SOIL AND GROUNDWATER MANAGEMENT PLAN
54 JEFFERSON AVENUE
ROCHESTER, NEW YORK
NYSDEC SPILL #1801598

Prepared for: City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614-1278

Prepared by: Day Environmental, Inc.
1563 Lyell Avenue
Rochester, New York 14606

Project #: 5883S-21

Date: August 2022

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1.0 INTRODUCTION

Day Environmental Inc. (DAY) prepared this Soil and Groundwater Management Plan (SGMP) for property addressed as 54 Jefferson Avenue, Rochester, New York (Site), on behalf of the City of Rochester (City). The SGMP should be implemented when work has the potential to disturb soil, fill material and/or groundwater that is impacted with residual constituents at the Site.

1.1 Site Background

The Site is located within the City of Rochester, New York. The "Site" consists of one parcel addressed as 54 Jefferson Avenue (SBL number 120.36-1-80.001) located in the City of Rochester, New York. The Site is currently vacant land located in an area zoned residential that formerly contained several structures. Studies completed at the Site identified potential environmental impacts (refer to Section 2.0). The location of the Site is shown on a Project Locus Map included as Figure 1, and a Site Plan depicting Site boundaries and former residential structures is included as Figure 2.

1.2 Statement of Purpose

The purpose of this SGMP is to present procedures to evaluate and manage soil and groundwater that is impacted with residual constituents that were detected during previous environmental work conducted in 2018, if such impacts are encountered during future subsurface activities. This SGMP was prepared in general accordance with the New York State Department of Environmental Conservation (NYSDEC) Region 8 Spills Unit document titled, "*Soil and Groundwater Management Plan Criteria*", updated November 8, 2018.

1.3 Responsibility for Implementation of the SGMP

Responsibility for implementation of this SGMP belongs to the Owner of the Site and to parties conducting subsurface work at the Site.

2.0 PREVIOUS ENVIRONMENTAL WORK AND SUBSURFACE CONDITIONS

A Phase I Environmental Site Assessment (Phase I ESA) report dated April 13, 2018 prepared by Ravi Engineering & Land Surveying, P.C. (Ravi) identified the following recognized environmental conditions (RECs) for the Site:

1. Vapor encroachment of the Site due to the proximity of historic off-site cleaners.

2. Potential lead-based paint in surface soil from former buildings at the Site.

3. Potential lead-based paint and asbestos in former building basement fills.

Based on review of available information in a Phase I Environmental Site Assessment (Phase I ESA) report dated April 11, 2018, the Site has only been used for residential purposes. No commercial or industrial uses of the Site were identified in this Phase I ESA.

In May 2018, Ravi commenced Phase II Environmental Site Assessment (Phase II ESA) fieldwork to further evaluate the RECs identified in the Phase I ESA report. The Phase II ESA was being conducted by Ravi on behalf of Flower City Habitat for Humanity relative to vacant lot residential properties that they planned to acquire from the City at that time. During this fieldwork, Ravi encountered field evidence of environmental impact [i.e., petroleum-type odors and elevated photoionization (PID) readings] suggesting a possible spill was encountered. The NYSDEC was notified, and the NYSDEC opened Spill File #1801598. This spill file is currently listed as active. Upon discovery of the suspected petroleum-impacted soil, analytical laboratory testing completed by the City detected some volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in a soil sample and some VOCs in two groundwater samples. Specific VOCs detected include: 2-butanone; acetone; carbon disulfide; isopropylbenzene; xylenes; and methylcyclohexane. Specific SVOCs detected include phenanthrene and pyrene. SVOCs were not detected in the two groundwater samples. The source of VOCs and SVOCs detected in the above-referenced samples is unknown. The analytical laboratory reports for these samples are included in Appendix A.

- Table 1 compares the results of the soil sample to soil cleanup levels (SCL) referenced in NYSDEC Commissioner Policy 51: Soil Cleanup Guidance, October 21, 2010 (CP-51), and also the unrestricted use soil cleanup objectives (UUSCO) referenced in Part 375 Environmental Remediation Programs, December 14, 2006 (Part 375). With the exception of the VOC acetone exceeding its UUSCO, detected VOCs and SVOCs did not exceed their respective SCL or UUSCO.

- Table 2 compares the results of the two groundwater samples to groundwater standards and guidance values referenced in the NYSDEC document titled “Division of Water Technical and Operational Guidance Series 1.1.1, June 1998, addended through June 2004 (TOGS 1.1.1). Detected VOCs did not exceed their respective groundwater standards or guidance values.

Actual soil type information from the May 2018 Phase II ESA fieldwork was not available for inclusion in this SGMP. The 1973 Monroe County soil survey indicates that the soil type in the area of the Site is Ub, or urban land, where interpretations are not given since soil materials are too variable. A 1971 Monroe County General Soil Map indicates that soil in the areas of the Site is identified as the Madrid-Massena Association that is dominated by soils formed in glacial till. The soil may be well-drained to poorly-drained with a moderately coarse-textured to medium-textured subsoil. Based on Review of Plate 2 (Map of Rochester Area Showing Geologic Formations and Their Water-Bearing Properties) for United States Department of Interior Circular 246 (Water Resources of the Rochester Area, New York) dated 1953, the uppermost bedrock beneath the Site consists of dolomite. Based on a review of City of Rochester Mile Square Rock Records Sheet 103, the top of bedrock in the area of the Site is anticipated to be approximately 10 to 16 feet below the ground surface. Based on a preliminary review of a 1980 Generalized Groundwater Contour Map (Rochester West Quadrangle), prepared by Dr. Richard A. Young and dated July 1980, regional groundwater in the area of the Site appears to flow to the southeast, and the top of the uppermost groundwater table in the overburden and/or bedrock may be approximately 10 feet below the ground surface. This groundwater flow direction may be modified locally due to buried utilities, nearby pumping, seasonal conditions, or other factors.

3.0 SITE CONTACTS

A copy of this SGMP has been provided to the NYSDEC and the City. In the event that subsurface material (e.g., soil, groundwater, etc.) containing residual constituent impacts is encountered during future Site activities, the NYSDEC Spill Unit and the City must be notified within two hours. The contact information for NYSDEC and the City is listed below.

NYSDEC Contact as of August 2022:

Mr. Michael F. Zamiarski, P.E.
Regional Spill Engineer
New York State Department of Environmental Conservation
6274 E. Avon-Lima Rd., Avon, NY 14414
mike.zamiarski@dec.ny.gov
(585) 226-5438
Spills Hotline: (800) 457-7362

City of Rochester (Current Owner), contact as of August 2022:

Ms. Jane MH Forbes
Associate Environmental Specialist
City of Rochester – Division of Environmental Quality
30 Church Street Room 300B
Rochester, NY 14614
Jane.Forbes@CityofRochester.Gov
(585) 428-7892 (office)

4.0 SOIL AND GROUNDWATER MANAGEMENT PLAN

This SGMP provides guidance on the identification, characterization, management, disposal and/or re-use of potentially impacted soil, fill and groundwater. The procedures presented herein are intended to reduce potential exposure to future workers conducting subsurface activities at the Site, and future occupants of the Site.

If unanticipated environmental conditions are encountered that differ from the environmental conditions documented herein, corrective environmental actions beyond those included in this SGMP may be warranted.

This SGMP was prepared in general accordance with the current NYSDEC Region 8 SGMP Criteria and Guidance document dated November 8, 2018, and current United States Environmental Protection Agency (USEPA) and NYSDEC non-hazardous waste disposal regulations. In addition, the "Beneficial Use" provisions in 6 New York Codes, Rules and Regulations (NYCRR) Part 360.12 and Part 360.13 are included in Appendix B to assist with the management of soil and fill materials encountered at the Site. Any changes made to these standards or guidelines subsequent to the date of this SGMP may result in portions of this SGMP becoming obsolete.

4.1 Potentially Impacted Material

This section describes the media that may be impacted based on information provided in the 2018 Phase I ESA and the 2018 soil and groundwater analytical laboratory test results associated with Phase II ESA fieldwork. This section provides information on the identification, handling, analytical laboratory testing, disposal, or re-use of these materials.

4.1.1 In-Field Identification

Media that are potentially impacted at the Site include soil, fill material and groundwater. These media will be considered contaminated unless it can be proved otherwise via appropriate analytical laboratory testing.

Certain types of impacts in soil, fill and groundwater may not be detectable via field observation or environmental screening. However, potential field evidence of impact on soil, fill, and groundwater for this Site may include, but is not be limited to, one or more of the following:

- Petroleum, chemical or unknown odors;
- Free product or sheen with an oily-type texture that would float on water;
- Gray, or black staining;
- Discernable material that can be considered a regulated solid waste, such as ash, paint chips, suspect asbestos containing material, etc.;
- Elevated VOC readings exceeding ambient air background when measured in the field using a real-time photoionization detector (PID) meter; and,
- Elevated metals readings exceeding ambient background when measured in the field using a real-time X-ray fluorescence spectrometer (XRF) meter.

4.1.2 Handling

Displaced or removed fill material, soil and groundwater must be managed in accordance with applicable federal, state, and local regulations.

Fill Material and Soil

Fill material and native soil will be considered impacted. If fill material or soil is removed/displaced, these materials must be segregated from each other and handled on-site in one or more of the following methods:

- Place on, and cover with, a layer of reinforced plastic sheeting at least 10 millimeters in thickness or two layers of regular plastic sheeting at least 12 millimeters thick. Secure plastic sheeting with sand bags or other suitable inert weights, and replace as needed if damaged by wind, site activities or other factors.

- Place in New York State Department of Transportation (NYSDOT)-approved 55-gallon drums with secure lids. Label drums with date, contents, and generator.

- Place in one or more lined roll-off dumpster with a secure cover.

Groundwater

Groundwater, and precipitation that enters excavations, will be considered impacted. If groundwater or precipitation that enters excavations is to be removed/displaced, it must be containerized (i.e., placed in sealed NYSDOT-approved 55-gallon drums, holding tanks or frac tanks) and staged on-site prior to characterization and disposal. A suitable pump may need to be utilized to pump the water from the work areas (e.g., excavations) until such time that the work is completed.

4.1.3 Characterization

Displaced/removed fill material, soil and water should be characterized in accordance with applicable federal, state, and local regulations, and disposal facility requirements when it cannot be re-used. The following is general guidance for characterizing these media.

Fill Material and Soil Characterization

If removed/displaced soil or fill material is being considered for off-site disposal at a regulated landfill facility, then the requirements of the operator of the landfill facility concerning sample frequency, analytical parameters to be tested, and laboratory requirements must be satisfied. Based on disposal facility requirements for similar sites in the Rochester, New York area, it is anticipated that the waste characterization analytical testing for each sample of removed/displaced soil or fill material being considered for off-site disposal at a regulated landfill facility from this Site may include, but may not be limited to, one or more of the following:

- TCL VOCs using USEPA Method 8260;

- TCL SVOCs using USEPA Method 8270;
- Total RCRA metals using USEPA Methods 6010 and 7471.
- Toxicity Characteristic Leaching Procedure (TCLP) metals using USEPA Method 1311, 6010 and 7470.
- Polychlorinated Biphenyls using USEPA Method 8082.
- Flashpoint using USEPA Method 1010 or 1030;
- Corrosivity (pH) using USEPA Method 9045D; and
- Reactivity using USEPA Method 7.3.

Groundwater/Excavation Water Characterization

A sample of each allotment of removed/displaced water must be collected, and each sample must be submitted to a NYSDOH ELAP-certified analytical laboratory for testing of appropriate waste characterization parameters. The proposed waste disposal company or wastewater treatment facility will identify the number of samples and the test parameters required. For this Site, it is anticipated that the waste characterization analytical program for each water sample may include, but not be limited to, one or more of the following:

- Purgeable Organic VOCs using USEPA Method 624;
- SVOCs using USEPA Method 625; and
- RCRA Metals using USEPA Method 200.7/245.2.

4.1.4 Disposal and Re-Use Options

This section addresses disposal and re-use options for soil/fill material, and groundwater/excavation water.

Soil/Fill Material

Per the definition in NYSDEC Part 360.2(a)(1), *Solid waste* or *waste* is defined as "*discarded materials including solid, liquid, semi-solid, or contained gaseous material, resulting from industrial, municipal, commercial, institutional, mining or agricultural operations or from residential activities including materials that are recycled or that may have value*". Per the definition in NYSDEC Part 360.2(b)(107), *Fill material* is defined as "soil and similar material excavated for the purpose of construction or maintenance, but does not include overburden generated from mining operations regulated pursuant to Part 422 of this Title"

Based on the observations and analytical testing reported in 2018, soil or other material at the Site can be considered fill material if excavated for the purpose of construction or maintenance, and some of this fill material could be considered solid waste if it is displaced and contains contaminants, or materials such as ash, cinders, slag, etc. Displaced fill material from the Site requires disposal at a regulated landfill facility unless it meets a Pre-Determined Beneficial Use, or a Case-Specific Beneficial Use Determination is obtained, as referenced in NYSDEC 6 NYCRR Part 360.12 and Part 360.13 (included in Appendix B) NYCRR Part 360 Regulations.

On-site or off-site re-use of displaced/removed/staged fill material or soil must be in compliance with NYSDEC Part 360 regulations. Fill material can be re-used as general Fill, Restricted-Use Fill, or Limited-Use Fill as defined in Part 360.13(f). Depending upon the type of material and its analytical laboratory test results, a Beneficial Use Determination (BUD) may be required, and re-use restrictions may apply. If fill material or soil is to be re-used, its geotechnical properties should also be considered.

If the fill material cannot be re-used on-site or off-site and requires off-site disposal, a waste profile must be prepared and submitted to the waste disposal company to obtain approval for disposal at an appropriate waste disposal facility (e.g., regulated landfill). Once approved, the fill material, and any plastic sheeting or drums, must be loaded onto NYSDEC Part 364-permitted trucks or trailers for transport of the fill material to the approved waste disposal facility for disposal. As an option, waste characterization samples can be collected and analyzed, and waste profiling can be approved for a designated waste disposal facility (e.g., regulated landfill) prior to excavation so that the material can be direct-loaded onto NYSDEC Part 364 permitted trucks and transported to the designated waste disposal facility for disposal.

Water

Options for addressing water groundwater and excavation water include, but may not be limited to one or more of the following:

- Discharge water into the excavation or adjacent ground surface provided that the water does to not exceed NYSDEC TOGS 1.1.1 groundwater standards and guidance values to the Site as long as the discharge will not adversely impact the Site, or adjoining/nearby properties, public right-of-way, and utilities.

- Discharge to a Publicly Owned Treatment Works (POTW) sanitary or combined sewer system under a Monroe County, New York sewer use permit in accordance with applicable regulations. If the water exceeds Monroe County sewer use limits or other criteria, it will require pre-treatment and re-testing prior to discharge under a sewer use permit.
- Off-site transport, and treatment or disposal, in accordance with applicable regulations.

4.2 Health and Safety

The Site owner is responsible for notifying Site workers involved with intrusive activities (e.g., excavation, dewatering, etc.) of the potential harmful exposures that may be present in subsurface media at the Site. This SGMP should be provided to Site workers for their review. The Site owner will discuss with the Site workers the proper identification, handling, and disposal/re-use methods described herein, and will caution the Site workers to avoid or minimize disturbance of impacted material in order to reduce or eliminate exposure to contaminants. Areas that have been disturbed (e.g., excavated, etc.) that contain potentially contaminated media should be restored (e.g., backfilled/covered with clean soil/fill cover, paved, etc.).

The entity conducting intrusive activities (e.g., excavation, dewatering, etc.) that have the potential to disturb impacted media must conduct its work in accordance with a Health and Safety Plan (HASP). An example HASP that contains on-site air monitoring requirements is included as Appendix C. An example Community Air Monitoring Plan (CAMP) that includes air monitoring for the protection of the adjoining/nearby community is included as Appendix D. The CAMP was sourced from is from NYSDEC DER-10. The entity can implement this HASP and CAMP during its intrusive activities, or prepare and implement its own HASP and CAMP, which must first be accepted by the City.

5.0 ENGINEERING CONTROLS

Prior to the construction of any enclosed structures (e.g., buildings) on the Site, the potential for soil vapor intrusion (SVI) impacts must be evaluated. Any potential SVI impacts that are identified must be mitigated. Mitigation measures may include, but are not limited to, the use of engineering controls such as a vapor barrier and sub-slab depressurization system. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York" and construction details of any planned enclosed structures. The City must be notified and consulted to approve any SVI evaluation and mitigation measures associated with any planned enclosed structures.

6.0 INSTITUTIONAL CONTROLS

As an institutional control, the Site is flagged in the City Building Information System (BIS), which requires the City's Division of Environmental Quality (DEQ) to be consulted prior to issuing permits for the Site. This institutional control ensures that the environmental conditions at the Site are evaluated prior to new construction. If a permit is approved that has the potential to result in encountering impacted material, City DEQ will provide a copy of this SGMP to the involved parties, notify the involved parties of the environmental conditions at the Site, and require the work to be completed in accordance with the SGMP.

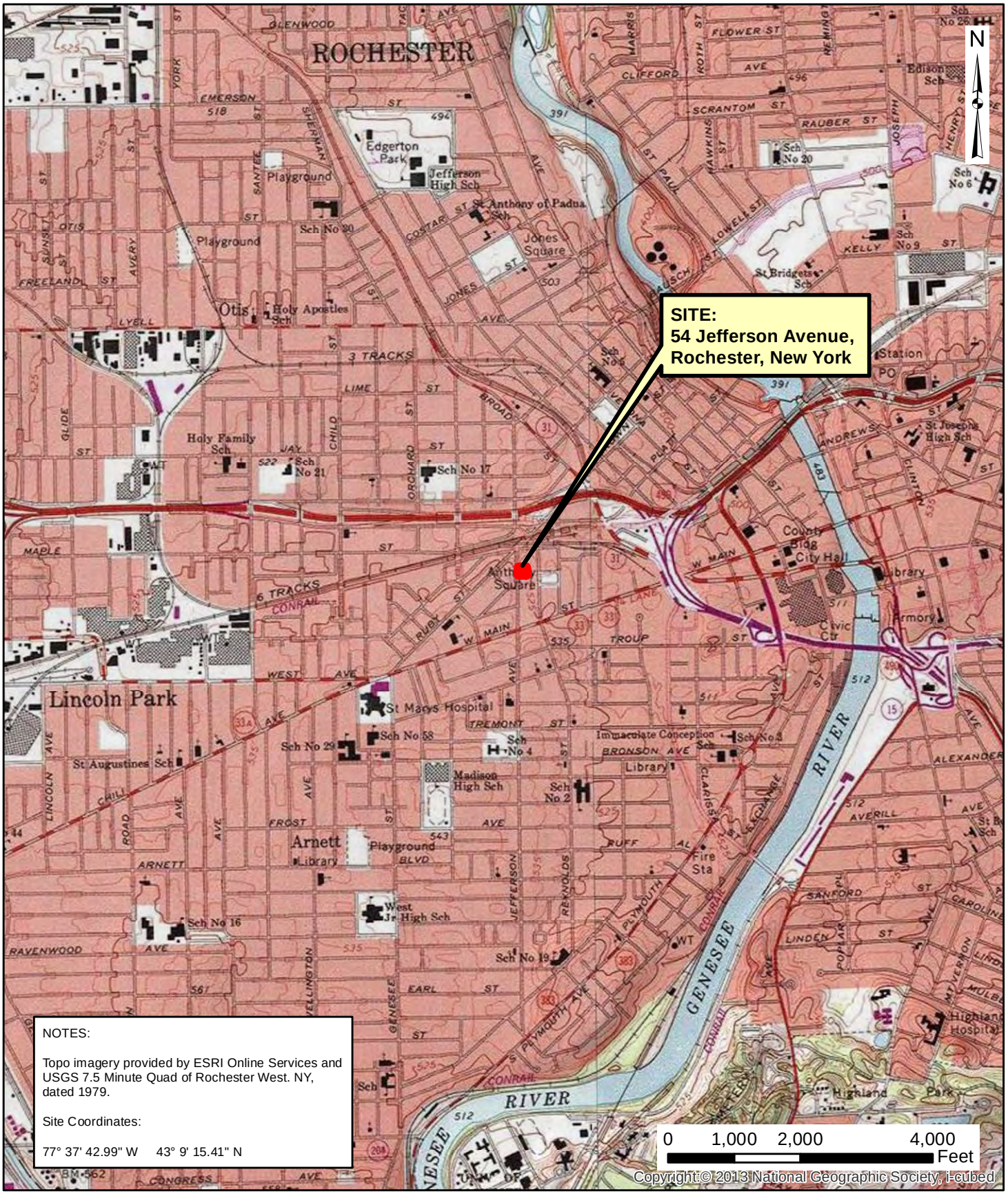
Chapter 59 (Health and Sanitation), Article III (Nuisances and Sanitation) § 59-27 (Water Supply) of the current Charter and Code of the City of Rochester, New York states:

A. No person shall use for drinking purposes, or in the preparation of food intended for human consumption, any water except the potable water supply authorized for public use by the City of Rochester; and

B. Other water supplies, wells or springs used for cooling and washing purposes only, where food is prepared or sold for human consumption, shall be tested and approved by the Monroe County Health Director. All auxiliary water supplies used for commercial or industrial use shall have all hydrants and faucets conspicuously posted indicating that such water is not for drinking use, and such water supplies shall not be cross-connected or interconnected with the public water supply.

This City Code has been interpreted to represent an institutional control that prohibits groundwater within the City limits, including the Site, from being used as a source of potable water.

FIGURES



NOTES:

Topo imagery provided by ESRI Online Services and USGS 7.5 Minute Quad of Rochester West. NY, dated 1979.

Site Coordinates:

77° 37' 42.99" W 43° 9' 15.41" N

Date: 09-15-2021 Drawn By: CPS Scale: AS NOTED	day **DAY ENVIRONMENTAL, INC.** **Environmental Consultants** **Rochester, New York 14606** **New York, New York 10170**	Project Title: 54 JEFFERSON AVENUE, ROCHESTER, NEW YORK SOIL AND GROUNDWATER MANAGEMENT PLAN Drawing Title: Project Locus Map	Project No.: 5883S-21 FIGURE 1

Document Path: E:\GIS Mapping\Rocity\5883S-21Rocity\5883S-02-Locus.mxd

Last Date Saved: 15 Sep 2021

NOTES:

Property boundary provided by the City of Rochester Department of Environmental Services, dated 2021. This boundary is approximate.

Aerial imagery provided Eagleview and the City of Rochester, dated 2018. This image may not reflect the most recent site conditions.

Document Path: E:\GIS Mapping\Rocity\5883S-21\Rocity5883S-01-SitePlan.mxd

Last Date Saved: 22 Sep 2021

Date: 09-15-2021 Drawn By: CPS Scale: AS NOTED	day **DAY ENVIRONMENTAL, INC.** **Environmental Consultants** **Rochester, New York 14606** **New York, New York 10170**	Project Title: 54 JEFFERSON AVENUE ROCHESTER, NEW YORK SOIL AND GROUNDWATER MANAGEMENT PLAN Drawing Title: Site Plan with Former Building Locations	Project No. 5883S-21 FIGURE 2

TABLES

Table 1

54 Jefferson Avenue
Rochester New York

Summary of Detected Constituents in mg/Kg or Parts per Million (ppm)

2018 Soil Sample

Detected Constituent	NYSDEC CP-51 SCL [1]	NYSDEC Part 375 UUSCO [2]	SS-3 5/11/2018 182044-01
VOCs			
2-Butanone	NA	0.12	0.0516
Acetone	NA	0.05	**0.31**
Carbon Disulfide	NA	NA	0.0169
Isopropylbenzene	2.3	NA	0.0214
Xylenes, Total	0.26	0.26	0.01753
Methylcyclohexane	NA	NA	0.0101
Total VOCs			0.42753
SVOCs			
Phenanthrene	100	100	0.655
Pyrene	100	100	0.332
Total SVOCs			0.987

[1] CP-51 SCL = Soil Cleanup Level per New York State Department of Environmental Conservation (NYSDEC) CP-51 dated October 21, 2010.

[2] UUSCO = Unrestricted Use Soil Cleanup Objective per NYSDEC Part 375 Environmental Remediation Programs dated December 14, 2006.

Concentration in **BOLD and RED** print exceeds Part 375 UUSCO

VOC = Volatile Organic Compound

SVOC = Semi-Volatile Organic Compound

LOCATION (depth in ft)	SS-3
SAMPLING DATE	5/11/2018
LAB SAMPLE ID	182044-01

U = Not Detected

NA = Not Available

Table 2

54 Jefferson Avenue
Rochester New York

Summary of Detected Constituents in ug/l or Parts per Billion (ppb)

2018 Groundwater Samples

Detected Constituent	Groundwater Standard or Guidance Value [1]	54 South 5/22/2018 182262-01	54 North 5/22/2018 182262-02
VOCs			
Acetone	50	14.3	11.2
Isopropylbenzene	5	U	2.02
Total VOCs		14.3	13.22
SVOCs		U	U

[1] Groundwater standard or guidance value are as referenced in NYSDEC TOGS 1.1.1 dated June 1998 with April 2000 and June 2004 Addendums.

U = Not Detected

VOC = Volatile Organic Compound

SVOC = Semi-Volatile Organic Compound

LOCATION	54 South
SAMPLING DATE	5/22/2018
LAB SAMPLE ID	182262-01

APPENDIX A

Analytical Laboratory Reports for 2018 Soil and Groundwater Samples

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

City of Rochester

For Lab Project ID

182044

Referencing

54 Jefferson Ave

Prepared

Friday, May 18, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182044

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: SS-3
Lab Sample ID: 182044-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/11/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
2-Methylnapthalene	**415**	ug/Kg		5/16/2018 13:08
Acenaphthene	< 302	ug/Kg		5/16/2018 13:08
Acenaphthylene	< 302	ug/Kg		5/16/2018 13:08
Anthracene	< 302	ug/Kg		5/16/2018 13:08
Benzo (a) anthracene	< 302	ug/Kg		5/16/2018 13:08
Benzo (a) pyrene	< 302	ug/Kg		5/16/2018 13:08
Benzo (b) fluoranthene	< 302	ug/Kg		5/16/2018 13:08
Benzo (g,h,i) perylene	< 302	ug/Kg		5/16/2018 13:08
Benzo (k) fluoranthene	< 302	ug/Kg		5/16/2018 13:08
Chrysene	< 302	ug/Kg		5/16/2018 13:08
Dibenz (a,h) anthracene	< 302	ug/Kg		5/16/2018 13:08
Fluoranthene	< 302	ug/Kg		5/16/2018 13:08
Fluorene	< 302	ug/Kg		5/16/2018 13:08
Indeno (1,2,3-cd) pyrene	< 302	ug/Kg		5/16/2018 13:08
Naphthalene	< 302	ug/Kg		5/16/2018 13:08
Phenanthrene	**655**	ug/Kg		5/16/2018 13:08
Pyrene	**332**	ug/Kg		5/16/2018 13:08

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**59.6**	37.7 - 103		5/16/2018 13:08
Nitrobenzene-d5	**45.6**	38.7 - 92.2		5/16/2018 13:08
Terphenyl-d14	**77.9**	69.9 - 113		5/16/2018 13:08

Method Reference(s): EPA 8270D
EPA 3550C
Preparation Date: 5/14/2018
Data File: B27365.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 6.15	ug/Kg		5/16/2018 21:31
1,1,2,2-Tetrachloroethane	< 6.15	ug/Kg		5/16/2018 21:31

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Friday, May 18, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182044

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: SS-3
Lab Sample ID: 182044-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/11/2018

1,1,2-Trichloroethane	< 6.15	ug/Kg	5/16/2018 21:31
1,1-Dichloroethane	< 6.15	ug/Kg	5/16/2018 21:31
1,1-Dichloroethene	< 6.15	ug/Kg	5/16/2018 21:31
1,2,3-Trichlorobenzene	< 15.4	ug/Kg	5/16/2018 21:31
1,2,4-Trichlorobenzene	< 15.4	ug/Kg	5/16/2018 21:31
1,2-Dibromo-3-Chloropropane	< 30.7	ug/Kg	5/16/2018 21:31
1,2-Dibromoethane	< 6.15	ug/Kg	5/16/2018 21:31
1,2-Dichlorobenzene	< 6.15	ug/Kg	5/16/2018 21:31
1,2-Dichloroethane	< 6.15	ug/Kg	5/16/2018 21:31
1,2-Dichloropropane	< 6.15	ug/Kg	5/16/2018 21:31
1,3-Dichlorobenzene	< 6.15	ug/Kg	5/16/2018 21:31
1,4-Dichlorobenzene	< 6.15	ug/Kg	5/16/2018 21:31
1,4-dioxane	< 61.5	ug/Kg	5/16/2018 21:31
2-Butanone	**51.6**	ug/Kg	5/16/2018 21:31
2-Hexanone	< 15.4	ug/Kg	5/16/2018 21:31
4-Methyl-2-pentanone	< 15.4	ug/Kg	5/16/2018 21:31
Acetone	**310**	ug/Kg	5/16/2018 21:31
Benzene	< 6.15	ug/Kg	5/16/2018 21:31
Bromochloromethane	< 15.4	ug/Kg	5/16/2018 21:31
Bromodichloromethane	< 6.15	ug/Kg	5/16/2018 21:31
Bromoform	< 15.4	ug/Kg	5/16/2018 21:31
Bromomethane	< 6.15	ug/Kg	5/16/2018 21:31
Carbon disulfide	**16.9**	ug/Kg	5/16/2018 21:31
Carbon Tetrachloride	< 6.15	ug/Kg	5/16/2018 21:31
Chlorobenzene	< 6.15	ug/Kg	5/16/2018 21:31
Chloroethane	< 6.15	ug/Kg	5/16/2018 21:31
Chloroform	< 6.15	ug/Kg	5/16/2018 21:31
Chloromethane	< 6.15	ug/Kg	5/16/2018 21:31
cis-1,2-Dichloroethene	< 6.15	ug/Kg	5/16/2018 21:31
cis-1,3-Dichloropropene	< 6.15	ug/Kg	5/16/2018 21:31
Cyclohexane	< 30.7	ug/Kg	5/16/2018 21:31
Dibromochloromethane	< 6.15	ug/Kg	5/16/2018 21:31

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182044

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: SS-3
Lab Sample ID: 182044-01 **Date Sampled:** 5/11/2018
Matrix: Soil **Date Received:** 5/11/2018

Dichlorodifluoromethane	< 6.15	ug/Kg		5/16/2018 21:31
Ethylbenzene	< 6.15	ug/Kg		5/16/2018 21:31
Freon 113	< 6.15	ug/Kg		5/16/2018 21:31
Isopropylbenzene	**21.4**	ug/Kg		5/16/2018 21:31
m,p-Xylene	**6.83**	ug/Kg		5/16/2018 21:31
Methyl acetate	< 6.15	ug/Kg		5/16/2018 21:31
Methyl tert-butyl Ether	< 6.15	ug/Kg		5/16/2018 21:31
Methylcyclohexane	**10.1**	ug/Kg		5/16/2018 21:31
Methylene chloride	< 15.4	ug/Kg		5/16/2018 21:31
o-Xylene	**10.7**	ug/Kg		5/16/2018 21:31
Styrene	< 15.4	ug/Kg		5/16/2018 21:31
Tetrachloroethene	< 6.15	ug/Kg		5/16/2018 21:31
Toluene	< 6.15	ug/Kg		5/16/2018 21:31
trans-1,2-Dichloroethene	< 6.15	ug/Kg		5/16/2018 21:31
trans-1,3-Dichloropropene	< 6.15	ug/Kg		5/16/2018 21:31
Trichloroethene	< 6.15	ug/Kg		5/16/2018 21:31
Trichlorofluoromethane	< 6.15	ug/Kg		5/16/2018 21:31
Vinyl chloride	< 6.15	ug/Kg		5/16/2018 21:31

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**122**	77.3 - 129		5/16/2018 21:31
4-Bromofluorobenzene	**99.2**	71 - 123		5/16/2018 21:31
Pentafluorobenzene	**87.2**	85.1 - 110		5/16/2018 21:31
Toluene-D8	**97.9**	82.7 - 112		5/16/2018 21:31

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: x50783.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Friday, May 18, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.

Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.

Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC

REPORT TO:		INVOICE TO:		
CLIENT: City of Rochester		CLIENT:		LAB PROJECT ID: 182044
ADDRESS:		ADDRESS:		
CITY:	STATE: ZIP	CITY:	STATE: ZIP:	Quotation #:
PHONE: 428-6649		PHONE:		Email: peckd@cityofrochester.gov
ATTN: Dennis Peck		ATTN:		

PROJECT REFERENCE: 54 Jefferson Ave

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260 TCL	CP-51 SVOC							REMARKS	PARADIGM LAB SAMPLE NUMBER
5/11/18	0930		X	SS-3	SO	2	X	X								01

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	X	None Required		None Required	
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other (please indicate date needed:)		Other (please indicate package needed:)		Other EDD (please indicate EDD needed:)	

Sampled By: Dennis M Peck — Date/Time: 5/11/18 1545

Relinquished By — Date/Time: 5/11/18 1545

Received By: Emily Anderson — Date/Time: 5/11/18 16:30

Received @ Lab By — Date/Time: 21°C 5/11/18 15.41

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: City of Rochester **Completed by:** Emily Jackson

Lab Project ID: 182044 **Date:** 5/11/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X	X 5035	
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature		X	
Comments	21°C		
Sufficient Sample Quantity	X		
Comments			

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report For

City of Rochester

For Lab Project ID

182262

Referencing

54 Jefferson Ave

Prepared

Wednesday, May 30, 2018

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: 54 South
Lab Sample ID: 182262-01
Matrix: Groundwater
Date Sampled: 5/22/2018
Date Received: 5/22/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 10.0	ug/L		5/25/2018 01:45
Acenaphthylene	< 10.0	ug/L		5/25/2018 01:45
Anthracene	< 10.0	ug/L		5/25/2018 01:45
Benzo (a) anthracene	< 10.0	ug/L		5/25/2018 01:45
Benzo (a) pyrene	< 10.0	ug/L		5/25/2018 01:45
Benzo (b) fluoranthene	< 10.0	ug/L		5/25/2018 01:45
Benzo (g,h,i) perylene	< 10.0	ug/L		5/25/2018 01:45
Benzo (k) fluoranthene	< 10.0	ug/L		5/25/2018 01:45
Chrysene	< 10.0	ug/L		5/25/2018 01:45
Dibenz (a,h) anthracene	< 10.0	ug/L		5/25/2018 01:45
Fluoranthene	< 10.0	ug/L		5/25/2018 01:45
Fluorene	< 10.0	ug/L		5/25/2018 01:45
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L		5/25/2018 01:45
Naphthalene	< 10.0	ug/L		5/25/2018 01:45
Phenanthrene	< 10.0	ug/L		5/25/2018 01:45
Pyrene	< 10.0	ug/L		5/25/2018 01:45

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**43.9**	31.2 - 108		5/25/2018 01:45
Nitrobenzene-d5	**54.4**	48.3 - 106		5/25/2018 01:45
Terphenyl-d14	**69.3**	52.2 - 117		5/25/2018 01:45

Method Reference(s): EPA 8270D
EPA 3510C
Preparation Date: 5/23/2018
Data File: B27769.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/29/2018 15:33
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/29/2018 15:33
1,1,2-Trichloroethane	< 2.00	ug/L		5/29/2018 15:33

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Report Prepared Wednesday, May 30, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: 54 South
Lab Sample ID: 182262-01 **Date Sampled:** 5/22/2018
Matrix: Groundwater **Date Received:** 5/22/2018

1,1-Dichloroethane	< 2.00	ug/L	5/29/2018	15:33
1,1-Dichloroethene	< 2.00	ug/L	5/29/2018	15:33
1,2,3-Trichlorobenzene	< 5.00	ug/L	5/29/2018	15:33
1,2,4-Trichlorobenzene	< 5.00	ug/L	5/29/2018	15:33
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L	5/29/2018	15:33
1,2-Dibromoethane	< 2.00	ug/L	5/29/2018	15:33
1,2-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:33
1,2-Dichloroethane	< 2.00	ug/L	5/29/2018	15:33
1,2-Dichloropropane	< 2.00	ug/L	5/29/2018	15:33
1,3-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:33
1,4-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:33
1,4-dioxane	< 20.0	ug/L	5/29/2018	15:33
2-Butanone	< 10.0	ug/L	5/29/2018	15:33
2-Hexanone	< 5.00	ug/L	5/29/2018	15:33
4-Methyl-2-pentanone	< 5.00	ug/L	5/29/2018	15:33
Acetone	**14.3**	ug/L	5/29/2018	15:33
Benzene	< 1.00	ug/L	5/29/2018	15:33
Bromochloromethane	< 5.00	ug/L	5/29/2018	15:33
Bromodichloromethane	< 2.00	ug/L	5/29/2018	15:33
Bromoform	< 5.00	ug/L	5/29/2018	15:33
Bromomethane	< 2.00	ug/L	5/29/2018	15:33
Carbon disulfide	< 2.00	ug/L	5/29/2018	15:33
Carbon Tetrachloride	< 2.00	ug/L	5/29/2018	15:33
Chlorobenzene	< 2.00	ug/L	5/29/2018	15:33
Chloroethane	< 2.00	ug/L	5/29/2018	15:33
Chloroform	< 2.00	ug/L	5/29/2018	15:33
Chloromethane	< 2.00	ug/L	5/29/2018	15:33
cis-1,2-Dichloroethene	< 2.00	ug/L	5/29/2018	15:33
cis-1,3-Dichloropropene	< 2.00	ug/L	5/29/2018	15:33
Cyclohexane	< 10.0	ug/L	5/29/2018	15:33
Dibromochloromethane	< 2.00	ug/L	5/29/2018	15:33
Dichlorodifluoromethane	< 2.00	ug/L	5/29/2018	15:33

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Report Prepared Wednesday, May 30, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: 54 South
Lab Sample ID: 182262-01 **Date Sampled:** 5/22/2018
Matrix: Groundwater **Date Received:** 5/22/2018

Ethylbenzene	< 2.00	ug/L	5/29/2018	15:33
Freon 113	< 2.00	ug/L	5/29/2018	15:33
Isopropylbenzene	< 2.00	ug/L	5/29/2018	15:33
m,p-Xylene	< 2.00	ug/L	5/29/2018	15:33
Methyl acetate	< 2.00	ug/L	5/29/2018	15:33
Methyl tert-butyl Ether	< 2.00	ug/L	5/29/2018	15:33
Methylcyclohexane	< 2.00	ug/L	5/29/2018	15:33
Methylene chloride	< 5.00	ug/L	5/29/2018	15:33
o-Xylene	< 2.00	ug/L	5/29/2018	15:33
Styrene	< 5.00	ug/L	5/29/2018	15:33
Tetrachloroethene	< 2.00	ug/L	5/29/2018	15:33
Toluene	< 2.00	ug/L	5/29/2018	15:33
trans-1,2-Dichloroethene	< 2.00	ug/L	5/29/2018	15:33
trans-1,3-Dichloropropene	< 2.00	ug/L	5/29/2018	15:33
Trichloroethene	< 2.00	ug/L	5/29/2018	15:33
Trichlorofluoromethane	< 2.00	ug/L	5/29/2018	15:33
Vinyl chloride	< 2.00	ug/L	5/29/2018	15:33

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed	
1,2-Dichloroethane-d4	**106**	77.2 - 121		5/29/2018	15:33
4-Bromofluorobenzene	**89.6**	70 - 123		5/29/2018	15:33
Pentafluorobenzene	**95.5**	85.4 - 110		5/29/2018	15:33
Toluene-D8	**94.6**	83.8 - 112		5/29/2018	15:33

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51162.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, May 30, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: 54 North
Lab Sample ID: 182262-02 **Date Sampled:** 5/22/2018
Matrix: Groundwater **Date Received:** 5/22/2018

Semi-Volatile Organics (PAHs)

Analyte	Result	Units	Qualifier	Date Analyzed
Acenaphthene	< 10.0	ug/L		5/25/2018 02:14
Acenaphthylene	< 10.0	ug/L		5/25/2018 02:14
Anthracene	< 10.0	ug/L		5/25/2018 02:14
Benzo (a) anthracene	< 10.0	ug/L		5/25/2018 02:14
Benzo (a) pyrene	< 10.0	ug/L		5/25/2018 02:14
Benzo (b) fluoranthene	< 10.0	ug/L		5/25/2018 02:14
Benzo (g,h,i) perylene	< 10.0	ug/L		5/25/2018 02:14
Benzo (k) fluoranthene	< 10.0	ug/L		5/25/2018 02:14
Chrysene	< 10.0	ug/L		5/25/2018 02:14
Dibenz (a,h) anthracene	< 10.0	ug/L		5/25/2018 02:14
Fluoranthene	< 10.0	ug/L		5/25/2018 02:14
Fluorene	< 10.0	ug/L		5/25/2018 02:14
Indeno (1,2,3-cd) pyrene	< 10.0	ug/L		5/25/2018 02:14
Naphthalene	< 10.0	ug/L		5/25/2018 02:14
Phenanthrene	< 10.0	ug/L		5/25/2018 02:14
Pyrene	< 10.0	ug/L		5/25/2018 02:14

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2-Fluorobiphenyl	**51.0**	31.2 - 108		5/25/2018 02:14
Nitrobenzene-d5	**59.6**	48.3 - 106		5/25/2018 02:14
Terphenyl-d14	**71.5**	52.2 - 117		5/25/2018 02:14

Method Reference(s): EPA 8270D
EPA 3510C
Preparation Date: 5/23/2018
Data File: B27770.D

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 2.00	ug/L		5/29/2018 15:57
1,1,2,2-Tetrachloroethane	< 2.00	ug/L		5/29/2018 15:57
1,1,2-Trichloroethane	< 2.00	ug/L		5/29/2018 15:57

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier:	54 North		
Lab Sample ID:	182262-02	**Date Sampled:**	5/22/2018
Matrix:	Groundwater	**Date Received:**	5/22/2018

1,1-Dichloroethane	< 2.00	ug/L	5/29/2018	15:57
1,1-Dichloroethene	< 2.00	ug/L	5/29/2018	15:57
1,2,3-Trichlorobenzene	< 5.00	ug/L	5/29/2018	15:57
1,2,4-Trichlorobenzene	< 5.00	ug/L	5/29/2018	15:57
1,2-Dibromo-3-Chloropropane	< 10.0	ug/L	5/29/2018	15:57
1,2-Dibromoethane	< 2.00	ug/L	5/29/2018	15:57
1,2-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:57
1,2-Dichloroethane	< 2.00	ug/L	5/29/2018	15:57
1,2-Dichloropropane	< 2.00	ug/L	5/29/2018	15:57
1,3-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:57
1,4-Dichlorobenzene	< 2.00	ug/L	5/29/2018	15:57
1,4-dioxane	< 20.0	ug/L	5/29/2018	15:57
2-Butanone	< 10.0	ug/L	5/29/2018	15:57
2-Hexanone	< 5.00	ug/L	5/29/2018	15:57
4-Methyl-2-pentanone	< 5.00	ug/L	5/29/2018	15:57
Acetone	**11.2**	ug/L	5/29/2018	15:57
Benzene	< 1.00	ug/L	5/29/2018	15:57
Bromochloromethane	< 5.00	ug/L	5/29/2018	15:57
Bromodichloromethane	< 2.00	ug/L	5/29/2018	15:57
Bromoform	< 5.00	ug/L	5/29/2018	15:57
Bromomethane	< 2.00	ug/L	5/29/2018	15:57
Carbon disulfide	< 2.00	ug/L	5/29/2018	15:57
Carbon Tetrachloride	< 2.00	ug/L	5/29/2018	15:57
Chlorobenzene	< 2.00	ug/L	5/29/2018	15:57
Chloroethane	< 2.00	ug/L	5/29/2018	15:57
Chloroform	< 2.00	ug/L	5/29/2018	15:57
Chloromethane	< 2.00	ug/L	5/29/2018	15:57
cis-1,2-Dichloroethene	< 2.00	ug/L	5/29/2018	15:57
cis-1,3-Dichloropropene	< 2.00	ug/L	5/29/2018	15:57
Cyclohexane	< 10.0	ug/L	5/29/2018	15:57
Dibromochloromethane	< 2.00	ug/L	5/29/2018	15:57
Dichlorodifluoromethane	< 2.00	ug/L	5/29/2018	15:57

PARADIGM
ENVIRONMENTAL SERVICES, INC

Lab Project ID: 182262

Client: City of Rochester

Project Reference: 54 Jefferson Ave

Sample Identifier: 54 North
Lab Sample ID: 182262-02 **Date Sampled:** 5/22/2018
Matrix: Groundwater **Date Received:** 5/22/2018

Ethylbenzene	< 2.00	ug/L			5/29/2018 15:57
Freon 113	< 2.00	ug/L			5/29/2018 15:57
Isopropylbenzene	**2.02**	ug/L			5/29/2018 15:57
m,p-Xylene	< 2.00	ug/L			5/29/2018 15:57
Methyl acetate	< 2.00	ug/L			5/29/2018 15:57
Methyl tert-butyl Ether	< 2.00	ug/L			5/29/2018 15:57
Methylcyclohexane	< 2.00	ug/L			5/29/2018 15:57
Methylene chloride	< 5.00	ug/L			5/29/2018 15:57
o-Xylene	< 2.00	ug/L			5/29/2018 15:57
Styrene	< 5.00	ug/L			5/29/2018 15:57
Tetrachloroethene	< 2.00	ug/L			5/29/2018 15:57
Toluene	< 2.00	ug/L			5/29/2018 15:57
trans-1,2-Dichloroethene	< 2.00	ug/L			5/29/2018 15:57
trans-1,3-Dichloropropene	< 2.00	ug/L			5/29/2018 15:57
Trichloroethene	< 2.00	ug/L			5/29/2018 15:57
Trichlorofluoromethane	< 2.00	ug/L			5/29/2018 15:57
Vinyl chloride	< 2.00	ug/L			5/29/2018 15:57

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	**107**	77.2 - 121		5/29/2018 15:57
4-Bromofluorobenzene	**102**	70 - 123		5/29/2018 15:57
Pentafluorobenzene	**93.2**	85.4 - 110		5/29/2018 15:57
Toluene-D8	**100**	83.8 - 112		5/29/2018 15:57

Method Reference(s): EPA 8260C
EPA 5030C
Data File: x51163.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, May 30, 2018

PARADIGM
ENVIRONMENTAL SERVICES, INC

Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.
"E" = Result has been estimated, calibration limit exceeded.
"Z" = See case narrative.
"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.
"J" = Result estimated between the quantitation limit and half the quantitation limit.
"L" = Laboratory Control Sample recovery outside accepted QC limits.
"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.
"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.
"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*
"(1)" = Indicates data from primary column used for QC calculation.
"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.
"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

GENERAL TERMS AND CONDITIONS
LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, tern or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty. Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation. LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB wi use LAB default method for all tests unless specified otherwise on the Work Order.
Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices. Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability. In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.
LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.
All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.
Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure. Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling. Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.
Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on th final report.
Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.
LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility. LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment. LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure. LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law. This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:		
CLIENT: City of Rochester		CLIENT:		LAB PROJECT ID: 182262
ADDRESS:		ADDRESS:		
CITY:	STATE: ZIP	CITY:	STATE: ZIP:	Quotation #:
PHONE: 469-6372		PHONE:		Email: peckd@cityofrochester.gov
ATTN: Dennis Peck		ATTN:		

PROJECT REFERENCE: 54 Jefferson Ave

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	8260 TCL	CP51 SVOCs								REMARKS	PARADIGM LAB SAMPLE NUMBER
5/22/18	1345		X	54 South	WG	3	X	X									01
5/22/18	1400		X	54 North	WG	3	X	X									02

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	X	None Required		None Required	
10 day		Batch QC		Basic EDD	
Rush 3 day		Category A		NYSDEC EDD	
Rush 2 day		Category B			
Rush 1 day					
Other		Other		Other EDD	
please indicate date needed:		please indicate package needed:		please indicate EDD needed :	

Dennis Peck	5/22/18	Total Cost:
Sampled By	Date/Time	
Dennis M Pole	5/22/18 1425	
Relinquished By	Date/Time	
Jane g Dadson	5/22/18 1425	
Received By	Date/Time	P.I.F.
Emily Jackson	5/22/18 14:49	
Received @ Lab By	Date/Time	

14°C 5/22/18 14:44

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

Chain of Custody Supplement

Client: City of Rochester **Completed by:** Emily Jackson

Lab Project ID: 182262 **Date:** 5/22/18

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments			
Transferred to method-compliant container			X
Headspace (<1 mL)	X		X 5VOC
Comments			
Preservation	X VOA		X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature		X	
Comments	14°C		
Sufficient Sample Quantity	X		
Comments			

APPENDIX B

NYSDEC 6 CRR-NY Part 360.12 and Part 360.13

6 CRR-NY 360.12
NY-CRR

OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK
TITLE 6. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAPTER IV. QUALITY SERVICES
SUBCHAPTER B. SOLID WASTES
PART 360. SOLID WASTE MANAGEMENT FACILITIES GENERAL REQUIREMENTS

6 CRR-NY 360.12
6 CRR-NY 360.12

360.12 Beneficial use.

(a) Applicability.

(1) This section applies to the use of certain wastes as effective substitutes for commercial products or raw materials as determined by the department. The materials cease to be solid waste when used according to this section. This section does not apply to materials that are being sent to facilities subject to regulation under Part 361 of this Title. This section also does not apply to waste used in a manner that constitutes disposal. Specific requirements for the beneficial use of navigational dredge material (NDM), brine, and fill material are found in sections 360.12(e)-(f) and 360.13 of this Part.

(2) The department reserves the right to require a permit pursuant to section 360.17 of this Part for land placement, including mine reclamation or subsurface mine filling, in place of a beneficial use determination, if deemed necessary by the department to prevent adverse impacts to public health and the environment.

(3) Materials must not be stored for more than 365 days prior to beneficial use unless otherwise approved through a registration, permit condition or case-specific beneficial use determination.

(b) Unacceptable uses.

Wastes used in the following manner are not eligible for a beneficial use determination:

(1) the use of flowable fill for mined land reclamation;

(2) the encasement of waste tires in concrete;

(3) the use of waste tires as fences or screening.

(c) Pre-determined beneficial uses.

(1) The following cease to be waste when used as described in this paragraph:

(i) materials identified in section 371.1(e)(1)(vi) through (viii) of this Title that cease to be solid waste as defined in section 371.1 of this Title;

(ii) fill material generated outside of New York City with no evidence of historical impacts such as reported spill events, or visual or other indication (odors, etc.) of chemical or physical contamination;

(iii) fill material when used in accordance with section 360.13 of this Part; and

(iv) NDM used outside ecologically sensitive areas, as commercial aggregate in place of sand or gravel if the NDM contains at least 90 percent sand and gravel, as determined by a standard grain size analysis method approved by the department and performed by an independent laboratory, and if the NDM contains less than 0.5 percent total organic carbon.

(2) The following cease to be waste when received at the location of use as described in this paragraph:

(i) uncontaminated newsprint used as animal bedding;

(ii) uncontaminated used wood pallets that are used to produce reconditioned or remanufactured wood pallets;

(iii) street sweepings, car wash grit, and water system catch basin materials that consist of sand and gravel and are free from litter and objectionable odors, when used in the following applications:

(a) as a substitute for commercial aggregate for the construction of roads or parking areas;

(b) as backfill for utilities within transportation corridors other than potable water utility lines;

(c) or in commercial or industrial land use locations as defined by section 375-1.8(g)(2)(iii) and (iv) of this Title;

(iv) waste tires required to secure tarpaulins in common weather protection practices such as agricultural storage covers and salt pile protection, provided the number of passenger tire equivalents used does not exceed 0.25 passenger tire equivalents per square foot of cover or bunker area, and whole tires are cut in half or have sufficient number of holes drilled in them to prevent retention of water;

(v) 150 or fewer waste tires or tire equivalents at a single site for purposes such as retaining walls, decoration, playground components, bumper guards, manufactured products feedstock, and similar purposes; and

(vi) bread and other similar grain products (spent brewery grains, etc.) used for animal feed or pet food, provided all packaging is removed prior to use;

(vii) source-separated recyclables that are typically managed at a recyclables handling and recovery facility but instead are received directly by a manufacturing plant for use as an ingredient in the manufacturing of a product.

(3) The following cease to be waste when the material meets the requirements for the intended use identified in this paragraph:

(i) ground granulated blast-furnace slag for use as a raw feed in the manufacture of cement and in concrete which meets an industry standard acceptable to the department;

(ii) unadulterated wood combustion ash for use as a soil amendment, provided the application rate is limited to the soil pH requirement of the crops grown;

(iii) industrial wastes historically used as an ingredient in a manufacturing process;

(iv) fats, oil, grease, and rendered animal parts, except for use as or in production of fuels;

(v) coal combustion fly ash which meets an industry standard acceptable to the department for use in concrete, concrete products, light-weight block, light-weight aggregate and flowable fill;

(vi) flue gas desulfurization or other gas-scrubbing byproducts when used to replace manufactured gypsum or manufactured calcium chloride, except for land application;

(vii) coal combustion bottom ash for use as an aggregate in portland cement, concrete, asphalt pavement, or roofing materials;

(viii) recycled aggregate or residue which meets a municipal or State specification or standard for use as commercial aggregate if generated from uncontaminated, recognizable concrete and other masonry products, brick, or rock that is separated from other waste prior to processing and subsequently processed and stored in a separate area as a discrete material stream;

(ix) recycled material or residue generated from uncontaminated asphalt pavement and asphalt millings which meets a municipal or State specification or standard for use as an ingredient in asphalt pavement or other paved surface construction and maintenance uses if separated from other waste prior to processing and subsequently processed and stored in a separate area as a discrete material stream;

(x) asphalt pavement and asphalt millings received at an asphalt manufacturing plant for incorporation into an asphalt product;

(xi) clay, till, or rock excavated as part of navigational dredging, which is separated from overlying navigational dredged material and used as fill or aggregate.

(4) The following cease to be waste when the material leaves a facility subject to exemption or regulation under Part 361 or 362 of this Title, provided the material is ultimately recycled or reused. If the material is taken to another facility regulated under this Part or Parts 361, 362, 363, or 365 of this Title, these provisions do not apply:

(i) materials produced by a recyclables handling and recovery facility for use as an ingredient in a manufacturing process or other acceptable end use. For glass, this includes uncontaminated glass-derived aggregate that meets a governmental or industrial organization specification acceptable to the department. The glass aggregate must not exceed the following measure of non-glass material content:

(a) five percent by volume; or

(b) 0.05 percent by mass of paper and 1 percent by mass of other non-glass materials;

(ii) compost and other soil conditioning products produced from facilities regulated under Subpart 361-3 of this Title provided the use restrictions are followed;

(iii) ground tree debris, wood debris, and yard trimmings used for mulch and other common uses;

(iv) tire-derived aggregate for use as:

(a) residential on-site septic system drainage media, provided the tire-derived aggregate meets the specification found in 10 NYCRR Appendix 75-A;

(b) mulch provided the tire-derived aggregate has a nominal size of less than 1 inch in any direction, is at least 99.9 percent wire free, and has no protruding wire; or

(c) playground surface and athletic field material, provided the tire-derived aggregate has a nominal size of less than 3/8 inches in any direction, is at least 99.9 percent wire free, and has no protruding wire;

(v) scrap metal;

(vi) used cooking oil and yellow grease processed in accordance with Subpart 361-8 of this Title, for use in animal feed, soap or other products, provided an applicable industry and/or government standard is met.

(5) By March 1st following each calendar year of operation, any person that distributes 10,000 tons or more of any pre-determined beneficial use material must submit a report to the department on a form acceptable to the department identifying the type and quantity of material beneficially used during the previous calendar year.

(d) Case-specific beneficial use determinations – general.

(1) For a determination that a specific waste may be beneficially used either in a manufacturing process to make a product, or as an effective substitute for a commercial product or raw material, a written petition must be submitted to the department.

(2) A petition must contain the following information:

(i) a detailed description of the waste and the proposed use of the waste;

(ii) a description of the annual quantity, by weight and volume, of the waste proposed for beneficial use;

(iii) a detailed description of the source, process, or treatment systems from which the waste originated, including a list of all chemicals and the quantity of all chemicals added during these processes;

(iv) analytical data concerning the chemical and physical characteristics of the waste and of each type of proposed product, and the chemical and physical characteristics of any analogous raw material or commercial product for which the waste is proposed to be an effective substitute;

(v) justification that the waste functions as an effective substitute for the commercial product or raw material and that the use meets or exceeds governmental or industry standards or specifications;

(vi) demonstration that there is a known or reasonably probable market for the intended use of the quantity and type of waste and of all proposed products by providing one or more of the following:

(a) a contract or agreement to purchase the proposed product or to have the waste used in the manner proposed; or

(b) other documentation that a market for the proposed product or use exists; and

(vii) demonstration that the management of the waste when used in accordance with the beneficial use will not adversely affect public health and the environment by providing, at a minimum:

(a) a waste control plan that describes the following:

(1) procedures for periodic testing of the waste, and as necessary, the product;

(2) the type of storage and the maximum anticipated volume of the waste to be stored before beneficial use. Storage before beneficial use must not exceed 365 days, unless a different time period for storage is approved by the department;

(3) procedures for run-on and run-off control at the storage areas for the waste; and

(4) a program and implementation schedule of best management practices designed to minimize uncontrolled dispersion of the waste before and during all aspects of its storage as inventory and during beneficial use;

(b) a comparison of the chemical and physical characteristics of the waste to applicable or relevant and appropriate criteria for the proposed beneficial use; and

(c) other information as the department determines to be appropriate to demonstrate that the proposed use will not adversely affect public health and the environment.

(3) The department will determine that the use constitutes a beneficial use only if the following criteria are satisfied:

(i) the petition contains all necessary technical information as required under paragraph (2) of this subdivision;

(ii) the essential nature of the proposed use of the waste constitutes use rather than disposal;

(iii) the waste will be managed as a commodity and intended to function or serve as an effective substitute for an analogous commercial product or raw material;

(iv) at the point of beneficial use, the waste will not require decontamination or other processing;

(v) a market exists or is reasonably certain to be developed for the proposed quantity and use of the waste or the product into which the waste is proposed to be incorporated;

(vi) heavy metals or other pollutants present in the waste are present at acceptable concentrations for the proposed product or use as determined by the department. For use of materials on the land as fill or cover, the material must not be used in ecologically sensitive areas and must not contain pollutants above the concentrations indicated in section 375-6.8(b) of this Title, for Residential Use and Protection of Groundwater, unless the petitioner can demonstrate properties or characteristics unique to the material or use that are acceptable to the department. Nothing in this subparagraph will have the effect of modifying any existing Memorandum of Understanding to which the department is a party; and

(vii) the proposed use will not significantly adversely affect public health and the environment.

(4) Approved petitions will be subject to conditions the department deems necessary to prevent adverse environmental impacts. When granting a beneficial use determination, the department will determine the precise point at which the waste ceases to be waste. Unless otherwise determined by the department, that point occurs when it is received for use in a manufacturing process, or for use as an effective substitute for a commercial product or raw material.

(5) The department will modify, suspend, or revoke any determination made under this section, upon notice and an opportunity to be heard, if it finds that one or more of the factors serving as the basis for the department's determination were incorrect or are no longer valid, that there has been noncompliance with any condition attached to the determination, or if necessary to prevent adverse impacts to public health and the environment, or control nuisances.

(6) Processing and review of a petition will be suspended if an enforcement action has been commenced against the petitioner for alleged violations of the ECL or other environmental laws administered by the department at the facility or site that is the subject of the petition.

(7) An approved case-specific beneficial use determination is valid for no more than five years from the date of approval. Case-specific beneficial use determinations may be renewed upon review and approval of the department.

(8) By March 1st following each calendar year of approval, the petitioners of an approved case-specific beneficial use determinations must submit a report to the department, on a form acceptable to the department that includes the quantity of waste beneficially used during the previous calendar year of operation and any analytical data or other information required in the approved case-specific beneficial use determination. The report must also contain a signed statement by a responsible official of the petitioner’s organization that the organization has been in compliance with the terms and conditions of the approved case-specific beneficial use determination during the reporting period.

(e) Case-specific beneficial use determinations - navigational dredged materials (NDM).

(1) Applicability. This subdivision applies to the upland management of NDM in a beneficial manner. This subdivision does not apply to NDM management in surface water, or in the riparian zone, or to the upland management of NDM if it is included under a dredging permit or other applicable permits specified in section 360.2(a)(4)(xi) of this Part.

(2) Case-specific NDM beneficial use determination petition. A written petition must be submitted to the department, containing the following information:

(i) the source of the NDM, estimated quantity for use, and the proposed schedule of use;

(ii) a sampling plan that describes how representative samples of the NDM will be obtained and the analytical methods that will be used to assess the samples;

(iii) analytical results of the untreated, unamended NDM and of the treated or amended NDM in compliance with subdivision (d) of this section;

(iv) a description of known or probable markets for the intended use of the NDM or end product, including one or more of the following:

(a) the location and description of the placement site and a description of the intended end use of the NDM or end product at that site;

(b) a contract to purchase the NDM or end product after processing, or to use the NDM in the manner proposed;

(c) a demonstration that the NDM or end product after processing complies with industry standards and specifications for that product; or

(d) other documentation that a legitimate market for the NDM or end product exists;

(v) a material management plan that describes the following:

(a) the disposition of any waste (*e.g.*, separated debris) which may result from processing of the NDM;

(b) a description of the type of storage and maximum anticipated inventory of NDM before being used;

(c) procedures for run-on and run-off control at the storage areas for the NDM and end product after processing;

(d) a program and implementation schedule of best management practices designed to minimize uncontrolled dispersion of the NDM before and during all aspects of its processing, transportation, and storage as inventory and during beneficial use;

(e) if applicable, a description of how unamended or amended NDM that will be used as structural fill will attain project-specific fill geotechnical or engineering specifications when received at the site of placement; and

(vi) a detailed description of all amendment or treatment that will occur before NDM use. The description must include the type and quantity of amendment or treatment procedures, and location of all processing operations.

(3) General provisions.

(i) The department will determine in writing, on a case-specific basis, whether the proposal constitutes a beneficial use, based on requirements described in this section. For use of NDM as general fill or cover, the requirements of subparagraph (d)(3)(vi) of this section must be met, except where NDM will meet criteria for and will be used in the same manner as restricted-use or limited-use fill material as described in section 360.13 of this Part.

(ii) NDM approved for beneficial use under this section ceases to be a waste when it meets the technical requirements or specifications for the intended end use, provided it is not stored for longer than 365 days after meeting the technical requirements or specifications, unless otherwise approved by the department.

(4) Sampling protocol and analytical methods. In support of a petition for a beneficial use determination, the petitioner may submit analytical results generated for another purpose, including 'in-situ' sediment sampling performed in support of a State or Federal permit to dredge, which may not conform to the sampling described in this paragraph.

(i) Untreated, unamended NDM and treated or amended NDM must be analyzed for the following parameters, unless otherwise approved by the department,, using department-approved analytical methods: volatile organic compounds; semivolatile organic compounds; pesticides; polychlorinated biphenyls; metals; sulfides; salt content; grain-size distribution; chlorinated dioxins/furans; carbazole; mirex; hexavalent chromium and cyanides. In addition, the department may require the submission of Synthetic Precipitation Leaching Procedure (EPA SW-846 Method 1312) or Toxicity Characteristic Leaching Procedure (EPA SW-846 Method 1311) results, as incorporated by reference in section 360.3 of this Part, and other data needed to justify the proposed end use (*e.g.*, nutrient content, geotechnical testing, etc.).

(ii) The NDM must be analyzed as prescribed in the following table unless otherwise approved by the department. If the source of the NDM has a history of significant contamination or highly variable contamination, additional sampling will be required. The sampling plan must be submitted and approved by the department prior to sampling the NDM.

TABLE: Analyses Required for NDM	
Cubic Yards of NDM	Minimum Number of Analyses
Under 5,000	1 for each 1,000 Cubic Yards
5,000-10,000	6
10,000-20,000	7
20,000-30,000	8
Over 30,000	*

*The department will require a project-specific approved sampling frequency.

(iii) All samples taken must be representative of the NDM that will be used. A written record of all sampling details must be submitted to the department and must include the date, location, and protocol used to obtain representative samples.

(iv) Statistical analysis in accordance with USEPA SW-846, as incorporated by reference in section 360.3 of this Part, may be used to justify compliance of NDM with contaminant limits where results show an exceedance. If the pollutant limit for beneficial use is lower than the required detection limit, an analytical result less than the required detection limit will be considered to comply with the pollutant limit.

(f) Case-specific beneficial use determinations – gas storage brine or production brine (brine).

(1) Applicability. In addition to the criteria outlined in subdivision (d) of this section, this subdivision applies to the use of gas storage brine or production brine on roads to control dust, stabilize unpaved road surfaces, reduce ice, or reduce snow.

(2) Case-specific brine beneficial use determination petition. The department will determine in writing, on a case-specific basis, whether the petition constitutes a beneficial use, based on requirements described in this section and subdivision (d) of this section. A written petition must be submitted to the department, containing the following information:

(i) the name, address and telephone number of the person or entity that is road spreading the brine;

(ii) a map or a listing of roads where brine will be applied;

(iii) an original, signed, and dated brine spreading authorization letter from the government agency or other property owner of the road(s);

(iv) the physical address of the brine storage location(s) or wells from which the brine is transported;

(v) a description of any system used at the well location(s) to separate brine and minimize any oil or gas in brine;

(vi) an analysis of a representative sample of the brine, obtained at a proposed point of use, for the parameters found in subparagraph (3)(iii) of this subdivision. All analyses must be performed by a laboratory certified by the New York State Department of Health using methods specified in this subdivision or otherwise acceptable to the department;

(vii) a road spreading plan that includes a description of the procedures to prevent the brine from flowing or running off into streams, creeks, lakes and other bodies of water. The plan should include, at a minimum:

(a) the type of use: dust control, road stabilization, or ice and snow control;

(b) a description of how the brine will be applied, including the equipment to be used and the method for controlling the rate of application;

(c) the proposed rate and frequency of application; and

(d) if the proposed use is ice or snow control, a description of how the operation complies with Department of Transportation guidelines for snow and ice control.

(3) Conditions for brine use. The conditions set forth below apply to all case specific beneficial use determinations for gas storage brine and production brine on all roads.

(i) Only gas storage brine and production brine from wells producing from formations other than the Marcellus Shale are approvable for road spreading.

(ii) Road spreading of drilling fluids and flowback water is prohibited.

(iii) Brine must comply with the following standards (test methods are incorporated by reference in section 360.3 of this Part):
BUD Criteria for the Use of Oil/Gas Brine for Road Uses

Parameter	Criteria, mg/L	Test Method
Total Dissolved Solids	>170,000*	Method approved by Department
Chloride	>80,000*	EPA Method 300.00
Sodium	>40,000*	SW-846 6010C
Calcium	>20,000*	SW-846 6010C
Iron	<250	SW-846 6010C
Barium	<1.0	SW-846 6010C
Lead	<2.5	SW-846 6010C
Sulfate	<2500	EPA Method 300.0
Oil/Grease	<15	EPA Method 1664
Benzene	<0.5	SW-846 8260
Ethylbenzene	<0.5	SW-846 8260
Toluene	<0.5	SW-846 8260
Xylene	<0.5	SW-846 8260

* lower levels may be considered when brine is used for dust control

(iv) Methods must be employed at the well site to minimize the amount of hydrocarbons present in the brine.

(v) Brine application within 50 feet of a stream, creek, lake, or other body of water is prohibited.

(vi) Brine application measurement methods must be used to ensure that brine application rates are within limits.

(vii) The vehicle used for brine application must be dedicated for that use or must be cleaned to remove any waste material prior to loading with brine.

(viii) Personnel that will be applying brine must be properly trained and educated on the equipment that will be used for brine application, the allowable application rates, and the use restrictions.

(ix) One representative analysis of the brine prior to use for the constituents in subparagraph (iii) of this paragraph must be submitted annually to the department. All analyses must be performed by a laboratory certified by the New York State Department of Health using methods acceptable to the department.

(x) In lieu of paragraph (d)(8) of this section an annual report must be submitted to the department by March 31st of each year containing data for the previous calendar year. The report must include:

(a) the source of the brine;

(b) analytical data;

(c) total amount of brine applied;

(d) dates of brine application;

(e) name of roads where applied, distance applied, and gallons applied; and

(f) effectiveness of brine application (excellent, good, fair, poor), etc.

(xi) Brine approved for beneficial use under this section ceases to be a waste when it meets the technical requirements or specifications for the intended end use.

(4) The following additional conditions set forth below apply to case specific beneficial use determinations for gas storage brine and production brine on unpaved roads for dust control and road stabilization:

(i) brine application is prohibited between sundown and sunrise;

(ii) brine application is prohibited on sections of road with a grade exceeding 10 percent;

(iii) brine application is prohibited on wet or frozen roads, during rain, or when rain is imminent;

(iv) brine application for dust control must occur only on unpaved roads;

(v) a spreader bar or similar device designed to deliver a uniform application of brine must be used;

(vi) the application vehicle must have brine shut-off controls in the cab;

(vii) brine cannot be applied directly to vegetation near the surface that is being treated;

(viii) application of brine within 12 feet of structures crossing bodies of water or crossing drainage ditches is prohibited;

(ix) when the application vehicle stops, the discharge of brine must stop;

(x) the vehicle must be moving at least five miles per hour when brine is being applied.

(5) The following additional conditions set forth below apply to case specific beneficial use determinations for gas storage brine and production brine on roads for ice and snow reduction:

(i) the brine application must not be used at a rate greater than needed for snow and ice control.

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NY-CRR

OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK
TITLE 6. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAPTER IV. QUALITY SERVICES
SUBCHAPTER B. SOLID WASTES
PART 360. SOLID WASTE MANAGEMENT FACILITIES GENERAL REQUIREMENTS

6 CRR-NY 360.13
6 CRR-NY 360.13

360.13 Special requirements for pre-determined beneficial use of fill material.

(a) Applicability.

This section applies to the direct use of fill material under a pre-determined beneficial use. This section does not apply to:

(1) fill material sent to facilities subject to regulation under Subpart 361-5 of this Title; and

(2) fill material generated outside of New York City with no evidence of historical impacts such as reported spill events, or visual or other indication (odors, etc.) of chemical or physical contamination as identified in section 360.12(c)(1)(ii) of this Part.

(b) Waste cessation.

Fill material ceases to be solid waste in accordance with the following:

(1) restricted-use fill and limited-use fill - once delivered to the site of reuse;

(2) general fill generated outside of the City of New York – once a determination that it is general fill has been made;

(3) general fill generated within the City of New York - once delivered to the site of reuse.

(c) Exemption for on-site reuse of fill material.

Fill material used as backfill for the excavation from which the fill material was taken, or as fill in areas of similar physical characteristics on the project property is exempt from regulation under this Part. If fill material exhibits historical or visual evidence of contamination (including odors), and will be used in an area with public access, the relocated fill material must be covered with a minimum of 12 inches of soil or fill material that meets the criteria for general fill, as defined in this Part. This provision does not apply to sites which are subject to a department-approved or undertaken program pursuant to Part 375 of this Title.

(d) Testing requirements for fill material.

Fill material that is not otherwise excluded or exempt from regulation under this section must sampled and analyzed pursuant to subdivision (e) of this section if:

(1) the fill material originates from a location within the City of New York unless the quantity of fill material does not exceed 10 cubic yards from one site and the 10 cubic yards or less of material does not contain historical evidence of impacts such as reported spill events, or visual or other indication (odors, etc.) of chemical or physical contamination;

(2) the fill material originates from a location outside the City of New York if:

(i) there is historical evidence of impacts such as reported spill events, or visual or other indication (odors, etc.) of chemical or physical contamination;

(ii) the fill material originates from a site with industrial land use as defined in section 375-1.8(g)(2)(iv) of this Title; or

(iii) if, during excavation, visual indication of chemical or physical contamination is discovered.

(e) Sampling and analysis requirements for fill material.

(1) Sample method and frequency. Samples must be representative of the fill material. The sampling program must be designed and implemented by or under the direction of a qualified environmental professional (QEP), using the table below as a minimum

sampling frequency. Written documentation of the sampling program with certification from the QEP that samples were representative of the fill material must be retained for three years after the sampling occurs and must be provided to the department upon request.

TABLE 1: Minimum Analysis Frequency for Fill Material

Fill Material Quantity (cubic yards)	Minimum Number of Analyses for Volatile Organic Compounds, if Required	Minimum Number of Analyses for all other parameters
0-300	2	1
301-1000	4	2
1001-10,000	6	3
10,001+	Two for every additional 10,000 cubic yards or fraction thereof	One per every additional 10,000 cubic yards or fraction thereof

(2) Analytical parameters. Fill material samples must be analyzed for:

(i) the Metals, PCBs/Pesticides, and Semivolatile organic compounds listed in section 375-6.8(b) of this Title;

(ii) asbestos if demolition of structures has occurred on the site;

(iii) volume of physical contaminants, if present, based on visual observation; and

(iv) volatile organic compounds listed in section 375-6.8(b) of this Title, if their presence is possible based on site events such as an historic petroleum spill, odors, photoionization detector meter or other field instrument readings.

(3) Laboratory and analytical requirements. Laboratory analyses must be performed by a laboratory currently certified by the New York State Department of Health's Environmental Laboratory Approval Program (ELAP).

(f) Acceptable fill material uses.

Fill material can be beneficially used in accordance with table 2 below.

TABLE 2: Fill Material Beneficial Use

Fill Material Type	**Fill Material End Use**	**Physical Criteria**	**Maximum Concentration Levels**
General Fill	Any setting where the fill material meets the engineering criteria, for use, except: 1. Undeveloped land; and 2. Agricultural crop land. General Fill may also be used in the same manner as Restricted-Use Fill and Limited-Use Fill.	Only soil, sand, gravel or rock; no non-soil constituents.	Lower of Protection of Public Health-Residential Land Use and Protection of Groundwater in section 375-6.8(b) of this Title.
Restricted-Use Fill [1]	Engineered use for embankments or subgrade in transportation corridors, or on sites where in-situ materials exceed Restricted-Use Fill or Limited-Use Fill criteria. Must be placed above the seasonal high water table. May also be used in the same manner as Limited-Use Fill.	Up to 40 percent by volume inert, non-putrescible non-soil constituents. [2]	General Fill criteria except that up to 3 mg/kg (dry weight) total benzo(a)pyrene (BAP) equivalent. [3] No detectable asbestos. In Nassau or Suffolk County – BAP equivalent does not apply. Polycyclic aromatic hydrocarbons must not exceed Protection of Groundwater Soil Cleanup Objectives in section 375-6.8(b) of this Title.
Limited-Use Fill [1]	Engineered use under foundations and pavements above the seasonal high water table. [4] Placement in Nassau and Suffolk Counties is prohibited.	No volume limit for inert, non-putrescible non-soil constituents. [2]	General Fill criteria, except up to Protection of Public Health-Commercial SCOs for metals; up to 3 mg/kg (dry weight) benzo(a)pyrene equivalent is allowed. [3] No detectable asbestos.

(g) Other fill material use criteria.

(1) Payment. A person must not receive payment or other form of consideration for allowing beneficial use of restricted-use fill or limited-use fill material on land under that person’s control.

(2) Notification in the City of New York. The department must be notified at least five days in advance of transfers of general fill, restricted-use fill and limited-use fill material generated in, imported to, or relocated within the City of New York in amounts greater than 10 cubic yards. Notifications must be made on forms or in a manner acceptable to the department and must include

any analytical data required by this section. The department reserves the right to inspect any site of generation or placement of fill material.

(3) Notification of fill material placement. For restricted-use fill and limited-use fill material, the department must be notified at least 5 days before delivery of greater than 10 cubic yards of fill material. Notification must be made on forms or in a manner acceptable to the department and must include any analytical data required by this section. The department reserves the right to inspect any site receiving fill material.

(4) Recordkeeping. The generator, processor, and receiver of fill material subject to sampling under this section must retain records of fill material quantities, with analytical data, for a minimum of three years after the fill material is removed or received, as applicable. These records must be made available to the department upon request.

(5) Transport.

(i) Transport of fill material that originates in the City of New York is subject to the requirements of Part 364 of this Title.

(ii) Transport of limited-use fill and restricted-use fill generated outside of New York City, is subject to the requirements of Part 364 of this Title.

(iii) Limited-use fill and restricted-use fill generated outside of Nassau and Suffolk counties is prohibited from being transported to any destination within Nassau or Suffolk County.

(6) Fill material not used in accordance with this section is a solid waste and must be managed at a facility authorized to receive it, or used pursuant to a case-specific beneficial use determination in accordance with section 360.12(d) of this Part.

Footnotes

1 Use of restricted or limited use fill material can only occur at a project in accordance with an approved local building permit or other municipal authorization that includes the need for the fill material. Fill material must be used within 30 days of arriving at the project site.

2 Inert, non-putrescible materials excludes plastic, gypsum wallboard, wood, paper, or other material that may readily degrade or produce odors.

3 Benzo(a)pyrene (BAP) equivalent is calculated using the following formula: BAPE= 1 x conc. Benzo(a)pyrene + 0.1 x [conc. Benz(a)anthracene + conc. Benzo(b)fluoranthene + conc. Benzo(k)fluoranthene + conc. Dibenz(a,h)anthracene + conc. Indeno(1,2,3-c,d)pyrene] + 0.01 x conc. Chrysene (All concentrations in mg/kg or ppm, dry weight.)

4 If foundation or pavement is not installed within 365 days of fill material placement, it placement will constitute prohibited disposal.

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APPENDIX C

Health and Safety Plan

HEALTH AND SAFETY PLAN

54 JEFFERSON AVENUE
ROCHESTER, NEW YORK

NYSDEC SPILL #1801598

Prepared for: City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614-1278

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Project No.: 5883S-21

Date: October 2021

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ATTACHMENTS

1.0 INTRODUCTION

This Health and Safety Plan (HASP) outlines the policies and procedures necessary to protect workers and the public from potential environmental hazards associated with soil, fill material and/or groundwater conditions that are posed during intrusive work at 54 Jefferson Avenue, Rochester, New York (Site). As outlined in this HASP, project activities shall be conducted in a manner to minimize the probability of injury, accident, or incident occurrence.

This HASP can be modified to cover other site activities when appropriate. 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 site activities.

2.0 SAFETY RESPONSIBILITY

Any entity (including contractors, consultants, state or local agencies, or other parties) and their employees that are involved with intrusive work at this Site will be responsible for their own safety while on-site. DAY's representatives are required to understand the information contained in this HASP, and must follow the recommendations that are made in this document. Other entities (including contractors, consultants, state or local agencies, or other parties) and their employees can implement this task. As an alternative, other entities can prepare and implement their own HASP, which must first be accepted by the City.

3.0 JOB HAZARD ANALYSIS

There are many hazards associated with intrusive work, and this HASP discusses some of the anticipated hazards for this Site. The hazards listed below deal specifically with those hazards associated with the disturbance and management of potentially contaminated media (e.g., soil, groundwater, etc.).

3.1 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.

A list of selected site-specific contaminants that have been detected at the Site is presented below. This list also presents the permissible exposure limits (PELs) and levels that are considered immediately dangerous to life and health (IDLH).

CONSTITUENT	OSHA PEL	IDLH
2-Butnone (MEK)	200 ppm	3000 ppm
Acetone	750 ppm	2500 ppm
Carbon Disulfide	20 ppm	500 ppm
Mixed Xylenes	100 ppm	900 ppm
Isopropylbenzene	50 ppm	900 ppm
Methylcyclohexane	500 ppm	1200 ppm
2-Methylnaphthalene	NA	NA
Phenanthrene	0.2 mg/m^3	80 mg/m^3
Pyrene	0.2 mg/m^3	80 mg/m^3

Notes:
PEL = OSHA Permissible Exposure Limits (TWA for 8-hour day)
IDLH = Immediately Dangerous to Life or Health Concentration
NA = Not Available
ppm = Parts Per Million

The potential routes of exposure for these analytes and chemicals include inhalation, ingestion, skin absorption and skin/eye contact. The potential for exposure through any one of these routes will depend on the activity conducted. The most likely routes of exposure during intrusive activities include inhalation and skin contact.

3.2 Physical Hazards

There are physical hazards associated with this Site, which might compound the chemical hazards. Hazard identification, training, adherence to the planned Site activities, and careful housekeeping can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this Site 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 due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices are essential to minimize the trip hazards.

- Small Quantity Flammable Liquids - Small quantities of flammable liquids 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, drill-rig) shall not be operated within 10 feet of high voltage lines, unless proper protection from the high voltage lines is provided by the appropriate utility company.

- 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.

  Proper hearing protection will be worn as deemed necessary. In general, feasible administrative or engineering controls shall be utilized when on-site personnel are subjected to noise exceeding an 8-hour time weighted average sound level of 90 d(B)A (decibels on the A-weighted scale). 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 inspected 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.

3.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, and irritant plants can pose a hazard when performing outdoor tasks. The entity conducting the work shall make every reasonable effort to alleviate these hazards should they arise.

3.3.1 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

The entity conducting the work will encourage Site workers to increase consumption of water or electrolyte-containing beverages such as Gatorade® when the potential for heat stress exists. In addition, workers will be encouraged to take rests whenever they feel any adverse effects that may be heat-related.

3.3.2 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 in workers. However, the entity conducting the work will instruct Site workers to wear warm clothing and to stop work to obtain more clothing if they become too cold. The Site workers will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

4.0 SITE CONTROLS

To prevent migration of contamination caused through tracking by personnel or equipment, work areas, and personal protective equipment staging/decontamination areas will be specified prior to beginning operations.

4.1 Site Zones

In the area where contaminated materials present the 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 contaminated media. Contaminated equipment or clothing will not be allowed outside the transition zone (e.g., on clean portions of the Site) unless properly containerized for disposal. 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 work activities that have the potential to encountered contamination.

4.2 General

The following items will be requirements to protect the health and safety of workers during implementation of activities that disturb impacted material.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contamination shall not occur in the work zone and transition zone during disturbance of impacted material.

- 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.

5.0 PROTECTIVE EQUIPMENT

This section addresses the various levels of PPE which 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.

5.1 Anticipated Protection Levels

TASK	PROTECTION LEVEL	COMMENTS/MODIFICATIONS
Site mobilization	D	
Site preparation	D	
Extrusive work (e.g., surveying, etc.)	D	
Intrusive work (e.g., soil excavation, dewatering, etc.)	C//D	Based on air monitoring
Support zone	D	
Site demobilization	D	

5.2 Protection Level Descriptions

This section lists the typical requirements for each protection level.

5.2.1 Level D

Level D consists of the following:

- Work clothing as prescribed by weather
- Steel-toed or composite-toed work boots
- Safety glasses
- Hard hat
- Work Gloves
- Chemical resistant protective gloves (e.g., disposable nitrile) during sampling or handling of potentially contaminated media
- Additional outer protective wear, such as face shield, side shields on safety glasses, and splash proof clothing (Saran coated Tyvek), if workers have a potential to be exposed to impacted liquids

5.2.2 Level C

Level C consists of the following:

- Air-purifying respirator with appropriate cartridges

- Work clothing as prescribed by weather
- Steel-toed or composite-toed work boots
- Safety glasses
- Hard hat
- Work Gloves
- Chemical resistant protective gloves (e.g., disposable nitrile) during sampling or handling of potentially contaminated media
- Additional outer protective wear, such as face shield, side shields on safety glasses, and splash proof clothing (Saran coated Tyvek), if workers have a potential to be exposed to impacted liquids
- Nitrile, neoprene, or PVC overboots and/or outer gloves, as deemed appropriate

Note: If the need for higher levels of PPE (e.g., Level A or Level B) becomes evident, the activities must be ceased until Site conditions are further evaluated, and any necessary modifications to the HASP have been accepted by the NYSDEC and the City.

5.3 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 OSHA 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, dusts, fumes and mists.

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.

6.0 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.

6.1 Personnel Decontamination

Personnel involved with activities that involve disturbing impacted media will follow the decontamination procedures described herein to ensure that material which workers may have contacted in the work zone and/or transition zone does not result in personal exposure and is not spread to clean areas of the Site or off-site. This sequence describes the general decontamination procedure. The specific stages can vary depending on the Site, the task, and 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

6.2 Equipment Decontamination

Impacted equipment 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.

6.3 Disposal

Decontamination wastes (e.g., disposable clothing, soil removed from equipment, decontamination water, etc.) will be treated as contaminated waste and be disposed of in accordance with provisions of the soil and groundwater management plan (SGMP) and applicable regulations.

7.0 AIR MONITORING

During activities that have the potential to disturb impacted soil, fill material, or groundwater, air monitoring will be conducted in order to determine airborne particulate and contamination levels. This ensures that respiratory protection is adequate to protect personnel against the chemicals that are encountered, and that chemical contaminants are not migrating off-site. Additional air monitoring may be conducted at the discretion of the Site safety Officer (SSO). Readings will be recorded and be available for review.

The following chart describes the direct reading instrumentation that will be utilized and the appropriate action levels.

Monitoring Device	Action level	Response/Level of Personal Protective Equipment (PPE)
PID Volatile Organic Compound Meter	< 5 ppm (above background) in breathing zone, sustained 5 minutes	Level D
	>5-25 ppm in breathing zone, sustained 5 minutes	Level C
	> 25 ppm in breathing zone, sustained 5 minutes	Stop work and evaluate condition with the City
RTAM Particulate Meter	< 100 $\mu g/m^3$ over an integrated period not to exceed 15 minutes	Continue working
	> 100 $\mu g/m^3$	Cease work, implement dust suppression, change in way work performed, etc. If levels cannot be brought below 150 $\mu g/m^3$, then upgrade PPE to Level C

$\mu g/m^3$ = microgram per cubic meter ppm = parts per million

7.1 Volatile Organic Compound Monitoring

An upwind PID measurement will be taken each day before operations begin in an area to determine the amount of volatile organic compounds (VOCs) naturally occurring in the air. This is referred to as a background level. Levels of VOCs will periodically be measured in the worker breathing zone air within the work zone and transition zone. Action levels are provided in the preceding table.

7.2 Particulate Monitoring

During activities where contaminated materials (e.g., soil, fill, etc.) may be disturbed, air monitoring will include real-time monitoring for particulates using a real-time aerosol monitor (RTAM) particulate meter at the perimeter of the work zone in accordance with the Final DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) dated May 2010. Action levels are provided in the preceding table.

8.0 EMERGENCY RESPONSE

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

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

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 Spills Hotline: (800) 457-7362

NYSDEC Local Office: (585) 226-2466

NYSDEC (Mike Zamiarski, P.E.): (585) 226-5438

City of Rochester DEQ (Dennis Peck): (585) 428-6884

Nearest Hospital: Highland Hospital
1000 South Avenue
Rochester, NY 14620

Hospital Emergency Phone Number: (585) 341-6880

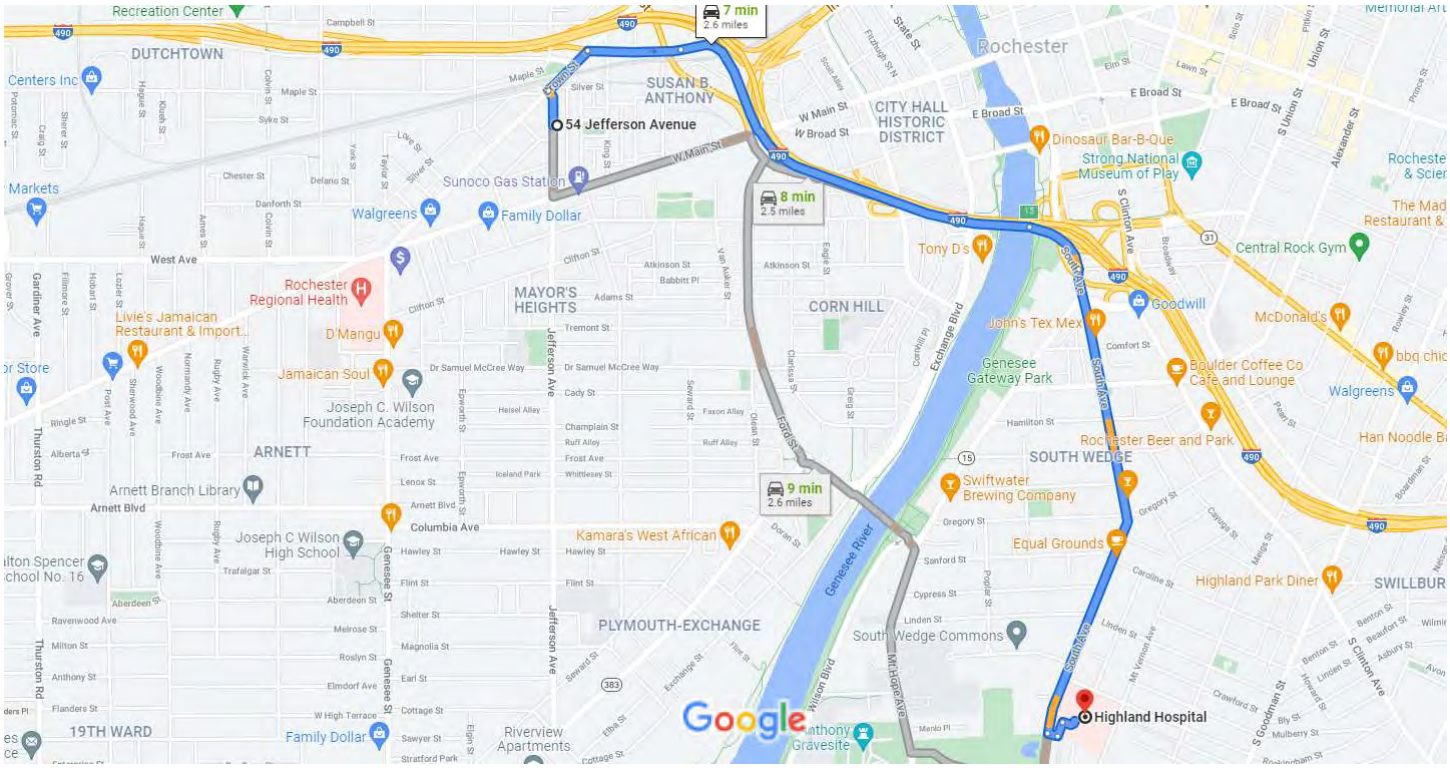
Directions to the Hospital: Refer to Attachment 1

ATTACHMENT 1

Directions to Hospital

54 Jefferson Ave, Rochester, NY 14608 to Highland Hospital

Drive 2.6 miles, 7 min



54 Jefferson Ave

Rochester, NY 14608

1. Head north on Jefferson Ave toward Brown St

16 s (413 ft)

Take I-490 E and South Ave to Bellevue Dr

6 min (2.4 mi)

2. Turn right onto Brown St

0.1 mi

3. Brown St turns right and becomes Allen St

0.2 mi

4. Use the right lane to take the ramp onto I-490 E

0.9 mi

5. Take exit 15 toward NY-15

0.2 mi

6. Merge onto South Ave

1.0 mi

Drive to your destination

2 min (449 ft)

7. Turn left onto Bellevue Dr

112 ft

8. Turn left

174 ft

9. Turn right

Destination will be on the right

164 ft

Highland Hospital

1000 South Ave, Rochester, NY 14620

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

APPENDIX D

Community Air Monitoring Plan

New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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 DEC/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, particularly if wind direction changes. 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.

1. 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.

2. 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.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) 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.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

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

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009