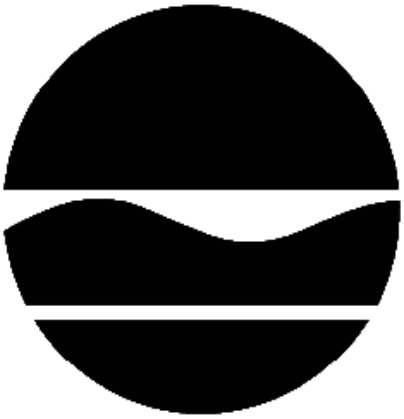
PROPOSED REMEDIAL ACTION PLAN

Andrews Street Site
Environmental Restoration Project
Rochester, Monroe County
Site No. E828144
September 2015



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of contaminants at the site resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy proposed by this Proposed Remedial Action Plan (PRAP). A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site. This PRAP identifies the IRM(s) conducted and discusses the basis for No Further Action.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Central Library of Rochester and Monroe County
Attn: Leatrice Brantley
115 South Avenue
Rochester, NY 14604
Phone: 585-428-7300

A public comment period has been set from:

9/21/2015 to 11/05/2015

A public meeting is scheduled for the following date:

10/07/2015 at 6:30 PM

Public meeting location:

City of Rochester, City Hall Room 208A

At the meeting, the findings of the remedial investigation (RI) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through 11/05/2015 to:

Charlotte Theobald
NYS Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414
charlotte.theobald@dec.ny.gov

The Department may modify the proposed remedy presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The site is located in an urban area of downtown Rochester. The Andrews Street Site is located at 300, 304-308 and 320 Andrews Street, and 25 Evans Street in the City of Rochester. It is bounded to north by the Inner Loop highway, by Franklin Square and Schiller Park to the east, by Andrews Street to the south, by Bristol Street to the west.

Site Features:
The site consists of four parcels owned by the City of Rochester. The total combined area is 1.524 acres. Prior to demolition, the site had 4 buildings with associated paved parking lots and city streets. A narrow city street (Evans Street) separated 320 Andrews Street parcel from the other 3 parcels. In 2013 Evans Street was formally abandoned by the City of Rochester and the land has been incorporated into the site. The buildings were demolished in 2010 and the site is currently vacant.

Current Zoning and Land Use:
The site is vacant lot and is located in the City of Rochester's zoning district known as the City Center District-Base (CCD-B). The CCD-B district allows for residential and commercial uses.

Past Use of the Site:
The site has been used for various commercial and industrial uses since the early 1920's including plumbing supply, electrical supply, bakery, printer, commercial bus depot and bus garage, gas station, chemical sales/distribution, dry cleaning equipment distributor, fuel oil contractor, and warehousing.

Phase I and II Environmental Assessments were conducted in 2006. The Phase I identified several recognized environmental conditions (RECs) at the site. The Phase II consisted of the installation of test borings, monitoring wells, evaluation of floor drains and discharge points, and the collection of soil and groundwater samples for laboratory analysis. The soil sample analytical data indicated tetrachlorothene, trichloroethene, cis-1,2-dichloroethene, and petroleum-related volatile organic compound impacts. The groundwater sample analytical data indicated tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene impacts.

Site Geology and Hydrogeology:
The on-site soils consist of heterogeneous historic urban fill layer which consisted of reworked soil, cinders, ash, crushed stone, concrete and asphalt. The urban fill layer depth ranges from 1.5 feet to 8 feet (ft.) below ground surface [bgs] (average thickness 3.12 ft.). Lacustrine deposits were encountered below the urban fill with dense glacial till underlain by silt and sand layers that extends to approximately 25 to 30 ft. bgs to the top of bedrock. The top of bedrock at the site ranges from 25 ft. bgs in the northern portion of the site to 30 ft. bgs in the central portion of the site. The site and the surrounding area are generally level. Surface water at the site flows towards Andrews Street or into on-site catch basins. The Genesee River is located approximately 0.3 miles west of the site.

The depth of the overburden groundwater ranges from 4.99 to 17.73 ft. and the flow direction is in a northerly direction towards the Inner Loop Expressway. The depth of the bedrock groundwater ranges from 11.26 to 23.45 ft. and the flow direction is in a northwestern direction.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted residential as described in Part 375-1.8(g) is/are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. City of Rochester and City of Rochester Dept. of Environmental Quality will assist the state in its efforts by providing all information to the state which identifies PRPs. City of Rochester and City of Rochester Dept. of Environmental Quality will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- air
- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation

for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

tetrachloroethene (PCE)
polychlorinated biphenyls (PCB)
dichloroethene (cis-1,2-)
trichloroethene (TCE)
vinyl chloride
polycyclic aromatic hydrocarbons (PAHS), total
arsenic
lead

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM Excavation

The Excavation IRM (completed October to December 2012) consisted of the excavation and off-site disposal of soil and other materials from six (6) source areas on the site where 6 NYCRR Part 375 soil cleanup objectives (SCOs) for restricted residential use were exceeded and where tetrachloroethene SCO for groundwater was exceeded. The six (6) areas of concern are known as IRM-01 to IRM-06.

IRM-01 Area: A total of 1,673.06 tons of non-hazardous tetrachloroethene impacted soil and 138.83 tons of characteristic hazardous tetrachloroethene impacted soil was excavated from an approximate 3,500 square foot source area down to depths ranging between approximately 4.0 and 15.5 ft. bgs. The tetrachloroethene impacted soils were disposed off-site at regulated landfills.

IRM-02 Area: Approximately 115 linear feet (LF) of combined sanitary/storm main sewer trunk line was decommissioned by removal and/or filled in accordance with Monroe County protocols. The associated sewer laterals were capped or removed and approximately 101 tons of tetrachloroethene impacted soil/fill material was excavated down to depths ranging between approximately 10 and 12.5 ft. bgs. This work was completed in the area of the former Evans Street ROW which was adjacent to the IRM-01 Area. The removed sanitary/storm sewer construction material was disposed off-site as non-hazardous waste at a regulated landfill.

IRM-03 Area: Two (2) 5,000-gallon petroleum underground storage tanks (USTs), the USTs K-Crete contents, and 48.82 tons of petroleum contaminated soil/fill material were excavated to a depth of approximately 12 ft. bgs. The steel USTs were recycled. The K-Crete and petroleum contaminated soil/fill material was disposed as non-hazardous wastes at a regulated landfill.

IRM-04 Area: A total of 15.64 tons of non-hazardous polychlorinated biphenyl (PCB)-impacted soil/fill material was excavated down to a depth of approximately 3 ft. bgs. The PCB contaminated soil/fill material was disposed off-site at a regulated landfill.

IRM-05 Area: A total of 223.21 tons of non-hazardous petroleum and volatile organic compound impacted soil/fill material was excavated to a depth of approximately 5.5 ft. bgs from the area of the former trench floor drain. The trench drain and contaminated soil/fill material was disposed off-site at a regulated landfill.

IRM-06 Area: Approximately 205 LF of piping and impacted soil/fill material was excavated to a depth of approximately 3 ft. bgs on the eastern side of the site. Sediments inside the piping contain relatively low concentrations of tetrachloroethene. The piping, sediments, and surrounding soil/fill material was disposed off-site at a regulated landfill as a non-hazardous waste. Confirmatory sampling indicated that the tetrachloroethene groundwater SCO and the restricted residential SCO for metals was not achieved in this area.

At each removal area a demarcation layer consisting of crusher run #2 stone (CR2 stone) and in select excavations underlain by a demarcation layer of geotextile fabric was installed at the bottom of the excavations. Site soils that did not present evidence of impacts were staged on-site and soil samples were collected in accordance with DER-10 Section 5.8(e) to determine on-site re-use. The Department approved the reuse of the staged on-site soils as well as the importation of non-soil material, CR2 stone, for the use as backfill material to return the site to grade.

IRM In-situ Chemical Oxidation

An In-situ Chemical Oxidation [completed July 2104 to September 2014] (ISCO) IRM was performed to treat tetrachloroethene groundwater contamination and remaining tetrachloroethene impacts in the soil. The 15,338 square foot treatment area targeted depth intervals from 7 ft. to 32 ft. below ground surface which resulted in a saturated treatment zone of 179,915 cubic feet. Pneumatic fracturing was used to increase the radius of influence (approx. 15 ft.) at the injection points. A 30% slurry of potassium permanganate (oxidation agent) was injected into the subsurface at 30 injection points. Approximately 33,550 pounds of potassium permanganate was injected into the treatment zone.

A polishing phase of ISCO was completed (October 2014 to June 2015) in areas where shallow injections resulted in daylighting issues of the potassium permanganate slurry. These areas were addressed by gravity fed injection wells and/or remediation pits which allowed for placement of the oxidation agent into the treatment zone. Approximately 3,168 gallons of a 5% potassium permanganate was injected at 12 locations. Seven (7) remediation test pits received a combination of drummed potassium permanganate slurry, potassium permanganate enriched daylighted soil/fill material, and potassium permanganate enriched development and purge water.

A supplemental soil removal (completed June to July 2014) was performed to excavate and dispose off-site tetrachloroethene impacted soil/fill material that exceeded the SCO of 1.3 ppm for tetrachloroethene. Approximately 76 tons of non-hazardous tetrachloroethene impacted soil/fill material was disposed off-site at a regulated landfill. Confirmatory sampling indicate the Site's tetrachloroethene SCOs was achieved.

As part of the IRM activities, a cover system consisting of 2 feet of Department approved imported CR2 stone was installed at the Site (November 2014).

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for the site.

Soil: On-site - After the completion of the Excavation IRM, tetrachloroethene concentrations in soil ranged from non-detect to 19 parts per million [ppm] (Protection of Groundwater SCO - 1.3 ppm). The concentration of PAHs ranged from non-detect to 28 ppm (Restricted Residential SCO - 1 ppm). The concentration of PCBs ranged from non-detect to 0.448 ppm (Restricted Residential SCO - 1 ppm). The concentration of arsenic ranged from non-detect to 17.5 ppm (Restricted Residential SCO - 16 ppm) and lead concentrations ranged from non-detect to 1,390 ppm (Restricted Residential SCO - 400 ppm). Based on the analytical data to date, it is not anticipated that soil contamination extends off-site.

Groundwater: On-site & Off-site - After completing the injection of a 30% slurry of potassium permanganate, tetrachloroethene concentrations ranged from non-detect to 15,500 parts per billion [ppb] (groundwater standard - 5 ppb); cis-1,2-dichloroethene concentrations ranged from non-detect to 220 ppb (groundwater standard - 5 ppb); and trichloroethene concentrations ranged from non-detect to 260 ppb (groundwater standard - 5 ppb). The recent groundwater sampling event, March 2015, has shown tetrachloroethene concentrations ranging from non-detect to 110 ppb. cis-1,2-dichloroethene concentrations ranged from non-detect to 160 ppb. Trichloroethene concentrations ranged from non-detect to 28.8 ppb. Vinyl chloride concentrations were non-detect.

Soil Vapor: On-site & Off-site - The perimeter on-site soil vapor sampling indicated tetrachloroethene at the property boundary. Soil vapor tetrachloroethene concentrations ranged from non-detect to 881 micrograms per cubic meter (ug/m^3). The off-site soil vapor sampling detected the presence of tetrachloroethene ranging from non-detect to 2.71 ug/m^3. Based on the analytical data to date, it's anticipated that soil vapor contamination exists on-site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

People who dig below the ground surface may come into contact with contaminants in subsurface soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion in any future on-site buildings which are developed and occupied. Environmental sampling indicates that soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or

impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF PROPOSED REMEDY

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes the implementation of ICs/ECs (environmental easement, cover system, Site Management Plan) as the selected remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

1. Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. A site cover currently exists and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover, which consists either of the structures such as buildings, pavement, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Any future on-site buildings will be required to have a sub-slab depressurization system or a similar engineered system to prevent the migration of vapors into the buildings from soil and/or groundwater.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);

- allow the use and development of the controlled property for restricted residential, commercial, and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in item #4 above.

Engineering Controls: The site cover and sub-slab depressurization system as discussed in item #2 and #3 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;

c. an Operation and Maintenance (O&M) Plan will be developed to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s) that are installed in buildings constructed in the future on the site. The plan will include, but is not limited to:

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the Remedial Investigation Report, waste/source materials were identified at the site and are impacting groundwater, soil, and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and source areas were identified at the site include IRM-01 and IRM-02 area. See Figure 5 for a Site Layout Map.

The documented work practices, historical site use (chemical sales/distribution and dry cleaning equipment distributor) along with the analytical and hydrogeological data indicate that the introduction of the chlorinated VOCs to the subsurface soils and groundwater likely occurred over an extended period of time in the source areas identified above. The areal extent of the impacted subsurface soils and groundwater as well as the distribution of the chlorinated VOCs is likely the result of more than one release/spill that occurred over a period of time. The groundwater impact footprint is approximately 360 feet (ft.) long and 120 ft. wide. The analytical data indicates that chlorinated VOC mass is distributed within the uppermost 20 ft of the overburden unit (0-20 ft. below ground surface) at the site. The waste/source areas identified will be addressed in the remedy selection process.

Source areas were identified at the site. Source areas identified as interim remedial measure (IRM) IRM-01 and IRM-02 as noted on Figure 5 were addressed during the excavation IRM and the ISCO IRM conducted at the site.

The source areas identified at the site were addressed by the IRMs described in Section 6.2. The remaining source area(s) identified during the RI will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from overburden and bedrock monitoring wells. The samples were collected to assess groundwater conditions on and off-site. The results indicate that contamination in the overburden (on-site and off-site) and the bedrock groundwater at the site exceeds the applicable SCGs for volatile organic compounds.

Table 1A – Pre-IRM Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
cis-1,2-Dichloroethene	ND to 220	5	28 of 123
Tetrachloroethene	ND to 70,000	5	61 of 123
Trichloroethene	ND to 260	5	42 of 123
Vinyl Chloride	ND to 2.7	2	2 of 123

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Table 1B – Post-IRM Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
cis-1,2-Dichloroethene	ND to 220	5	22 of 114
Tetrachloroethene	ND to 15,500	5	60 of 114
Trichloroethene	ND to 260	5	39 of 114
Vinyl chloride	ND to 2.7	2	1 of 114

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Groundwater contamination identified during the RI was addressed during the IRM described in Section 6.2.

Figures 2 and 3 present pre- and post- IRM overburden groundwater contamination. Prior to the Excavation IRM, the highest tetrachloroethene concentration in a groundwater monitoring well was 70,000 parts per billion (ppb). After the excavation IRM, the highest tetrachloroethene concentration within that monitoring well was 15,500 ppb. Figure 2 presents tetrachloroethene groundwater concentrations post-Excavation IRM. The in-situ chemical oxidation (ISCO) IRM has reduced tetrachloroethene concentration to 110 ppb within that groundwater monitoring well. Figure 3 and Figure 4 present tetrachloroethene overburden and bedrock groundwater concentrations from the March 2015 sampling event post-ISCO IRM. The tetrachloroethene concentration with the site's groundwater has been reduced by 2 orders of magnitude. Tetrachloroethene has been detected in an off-site overburden monitoring well location within the NYSDOT right-a-way on ramp to the Inner Loop at concentrations ranging from 5.1 ppb to 220 ppb.

Based on the findings of the RI, the presence of cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene has resulted in the contamination of groundwater. These site contaminants are considered to be the primary contaminants of concern which drove the implementation of the IRMs, the remediation of site groundwater, and will be addressed by the remedy selection process.

Soil

Subsurface soil samples were collected from a depth of 0.5 – 30.6 feet to assess soil contamination impacts to groundwater. The results indicate that soils at the site exceed the unrestricted SCG for volatile and semi-volatile organics, metals, PCBs, and pesticides.

Table 2A - Pre-IRM Subsurface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Tetrachloroethene	ND to 3,560	1.3[d]	21 of 154	1.3[d]	21 of 154
Trichloroethene	ND to 1.3	0.47	1 of 154	21	0 of 154
Xylene	ND to	0.26	1 of 21	100	0 of 21
SVOCs					
Benzo(a)anthracene	ND to 26	1	5 of 70	1	5 of 70
Benzo(b)fluoranthene	ND to 28	1	6 of 70	1	6 of 70
Benzo(a)pyrene	ND to 20	1	6 of 70	1	6 of 70
Benzo(k)fluoranthene	ND to 8.3	0.8	3 of 70	3.9	2 of 70
Chrysene	ND to 27	1	6 of 70	3.9	3 of 70
Indeno(1,2,3-cd)pyrene	ND to 11	0.50	5 of 70	0.50	5 of 70
Dibenz(a,h)anthracene	ND to 3.2	0.33	3 of 70	0.33	3 of 70
Inorganics					
Arsenic	ND to 56.6	13	5 of 66	16	4 of 66
Barium	ND to 1020	350	2 of 66	400	2 of 66
Cadmium	ND to 7.86	2.5	1 of 66	4.3	1 of 66
Copper	ND to 191	50	3 of 66	270	0 of 66
Lead	ND to 1,390	63	13 of 66	400	4 of 66
Mercury	ND to 9	0.18	8 of 66	0.81	2 of 66
Zinc	ND to 681	109	10 of 66	10,000	0 of 66
Pesticides/PCBs					
PCBs	ND to 1.8	0.1	2 of 75	1	1 of 75

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted Residential Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Table 2B - Post-IRM Subsurface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Tetrachloroethene	ND to 19	1.3[d]	10 of 182	1.3[d]	10 of 182
Trichloroethene	ND to 0.0253	0.47	0 of 182	21	0 of 182
Xylenes	ND to 0.051	0.26	0 of 182	100	0 of 182
SVOCs					
Benzo(a)anthracene	ND to 26	1	4 of 76	1	4 of 76
Benzo(a)pyrene	ND to 20	1	4 of 76	1	4 of 76
Benzo(b)fluoranthene	ND to 28	1	4 of 76	1	4 of 76
Benzo(k)fluoranthene	ND to 8.3	0.8	4 of 76	1.7	3 of 76
Chrysene	ND to 27	1	5 of 76	1	5 of 76
Dibenzo(a,h)anthracene	ND to 3.2	0.33	3 of 76	0.33	3 of 76
Indeno(1,2,3-cd)pyrene	ND to 11	0.50	4 of 76	0.50	4 of 76
Inorganics					
Arsenic	ND to 17.5	13	2 of 79	16	1 of 79
Barium	ND to 1,020	350	3 of 79	400	2 of 79
Cadmium	ND to 2.98	2.5	1 of 79	4.3	0 of 79
Copper	ND to 191	50	2 of 79	270	0 of 79
Lead	0.678 to 1,390	63	21 of 79	400	4 of 79
Mercury	ND to 9	0.18	10 of 79	0.81	2 of 79
Zinc	8.39 to 681	109	11 of 79	10,000	0 of 79
Pesticides/PCBs					
PCBs	ND to 0.448	0.1	1 of 71	1	0 of 71

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted Residential Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Soil contamination identified during the RI was addressed during the IRMs described in Section 6.2.

Figure 5 presents the locations of soil samples that exceed restricted residential SCOs for metals and semi-volatile organic compounds (SVOCs) in particular polycyclic hydrocarbons (PAHs). Analysis of fill material determined that the metal and PAH soil contamination at the site is associated with historic fill activity. Ash, cinders, glass, brick, and coal are common components found in urban fill material and were observed at the site. The metals and PAH contamination above the site's SCOs are primarily located outside of the completed excavation IRMs and within the defined urban fill layer at the site. The metal and PAH SCO exceedance locations as presented on Figure 5 are below the site's cover system. The metal and SVOC and PAH soil contamination is not considered site specific contaminants of concern.

Based on the findings of the Remedial Investigation, the presence of tetrachloroethene has resulted in the contamination of soil. The tetrachloroethene identified in soil is considered to be the primary contaminant of

concern which drove the implementation of the IRMs, the remediation of site soils, and to be addressed by the remedy selection process.

Soil Vapor

The potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor at the site's perimeter as the site is currently a vacant lot. Off-site soil vapor sampling was completed at three (3) adjacent properties.

Five (5) soil vapor samples were collected on-site at the perimeter of the site and three (3) off-site at adjacent off-site properties. Outdoor air samples were also collected at the same time as the soil vapor samples. Tetrachloroethene was detected in 4 of the 5 on-site soil vapor samples as well as the outdoor air sample. The daughter products of tetrachloroethene (trichloroethene, cis-1,2-dichlorothene, and vinyl chloride) were also detected on-site. Tetrachloroethene was detected in 2 of the 3 off-site soil vapor samples and the daughter products were detected in 1 of 3 off-site soil vapor samples.

Based on the concentrations detected and in comparison with the Guidance for Evaluating Soil Vapor Intrusion in the State of New York prepared by the NYSDOH (October 2006), the primary soil vapor contaminant is tetrachloroethene which would be associated with the chemical sales/distribution and dry cleaning equipment distributor at the site. Five (5) on-site soil vapor samples were collected and tetrachloroethene concentrations ranged from non-detect to 881 micrograms per cubic meter (ug/m^3). Off-site soil vapor samples were collected near the closest off-site receptors and tetrachloroethene concentrations ranged between non-detect to 2.71 ug/m^3. Based on the results of the off-site soil vapor samples in conjunction with the nearby groundwater sample results, additional soil vapor intrusion sampling is not needed at this time. As noted on Figure 6, the primary soil vapor contamination is found along the northern, eastern, western, and southern property boundary. Soil vapor testing in the adjacent off-site properties did not find any site related contamination along the eastern property. Based on analytical data for soil, groundwater, and soil vapor that have been collected on-site to date, it's anticipated that soil vapor contamination exists on-site.

Based on the findings of the Remedial Investigation, the presence of tetrachloroethene has resulted in the contamination of soil vapor. The tetrachloroethene and associated daughter products are considered to be the primary contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls and includes institutional controls, in the form of and environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

Present Worth: *$369,000*
Capital Cost: *$226,000*
Annual Costs: *$143,000*

Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: the excavation and off-site disposal of all waste and soil/fill material above the unrestricted soil cleanup objectives and site restoration.

Capital Cost: *$8,569,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	0	0	0
No Further Action Site Management	226,00	143,00	369,000
Pre-Disposal/Unrestricted	8,567,000	0	0

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 2, No Further Action with Site Management as the remedy for this site. Alternative 2 would achieve the remediation goals for the site by institutional and engineering controls and site management. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 7.

Basis for Selection

The proposed remedy is based on the results of the RI, the IRMs, and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the RI/AA report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy, Alternative 2, would satisfy this criterion by maintaining the institutional controls, engineering controls, and site management. Alternative 2 addresses the source of the groundwater contamination, which is the most significant threat to public health and the environment. Alternative 1 (No Action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 3, by removing all soil/fill material above the unrestricted soil cleanup objective, will be protective of human health and the environment. Alternative 2 also will be protective of human health and the environment and will rely on a restriction of groundwater use and engineering controls at the site to protect human health. Alternative 3 may require a short-term restriction on groundwater use; however, it is expected the restriction will be removed in approximately 3 years. The potential for soil vapor intrusion will be significantly reduced by Alternative 3. Alternative 3 will require an evaluation of soil vapor intrusion to determine if the potential for soil vapor intrusion has been eliminated and vapor mitigation is not required. The potential for soil vapor intrusion will remain higher under Alternative 2. Soil vapor mitigation is required under Alternative 2 in order to protect human health.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 2 complies with SCGs to the extent practicable. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives at the surface through the site cover system. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternative 3 also complies with this criterion. Because Alternatives 2 and 3 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site. It is expected Alternative 3 will achieve groundwater SCGs in less than 5 years, while groundwater contamination above SCGs would remain on-site under Alternative 2 for many years. It is expected Alternative 3 will eliminate the potential of soil vapor intrusion and the need for vapor

mitigation while Alternative 2 will still have the potential for soil vapor intrusion and a vapor mitigation at the site will be needed.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by Alternative 3 which involves the excavation of all soil/fill material above the unrestricted soil cleanup objective. Since the contamination is dispersed across the site Alternative 3 results in the removal of all of the chemical contamination at the site and removes the need for property use restrictions and long-term monitoring. Alternative 2 would result in the maintaining of the site cover system, but it also requires an environmental easement and long-term groundwater monitoring. For Alternative 2, site management remains effective, but a groundwater and site use restriction still would be needed at the site. Alternative 3 will require a short-term groundwater use restriction. The potential for soil vapor intrusion is significantly reduced with Alternative 3; whereas, Alternative 2 there is the potential for soil vapor intrusion.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 controls potential exposures with ICs, ECs, and site management. Alternative 3 reduces the toxicity, mobility and volume of on-site waste and soil/fill material by transferring the material to an approved off-site disposal facility. Alternative 2 permanently reduces the toxicity, mobility and volume of contaminants by the use of chemical treatment (oxidation agent). Alternative 2 requires a groundwater use restriction and over time will reduce the potential for soil vapor intrusion. Alternative 3 may require a short-term groundwater use restriction and significantly reduces the potential for soil vapor intrusion.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 and 3 have short-term impacts which can be easily controlled. However, Alternative 2 would have the smallest short-term impact. The time needed to achieve the remediation goals is the shortest for Alternative 3 and longest for Alternative 2. Alternative 3 has the greatest short-term impacts to the human health and environment due to the potential exposure to site contamination during the excavation activities (nuisance odors, inhalation, contact, noise, traffic congestion).

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 2 and 3 are both favorable in that they are readily implementable. Alternative 3 is implementable, but the administrative feasibility will be more cumbersome and difficult. The volume of soil/fill material excavated under this alternative would necessitate increased truck traffic on local roads for several months, the management of groundwater and precipitation, the protection of and/or the relocation of public infrastructure, potential excavation area stabilization issues, operating approvals, permits, and construction access.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs for Alternatives 2 and 3 vary significantly. Alternative 2 has a relative low cost, but any remaining impacted soil/fill material would not be addressed other than by ICs, ECs, and site management. Alternative 3 has the highest present value work cost due the large volume of soil/fill material to be excavated, disposal off-site at an approved landfill facility, and extensive site restoration.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

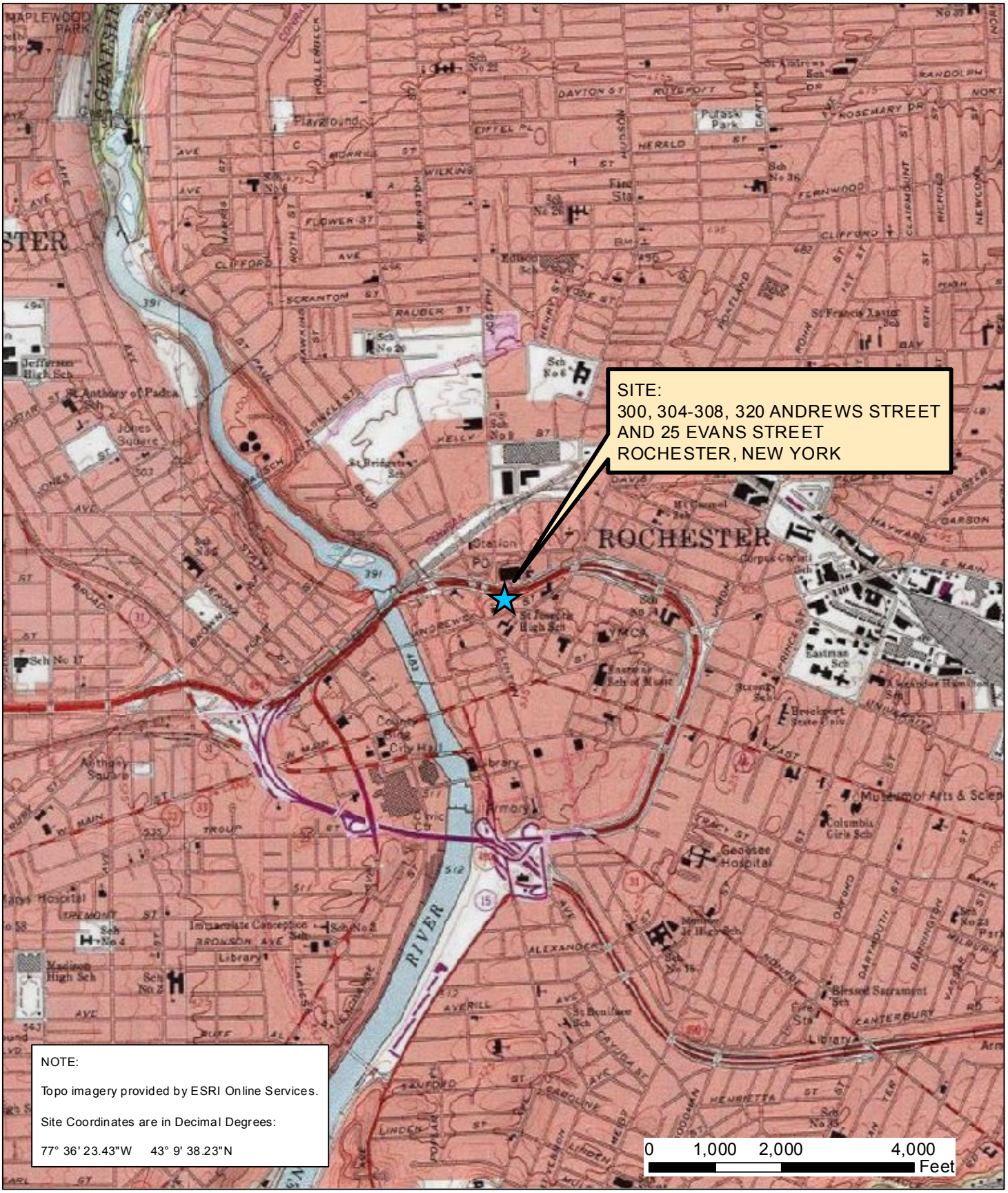
The anticipated use of the site is restricted residential. Alternatives 2 would be less desirable as some the remaining impacted soil/fill material would remain on the property but ICs, ECs, and site management can be used to address those impacts. Alternative 3 would remove all impacted soil/fill material permanently. The removal all of the soil/fill material that exceeds unrestricted use from the site (Alternative 3) would not have any use restrictions placed on the site.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 2 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

\GIS\GIS Mapping\Andrews Street\4355S-1A.mxd



NOTE:

Topo imagery provided by ESRI Online Services.

Site Coordinates are in Decimal Degrees:

77° 36' 23.43"W 43° 9' 38.23"N

Date: 10-01-2012	day **DAY ENVIRONMENTAL, INC.** Environmental Consultants Rochester, New York 14606 New York, New York 10016-0701	Project Title: 300, 304-308, 320 ANDREWS STREET AND 25 EVANS STREET ROCHESTER, NEW YORK (NYSDEC SITE NO.: E828144) ENVIRONMENTAL RESTORATION PROJECT	Project No.: 4355S-10
Drawn By: CPS		Drawing Title: Project Locus Map	FIGURE 1
Scale: AS NOTED			

Legend

MW-11
28.6 ppb
(15 ft)

Overburden monitoring well
Tetrachloroethene or PCE in ug/L (with depth of September 2013 groundwater sample in parentheses)

N

Former Evans Street righ-of-way (Officially abandoned by the City of Rochester in March 2013)

Site boundary

PCE in Groundwater (ug/l or ppb)
Prior to IRM ISCO Injections
based on GIS modeling

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 25,000
- 25,000 - 34,000

ND = Not Detected

NOTE:

ArcGIS Spatial Analyst Nearest Neighbor interpolation used to model Peak PCE in groundwater concentrations.

Base mapping data provided by City of Rochester and Monroe County.

0 25 50 100 Feet

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JAD	CPS	AS NOTED	03-2015	03-2015	04-01-2015

DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
300, 304-308, 320 ANDREWS STREET
AND 25 EVANS STREET
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO.: E828144

Drawing Title
Peak PCE Concentrations Detected in September 2013 Round 4 (Baseline) Pre-IRM ISCO Overburden Groundwater Samples

Project No.
4355S-10

FIGURE 2

Document Path: C:\Users\smelt.DAYOFFICE\Dropbox\Andrews Street\Andrews Street\GIS Data\Andrews Street\RIAA\4355S-32-RIAA - Peak PCE in Overburden Groundwater.mxd

Legend

N

MW-11
7.6 (15 ft)

Overburden monitoring well
(Tetrachloroethene or PCE in ug/L with depth of March 2015 groundwater sample in parentheses)

Former Evans Street right-of-way (Officially abandoned by the City of Rochester in March 2013)

PCE in Groundwater (ug/l or ppb) subsequent to IRM ISCO injections based on GIS modeling

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 25,000
- 25,000 - 34,000

ND = Not Detected

NT = Not Tested

NOTE:

ArcGIS Spatial Analyst Nearest Neighbor interpolation used to model Peak PCE in groundwater concentrations.

Base mapping data provided by City of Rochester and Monroe County.

0 25 50 100 Feet

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DATE DRAWN	03-2015
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DATE ISSUED	04-13-2015

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New York, New York 10170

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AND 25 EVANS STREET
ROCHESTER, NEW YORK

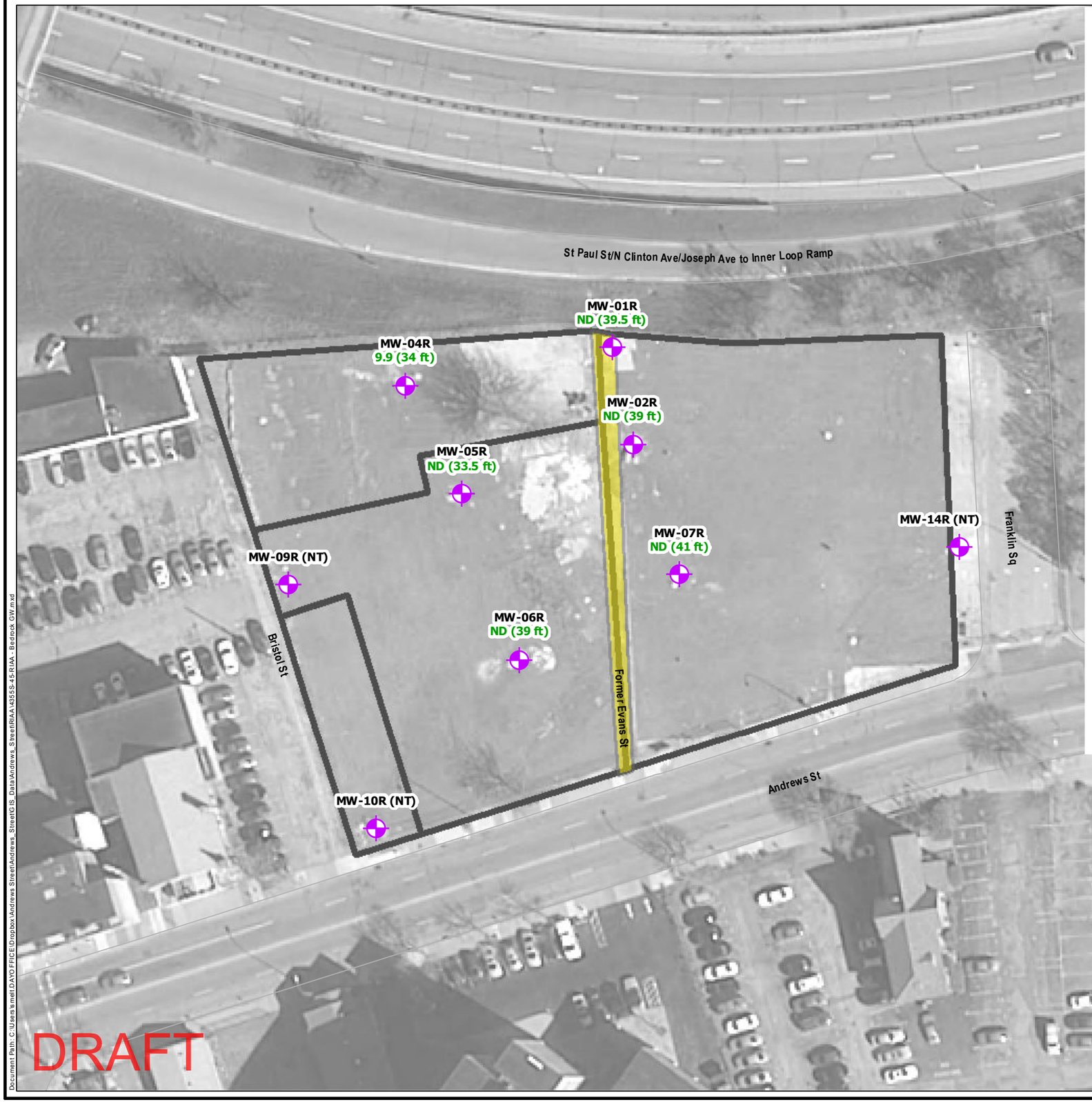
ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO.: E828144

Drawing Title
Peak PCE Concentrations Detected in March 2015
(Six-Month Performance Monitoring Event) Overburden Groundwater Samples

Project No.
4355S-10

FIGURE 3

Document Path: C:\Users\smelt.DAYOFFICE\Dropbox\Andrews StreetAndrews_StreetGIS Data\Andrews_StreetIRIAA4355S-44 RIAA - Peak February 2015 PCE in Groundwater.mxd



Legend

N

MW-01R
ND (39.5 ft)

Bedrock monitoring well with groundwater elevation measured on February 26, 2015. **Tetrachloroethene or PCE in ug/L (with depth of March 2015 groundwater sample in parentheses)**

Andrews Street ERP Site

Former Evans Street right-of-way (Officially abandoned by the City of Rochester in March 2013)

PCE in Groundwater (ug/l or ppb) subsequent to IRM ISCO injections based on GIS modeling

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 25,000
- 25,000 - 34,000

ND = Not Detected

NT = Not Tested

NOTE:

ArcGIS Spatial Analyst Neareast Neighbor interpolation used to model Peak PCE in groundwater concentrations.

Base mapping data provided by City of Rochester and Monroe County.

0 15 30 60 Feet

Document Path: C:\Users\melt.DAYOFFICE\Dropbox\Andrews Street\Andrews_Street\GIS_Data\Andrews_Street\RIAA\4355S-15-RIAA - Bedrock GW.mxd

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Project Title
300, 304-308, 320 ANDREWS STREET
AND 25 EVANS STREET
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO.: E828144

Drawing Title
Peak PCE Concentrations Detected in March 2015
(Six-Month Performance Monitoring Event) Bedrock Groundwater Samples

Project No.
4355S-10

FIGURE 4

IRM-03

IRM-05

IRM-02

IRM-06

IRM-04

IRM-01

See Key Plan A

See Key Plan B

Bristol St

Franklin Sq

Former Evans St

Andrews St

039 S,M

055 S

053 M

020 S

021 S,M

046 S

212 M

Legend

- Soil sample that does not exceed one or more Part 375 Restricted Residential Use Soil Cleanup Objective (RRUSCO)
- Soil sample that exceeds one or more Part 375 RRUSCO
- Former IRM excavation limits
- Approximate extent of observed potassium permanganate influence
- Former Evans Street right-of-way (Officially abandoned by the City of Rochester in March 2013)
- Former basements
- IRM Soil backfill that exceeds one or more Part 375 RRUSCO. Samples representative of site soil used as backfill at IRM-01 are listed below:

223	272	278	284 M
224	273	279	
225	274	280	
226	275	282	
247 S, M	277	283	

S = Exceedance of RRUSCO for one or more Semi-Volatile Organic Compounds

M = Exceedance of RRUSCO for one or more Metals

N

0 15 30 60 Feet

Key Plan A

0 2.5 5 10 Feet

Key Plan B

0 5 10 20 Feet

NOTES:

Upper 2 feet + of former basement and former IRM excavation areas are backfilled with NYSDEC approved imported stone that meets NYSDEC DER-10 requirements.

Cover system meeting NYSDEC requirements is present over entire site. RUUSCO exceedances are beneath this cover system.

Base mapping data provided by City of Rochester and Monroe County.

DRAFT

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JAD	03-2015	CPS	03-2015	AS NOTED	04-16-2015

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Project Title
300, 304-308, 320 ANDREWS STREET
AND 25 EVANS STREET
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO: E828144

Drawing Title
Post-IRM Cumulative Test Location Plan Depicting Sample Locations Exceeding / Not Exceeding Part 375 Restricted Residential Use SCOs

Project No.
4355S-10

FIGURE 5

Map document path: C:\Users\smeli.DAYOFFICE\Dropbox\Andrews Street\Andrews_Street\GIS_Data\Andrews_Street\RIAA\4355S-47-RIAA - RestrictedResidentialUseSCOs-LargeFormat.mxd

Last date document was saved: 03 Jun 2015

St Paul St/N Clinton Ave/Joseph Ave to Inner Loop Ramp

PCE: 244 ug/m^3

PCE: 2.71 ug/m^3

PCE: 188 ug/m^3

PCE: 92.2 ug/m^3

PCE: ND

PCE: 881 ug/m^3

PCE: 362 ug/m^3

PCE: ND

PCE: 1.7 ug/m^3

PCE: ND

Franklin Sq

Former Evans St

Bristol St

Andrews St

Legend

- Off-site soil vapor sample (01/24/2014)
- Background outdoor air sample (01/24/2014)
- Background outdoor air sample (07/18/2013)
- On-site soil vapor sample (07/18/2013)
- Monitoring well
- Manhole
- Storm inlet
- Piping cracks and/or bad joints in Former Evans Street sewer
- Catch basins
- Approximate_water_main
- Approximate_water_line
- Sewer main
- Storm inlet later
- Laterals located 09192011
- Holly Main
- Holly Hydrant
- Former Evans Street right-of-way (Officially abandoned by the City of Rochester in March 2013)
- Andrews Street Site Boundary

NOTE:

Base mapping data provided by City of Rochester and Monroe County.

0 25 50 100 Feet

DRAFT

Document Path: C:\Users\smelt.DAYOFFICE\Dropbox\Andrews StreetAndrews StreetGIS Data\Andrews StreetIRIAA4355S-28 RIAA - SVI Locations and Utilities.mxd

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JAD	CPS	AS NOTED	03-2015

DATE DRAWN	DATE ISSUED
03-2015	03-31-2015

day
DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
300, 304-308, 320 ANDREWS STREET
AND 25 EVANS STREET
ROCHESTER, NEW YORK

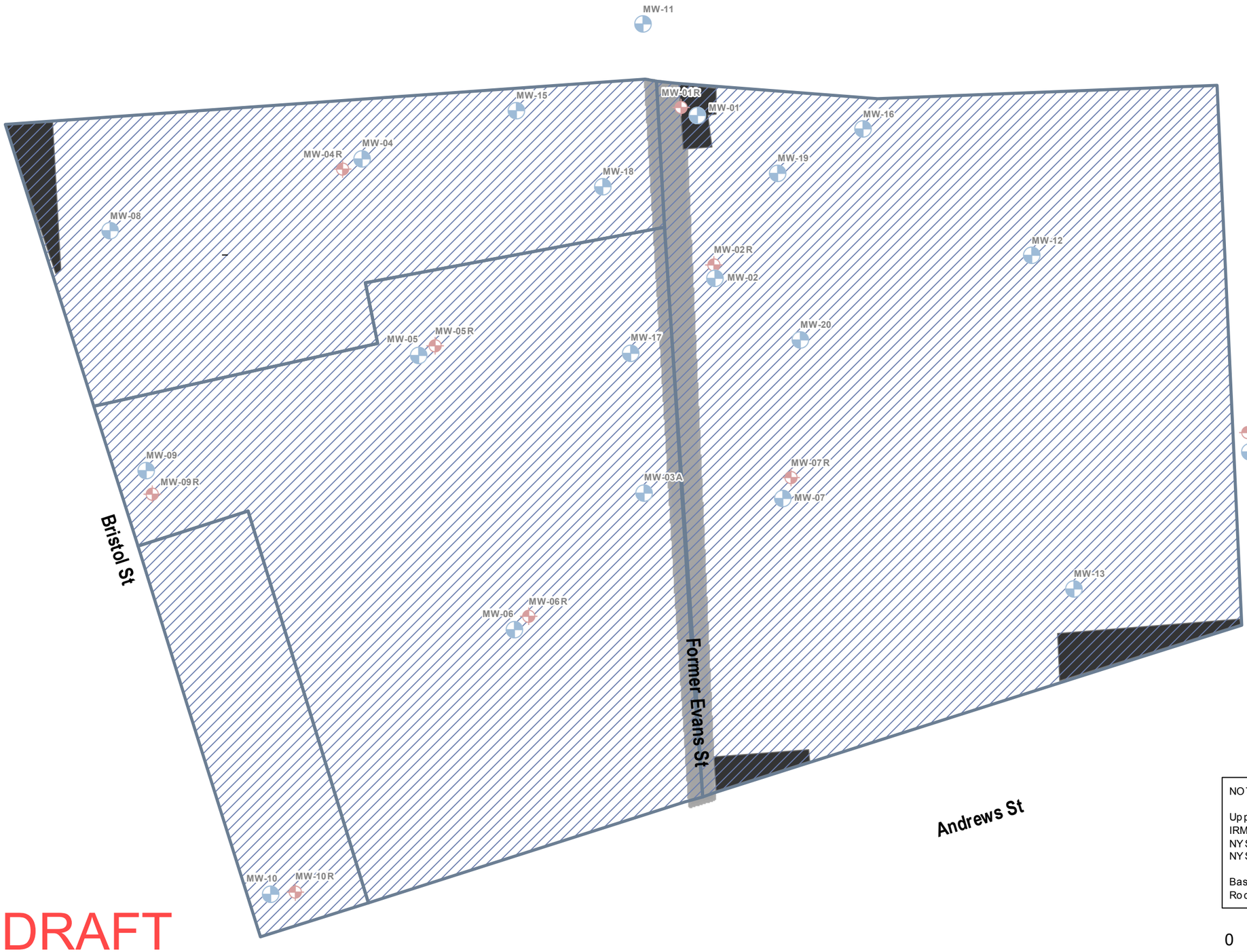
ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO.: E828144

Drawing Title
Soil Vapor Sample Location Plan with Utilities Overlay

Project No.
4355S-10

FIGURE **6**

St Paul St/N Clinton Ave/Joseph Ave to Inner Loop Ramp



Legend

- Bedrock monitoring well
- Overburden monitoring well
- Former Evans Street right-of-way (Officially abandoned by the City of Rochester in March 2013)
- Area of cover system including 2 ft approved cover material (CR-2) or impermeable surfaces (Asphalt and Concrete). Area also represents: 1) Area of Soil Vapor Intrusion Concerns; and 2) Area of Institutional Control Boundaries
- Existing impermeable covers (i.e. Asphalt or Concrete)

N

NOTE:

Upper 2 feet + of former basement and former IRM excavation areas are backfilled with NYSDEC approved imported stone that meets NYSDEC DER-10 requirements.

Base mapping data provided by City of Rochester and Monroe County.

0 15 30 60 Feet

DRAFT

DESIGNED BY	DATE
JAD	04-2015
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CPS	04-2015
SCALE	DATE ISSUED
AS NOTED	04-06-2015

DAY ENVIRONMENTAL, INC.
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Rochester, New York 14606
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Project Title
300, 304-308, 320 ANDREWS STREET
AND 25 EVANS STREET
ROCHESTER, NEW YORK

ENVIRONMENTAL RESTORATION PROJECT NYSDEC SITE NO: E828144

Drawing Title
Supplemental IRM Cover System Site Plan

Project No.
4355S-10

FIGURE **7**

Map document path: C:\Users\smelt\DAYOFFICE\Dropbox\Andrews Street\Andrews_Street\GIS_Data\Andrews_StreetIRIAA\4355S-36-RIAA - Installed Cover System.mxd

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