

INTERIM REMEDIAL MEASURE REPORT

**14-60 CHARLOTTE STREET
ROCHESTER, NEW YORK**

NYSDEC Spills #0070043 & #0070044

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1.0 INTRODUCTION

Day Environmental, Inc. (DAY) prepared this report summarizing an Interim Remedial Measure (IRM) that was implemented at the 14-60 Charlotte Street property, City of Rochester, County of Monroe, New York (Site). The location of the Site is shown on Figure 1 (Project Locus Map) and Figure 2 (Site Plan) that are included in Appendix A.

1.1 Background

A two-story vacant residential dwelling on the parcel addressed as 26 Charlotte Street, a former flammable storage shed on the parcel addressed as 28-30 Charlotte Street, and an approximately 1,800-square foot one-story vacant commercial concrete block garage located on the parcel addressed as 42 Charlotte Street were demolished in September 2001. The 48-60 Charlotte Street parcel is actively used as an open parking lot and the remainder of the Site is vacant or unused. The City of Rochester is the current owner of the Site.

Under current City of Rochester plans, the Site will be redeveloped for residential use. It is currently anticipated that the residential redevelopment will consist of construction of a condominium or apartment complex. The redevelopment will not include single family residences.

DAY previously completed various environmental studies at the Site and in the right-of-ways of Haags Alley and Charlotte Street (refer to Figure 3 included in Appendix A). These studies are summarized in reports prepared by DAY titled "Supplemental Phase II Environmental Studies, 14-60 Charlotte Street, Rochester, New York" dated November 2000 and "Supplemental Environmental Studies, 14-60 Charlotte Street, Rochester, New York" dated February 2001. These reports identified and documented the existence of soil and groundwater contamination at the Site and in the right-of-way of Haags Alley north of the Site. In addition, light non-aqueous phase liquid (LNAPL) designated as diesel fuel was detected in monitoring well MW-7 located on the southeast portion of the 14-16 Charlotte Street parcel. Some contaminants detected (e.g., light-weight total petroleum hydrocarbon (TPH) identified as mineral spirits and chlorinated volatile organic compounds) appear attributable to an off-site source located north of Haags Alley. Properties that could be considered as potential off-site sources of contamination (e.g., historic dry cleaning operations, historic auto painting operations, etc.) are depicted on Figure 3 included in Appendix A.

In April 2000, the City of Rochester notified the New York State Department of Environmental Conservation (NYSDEC) of the preliminary field findings of the environmental studies that were being performed on the Site. The NYSDEC subsequently assigned spill number NYSDEC Spill #0070043 to the parcels addressed as 26-60 Charlotte Street. A separate spill number NYSDEC Spill #0070044 was assigned to the parcel addressed as 14-16 Charlotte Street. These spills currently have an "active" status.

An exposure assessment was performed using the available site data obtained during previous environmental work. The exposure assessment report dated June 2001 concluded that a combination of remedial actions and environmental engineering controls should be implemented if the Site is to be redeveloped for residential and/or commercial uses. Based on this exposure assessment, the site specific target levels (SSTLs) for the highest ("worst case") concentrations of

various constituents detected in soil, fill or groundwater at the Site and/or their respective cumulative baseline risk factors were exceeded for one or more of the following exposure pathways:

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

In order to address regulatory cleanup criteria for contamination attributable to on-site sources and mitigate complete exposure pathways to residual contamination at the Site attributable to on-site or off-site sources, the following items were recommended so that the Site can be redeveloped as identified herein:

1. Removing the known on-site sources of petroleum contamination as an IRM. Subsurface conditions beneath the existing buildings (now demolished) will be characterized and addressed during their demolition;
2. Addressing the free product LNAPL encountered at monitoring well MW-7.
3. Implementing an environmental management plan (EMP), including a health and safety plan (HASp) This would include performing environmental monitoring (air monitoring with a photoionization detector [PID] and particulate meter; visual observations; etc.) during activities that would potentially disturb contaminated media;
4. Designing environmental engineering controls (i.e., vapor barriers, passive or active venting systems, etc. on proposed new buildings);
5. Implementing institutional controls (e.g., City of Rochester flagging system); and
6. Implementing a long-term monitoring program

A corrective action plan (CAP) dated October 2001 was developed by DAY to address the contamination at the Site in a manner that would implement the recommendations set forth above for allowing the residential redevelopment of the Site. The CAP was submitted to the NYSDEC, the Monroe County Department of Health (MCDOH) and the New York State Department of Health (NYSDOH). The CAP included an IRM soil removal, which is the focus of this IRM report. In addition, post-IRM confirmatory sampling and groundwater monitoring for LNAPL are presented in this IRM report.

1.2 Objectives

The objectives of the IRM were to: 1) remediate (i.e., remove) contaminated overburden soils; and 2) remove hydraulic lifts and an underground storage tank that had the potential to represent on-going sources of contamination in order to allow for the redevelopment of the Site for the stated future use while satisfying regulatory agencies' cleanup criteria and concerns to human health and the environment.

2.0 INTERIM REMEDIAL MEASURE

Between August and October 2001, the two-story residential dwelling on the 26 Charlotte Street parcel and the one-story commercial building on the 42 Charlotte Street parcel were demolished. During the demolition work, a DAY representative visited the Site periodically to observe subsurface conditions. In addition, environmental monitoring (e.g., air monitoring with a PID; visual observations; etc.) was conducted during the demolition of the building on the 42 Charlotte Street parcel. As part of the demolition, the top of a former floor drain inside the building on the 42 Charlotte Street parcel was removed. Some soils immediately beneath the concrete floor slab in proximity to the floor drain and the in-ground hydraulic lift showed evidence of petroleum-type contamination (e.g., staining). [Note: The floor drain contents and the contaminated soils were later removed and disposed off-site as part of the IRM described below]. Evidence of petroleum-type contamination was not observed during demolition of the residential structure on the 26 Charlotte Street parcel.

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

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

Select photographs of IRM activities are included in Appendix B.

2.1 Removal of In-Ground Hydraulic Lifts and UST

On November 19, 2001, Arrow removed one in-ground two-cylinder hydraulic lift with a reservoir tank and associated hardware from the 42 Charlotte Street parcel. The reservoir tank and one post were empty, and approximately one quart of hydraulic oil was removed from the other post and placed in a 5-gallon container. Arrow subsequently transported and disposed of the lift and the hydraulic oil off-site.

On March 25, 2002, Arrow removed one lift cylinder from a former in-ground hydraulic lift from the 14-16 Charlotte Street parcel. Approximately five gallons of hydraulic oil were removed from the lift cylinder and placed in a 5-gallon container. Arrow subsequently transported and disposed of this lift and the hydraulic oil off-site.

On November 21, 2001, during soil removal activities on the 14-16 Charlotte Street parcel, one 1,000-gallon underground storage tank was encountered. This tank was located on the southern portion of this parcel in proximity to former well MW-7 where LNAPL tentatively identified as diesel fuel was previously detected. [Note: DAY's Phase I ESA report dated May 15, 1997

contains City of Rochester Building Department and Fire Department records indicating a 1,000-gallon fuel oil tank was located in this general area of the Site].

On November 21, 2001, DAY collected a sample of the UST contents (designated as Sample 1B-UST Contents) and had it tested by Paradigm for the following parameters:

- TPH using USEPA Method 310.13.
- VOCs using USEPA Method 8240.
- Ignitability using SW846 Method 1010.
- Total Resource Conservation and Recovery Act (RCRA) metals using USEPA Method 6010 and 7470.

The analytical laboratory report for the sample of UST contents is included in Appendix E. The test results for this UST contents sample are summarized on Table 5 (TPH), Table 6 (VOCs), Table 7 (Ignitability) and Table 8 (RCRA Metals), which are included in Appendix D. In summary, the test results indicated the following:

- The sample of UST contents contained medium weight TPH pure petroleum product designated as diesel fuel.
- The sample of UST contents contained the VOCs benzene, ethylbenzene, toluene and total xylenes at concentrations ranging between 28,300 ug/l or ppb and 1,184,000 ug/l or ppb
- The sample of UST contents had an ignitability flashpoint of 31°C
- The sample of UST contents contained the metals barium and mercury at concentrations of 0.497 mg/l or ppm and 0.0074 mg/l or ppm, respectively.

On December 11, 2001, MARCOR Remediation, Inc. removed the UST and its contents (i.e., approximately 200 gallons) from the Site.

2.2 Soil Removal and Off-Site Disposal

Between November 13 through November 21, 2001 and March 25 through March 28, 2002, petroleum-contaminated soil was removed from the Site. Arrow Contracting, Inc. (Arrow) was retained by DAY to provide excavation and backfilling services. R.V.A. Independent Trucking Associates, Inc. (NYSDEC Permit #8A-706) was retained to transport contaminated soils off-site to the landfill. Soil/fill in the excavation areas that exhibited PID readings greater than 10 parts per million (ppm), and/or staining, objectionable odors, sheen, etc. were removed and disposed of off-site. A DAY representative also screened the ambient air above the excavated soils during the removal work to assist in segregating soil that were re-used on-site from contaminated soil that required off-site disposal.

Areas of soil contamination were removed to the top of bedrock; however, in some instances, the excavation was generally discontinued when a layer of contaminated soil above bedrock was observed to be less than one foot thick. In most cases, the contamination was at or near the top of bedrock, and a layer of uncontaminated fill and soil ranging between approximately six and ten feet thick required removal to expose the contaminated soil. The uncontaminated fill and soil were staged in piles adjoining the excavation from which it originated, and were later used as backfill in the same excavation. Figure 4 included in Appendix A depicts the anticipated IRM soil removal areas in relation to the actual IRM soil removal areas. As shown on Figure 4,

anticipated soil removal areas were designated as Area 1 through Area 4. The IRM work conducted at each area is further described below:

- AREA 1 (14-16 Charlotte Street) The majority of IRM soil removal work was conducted at Area 1. The presence of buried utilities beneath the sidewalk along the southern property line inhibited removal of some contaminated soils that were greater than one foot above the top of bedrock (refer to Figures 4 and 5 included in Appendix A). The volume of soil removed from Area 1 was larger than initially anticipated due to “chasing” lenses of the contamination above the top of bedrock.
- AREA 2 (28-34 Charlotte Street) The Area 2 locations were excavated; however, the presence of contamination requiring remediation (i.e., exhibited PID readings greater than 10 ppm, and/or staining, objectionable odors, sheen, etc.) was only encountered in a portion of the southern Area 2 location (refer to Figure 4 included in Appendix A). As such, only a limited amount of contaminated soil was removed from Area 2.
- AREA 3 (36-42 Charlotte Street) The actual area of soil removed from Area 3 was similar to that initially anticipated. Due to its proximity to the right-of-way of Haags Alley (refer to Figures 4 and 5 included in Appendix A), some contaminated soils that were more than one foot above the top of bedrock could not be removed along the northern property line on this part of the Site.
- AREA 4 (48-60 Charlotte Street) The Area 4 locations were excavated; however, the presence of contamination requiring remediation (i.e., exhibited PID readings greater than 10 ppm, and/or staining, objectionable odors, sheen, etc.) was not encountered. As such, soil was not removed for off-site disposal from Area 4.

A total of 1,887 tons of petroleum-contaminated soil was excavated to the top of competent bedrock and disposed of at Mill Seat Landfill, Riga, New York. The approved waste profile sheets, landfill invoices, and two example landfill disposal tickets for the first and last day contaminated soil was transported off-site are included in Appendix C. A complete set of landfill disposal tickets for each load of contaminated soil is on file at DAY’s office.

It was anticipated that LNAPL (diesel fuel or heating oil) might be encountered on the southern portion of Area 1 and require removal. However, during soil removal work in this area, only a few small approximate four-foot diameter or less areas of LNAPL (0.1 inch thick or less) were observed floating on the top of groundwater in the excavation. These areas were removed using absorbent pads and disposed off-site with the contaminated soil.

2.3 On-Site Monitoring During IRM Soil Removal Activities

During the IRM soil removal work, environmental air monitoring for volatile organic compounds (VOCs) and particulates was conducted in general accordance with the protocol identified in the EMP and HASP developed for this Site. The monitoring served two purposes: (1) protection of on-site personnel and the nearby community to exposures of Site contaminants; and (2) assist in segregation of petroleum-contaminated media (e.g., soil, etc.) from uncontaminated media.

Visual and olfactory observations (i.e., staining, odors, etc.) of soil and fill material were conducted during the removal activities. Also, monitoring with a PID and particulate meter were conducted during excavation/removal of soil and fill materials.

- Soils that exhibited a petroleum odor, visible staining, a sheen, or PID readings above 10 ppm were segregated from “clean” soil and disposed of at Mill Seat Landfill.

Air monitoring with the PID and particulate meter was also conducted in order to determine airborne contamination levels. The purpose of this monitoring was to determine proper respiratory protection for on-site workers and to protect against airborne contaminants from migrating off-site.

- PID readings measured in the worker’s breathing zone and around the perimeter of the work zone (i.e., soil removal area actively being excavated) did not exceed 0.0 ppm. Discrete particulate (i.e., dust) readings around the perimeter of the work zone were measured to range between 0.0 mg/m³ and 0.13 mg/m³. As shown, action levels (i.e., PID readings <1 ppm sustained for five minutes for Level D protection; and particulates <0.15 mg/m³ over 15-minute intervals as identified in the HASP) were not exceeded.

Field observations and measurements were documented during the air monitoring work, and are available to regulatory authorities for their review, if requested.

2.4 Confirmatory Sampling

Prior to backfilling, DAY collected twenty-three (23) confirmatory soil samples and one groundwater sample from the excavations (refer to Figure 4 included in Appendix A and Table 1 included in Appendix D). Fifteen soil samples were collected from Area 1 excavations. Two samples were collected from Area 2 excavations. Four soil samples and one groundwater sample were collected from the Area 3 excavation. Two soil samples were collected from Area 4 excavations. When excavations were terminated on bedrock, bottom samples were not collected. The confirmatory soil samples collected for each area are summarized below:

- AREA 1 (14-16 Charlotte Street) Confirmatory soil samples were collected from the walls of Area 1 excavations.
 - Samples #1A (north, south, east and west walls), Sample #1-1C (11’5’), Sample #2-1C (11’), Sample #101-1C (1’), Sample A(13’), B(8.5’), C(11.5’), D(12’) and E(10’) were collected within one foot of the top of bedrock.
 - Samples A(4-5’), B(7.5’), and E(7’) were collected in apparent “clean” soil above contaminated soil that was greater than one foot thick.
- AREA 2 (28-34 Charlotte Street) The Area 2 locations were excavated; however, the presence of contamination requiring remediation was only encountered in one portion of the southern Area 2 location.
 - Sample #2A was collected from near the surface of Area 2A from excavated material that had the highest likelihood of containing petroleum contamination based on previous analytical laboratory data and observations.

- Sample #2B was collected from Area 2B within one foot of the top of bedrock in the area where contaminated soil was encountered and removed.
- AREA 3 (36-42 Charlotte Street) Confirmatory samples were collected from the Area 3 excavation.
 - Soil Samples #3A (north, south, east and west walls) were collected within one foot of the top of bedrock.
 - Groundwater Sample “Excavation #3A Water” was collected from the bottom of the excavation.

[Note: at the time the groundwater sample was collected from this excavation, DAY also collected a groundwater sample from groundwater monitoring well MW-13 located nearby in Haags Alley (designated as Sample MW-13/Groundwater) for comparison of the groundwater quality of the Area 3 excavation.]

- AREA 4 (48-60 Charlotte Street) The Area 4 locations were excavated; however, the presence of contamination requiring remediation was not encountered.
 - Sample #4A and Sample #4B were collected within one foot of the top of bedrock at Area 4 excavations, which were anticipated to have the highest likelihood of petroleum contamination based on previous analytical laboratory data and observations.

DAY retained Paradigm Environmental Services, Inc. (Paradigm), a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory, to test the confirmatory soil samples for the following parameters:

- Target compound list (TCL) and NYSDEC Spill Technology and Remediation Series (STARS)-list VOCs using United States Environmental Protection Agency (USEPA) Method 8260.
- STARS-list semi-volatile organic compounds (SVOCs) using USEPA Method 8270.
- TPH using NYSDOH Method 310.13.

Groundwater samples “Excavation #3A Water” and “MW-13/Groundwater” were analyzed by Paradigm for TPH using NYSDOH Method 310.13.

2.4.1 Confirmatory Soil Sample Test Results

The analytical laboratory reports for the confirmatory soil samples are included in Appendix E. The test results for confirmatory soil samples are summarized on Table 2 (TPH), Table 3 (VOCs) and Table 4 (SVOCs), which are included in Appendix D. The tables with VOC and SVOC test results also include recommended soil cleanup objectives as referenced in the NYSDEC Technical and Administrative Guidance Memorandum dated January 24, 1994 (TAGM 4046) as

amended by the NYSDEC's supplemental Tables dated August 22, 2001. Currently, there are no New York State cleanup criteria for TPH in soil. The analytical laboratory test results are further summarized below:

TPH

TPH was detected in the following eight samples:

- Heavy-weight TPH designated as lube oil was detected in Sample #1 (North Wall) and Sample #1 (East Wall) from Area 1 at concentrations of 19 mg/Kg or ppm and 8.44 mg/Kg or ppm, respectively. [Note: The area where Sample #1(East Wall) was collected was later removed during the IRM soil removal work conducted in March 2002].
- Medium-weight TPH designated as diesel fuel was detected in Samples A(13') and B(7.5') and B(8.5') from Area 1 at concentrations of 3,820 mg/Kg or ppm, 1,550 mg/Kg or ppm and 4,460 mg/Kg or ppm, respectively. These locations are along the southern property boundary in an area where the presence of buried utilities beneath the sidewalk inhibited removal of contaminated soils that were greater than one foot above the top of bedrock.
- Heavy-weight TPH (designated as lube oil) and light-weight TPH (designated as mineral spirits) were detected in Sample #3A (North Wall) from Area 3 at concentrations of 3,400 mg/Kg or ppm and 1,240 mg/Kg or ppm, respectively (i.e., summed total TPH of 4,640 mg/Kg or ppm). This location is along the northern property boundary adjoining Haags Alley in an area where the contaminated soils could not be removed that were greater than one foot above the top of bedrock. The soil contamination in this excavation was observed to be thickest along the north excavation wall abutting Haags Alley and tapered off toward the south.
- Heavy-weight TPH (designated as lube oil) was detected in Sample #3A (West Wall) from Area 3 at a concentration of 12 mg/Kg or ppm.
- Heavy-weight TPH (designated as lube oil) was detected in Sample #4A from Area 4 at a concentration of 12.1 mg/Kg or ppm.

TPH was not detected at concentrations above reported analytical laboratory detection limits in the other fifteen (15) confirmatory soil samples.

VOCs

VOCs were detected in the following five soil samples:

- Sample #2A from Area 2
- Sample #3A (North Wall) from Area 3
- Sample A(13') from Area 1
- Sample B(7.5') from Area 1
- Sample B(8.5') from Area 1

Only the detected concentrations of one or more specific VOCs and/or the total VOCs in Sample A(13') from Area 1, and Sample B(8.5') from Area 1 exceeded their respective TAGM 4046 recommended soil cleanup objectives (refer to Figures 4 and 5 included in Appendix A).

The detected concentrations of the specific VOCs and total VOCs in the remaining samples [i.e., Sample #2A from Area 2, Sample #3A (North Wall) from Area 3, and Sample B (7.5') from Area 1] do not exceed their respective TAGM 4046 recommended soil cleanup objectives.

VOCs were not detected at concentrations above reported analytical laboratory detection limits in the other eighteen (18) confirmatory soil samples.

SVOCs

SVOCs were detected in the following six soil samples:

- Sample #1A (East Wall) from Area 1
- Sample #3A (North Wall) from Area 3
- Sample #3A (South Wall) from Area 3
- Sample A (13') from Area 1
- Sample B (7.5') from Area 1
- Sample B (8.5') from Area 1

The concentration of the SVOC naphthalene detected in Sample B (8.5') from Area 1 exceeded its respective TAGM 4046 recommended soil cleanup objective (refer to Figures 4 and 5 included in Appendix A).

The detected concentrations of specific SVOCs and total SVOCs in the remaining samples [i.e., Sample #1A (East Wall) from Area 1, Sample #3A (North Wall) from Area 3, Sample #3A (South Wall) from Area 3, Sample A (13') from Area 1, and Sample B (7.5') from Area 1] do not exceed their respective TAGM 4046 recommended soil cleanup objectives.

SVOCs were not detected at concentrations above reported analytical laboratory detection limits in the other seventeen (17) confirmatory soil samples.

2.4.2 Groundwater Sample Test Results

The analytical laboratory reports for the groundwater samples are included in Appendix E. The TPH test results for groundwater samples are summarized on Table 5, which is included in Appendix D. Currently, there are no New York State cleanup criteria for TPH in groundwater. The analytical laboratory test results are further summarized below:

- Heavy-weight TPH (designated as lube oil) and medium-weight TPH (designated as mineral spirits) were detected in Sample "Excavation #3A Water" from Area 3 at concentrations of 27,800 ug/l or ppb and 10,400 ug/l or ppb, respectively (i.e., summed total TPH of 38,200 ug/l or ppb). This location is along the northern property boundary adjoining Haags Alley, in the vicinity of a suspected off-site groundwater contamination plume. Sample MW-13 located in Haags Alley contained medium-weight TPH designated as mineral spirits at a concentration of 1,730 ug/l or ppb.

2.5 Placement of ORC

As a supplement to the IRM, 510 pounds of ORC was purchased from RegenesiS and added to the saturated zone immediately above bedrock at the Area 1 excavations on the 14-16 Charlotte Street parcel prior to backfilling. The ORC was added to the excavations in order to enhance the bioremediation of residual petroleum contamination in the saturated zone (i.e., saturated soils and groundwater). The amount of ORC applied was based on use of RegenesiS' estimating software (Version 2a) for groundwater treatment in a tank excavation as identified in the CAP.

2.6 Backfilling Excavations

Subsequent to collection of confirmatory soil samples (and placement of ORC at excavations on the 14-16 Charlotte Street Parcel), the excavations where contaminated soil was removed were generally backfilled using the following protocol:

- A layer of select crusher-run fill sourced off-site was placed and generally compacted in one-foot lifts at the bottom of excavations. The layer ranged between approximately one and three feet thick.
- Soil/fill that was not contaminated with VOCs or petroleum at concentrations above regulatory criteria (e.g., NYSDEC STARS Memo #1 or TAGM 4046 criteria) was placed and generally compacted in one-foot lifts in the same excavations from which it originated.
- A minimum one-foot thick layer of select crusher-run fill sourced off-site was placed and compacted at the top of excavations (i.e., at the ground surface).

Subsequent to collection of confirmatory soil samples, the excavations where no contaminated soil was removed were generally backfilled with the soil/fill that originated from the excavations.

VanDerHorst Geotechnical Engineering, P.C. performed one proctor test on the select crusher run fill material and intermittent compaction testing during backfilling of excavations. Copies of the geotechnical test results are included in Appendix E.

3.0 POST-IRM LNAPL MONITORING

During the IRM soil removal work, two (2) four-inch inner-diameter (ID) Schedule 40 polyvinyl chloride (PVC) groundwater monitoring wells (designated as MW-A and MW-B) were installed on the 14-16 Charlotte Street parcel in areas where LNAPL was most likely anticipated to be present. The wells were installed between 0.5 and 1.0 feet into bedrock, and were screened to near the ground surface. Figure 4 included in Appendix A depicts the locations of these two wells on the Site.

Between April 17, 2002 and August 14, 2002, DAY performed 10 monitoring events at the wells to measure static water levels and LNAPL levels using: 1) an electronic static water level and visual observations; or 2) a Heron Model HO1.L oil/water interface meter. The data obtained is provided on Table 9 included in Appendix D. As shown, LNAPL was not detected in the wells during the monitoring events.

4.0 CONCLUSIONS

Elements of the CAP completed as part of the IRM are summarized below:

- The two-story residential dwelling on the 26 Charlotte Street parcel was demolished.
- The one-story building located on the 42 Charlotte Street parcel (formerly used for automobile repair) was demolished. In conjunction with the demolition and subsequent soil removal work, the former floor drain with catch basin and its contents on this parcel were removed and disposed off-site.
- Two in-ground hydraulic lifts that were located on the 14-16 and 42 Charlotte Street parcels were removed and disposed off-site.
- One 1,000-gallon capacity UST containing approximately 200 gallons of petroleum (e.g., fuel oil or diesel fuel) on the 14-16 Charlotte Street parcel was permanently closed via removal. This UST was located in proximity to former groundwater monitoring well MW-7 where LNAPL was previously detected.
- A total of 1,887 tons of petroleum-contaminated soil was removed from the Site, and transported off-site to a permitted landfill facility. With the exception of two areas of the Site (i.e., along the southern property boundary of the 14-16 Charlotte Street parcel and along the northern property boundary of the 42 Charlotte Street parcel), contaminated soil was removed to the top of bedrock or until the seam of soil contamination above the bedrock was less than one foot thick. Removal of contaminated soil was discontinued in these areas due to the proximity of the excavations to street improvements (e.g., sidewalk, paved street) and buried utilities in the right-of-way of Charlotte Street and Haags Alley, and also due to the fact that the soil contamination in Haags Alley appears attributable to an off-site source. The soil contamination left in-place on the southern property line of the 14-16 Charlotte Street parcel appears attributable to the former diesel fuel UST that was removed from this parcel during the IRM.
- Prior to backfilling, a total of 23 confirmatory soil samples were collected from the walls of IRM excavations and analyzed for TCL and STARS-list VOCs using USEPA Method 8260, STARS-list SVOCs using USEPA Method 8270, and for TPH using NYSDOH Method 310.13. Based on the analytical laboratory test results, only two soil samples (i.e., Samples A @ 13' and B @ 8.5') collected from the south excavation wall along the southern property line of the 14-16 Charlotte Street parcel contained specific VOCs and/or SVOCs at concentrations above TAGM 4046 recommended soil cleanup objectives, [i.e., the location where the Charlotte Street right-of-way inhibited further removal of contaminated soil above bedrock (refer to Figures 4 and 5 included in Appendix A)].
- ORC was placed at the bottom of excavations on the 14-16 Charlotte Street parcel to enhance biodegradation of residual petroleum contamination in the saturated zone.
- Post-IRM groundwater monitoring on the 14-16 Charlotte Street parcel has not detected the presence of LNAPL on the uppermost groundwater-bearing zone (i.e., overburden/bedrock interface).

- A perimeter vent system, such as that depicted on Figure 4 included in the CAP, was not installed in this area during the IRM since future redevelopment plans have not been finalized.
- The IRM was successful in removing petroleum-contaminated soils from the Site in preparation for future redevelopment.

The City of Rochester has issued a Request for Proposal (RFP) for residential redevelopment of the Site. The City of Rochester will require the selected developer to implement the elements of the CAP that were not performed as part of the IRM.

5.0 ABBREVIATIONS

Arrow	Arrow Contracting, Inc.
CAP	Corrective Action Plan
DAY	Day Environmental, Inc.
ELAP	Environmental Laboratory Approval Program
EMP	Environmental Management Plan
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
LNAPL	Light Non-Aqueous Phase Liquid
MCDOH	Monroe County Department of Health
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORC	Oxygen Release Compound
PID	Photoionization Detector
ppb	Parts Per Billion
ppm	Parts Per Million
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
SSTL	Site Specific Target Level
STARS	Spill Technology and Remediation Series
SVOC	Semi-Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memorandum
TCL	Target Compound List
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

APPENDIX A

Figures

APPENDIX B

Photographs

APPENDIX C

Waste Profile and Disposal Documentation

APPENDIX D

Tables

APPENDIX E

Analytical Laboratory Reports