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

Prepared for:

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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 at the 937 Genesee Street Site (Site) located at 937-941 Genesee Street, Rochester, NY, as shown on Figure 1. 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 all three Remedial Areas of Concern (RAOCs). 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 Site (NYSDEC Spill No. 1206397) is located at 937-941 (aka 937) Genesee Street in the City of Rochester, Monroe County, New York (Monroe County Tax ID No. 135.34-2-36). It operated as an auto service shop from the middle 1910s through the early 1940s and as a dry cleaner from the middle 1940s through the middle 2000s.

1.2 PURPOSE AND CONTENT OF REPORT

This report presents an evaluation of alternatives for the remediation of the 937 Genesee Street Site (Site), as shown on Figure 1. The New York State Department of Environmental Conservation (NYSDEC) assigned Spill Number 1206397 to the Site. The project objective is to remediate the Site to the degree required to allow its redevelopment for restricted residential use, as per 6NYCRR Part 375 and NYSDEC's Commissioner Policy 51 (CP-51).

Stantec Consulting Services Inc. (Stantec) 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 all three Remedial Areas of Concern (RAOCs), 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 concerns, and the affected media, the recommended remedial approach is Alternative C.

The proposed remedial action includes the following:

- Decommissioning/ replacement of existing monitoring wells;
- Excavation and off-site disposal of impacted soils from RAOCs 1, 2 and 3;
- 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 a site management plan 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 and reviewed for preparation 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 prepared by Stantec for the City;
- a January 2003 Phase II ESA of 923-927 Genesee Street prepared by Stantec for the City;
- a December 2003 Phase II Site Investigation of 923-927 Genesee Street prepared by Stantec for the City;
- a July 2011 Phase II ESA of 937 Genesee Street prepared by Stantec for the City;
- a September 2012 Phase I ESA of 937 Genesee Street prepared by Stantec for the City;
- an October 2012 Supplemental Phase II ESA of 937 Genesee Street prepared by Stantec for the City;
- an October 2012 Microbial Insights Biotraps Analysis for 937 Genesee Street prepared by Stantec for the City; and
- an October 2012 Opinion of Probable Remedial Costs for 937 Genesee Street prepared by Stantec for the City.

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 dry cleaners 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 but 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. 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. Odors, considered to be nuisance characteristics, were observed in both soil and groundwater. The TPH analysis indicated that the B-2 sample contained a medium weight petroleum hydrocarbon matching the lab's diesel fuel standard. B-3 contained medium weight kerosene and heavy weight lube oil, B-4 contained light weight mineral spirits and heavy weight lube oil, B-6 contained light weight mineral spirits, and SED-1, which was collected from the sediment in the manhole, contained medium weight kerosene and heavy weight lube oil. The lab's mineral spirits standard is a mixture of the several very 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 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 for VOCs were detected in MW-3 and MW-6, and a slight exceedance for selenium was detected in MW-7. 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 Dr. Richard Young's Groundwater Contour Maps of Monroe County (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 slight flow 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 at 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 cleaners 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 from 1947 through 1961 for a 250-gallon solvent tank.

- 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. 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 B-19. Exceedances of groundwater standards for VOCs were detected in MW-3, MW-6, and MW-14. The greatest concentrations were reported 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 B-3/MW-3 and B-14/MW-14, 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 western most 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 eastern most 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 the angled borings at the western property boundary, there was no information to suggest 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 degraders were present 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 viable at that time.

Benzyl succinate synthase is an indicator of anaerobic petroleum hydrocarbon degradation. The results were below quantification limits for 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 restricted residential and/or commercial redevelopment activities at the Site are anticipated, remedial excavation work is anticipated on-site, and 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 at 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 a Site Management Plan (SMP).

2.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

6 NYCRR Part 375 Restricted Residential Soil Cleanup Objectives (SCOs) and NYSDEC's Commissioner Policy 51 (CP-51) Restricted Residential SCOs were 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 a Site Management Plan (SMP) for potential future disturbances (e.g., utility 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, as per State code, Class GA drinking water-based standards are the applicable SCGs for groundwater. CoCs in groundwater were selected based on exceedances of 6 NYCRR Part 703 Class GA Groundwater Standards, and NYSDEC Technical and Operational Guidance Series 1.1.1: Ambient Water Quality Standards and Guidance Values (GSGVs) and Groundwater Effluent Limitations dated June 1998, revised June 2004.

In the event that it is not feasible to achieve the applicable SCOs for soil and/or the GSGVs for groundwater, site-specific cleanup levels will be established for the Site that, in conjunction with institutional and engineering controls, will attain conditions protective of public health and the environment for the intended and reasonably anticipated use of the Site.

In order to protect occupants of future buildings, sub-slab depressurization systems (SSDSs) will need to be installed, or post-remedial soil gas sampling will be required to confirm that SSDSs are not necessary based on the Human Health Risk Assessment guidelines outlined in NYSDEC DER-10 and the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006,.

2.3 CLEANUP OVERSIGHT RESPONSIBILITY

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. Table 1 presents an alternatives analysis matrix for the three alternatives. Design assumptions are presented in Table 2. Costs for these alternatives are presented in Tables 3 – 5.

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.
B. Excavation	This alternative includes the excavation and off-site disposal of impacted materials from all three RAOCs 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 excavations that creates aerobic conditions and accelerates VOC degradation in groundwater. Enhanced MNA would only be applied to RAOC 1 and RAOC 2 since they are the only areas with VOC impacts 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 concerns, 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 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 A reduces toxicity, mobility and volume of contamination, should meet ARARs, and therefore would be protective of the environmental or 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 Site Management Plan (SMP) in order to manage potential future disturbances of residual contamination. Following completion of the remedial measures, it is anticipated the property will be able to be reused to its full potential 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 reported between 2± and 15± ft. bgs. In conjunction, impacted groundwater was reported in RAOC 1 beginning at a depth of 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 depth of 15 ft., totaling an estimated 560± CY of soil (Figure 2). A 1,250± sq. ft. area of asphalt from the parking area immediately north of RAOC 1 will need to be removed and disposed of offsite, then restored with crusher run. Contingent on excavation wall stability, potential 1:2 sloping would require the removal of an additional estimated soil volume of 310± CY that would be reused onsite as clean backfill. Removal of the concrete slab over RAOC 1 is included in this recommendation. In situ groundwater treatment is recommended to address residual groundwater impacts. This would involve applying an estimated 500 lbs. of ORC™ or EHC-O™, an oxygen additive, to the open excavation to assist in addressing residual VOC impacted groundwater.

Following excavation and the application of an oxygen additive to the excavation, up to two years of groundwater monitoring would be conducted to verify the effectiveness of the remedial measures.

3.1.2 RAOC 2 Remedy

Within RAOC 2, soil with VOC impacts has been reported between 4± and 16± ft. bgs. Impacted groundwater was also reported in RAOC 2 beginning at a depth of 10.7± ft. bgs. To address these impacts, Alternative C is recommended. This alternative involves excavation and off-site disposal of soil from a 375± sq. ft. area to an estimated depth of 15 ft., totaling an estimated 210± CY of soil (Figure 2). A 375± sq. ft. area of asphalt over RAOC 2 will need to be removed and disposed of offsite, then restored with crusher run. Contingent on excavation wall stability, potential 1:2 sloping would require the removal of an additional estimated soil volume of 210± CY that would be reused onsite as clean backfill. In situ groundwater treatment is recommended to address residual groundwater impacts. This would involve applying an estimated 200 lbs. of ORC™ or EHC-O™, an oxygen additive, to the open excavation to assist in addressing residual VOC impacted groundwater.

Following excavation and the application of an oxygen additive to the excavation, up to two years of groundwater monitoring would be conducted to verify the effectiveness of the remedial measures.

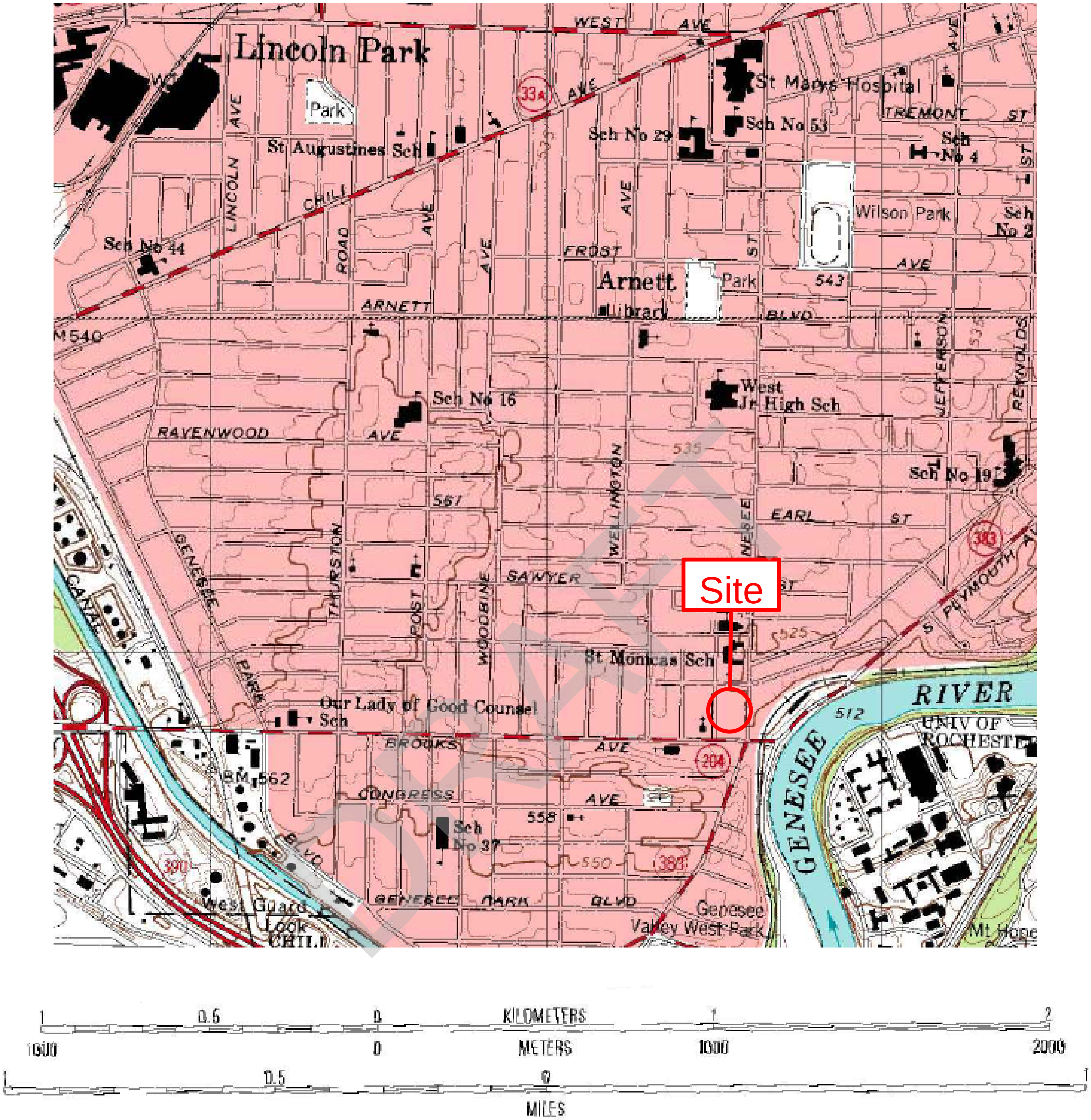
3.1.3 RAOC 3 Remedy

Within RAOC 3, soil with SVOC and metals impacts has been reported between 0 and 2 ft. bgs Alternative C will involve excavation and off-site disposal of 210 CY± of impacted soil (Figure 2). Soils at greater depths are considered unlikely to create significant human health or ecological exposure pathways and are therefore not recommended for removal, however confirmatory soil sampling will be conducted to evaluate residual concentrations to determine if a clean soil cover is needed.

3.1.4 Soil Vapor Remedy

To address potential residual vapors, the concrete slab and portions of the asphalt parking surface (refer to Figure 2) will be removed as part of the remedial action at the Site to allow for evaluation of subsurface conditions and to eliminate their potential capping effect. The concrete slab covers an area of approximately 4,200 sq. ft. and is estimated to be approximately 10 inches thick. The surface area of asphalt requiring removal is approximately 1,250 sq. ft. and the asphalt is assumed to be approximately 2 inches thick. An estimated 130± CY of concrete slab and 12± CY of asphalt are estimated for removal and off-site disposal, followed by restoration with up to 12 inches of crushed stone. In addition, future buildings at the Site will need to be designed and constructed such that a sub-slab depressurization system can be operated to address potential volatile organic vapor concerns that may remain following implementation of the remedial action.

FIGURES



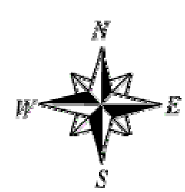


Figure 1

Site Location Map

937 Genesee Street
City of Rochester, Monroe County, New York

Source: USGS Topographic Map (Rochester West)

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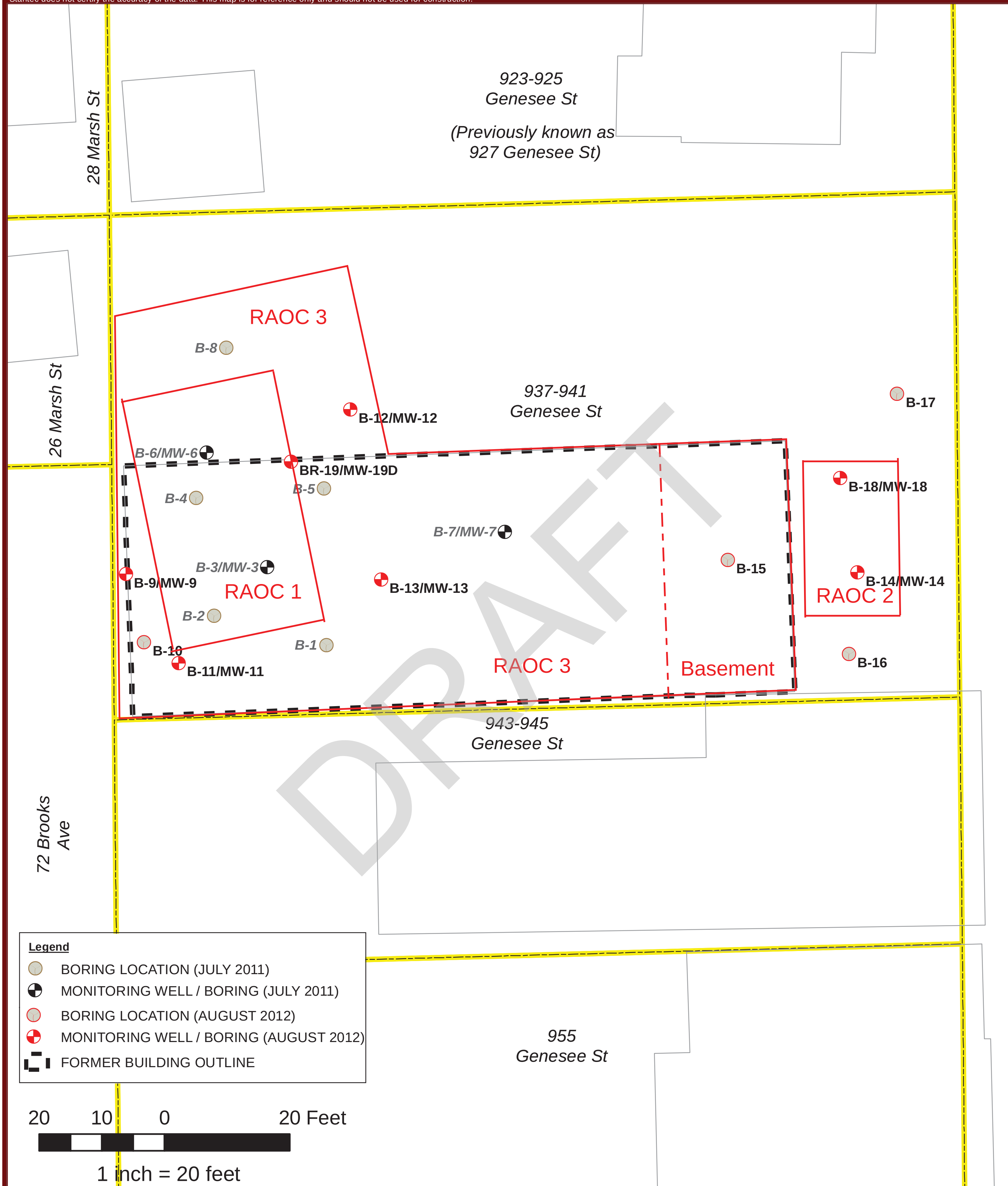

Geographic Information Systems Cartographic Design By: Andrew Less and Katie Premo

Path: U:\190500696\drawing\GIS\Figure 2 - Monitoring Well & Boring Locations.mxd

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FIG. 2

REMEDIAL AREAS OF CONCERN MAP

937 GENESEE STREET, ROCHESTER , NY

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		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 level residual impacts.	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 EHC-O or ORC 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.	$421,000	- Low capital costs. - Highest OM&M costs of all alternatives, due to the possible 30 year monitoring program. (See Table 3). - Costs include 10% contingency.	- 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.	$357,800	- 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. - Costs include 10% contingency	- 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.	$400,800	- Minor increase in capital costs due to EMNA and groundwater monitoring. - OM&M costs are less than MNA due to decreased monitoring time. - Costs include 10% contingency.	- 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.

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.
9 - 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.
8 - 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. For the purposes of the OPC, RAOC 3 includes the entire area beneath the concrete slab and limited areas north of the slab under asphalt.

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 presented separately from soil excavation costs.
- Excavation volumes are based on 1:2 slopes.
- 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 up to 2 years of quarterly groundwater sampling to evaluate contaminant reduction progress from source removal and ORC enhancement.

General Assumptions:

- All costs are in constant fiscal year 2012 dollars.
- Soil density is assumed to be 1.7 Tons/CY.
- Concrete and asphalt density is assumed to be 2 Tons/CY.
- Prevailing wage rates are assumed.
- The OPCs were prepared without the formal solicitation of contractor bids, and are therefore based upon related project experience, anticipated field conditions, and the estimated scope of work.
- Project-specific unit rates will need to be developed once regulatory review and approval processes are completed

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

					RAOC 1			RAOC 2			RAOC 3			Basement		
		Overall			(14-feet thick)			(10-feet thick)			(1-foot thick)			(9-feet thick)		
		Overall			Manhole / Dry Well Area			MW-14 Area			Fill			Basement		
					Non-Hazardous			Non-Hazardous			Non-Hazardous			Non-Hazardous - Onsite Reuse		
DESCRIPTION	**UNIT**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**
Implementation																
Remedial Design Investigation (RDI) - 1 day Geoprobe program	LS		$1,500	$0												
RDI Soil Analytical	EACH		$300	$0												
Geophysical Survey	LS		$2,000	$0												
Equipment Mob/ Demob	LS		$3,000	$0												
Decon/Staging Areas/HASP	LS		$3,000	$0												
Monitoring Well Decommissioning (MW-3, MW-6, MW-7, MW-9, MW-11, MW-13, MW-14, MW-18, MW-19D)	LS		$1,000	$0												
Removal Concrete Slab and Staging (10 inches thick)	CY		$30	$0												
Removal Asphalt and Staging (3 inches thick)	CY		$30	$0												
Soil Excavation and Staging	CY					$15	$0		$15	$0		$15	$0		$15	$0
Sidewall Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA					$150	$0		$150	$0		$300	$0		$0	$0
Bottom Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA					$150	$0		$150	$0		$300	$0		$0	$0
Pumping/Handling/Storage of Water from Excavations	LS		$4,000	$0												
Remove bollards along Genesee Street for access, install site access fencing.	LS		$4,000	$0												
Install temporary fencing (~ 5 ft away from perimeter of excavation)	LF					$3	$0		$3	$0		$3	$0		$3	$0
Sample clean backfill from on-site	EACH		$450	$0											$450	$0
Backfill with ORC additive	Pounds					$10	$0		$10	$0		$10	$0		$10	$0
Install and compact clean backfill from on-site	CY					$8	$0		$8	$0		$8	$0		$8	$0
Import, Install and Compact clean backfill from off-site borrow source	CY					$32	$0		$32	$0		$32	$0		$32	$0
Site Restoration (12-inches crusher run stone over excavated areas)	CY					$40	$0		$40	$0		$40	$0		$40	$0
2-inch dia. Monitoring Well Installation (replacements for MW-3, MW-14, western boundary, and southern boundary)	EACH		$1,200	$0												
30 Years of Quarterly Groundwater Monitoring (5 wells for USEPA TCL/NYSDEC STARS VOCs, Cat B) includes standard T.A.T.	EACH	810	$150	$121,500												
Waste Characterization	EACH					$1,000	$0		$1,000	$0		$1,000	$0		$1,000	$0
Handling/Storage of Water from Wells	DRUM	30	$500	$15,000												
					Solid Waste Facility			Solid Waste Facility			Solid Waste Facility			Solid Waste Facility		
Load, Transport, and Dispose of Soils	Tons					$55	$0		$55	$0		$55	$0		$55	$0
Concrete and asphalt	Tons		$15	$0											$15	$0
Total Implementation				$136,500			$0			$0			$0			$0
Total Implementation plus 8% tax				**$147,420**			**$0**			**$0**			**$0**			**$0**
Engineering																
Construction/Bid Documents	LS		$7,500	$0												
Remedial Design Investigation	LS		$3,000	$0												
Corrective Action Plan Development	LS	0	$7,500	$0												
DUSR per event, including RDI, Excavation, and GW Monitoring	EACH	120	$275	$33,000												
EPA Program Documents	LS	0	$5,000	$0												
Construction Oversight including CAMP for excavations	DAY		$1,100	$0	0	$1,550	$0	0	$1,550	$0	0	$1,550	$0	0	$1,550	$0
GIS Modeling and Geospatial Database	LS		$5,000	$0												
Remedial Construction Report	LS	0	$7,500	$0												
Site Management Plan	LS	1	$7,500	$7,500												
Groundwater Monitoring Events	EACH	120	$1,500	$180,000												
Total Engineering				$220,500			$0			$0			$0			$0
Construction Management (10%)				$14,742			$0			$0			$0			$0
Total Engineering including Construction Management Markup				**$235,242**			**$0**			**$0**			**$0**			**$0**
Opinion of Probable Cost				**$382,662**			**$0**			**$0**			**$0**			**$0**

DISPOSAL COST			TOTAL IMPLEMENTATION PLUS 8% TAX	TOTAL ENGINEERING	TOTAL CONSTRUCTION MANAGEMENT (10%)	TOTAL COST	
Soil Disposal Cost	Concrete Disposal Cost	Total soil and concrete				without contingency	with 10% contingency
$0	$0	$0	$147,420	$220,500	$14,742	$382,662	$420,928

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

OPINION OF PROBABLE REMEDIAL COST - ALTERNATIVE B - EXCAVATION

					RAOC 1			RAOC 2			RAOC 3			Basement		
		Overall			(14-feet thick)			(10-feet thick)			(1-foot thick)			(9-feet thick)		
		Overall			Manhole / Dry Well Area			MW-14 Area			Fill			Basement		
					Non-Hazardous			Non-Hazardous			Non-Hazardous			Non-Hazardous - Onsite Reuse		
DESCRIPTION	**UNIT**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**
Implementation																
Remedial Design Investigation (RDI) - 1 day Geoprobe program	LS	1	$1,500	$1,500												
RDI Soil Analytical	EACH	10	$300	$3,000												
Geophysical Survey	LS	1	$2,000	$2,000												
Equipment Mob/ Demob	LS	1	$3,000	$3,000												
Decon/Staging Areas/HASP	LS	1	$3,000	$3,000												
Monitoring Well Decommissioning (MW-3, MW-6, MW-7, MW-9, MW-11, MW-13, MW-14, MW-18, MW-19D)	LS	9	$1,000	$9,000												
Removal Concrete Slab and Staging (10 inches thick)	CY	130	$30	$3,900												
Removal Asphalt and Staging (3 inches thick)	CY	12	$30	$347												
Soil Excavation and Staging	CY				870	$15	$13,050	420	$15	$6,300	210	$15	$3,150	370	$15	$5,550
Sidewall Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA				5	$150	$750	5	$150	$750	15	$300	$4,500	0	$0	$0
Bottom Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA				5	$150	$750	5	$150	$750	10	$300	$3,000	0	$0	$0
Pumping/Handling/Storage of Water from Excavations	LS	1	$4,000	$4,000												
Remove bollards along Genesee Street for access, install site access fencing.	LS	1	$4,000	$4,000												
Install temporary fencing (~ 5 ft away from perimeter of excavation)	LF				150	$3	$450	100	$3	$300	0	$3	$0	150	$3	$450
Sample clean backfill from on-site	EACH	8	$450	$3,600										6	$450	$2,700
Backfill with ORC additive	Pounds					$10	$0		$10	$0	0	$10	$0	0	$10	$0
Install and compact clean backfill from on-site	CY				350	$8	$2,800	280	$8	$2,240	0	$8	$0	370	$8	$2,960
Import, Install and Compact clean backfill from off-site borrow source	CY				520	$32	$16,640	140	$32	$4,480	0	$32	$0	0	$32	$0
Site Restoration (12-inches crusher run stone over excavated areas)	CY				0	$40	$0	50	$40	$2,000	210	$40	$8,400	0	$40	$0
2-inch dia. Monitoring Well Installation (replacements for MW-3, MW-14, western boundary, and southern boundary)	EACH		$1,200	$0												
2 Years of Quarterly Groundwater Monitoring (5 wells for USEPA TCL/NYSDEC STARS VOCs, Cat B) includes standard T.A.T.	EACH		$150	$0												
Waste Characterization	EACH				2	$1,000	$2,000	1	$1,000	$1,000	1	$1,000	$1,000	0	$1,000	$0
					Solid Waste Facility			Solid Waste Facility			Solid Waste Facility			Solid Waste Facility		
Load, Transport, and Dispose of Soils	Tons				890	$55	$48,950	240	$55	$13,200	360	$55	$19,800	0	$55	$0
Concrete and asphalt	Tons	283	$15	$4,247										125	$15	$1,875
Total Implementation				$41,594			$85,390			$31,020			$39,850			$13,535
Total Implementation plus 8% tax				**$44,922**			**$92,221**			**$33,502**			**$43,038**			**$14,618**
Engineering																
Construction/Bid Documents	LS	1	$7,500	$7,500												
Remedial Design Investigation	LS	1	$3,000	$3,000												
Corrective Action Plan Development	LS	1	$7,500	$7,500												
DUSR per event, including RDI, Excavation, and GW Monitoring	EACH	3	$275	$825												
EPA Program Documents	LS	1	$5,000	$5,000												
Construction Oversight including CAMP for excavations	DAY	5	$1,100	$5,500	7	$1,550	$10,850	4	$1,550	$6,200	2	$1,550	$3,100	3	$1,550	$4,650
GIS Modeling and Geospatial Database	LS	1	$5,000	$5,000												
Remedial Construction Report	LS	1	$7,500	$7,500												
Site Management Plan	LS	1	$7,500	$7,500												
Groundwater Monitoring Events	EACH		$1,500	$0												
Total Engineering				$49,325			$10,850			$6,200			$3,100			$4,650
Construction Management (10%)				$4,492			$9,222			$3,350			$4,304			$1,462
Total Engineering including Construction Management Markup				**$53,817**			**$20,072**			**$9,550**			**$7,404**			**$6,112**
Opinion of Probable Cost				**$98,739**			**$112,293**			**$43,052**			**$50,442**			**$20,730**

DISPOSAL COST			TOTAL IMPLEMENTATION PLUS 8% TAX	TOTAL ENGINEERING	TOTAL CONSTRUCTION MANAGEMENT (10%)	TOTAL COST	
Soil Disposal Cost	Concrete Disposal Cost	Total soil and concrete				without contingency	with 10% contingency
$81,950	$4,247	$86,197	$228,301	$74,125	$22,830	$325,256	$357,781

Notes:
1.7 tons/yard for soil
2 tons/yard for concrete
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 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

					RAOC 1			RAOC 2			RAOC 3			Basement		
		Overall			(14-feet thick)			(10-feet thick)			(1-foot thick)			(9-feet thick)		
		Overall			Manhole / Dry Well Area			MW-14 Area			Fill			Basement		
					Non-Hazardous			Non-Hazardous			Non-Hazardous			Non-Hazardous - Onsite Reuse		
DESCRIPTION	**UNIT**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**	**QTY**	**UNIT COST $**	**COST $**
Implementation																
Remedial Design Investigation (RDI) - 1 day Geoprobe program	LS	1	$1,500	$1,500												
RDI Soil Analytical	EACH	10	$300	$3,000												
Geophysical Survey	LS	1	$2,000	$2,000												
Equipment Mob/ Demob	LS	1	$3,000	$3,000												
Decon/Staging Areas/HASP	LS	1	$3,000	$3,000												
Monitoring Well Decommissioning (MW-3, MW-6, MW-7, MW-9, MW-11, MW-13, MW-14, MW-18, MW-19D)	LS	9	$1,000	$9,000												
Removal Concrete Slab and Staging (10 inches thick)	CY	130	$30	$3,900												
Removal Asphalt and Staging (3 inches thick)	CY	12	$30	$347												
Soil Excavation and Staging	CY				870	$15	$13,050	420	$15	$6,300	210	$15	$3,150	370	$15	$5,550
Sidewall Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA				5	$150	$750	5	$150	$750	15	$300	$4,500	0	$0	$0
Bottom Confirmatory Soil Sampling - Cat B, TCL/STARS VOCs in RAOC-1 and RAOC-2, SVBNs and RCRA Metals in RAOC-3	EA				5	$150	$750	5	$150	$750	10	$300	$3,000	0	$0	$0
Pumping/Handling/Storage of Water from Excavations	LS	1	$4,000	$4,000												
Remove bollards along Genesee Street for access, install site access fencing.	LS	1	$4,000	$4,000												
Install temporary fencing (~ 5 ft away from perimeter of excavation)	LF				150	$3	$450	100	$3	$300	0	$3	$0	150	$3	$450
Sample clean backfill from on-site	EACH	8	$450	$3,600										6	$450	$2,700
Backfill with ORC additive	Pounds				500	$10	$5,000	200	$10	$2,000	0	$10	$0	0	$10	$0
Install and compact clean backfill from on-site	CY				350	$8	$2,800	280	$8	$2,240	0	$8	$0	370	$8	$2,960
Import, Install and Compact clean backfill from off-site borrow source	CY				520	$32	$16,640	140	$32	$4,480	0	$32	$0	0	$32	$0
Site Restoration (12-inches crusher run stone over excavated areas)	CY				0	$40	$0	50	$40	$2,000	210	$40	$8,400	0	$40	$0
2-inch dia. Monitoring Well Installation (replacements for MW-3, MW-14, western boundary, and southern boundary)	EACH	4	$1,200	$4,800												
2 Years of Quarterly Groundwater Monitoring (5 wells for USEPA TCL/NYSDEC STARS VOCs, Cat B) includes standard T.A.T.	EACH	54	$150	$8,100												
Waste Characterization	EACH				2	$1,000	$2,000	1	$1,000	$1,000	1	$1,000	$1,000	0	$1,000	$0
Handling/Storage/Disposal of Water from Wells	DRUM	2	$500	$1,000												
					Solid Waste Facility			Solid Waste Facility			Solid Waste Facility			Solid Waste Facility		
Load, Transport, and Dispose of Soils	Tons				890	$55	$48,950	240	$55	$13,200	360	$55	$19,800	0	$55	$0
Concrete and asphalt	Tons	283	$15	$4,247										125	$15	$1,875
Total Implementation				$55,494			$90,390			$33,020			$39,850			$13,535
Total Implementation plus 8% tax				**$59,934**			**$97,621**			**$35,662**			**$43,038**			**$14,618**
Engineering																
Construction/Bid Documents	LS	1	$7,500	$7,500												
Remedial Design Investigation	LS	1	$3,000	$3,000												
Corrective Action Plan Development	LS	1	$7,500	$7,500												
DUSR per event, including RDI, Excavation, and GW Monitoring	EACH	11	$275	$3,025												
EPA Program Documents	LS	1	$5,000	$5,000												
Construction Oversight including CAMP for excavations	DAY	5	$1,100	$5,500	7	$1,550	$10,850	4	$1,550	$6,200	2	$1,550	$3,100	3	$1,550	$4,650
GIS Modeling and Geospatial Database	LS	1	$5,000	$5,000												
Remedial Construction Report	LS	1	$7,500	$7,500												
Site Management Plan	LS	1	$7,500	$7,500												
Groundwater Monitoring Events	EACH	8	$1,500	$12,000												
Total Engineering				$63,525			$10,850			$6,200			$3,100			$4,650
Construction Management (10%)				$5,993			$9,762			$3,566			$4,304			$1,462
Total Engineering including Construction Management Markup				**$69,518**			**$20,612**			**$9,766**			**$7,404**			**$6,112**
Opinion of Probable Cost				**$129,452**			**$118,233**			**$45,428**			**$50,442**			**$20,730**

DISPOSAL COST			TOTAL IMPLEMENTATION PLUS 8% TAX	TOTAL ENGINEERING	TOTAL CONSTRUCTION MANAGEMENT (10%)	TOTAL COST	
Soil Disposal Cost	Concrete Disposal Cost	Total soil and concrete				without contingency	with 10% contingency
$81,950	$4,247	$86,197	$250,873	$88,325	$25,087	$364,285	$400,713

Notes:
1.7 tons/yard for soil
2 tons/yard for concrete
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	14	520	350
				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	10	140	280
				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	1	1	210	0
Basement								9	0	0	370
								Estimated Total		**660**	**630**

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

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.

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

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.