE to Level C.
PID Volatile Organic Compound Meter	< 1 ppm in breathing zone, sustained 5 minutes	<u>Level D</u>
	1-25 ppm in breathing zone, sustained 5 minutes	<u>Level C</u> , monitor air for VOCs using chemical-specific drager tubes.
	26-250 ppm in breathing zone, sustained 5 minutes	<u>Level B</u> , Stop work, evaluate the use of engineering controls
	>250 ppm in breathing zone	<u>Level A</u>

### 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<sup>3</sup> 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 ( $\text{ug}/\text{m}^3$ ) 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  $150 \text{ ug}/\text{m}^3$  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  $150 \text{ ug}/\text{m}^3$  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  $150 \text{ ug}/\text{m}^3$  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, Jane Forbes	(585) 428-7892
Nearest Hospital	Highland Hospital 1000 South Avenue Rochester, New York 14620 (585) 473-2200

Directions to the Hospital (refer to Figure 1):

1. Head southwest on Reynolds Street towards Clifton Street
2. Turn LEFT onto Tremont Street
3. Turn RIGHT onto Ford Street
4. Pass through 1 roundabout
5. Stay STRAIGHT to go onto Mt Hope Avenue (Rt-15)
6. Turn RIGHT onto Mt Hope Avenue
7. Turn LEFT onto Robinson Drive
8. Turn LEFT onto South Avenue
9. 1000 South Avenue is on the RIGHT.

### 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% AFFF 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.

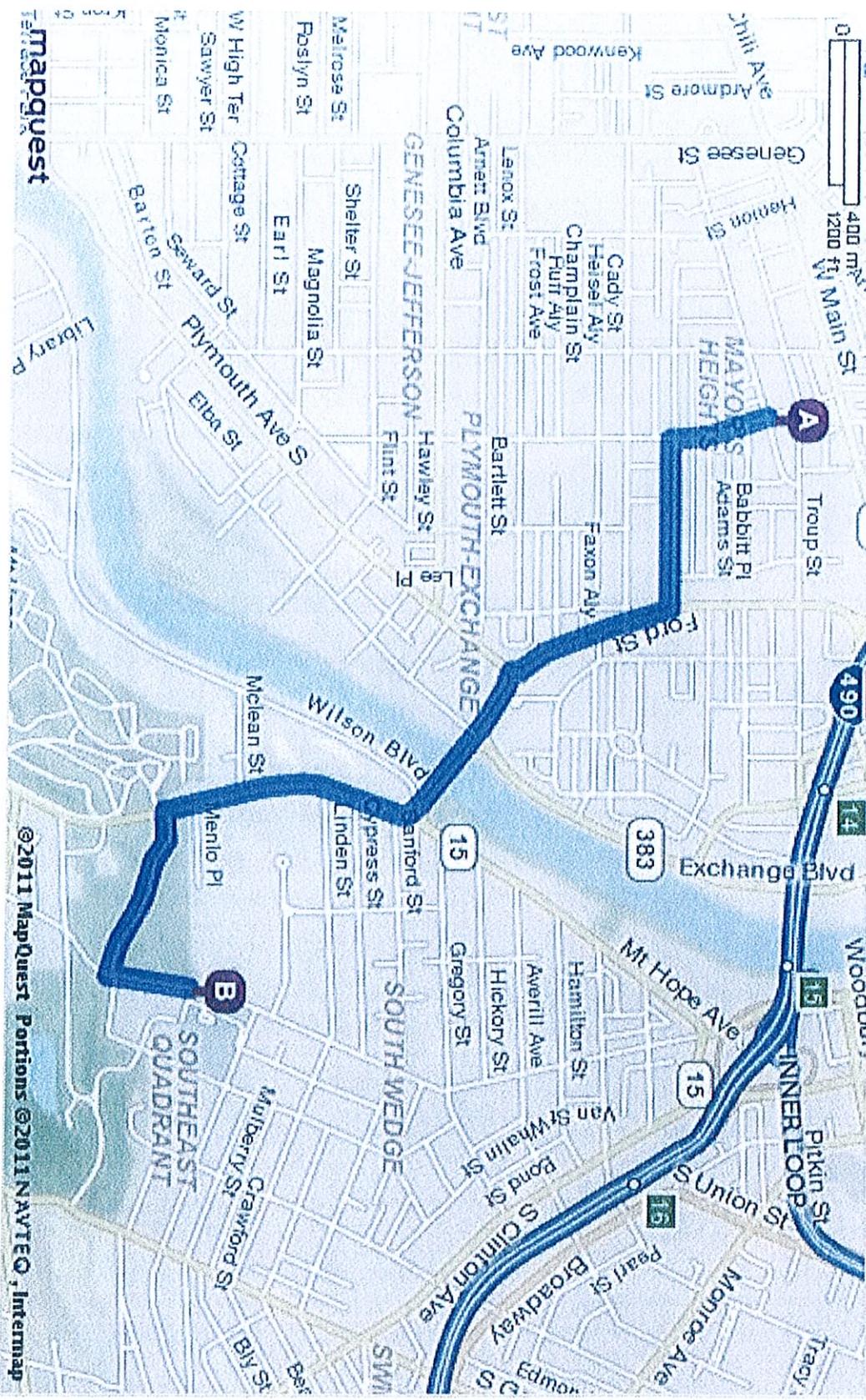
#### 9.7 Locating Containerized Waste and/or Underground Storage Tanks

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 Health
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 <sup>3</sup>	Micrograms Per Meter Cubed
UST	Underground Storage Tank
VOC	Volatile Organic Compound



©2011 MapQuest Portions ©2011 NAVTEQ, Internap

## 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 ( $\text{mcg}/\text{m}^3$ ) 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  $\text{mcg}/\text{m}^3$  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  $\text{mcg}/\text{m}^3$  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  $\text{mcg}/\text{m}^3$  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/m<sup>3</sup>, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m<sup>3</sup> 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.