ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
937-941 GENESEE STREET
ROCHESTER, NEW YORK
NYSDEC SPILL NO. 1206397

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Executive Summary

This report presents an Analysis of Brownfield Cleanup Alternatives (ABCA) for the remediation of soil and groundwater impacts identified on the City of Rochester-owned property at 937-941 Genesee Street , Rochester, NY, located as shown on Figure 1 (the Site). The New York State Department of Environmental Conservation (NYSDEC) assigned Spill No.1206397 to the Site.

Three remediation alternatives were retained following preliminary screening of applicable remedial methods and technologies.

- Alternative A is the No Action alternative and includes monitored natural attenuation with an assumed duration of 30 years.
- Alternative B includes the excavation and off-site disposal of impacted materials from Remedial Areas of Concern (RAOCs) 1 and 2.
- Alternative C includes all of the components of Alternative B, plus the direct application of a chemical additive to the open excavations of RAOC 1 and RAOC 2 and one year of post-excavation groundwater monitoring, with the potential for conducting a second year of monitoring contingent on the first year's results.

Based on the extent of the impacted areas, the contaminants of concerns, and the affected media, the recommended remedial approach is Alternative C.

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1.0 INTRODUCTION AND BACKGROUND

1.1 SITE DESCRIPTION AND HISTORY

The property in question is located at 937-941 Genesee Street in the City of Rochester, Monroe County, New York (referred to herein as 937 Genesee, or the "Site"). The property is owned by the City of Rochester (the City) and the Monroe County Tax ID for the Site is No. 135.34-2-36.

The Site contained an auto service shop from the middle 1910s through the early 1940s and a dry cleaner from the middle 1940s through 2009. Previous environmental Investigations have identified petroleum-related contamination in soil and groundwater and the New York State Department of Environmental Conservation (NYSDEC) assigned Spill Number 1206397 to the Site.

1.2 PURPOSE AND CONTENT OF REPORT

This report presents an evaluation of alternatives for the remediation of the 937 Genesee Street Site as shown on Figure 1. The project objective is to remediate the Site to the degree required to allow its redevelopment for Restricted Residential Use, in accordance with 6NYCRR Part 375 and NYSDEC's Commissioner Policy 51 (CP-51).

Stantec Consulting Services Inc. (Stantec), working on behalf of the City, identified three alternatives for remediation of the 937 Genesee Street Site:

- Alternative A is the No Action alternative and includes monitored natural attenuation with an assumed duration of 30 years.
- Alternative B includes the excavation and off-site disposal of impacted materials from Remedial Areas of Concern (RAOCs) 1 and 2, as shown on Figure 2.
- Alternative C includes all of the components of Alternative B, plus the direct application of a chemical additive to the open excavations of RAOC 1 and RAOC 2 and one year of post-excavation groundwater monitoring, with the potential for conducting a second year of monitoring contingent on the first year's results.

Based on the extent of the impacted areas, the contaminants of concern, and the affected media, the recommended remedial approach is Alternative C.

The specific proposed remedial action includes the following:

- Decommissioning/replacement of existing monitoring wells;
- Excavation and off-site disposal of petroleum-impacted soils from RAOCs 1 and 2;
- Application of an in-situ, bio-augmentation additive to the open RAOC 1 and RAOC 2 excavations to promote enhanced natural attenuation of residual petroleum related Volatile Organic Compound (VOC) impacted groundwater;

- Conducting one year of post-excavation groundwater monitoring for VOCs, with the potential for conducting a second year of monitoring contingent on the first year's results;
- Preparation of an Environmental Management Plan (EMP) for future site use and re-development; and
- Implementation of Institutional Controls incorporating the site into the City of Rochester (City) BIS flagging system to ensure residual impacts are properly managed in the future, as necessary.

The analysis of remedial alternatives includes a summary of previous environmental investigations at the Site, a discussion of the anticipated future use of the Site, an examination of potential exposure scenarios, applicable relevant and appropriate regulations (ARARs) that will be used as remedial Site cleanup objectives (RSCOs) and a discussion of the evaluated remedial alternatives.

1.3 SUMMARY OF PRIOR INVESTIGATIONS

Environmental studies that have been completed for the 937 Genesee Street Site and/or the surrounding area and for which reports prepared by Stantec for the City and used in the development of this ABCA include:

- a November 2002 Phase I Environmental Site Assessment (ESA) of twenty-three contiguous parcels in the Brooks Landing Urban Renewal District;
- a January 2003 Phase II ESA of 923-927 Genesee Street (located adjacent to the north of the Site);
- a December 2003 Phase II Site Investigation of 923-927 Genesee Street;
- a July 2011 Phase II ESA of 937 Genesee Street;
- a September 2012 Phase I ESA of 937 Genesee Street;
- an October 2012 Supplemental Phase II ESA of 937 Genesee Street;
- an October 2012 Microbial Insights Biotraps Analysis for 937 Genesee Street;
- an October 2012 Opinion of Probable Remedial Costs for 937 Genesee Street; and
- A November 2012 Draft Analysis of Brownfield Cleanup Alternatives, 937 Genesee Street, Rochester, New York, NYSDEC Spill No. 1206397.

1.3.1 November 2002 Phase I ESA of the Brooks Landing Urban Renewal District

In November 2002, Stantec performed a Phase I ESA of twenty-three contiguous parcels in the Brooks Landing Urban Renewal District, including the Site. The Phase I

ESA indicated that 937-941 Genesee Street was occupied by an auto repair facility from 1912 to 1941 and by a dry cleaner from 1946 until its 2009 demolition.

1.3.2 January 2003 and December 2003 Phase II ESAs of 923-927 Genesee Street

Stantec completed two Phase II Investigation programs in 2003 at the adjoining property to the north, 923-927 Genesee Street, which indicated low level arsenic, lube oil, and diesel fuel impacts to a fill layer. The investigations did not encounter impacts to groundwater or to deeper soils at the property boundary.

1.3.3 July 2011 Phase II ESA of 937-941 Genesee Street

The results of the July 2011 Phase II ESA indicated the presence of VOC impacts in soil and groundwater at the Site. VOC concentrations in soil exceeded NYSDEC Part 375 and CP-51 soil cleanup objectives (SCOs) for unrestricted use in a sample (B-3) near a manhole that was identified in the building footprint and the sediment sample (SED-1) taken from the manhole. Petroleum odors, considered to be nuisance characteristics, were observed in both soil and groundwater. Total petroleum hydrocarbon (TPH) analyses of soil samples from several test borings indicated the following (see boring locations, Figure 2):

- Boring B-2 contained a medium-weight petroleum hydrocarbon matching the lab's diesel fuel standard;
- Boring B-3 contained medium weight kerosene and heavy weight lube oil;
- Boring B-4 contained lightweight mineral spirits and heavy weight lube oil;
- Boring B-6 contained light weight mineral spirits, and
- Sediment sample SED-1, which was collected from the manhole, contained medium weight kerosene and heavy weight lube oil.

The lab's mineral spirits standard is a mixture of several similar petroleum products included in the mineral spirit category, one of which is Stoddard solvent. Although further distinction was not possible, Stantec concluded from the TPH and the VOC analytical results that one of the sources of the aromatic VOCs detected in the site samples is likely to have been a release of Stoddard solvent, a common dry cleaning solvent used in the 19040s and 1950s, from the former dry cleaning facility. Releases from the former auto repair shop are also likely to have affected the site.

Exceedances of groundwater standards from NYSDEC's Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1) for VOCs were detected in monitoring wells MW-3 and MW-6, and a slight exceedance for selenium was detected in well MW-7 (see Figure 2). The greatest concentrations were reported in the area near the manhole in the building slab. The TPH analysis indicated that the MW-3 sample contained medium weight kerosene and medium weight diesel. The MW-6 sample contained medium weight kerosene.

According to available groundwater contour maps of Monroe County (Young, 1980), and based on topographic gradient, regional groundwater flow in the vicinity of the subject property is expected to flow easterly, towards the Genesee River located 515± feet east of the subject property. During the July 2011 Phase II ESA, water level measurements indicated that the groundwater table was relatively flat at 937 Genesee Street with an indication of a slight gradient toward the east-northeast. Given the significantly lower impacts in the B-7/MW-7 location, which was east of the other locations, it appeared that the contamination was focused on the rear (west) portion of the building near the manhole and dry well. The source of the impacts appeared to have been the past use of the site as a dry cleaner and auto repair facility.

1.3.4 September 2012 Phase I ESA of 937-941 Genesee Street

The September 2012 Phase I ESA identified the following recognized environmental conditions (RECs):

- 941 Genesee Street was listed as a garage from 1917-18 through 1942. The 1912 Sanborn map showed an auto repair shop with a detached garage on the 941 Genesee Street parcel. A permit was maintained from 1938 through 1941 for a 550-gallon gasoline tank and pump, which were listed as removed in 1943. The 1918 and 1926 Plat maps showed a stone building labeled "Garage" on 941 Genesee Street, and in 1935 it was labeled "General Motor Service."
- 941 Genesee Street was listed as a dry cleaner from 1947 through 2003 and appeared to remain so until its 2009 demolition. The 1950 and 1971 Sanborn maps showed a dry cleaning building with a pressing section, a cleaning section, and a boiler room on the 941 Genesee Street parcel. A permit was maintained with the City from 1947 through 1961 for a 250-gallon "solvent" tank (type of solvent not specified).
- Per City Department of Environmental Services (DES) discussions with other City staff who were involved in the demolition of the former building on the subject property in 2009, it is understood that they observed a partially buried 55-gallon drum that was filled with stone, had no bottom and was buried in the floor at the rear of the building. This was suspected to have been a dry well structure.
- An approximate three-foot-diameter manhole is located in the western portion of the foundation slab (Figure 2). Upon investigation during the July 2011 Phase II ESA, the manhole was found to have a solid bottom and did not appear to have an outlet.
- VOC and petroleum hydrocarbon impacts to sediment, soil, and groundwater were documented in the July 2011 Phase II ESA.

1.3.5 October 2012 Supplemental Phase II ESA of 937-941 Genesee Street

The October 2012 Supplemental Phase II ESA indicated the presence of VOC impacts in soil and groundwater. Nuisance odors were noted in borings B-14 and B-18. Concentrations of lead and mercury exceeded the NYSDEC SCOs for Unrestricted Use and indeno(1,2,3-cd)pyrene exceeded the NYSDEC SCO for Restricted Residential Use in the fill material from boring B-19.

Exceedances of the NYSDEC groundwater standards for VOCs were detected in wells MW-3, MW-6, and MW-14. The greatest concentrations were detected in the area near the manhole. Water level measurements indicated that the hydraulic gradient was relatively flat with a slight indication of flow toward the east-northeast with overburden groundwater depths that ranged from 8± to 10± feet below ground surface.

Given the absence of petroleum-related impacts in the borings and monitoring wells installed between MW-3 and B-14/MW-14 (Figure 2), it appeared that two separate areas of the site have been impacted by petroleum-related releases; in addition, the lateral extent of these releases appears to have been delineated. The westernmost impacted area was centered on B-3/MW-3 and B-6/MW-6 near the manhole and dry well. The sources of the impacts appeared to have been the past use of the site as a dry cleaner and auto repair facility including probable releases from the manhole and former drywell.

The easternmost impacted area was centered on B-14/MW-14. It was suspected that the contamination in this area may have resulted from a release associated with the sewer that serviced the subject property; contamination may also be related to the former onsite presence of a 550-gallon gasoline tank and pump between 1938 and 1941 and a 250-gallon solvent tank between 1947 and 1961, the former locations of which are unknown. Based on the soil sample results from the surrounding borings B-15, B-16, B-18, and groundwater sample results from MW-18, it appeared that of impacts on the eastern portion of the site are limited to the area adjacent to B-14/MW-14.

Given the delineation of these two areas of impact and given that no evidence of impacts was observed in two angled test borings performed at the western property boundary, there was no indication that contamination had migrated offsite.

1.3.6 October 2012 Microbial Insights Biotraps Analysis for 937-941 Genesee Street

A biotrap survey was begun immediately following the October 2012 Supplemental Phase II ESA field work. Microbial Insights biotraps were set out in monitoring wells MW-6, MW-13, MW-14, and MW-19D. The results of the biotrap survey indicate that petroleum hydrocarbon-degrading microbes were present in groundwater at the Site. However, the natural attenuation process had become rate-limited due to the lack of sufficient electron acceptors. The detection of phenol hydroxylase and toluene dioxygenase indicated the potential for an aerobic pathway, but with natural dissolved oxygen (DO) levels less than 1.0 mg/L, this degradation mechanism was not considered viable.

Benzyl succinate synthase is an indicator of anaerobic petroleum hydrocarbon degradation. The results were below quantification limits for this compound in all wells sampled. This does not mean anaerobic petroleum hydrocarbon degrading bacteria populations are not present at the site. However, the field monitoring of monitored natural attenuation (MNA) parameters indicated that the site was also depleted of alternative electron acceptors to oxygen within the identified impacted area (MW-3 and MW-14).

The geochemical parameter monitoring and biotrap survey results indicated that MNA treatment of the residual groundwater impacts would require enhancement of the naturally-occurring degradation processes through electron acceptor addition.

1.3.7 October 2012 Opinion of Probable Remedial Costs for 937-941 Genesee Street

The October 2012 Opinion of Probable Remedial Costs presented a remedial scenario which was similar to Remedial Alternative C, detailed herein.

1.4 PROPOSED FUTURE USE OF SITE

The City has indicated that the redevelopment of this vacant Site is anticipated to include mixed use, restricted residential, or commercial options, consistent with the ongoing redevelopment of the Brooks Landing Urban Renewal District. Given the lack of use of the property for a number of years, the current land use will be unaffected by the recommended remedy.

2.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

2.1 EXPOSURE PATHWAYS

Considering that: 1) Restricted Residential and/or Commercial redevelopment activities at the Site are anticipated; 2) remedial excavation work is anticipated on-site; and 3) residential buildings are located near the Site, the *construction worker/trespasser*, *occupational worker* and *local resident* have been identified as the most appropriate potential human receptors.

Exposures to the construction worker may occur during remediation, construction and other activities that involve excavation on the Site or at its periphery. Exposures to occupational workers at future Site facilities could occur during normal facility operations due to potential vapor intrusion into buildings, by way of exposure to soil vapor and groundwater during remediation within a building, or during any excavation activity that may take place on or around the Site if remediation does not occur prior to Site redevelopment. Exposure to residents of nearby properties could potentially occur during excavation work at the Site through dispersion of particulates and volatilization of contaminants. Potential routes of exposure include:

- Inhalation of vapors released from volatile substances present in subsurface soils (potential future occupational worker and construction worker/trespasser, and local residents during construction);
- Ingestion and dermal contact of substances in subsurface soils (potential future occupational worker and construction worker/trespasser); and
- Ingestion, inhalation and dermal contact with substances present in groundwater (potential future occupational worker and construction worker/trespasser).

Potential exposure during the remedial work will be managed with a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) designed to protect Site workers and the public. Potential future exposures to residual contamination, if any, will be mitigated by way of institutional and engineering controls and an EMP.

2.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

NYSDEC's Restricted Residential SCOs have been selected as the Site Standards, Criteria and Guidelines (SCGs) for soil cleanup. Contaminants of concern (CoCs) at the Site are defined as the substances for which the concentrations in soil exceed the associated Restricted Residential SCOs. Impacted soil or fill containing contaminants above SCOs that are left in-place will be managed with an EMP for potential future disturbances (e.g., utility installation or repair work), and with environmental engineering and institutional controls (e.g., placement of a clean soil cover, installation of a sub-slab depressurization system in future buildings, and flagging the Site in the City's Building Information System).

Even though no potable use of groundwater is allowed in the City of Rochester, in accordance with State code, Class GA drinking water-based standards are the applicable SCGs for groundwater. Accordingly, CoCs in groundwater were selected based on exceedances of the groundwater standards listed in TOGS 1.1.1.

In the event that it is not feasible to achieve the applicable SCOs for soil and/or the GSGVs for groundwater, it would be proposed to conduct groundwater monitoring until asymptotic conditions for VOCs are attained for a one year period. At that time, it would be the proposed that the institutional and engineering controls be used to provide conditions protective of public health and the environment for the intended and reasonably anticipated use of the Site.

In order to protect occupants of a future building(s), a sub-slab depressurization system(s) (SSDS) would need to be installed, or post-remedial soil gas sampling would be required to confirm that an SSDS is not necessary based on the Human Health Risk Assessment guidelines outlined in NYSDEC's Technical Guidance for Site Investigation and Remediation (DER-10, May 2010) and the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

2.3 CLEANUP OVERSIGHT RESPONSIBILITY

The City has executed a Stipulation Agreement with the NYSDEC for the cleanup of the Site. The NYSDEC will oversee the cleanup through the Petroleum Spill Cleanup Program.

3.0 EVALUATION OF CLEANUP ALTERNATIVES

In order to evaluate the effectiveness of remedial alternatives for this Site, nine general and site-specific remediation criteria (i.e., threshold criteria) were reviewed in accordance with the provisions set forth in DER-10. These criteria are presented in Table 1. The first two evaluation criteria are threshold criteria and must be satisfied in order for an alternative to be considered for selection. The subsequent evaluation criteria are primary balancing criteria which are used to compare the positive and negative aspects of each remedial alternative that first meets the threshold criteria.

Three remediation alternatives were identified to address the impacts at the Site following review of the above-referenced criteria; these three alternatives are summarized in the table below. The attached Table 1 presents an alternatives analysis matrix for the three alternatives, design assumptions are presented in Table 2, and costs for these alternatives are presented in Tables 3 through 5.

Based on the findings of the subsurface investigations performed, the Site has been divided into three Remedial Areas of Concern (RAOCs; see Figure 2).

Evaluated Method, Technology, or Approach	Description
A. No Action: Monitored Natural Attenuation (MNA)	VOCs are organic molecules that are capable of being degraded by natural processes over time. Natural attenuation of VOCs appears to be occurring at this site as suggested by the most recent data indicating depletion of electron receptors. The No Action alternative does not involve proactive remedial measures but instead relies on periodically monitoring the contamination to verify that natural attenuation is continuing to occur at an acceptable rate.
B. Excavation	This alternative includes the excavation and off-site disposal of impacted materials from RAOC 1 and RAOC 2 and backfilling with clean materials.
C. Excavation with Enhanced MNA	This alternative includes the components of Alternative B, plus the direct application of a chemical additive to the open RAOC 1 and RAOC 2 excavations to create aerobic conditions and accelerate VOC degradation in groundwater. One year of post-excavation groundwater monitoring would be conducted to evaluate the effectiveness of the removal program in addressing groundwater impacts, with the potential for conducting a second year of monitoring contingent on the first year's results.

3.1 RECOMMENDED CLEANUP ALTERNATIVE

Based on the extent of the impacted areas, the contaminants of concern, and the affected media, the recommended remedial approach is Alternative C. This combination of technologies can immediately and permanently remove significant contaminant mass and volume, and can effectively remove petroleum-contaminated soils present in the unsaturated zone leaching to groundwater. Application of an oxygen releasing compound is a proven remedial alternative documented to enhance the biodegradation of organic contaminants such as petroleum hydrocarbons that are biodegradable under aerobic conditions. Application of oxygen releasing compound is suitable for shallow groundwater conditions since there is no generation of hazardous vapors or the need for vapor control, and it does not require the disposal of contaminated groundwater. Alternative C reduces toxicity, mobility and volume of contamination, should meet ARARs, and therefore would be protective of the environmental and human health.

The proposed remedy will also require Institutional Controls and Engineering Controls (e.g. City BIS flagging, clean soil cover, vapor mitigation system) appropriate to anticipated Site redevelopment. In addition, the proposed remedy will include development and implementation of a SMP to manage potential future disturbances of residual contamination. Following completion of the remedial measures, it is anticipated the property will be able to be redeveloped under a Restricted Residential/Commercial usage scenario and consistent with zoning regulations. Any potential limitations associated with low level residual soil contamination are not expected to adversely affect future land use. Similarly, since the City prohibits the use of groundwater as a drinking water supply, potential low levels of residual groundwater impacts are not expected to adversely affect future use of the Site.

3.1.1 RAOC 1 Remedy

Within RAOC 1, soil with VOC impacts has been identified between approximately 2 and 15 ft. below ground surface (bgs). In conjunction, impacted groundwater was reported in RAOC 1 beginning at a depth of approximately 8.5 ft. bgs. To address these impacts, Alternative C is recommended. This alternative involves excavation and off-site disposal of soil from a 1,000 sq. ft. area to an estimated maximum depth of 15 ft. Shallow, non-impacted soil removed from the excavation footprint will be removed and stockpiled for potential reuse as backfill. Based on laboratory results and field observations made during previous soil boring explorations of RAOC 1, an estimated 357± CY of impacted material is expected to be removed for off-site disposal (Figure 2). A 1,250± sq. ft. area of asphalt paving from the parking area immediately north of RAOC 1 will need to be removed and disposed of offsite, and the concrete slab over RAOC 1 would also be removed. These areas would then be backfilled to existing grade with a granular crushed stone product fill.

Excavation benching will be performed around the perimeter of RAOC 1 to establish stable excavation sidewalls (Figure 2). It should be noted that the proposed bench configuration is not designed to conform to OSHA excavation guidelines, since personnel will not be entering the excavations greater than 4 ft. bgs. Confirmation soil sampling of the excavation sidewalls and bottom would be performed to demonstrate sufficient removal of impacted materials. The excavation will then be backfilled with clean imported material to existing grade. Imported material will be tested to demonstrate that it is essentially free of contaminants in accordance with DER-10 requirements.

In-situ groundwater treatment is recommended to address residual groundwater impacts. This would be accomplished through the application of an estimated 275 lbs. of ORC-A™, an oxygen additive product manufactured by Regenesis, to the open excavation to assist in addressing residual VOC impacted groundwater.

Following excavation, sampling, ORC-A placement and backfill, up to two years of groundwater monitoring would be conducted to verify the effectiveness of the remedial measures.

3.1.2 RAOC 2 Remedy

The remedy proposed for RAOC 2 is essentially the same as that proposed for RAOC-1 (Alternative C). Within RAOC 2, soil with VOC impacts has been reported between approximately 4 and 16 ft. bgs. Impacted groundwater was also reported in RAOC-2 beginning at a depth of approximately 10.7 ft. bgs

This alternative involves excavation and off-site disposal of soil from a 375± sq. ft. area to an estimated maximum depth of 15 ft. Shallow, non-impacted soil removed from the excavation footprint will be removed and stockpiled for potential reuse as backfill. Based on laboratory results and field observations made during previous soil boring explorations of RAOC 2, an estimated 118± CY of impacted material is expected to be removed for off-site disposal (Figure 2).

An estimated 375 sq. ft. area of asphalt paving over RAOC 2 will need to be removed and disposed of offsite, then backfilled to existing grade with a granular crushed stone product fill. Excavation benching will be performed around the perimeter of RAOC 1 to establish stable excavation sidewalls (Figure 2). As with RAOC 1, the proposed bench configuration is not designed to conform to OSHA excavation guidelines, since personnel will not be entering the excavations greater than 4 ft. bgs.

In-situ groundwater treatment is recommended to address residual groundwater impacts in the same manner as RAOC 1. This would be accomplished through the application of an estimated 225 lbs. of ORC-A™ to the open excavation to assist in addressing residual VOC impacted groundwater. The excavation will then be backfilled with clean imported material to existing grade. Imported material will be tested to demonstrate that it meets backfill requirements in accordance with DER-10 requirements and/or to the satisfaction of the NYSDEC Project Manager.

Following excavation, sampling, ORC-A placement and backfill, up to two years of groundwater monitoring would be conducted to verify the effectiveness of the remedial measures.

3.1.3 RAOC 3 Remedy

Within RAOC 3, soil impacted with semivolatile organic compounds (SVOCs) and metals at levels above NYSDEC SCOs has been identified between 0 and 2 ft. bgs. The presence of SVOCs and metals is consistent with that typically observed in urban fill. Accordingly, the presence of this urban fill will be addressed through the development of an EMP. Impacted soils remaining on site will be capped by a structure, concrete sidewalks, asphalt pavement or a minimum of one ft. of clean soils in landscaped areas. The SMP will include requirements for excavation, management and potential offsite disposal of impacted materials in the event future site activities disturb these materials. Routine monitoring, maintenance and periodic inspection of the cover system would also be required by the EMP.

3.1.4 Soil Vapor Remedy

The concrete slab and portions of the asphalt paving (Figure 2) will be removed as part of the remedial action at the Site. The surface area of asphalt requiring removal is approximately 1,100 sq. ft. Observations and measurements made in five test borings drilled within the western slab section indicate that the slab is approximately 4-in thick; borings drilled in eastern portion of the slab indicated a 6- to 8-in thickness of concrete. An estimated 65 cubic yards (cy) of concrete and 12 cy of asphalt are estimated for removal and off-site disposal, followed by backfill with a granular crushed stone product and topsoil in some areas.

Future occupied buildings at the Site will need to be constructed with an SSDS to mitigate potential soil vapor intrusion of VOCs from possible remaining contamination. The SSDS would include a sub-slab vapor barrier, a vapor collection system that could be equipped with electric fans if needed, and a system of piping to vent vapors to the outside. Routine monitoring, maintenance and periodic inspection of the system would also be required by the SMP.

4.0 REFERENCES

- Young, R.A., 1980, *Map of Shallow Groundwater for Monroe County , N.Y.* , Monroe County Environmental Management Council.
- NYSDEC, 2006, 6NYCRR Part 375, Section 375-6.8*, Soil Cleanup Objective Tables* (December 14, 2006).
- NYSDEC, 2006, *DER-10/Technical Guidance for Site Investigation and Remediation*, May 3, 2010
- NYSDEC, 1998, Technical Operational Guidance Series, 1.1.1, *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (October 22, 1993, Reissued June 1998).
- NYSDEC, 2010, Commissioner's Policy CP-51, *Soil Cleanup Guidance*, October 21, 2010.

TABLES

TABLE 1
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

ALTERNATIVES ANALYSIS MATRIX

Remedial Alternative[1]		Description	1 - Protection of Human Health and the Environment		2 - Standards, Criteria, & Guidance (SCG)		3 - Short-term Effectiveness & Impacts		4 - Long-term Effectiveness & Permanence		5 - Reduction of Toxicity, Mobility, or Volume	
			Meets Criteria?	Discussion	Meets Criteria?	Discussion	Meets Criteria?	Discussion	Meets Criteria?	Discussion	Meets Criteria?	Discussion
A	No Action: Monitored Natural Attenuation (MNA)	**- MNA with 30 years of quarterly monitoring.**	No	- Risks associated with off-Site migration of VOCs are not mitigated. - Potential on-Site exposure risks to occupational workers.	No	- Compliance with SCGs will not be achieved for an extended period of time; - Will depend heavily on institutional controls.	No	- No short-term effectiveness or impacts.	Yes	- Wastes and residuals will remain on-Site following implementation of MNA, but long-term reduction is expected. - Natural processes that induce attenuation of contaminant impacts to the subsurface are dependent upon several factors such as subsurface conditions, amount of contaminant present and possible presence of free product (LNAPL). Given this uncertainty, exposure risks are most likely to persist for an undetermined period of time; - Monitoring alone will not mitigate exposure risks but will provide some quantification; - Given the future intended use of the Site as a mixed use restricted residential and commercial facility, land use controls are likely to be reliably implemented; - Uncertainty associated with meeting remedial action objectives will continue in the future.	No	- No control of short-term and long-term contaminant toxicity, mobility or volume.
B	Excavation	**- Excavation and off-site disposal of soils exceeding Restricted Residential SCOs.**	Yes	- Potential off-Site exposure risks are significantly mitigated by the aggressive source removal approach of this alternative combined with a site management plan. - Excavation and disposal of impacted soils increases temporary exposure risks to humans and wildlife due to handling of contaminated materials and potential for dispersion of contamination in air.	Partial	- Removal of most significantly impacted soils will allow compliance with SCGs for VOCs, SVOCs, and metals in soils but will not address residual impacts to groundwater. Site management plan will be used to address low	Yes	- Heavy truck traffic and associated decontamination, dust control and soil tracking measures required due to excavation of soils. - Staging area required. - Limited short duration construction and contaminated soil removal impacts. - Short-term effectiveness of this alternative is good due to soil excavation.	Yes	- The significantly impacted soils will be removed from this site. Low level impacts remaining on-Site following removal action would be mitigated through site management plan.	Partial	- Removal of the significantly impacted soils will effectively addresses toxicity, mobility and volume of most significant impacts with maximum certainty; - Low level impacts in groundwater will remain. A site management plan would be used to address low level residual impacts.
C	Excavation and Enhanced Monitored Natural Attenuation (EMNA)	**- Combines Alternative B with EMNA; - Direct Application of ORC-A to open excavation of RAOC 1 and RAOC 2 to accelerate contaminant degradation in groundwater.**	Yes	- Refer to discussion of alternative B. - In addition, in-situ groundwater remediation provides additional protection for human health and the environment.	Yes	- Refer to discussion of alternative B. EMNA will provide quicker compliance with VOC SCGs for groundwater.	Yes	- Refer to discussion of alternative B. In addition, EMNA will result in quicker compliance with groundwater SCGs.	Yes	- Refer to discussion of alternative B. EMNA would provide benefit in reducing remediation timelines by addressing the low VOC groundwater impacts remaining on-Site.	Yes	- Removal of the significantly impacted soils will effectively addresses toxicity, mobility and volume of most significant impacts with maximum certainty. A site management plan would be used to address low level residual impacts. - More control of VOC groundwater contaminant toxicity, mobility and volume would result from EMNA..

Notes:
1 - Design assumptions for alternatives are presented in Table 2.

Definitions:

1 - Protection of Human Health and the Environment - This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, engineering controls or institutional controls. The remedy's ability to achieve each of the Remedial Action Obectives (RAOs) is evaluated.

2 - Standards, Criteria, & Guidance Values (SCGs) - Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

3 - Short-term Effectiveness & Impacts - The potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during the construction and/or implementation are evaluated. This includes identification of short-term adverse impacts and health risks, the effectiveness of any engineering controls, and the length of time needed to achieve the remedial objectives.

4 - Long-term Effectiveness & Permanence - This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated:

i. The magnitude of the remaining risks (i.e. will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals?),
ii. The adequacy of the engineering and institutional controls intended to limit the risk,
iii. The reliability of these controls, and;
iv. The ability of the remedy to continue to meet RAOs in the future.

5 - Reduction of Toxicity, Mobility, or Volume - The remedy's ability to reduce the toxicity, mobility or volume of site contamination is evaluated. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the site.

6 - Implementability - The technical and administrative feasibility of implementing the remedy is evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc. Includes the evaluation of the reliability and viability of implementation of the institutional or engineering controls necessary for a remedy.

7 - Land Use - This criterion is intended to evaluate the remedial alternatives in relation to the planned future use of the Site.

8 - Community Acceptance - This criterion is intended to select a remedial alternative that is acceptable to the community. The public's comments, concerns and overall perception of the remedy are later addressed through the Citizen Participation Plan (CPP). The CPP provides a mechanism for the public to review and comment on project documents as the project progresses.

9 - Cost Effectiveness - Includes both short-term costs of implementation, including engineering/design, and long-term costs of operation, maintenance and monitoring activities to maintain engineering controls.

TABLE 1
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

ALTERNATIVES ANALYSIS MATRIX

Remedial Alternative[1]		6 - Implementability		7 - Land Use		8 - Community Acceptance		9 - Cost Effectiveness		Overall
		Meets Criteria?	Discussion	Meets Criteria?	Discussion	Meets Criteria?	Discussion	Opinion of Probable Costs	Discussion	Conclusions and recommendations
A	No Action: Monitored Natural Attenuation (MNA)	Yes	- Successful implementation depends largely on presence of natural processes at the Site that are degrading contaminants. These processes are considered present at the Site due to the indications of microbial presence from the biotraps study.	No	- Anticipated land use at the Site is restricted residential and/or commercial. - Engineering and institutional controls, which are not currently in place, will be required at the Site under this alternative. - Long term presence of impacts may restrict future land use opportunities.	No	- Community acceptance for MNA is not anticipated due to the lack of contaminant removal. - Lack of significant vehicular traffic is likely to be favored by the community.	$457,516	- Low capital costs. - Highest OM&M costs of all alternatives, due to the possible 30 year monitoring program. (See Table 3).	- Most costly of the alternatives due to OM&M costs of 30 year monitoring program; - Least favorable alternative overall due to poor performance with the 'protection of human health and the environment', 'SCG', 'short-term effectiveness', 'reduction of toxicity, mobility or volume', and 'land use' criteria. - Poor remedial 'value' : costs of this alternative exceed that of an aggressive remedial program that is more likely to comply with regulatory agency requirements.
B	Excavation	Yes	- Soil excavation and disposal is widely used successfully and reliably; - The areas to be excavated are located in fairly open areas; - Staging area is available at the Site to process excavated soils.	Yes	- Anticipated land use at the Site is restricted residential and/or commercial; - Engineering and institutional controls, which are not currently in place, will be required but will be less significant than Alternate A due to greater compliance with SCGs;	Partial	- Lack of overall ability to achieve the remedial goal of eliminating risk to human health and environment would likely result in low-acceptance by the community.	$162,049	- Cost includes engineering, excavation, sampling and analysis, waste disposal, and reporting. - Costs based on Alternative C minus application of EHC-O and groundwater monitoring costs.	- Excavation alone is less costly and more favorable than MNA but less favorable than Excavation with EMNA since it is less protective of human health and the environment, it provides less compliance with SCGs for groundwater, it has reduced long-term effectiveness and less reduction in toxicity, mobility and volume.
C	Excavation and Enhanced Monitored Natural Attenuation (EMNA)	Yes	- Refer to discussion of Alternative B.	Yes	- Refer to discussion of alternative B. Implementation of EMNA may reduce need for sub-slab depressurization systems in future buildings.	Yes	- The anticipated rapid improvement of groundwater quality likely makes this alternative likely to be acceptable to the community; - More rapid closure of site likely makes this alternative acceptable.	$199,290	- Minor increase in capital costs due to EMNA and groundwater monitoring. - OM&M costs are less than MNA due to decreased monitoring time.	- More favorable alternative relative to Excavation alone as it is more likely to comply with regulatory agency requirements including more protection to human health and the environment, greater compliance with SCGS, greater long term effectiveness and perseverance and greater reduction in toxicity, mobility and volume.

Notes:
1 - Design assumptions for alternatives are presented in Table 2.

<u>**Definitions:**</u>
1 - Protection of Human Health and the Environment - This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, engineering controls or institutional controls. The remedy's ability to achieve each of the Remedial Action Obectives (RAOs) is evaluated.
2 - Standards, Criteria, & Guidance Values (SCGs) - Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.
3 - Short-term Effectiveness & Impacts - The potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during the construction and/or implementation are evaluated. This includes identification of short-term adverse impacts and health risks, the effectiveness of any engineering controls, and the length of time needed to achieve the remedial objectives.
4 - Long-term Effectiveness & Permanence - This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated:
i. The magnitude of the remaining risks (i.e. will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals?),
ii. The adequacy of the engineering and institutional controls intended to limit the risk,
iii. The reliability of these controls, and;
iv. The ability of the remedy to continue to meet RAOs in the future.
5 - Reduction of Toxicity, Mobility, or Volume - The remedy's ability to reduce the toxicity, mobility or volume of site contamination is evaluated. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the site.
6 - Implementability - The technical and administrative feasibility of implementing the remedy is evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc. Includes the evaluation of the reliability and viability of implementation of the institutional or engineering controls necessary for a remedy.
7 - Land Use - This criterion is intended to evaluate the remedial alternatives in relation to the planned future use of the Site.
8 - Community Acceptance - This criterion is intended to select a remedial alternative that is acceptable to the community. The public's comments, concerns and overall perception of the remedy are later addressed through the Citizen Participation Plan (CPP). The CPP provides a mechanism for the public to review and comment on project documents as the project progresses.
9 - Cost Effectiveness - Includes both short-term costs of implementation, including engineering/design, and long-term costs of operation, maintenance and monitoring activities to maintain engineering controls.

TABLE 2
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

REMEDIAL DESIGN ASSUMPTIONS

Determination of Extent of Remedial Areas of Concern

- Soil and groundwater contaminant levels, PID readings, and odors which are considered nuisance characteristics were used in the delineation of RAOCs for attaining compliance with Restricted Residential Use SCOs and CP-51.
- RAOC 1 is centered on B-3/MW-3 and B-6/MW-6 near the manhole and dry well.
- RAOC 2 is centered on B-14/MW-14.
- RAOC 3 consists of shallow fill material that exceeds Restricted Residential SCOs. Remediation of RAOC 3 is not included in this cleanup effort.

Soil Excavation and Off-Site Disposal

- Non-hazardous soil excavation production rate is assumed to be 150 Tons/day.
- Backfill production rate is assumed to be 150 CY/day.
- Sufficient staging area is assumed to be available.
- All excavated soils are assumed to meet treatment standards based on observed contaminant concentrations.
- Asphalt and concrete removal are estimated separately from soil excavation costs.
- Excavation volumes are based on excavation benching.
- No shoring of excavations will be required to protect structures or utilities.
- No replacements of existing utilities will be required.

Enhanced Monitored Natural Attenuation

- One-time direct application of chemical enhancements to open excavations only in RAOC-1 and RAOC-2 where elevated VOCs and other field observations of petroleum impacts, such as PID readings and odors, were observed. Anticipate one year of quarterly groundwater sampling, with the potential for a second year contingent on first-year results, to evaluate contaminant reduction progress from source removal and ORC-A enhancement. Following the first groundwater monitoring (GWM) event, which will be performed by Stantec, GWM may be performed by the City of Rochester, however the associated costs provided in the OPCs have included Stantec's costs.

General Assumptions:

- All costs are in constant fiscal year 2015 dollars.
- Soil density is assumed to be 1.7 tons/CY
- Concrete and asphalt density are assumed to be 2 tons/CY
- Prevailing wage rates are assumed.
- The OPCs were prepared using a contractor bid, related project experience, anticipated field conditions, and the estimated scope of work.

TABLE 3
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

OPINION OF PROBABLE REMEDIAL COST - ALTERNATIVE A - NO ACTION WITH 30 YEARS MONITORED NATURAL ATTENUATION

DESCRIPTION	UNIT	QTY	UNIT PRICE*	ESTIMATED COST
Implementation				
30 Years of Quarterly Groundwater Monitoring (5 wells for USEPA TCL/NYSDEC STARS VOCs, Cat B) includes standard T.A.T.	Per Event	120	1,399	167,904
Handling/Storage of Water from Wells	Drum	30	500	15,000
			Implementation Subtotal	**182,904**
Engineering				
Finalize ABCA, Revise Per Comments, Distribute	LS	1	2,006	2,006
Prepare Environmental Management Plan	LS	1	1,588	1,588
EPA ACRES Database & GIS File Mgmnt.	LS	1	11,236	11,236
DUSR per event, including RDI, Excavation, and GW Monitoring	EACH	120	363	43,560
Groundwater Monitoring Events	EACH	120	1,679	201,480
			Total Engineering Expenses including markup	**274,612**
			Opinion of Probable Total Cost	**457,516**

Notes:
1. * - 10% contractor or subconsultant markup added where applicable.

TABLE 4
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

OPINION OF PROBABLE REMEDIAL COST - ALTERNATIVE B - EXCAVATION

DESCRIPTION	UNIT	QTY	UNIT PRICE	ESTIM COST
Implementation				
Contractor Expenses:				
Mobilization/Demobilization	LS	1	$ 4,250	$ 4,250
Install & Maintain Silt Fence / Sediment Control Barrier	LF	160	4	640
Provide Frac tank, pump and associated equipment for handling and storage of excavation water:				
A - Mobilization/Cleaning/Demobilization	LS	1	3,150	3,150
B - Tank rental	ea., per mo.	1	1,055	1,055
C - Winter season surcharge for water tank heating equipment (if needed)	month	0	900	
Manage Water from Excavations	gal	2000	0.50	1,000
Discharge Containerized Water to sewer (per permit conditions)	gal	2000	0.15	300
Transport and Dispose of Water Offsite (non-hazardous waste)	gal	0	1.35	
Demolish and remove existing concrete floor slabs	sq ft	3600	1.35	4,860
Demolish and remove existing foundation walls	LF	340	38	12,920
Recycle waste concrete and foundation wall block	ton	200	17	3,400
Demolish and remove existing asphalt pavement	sq ft	1100	1.25	1,375
Recycle waste asphalt	ton	27	22	594
Demolish and remove existing underground utilities	LF	120	30	3,600
Perform Geoprobe Borings for waste pre-characterization sampling (1/2 day)	LS	1	700	700
Load/Transport/Dispose (or recycle) uncontaminated debris (from utility demolition or if encountered in clean soil during remedial excavation)	ton	4	8	31
Excavate shallow non-impacted soil from RAOC-1 and RAOC-2; segregate and stockpile for on-site reuse	cy	345	8	2,674
Excavate and Load for transport RAOC-1 and RAOC-2 Impacted Soils	cy	475	8	3,800
Transport and Dispose Petroleum-Impacted Soil (non-hazardous)	ton	783	38	29,363
Replace stockpiled non-impacted soil from on site (as deemed acceptable for backfill) into excavations and compact in lifts.	cy	345	6	1,898
Import, place and compact clean, granular backfill soils into excavations up to existing grade.	cy	449	24	10,776
Import and place 6-in crushed stone at top of backfilled area in RAOC-1 (even with surrounding grade).	cy	26	29	754
Import and place 2-in of topsoil at top of backfilled area in RAOC-2; seed with grass seed mix; mulch with straw.	cy	4	75	300
Decommission existing bedrock monitoring well MW-19D	LS	1	800	800
Decommission existing overburden wells MW-7 and -13	LS	2	400	800
Site Restoration	LS	1	1,200	1,200
Total Contractor Expenses plus 8% tax				**97,458**
Consultant Direct Expenses (supplies, rentals, etc.) plus 8% tax				6,385
Consultant Labor and Overhead				18,667
Laboratory and Data Validation Expenses				8,989
Fixed Fee (10%)				13,150
Total Implementation Expenses				**144,649**
Engineering				
Finalize ABCA, Revise Per Comments, Distribute	LS	1	2,006	2,006
Prepare Corrective Action Plan (including HASP/CAMP/QAPP); Revise per comments	LS	1	5,501	5,501
Prepare Remedial Construction/Closure Report	LS	1	5,722	5,722
Prepare Environmental Management Plan	LS	1	1,588	1,588
EPA ACRES Database & GIS File Mgmnt.	LS	1	749	749
Prepare for and Attend Project Meetings	LS	1	1,834	1,834
Total Engineering Expenses				**17,400**
Opinion of Total Probable Cost				**$162,049**

Notes:
1.7 tons/yard for soil
2 tons/yard for concrete and asphalt
Non-hazardous soil excavation production rate of 150 Tons/day.
Backfill production rate of 150 CY/day.
Refer to Figure 2 for the Restricted Residential excavation plan
No groundwater monitoring well installation or sampling is involved in this Alternative.

TABLE 5
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

OPINION OF PROBABLE REMEDIAL COST - ALTERNATIVE C - EXCAVATION AND ENHANCED MONITORED NATURAL ATTENUATION

DESCRIPTION	UNIT	QTY	UNIT PRICE	EST COST
Implementation				
Contractor Expenses:				
Mobilization/Demobilization	LS	1	$4,250	$4,250
Install & Maintain Silt Fence / Sediment Control Barrier	LF	160	4	640
Provide Frac tank, pump and associated equipment for handling and storage of excavation water: A - Mobilization/Cleaning/Demobilization	LS	1	3,150	3,150
B - Tank rental	ea., per mo.	1	1,055	1,055
C - Winter season surcharge for water tank heating equipment (if needed)	month	0	900	
Manage Water from Excavations	gal	2000	0.50	1,000
Discharge Containerized Water to sewer (per permit conditions)	gal	2000	0.15	300
Transport and Dispose of Water Offsite (non-hazardous waste)	gal	0	1.35	
Demolish and remove existing concrete floor slabs	sq ft	3600	1.35	4,860
Demolish and remove existing foundation walls	LF	340	38	12,920
Recycle waste concrete and foundation wall block	ton	200	17	3,400
Demolish and remove existing asphalt pavement	sq ft	1100	1.25	1,375
Recycle waste asphalt	ton	27	22	594
Demolish and remove existing underground utilities	LF	120	30	3,600
Perform Geoprobe Borings for waste pre-characterization sampling (1/2 day)	LS	1	700	700
Load/Transport/Dispose (or recycle) uncontaminated debris (from utility demolition or if encountered in clean soil during remedial excavation)	ton	4	8	31
Excavate shallow non-impacted soil from RAOC-1 and RAOC-2; segregate and stockpile for on-site reuse	cy	345	8	2,674
Excavate and Load for transport RAOC-1 and RAOC-2 Impacted Soils	cy	475	8	3,800
Transport and Dispose Petroleum-Impacted Soil (non-hazardous)	ton	783	38	29,363
Provide and place ORC™ into RAOC-1 and RAOC-2 Excavations.	lbs	475	11	4,988
Replace stockpiled non-impacted soil from on site (as deemed acceptable for backfill) into excavations and compact in lifts.	cy	345	6	1,898
Import, place and compact clean, granular backfill soils into excavations up to existing grade.	cy	449	24	10,776
Import and place 6-in crushed stone at top of backfilled area in RAOC-1 (even with surrounding grade).	cy	26	29	754
Import and place 2-in of topsoil at top of backfilled area in RAOC-2; seed with grass seed mix; mulch with straw.	cy	4	75	300
Install 1" PVC Monitoring Wells as replacement for excavated wells.	each	3	500	1,500
Decommission existing bedrock monitoring well MW-19D	LS	1	800	800
Decommission existing overburden wells MW-7 and -13	LS	2	400	800
Site Restoration	LS	1	1,200	1,200
Total Contractor Expenses plus 8% tax				**104,465**
Consultant Direct Expenses (supplies, rentals, etc.) plus 8% tax				6,385
Consultant Labor and Overhead				19,814
Laboratory and Data Validation Expenses				8,989
Fixed Fee (10%)				13,965
Post Remediation Groundwater Monitoring Expenses (8 rounds)				
Consultant Direct Expenses (supplies, rentals, etc.) plus 8% tax	LS	8	553	4,425
Consultant Labor and Overhead	LS	8	973	7,780
Laboratory and Data Validation Expenses	LS	8	1,602	12,816
Fixed Fee (10%)	LS	8	313	2,502
Total Implementation Expenses				**181,141**
Engineering				
Finalize ABCA, Revise Per Comments, Distribute	LS	1	2,006	2,006
Prepare Corrective Action Plan (including HASP/CAMP/QAPP); Revise per comments	LS	1	5,501	5,501
Prepare Remedial Construction/Closure Report	LS	1	5,722	5,722
Prepare Environmental Management Plan	LS	1	1,588	1,588
EPA ACRES Database & GIS File Mgmnt. (2 years)	Yr	2	749	1,498
Prepare for and Attend Project Meetings	LS	1	1,834	1,834
Total Engineering Expenses				**18,149**
Opinion of Total Probable Cost				**$199,290**

Notes:
1.7 tons/yard for soil
2 tons/yard for concrete and asphalt
Non-hazardous soil excavation production rate of 150 Tons/day.
Backfill production rate of 150 CY/day.
Refer to Figure 2 for the Restricted Residential excavation plan

TABLE 6
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
BROWNFIELD ASSESSMENT SITE
937 GENESEE STREET
ROCHESTER, NEW YORK

SOIL CLEANUP SUMMARY - RESTRICTED RESIDENTIAL SCOS

Location			Depth (feet)	Contaminant of Concern and Nuisance Characteristics	Detection (mg/kg)	Restricted Residential SCO (mg/kg)	CP-51 SCO (mg/kg)	Proposed Excavation Depth (ft)	Impacted Soil Thickness to be Disposed (ft)	Estimated Total Off-Site Soil Disposal Volume (CY)	Estimated Total On-Site Soil Reuse Volume (CY)
Manhole/ Dry Well Area	RAOC 1	B-2	4-5	PID	470			15	8.75 to 10	357	203
				Odor, staining							
		B-3	6-8	Ethylbenzene	2	41	1.00				
				1,2,4-Trimethylbenzene	9.53	52	3.60				
				m&p-Xylene	1.94	100	0.26				
				PID	1,658						
				Odor, staining							
		B-4	7-8	PID	971						
				Odor							
		B-6	6-8	PID	1,547						
				Odor, staining							
Eastern B-14 Area	RAOC 2	B-14	8-10	PID	510			15	7.5 to 10	118	142
				Odor							
		B-18	6-8	PID	16						
				Odor							
Fill	RAOC 3	B-19 Fill	0-2	Indeno(1,2,3-cd)pyrene	0.51	0.50	0.50	0	0	0	0
									Estimated Total	**475**	**345**

Sample Location				B2		B3		B4		B6		B-9S	B-10S		B-11S	B-12S	B-13S	B-14S	B-15S	B-16S
Sample Date				23-May-11	23-May-11	24-May-11	24-May-11	23-May-11	23-May-11	23-May-11	23-May-11	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12	20-Aug-12
Sample ID				B2 (4-4.8)	B2 (4-4.8)	B3 (6-8)	B3 (6-8)	B4 (7.5-8)	B4 (7.5-8)	B6 (7-8)	B6 (7-8)	B-9S	B-10S	B-10SDUP	B-11S	B-12S	B-13S	B-14S	B-15S	B-16S
Sample Depth				4 - 4.8 ft	4 - 4.8 ft	6 - 8 ft	6 - 8 ft	7.5 - 8 ft	7.5 - 8 ft	7 - 8 ft	7 - 8 ft	4 - 8 ft	8 - 12 ft		16 - 17.5 ft	8 - 12 ft	8 - 12 ft	8 - 12 ft	8 - 12 ft	8 - 12 ft
Sampling Company				STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC		STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory				PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM	SPECTRUM
Laboratory Work Order				P11-2070	P11-2070R	P11-2085	P11-2085R	P11-2070	P11-2070R	P11-2070	P11-2070R	L1794	L1794	L1794	L1794	L1794	L1794	L1794	L1794	L1794
Laboratory Sample ID				7014	7014R	7057	7057R	7017	7017R	7016	7016R	L1794-01	L1794-02	L1794-02DUP	L1794-03	L1794-04	L1794-05	L1794-06	L1794-07	L1794-08
Sample Type	Units	6NYCRR	NYSDEC											Lab Replicate						
General Chemistry																				
Moisture Content	%	n/v	n/v	-	-	-	-	-	-	-	-	**8.0 J**	**12**	**14.63**	**11**	**13**	**8.0 J**	**9.4 J**	**14**	**15**
Petroleum Hydrocarbons																				
Heavy Weight PHC as: Lube Oil	µg/kg	n/v	n/v	-	-	-	**1180000**	-	**14200**	-	-	-	-	-	-	-	-	-	-	-
Light Weigth PHC as: Mineral Spirits	µg/kg	n/v	n/v	-	-	-	-	-	**228000**	-	**38400**	-	-	-	-	-	-	-	-	-
Medium Weight PHC as: Diesel Fuel	µg/kg	n/v	n/v	-	**1580000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medium Weight PHC as: Kerosene	µg/kg	n/v	n/v	-	-	-	**616000**	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Extractable Hydrocarbons	mg/kg	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16**	-	-
Metals																				
Arsenic	mg/kg	16_{g}^{AB} 13_{n}^{C}	n/v	-	-	**3.78**	-	-	-	-	-	-	-	-	-	-	-	**5.4**	-	-
Barium	mg/kg	400^{AB} 350_{n}^{C}	n/v	-	-	**26.1**	-	-	-	-	-	-	-	-	-	-	-	**21 B**	-	-
Cadmium	mg/kg	9.3^{A} 4.3^{B} 2.5_{n}^{C}	n/v	-	-	0.499 U	-	-	-	-	-	-	-	-	-	-	-	0.21 U	-	-
Chromium (Total)	mg/kg	${}_{NS,q}^{A}$ ${}_{NS,q}^{B}$ ${}_{NS,q}^{C}$	n/v	-	-	**5.11**	-	-	-	-	-	-	-	-	-	-	-	**7.1**	-	-
Lead	mg/kg	1000^{A} 400^{B} 63_{n}^{C}	n/v	-	-	**15.2**	-	-	-	-	-	-	-	-	-	-	-	**7.6**	-	-
Mercury	mg/kg	2.8_{k}^{A} 0.81_{k}^{B} 0.18_{n}^{C}	n/v	-	-	0.0085 U	-	-	-	-	-	-	-	-	-	-	-	**0.0034 J**	-	-
Selenium	mg/kg	1500^{A} 180^{B} 3.9_{n}^{C}	n/v	-	-	0.997 U	-	-	-	-	-	**1.7**	1.4 U	-	**1.5**	1.5 U	**1.1 J**	**0.76 J**	1.2 U	**1.1 J**
Silver	mg/kg	1500^{A} 180^{B} 2^{C}	n/v	-	-	0.997 U	-	-	-	-	-	-	-	-	-	-	-	1.2 U	-	-
Semi - Volatile Organic Compounds																				
Acenaphthene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 20000^{C}	20000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/kg	5600^{A} 1000_{g}^{B} 1000_{n}^{C}	1000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/kg	1000_{g}^{AB} 1000_{n}^{C}	1000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/kg	5600^{A} 1000_{g}^{B} 1000_{n}^{C}	1000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/kg	500000_{c}^{A} 100000_{b}^{BC}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/kg	56000^{A} 3900^{B} 800_{n}^{C}	800^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/kg	56000^{A} 3900^{B} 1000_{n}^{C}	1000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/kg	560^{A} 330_{f}^{B} 330_{m}^{C}	330^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 30000^{C}	30000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/kg	5600^{A} 500_{g}^{B} 500_{n}^{C}	500^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/kg	500000_{c}^{A} 100000_{b}^{B} 12000^{C}	12000^{DE}	-	-	**594**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/kg	500000_{c}^{A} 100000_{b}^{BC}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/kg	500000_{c}^{A} 100000_{b}^{BC}	100000^{E}	-	-	312 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds																				
Acetone	µg/kg	500000_{c}^{A} 100000_{b}^{B} 50^{C}	n/v	*138 U*	-	*114 U*	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	**6.2 J**	4.9 U	6.3 U	7.1 U	7.0 U
Benzene	µg/kg	44000^{A} 4800^{B} 60^{C}	60^{DE}	*138 U*	-	*114 U*	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Bromodichloromethane	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Bromoform (Tribromomethane)	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	n/v	346 U	-	284 U	-	1960 U	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Bromomethane (Methyl bromide)	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Butylbenzene, n-	µg/kg	500000_{c}^{A} 100000_{b}^{B} 12000^{C}	12000^{DE}	**637**	-	**1020**	-	**855**	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**2.7 J**	7.1 U	7.0 U
Butylbenzene, sec- (2-Phenylbutane)	µg/kg	500000_{c}^{A} 100000_{b}^{B} 11000^{C}	11000^{DE}	**232**	-	**518**	-	**1340**	-	**70.1**	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**2.9 J**	7.1 U	7.0 U
Butylbenzene, tert-	µg/kg	500000_{c}^{A} 100000_{b}^{B} 5900^{C}	5900^{DE}	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Carbon Disulfide	µg/kg	500000_{c}^{A} 100000_{b}^{B} 100000_{a}^{C}	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	22000^{A} 2400^{B} 760^{C}	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U

See last page for notes.

Sample Location				**B2**		**B3**		**B4**		**B6**		**B-9S**	**B-10S**		**B-11S**	**B-12S**	**B-13S**	**B-14S**	**B-15S**	**B-16S**
Sample Date				**23-May-11**	**23-May-11**	**24-May-11**	**24-May-11**	**23-May-11**	**23-May-11**	**23-May-11**	**23-May-11**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**	**20-Aug-12**
Sample ID				**B2 (4-4.8)**	**B2 (4-4.8)**	**B3 (6-8)**	**B3 (6-8)**	**B4 (7.5-8)**	**B4 (7.5-8)**	**B6 (7-8)**	**B6 (7-8)**	**B-9S**	**B-10S**	**B-10SDUP**	**B-11S**	**B-12S**	**B-13S**	**B-14S**	**B-15S**	**B-16S**
Sample Depth				**4 - 4.8 ft**	**4 - 4.8 ft**	**6 - 8 ft**	**6 - 8 ft**	**7.5 - 8 ft**	**7.5 - 8 ft**	**7 - 8 ft**	**7 - 8 ft**	**4 - 8 ft**	**8 - 12 ft**		**16 - 17.5 ft**	**8 - 12 ft**	**8 - 12 ft**	**8 - 12 ft**	**8 - 12 ft**	**8 - 12 ft**
Sampling Company				**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**		**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**
Laboratory				**PARAROCH**	**PARAROCH**	**PARAROCH**	**PARAROCH**	**PARAROCH**	**PARAROCH**	**PARAROCH**	**PARAROCH**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**
Laboratory Work Order				**P11-2070**	**P11-2070R**	**P11-2085**	**P11-2085R**	**P11-2070**	**P11-2070R**	**P11-2070**	**P11-2070R**	**L1794**	**L1794**	**L1794**	**L1794**	**L1794**	**L1794**	**L1794**	**L1794**	**L1794**
Laboratory Sample ID				**7014**	**7014R**	**7057**	**7057R**	**7017**	**7017R**	**7016**	**7016R**	**L1794-01**	**L1794-02**	**L1794-02DUP**	**L1794-03**	**L1794-04**	**L1794-05**	**L1794-06**	**L1794-07**	**L1794-08**
Sample Type	**Units**	**6NYCRR**	**NYSDEC**											**Lab Replicate**						
Volatile Organic Compounds																				
Chlorobenzene (Monochlorobenzene)	µg/kg	500000_c^A 100000_b^B 1100^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Chloroethane (Ethyl Chloride)	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Chloroethyl Vinyl Ether, 2-	µg/kg	n/v	n/v	692 U	-	568 U	-	3920 U	-	52.3 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Chloroform (Trichloromethane)	µg/kg	350000^A 49000^B 370^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Chloromethane	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dibromochloromethane	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichlorobenzene, 1,2-	µg/kg	500000_c^A 100000_b^B 1100^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichlorobenzene, 1,3-	µg/kg	280000^A 49000^B 2400^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichlorobenzene, 1,4-	µg/kg	130000^{AB} 1800^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloroethane, 1,1-	µg/kg	240000^A 26000^B 270^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloroethane, 1,2-	µg/kg	30000^A 3100^B 20_m^C	n/v	*138 U*	-	*114 U*	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloroethene, 1,1-	µg/kg	500000_c^A 100000_b^B 330^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloroethylene, cis-1,2-	µg/kg	500000_c^A 100000_b^B 250^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloroethylene, trans-1,2-	µg/kg	500000_c^A 100000_b^B 190^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloropropane, 1,2-	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloropropene, cis-1,3-	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Dichloropropene, trans-1,3-	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Ethylbenzene	µg/kg	390000^A 41000^{BC}	1000^{DE}	138 U	-	**1520**^{CDE}	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Hexanone, 2- (Methyl Butyl Ketone)	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	346 U	-	284 U	-	1960 U	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Isopropylbenzene	µg/kg	500000_c^A 100000_b^B 100000_a^C	2300^{DE}	138 U	-	**718**	-	784 U	-	**14.9**	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**1.9 J**	7.1 U	7.0 U
Isopropyltoluene, p- (Cymene)	µg/kg	500000_c^A 100000_b^B 100000_a^C	10000^{DE}	**460**	-	**764**	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**5.8 J**	7.1 U	7.0 U
Methyl Ethyl Ketone (MEK)	µg/kg	500000_c^A 100000_b^B 120^C	n/v	*138 U*	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Methyl Isobutyl Ketone (MIBK)	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	346 U	-	284 U	-	1960 U	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Methyl tert-butyl ether (MTBE)	µg/kg	500000_c^A 100000_b^B 930^C	930^D	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Methylene Chloride (Dichloromethane)	µg/kg	500000_c^{AC} 100000_b^B	n/v	*346 U*	-	*284 U*	-	*1960 U*	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	**1.9 J**	**2.1 J**	6.3 U	**2.7 J**	7.0 U
Naphthalene	µg/kg	500000_c^A 100000_b^B 12000^C	12000^{DE}	**3830**	-	**1050**	-	1960 U	-	26.1 U	-	6.3 U	**2.5 J**	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Propylbenzene, n-	µg/kg	500000_c^A 100000_b^B 3900^C	3900^{DE}	**212**	-	**1190**	-	**1370**	-	**36.9**	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**4.4 J**	7.1 U	7.0 U
Styrene	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	346 U	-	284 U	-	1960 U	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Tetrachloroethane, 1,1,2,2-	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Tetrachloroethylene (PCE)	µg/kg	150000^A 19000^B 1300^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Toluene	µg/kg	500000_c^A 100000_b^B 700^C	700^{DE}	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	**1.7 J**	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Trichloroethane, 1,1,1-	µg/kg	500000_c^A 100000_b^B 680^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Trichloroethane, 1,1,2-	µg/kg	500000_c^A 100000_b^B 100000_a^C	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Trichloroethylene (TCE)	µg/kg	200000^A 21000^B 470^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	n/v	138 U	-	114 U	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Trimethylbenzene, 1,2,4-	µg/kg	190000^A 52000^B 3600^C	3600^{DE}	**1660**	-	**9530**^{CDE}	-	**1000**	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	**7.9**	7.1 U	7.0 U
Trimethylbenzene, 1,3,5-	µg/kg	190000^A 52000^B 8400^C	8400^{DE}	138 U	-	**2340**	-	784 U	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Vinyl Acetate	µg/kg	n/v	n/v	346 U	-	284 U	-	1960 U	-	26.1 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Vinyl chloride	µg/kg	13000^A 900^B 20^C	n/v	*138 U*	-	*114 U*	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Xylene, m & p-	µg/kg	$500000_{c,p}^A$ $100000_{b,p}^B$ 260_p^C	n/v	138 U	-	**1940**^{C}	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Xylene, o-	µg/kg	$500000_{c,p}^A$ $100000_{b,p}^B$ 260_p^C	n/v	138 U	-	114 U	-	*784 U*	-	10.5 U	-	6.3 U	5.5 U	-	5.6 U	6.3 U	4.9 U	6.3 U	7.1 U	7.0 U
Volatile Tentatively Identified Compounds																				
Total VOC TICs	µg/kg	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**234 JN**	-	-

See last page for notes.

Sample Location				**B-18S**		**B-19 FILL**		**B-19S**		**SED1**	
Sample Date				**20-Aug-12**	**20-Aug-12**	**21-Aug-12**	**21-Aug-12**	**21-Aug-12**	**21-Aug-12**	**23-May-11**	**23-May-11**
Sample ID				**B-18S**	**B-18SDUP**	**BR-19 FILL**	**BR-19 FILLDUP**	**BR-19 S**	**BR-19 SDUP**	**SED1**	**SED1**
Sample Depth				**8 - 12 ft**		**0 - 2 ft**		**12 - 16 ft**		**2 - 3 ft**	**2 - 3 ft**
Sampling Company				**STANTEC**		**STANTEC**		**STANTEC**		**STANTEC**	**STANTEC**
Laboratory				**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**PARAROCH**	**PARAROCH**
Laboratory Work Order				**L1794**	**L1794**	**L1803**	**L1803**	**L1803**	**L1803**	**P11-2070**	**P11-2070R**
Laboratory Sample ID				**L1794-10**	**L1794-10DUP**	**L1803-01**	**L1803-01DUP**	**L1803-02**	**L1803-02DUP**	**7013**	**7013R**
Sample Type	**Units**	**6NYCRR**	**NYSDEC**		**Lab Replicate**		**Lab Replicate**		**Lab Replicate**		
General Chemistry											
Moisture Content	%	n/v	n/v	**11**	-	**17**	-	**12**	-	-	-
Petroleum Hydrocarbons											
Heavy Weight PHC as: Lube Oil	µg/kg	n/v	n/v	-	-	-	-	-	-	-	**1240000**
Light Weigth PHC as: Mineral Spirits	µg/kg	n/v	n/v	-	-	-	-	-	-	-	-
Medium Weight PHC as: Diesel Fuel	µg/kg	n/v	n/v	-	-	-	-	-	-	-	-
Medium Weight PHC as: Kerosene	µg/kg	n/v	n/v	-	-	-	-	-	-	-	**64200**
Total Extractable Hydrocarbons	mg/kg	n/v	n/v	-	-	-	-	-	-	-	-
Metals											
Arsenic	mg/kg	$16_g^{AB}\ 13_n^{C}$	n/v	**3.2**	**3.701**	**8.0**	-	-	-	-	-
Barium	mg/kg	$400^{AB}\ 350_n^{C}$	n/v	**21 B**	**22.01 B**	**53 B**	-	-	-	-	-
Cadmium	mg/kg	$9.3^{A}\ 4.3^{B}\ 2.5_n^{C}$	n/v	**0.041 J**	**0.07377 JR**	**0.28**	-	-	-	-	-
Chromium (Total)	mg/kg	${}_{NS,q}^{A}\ {}_{NS,q}^{B}\ {}_{NS,q}^{C}$	n/v	**6.1**	**6.184**	**12 B**	-	-	-	-	-
Lead	mg/kg	$1000^{A}\ 400^{B}\ 63_n^{C}$	n/v	**7.2**	**11.03 R**	**140^{C}**	-	-	-	-	-
Mercury	mg/kg	$2.8_k^{A}\ 0.81_k^{B}\ 0.18_n^{C}$	n/v	0.038 U	-	**0.28^{C}**	**0.09892 R**	-	-	-	-
Selenium	mg/kg	$1500^{A}\ 180^{B}\ 3.9_n^{C}$	n/v	**0.68 J**	**0.8537 JR**	1.7 U	-	**1.4**	**1.449**	-	-
Silver	mg/kg	$1500^{A}\ 180^{B}\ 2^{C}$	n/v	1.1 U	1.1 U	1.7 U	-	-	-	-	-
Semi - Volatile Organic Compounds											
Acenaphthene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 20000^{C}$	20000^{E}	-	-	390 U	-	-	-	-	-
Acenaphthylene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	100000^{E}	-	-	-	-	-	-	-	-
Anthracene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	100000^{E}	-	-	390 U	-	-	-	-	-
Benzo(a)anthracene	µg/kg	$5600^{A}\ 1000_g^{B}\ 1000_n^{C}$	1000^{E}	-	-	**130 J**	-	-	-	-	-
Benzo(a)pyrene	µg/kg	$1000_g^{AB}\ 1000_n^{C}$	1000^{E}	-	-	**180 J**	-	-	-	-	-
Benzo(b)fluoranthene	µg/kg	$5600^{A}\ 1000_g^{B}\ 1000_n^{C}$	1000^{E}	-	-	**570**	-	-	-	-	-
Benzo(g,h,i)perylene	µg/kg	$500000_c^{A}\ 100000_b^{BC}$	100000^{E}	-	-	**700**	-	-	-	-	-
Benzo(k)fluoranthene	µg/kg	$56000^{A}\ 3900^{B}\ 800_n^{C}$	800^{E}	-	-	**190 J**	-	-	-	-	-
Chrysene	µg/kg	$56000^{A}\ 3900^{B}\ 1000_n^{C}$	1000^{E}	-	-	**250 J**	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/kg	$560^{A}\ 330_f^{B}\ 330_m^{C}$	330^{E}	-	-	*390 U*	-	-	-	-	-
Fluoranthene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	100000^{E}	-	-	**160 J**	-	-	-	-	-
Fluorene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 30000^{C}$	30000^{E}	-	-	390 U	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/kg	$5600^{A}\ 500_g^{B}\ 500_n^{C}$	500^{E}	-	-	**510^{BCE}**	-	-	-	-	-
Naphthalene	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 12000^{C}$	12000^{DE}	-	-	390 U	-	-	-	-	-
Phenanthrene	µg/kg	$500000_c^{A}\ 100000_b^{BC}$	100000^{E}	-	-	**120 J**	-	-	-	-	-
Pyrene	µg/kg	$500000_c^{A}\ 100000_b^{BC}$	100000^{E}	-	-	**230 J**	-	-	-	-	-
Volatile Organic Compounds											
Acetone	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 50^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	**1080^{C}**	-
Benzene	µg/kg	$44000^{A}\ 4800^{B}\ 60^{C}$	60^{DE}	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Bromodichloromethane	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Bromoform (Tribromomethane)	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	39.9 U	-
Bromomethane (Methyl bromide)	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Butylbenzene, n-	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 12000^{C}$	12000^{DE}	5.2 U	-	-	-	5.4 U	-	**57.9**	-
Butylbenzene, sec- (2-Phenylbutane)	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 11000^{C}$	11000^{DE}	**2.7 J**	-	-	-	5.4 U	-	**34.4**	-
Butylbenzene, tert-	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 5900^{C}$	5900^{DE}	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Carbon Disulfide	µg/kg	$500000_c^{A}\ 100000_b^{B}\ 100000_a^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	**18.0**	-
Carbon Tetrachloride (Tetrachloromethane)	µg/kg	$22000^{A}\ 2400^{B}\ 760^{C}$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-

See last page for notes.

Table 7
Summary of Analytical Results in Soil
May 2011 and August 2012 Sampling
937 Genesee Street, Rochester, NY

Sample Location				**B-18S**		**B-19 FILL**		**B-19S**		**SED1**	
Sample Date				**20-Aug-12**	**20-Aug-12**	**21-Aug-12**	**21-Aug-12**	**21-Aug-12**	**21-Aug-12**	**23-May-11**	**23-May-11**
Sample ID				**B-18S**	**B-18SDUP**	**BR-19 FILL**	**BR-19 FILLDUP**	**BR-19 S**	**BR-19 SDUP**	**SED1**	**SED1**
Sample Depth				**8 - 12 ft**		**0 - 2 ft**		**12 - 16 ft**		**2 - 3 ft**	**2 - 3 ft**
Sampling Company				**STANTEC**		**STANTEC**		**STANTEC**		**STANTEC**	**STANTEC**
Laboratory				**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**PARAROCH**	**PARAROCH**
Laboratory Work Order				**L1794**	**L1794**	**L1803**	**L1803**	**L1803**	**L1803**	**P11-2070**	**P11-2070R**
Laboratory Sample ID				**L1794-10**	**L1794-10DUP**	**L1803-01**	**L1803-01DUP**	**L1803-02**	**L1803-02DUP**	**7013**	**7013R**
Sample Type	**Units**	**6NYCRR**	**NYSDEC**		**Lab Replicate**		**Lab Replicate**		**Lab Replicate**		
Volatile Organic Compounds											
Chlorobenzene (Monochlorobenzene)	µg/kg	$500000_c^A\ 100000_b^B\ 1100^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Chloroethane (Ethyl Chloride)	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Chloroethyl Vinyl Ether, 2-	µg/kg	n/v	n/v	5.2 U	-	-	-	5.4 U	-	79.7 U	-
Chloroform (Trichloromethane)	µg/kg	$350000^A\ 49000^B\ 370^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Chloromethane	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dibromochloromethane	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichlorobenzene, 1,2-	µg/kg	$500000_c^A\ 100000_b^B\ 1100^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichlorobenzene, 1,3-	µg/kg	$280000^A\ 49000^B\ 2400^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichlorobenzene, 1,4-	µg/kg	$130000^{AB}\ 1800^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloroethane, 1,1-	µg/kg	$240000^A\ 26000^B\ 270^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloroethane, 1,2-	µg/kg	$30000^A\ 3100^B\ 20_m^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloroethene, 1,1-	µg/kg	$500000_c^A\ 100000_b^B\ 330^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloroethylene, cis-1,2-	µg/kg	$500000_c^A\ 100000_b^B\ 250^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloroethylene, trans-1,2-	µg/kg	$500000_c^A\ 100000_b^B\ 190^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloropropane, 1,2-	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloropropene, cis-1,3-	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Dichloropropene, trans-1,3-	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Ethylbenzene	µg/kg	$390000^A\ 41000^{BC}$	1000^{DE}	**1.1 J**	-	-	-	5.4 U	-	**21.0**	-
Hexanone, 2- (Methyl Butyl Ketone)	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	39.9 U	-
Isopropylbenzene	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	2300^{DE}	**1.5 J**	-	-	-	5.4 U	-	**17.9**	-
Isopropyltoluene, p- (Cymene)	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	10000^{DE}	5.2 U	-	-	-	5.4 U	-	**89.1**	-
Methyl Ethyl Ketone (MEK)	µg/kg	$500000_c^A\ 100000_b^B\ 120^C$	n/v	5.2 U	-	-	-	5.4 U	-	**284^C**	-
Methyl Isobutyl Ketone (MIBK)	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	39.9 U	-
Methyl tert-butyl ether (MTBE)	µg/kg	$500000_c^A\ 100000_b^B\ 930^C$	930^D	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Methylene Chloride (Dichloromethane)	µg/kg	$500000_c^{AC}\ 100000_b^B$	n/v	**3.4 BJ**	-	-	-	**4.0 BJ**	-	39.9 U	-
Naphthalene	µg/kg	$500000_c^A\ 100000_b^B\ 12000^C$	12000^{DE}	5.2 U	-	-	-	5.4 U	-	**264**	-
Propylbenzene, n-	µg/kg	$500000_c^A\ 100000_b^B\ 3900^C$	3900^{DE}	**1.2 J**	-	-	-	5.4 U	-	**44.5**	-
Styrene	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	39.9 U	-
Tetrachloroethane, 1,1,2,2-	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Tetrachloroethylene (PCE)	µg/kg	$150000^A\ 19000^B\ 1300^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Toluene	µg/kg	$500000_c^A\ 100000_b^B\ 700^C$	700^{DE}	5.2 U	-	-	-	**2.3 J**	-	15.9 U	-
Trichloroethane, 1,1,1-	µg/kg	$500000_c^A\ 100000_b^B\ 680^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Trichloroethane, 1,1,2-	µg/kg	$500000_c^A\ 100000_b^B\ 100000_a^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Trichloroethylene (TCE)	µg/kg	$200000^A\ 21000^B\ 470^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Trichlorofluoromethane (Freon 11)	µg/kg	n/v	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Trimethylbenzene, 1,2,4-	µg/kg	$190000^A\ 52000^B\ 3600^C$	3600^{DE}	**1.1 J**	-	-	-	5.4 U	-	**1540**	-
Trimethylbenzene, 1,3,5-	µg/kg	$190000^A\ 52000^B\ 8400^C$	8400^{DE}	5.2 U	-	-	-	5.4 U	-	**17.9**	-
Vinyl Acetate	µg/kg	n/v	n/v	5.2 U	-	-	-	5.4 U	-	39.9 U	-
Vinyl chloride	µg/kg	$13000^A\ 900^B\ 20^C$	n/v	5.2 U	-	-	-	5.4 U	-	15.9 U	-
Xylene, m & p-	µg/kg	$500000_{c,p}^A\ 100000_{b,p}^B\ 260_p^C$	n/v	5.2 U	-	-	-	5.4 U	-	**76.9**	-
Xylene, o-	µg/kg	$500000_{c,p}^A\ 100000_{b,p}^B\ 260_p^C$	n/v	5.2 U	-	-	-	5.4 U	-	**225**	-
Volatile Tentatively Identified Compounds											
Total VOC TICs	µg/kg	n/v	n/v	**236.6 JN**	-	-	-	-	-	-	-

See last page for notes.

Notes:

6NYCRR	NYSDEC 6 NYCRR Part 375 Soil Clean-up Objectives (SCOs)
A	NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Human Health - Commercial
B	NYSDEC 6 NYCRR Part 375 - Restricted Use SCO - Protection of Human Health - Restricted Residential
C	NYSDEC 6 NYCRR Part 375 - Unrestricted Use Soil Cleanup Objectives
NYSDEC	New York State Department of Environmental Conservation, DEC Policy CP-51, October 21, 2010
D	Table 2 Soil Cleanup Levels for Gasoline Contaminated Soils
E	Table 3 Soil Cleanup Levels for Fuel Oil Contaminated Soil
6.5[A]	Concentration exceeds the indicated standard.
15.2	Concentration was detected but did not exceed applicable standards.
0.50 U	Laboratory estimated quantitation limit exceeded standard.
0.03 U	The analyte was not detected above the laboratory estimated quantitation limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
NS,q[BC]	No SCO has been established for this compound. No SCO has been established for total chromium; however, see standards for trivalent and hexavalent chromium.
NS,q[A]	No SCO has been established for this compound. No SCO has been established for total chromium; however, see standards for trivalent and hexavalent chromium. For commercial use, these are 1500 and 400 mg/kg respectively.
a	The SCOs for unrestricted use were capped at a maximum value of 100 mg/kg. See 6 NYCRR Part 375 TSD Section 9.3
b	The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 mg/kg. See 6 NYCRR Part 375 TSD Section 9.3.
b,p	The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 mg/kg. See 6 NYCRR Part 375 TSD Section 9.3. The criterion is applicable to total xylenes, and the individual isomers should be added for comparison.
c	The SCOs for commercial use were capped at a maximum value of 500 mg/kg. See TSD Section 9.3.
c,p	The SCOs for commercial use were capped at a maximum value of 500 mg/kg. See TSD Section 9.3. The criterion is applicable to total xylenes, and the individual isomers should be added for comparison.
f	For constituents where the calculated SCO was lower than the CRQL, the CRQL is used as the SCO value.
g[AB]	For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.
k[AB]	This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See 6 NYCRR Part 375 TSD Table 5.6-1.
m	For constituents where the calculated SCO was lower than the Contract Required Quantitation Limit (CRQL), the CRQL is used as the Track 1 SCO value.
n	For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.
p	The criterion is applicable to total xylenes, and the individual isomers should be added for comparison.
B	Indicates analyte was found in associated blank, as well as in the sample.
J	Indicates estimated value.
N	Indicates presumptive evidence of a compound. Identification of tentatively identified compound is based on a mass spectral library search.
R	RPD outside accepted recovery limits

Sample Location			**MW-3**			**MW-6**			**MW-7**		**MW-11**	**MW-12**	**MW-13**	**MW-14**	**MW-18**	**MW-19D**	**Trip Blank**		
Sample Date			**3-Jun-11**	**3-Jun-11**	**28-Aug-12**	**3-Jun-11**	**3-Jun-11**	**27-Aug-12**	**3-Jun-11**	**28-Aug-12**	**28-Aug-12**	**27-Aug-12**	**27-Aug-12**	**28-Aug-12**	**28-Aug-12**	**27-Aug-12**	**3-Jun-11**	**27-Aug-12**	**28-Aug-12**
Sample ID			**MW-3-GW**	**MW-3-GW**	**MW-3-W**	**MW-6-GW**	**MW-6-GW**	**MW-6-W**	**MW-7-GW**	**MW-7-W**	**MW-11-W**	**MW-12-W**	**MW-13-W**	**MW-14-W**	**MW-18-W**	**MW-19D-W**	**Trip Blank**	**TB-082712**	**TB-082812**
Sampling Company			**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**
Laboratory			**PARAROCH**	**PARAROCH**	**SPECTRUM**	**PARAROCH**	**PARAROCH**	**SPECTRUM**	**PARAROCH**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**PARAROCH**	**SPECTRUM**	**SPECTRUM**
Laboratory Work Order			**P11-2234**	**P11-2234R**	**L1835**	**P11-2234**	**P11-2234R**	**L1826**	**P11-2234**	**L1835**	**L1835**	**L1826**	**L1826**	**L1835**	**L1835**	**L1826**	**P11-2234**	**L1826**	**L1835**
Laboratory Sample ID			**7482**	**7482R**	**L1835-02**	**7483**	**7483R**	**L1826-04**	**7481**	**L1835-03**	**L1835-01**	**L1826-02**	**L1826-03**	**L1835-05**	**L1835-04**	**L1826-01**	**7480**	**L1826-05**	**L1835-06**
Sample Type	**Units**	**TOGS**															**Trip Blank**	**Trip Blank**	**Trip Blank**
General Chemistry																			
Nitrate (as N)	mg/L	10_x^B	-	-	**0.13**	-	-	-	-	-	0.05 U	-	-	0.05 U	-	**0.26**	-	-	-
Nitrite	mg/L	n/v	-	-	0.02 U	-	-	-	-	-	0.02 U	-	-	0.02 U	-	0.02 U	-	-	-
Nitrite/Nitrate	mg/L	n/v	-	-	**0.14**	-	-	-	-	-	0.05 U	-	-	0.05 U	-	**0.26**	-	-	-
Sulfate	mg/L	250^B	-	-	**56.1**	-	-	-	-	-	**121**	-	-	**146**	-	**132**	-	-	-
Petroleum Hydrocarbons																			
Medium Weight PHC as: Diesel Fuel	µg/L	n/v	-	**346**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medium Weight PHC as: Kerosene	µg/L	n/v	-	**696**	-	-	**598**	-	-	-	-	-	-	-	-	-	-	-	-
Total Extractable Hydrocarbons	mg/L	n/v	-	-	**1.6**	-	-	**0.33**	-	-	-	-	-	**0.28**	-	-	-	-	-
Metals																			
Arsenic	mg/L	0.025^B	0.010 U	-	-	0.010 U	-	-	0.010 U	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	1^B	**0.153**	-	-	**0.126 M**	-	-	0.100 U	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.005^B	0.005 U	-	-	**0.005 M**	-	-	0.005 U	-	-	-	-	-	-	-	-	-	-
Chromium (Total)	mg/L	0.05^B	0.010 U	-	-	0.010 U	-	-	0.010 U	-	-	-	-	-	-	-	-	-	-
Lead	mg/L	0.025^B	0.010 U	-	-	**0.010 M**	-	-	0.010 U	-	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.0007^B	0.0002 U	-	-	0.0002 U	-	-	0.0002 U	-	-	-	-	-	-	-	-	-	-
Selenium	mg/L	0.01^B	0.010 U	-	*0.030 U*	0.010 U	-	*0.030 U*	**0.018^B**	*0.030 U*	*0.030 U*	*0.030 U*	*0.030 U*	*0.030 U*	*0.030 U*	*0.030 U*	-	-	-
Silver	mg/L	0.05^B	0.010 U	-	-	0.010 U	-	-	0.010 U	-	-	-	-	-	-	-	-	-	-
Semi - Volatile Organic Compounds																			
Acenaphthene	µg/L	20^B	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	n/v	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	50^A	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.002^A	*10.0 U*	-	-	*10.0 U*	-	-	*10.0 U*	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/L	n/v	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	0.002^A	*10.0 U*	-	-	*10.0 U*	-	-	*10.0 U*	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	n/v	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	0.002^A	*10.0 U*	-	-	*10.0 U*	-	-	*10.0 U*	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	0.002^A	*10.0 U*	-	-	*10.0 U*	-	-	*10.0 U*	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/L	50^A	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	50^A	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	0.002^A	*10.0 U*	-	-	*10.0 U*	-	-	*10.0 U*	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	10^B	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	50^A	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	50^A	10.0 U	-	-	10.0 U	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds																			
Acetone	µg/L	50^A	10.0 U	-	5.0 U	10.0 U	-	5.0 U	10.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U	5.0 U	5.0 U
Benzene	µg/L	1^B	**6.43^B**	-	**$1.9\ J^B$**	**0.703**	-	*5.0 U*	0.700 U	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	**0.77 J**	*5.0 U*	*5.0 U*	0.700 U	*5.0 U*	*5.0 U*
Bromodichloromethane	µg/L	50^A	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Bromoform (Tribromomethane)	µg/L	50^A	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Bromomethane (Methyl bromide)	µg/L	5_{**}^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Butylbenzene, n-	µg/L	5_{**}^B	2.00 U	-	**2.1 J**	**2.28**	-	**0.62 J**	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**1.5 J**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Butylbenzene, sec- (2-Phenylbutane)	µg/L	5_{**}^B	**3.78**	-	**3.1 J**	**20.9^B**	-	**12^B**	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**2.7 J**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Butylbenzene, tert-	µg/L	5_{**}^B	2.00 U	-	5.0 U	**4.03**	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Carbon Disulfide	µg/L	60^A	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Chlorobenzene (Monochlorobenzene)	µg/L	5_{**}^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Chloroethane (Ethyl Chloride)	µg/L	5_{**}^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	10.0 U	-	5.0 U	10.0 U	-	5.0 U	10.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	µg/L	7^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Chloromethane	µg/L	5_{**}^B	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dibromochloromethane	µg/L	50^A	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dichlorobenzene, 1,2-	µg/L	3^B	2.00 U	-	*5.0 U*	2.00 U	-	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*
Dichlorobenzene, 1,3-	µg/L	3^B	2.00 U	-	*5.0 U*	2.00 U	-	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*

See next page for notes.

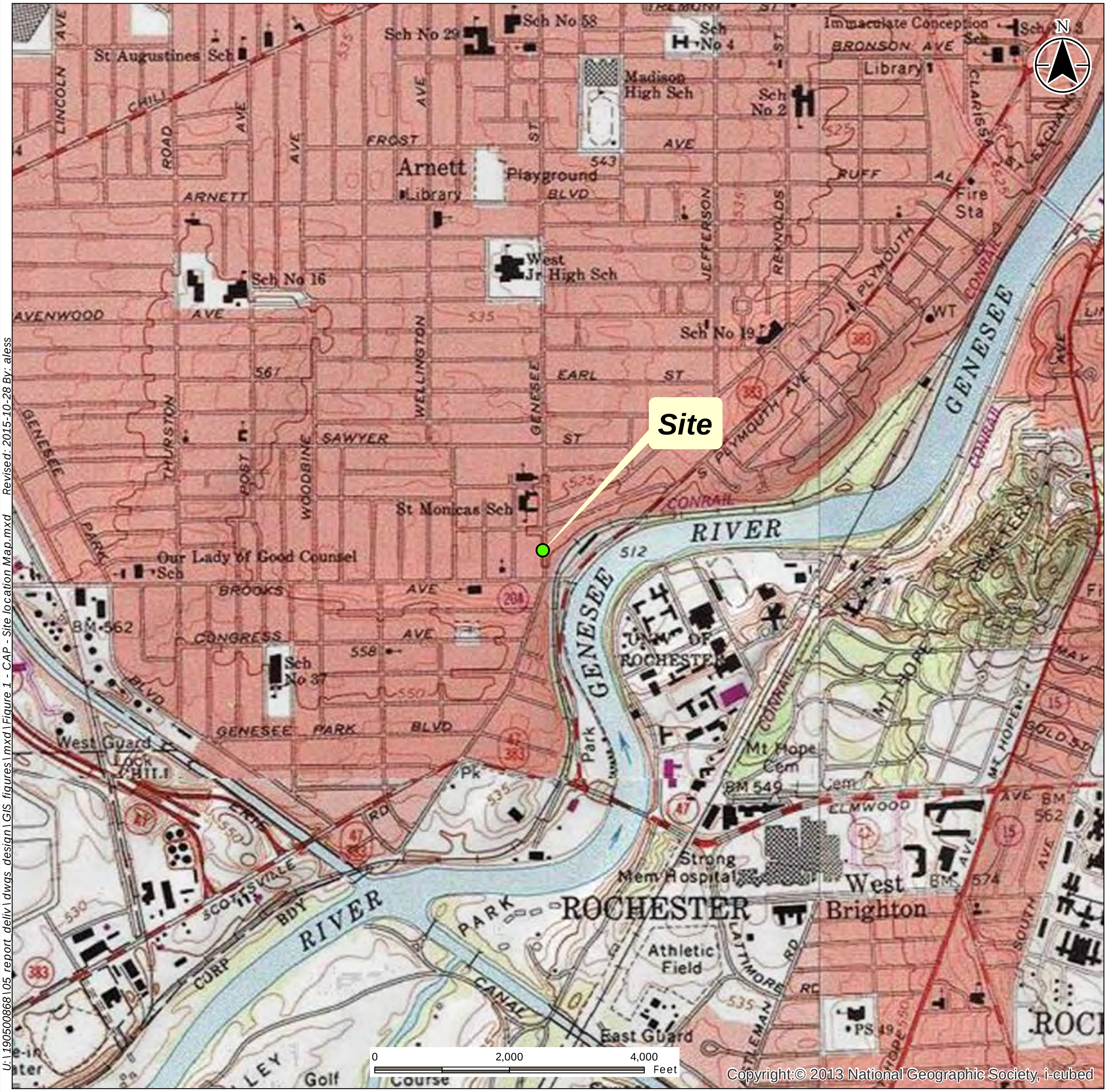
Table 8
Summary of Analytical Results in Groundwater
June 2011 and August 2012 Sampling
937 Genesee Street, Rochester, NY

Sample Location				**MW-3**			**MW-6**			**MW-7**	**MW-11**	**MW-12**	**MW-13**	**MW-14**	**MW-18**	**MW-19D**		**Trip Blank**	
Sample Date			**3-Jun-11**	**3-Jun-11**	**28-Aug-12**	**3-Jun-11**	**3-Jun-11**	**27-Aug-12**	**3-Jun-11**	**28-Aug-12**	**28-Aug-12**	**27-Aug-12**	**27-Aug-12**	**28-Aug-12**	**28-Aug-12**	**27-Aug-12**	**3-Jun-11**	**27-Aug-12**	**28-Aug-12**
Sample ID			**MW-3-GW**	**MW-3-GW**	**MW-3-W**	**MW-6-GW**	**MW-6-GW**	**MW-6-W**	**MW-7-GW**	**MW-7-W**	**MW-11-W**	**MW-12-W**	**MW-13-W**	**MW-14-W**	**MW-18-W**	**MW-19D-W**	**Trip Blank**	**TB-082712**	**TB-082812**
Sampling Company			**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**	**STANTEC**
Laboratory			**PARAROCH**	**PARAROCH**	**SPECTRUM**	**PARAROCH**	**PARAROCH**	**SPECTRUM**	**PARAROCH**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**SPECTRUM**	**PARAROCH**	**SPECTRUM**	**SPECTRUM**
Laboratory Work Order			**P11-2234**	**P11-2234R**	**L1835**	**P11-2234**	**P11-2234R**	**L1826**	**P11-2234**	**L1835**	**L1835**	**L1826**	**L1826**	**L1835**	**L1835**	**L1826**	**P11-2234**	**L1826**	**L1835**
Laboratory Sample ID			**7482**	**7482R**	**L1835-02**	**7483**	**7483R**	**L1826-04**	**7481**	**L1835-03**	**L1835-01**	**L1826-02**	**L1826-03**	**L1835-05**	**L1835-04**	**L1826-01**	**7480**	**L1826-05**	**L1835-06**
Sample Type	**Units**	**TOGS**															**Trip Blank**	**Trip Blank**	**Trip Blank**
Volatile Organic Compounds (cont'd)																			
Dichlorobenzene, 1,4-	µg/L	3^{B}	2.00 U	-	*5.0 U*	2.00 U	-	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*
Dichloroethane, 1,1-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dichloroethane, 1,2-	µg/L	0.6^{B}	*2.00 U*	-	*5.0 U*	*2.00 U*	-	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*
Dichloroethene, 1,1-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dichloroethylene, cis-1,2-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dichloroethylene, trans-1,2-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Dichloropropane, 1,2-	µg/L	1^{B}	*2.00 U*	-	*5.0 U*	*2.00 U*	-	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*
Dichloropropene, cis-1,3-	µg/L	0.4_{p}^{B}	*2.00 U*	-	*5.0 U*	*2.00 U*	-	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*
Dichloropropene, trans-1,3-	µg/L	0.4_{p}^{B}	*2.00 U*	-	*5.0 U*	*2.00 U*	-	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*
Ethylbenzene	µg/L	5_{**}^{B}	**54.8^{B}**	-	**71^{B}**	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**3.4 J**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50^{A}	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Isopropylbenzene	µg/L	5_{**}^{B}	**18.5^{B}**	-	**14^{B}**	**6.37^{B}**	-	**2.0 J**	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**9.6^{B}**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Isopropyltoluene, p- (Cymene)	µg/L	5_{**}^{B}	**4.85**	-	5.0 U	**5.42^{B}**	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Methyl Ethyl Ketone (MEK)	µg/L	50^{A}	10.0 U	-	5.0 U	10.0 U	-	5.0 U	10.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10.0 U	5.0 U	5.0 U
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Methyl tert-butyl ether (MTBE)	µg/L	10^{A}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Methylene Chloride (Dichloromethane)	µg/L	5_{**}^{B}	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Naphthalene	µg/L	10^{B}	**7.97**	-	**8.8**	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**2.2 J**	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Propylbenzene, n-	µg/L	5_{**}^{B}	**15.5^{B}**	-	**13^{B}**	**11.5^{B}**	-	**1.8 J**	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**11^{B}**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Styrene	µg/L	5_{**}^{B}	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Tetrachloroethane, 1,1,2,2-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Tetrachloroethylene (PCE)	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Toluene	µg/L	5_{**}^{B}	**7.01^{B}**	-	**1.4 J**	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**0.78 J**	5.0 U	**0.56 J**	2.00 U	5.0 U	5.0 U
Trichloroethane, 1,1,1-	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Trichloroethane, 1,1,2-	µg/L	1^{B}	*2.00 U*	-	*5.0 U*	*2.00 U*	-	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*2.00 U*	*5.0 U*	*5.0 U*
Trichloroethylene (TCE)	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Trichlorofluoromethane (Freon 11)	µg/L	5_{**}^{B}	2.00 U	-	5.0 U	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Trimethylbenzene, 1,2,4-	µg/L	5_{**}^{B}	**60.7^{B}**	-	**95^{B}**	**14.5^{B}**	-	5.0 U	2.00 U	**0.60 J**	5.0 U	5.0 U	5.0 U	**22^{B}**	5.0 U	**0.69 J**	2.00 U	5.0 U	5.0 U
Trimethylbenzene, 1,3,5-	µg/L	5_{**}^{B}	**55.7^{B}**	-	**15^{B}**	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**2.1 J**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Vinyl Acetate	µg/L	n/v	5.00 U	-	5.0 U	5.00 U	-	5.0 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.0 U	5.0 U
Vinyl chloride	µg/L	2^{B}	2.00 U	-	*5.0 U*	2.00 U	-	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	*5.0 U*	2.00 U	*5.0 U*	*5.0 U*
Xylene, m & p-	µg/L	5_{**}^{B}	**86.8^{B}**	-	**90^{B}**	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**5.4^{B}**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Xylene, o-	µg/L	5_{**}^{B}	**7.99^{B}**	-	**2.6 J**	2.00 U	-	5.0 U	2.00 U	5.0 U	5.0 U	5.0 U	5.0 U	**0.65 J**	5.0 U	5.0 U	2.00 U	5.0 U	5.0 U
Volatile Tentatively Identified Compounds																			
Total VOC TICs	µg/L	n/v	-	-	**317 JN**	-	-	**84 JN**	-	-	-	-	-	**236 JN**	-	-	-	-	-

Notes:

TOGS	NYSDEC TOGS 1.1.1 (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
A	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
B	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
6.5^{A}	Concentration exceeds the indicated standard.
15.2	Concentration was detected but did not exceed applicable standards.
0.50 U	Laboratory estimated quantitation limit exceeded standard.
0.03 U	The analyte was not detected above the laboratory estimated quantitation limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
**	The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
p	Applies to the sum of cis- and trans-1,3-dichloropropene.
x	Topsoil: surface A, L, F, H and O horizons on the control area, or the equivalent surface soil where these horizons are not present.
J	Indicates estimated value.
M	Denotes matrix spike recoveries outside QC limits. Matrix bias indicated.
N	Indicates presumptive evidence of a compound. Identification of tentatively identified compound is based on a mass spectral library search.

FIGURES



U:\190500868\05_report_deliv\dwgs_design\GIS_figures\mxd\Figure 1 - CAP - Site location Map.mxd Revised: 2015-10-28 By: aless

Stantec

Notes

1. Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

2. Source: USGS Map Rochester West Quad

Project Location:
937-941 Genesee Street
Rochester, NY

Prepared by	APL	on 2015-10-26
Technical Review by	BM	on 2015-10-26
Independent Review by	MPS	on 2015-10-26

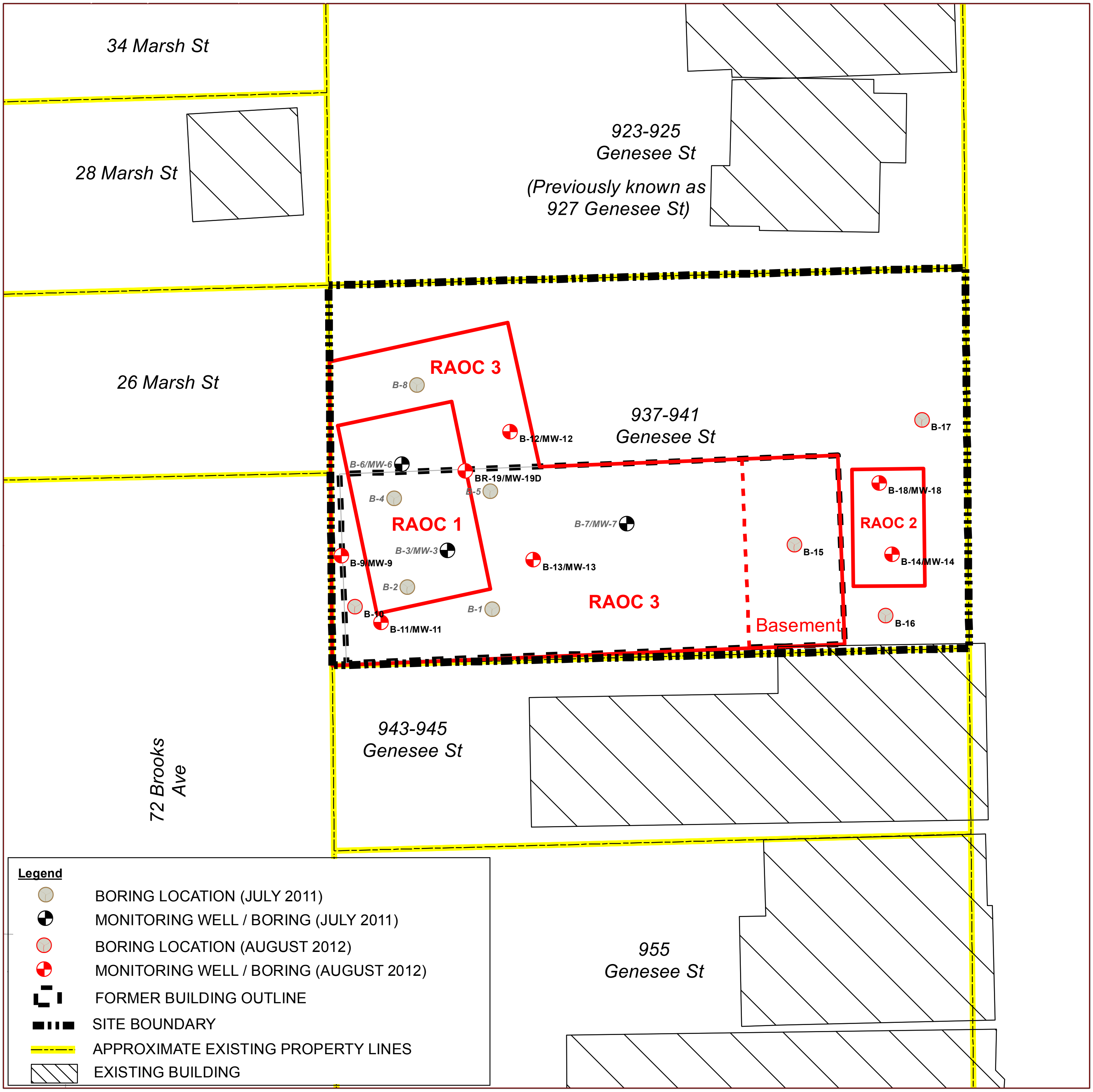
190500868

Client/Project
City of Rochester
Analysis of Brownfield Cleanup Alternatives
937-941 Genesee Street

Figure No.
1

Title

Site Location Map



U:\190500868\05_report_deliv\dwgs_design\GIS_figures\mxd\ABCA\Figure 2 - Monitoring Well & Boring Locations.mxd Revised: 2015-11-11 By: aless

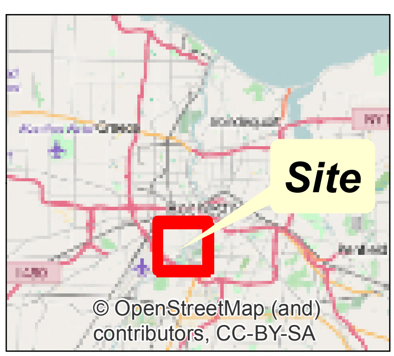
Stantec

30 15 0 30 Feet

1 inch = 20 feet

Notes

1. Coordinate System:
NAD 1983 StatePlane New York West FIPS 3103 Feet



Project Location:
937-941 Genesee Street
Rochester, NY

Prepared by APL on 2015-10-26
Technical Review by BM on 2015-10-26
Independent Review by MPS on 2015-10-26

190500868

Client/Project
City of Rochester
Corrective Action Plan
937-941 Genesee Street

Figure No.
2

Title
Remedial Areas of Concern