SUPPLEMENTAL FEASIBILITY STUDY
TECHNICAL MEMORANDUM FOR OPERABLE UNIT 1
FOR THE
NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE
NASSAU COUNTY, NEW YORK

KCUSACE CONTRACT NUMBER: W912DQ-11-D-3007
TASK ORDER NUMBER: 0009

Prepared for:
UNITED STATES ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
601 East 12th Street
Kansas City, MO 64106

Prepared by:

HDR | O'Brien & Gere Joint Venture
One Blue Hill Plaza
Pearl River, NY 10965
and
1090 King Georges Post Road, Suite 904
Edison, NJ 08837

HDR|OBG JV

JULY 2013

687590

R2-0012116

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
1.1 PURPOSE 1-2
2.0 OU1 DESCRIPTION AND HISTORY 2-3
2.1 OU1 DESCRIPTION 2-3
2.2 GEOLOGY AND HYDROGEOLOGY 2-3
3.0 SUMMARY OF REMEDIAL INVESTIGATIONS 3-1
3.1 REGULATORY HISTORY AND PREVIOUS INVESTIGATIONS 3-1
3.1.1 NYSDEC Remedial Investigations 3-1
3.1.2 Pre-Design Investigations 3-3
3.2 NATURE AND EXTENT OF CONTAMINATION 3-7
4.0 REMEDIAL ACTION CLEANUP GOALS AND OBJECTIVES 4-1
4.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 4-1
4.2 BASELINE HUMAN HEALTH RISK ASSESSMENT 4-1
4.3 REMEDIAL ACTION OBJECTIVES AND GOALS 4-2
5.0 DEVELOPMENT OF ALTERNATIVES 5-1
5.1 DEVELOPMENT OF UPDATED COST ESTIMATES 5-1
5.1.1 Alternatives 1-3: Passive Alternatives 5-2
5.1.2 Alternatives 4A – 8A: In-Well Vapor Stripping 5-2
5.1.2.1. Vapor Treatment 5-5
5.1.2.2. System Performance Monitoring 5-5
5.1.3 Alternatives 4B – 7B: Groundwater Extraction 5-7
5.1.3.1. Groundwater Treatment and Discharge 5-7
5.1.3.2. System Performance Monitoring 5-8
5.2 DEVELOPMENT OF ALTERNATIVE 8B 5-9
5.3 IN SITU CHEMICAL OXIDATION 5-12
5.4 DEVELOPMENT OF ALTERNATIVE 9 5-14
6.0 DETAILED EVALUATION OF ALTERNATIVES 6-1
6.1 INTRODUCTION 6-1
6.2 INDIVIDUAL ANALYSIS OF ALTERNATIVE 8B 6-3
6.3 INDIVIDUAL ANALYSIS OF ALTERNATIVE 9 6-7
6.4 UPDATED COST ANALYSIS OF ALTERNATIVES 6-13
6.5 UPDATED COMPARATIVE ANALYSIS OF ALTERNATIVES 6-13
6.5.1 Overall Protection of Human Health and the Environment 6-13
6.5.2 Compliance with ARARs 6-15
6.5.3 Long Term Effectiveness and Permanence 6-16
6.5.4 Reduction of Toxicity, Mobility, or Volume 6-17
6.5.5 Short Term Impacts and Effectiveness 6-18
6.5.6 Implementability 6-19

6.5.7 Relative Cost 6-22
7.0 REFERENCES 7-1
8.0 GLOSSARY OF ACRONYMS AND ABBREVIATIONS 8-1

R2-0012118

LIST OF FIGURES

Figure 2-1 Site Location Map
Figure 3-1 Summary of Groundwater Analytical Results from Non-Permanent Monitoring Well Locations
Figure 3-2 PCE Iso-Concentration Map
Figure 3-3 TCE Iso-Concentration Map
Figure 3-4 TCA Iso-Concentration Map
Figure 3-5 Eastern Plume Cross Section Plan View
Figure 3-6 Eastern Plume Cross Section View
Figure 3-7 Summary of Groundwater Analytical Results from Permanent Monitoring Well Locations

Figure 5-1 ART System Diagram
Figure 5-2 Alternative 8A In-Well Vapor Stripping/Vapor Treatment: Full Plume Remediation of Aquifer
Figure 5-3 Alternative 8B Groundwater Extraction/Air Stripping: Full Plume Remediation of Aquifer
Figure 5-4 Alternative 9 Combined In-Well Vapor Stripping and Groundwater Extraction/Air Stripping: Full Plume Remediation of Aquifer

LIST OF TABLES

Table 4-1 Summary of ARARs and TBCs
Table 4-2 NYS Class GA and Federal MCL/MCLGs Groundwater Quality Standards
Table 5-1 In-Well Vapor Stripping NYSDEC's FS Assumptions
Table 5-2 Increase in In-Well Vapor Stripping Wells
Table 5-3 Increase in Flow Rates
Table 6-1 Evaluation of Alternatives
Table 6-2 Cost Estimate for Alternative 8B
Table 6-3 Cost Estimate for Alternative 9
Table 6-4 Cost Estimate for Alternative 1
Table 6-5 Cost Estimate for Alternative 2
Table 6-6 Cost Estimate for Alternative 3
Table 6-7 Cost Estimate for Alternative 4A
Table 6-8 Cost Estimate for Alternative 4B
Table 6-9 Cost Estimate for Alternative 5A
Table 6-10 Cost Estimate for Alternative 5B
Table 6-11 Cost Estimate for Alternative 6A
Table 6-12 Cost Estimate for Alternative 6B
Table 6-13 Cost Estimate for Alternative 7A

Table 6-14 Cost Estimate for Alternative 7B
Table 6-15 Cost Estimate for Alternative 8A

LIST OF APPENDICES

Appendix A Groundwater Analytical Results Summary Table
Appendix B NYSDEC's FS Layouts for Alternatives 4A&B – 7A&B

R2-0012120

1.0 INTRODUCTION

This Technical Memorandum for Operable Unit (OU) 1 at the New Cassel/Hicksville Groundwater Contamination Superfund Site was prepared by Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. (HDR) under the Army Corp of Engineers Kansas City District (USACE KC) Contract Number W912DQ-11-D-3007, Task Order Number 0009. The New Cassel/Hicksville Groundwater Contamination Superfund Site (Site) comprises a widespread area of groundwater contamination within the Towns of Hempstead, North Hempstead and Oyster Bay, New York. The New Cassel Industrial Area (NCIA) encompasses approximately 170 acres of land and is bounded by the Long Island Railroad to the north, Frost Street to the east, Old Country Road to the south, and Grand Boulevard to the southwest. The NCIA is a developed industrial and commercial area that has multiple sites listed on the New York State Registry of Inactive Hazardous Waste Sites. This Technical Memorandum addresses groundwater contamination down gradient of the NCIA, designated as OU1 at the Site.

In October 2003, The New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) to address groundwater contamination down gradient or south of the NCIA, which was identified in the NYSDEC's ROD as the "NCIA Off-site Groundwater" or Operable Unit No. 3 (OU3). The term "OU3" is the geographical designation that NYSDEC assigned to a portion of the area that EPA has designated as OU1. NYSDEC determined that a variety of disposal activities within the NCIA have resulted in the disposal of hazardous wastes, including 1,1,1-trichloroethane (1,1,1- TCA), tetrachloroethylene (PCE), and trichloroethylene (TCE), which are considered to be chlorinated volatile organic compounds (CVOCs), some of which were released or have migrated from the NCIA sites to surrounding areas, including the area bordering the NCIA south of Old Country Road and Grand Boulevard.

The NYSDEC's ROD selected full plume remediation of upper and deep portions of the aquifer (to 225 feet below ground surface (bgs)) with in-well vapor stripping/localized vapor treatment for the area down gradient of the NCIA. The NYSDEC's ROD also provided for use of a contingency remedy using groundwater extraction and ex situ treatment, if a pilot study determined the selected remedy to be less practical due to engineering or economics reasons. In 2009 a pre-design investigation (PDI) was completed by Dvirka and Bartilucci Consulting Engineers (D&B). Results of the PDI determined the aquifer to be anisotropic[1] and as a result D&B concluded that in-well vapor stripping would not be an effective technology for remediating the groundwater. NYSDEC then switched the remedial technology to the contingency remedy of groundwater extraction and ex situ treatment and a subsequent PDI for the contingency remedy was finalized in December 2011 by HDR.

[1] Anisotropic: The aquifer exhibits properties of different value when measured in different directions. For the purpose of the Technical Memorandum, anisotropic refers to the hydraulic conductivity of the aquifer (i.e. the horizontal conductivity varies from the vertical hydraulic conductivity).

This Technical Memorandum has been prepared to update the cost estimates in the *New Cassel Industrial Area Offsite Groundwater Remedial Investigation/Feasibility Study (RI/FS) Report, Volumes I, II and III*, prepared by Lawler Matusky and Skelly Engineers (LMS), dated September 2000. NYSDEC's FS conducted an evaluation of eleven remedial response alternatives to address the groundwater contamination down gradient of the NCIA. The remedial alternatives evaluated focused on treating groundwater from the water table (located approximately 55 feet bgs) to 125 feet bgs (Alternatives 4A, 4B, 6A, and 6B) and to 200 feet bgs (Alternatives 5A, 5B, 7A, and 7B). Alternatives designated with an "A" represent an in-well vapor stripping system with localized delivery and vapor treatment. Alternatives designated with a "B" represent a groundwater extraction system with centralized air stripping and vapor treatment/effluent re-injection. NYSDEC's FS also evaluated a no further action, monitored natural attenuation, and a monitoring, assessment, and contingent remediation remedial response alternatives.

This Technical Memorandum includes the evaluation of the groundwater extraction and in-well vapor stripping technologies across the vertical extent of the contaminated aquifer in OU1. Additional investigations are anticipated in the far-field area that is south of OU1 and are considered to be outside the scope of this Technical Memorandum. The contingency remedy discussed in NYSDEC's ROD is included as Alternative 8B: Full Plume Remediation of Upper and Deep Portions of the Aquifer using Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection. A new remedy which combines both in-well vapor stripping and groundwater extraction and ex situ treatment technologies has been included as Alternative 9: Full Plume Remediation of Upper and Deep Portions of the Aquifer using Combined In-Well Vapor Stripping and Groundwater Extraction/Air Stripping and Vapor Treatment/Effluent Re-Injection. In addition, EPA has decided to add an additional component to all the alternatives to address elevated concentrations found in the eastern plume. The technology selected for evaluation is in situ chemical treatment.

1.1 Purpose

The purpose of this Technical Memorandum is to:

- Update the original cost estimates for each alternative included in NYSDEC's FS;
- Provide an updated conceptual layout for Alternative 8A;
- Provide a cost estimate, conceptual layout and screening analysis for new Alternative 8B;
- Provide a cost estimate, conceptual layout and screening analysis for new Alternative 9; and
- Update the original comparative analysis to include Alternatives 8B and 9.

2.0 OU1 DESCRIPTION AND HISTORY

2.1 OU1 Description

The NCIA is located in the Town of North Hempstead, Nassau County (Figure 2-1). It encompasses approximately 170 acres of land and is bounded to the north by the Long Island Rail Road; to the south by Old Country Road; and to the southwest by Grand Boulevard. The NCIA is a developed industrial and commercial area that has multiple sites listed on the New York State Registry of Inactive Hazardous Waste Sites. The EPA OU1 consists of groundwater contamination in the area down gradient of the NCIA and south of Old Country Road (Figure 2-1).

Groundwater contamination plumes originating within the NCIA have migrated over 1,000 feet down gradient of the NCIA with contaminant concentrations greater than 1,000 µg/L of total CVOCs. Groundwater contamination has been detected within the OU1 study area at depths greater than 200 feet bgs. Contaminants have also impacted the Bowling Green public water supply wells installed in the Magothy aquifer located more than 500 feet bgs. Based on the previous onsite investigation data, there are three plumes which are understood to have migrated from the NCIA across Old Country Road and into the OU1 Study Area. These three plumes in the OU1study area are considered to be the OU1 eastern, OU1 central, and OU1 western plumes.

2.2 Geology and Hydrogeology

Directly underlying the study area is the Upper Glacial aquifer. The Upper Glacial aquifer is comprised of 60 to 80 feet of glacial outwash plain sediments consisting of relatively high permeability sand and gravel. Underlying the Upper Glacial aquifer is the Magothy aquifer and a distinct separation between the two aquifers is typically not found in this area as the aquifer material transitions from Pleistocene to Cretaceous. The Magothy aquifer is approximately 600 feet thick in the study area and is comprised of predominantly sand and silty sand with alternating discontinuous low permeable laminated layers of silt and clay. Underlying the Magothy aquifer, in descending order, are the Raritan Clay confining unit, Lloyd aquifer and consolidated bedrock. Bedrock is approximately 1,000 feet bgs.

In the study area, groundwater is approximately 38 to 50 feet bgs. Regional groundwater flow in the Upper Glacial and Magothy aquifers is to the south and southwest.

3.0 SUMMARY OF REMEDIAL INVESTIGATIONS

3.1 Regulatory History and Previous Investigations

In 1986 the Nassau County Department of Health conducted a county wide groundwater investigation. The investigation identified widespread groundwater contamination throughout the NCIA. Following the investigation, in 1988 the NYSDEC listed the NCIA as a Class 2 site in the New York Registry of Inactive Hazardous Waste Disposal Sites.

In order to identify the sources and responsible parties of contamination within the NCIA, the NYSDEC conducted Preliminary Site Assessments (PSAs) within the NCIA. Field investigations were conducted in fall 1994, fall 1995, and fall 1996. The NYSDEC also collected several soil and groundwater samples in December 1998, January 1999 and December 1999. Based on the findings of these PSAs, 17 sites were identified and listed as Class 2 sites in the Registry between May 1995 and September 1999. Of the 17 sites, three were investigated and delisted from the Registry, two sites were investigated, remediated and delisted from the registry, and one site was investigated, remediated and reclassified to a Class 4 site.

3.1.1 NYSDEC Remedial Investigations

NYSDEC conducted remedial investigations in the groundwater down gradient of the NCIA from 1995 to 2000. The activities conducted during the remedial investigations included:

- Installation of four shallow monitoring wells and 15 hydro-punch locations down gradient of the NCIA (summer 1996).
- Five rounds of groundwater monitoring well sampling. The first round (summer 1996) sampled 41 existing wells, including four new shallow wells.
- The second round (summer 1997) sampled the same wells as the first round, and 11 hydro-punch locations south of Old Country Road.
- Early warning monitoring wells south of Old Country Road and up gradient of the Bowling Green water supply wells were installed and sampled in July 1998.
- The third round (spring 1999) sampled 41 existing wells, and the four Bowling Green early warning wells. Four new wells were installed and sampled.
- The fourth round (summer 1999) sampled 41 existing groundwater monitoring wells, plus the four Bowling Green early warning monitoring wells.
- The fifth round (January 2000) sampled 20 existing monitoring wells and the four Bowling Green early warning monitoring wells. Monitored natural attenuation (MNA) parameters were collected at this time.

R2-0012124

Based on the results of these investigations NYSDEC determined that the groundwater down gradient of the NCIA required remediating. A FS was prepared to analyze 11 alternatives for remediating the groundwater. Alternatives evaluated in the NYSDEC's FS included:

- Alternative 1: No Action
- Alternative 2: Monitored Natural Attenuation
- Alternative 3: Long Term Monitoring, Assessment and Contingent Remediation
- Alternative 4A: Remediation of Upper Portion of Aquifer (to 125 feet bgs) with In-Well Vapor Stripping/Localized Vapor Treatment
- Alternative 4B: Remediation of Upper Portion of Aquifer (to 125 feet bgs) with Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection
- Alternative 5A: Remediation of Upper and Deeper Portions of Aquifer (to 200 feet bgs) with In-Well Vapor Stripping/Localized Vapor Treatment
- Alternative 5B: Remediation of Upper and Deeper Portions of Aquifer (to 200 feet bgs) with Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection
- Alternative 6A: Full Plume Remediation of Upper Portion of Aquifer (to 125 feet bgs) with In-Well Vapor Stripping/Localized Vapor Treatment
- Alternative 6B: Full Plume Remediation of Upper Portion of Aquifer (to 125 feet bgs) with Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection
- Alternative 7A: Full Plume Remediation of Upper and Deeper Portions of Aquifer (to 200 feet bgs) with In-Well Vapor Stripping/Localized Vapor Treatment
- Alternative 7B: Full Plume Remediation of Upper and Deeper Portion of Aquifer (to 200 feet bgs) with Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection

NYSDEC's final RI/FS Report was completed in September 2000. Subsequent to finalizing the RI/FS, the NYSDEC issued a ROD for the site in October 2003. The NYSDEC's ROD added and selected an additional remedy that was not included in NYSDEC's FS. The remedy selected was listed as Alternative 8 (referred to as Alternative 8A in this Technical Memorandum), Full Plume Remediation of Upper and Deep Portions of the Aquifer (to 225 feet bgs) with In-Well Vapor Stripping/Localized Vapor Treatment. An element of Alternative 8, as outlined in NYSDEC's ROD, allowed for a contingency remedy using ex situ treatment and a centralized treatment building, if for engineering or economic reasons in situ treatment proved to be impractical.

R2-0012125

3.1.2 Pre-Design Investigations

Subsequent to NYSDEC issuing a ROD, two PDIs were conducted for the groundwater contamination down gradient of the NCIA. The first was conducted in 2009 by Dvirka and Bartilucci Consulting Engineers (D&B) and the second by HDR in 2011.

The purpose for the 2009 PDI was to verify the assumptions made during the NYSDEC's FS for the conceptual design of the in-well vapor stripping system. It was needed to provide details necessary for implementing the selected remedy of in-well vapor stripping and localized vapor treatment. The investigation included groundwater quality assessment, geologic profiling and soil sampling. The 2009 PDI activities included:

- Groundwater samples were collected from monitoring wells MW-1 through MW-9 and the Bowling Green early warning wells EW-1B, EW-2B, EW-1C, and EW-2C.
- Vertical profile groundwater sampling was conducted using two methods: temporary wells and hydro-punch sampling.
- Seven temporary wells were installed to approximately 285 feet bgs. A total of 85 groundwater samples were collected from the seven temporary wells.
- Two soil borings were constructed to a depth of 500 feet bgs. At each location, hydropunch groundwater samples were collected at 20-foot intervals from the water table (approximately 45 feet below grade) to the terminal depth of the boring at 500 feet bgs. A total of 48 groundwater samples were collected from the two hydropunch borings.
- Geological samples were collected from the two borings drilled to 500 feet bgs. Split spoon samples were collected and analyzed for particle size using America Society for Testing and Materials (ASTM) Method D422 and select samples were analyzed for vertical hydraulic conductivity using ASTM Method D5084 or D2434 (due to presence of gravel).
- Six additional soil samples were collected from TMW-3D and five from TMW-8D.
- Gamma log readings were also used to identify potentially low permeability zones which could adversely impact recirculation patterns within the influence of the in-well vapor stripping wells.
- Evaluation of natural attenuation of the groundwater plumes using existing groundwater data

D&B presented the following findings from the 2009 PDI:

- Based on literature data for the Magothy aquifer in the vicinity of the area of proposed treatment, anisotropies of approximately 100 or greater are not uncommon. Vertical hydraulic conductivity sampling revealed even higher degrees of anisotropy.
- Potentially significant low permeability zones exist within the Magothy aquifer in areas of proposed treatment.

R2-0012126

- Local Town and County officials expressed concern during coordination efforts that the installation and operation of in-well vapor stripping units within public rights-of-way will be logistically difficult given the presence of many utilities, including water, gas, electric, sanitary sewer, and storm sewer.
- Local Town and County officials offered to assist in the identification and use of potential public lands within the NCIA in order to locate a central treatment plant if conventional groundwater extraction and ex situ treatment remediation methods were chosen over in-well vapor stripping.

The seven temporary monitoring wells were advanced to a depth of 285 feet bgs. Results indicated that CVOC concentrations from these seven temporary monitoring wells were consistent with findings from the existing permanent monitoring wells. At two additional locations, TMW-3D and TMW-8D, groundwater samples were collected at 20-foot intervals from the water table (approximately 45 feet bgs) to a depth of 502 feet bgs. TMW-3D and TMW-8D documented the presence of Site-related CVOC contamination respectively at depths to 432 feet bgs and 502 feet bgs. CVOC sample results from the temporary monitoring wells were generally observed to be greater than CVOC sample results collected from permanent monitoring wells installed at the same locations. There is a greater uncertainty with the groundwater sampling data collected from the temporary well locations relative to the permanent monitoring well locations. At these locations only one sample was collected. Additional data collection will be needed during the PDI to verify the concentrations seen in TMW-3D and TMW-8D to depths of 502 feet bgs. A summary of the CVOC sample results from the temporary monitoring wells are shown on Figure 3-1.

The 2009 PDI included an evaluation of the natural attenuation of groundwater plumes, which used available data groundwater monitoring sampling results collected quarterly post 2003-ROD, to determine whether the data corresponds with previous conclusions. As discussed in NYSDEC's 2000 RI Report, the January 2000 MNA parameters were collected and analyzed from a subset of 24 monitoring wells and input to the modeling software BioChlor, which provided a screening level evaluation of MNA. The BioChlor evaluation indicated that although naturally occurring breakdown of CVOCs is apparent, it was limited to a number of wells.

The 2009 PDI notes that based upon their evaluation, the CVOCs comprise two general suites of parent and degradation or daughter products, ethanes and ethenes. An evaluation of the occurrence and distribution of ethane compounds in the CVOC plume suggested that degradation was occurring. Historically, the parent compound 1,1,1-TCA was the primary ethane species constituent detected in wells within the NCIA. However, in wells down gradient of the NCIA, the percentage of 1,1,1-TCA decreased relative to the wells within the NCIA while the percentage of 1,1-dichloroethane (1,1-DCA) increased relative to the NCIA wells, indicating the degradation of 1,1,1-TCA to 1,1-DCA.

R2-0012127

However, evaluations were not able to determine whether breakdown of ethene constituents was occurring due to the varying occurrence and distribution of the parent and breakdown ethene compounds between the NCIA and down gradient wells. Historically, the distribution of ethene constituents in the wells located within the NCIA was comprised mainly of breakdown products 1,1-dichloroethene (1,1-DCE) and 1,2-DCE, while wells down gradient of the NCIA contained relatively higher amounts of the parent products PCE and TCE. In addition, significant levels of vinyl chloride were not present, indicating that the ultimate breakdown of the ethene suite is not taking place.

As part of the natural attenuation evaluation, some additional parameters that would be indicative of the biodegradation of CVOCs were collected from a limited set of monitoring wells. The data did not reveal the presence of ferrous iron, indicating that a reducing environment may not be present at those locations, and total organic carbon was also not detected. The presence of total organic carbon would have indicated a potential energy source for biodegradation. In addition, byproducts of biodegradation (i.e. alkalinity, chlorides, carbon dioxide and methane) were not detected at elevated concentrations. Parameters such as sulfide and hydrogen were not collected during this evaluation.

Based on these factors, the 2009 PDI concluded that, significant biodegradation of the CVOC plumes does not appear to be occurring in the area down gradient of the NCIA. However, the limited presence of some breakdown products suggests that there may be zones of biodegradation present. The 2009 PDI prepared by D&B also concluded that the anisotropic ratio of the Magothy aquifer was greater than 100. The anisotropies were calculated based on horizontal conductivities that were based upon literature data and vertical conductivities identified in the laboratory. For the Magothy, a horizontal hydraulic conductivity of 250 feet/day was used which is an average of the entire geologic unit. Soil samples targeted to silt/clay lens in the aquifer were collected from the PDI borings and shipped to the laboratory. Attempts at collecting undisturbed samples to preserve the subsurface lithology (layer) and density (compaction) were made, but were unsuccessful. As a result samples collected were disturbed. A flexible wall permeameter was used to complete a falling head test on these disturbed soil samples. Sample preparation included extruding the soil sample from the tube, cut, trimmed and placed into the permeameter at the density and moisture content received. The test results were used as the vertical hydraulic conductivity although a homogenous soil sample is likely closer to approximate the horizontal conductivity. The average horizontal conductivity for the entire aquifer obtained from a literature search was then divided by the vertical hydraulic conductivity obtained from the discrete soil samples targeted to the silt/clay lenses in the aquifer. The calculated anisotropies in the 2009 D&B PDI for the Magothy aquifer are 206, 882, 1617, 9589, 34049 and 215642.

Results of the 2009 PDI completed by D&B indicated the Upper Glacial aquifer to be fairly isotropic, but the Magothy aquifer to be highly anisotropic. As a result D&B concluded that in-

R2-0012128

well vapor stripping would not be an effective technology for remediating the groundwater and recommended that the contingency remedy of groundwater extraction and ex situ treatment be implemented in lieu of the in-well vapor stripping. D&B further recommended additional investigations since the vertical and horizontal extent of contamination in the area down gradient of NCIA had not been fully delineated.

As a result, NYSDEC elected to use the contingency remedy of extraction and ex situ treatment and a subsequent PDI to collect additional site specific data necessary to design the contingency remedy of groundwater extraction and ex situ treatment was conducted by HDR in 2011. Activities completed in the second PDI included:

- Sampling of existing monitoring wells MW-1 through MW-9, the Frost Street monitoring wells FSMW-6B, FSMW-7B, and the FSMW-13 and FSMW-14 clusters, and the Bowling Green early warning wells EW-1B, EW-1C, EW-2B, and EW-2C;
- Installation and sampling of 11 new monitoring wells (MW-10, MW-11S, MW-11D, MW-12, MW-13, MW-14, MW-15, MW-16S, MW-16D, MW-17S and MW-17D) and two test extraction wells (EX-1 and EX-2);
- 72-hour pump test of extraction well EX-1; and
- Pilot Study/Treatability Study for ex situ treatment of contaminated groundwater using air stripping, carbon, and combined treatment using air stripping and carbon.

The 2011 PDI results, which sampling from an expanded monitoring well network, provided a better understanding of the areal extent and depth of the groundwater contamination down gradient of the NCIA. The expanded monitoring well network installed wells to a depth of 285 feet bgs and as such, the results indicated that the impacted area of groundwater down gradient of the NCIA was deeper (to 285 feet bgs) than 225 feet bgs, as had been previously assumed. The water level monitoring conducted as part of the pump test determined that the Bowling Green public water supply wells strongly influence the water levels in all of the Magothy aquifer wells that were monitored during the test. Results from the pump test showed the test extraction wells to be relatively high yielding wells and determined that a series of high yield pumping wells would be required to capture the known contamination.

During the 2011 PDI conducted by HDR a 72 hour pump test was completed where anisotropies of 27 to 100 were calculated from the drawdown data. These results were much lower than estimates provided by D&B. Calculated results for anisotropy based on the 2011 pump test data were within the published ranges found in several USGS studies on Long Island.

Results of the pilot study indicated that polishing using liquid phase carbon would be necessary to achieve the NYS Class GA groundwater quality standards and vapor phase treatment would be required for off-gas treatment. Based on concentrations of dissolved phase iron and other inorganics, pretreatment would not be required. At the time the 2011 PDI was completed a

R2-0012129

suitable location for a centralized treatment building or reinjection location was not found and further investigation and negotiations with local officials would be necessary to secure a suitable location.

3.2 Nature and Extent of Contamination

The PDI conducted in 2011 resulted in a better understanding of the areal extent and depth of the contamination across the study area. The results, which included sampling from an expanded monitoring well network installed to a depth of 285 feet bgs, indicated that the impacted area of groundwater is deeper than previously believed. The currently known extent of the groundwater contamination is shown on Figures 3-2 through 3-4. Consistent with NYSDEC's FS there appears to be three separate plumes within OU1 with different contaminant profiles. The OU1 eastern plume is comprised predominantly of PCE (up to 16,000 µg/L) with some TCE and concentrations less than 23 µg/L of 1,1,1-TCA. The OU1 central plume consists of PCE (up to 330 µg/L), TCE (up to 990 µg/L) and 1,1,1-TCA (up to 1,400 µg/L). The OU1 western plume consists of TCE (up to 1,400 µg/L) and PCE (up to 530 µg/L) with concentrations of 1,1,1-TCA generally less than 21 µg/L, with the exception of temporary monitoring well TMW-2 which had a concentration of 88 µg/L.

The contamination appears to migrate deeper as the distance along the plume axis increases away from the NCIA which is shown in the cross section cut along the OU1 eastern plume included as Figures 3-5 and 3-6. The cross section along the OU1 eastern plume shows that closer to Old Country Road, greater concentrations of PCE were found at shallower depths. For example, the cluster of Frost Street Sites monitoring wells FSMW-13A, B, and C, installed in 2004 and are approximately 200 feet south (down gradient) of Old Country Road shows PCE concentrations of 95 µg/L at 80 feet bgs, 130 µg/L at 130 feet bgs, and 34 µg/L at 250 feet bgs. Based on the FSMW-13A data, the plume concentration is greatest at 130 feet bgs. At approximately 1,600 feet south (down gradient) of Old Country Road the PCE concentration at 285 feet bgs is 610 µg/L (MW-17D) and no detection of PCE was found at 225 feet bgs (MW-17S). At the MW17 location the contamination is deeper than 225 feet bgs and may be centered around 285 feet bgs.

In the OU1 eastern plume area, groundwater generally flows in a southern direction across the OU1 study area. In the OU1 central plume area, groundwater flows in a southwestern direction. In the OU1 western plume area, groundwater flows in a south-southwestern direction across the OU1 study area. There is a natural downward gradient across the OU1 study area that is enhanced by the almost continuous pumping of the Bowling Green supply wells (labeled as BG-1 and BG-2 on Figures 3-2 through 3-4).

The OU1 eastern plume is better defined in the northern section of the study area, as a more expansive monitoring well network exists, although some additional delineation may be warranted to further define the eastern and southern boundaries of the plume and the depth of

R2-0012130

contamination. The OU1 eastern plume extends further to the south and deeper than detected in previous investigations based on the results from the 2011 PDI monitoring well pair MW-17. The location of MW-17 is down gradient of the Bowling Green water supply wells, indicating the contamination has migrated beyond the wells at a shallower depth than the basal water producing zone of the Magothy aquifer.

The OU1 central plume is orientated in a more southwest direction compared to the south-southwestern orientation of the OU1 western plume and south orientation of the OU1 eastern plume. This is consistent with the groundwater flow direction based on the groundwater elevation data collected during the PDI completed in 2011. The presence of 1,1,1-TCA in the OU1central plume can be used as a contaminant fingerprint to distinguish between the various plumes because concentrations of 1,1,1-TCA in this plume are generally 50 times higher than those of the eastern and western plumes.

The 2011 PDI investigation was successful in delineating much of the plume to the west and south at the 200 foot depth. The OU1 western plume covers a larger areal extent compared to the OU1 eastern and central plumes which may indicate more than one source area within the NCIA (comingling plumes). Additional investigation would be needed to better define the OU1western plume on the interior of the OU1 study area.

A review of the groundwater sampling results from NYSDEC's RI in 2000) to NYSDEC's PDI in 2011 indicates that the contaminant plumes appear to be stable. The predominant CVOCs which are the contaminants of concern (COCs) primarily include PCE, 1,1,1-TCA and TCE. Also present are lower concentrations of breakdown products of PCE and TCE and other minor constituents of all compounds within the volatile organic compound (VOC) category. A summary of the analytical results from the permanent monitoring wells is provided on Figure 3-7. Summary tables for groundwater samples collected from both the permanent and temporary monitoring wells have been included as Appendix A. There are localized areas where declining or increasing concentration trends are observed. These localized declining or increasing concentration trends can also be observed in the same monitoring well cluster location over various depths in the aquifer. The sampling data from the early warning wells indicated that the concentration of CVOCs has decreased since the last sampling round in 2008 in both the deep and shallow wells. At this time trace levels (less than 5 µg/L) of CVOCs are found in the deep early warning wells (EW-1C and EW-2C). However, when reviewing available groundwater data as a whole, no significant concentration trends were observed. Daughter compounds of PCE, TCE, and 1,1,1-TCA have been detected in wells throughout the area down gradient of the NCIA however, their presence was limited throughout the study area. The concentrations of PCE/TCE daughter compounds are relatively low to non-detect compared to the concentrations of PCE and TCE, indicating that biodegradation of PCE/TCE is not progressing at a significant rate within the OU1 study area.

R2-0012131

4.0 REMEDIAL ACTION CLEANUP GOALS AND OBJECTIVES

The NYSDEC's FS identified applicable or relevant and appropriate requirements (ARARs) and to-be-considered (TBC) items. The NYSDEC's FS also included a health exposure pathway analysis completed in accordance with EPA's Risk Assessment Guidance for Superfund – Volume I: Human Health Evaluation Manual (EPA 1989a). The ARARs, TBCs and pathway analysis were used in developing the Remedial Action Objectives (RAOs) identified in NYSDEC's FS. As part of this Technical Memorandum, HDR reviewed the ARARs and TBCs for updates since the NYSDEC's FS was finalized in 2000. Additionally HDR completed a Baseline Human Health Risk Assessment (BHHA) to update the original findings from the exposure pathway analysis completed in the NYSDEC's FS. This section identifies updates to the BHHA, provides a summary of the ARARs and TBCs and identifies the RAOs.

4.1 Applicable or Relevant and Appropriate Requirements

Section 121(d) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that site remedial actions attain or waive Federal environmental ARARs, or more stringent State environmental ARARs upon completion of the remedial action. The NYSDEC's FS identified ARARs as well as TBCs. TBCs are not legally binding but may be useful in evaluating site risks and determining cleanup goals and are therefore considered when selecting a remedy for a site.

ARARs are generally divided into three item-specific categories: chemical, location, and action. Chemical specific ARARs provide guidance on acceptable or permissible contaminant concentrations in environmental media such as soil, air and water. Location-specific ARARs govern activities in critical environments such as floodplains, potable source aquifers, wetlands, endangered species habitats, or historically significant areas. Action-specific ARARs are technology or activity-based requirements. ARARs and TBCs that were considered in evaluating the alternatives for this site are summarized in Table 4-1. A more detailed discussion of the applicable ARARs and TBCs is provided in Chapter 7 of the NYSDEC's FS and the BHHRA prepared by HDR.

4.2 Baseline Human Health Risk Assessment

The *New Cassel Industrial Area Operable Unit 1 Site, Final Baseline Human Health Risk Assessment*, dated May 2013 was prepared by HDR to identify potential risks to human health associated with the New Cassel/Hicksville Groundwater Contamination Site. The results of the BHHRA indicated that there is a risk to human health based on the groundwater contamination present at the site.

R2-0012132

4.3 Remedial Action Objectives and Goals

NYSDEC's FS identified RAOs for the area down gradient of the NCIA for the protection of public health and the environment based on findings of the RI. The RAOs identified in NYSDEC's FS were to:

- Prevent human exposure (inhalation, ingestion, and dermal contact) to the contaminants in the groundwater, which are contaminated with unacceptable levels of COCs.
- Prevent further migration of contaminants in groundwater.

The final BHHRA further refined the RAOs by defining what the unacceptable levels of COCs were. The updated ROAs for EPA's OU1 are to:

- Prevent or minimize potential, current, and future human exposure (via ingestion and dermal) to VOCs in groundwater at concentrations in excess of federal and state maximum contaminant limits (MCLs)
- Minimize the potential for off-site migration of groundwater with VOC contaminant concentrations greater than MCLs.
- Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the federal and state MCLs.

The EPA's National Primary Drinking Water Standards for groundwater (40 CFR Part 141) were promulgated by the Safe Drinking Water Act (SDWA) that regulates contaminants in groundwater utilized as potable water supplies. The primary standards include both MCLs and Maximum Contaminant Level Goals (MCLGs). MCLs are applicable for groundwater and public water supplies.

The cleanup objectives identified in NYSDEC's FS were the NYS Class GA groundwater quality standards promulgated at 6NYCRR §703.6. The NYS Class GA groundwater quality standards are defined as: "The best usage of Class GA waters is as a source of potable water supply. Class GA waters are fresh groundwater found in the saturated zone of unconsolidated deposits and consolidated rock or bedrock". Therefore, the NYS Class GA groundwater standards are intended to protect human health through the use of the groundwater as a drinking water supply and are equivalent to the NYS MCLs established by the NYS Department of Health (NYSDOH) for public drinking water supplies. The cleanup objectives therefore remained unchanged from NYSDEC's FS, and continue to be the NYS Class GA groundwater quality standards. The NYS Class GA groundwater quality standards and the federal MCLs/MCLGs are summarized in Table 4-2.

5.0 DEVELOPMENT OF ALTERNATIVES

NYSDEC's FS identified 11 groundwater response alternatives. The original layouts for the alternatives with active remedies have been included as Appendix B. Alternative 8A (formerly Alternative 8), which was added to the NYSDEC's ROD consisted of full plume remediation of upper and deep portions of the aquifer (to 225 feet bgs) with in-well vapor stripping/localized vapor treatment. In addition to adding Alternative 8A (formerly Alternative 8), the NYSDEC's ROD also included a contingency remedy of groundwater extraction and ex situ treatment to a depth of 225 feet bgs.

Subsequent to the NYSDEC finalizing the FS and ROD additional data has been collected on the chemical concentrations in groundwater. Elevated concentrations of CVOCs, ten to 100 times the concentrations observed during the RI have been observed from samples collected in the eastern plume. These elevated concentrations are found in the vicinity of monitoring well cluster FSMW-14 which was installed in 2004. Since its installation, groundwater samples collected from 2005 onward have revealed elevated concentrations of PCE greater than 10,000 µg/L (up to 75,000 µg/L) and TCE greater than 1,000 µg/L (up to 2,300 µg/L) in the upper (<175 feet bgs) portion of the aquifer. As this information was unavailable at the time the NYSDEC's FS was prepared and remedial technologies were evaluated, EPA included an additional component to all the active remedial technologies to address these elevated concentrations. The technology selected for evaluation is in-situ chemical treatment, such as ISCO.

This section includes the following:

- Assumptions used in updating cost estimates for all the alternatives described in NYSDEC's FS.
- Development of Alternative 8B which is the contingency remedy described in the NYSDEC's ROD.
- The basis and development for using in-situ chemical treatment, such as ISCO to treat elevated concentrations of CVOCs observed since finalizing the NYSDEC's FS and ROD.
- Development of new Alternative 9 which uses both in-well vapor stripping and groundwater extraction and ex situ treatment to treat the aquifer.

5.1 Development of Updated Cost Estimates

Cost estimates for the alternatives presented in NYSDEC's FS which was prepared in 2000, were updated to account for inflation from 2000 to 2013. Subsequent to the completion of NYSDEC's FS, additional PDI activities were conducted providing field measurements of the aquifer characteristics and a revised nature and extent of contamination model. Based on this

R2-0012134

information, additional modifications to the cost estimates were made and are described in more detail in the following sections.

5.1.1 Alternatives 1-3: Passive Alternatives

Passive alternatives included the no action, monitored natural attenuation, and long term monitoring alternatives. Updates to cost estimates for these alternatives included removal of all costs for the no action alternative and an increase to unit costs for Alternatives 2 and 3 to account for inflation from 2000 to 2013. The revised cost estimates also use a 7% rate of return and a 3% inflation rate whereas NYSDEC's FS used a 5% discount rate.

The NYSDEC's FS included operation and maintenance costs associated with the water treatment system for the Bowling Green water supply wells. However, because the alternatives discussed in this Technical Memorandum would need to be protective of the public health without relying on the current water treatment system for the Bowling Green water supply wells, the updates to these estimates did not include the operation and maintenance costs associated with the Bowling Green water supply.

5.1.2 Alternatives 4A – 8A: In-Well Vapor Stripping

The alternatives presented in NYSDEC's FS assumed a combination of shallow, intermediate and deep in-well vapor stripping wells to provide contaminant mass removal in the upper and deeper portions of the aquifer. The shallow, intermediate, and deep aquifer zones were defined in the NYSDEC's FS as the saturated zones between the water table and 64 feet bgs (shallow), between 65 feet bgs and 124 feet bgs (intermediate), and between 125 feet bgs and 200 feet bgs (deep). Analytical data collected from newly installed wells (to 285 feet bgs) during the 2011 PDI showed contamination deeper than previously assumed. As a result, the definitions of the zones were modified. For this Technical Memorandum the shallow zone is defined as the saturated zone from the water table to 175 feet bgs, the intermediate is from 175 feet bgs to 200 feet bgs, and the deep is from 200 feet bgs to 285 feet bgs. During the remedial design, actual well construction depths will be determined and may be adjusted as additional data is collected.

NYSDEC's FS discussed three main types of in-well vapor stripping systems, which included the Unterdruck-Verdampfer-Brunnen (UVB) or "vacuum vaporizer well" system, the NoVOCs™ system, and the Density Driven Convection (DDC) system. Today three vendors remain which include IEG Technologie (IEG) who manufactures the UVB system, Wasatch Environmental Inc. (WE) who manufactures the DDC system, and Accelerated Remediation Technologies (ART). The IEG system uses a submersible pump to pump contaminated groundwater from the specified depth to the top of the wellhead where a low profile air stripper installed at the wellhead is used to strip VOCs from the groundwater. Treated groundwater is then reintroduced into the aquifer. This system also uses inflatable packers to provide separate

R2-0012135

treatment zones and discharge zones in the well. The DDC system uses compressed air to create an upward circulation motion. Air is introduced at the treatment depth to strip volatile organic compounds from the groundwater. A vacuum line is then used to pull vapors from the wellhead to a vapor treatment system. The ART system uses a submersible pump to pump contaminated groundwater from an influent screen to the top of the wellhead where it is discharged back into the well through a showerhead type fitting. Contaminated groundwater then cascades down the unsaturated portion of the well casing while a compressed air line is used to create a counter upward flow in the well casing which strips volatile organics from the groundwater. Treated water is then re-injected back into the aquifer through a screen located at the bottom of the unsaturated zone. Figure 5-1 shows a typical configuration for the ART system.

For purposes of cost estimating in NYSDEC's FS, the UVB in-well vapor stripping system was assumed to be implemented at the site. For cost estimating purposes, this Technical Memorandum assumed the ART in-well vapor stripping technology would be implemented because of the thickness of the unsaturated zone (38 – 50 feet) which is favorable to using the ART system and the spatial constraints of installing underground vaults in existing roadways which would be necessary for other technologies such as the UVB system. As discussed later in this section, in the area down gradient of the NCIA there are certain challenges to the use of in-well vapor stripping. Challenges that would need to be addressed include the depth of contamination, the elevated concentrations of contamination, and the anisotropic characteristics of the aquifer.

Under NYSDEC's FS each alternative was comprised of different combinations of wells installed at different depths to capture contamination from different zones of the aquifer. Different radiuses of influence (ROI) were assumed in NYSDEC's FS for in-well vapor stripping wells depending on depth. A summary of the well depths, pumping rates and associated ROI used in NYSDEC's FS is summarized in Table 5-1.

Based on the 2011 pump test data and discussions with vendors, a ROI of 125 feet at a pumping rate of 40 gallons per minute (gpm) was assumed for this Technical Memorandum. These wells were assumed to be spaced approximately 100 feet apart. The actual ROI, pumping rate and well spacing would be determined during the remedial design (RD) and would be verified during a pilot study.

The decrease in the ROI relative to NYSDEC's FS resulted in an increase in the total number of required in-well vapor stripping wells for each alternative. The number of required wells was calculated as the number of new ROI wells to match the diameter of the NYSDEC's FS ROI wells. For example, in NYSDEC's FS, an in-well vapor stripping well was assumed to have a 200 foot ROI, but for this Technical Memorandum it was assumed to be replaced with two in-well vapor stripping wells, each with a 100 foot ROI. Table 5-2 summarizes the increase in the

R2-0012136

number of wells for each alternative.

Using the above assumption (100 foot well spacing), a conceptual layout for Alternative 8A was prepared as shown on Figure 5-1. The conceptual layout shows 72 in-well vapor stripping wells to cover the 100 µg/L CVOC concentration area of the three OU1 plumes. The conceptual layout places wells centrally along each of the OU1 plumes to provide mass removal and places wells perpendicular to groundwater flow along the study area limit of the plume to provide containment, treatment or both of the plume. The actual location, number of wells, and placement would be determined after conducting a PDI which will provide information needed to better define the limits of the three plumes.

For the purpose of the Technical Memo the in-well vapor stripping wells are assumed to treat groundwater to the NYS Class GA groundwater quality standards before reintroducing treated groundwater back into the upper aquifer. Typically the technology relies on multiple passes of groundwater through the well via circulation cells that are established in the formation. However, based on Site specific characteristics there may be advantages to designing the system to meet the NYS Class GA groundwater quality standards with one pass through the in-well stripping system without relying on the need to form a groundwater circulation cell. The formation of groundwater circulation cells are directly impacted by the aquifer's anisotropy. Anisotropies of the Magothy aquifer calculated from data obtained from the 2011 pump test ranged from 27 to 100. The feasibility of whether the formation of a viable circulation cell is possible would be determined during the remedial design phase and verified with a pilot study. Without a circulation cell (multiple passes through the well) a treatment efficiency of 99% or greater would be needed to achieve the NYS Class GA standards in the effluent in portions of the aquifer where CVOC concentrations are greater than 1,000 µg/L. A pilot study for the in-well vapor stripping system is recommended to verify that the in-well vapor stripping system would reliably achieve the treatment efficiencies needed to meet RAOs for the Site.

The known deepest contamination based on permanent monitoring wells is at 285 feet bgs or approximately 230 feet beneath the water surface. The practical limit for the injection of air into water is limited to about 100 feet beneath the water. This will limit the injection of air to the upper 100 feet of water column in the in-well vapor stripping wells. The ART system uses the unsaturated zone of the well casing as an air stripping column. For the ART system injection of air is assumed to be limited to the upper portion (100 feet) of the water column. Variations in the air and water flow rates including the installation of a second submersible pump can be used to increase the removal efficiency of the well. The UVB system is essentially an air stripper mounted on the wellhead. The size, air and groundwater flow rates can be varied to achieve the effluent requirements. In addition, variations to the screen intervals for extraction and reinjection as well as the number of packers and locations can be used to optimize the in-well vapor stripping system to promote multiple passes through the well. The final configuration for

R2-0012137

the in-well vapor stripper would be selected during the design phase and a pilot study would be conducted to verify the removal efficiency of the design prior to full scale implementation.
The in-well vapor stripping alternatives rely on physical processes for contamination not captured by the in-well vapor stripping wells. In-well vapor stripping alternatives that propose more wells would rely less on physical processes than those with less wells. For the in-well vapor stripping alternatives, the primary physical processes would mainly consist of dispersion, dilution and diffusion.

5.1.2.1.Vapor Treatment

NYSDEC's FS assumed localized vapor treatment using granular activated carbon contained in vaults at the in-well vapor stripping wellhead. The increase in the number of in-well vapor stripping wells makes localized vapor treatment at each in-well vapor stripping wellhead more difficult to implement and less cost effective relative to a centralized treatment system. The vault size to contain all the equipment needed for stripping and vapor treatment was estimated to be roughly 75 square feet and individual purchases for treatment equipment for each in-well vapor stripping well increases the cost considerably. Therefore, a centralized treatment system was used for the conceptual design and assumed to prepare the cost estimates for all the in-well vapor stripping alternatives for this Technical Memorandum.

For this conceptual design, the centralized treatment building was assumed to be located adjacent to the Bowling Green water supply wells. The building would be approximately 1,000 square feet and would house two 10,000 pounds granular activated carbon vessels, ancillary equipment, and a small office for the operator. Based on data from the 2011 PDI and estimated flow rates, it is assumed that both vapor phase carbon vessels would need to be changed out once per year.

5.1.2.2.System Performance Monitoring

NYSDEC's FS estimated time frames for active remediation based on discussions with vendors and a review of case studies. NYSDEC's FS assumed the following time frames for active remediation for each alternative:

- Alternative 4A: 7 years
- Alternative 5A: 9 years
- Alternative 6A: 5 years
- Alternative 7A: 7 years
- Alternative 8A: 7 years

As mentioned in the NYSDEC's FS many parameters used in deriving estimated active remediation time frames can vary and significantly change the required remediation time. The layouts for Alternatives 4A – 7A included in NYSDEC's FS (Appendix B), show well spacing

R2-0012138

that provides "flow through" treatment. As a result, the time frame for treatment will include the travel time for the contaminant to reach the in-well vapor stripping well. To account for this and other unknowns, the active remediation time period for all the alternatives was realistically increased to 30 years. The actual time frames may be much less, especially if wells are clustered closer together as shown in the revised layout for Alternative 8A (Figure 5-2). A pilot study will be necessary to better determine the actual time frames that will be required to meet the RAOs for the site.

Performance monitoring would be completed for all alternatives to assess the effectiveness of the in-well vapor stripping system. Sample results would be used to verify the treatment efficiency of the in-well vapor stripping systems. Monthly air samples would also be collected at the influent, between the carbon vessels, and at the effluent of the off-gas treatment system. Samples of accumulated condensate would be collected as required prior to disposal or discharge to the publicly owned treatment works (POTW). Results of performance samples would be used to determine the change out frequency for the carbon, cleaning frequency for the in-well vapor strippers and compliance with regulatory permits. Carbon change out would consist of an onsite service to vacuum spent carbon from the vessels and replace it with reactivated carbon. Spent carbon would be sent off site to be reactivated or disposed.

The long-term monitoring program for all the alternatives is intended to assess the effectiveness of the groundwater in-well vapor stripping systems. For cost estimating purposes, it was assumed that groundwater samples would be collected from all monitoring wells semi-annually for the first five years and then reduced to annually until the system is decommissioned after 30 years. The actual time frame for monitoring can be re-evaluated and possibly reduced or discontinued at any time during the project time frames.

The long-term groundwater monitoring program would include sampling from two early warning monitoring well clusters that were installed by NYSDEC in 1997. These two well clusters are located up gradient of the Bowling Green supply wells and screened at depths between 132 -164 and 504-516 feet bgs. Sampling from these depth intervals provides an "early warning" to the Bowling Green water supply wells BG-1 and BG-2, which are screened at depths of 470 and 524 feet bgs, respectively. In the event that sampling revealed that concentrations had increased an evaluation would be conducted to assess potential impact at the Bowling Green water supply wells, which would be further outlined during the remedial design phase. However, recent sampling results from April 2011 did not indicate concentrations in the two early warning monitoring wells clusters above their respective State and Federal water quality standards for Site related CVOCs.

R2-0012139

5.1.3 Alternatives 4B – 7B: Groundwater Extraction

The alternatives presented in NYSDEC's FS assumed a combination of shallow, intermediate and deep extraction wells to provide contaminant mass removal and containment. The estimated capture zones were calculated based on published data for the aquifer. The capture zones shown for the pumping rates proposed in NYSDEC's FS were reviewed and compared to the aquifer data collected during the pump test completed as part of the 2011 PDI. The review determined that the original flow rates proposed for the alternatives would need to increase in order to achieve the capture zones shown on the layouts in the NYSDEC's FS. The increase in overall flow rates required for each alternative to achieve the assumed capture zones shown in the NYSDEC's FS are provided in Table 5-3.

To provide the updated cost estimates, the original configuration and number of extraction wells shown for each alternative was left unchanged. Instead, the cost was updated to reflect the overall increase in total flow as presented in Table 5-3. Increases in the flow rates affect the size of the treatment equipment needed to achieve the NYS Class GA groundwater quality standards, the number of infiltration wells needed for recharge, and the operation and frequency of maintenance required for the vapor phase carbon and bag filters, which were accounted for in the updated cost estimates. The actual number of wells, locations and pumping rates would be determined during the RD after completing a PDI needed to fully delineate the plumes.

5.1.3.1.Groundwater Treatment and Discharge

As assumed in NYSDEC's FS, groundwater treatment would occur in a centralized treatment building. NYSDEC's FS assumed pre-treatment using pH adjustment and coagulation/flocculation to remove inorganic constituents to prevent fouling of the air stripper. Based on the analytical results from the 2011 PDI, iron and total hardness concentrations are less than 1 mg/l and 40 mg/l, respectively and fouling of the air stripper is not anticipated. As a result, costs for the pre-treatment equipment were removed from all the alternatives.

For this Technical Memorandum it was assumed that the groundwater extraction treatment system would include bag filters for removing total suspended solids and a low profile air stripper for removing CVOCs. To achieve the NYS Class GA groundwater quality standards, liquid phase granular activated carbon would be used as a polisher. Vapor emitted from the air stripper would be treated using granular activated carbon.

Not all contaminated groundwater would be captured by the extraction wells proposed for Alternatives 4B – 7B and as a result all these alternatives would rely on a measure of physical processes to meet the RAOs. Groundwater extraction and ex situ treatment alternatives that propose more wells would rely less on physical processes than those with less wells. For the groundwater extraction and ex situ treatment alternatives the primary physical processes would

R2-0012140

mainly consist of dispersion, dilution and diffusion.

As assumed in the original estimates, treated groundwater would be returned to the aquifer using a series of infiltration wells having a diameter of eight feet and depth of 15 feet. For estimating purposes, it was assumed that infiltration wells would be spaced a minimum of 50 feet apart and ten feet from any structure. Calculations were completed to approximate the number of infiltration wells needed to manage the treated groundwater. Based on calculations, four infiltration wells would be needed to effectively infiltrate every 100 gpm of treated groundwater. During the PDI infiltration testing would be conducted to verify the number assumed in developing the cost estimates. For the updated cost estimates, the centralized treatment plant and infiltration wells were assumed to be located adjacent to the Bowling Green public water supply wells, in the vicinity of the Basin #51 Parcel. Area used for infiltration would be restored as necessary to allow for the continued use of the area by the public. The remedial design would include an evaluation of any potential affects to the recharge basin if infiltration at that location was ultimately selected.

5.1.3.2.System Performance Monitoring

NYSDEC's FS estimated time frames for active remediation based on the time it would take for the furthest contaminant with the highest retardation factor to be captured by the groundwater extraction system. The estimate was based on the retardation factor for PCE and a hydraulic conductivity of 70 feet / day. NYSDEC's FS assumed the following time frames for active remediation for each alternative.

- Alternative 4B: 9 years
- Alternative 5B: 12 years
- Alternative 6B: 7 years
- Alternative 7B: 10 years

The above time frames do not account for adsorption of the contaminants to soil particles and the release of adsorbed contaminants as contaminant mass is reduced in the groundwater. To account for this unknown, the active remediation for all the alternatives was increased to a more realistic 30 years.

Performance monitoring for all alternatives to assess the effectiveness of the groundwater treatment system would be completed on a monthly basis. During the remedial design phase, the frequency of performance monitoring and the parameters for such sampling will be refined. Groundwater samples would be collected at the influent, after the bag filters, between the carbon vessels, and at the effluent. Results would be used to determine the change out frequency for the bag filters and carbon. Carbon change out would consist of an onsite service to vacuum spent carbon from the vessels and replace it with reactivated carbon. Spent carbon would be sent off

R2-0012141

site to be either reactivated or disposed. Air samples would be collected and analyzed monthly from the influent to the vapor phase carbon, between the carbon and at the stack.

The long-term monitoring program for all the alternatives is intended to assess the effectiveness of the groundwater extraction and ex situ treatment systems. For estimating purposes it was assumed that groundwater samples would be collected from all monitoring wells semi-annually for the first five years and then reduced to annually until the system is decommissioned after 30 years.

The long-term groundwater monitoring program would include sampling from two early warning monitoring well clusters that were installed by NYSDEC in 1997. These two well clusters are located up gradient of the Bowling Green supply wells and screened at depths between 132 -164 and 504-516 feet bgs. Sampling from these depth intervals provides an "early warning" to the Bowling Green water supply wells BG-1 and BG-2, which are screened at depths of 470 and 524 feet bgs, respectively. In the event that sampling revealed that concentrations had increased an evaluation would be conducted to assess potential impact at the Bowling Green water supply wells, which would be further outlined during the remedial design phase. However, recent sampling results from April 2011 did not indicate concentrations in the two early warning monitoring wells clusters above their respective State and Federal water quality standards for Site related CVOCs.

5.2 Development of Alternative 8B

Alternative 8B consists of a groundwater extraction and ex situ treatment system to capture contaminated groundwater from the shallow and deep aquifer. The NYSDEC's ROD defined a depth for the contingency remedy of 225 feet bgs, however results of the 2011 PDI, which sampled from the expanded monitoring well network down to 285 feet bgs, identified contamination deeper than 225 feet bgs. As a result, the conceptual design and cost estimates for Alternative 8B assumed a deeper contamination down to 285 feet bgs. During the remedial design, actual well construction depths will be determined and may be adjusted as additional data is collected.

The extracted groundwater would be pumped to one centralized treatment plant where groundwater would be treated using air stripping and liquid phase carbon to achieve effluent limits below the NYS Class GA groundwater quality standards. Treated effluent would then be re-injected back into the upper aquifer using infiltration wells. This alternative assumes off-gas treatment using vapor phase carbon.

A conceptual layout showing the extraction well locations for cost estimating purposes is shown on Figure 5 - 3 – Alternative 8B Groundwater Extraction/Air Stripping. The actual number of wells, locations and pumping rates would be determined during the RD after completing a PDI

R2-0012142

needed to fully delineate the plumes. For this Technical Memorandum, extraction wells were placed to target treatment of groundwater contaminated with levels of CVOCs in excess of 100 µg/L in the shallow (water table to 175 feet bgs), intermediate (175-200 feet bgs) and deep (200-285 feet bgs) aquifers. Extraction wells were located centrally along each of the three OU1 plume lengths, increasing in depth as the plume moves south which corresponds with the downward migration of contamination. Shallow extraction wells would be installed to 150 feet bgs, intermediate to 200 feet bgs, and deep to 285 feet bgs. A depth of 285 feet bgs was estimated based on available information from permanent monitoring wells. Additional extraction wells were placed down gradient of the plume at the limit of the OU1 study area to provide containment and mass removal. Because not all contaminated groundwater above the RAOs would be captured, this alternative would rely on natural attenuation, as do all the other alternatives.

Capture zones at different pumping rates were calculated using the capture zone analysis equation and the aquifer characteristics determined during the 72 hour pump test conducted during the 2011 PDI. Aquifer characteristics included the hydraulic gradient, saturated thickness of the aquifer and hydraulic conductivity. Based on the results, the number of wells at specified pumping rates was used to optimize treatment of the aquifer. Pumping rates were selected to match the capture zones to the estimated plume widths.

Capture of the 100 µg/L CVOCs contamination of the OU1 eastern plume, which is approximately 300 feet wide, will be achieved using three extraction wells consisting of one shallow, one intermediate, and one deep, each pumping at 20 gpm. This extraction well configuration should provide mass removal of contamination greater than 100 µg/L for this plume. The OU1 central plume 100 µg/L CVOCs contamination, also approximately 400 feet wide, will be captured using three extraction wells, one shallow pumping at 20 gpm, one intermediate and one deep pumping each pumping at 40 gpm. The OU1 western plume, which is wider than the eastern plume (800 – 1,000 feet wide), will be captured using five extraction wells consisting of one shallow well pumping at 50 gpm, one intermediate well pumping at 60 gpm, and three deep wells pumping at rates of 50 gpm, 80 gpm and 100 gpm. Because the deeper plumes have a greater width compared to the shallower contamination plume, flow rates for the deeper wells were increased to provide a wider capture zone to capture the deeper plume width. The total aggregate flow rate from all extraction wells will be 500 gpm. The layout of Alternative 8B is based on a better defined plume limit, as opposed to the alternatives laid out in NYSDEC's FS, as a result the overall flow rate for Alternative 8B is less than flow rates assumed for Alternatives 7B and 6B. After collecting additional data during the PDI, the conceptual layout and pumping rates would be further refined and optimized.

Although there was evidence of influence on all the monitoring wells as a result of the pumping of the Bowling Green water supply wells, it is believed that the addition of extraction wells within the aquifer would have a minimal impact on the capacity of the water supply wells. This

R2-0012143

is supported by the results of the pump test which indicated the aquifer to be a very high yielding aquifer. The Bowling Green water supply wells are also installed to depths of 500-600 feet bgs, which is approximately 250 feet deeper than the anticipated extraction wells. The vertical separation of the extraction wells will minimize the influence of any potential interference. However, the remedial design would fully evaluate the potential impact on the water supply wells.

A suitable location for a centralized treatment plant has yet to be identified. For purposes of developing the conceptual design and a cost estimate for this alternative, it was assumed that the centralized treatment plant would be located adjacent to the Bowling Green water supply wells in the vicinity of the Recharge Basin #51 parcel. This is the same location assumed to prepare cost estimates for the other alternatives in NYSDEC's FS. A 4,000 square foot building is estimated to house the treatment equipment and an office for the full time operator. The groundwater treatment equipment would include a treatment system consisting of bag filters, a low-profile air stripper having six trays, two 20,000 pound liquid phase carbon vessels for polishing, and two 10,000 pound carbon vessels for off-gas treatment. For cost estimating a treatment plant with a maximum treatment capacity of 1 million gallons per day (mgd) was assumed. The actual treatment plant design capacity will be determined during the remedial design and will be based on the final number of extraction wells and pumping rates determined after evaluating data collected during the PDI. The treatment system would be designed to treat groundwater to meet the NYS Class GA groundwater quality standards.

Once treated, groundwater would be pumped into approximately 20 infiltration wells. Infiltration wells were assumed to have a diameter of 8 feet and a depth of 15 feet. The actual number of infiltration wells needed and locations would be determined during the remedial design phase and would be based on data collected during a pre-design investigation. For cost estimating purposes it was assumed that infiltration wells would be installed in the vicinity of Recharge Basin #51. Areas installed with infiltration wells would be restored as needed to allow for continued use of the area by the public. For cost estimating, it was assumed that infiltration wells would be spaced a minimum of 50 feet apart and 10 feet from any structure. During the design the actual spacing and location would be evaluated to ensure recharged groundwater would not have an impact on the flow direction of the groundwater contamination. The disposal options of infiltration, discharge to surface water, or discharge to a POTW would be evaluated during the design phase. The remedial design would include an evaluation of any potential affects to the recharge basin if infiltration at that location was ultimately selected.

This alternative would also include institutional controls and long term monitoring as described in Section 5.1.3 for the other groundwater extraction and ex situ treatment alternatives. Long term monitoring would be required during the entire 30 year period and would be the same as described for all the groundwater extraction and ex situ treatment system alternatives. The long-term groundwater monitoring program would include sampling from two early warning

R2-0012144

monitoring well clusters that were installed by NYSDEC in 1997. These two well clusters are located up gradient of the Bowling Green Supply wells and screened at depths between 132 -164 and 504-516 feet bgs. Sampling from these depth intervals provides an "early warning" to the Bowling Green water supply wells BG-1 and BG-2, which are screened at depths of 470 and 524 feet bgs, respectively. In the event that sampling revealed that concentrations had increased an evaluation would be conducted to assess potential impact at the Bowling Green water supply wells, which would be further outlined during the remedial design phase. However, recent sampling results from April 2011 did not indicate concentrations in the two early warning monitoring wells clusters above their respective State and Federal water quality standards for Site related CVOCs. For costing purposes, it was assumed that the treatment system would run for 30 years in order to achieve the remedial action objectives for the site.

5.3 In Situ Chemical Treatment

In Situ Chemical Oxidation (ISCO), an in-situ chemical treatment, chemically converts contaminants to less toxic compounds. ISCO involves injecting a solution of oxidizing agent into the subsurface via an injection well to treat dissolved-phased contaminants. The oxidizing agents most commonly used are ozone, hydrogen peroxide, persulfate or potassium permanganate. Matching the oxidant and in situ delivery system to the contaminants of concern and the OU1conditions is a key factor in successful implementation and achieving performance goals. The in-situ chemical treatment, ISCO was used in preparing cost estimates for this Technical Memorandum.

In-situ chemical treatment, such as ISCO can complement other technologies by enhancing mass transfer from soil to groundwater and by increasing oxygen concentrations which will provide mass reduction in a relatively rapid treatment time when compared with other remedies. Use of in-situ chemical treatments, such as ISCO would be implemented as a complement to all the active remediation alternatives which include alternatives developed in the NYSDEC's FS. In the conceptual design, implementation will be targeted to areas having concentrations of CVOCs greater than 10,000 µg/L. The ROI of ISCO injection points is usually relatively low (i.e., generally 10 to 15 feet in similar aquifers). To achieve complete coverage of the aquifer, a large number of injection points would be required to treat plumes with a large areal footprint. For cost estimating purposes it was assumed that a 100 by 100 foot area in the vicinity of monitoring well FSMW-14 will be injected with ISCO. To provide full coverage of this area, 32 permanent injection points will be installed assuming a 10 feet ROI and injection point spacing of 15 feet. Each injection point was assumed to be injected with 5,600 gallons of permanganate per injection event which was based on an assumed porosity of 30% and a reagent volume of 10% of the porosity volume. The actual chemical reagent, delivery rates and reagent volumes would be determined during the RD and would be based on additional site characteristics compiled during the PDI.

Because the greatest concentrations were observed at 130 feet bgs, points were assumed in the conceptual design to be installed to a depth of 170 feet bgs with a treatment zone vertical interval of 80 feet. To provide complete vertical coverage of the target 80 feet treatment zone, injections were assumed to be completed using packers to break up the vertical zones into smaller intervals. Injections were assumed to occur by gravity feed, however if a confined layer is present in the target treatment zone then injections would need to be pressurized to properly distribute reagent into the aquifer. To provide effective treatment two injection events were assumed, however based on Site conditions and performance monitoring additional injection events may be necessary. Areas outside the treatment zone would be treated using in-well vapor stripping or pump and treat as described for each remedial alternative. Treatment would be phased in areas proposed to be injected with in-situ chemical treatment that would also be installed with in-well vapor stripping wells or groundwater extraction wells to avoid any negative interference between the treatment systems. Prior to implementation, a study would be conducted during the pre-design to assess which in-situ chemical treatment would be best suited for implementation.

The Bowling Green water supply wells are installed to depths of 500-600 feet bgs and are located over 1,000 feet from the eastern plume which had the greatest concentrations of CVOCs where the ISCO injections are targeted in the conceptual design. The horizontal (1,000 feet) and vertical (330 feet) separation of the ISCO conceptual injection points from the Bowling Green water supply wells minimizes the potential risk for injected reagent to impact the water supply wells. However to ensure no impacts would occur to the existing water supply wells, a fate and transport model for chemical injected into the aquifer would be completed prior to implementing this technology.

Prior to implementing an in-situ chemical treatment such as ISCO a subsurface utility survey would be completed of the area to verify the injection of ISCO would not have any effect on existing utilities. Existing boreholes or abandoned wells previously installed in the vicinity of the area designated for ISCO application would be inspected to verify that these holes were properly abandoned. Boreholes or wells that were improperly abandoned may provide a conduit for reagent surfacing during pressurized application methodologies (if required due to the presence of a confined layer). Because the depth of injection is deep (>100 feet bgs) and the depth of the saturated zone is 50 feet bgs which is much deeper than the typical depth of subsurface utilities, concerns of impacting subsurface utilities would be limited to ensuring well points are installed a sufficient distance away to prevent any damage during well point installation.

Subsurface monitoring would occur before each injection event, during and after to measure the aquifers response to the injections. Monitoring may include installing pressure transducers in existing monitoring wells and recording periodic water levels from these wells. During application the injection pressure and flow rate of the reagents would also be measured. After application, groundwater samples would also be collected from monitoring wells in the vicinity

R2-0012146

of the treatment to evaluate the effectiveness of the application.

Proper handling, storage and application of chemical reagents would be required during implementation of this technology. A Site specific health and safety plan meeting all state and federal requirements would be prepared by the Contractor who would be responsible for implementing in-situ chemical treatment. Practices to minimize the potential for spills, leaks or other unwanted discharges would be implemented such as providing temporary secondary containment areas for the mixing of chemical reagents before injection. Absorbent materials would be available for emergency clean up. Material Safety Data Sheets (MSDSs) for all chemicals used would be maintained onsite and available and emergency personnel would be notified prior to implementing in-situ chemical treatment at OU1. During implementation the area would be sectioned off to prevent unauthorized access and at the end of each day chemical reagents would be either removed from the Site or properly secured and stored to prevent any contact with residents in the area.

The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. Robust site characterization, screening, feasibility testing and treatability/pilot study is required prior to implementing this technology, particularly related to understanding subsurface heterogeneities or preferential flow paths. The site soil's low natural organic matter content and high sand content will increase the likely effectiveness of this technology.

5.4 Development of Alternative 9

CVOC concentrations across the site vary from over 10,000 µg/L in some portions of the aquifer to less than 100 µg/L in others. Based on this contaminant concentration variation, a combined remedial alternative using both in-well vapor stripping, ex situ treatment of extracted groundwater, and an in-situ chemical treatment such as ISCO was developed for implementation at this site.

There are advantages and disadvantages to each of the remedial technologies being evaluated for use at this site. Typical in-well vapor stripping provides a treatment efficiency of approximately 90%. Variations in the technology will likely be needed to provide multiple passes through the treatment system and/or other methods to effectively reduce contamination levels to meet the NYS Class GA groundwater quality standard before introducing the groundwater back into the upper aquifer. A pilot study will be necessary to verify that the NYS Class GA groundwater quality standards can be achieved. Because the in-well vapor stripping technology has a limit to its treatment efficiency, it may not be the optimal technology for portions of the aquifer having concentrations greater than 1,000 µg/L. Unlike in-well vapor stripping, ex situ treatment of extracted groundwater has fewer limitations, because the treatment system is above ground. As

R2-0012147

such ex situ treatment of extracted groundwater can be easily designed to reduce high concentrations (>1,000 µg/L) to below the NYS Class GA groundwater standard.

The following parameters were assumed in developing the conceptual design of this alternative:

- An in-situ chemical treatment, ISCO would be applied to plume areas with concentrations of CVOCs greater than 10,000 µg/L;
- Groundwater extraction and ex situ treatment would be applied to plume areas with concentrations of CVOCs greater than 1,000 µg/L but less than 10,000 µg/L;
- In-well vapor stripping would be applied to plume areas with concentrations of CVOCs greater than 100 µg/L but less than 1,000 µg/L; and,
- Physical process such as dispersion, dilution and diffusion would be used for plume areas with concentrations of CVOCs less than 100 µg/L.

A conceptual layout for this alternative is shown on Figure 5-4. The actual conceptual layout and remedial technology to be used for treatment based on contaminant concentrations may be revised based on data collected during the PDI.

The eastern plume which has concentrations of CVOCs generally greater than 1,000 µg/L would be treated using three groundwater extraction wells each pumping at a rate of 20 gpm, which is unchanged from Alternative 8B. Prior to installing the extraction wells, the greatest concentrations would be treated with an in-situ chemical treatment such as ISCO. A 100 by 100 foot area in the vicinity of monitoring well cluster FSMW-14 was proposed for in-situ chemical treatment injection. The central plume which has concentrations generally less than 1,000 µg/L of CVOCs would be treated using in-well vapor stripping. Ten in-well vapor stripping wells would be used to provide mass removal for the central plume. The western plume has concentrations generally less than 1,000 µg/L of CVOCs, with the exception of TMW-2, however due to the plume's width a combination of groundwater extraction and in-well vapor stripping was selected to treat this plume. Extraction well flow rates were reduced from the pump and treat only alternative (8B) to allow for placement of in-well stripping wells along the edge of the plume. Three extraction wells were assumed for the western plume, pumping at rates of 60 gpm, 40 gpm and 20 gpm. The total flow rate for the groundwater extraction and treatment remedy would be 180 gpm and the total number of in-well vapor stripping wells would be 20. After collecting additional data during the PDI, the conceptual layout and pumping rates would be further refined and optimized.

A centralized treatment building would be necessary under this alternative to house the ex situ treatment for extracted groundwater and vapor treatment for the off-gas from the in-well vapor stripping wells. For purposes of developing a cost estimate for this alternative, it was assumed that the centralized treatment plant would be located adjacent to the Bowling Green water supply wells in the vicinity of the Recharge Basin #51 parcel. This is the same location assumed for the

R2-0012148

other alternatives in the NYSDEC's FS. A 3,200 square foot building is estimated to house the treatment equipment and a small office for the full time operator. The groundwater treatment equipment would include a treatment system consisting of bag filters, a low-profile air stripper having six trays, two 5,000 pound liquid phase carbon vessels for polishing, and two 10,000 pound carbon vessels for off-gas treatment. For cost estimating a treatment plant with a maximum treatment capacity of 0.5-mgd was assumed. The actual treatment plant design capacity will be determined during the remedial design and will be based on the final number of extraction wells and pumping rates determined after evaluating data collected during the PDI. Contaminated vapor from the in-well vapor stripping wells would be conveyed to the central treatment building for treatment using the vapor phase carbon vessels used to treat vapor from the low profile air stripper. Groundwater treated at the centralized plant would be pumped into approximately 7 infiltration wells. Infiltration wells were assumed to have a diameter of eight feet and a depth of 15 feet. The actual number of infiltration wells needed and locations would be determined during a pre-design investigation. For cost estimating purposes it is assumed that infiltration wells would be installed in the vicinity of Recharge Basin #51. Areas installed with infiltration wells would be restored as needed to allow for continued use of the area by the public. For cost estimating, it was assumed that infiltration wells would be spaced a minimum of 50 feet apart and 10 feet from any structure. During the design the actual spacing and location would be evaluated to ensure recharged groundwater would not have an impact on the flow direction of the groundwater contamination. The disposal options for treated groundwater include infiltration, discharge to surface water, or discharge to a POTW. All disposal options would be evaluated during the design phase. The remedial design would include an evaluation of any potential affects to the recharge basin if infiltration at that location was ultimately selected.

As required for all alternatives proposing to use in-well vapor stripping, a PDI would be necessary to verify treatment to the NYS Class GA groundwater quality standards can be achieved. Because of the depth and concentrations of contamination in the aquifer, variations in the typical in-well vapor stripping technologies would likely be necessary to provide the required treatment efficiency needed to meet the NYS Class GA groundwater quality standards. Anisotropies in the aquifer range from 27 to 100, which may make the formation of a circulation cell difficult. Typical in-well vapor stripping technologies rely on multiple passes to provide high treatment efficiencies. If a circulation cell cannot be established, the in-well system could still be utilized if the removal efficiency can meet the NYS Class GA standards in one pass through the well. Additional modifications to the technology may be required to provide treatment in one pass through the well.

The long term operation and maintenance of the centralized treatment system and in-well vapor stripping wells would consist of performance monitoring of the centralized treatment system, well cleaning and repair, infiltration well cleaning, changing filters and replacing both liquid and vapor phase carbon. For costing purposes it was assumed that performance monitoring would be

R2-0012149

conducted monthly to verify air emissions meet air quality standards and to determine the change out frequency for both the liquid and vapor phase carbon. This alternative would also include institutional controls and long term monitoring. For costing purposes, it was assumed that the treatment system would run for 30 years in order to achieve the remedial action objectives for the site. Long term monitoring would be required during the entire 30 year period.

The long-term groundwater monitoring program would include sampling from two early warning monitoring well clusters that were installed by NYSDEC in 1997. These two well clusters are located up gradient of the Bowling Green supply wells and screened at depths between 132 -164 and 504-516 feet bgs. Sampling from these depth intervals provides an "early warning" to the Bowling Green water supply wells BG-1 and BG-2, which are screened at depths of 470 and 524 feet bgs, respectively. In the event that sampling revealed that concentrations had increased an evaluation would be conducted to assess potential impact at the Bowling Green water supply wells, which would be further outlined during the remedial design phase. However, recent sampling results from April 2011 did not indicate concentrations in the two early warning monitoring wells clusters above their respective State and Federal water quality standards for Site related CVOCs.

R2-0012150

6.0 DETAILED EVALUATION OF ALTERNATIVES

6.1 Introduction

This section provides an individual analysis of Alternative 8B, Alternative 9 and an updated comparative analysis for NYSDEC's FS to include Alternatives 8B and 9. The comparative analysis also takes into account the updated assumptions discussed in Section 5.0 and the updated costs. The purpose of the evaluation is to identify the advantages and disadvantages of each alternative as well as key trade-offs among the alternatives. The detailed evaluation of Alternatives 8B and 9 consists of an individual analysis against the evaluation criteria and a comparative analysis among the alternatives to assess the relative performance of each alternative with respect to the evaluation criteria.

The evaluation was based on criteria established under *Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA October 1988). The nine evaluation criteria have been developed to address Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirements and to address the additional technical and policy considerations that have proven to be important for selecting among remedial alternatives. The evaluation criteria are as follows:

- **Overall Protective of Human Health and the Environment:** This criterion is an evaluation of the alternative'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 alternative's ability to achieve each of the RAOs is evaluated.
- **Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):** This criterion evaluates how the alternative complies with the ARARs, or if a waiver is required and how it is justified.
- **Long Term Effectiveness and Permanence:** Each alternative is evaluated for its long-term effectiveness after implementation. If wastes or treated residuals remain on-Site after the selected remedy has been implemented, the following items are evaluated:
    - 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);
    - The adequacy of the engineering and institutional controls intended to limit the risk;
    - The reliability of these controls, and
    - The ability of the remedy to continue to meet RAOs in the future.

R2-0012151

- **Reduction of Toxicity, Mobility, or Volume:** The alternative's ability to reduce the toxicity, mobility or volume of Site contamination is evaluated. Preference should be given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.
- **Short Term Effectiveness:** 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. A discussion of how the identified potential adverse impacts to the community or workers at the Site will be controlled, and the effectiveness of the controls, should be presented. A discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures) is provided. The length of time needed to achieve the remedial objectives is also estimated.
- **Implementability:** The technical and administrative feasibility of implementing each alternative is evaluated for this criterion. 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.
- **Relative Cost:** This criterion evaluates the estimated capital, operations, maintenance, and monitoring costs for each alternative. Relative costs are estimated and presented on a present worth basis. Cost estimates are provided in the range of plus 50% to minus 30%.
- **State Acceptance:** The State's and supporting agencies' comments, concerns and overall perception of the remedy are evaluated in a format that responds to all questions that are raised (i.e., responsiveness summary).
- **Community Acceptance:** The public's comments, concerns and overall perception of the remedy are evaluated in a format that responds to all questions that are raised (i.e., responsiveness summary).

The eighth and ninth criteria, State and Community acceptance, will be evaluated following public comments on the Proposed Remedial Action Plan, which will include this Technical Memorandum as part of the administrative record. The eighth and ninth criteria would be addressed once a final decision has been made and EPA's ROD is being prepared.

The individual analyses for Alternatives 1 through 8 are provided in the NYSDEC's ROD. Table 6-1 summarizes the individual analyses for all the alternatives, including new Alternatives 8B and 9. This table presents revisions to the original analyses based on the updates to the alternatives discussed in Section 5.0 and includes the updated costs.

R2-0012152

6.2 Individual Analysis of Alternative 8B

This section presents the individual analysis for Alternative 8B with respect to the first seven criteria:

Overall Protection of Human Health and the Environment – Alternative 8B provides overall protection of human health and the environment by removing contaminant mass from the shallow and deep aquifers within OU1 to prevent further migration by using in-situ chemical treatment such as ISCO and groundwater extraction and ex situ treatment. Implementing an in-situ chemical treatment to reduce elevated concentrations would provide a reduction in CVOCs in a relatively short time frame which would potentially reduce the overall time frame for the alternative to meet the RAOs. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of an in-situ chemical treatment. Temporary secondary containment systems and emergency spill kits with absorbents would be used to effectively reduce risks posed to the environment. During implementation the area would be sectioned off to prevent unauthorized access and at the end of each day chemical reagents would be either removed from the Site or properly secured and stored to prevent any contact with residents in the area. Risks posed to workers and the public during implementation of an in-situ chemical treatment would be controlled through monitoring and site-specific health and safety plans. Extracted groundwater may pose an exposure risk to workers prior to treatment. Physical processes such as dispersion, dilution and diffusion would further reduce CVOC concentrations not being actively treated by groundwater extraction and ex situ treatment or an in-situ chemical treatment such as ISCO.

Additional protection would be provided by the institutional controls that reduce the risk of ingestion of contaminated groundwater.

The aquifer is designated as a sole source aquifer and is in the vicinity of the Bowling Green water supply wells. Application of an in-situ chemical treatment such as ISCO would be in the upper portion (<170 feet bgs) of the aquifer which is a 330 feet vertical separation from the Bowling Green water supply wells and would be proposed over 1,000 feet horizontally from these wells. Therefore, while considered unlikely that the injection of an in-situ chemical treatment would impact the existing public water supply wells a study would be conducted prior to implementation. Prior to implementing the remedy a fate and transport model would be completed to verify no impacts would occur. Dispersion and dissolution of the injected chemicals would also decrease the potential for adverse impacts to the public water supply wells.

Compliance with ARARs – Alternative 8B would meet the ARARs after an extended period of operation. Use of an in-situ chemical treatment such as ISCO for elevated concentrations of CVOCs (10,000 µg/L) would potentially decrease the period of time required to meet ARARs by

R2-0012153

reducing the mass of contaminants in these areas. The groundwater extraction treatment system would be designed to address groundwater with contaminant concentrations greater than 100 µg/L of CVOCs and will treat the contaminated groundwater to the NYS Class GA groundwater quality standards. Groundwater contamination less than 100 µg/L of CVOCs but greater than the NYS Class GA groundwater quality standards would naturally attenuate over time.

There are no promulgated air quality standards for the contaminants of concern (COCs) in OU1under the National Ambient Air Quality Standards (NAAQS) or the NY Ambient Air Quality Standards (NYAAQS). However, emissions from the groundwater treatment plant would comply with the requirements of NYSDEC Air Toxics Program promulgated at Title 6 of the New York State Code of Rules and Regulations (6NYCRR) Part 212 and the corresponding guidance values in NYSDEC's guidance document *Guidelines for the Control of Toxic Ambient Air Contaminants*, which provides NYSDEC's policy for the control of toxic ambient air contaminant sources not directly addressed by the NYS or Federal ambient air quality standards.

Injection of an in-situ chemical treatment such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.

Long Term Effectiveness and Permanence – Alternative 8B would reduce and permanently remove CVOCs from the Upper Glacial and Magothy aquifers over an extended period of time. The implementation of an in-situ chemical treatment such as ISCO for elevated concentrations of CVOCs would further reduce concentrations in a shorter time period prior to treating the area with groundwater extraction and ex situ treatment. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. A robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths in order to ensure the effectiveness of an in-situ chemical treatment.

A time frame of 30 years is estimated for Alternative 8B to meet the RAOs. Institutional controls would minimize the potential for ingestion of contaminated groundwater by prohibiting its use as a water supply without treatment. A long-term monitoring program would be implemented to verify the long term effectiveness of an in-situ chemical treatment and groundwater extraction and ex situ treatment system. In accordance with CERCLA, a review would need to be conducted at least once every five years to verify that the remedy continues to provide adequate protection of human health and the environment.

Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment – Alternative 8B would reduce the toxicity and volume of contamination from the groundwater by removing contaminant mass from the aquifer. Air stripping would transfer CVOCs to the vapor phase which would then be treated using granular activated carbon. CVOCs adsorbed to the carbon would be destroyed during the carbon reactivation process.

Implementation of an in-situ chemical treatment such as ISCO to treat elevated concentrations of CVOCs (>10,000 µg/L) would reduce the toxicity and volume of contamination. After applying an in-situ chemical treatment, these areas would be further treated using groundwater extraction and ex situ treatment using air stripping.

Short Term Impacts and Effectiveness – The installation of extraction wells, transmission piping and the treatment plant building are expected to result in minimal impacts to human health or the environment. The estimated time for construction is one year. Potential exposure to contaminants during construction would be minimal because contaminants are located in the subsurface groundwater. Dust control measures may be necessary during installation of the transmission piping and treatment plant building, which would require the largest area of disturbance. Installation of the transmission piping and extraction wells would have an impact on traffic, because they would be installed along local roads in the off-site area. During installation traffic may need to be re-routed around roads where structures would be installed and additional personnel would be needed to provide traffic control. Construction would temporarily increase noise during work hours in the residential neighborhoods where extraction wells and transmission piping would be installed.

During in-situ chemical treatment such as ISCO implementation chemical reagents would require on site mixing which poses exposure risks to workers and the community. If pressure application of ISCO is needed, additional exposure risks may be presented if preferential pathways to the surface exist. These pathways may provide a conduit to the surface for chemical reagents under pressure. To reduce these risks all previous monitoring wells and boreholes installed in the vicinity of area proposed for ISCO application would be inspected to verify proper abandonment and a site specific health and safety plan would be prepared and implemented. The plan would outline response actions for eliminating and cleaning up any reagent surfacing that occurs during implementation. The health and safety plan would also provide the MSDSs for chemical reagents and requirements for proper handling and storage of the reagents. The installation of permanent injection points would cause short term disruptions to the community. Exposure to contaminants during injection point installation would be minimal and would be limited to contaminated water purged during well development and soil cuttings from drilling the injection points. During implementation the area would be sectioned off to prevent unauthorized access and at the end of each day chemical reagents would be either

R2-0012155

removed from the Site or properly secured and stored to prevent any contact with residents in the area.

Implementability – The technologies proposed for implementation under this alternative are all readily available and require no special equipment. In-situ chemical treatments such as ISCO are a readily available and proven technology. Implementation of in-situ chemical treatments should be completed by an experienced contractor familiar with the potential hazards of injecting chemical reagents into the groundwater. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. Robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths.

Technologies required for installing extraction and infiltration wells and constructing the groundwater treatment system are readily available. The technology proposed for vapor treatment is a commonly applied technology that is readily implementable.

A suitable location for the centralized treatment plant has yet to be identified. A review of all the properties within a quarter mile radius of OU1to identify potential sites was completed for this Technical Memorandum. Using the Nassau County Department of Assessment GIS land record viewer and the Long Island Index interactive map, eight (8) publically owned and 29 commercial/community service properties were identified. Five of the public properties were screened out (two were schools and three appeared to be foreclosed residences and were too small). The remaining public properties included the Bowling Green public water supply properties, storm water recharge Basin #51, and the Nassau County water supply well/basin property located off of Edgewood Drive. Due to the size of the property (1.42 acres) and the restricted access, the Nassau County water supply well/basin does not appear to be a viable location for a treatment plant. Based on the preliminary screening Recharge Basin #51 or the Bowling Green Water District properties would be the only viable locations within a quarter mile of the study area. Further evaluation, investigations, and discussions with local and county officials would need to be conducted to identify a suitable location.

Infiltration of the full amount of treated groundwater would require the installation of 20 infiltration wells. The area required for installation of the number of infiltration wells needed is estimated to be 40,000 square feet. A suitable location that would be acceptable to the community would need to be identified for the installation of the infiltration wells. Areas installed with infiltration wells would require restoring to allow for the continued use of these areas by the public.

Relative Cost – The 30-year present value cost of this alternative is estimated to be $24.2 million. The capital cost is estimated to be $8,862,000 and the average annual operations and monitoring cost is estimated to be $645,000. The capital cost is primarily for construction of the extraction wells, transmission piping, centralized treatment building and treatment equipment. The operations and monitoring costs include monitoring and maintenance of the extraction wells, transmission piping and treatment system equipment. The estimated cost for Alternative 8B is summarized in Table 6-2.

6.3 Individual Analysis of Alternative 9

This section presents the individual analysis for Alternative 9 with respect to the first seven criteria:

Overall Protection of Human Health and the Environment – Alternative 9 provides overall protection of human health and the environment by removing contaminant mass from the shallow and deep aquifers of the plume within OU1 to prevent further migration. Rapid reduction of elevated concentrations (>10,000 µg/L) would be achieved by injecting an in-situ chemical treatment, such as ISCO into these areas prior to using groundwater extraction and ex situ treatment to further reduce concentrations and meet RAOs. The portions of the aquifer having less than 1,000 µg/L of CVOCs would be treated using in-well vapor stripping. Physical processes such as dispersion, dilution and diffusion would further reduce CVOC concentrations in areas less than 100 µg/L but greater than the NYS Class GA groundwater quality standards, where active treatment would not be implemented. Additional protection would be provided by implementing institutional controls which would reduce the risk of ingestion of contaminated groundwater.

The aquifer is designated as a sole source aquifer and is in the vicinity of the Bowling Green water supply wells. Application of an in-situ chemical treatment such as ISCO would be in the upper portion (<170 feet bgs) of the aquifer which is a 330 feet vertical separation from the Bowling Green water supply wells and would be proposed over 1,000 feet horizontally from these wells. Therefore, while unlikely that the injection of an in-situ chemical treatment such as ISCO would impact the existing public water supply wells, a study would be conducted prior to implementation. Prior to implementing the remedy a fate and transport model would be completed to verify no impacts would occur. Dispersion and dissolution of the injected chemicals would also decrease the potential for adverse impacts to the public water supply.

Extracted groundwater may pose an exposure risk to workers prior to treatment. Groundwater treated by in-well vapor stripping wells may potentially spread contamination into the upper aquifer if the system cannot reduce groundwater contaminant concentrations to meet the groundwater quality standard. To minimize the potential for this risk, in the conceptual design,

R2-0012157

in-well vapor stripping wells would be limited to treat portions of the aquifer having less than 1,000 µg/L CVOCs.

Typical in-well vapor stripping relies on multiple passes or the formation of groundwater circulation cells to increase the treatment efficiency, however at this Site the formation of groundwater circulation cells may not be possible to establish due to the anisotropies of the aquifer. The in-well stripping system can still be utilized under these conditions if the removal efficiency of the well is sufficient for the effluent to meet the NYS Class GA groundwater quality standards. This Technical Memorandum assumes the in-well vapor stripping technology would be designed to treat groundwater to the NYS Class GA groundwater quality standards without relying on the formation of a groundwater circulation cell (i.e. one pass through the well). The remedial design would likely need enhancements or variations from the standard system so that the system would provide the required treatment efficiency. A pilot study for the in-well vapor stripping system is assumed to verify that the in-well vapor stripping system would meet RAOs for the Site and would be economical, technically feasible and reliable. If during the pilot study it is determined that in-well vapor stripping would not meet the RAOs or that the technology is cost prohibitive or technically infeasible, a full scale implementation would not be pursued.

Compliance with ARARs – Alternative 9 would meet the ARARs after an extended period of operation. Use of in-situ chemical treatment such as ISCO for elevated concentrations of CVOCs (10,000 µg/L) would potentially decrease the period of time required to meet ARARs by reducing the mass of contaminants in in-situ chemical treated areas. The treatment system portion of the remedy, consisting of both in-well vapor stripping wells and ex situ treatment of extracted groundwater, would be designed to address groundwater with contaminant concentrations greater than 100 µg/L of CVOCs and would treat the contaminated groundwater to the NYS Class GA groundwater quality standards. Groundwater outside the active treatment area with contaminant concentrations less than 100 µg/L of CVOCs but greater than the NYS Class GA groundwater quality standards would naturally attenuate over time. Selecting the remedial technology based on the contaminant concentrations decreases the probability that the alternative effluent would fail to meet the NYS Class GA groundwater quality standards.

There are no promulgated air quality standards for the COCs in the OU1 area under the NAAQS or the NYAAQS. However, emissions from the groundwater treatment plant would comply with the requirements of NYSDEC Air Toxics Program promulgated at 6NYCRR Part 212 and the corresponding guidance values in NYSDEC's guidance document Guidelines for the Control of Toxic Ambient Air Contaminants, which provides NYSDEC's policy for the control of toxic ambient air contaminant sources not directly addressed by the NYS or Federal ambient air quality standards.

Injection of an in-situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's UIC Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.

Typical in-well stripping provides a treatment efficiency of approximately 90%. A pilot study is recommended to verify that the in-well vapor stripping technology can achieve the NYS Class GA groundwater quality standards. Modifications to the standard technology may be needed to meet the treatment efficiency required to achieve the RAOs. In the event in-well vapor stripping is unable to achieve the NYS Class GA groundwater quality standards due to elevated concentrations or other limitations, the technology would be substituted with groundwater extraction and ex situ treatment.

Long Term Effectiveness and Permanence – Alternative 9 would reduce and permanently remove CVOCs from the Upper Glacial and Magothy aquifers over an extended period of time. The implementation of an in-situ chemical treatment, such as ISCO for elevated concentrations of CVOCs would further reduce concentrations in a shorter time period prior to treating the area with groundwater extraction and ex situ treatment. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. A robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths in order to ensure the effectiveness of in-situ chemical treatment.

A time frame of 30 years is estimated for Alternative 9 to meet the RAOs. Institutional controls would minimize the potential for ingestion of contaminated groundwater by prohibiting its use as a water supply without treatment. A long-term monitoring program would be implemented to verify the long term effectiveness of in-situ chemical treatment, such as ISCO and the in-well vapor stripping and groundwater extraction and ex situ treatment systems. In accordance with CERCLA, a review would be conducted at least once every five years to verify that the remedy continued to provide adequate protection of human health and the environment.

Typical in-well vapor stripping provides a treatment efficiency of approximately 90%. A pilot study would be completed to verify that the in-well vapor stripping technology can achieve the NYS Class GA groundwater quality standards. Modifications to the standard technology may be needed to meet the treatment efficiency required to achieve the RAOs. A pilot study would be conducted to verify the treatment efficiency of the in-well vapor stripping and its reliability prior to implementing the technology.

R2-0012159

Although iron and total hardness concentrations indicated a low potential for iron fouling and scaling, in-well vapor stripping wells may require additional maintenance to maintain their long term effectiveness and treatment efficiency. Changes can include a reduction in carbon dioxide from groundwater resulting in an increase in pH and subsequent mineral precipitation or a change in the redox potential causing iron precipitation.

In the event in-well vapor stripping is unable to achieve the NYS Class GA groundwater standards due to elevated concentrations or other limitations, the technology would be substituted with groundwater extraction and ex situ treatment.

Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment – Alternative 9 would reduce the toxicity and volume of contamination from the groundwater by removing contaminant mass from the aquifer. Air stripping and in-well vapor stripping will transfer CVOCs to the vapor phase which would then be treated using granular activated carbon. CVOCs adsorbed to the carbon would be destroyed during the carbon reactivation process.

Implementation of in-situ chemical treatment such as ISCO to treat elevated concentrations of CVOCs (>10,000 µg/L) would also reduce the toxicity and volume of contamination. After applying an in-situ chemical treatment, these areas would be further treated using groundwater extraction and ex situ treatment.

Short Term Impacts and Effectiveness – The installation of injection wells, extraction wells, in-well vapor stripping wells, transmission piping and the treatment plant building would result in minimal impacts to human health or the environment. The estimated time for construction is one year. Potential exposure to contaminants during construction would be minimal because contaminants are located in the subsurface groundwater. Dust control measures would potentially be necessary during installation of the transmission piping, in-well vapor stripping vaults, and treatment plant building, which would require the largest area of disturbance. Installation of approximately 22,000 feet of trench for the transmission piping, 20 in-well vapor stripping vaults, and six extraction wells would have an impact on traffic, because they would be installed along local roads within OU1. During installation traffic may need to be re-routed around roads where structures would be installed and additional personnel would be needed to provide traffic control. Construction would temporarily increase noise during work hours in the residential neighborhoods where extraction wells, in-well vapor stripping vaults, and transmission piping would be installed.

During in-situ chemical treatment implementation chemical reagents would require on site mixing which poses exposure risks to workers and the community. If pressure application of in-situ chemical treatment, such as ISCO is needed, additional exposure risks may be presented if preferential pathways to the surface exist. These pathways may provide a conduit to the surface

R2-0012160

for chemical reagents under pressure. To reduce these risks all previous monitoring wells and boreholes installed in the vicinity of area proposed for in-situ chemical treatment application would be inspected to verify proper abandonment and a site specific health and safety plan would be prepared and implemented. The plan would outline response actions for eliminating and cleaning up any reagent surfacing that occurs during implementation. The health and safety plan would also provide the MSDSs for chemical reagents and requirements for proper handling and storage of the reagents. Access agreements would be necessary to install injection points on private property. The installation of permanent injection points would cause short term disruptions to the community. Exposure to contaminants during injection point installation would be minimal and would be limited to contaminated water purged during well development and soil cuttings from drilling the injection points.

Implementability – The technologies proposed for implementation under this alternative are all readily available and require no special equipment. In-situ chemical treatment such as ISCO is a readily available and proven technology. Implementation of ISCO should be completed by an experienced contractor familiar with the potential hazards of injecting chemical reagents into the groundwater. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. Robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths.

Technologies required for installing extraction and infiltration wells and constructing the groundwater treatment system are readily available. The technology proposed for vapor treatment is a commonly applied technology that is readily implementable.

As discussed for Alternative 8B, a suitable location for the centralized treatment plant has yet to be identified. Based on the preliminary screening Recharge Basin #51 or the Bowling Green Water District properties would be the only viable locations within a quarter mile of the study area. Further evaluation, investigations, and coordination with local and county officials would need to be conducted to identify a suitable location.

Infiltration of the full amount of treated groundwater will require the installation of seven infiltration wells. The area required for installation of the number of infiltration wells needed is estimated to be 23,000 square feet. A suitable location that would be acceptable to the community would need to be identified for the installation of the infiltration wells. Areas installed with infiltration wells would be restored to allow for the continued use of these areas by the public. In-well vapor stripping wells and vaults would be located in streets or rights-of-way, which would require little or no land acquisition, but would require road opening permits from the Town. Vaults would need to be located around existing subsurface utilities which may be challenging in some areas. Coordination with the local Department of Public Works and

R2-0012161

subsurface investigations to adequately locate underground utilities would be required to identify suitable locations for these vaults. Assuming larger vaults (> 75 square feet needed to provide vapor treatment) would not be accepted or suitably fit into existing local roads and right of ways, it was assumed that vapor from the in-well systems would be conveyed to the central treatment building for vapor treatment. The length of trench estimated to convey vapor to a central treatment building is approximately 22,000 feet with the longest length of pipe estimated over 5,000 feet. To overcome these distances, vapor transmission would require the use of large vacuum blowers that would potentially cause excess noise in the vicinity of the treatment building. To mitigate the noise impacts, the building would require sound proofing and blowers would be installed with silencers. A potential for fine sand clogging of the in situ and ex situ treatment systems exists if the extraction and in-well vapor stripping wells are installed where the aquifer sands are smaller in size than the sand pack and/or well screen slot size resulting in fines entering and potentially clogging the monitoring well. Well screens and packing materials must be appropriately sized to ensure clogging won't occur.

In-well vapor stripping is a commercial technology patented to a small number of vendors which could limit competitive bidding. There are several variations of this technology. The depth of deepest contamination (estimated to 285 feet bgs) would increase the design challenges of the in-well system and air injection would likely be limited to the upper portion (100 foot) of the water column in the well. Anisotropic aquifer conditions may limit the ability for in-well vapor stripping wells to establish a groundwater circulation cell within the aquifer. The design assumption for this Technical Memorandum is that groundwater would be treated to the NYS Class GA groundwater quality standards without the formation of a groundwater circulation cell. The disadvantage of this assumption is that the in-well vapor stripping system would need to achieve relatively high removal efficiencies before introducing the groundwater back into the upper aquifer. Typical in-well vapor stripping provides a treatment efficiency of approximately 90%. A removal efficiency of 95% or greater may be needed to reduce contamination levels to meet the NYS Class GA groundwater quality standards.

Iron will dissolve into groundwater under anoxic or nearly anoxic conditions and precipitate out of groundwater as the dissolved oxygen levels increase. The in-well system would be susceptible to clogging of system components from precipitation of iron once the groundwater is oxygenated. Based on the iron concentrations measured in the aquifer (generally less than 1 mg/l) and observations made during the treatability testing conducted during the 2011 PDI, precipitation of iron from the groundwater does not appear to be an issue at this Site. A pilot study would be necessary to verify that the NYS Class GA groundwater quality standards can be consistently achieved by the in-well vapor stripping technology.

Although total hardness concentrations indicate a low potential for scaling, in-well vapor stripping wells may require additional cleaning due to changes in the geochemistry of the aquifer

R2-0012162

resulting from the technology. Changes can include a reduction in carbon dioxide from groundwater resulting in an increase in pH and subsequent mineral precipitation.

Relative Cost – The 30-year present value cost of this alternative is estimated to be $22.9 million. The capital cost is estimated to be $10,044,000 and the average annual operations and monitoring cost is estimated to be $680,000. The capital cost is primarily for construction of the extraction wells, in-well vapor stripping wells, transmission piping, centralized treatment building and treatment equipment. The estimated cost for Alternative 9 is summarized in Table 6-3.

6.4 Updated Cost Analysis of Alternatives

The cost estimates for the alternatives presented in NYSDEC's FS were updated to account for inflation from 2000 to 2013. In addition to accounting for inflation, the cost estimates for the alternatives were also updated to reflect modifications to the assumptions used in NYSDEC's FS based on information obtained during the 2009 and 2011 PDIs. The cost estimate revisions included:

- Increased estimated flow rates for the groundwater extraction and ex situ treatment alternatives based on aquifer pump tests;
- Reduction in in-well vapor stripping ROI resulting in an increase in the number of stripping wells;
- Increased estimated remedial time frames;
- Increase in the vertical and horizontal extent of groundwater contamination footprint; and
- Addition of ISCO, an in-situ chemical treatment, to all active treatment alternatives.

The estimated costs for Alternatives 1 through 8A are summarized in Tables 6-4 through 6-15.

6.5 Updated Comparative Analysis of Alternatives

A comparative analysis was completed where the alternatives were evaluated in relation to each other for each of the evaluation criteria. The purpose of this analysis is to identify the relative advantages and disadvantages of each alternative. The comparative analysis takes into account the updated assumptions used in preparing the updated cost estimates.

6.5.1 Overall Protection of Human Health and the Environment

All the alternatives include institutional controls which provide protection of human health by preventing ingestion of contaminated groundwater. Alternatives 1, 2 and 3 provide the least

R2-0012163

protection of human health and no protection for the environment when compared with the other alternatives since these alternatives provide no active treatment to reduce contamination levels or prevent the migration of the contaminant plumes.

All active treatment remedies include the implementation of ISCO, an in-situ chemical treatment used in the conceptual design for elevated concentrations of CVOCs (>10,000 µg/L) and physical processes for CVOC concentrations less than 100 µg/L. Use of an in-situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of an in-situ chemical treatment. Temporary secondary containment systems and emergency spill kits with absorbents would be used to effectively reduce risks posed to the environment. Risks posed to workers and the public during implementation of in-situ chemical treatment would be controlled through monitoring and site-specific health and safety plans.

The aquifer is designated as a sole source aquifer and is in the vicinity of the Bowling Green water supply wells. Application of in-situ chemical treatment, such as ISCO would be in the upper portion (<170 feet bgs) of the aquifer which is a 330 feet vertical separation from the Bowling Green water supply wells and would be proposed over 1,000 feet horizontally from these wells. It is therefore unlikely that the injection of in-situ chemical treatment such as ISCO would impact the existing public water supply wells. Prior to implementing the remedy a fate and transport model would be completed to verify no impacts would occur. Dispersion and dissolution of the injected chemicals would also decrease the potential for adverse impacts to the public water supply.

Physical processes such as dispersion, dilution and diffusion would further reduce CVOC concentrations in areas less than 100 µg/L but greater than the NYS Class GA groundwater quality standards, where active treatment would not be implemented. Additional protection would be provided for all the active alternatives by implementing institutional controls which would reduce the risk of ingestion of contaminated groundwater.

Of the active treatment remedies, the in-well stripping alternatives provide similar levels of protection as the comparable groundwater extraction and ex situ treatment alternatives. The Alternatives that target areas of greater contaminant concentrations in only a portion of the aquifer such as Alternatives 4A and 4B which targets greater contaminated groundwater to a depth of 175 feet bgs, and Alternatives 5A and 5B which targets greater contaminated groundwater to a depth of 200 feet bgs, would provide the least protection of all the active remedies relative to alternatives that target a larger portion of the aquifer. Alternatives 6A and 6B address a larger portion of the contamination in the upper aquifer in order to achieve the NYS Class GA groundwater quality standards, and are the next protective. Alternatives 7A and 7B are the next protective because they

R2-0012164

address both the upper and lower aquifer to a depth of 200 feet bgs in order to achieve NYS Class GA groundwater quality standards and Alternatives 8A, 8B and 9 are the most protective because they will address the entire upper and lower aquifer.

While all the Alternatives would rely on natural attenuation to some degree to achieve RAOs, Alternatives 8A, 8B and 9 relies the least on natural attenuation because these alternatives are anticipated to capture more of the contamination than any of the other alternatives.

In-well vapor stripping alternatives may be less protective of the environment than the comparable groundwater extraction and treatment alternative because there is a potential for contaminating the upper aquifer using the in-well vapor stripping if NYS Class GA groundwater quality standards are not met before reintroducing treated groundwater. A pilot study would be required to evaluate and ensure that the effluent standards can be consistently achieved.

6.5.2 Compliance with ARARs

Alternative 1 does not comply with any ARARs with the exception of the Federal and NYS requirement to include a "no action" alternative in the range of detailed evaluation. Alternatives 2 and 3 would not achieve site ARARs within a reasonable timeframe due to the elevated concentrations of CVOCs (>100 µg/L) in the aquifer. Data collected during the 2011 PDI indicates that as a whole biodegradation of CVOCs is not progressing at a significant rate and natural attenuation of the contaminants is likely to exceed 30 years.

All active remediation alternatives would comply with the ARARs for both groundwater and air emissions. Alternatives 6A, 6B, 7A, 7B, 8A, 8B and 9 are expected to be more effective at meeting the RAOs since these alternatives will treat both the upper and deep portions of the aquifer and will remove more contamination than the Alternatives 4A, 4B, 5A, and 5B which would treat only a portion of the aquifer and would leave a larger portion of the aquifer untreated. Alternatives 8A, 8B and 9 would have the greatest mass removal than all the alternatives as these alternatives would address the deepest portion of the aquifer determined to be impacted.

Injection of an in-situ chemical treatment such as ISCO into the aquifer would require compliance with EPA's UIC Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.

Typical in-well stripping provides a treatment efficiency of approximately 90%. A removal efficiency of 95% or greater may be needed for one pass through the in-well air stripper to reduce contamination levels to meet the NYS Class GA groundwater quality standards. A pilot study would be necessary for all the alternatives using in-well vapor stripping to verify ARARs for groundwater can be achieved. Because in-well vapor stripping wells will be limited under

R2-0012165

Alternative 9 to portions of the aquifer having concentrations of CVOCs less than 1,000 µg/L, there is a greater potential for in-well vapor stripping wells to meet ARARs than the other in-well vapor alternatives (Alternatives 4A – 8A).

6.5.3 Long Term Effectiveness and Permanence

Alternatives 1, 2 and 3 would not provide a high degree of long-term effectiveness or permanence as no active remediation measures are proposed. Alternatives 2 and 3 rely on natural attenuation to reduce CVOC groundwater contamination. These alternatives would likely have limited effectiveness in areas of elevated CVOC concentrations (>100 µg/L) given the lack of CVOC daughter compounds in the aquifer suggesting minimal if any biological degradation is occurring.

The implementation of in-situ chemical treatment such as ISCO to treat elevated concentrations of CVOCs under all active remedies would further reduce concentrations in a shorter time period prior to treating the area with either in-well vapor stripping or groundwater extraction and ex situ treatment. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. Robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths in order to ensure the effectiveness of an in-situ chemical treatment such as ISCO.

Alternatives 4A, 4B, 5A, and 5B would permanently remove CVOC contaminants from the groundwater through active in situ or ex situ treatment processes. For these alternatives, the greater concentration areas of groundwater contamination in the targeted treatment zone (either upper or lower) would be addressed and natural attenuation would be relied upon to achieve RAOs. Alternatives 6A, 6B, 7A, 7B, 8A, 8B and 9 would also permanently remove CVOC contaminants from groundwater through either in-well vapor stripping and/or groundwater extraction and ex situ treatment processes. In all active remedies, the NYS Class GA groundwater quality standards would be achieved to the depths designated for each Alternative. Implementation of Alternatives 4A, 4B, 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B, or 9 (all active remedies) would be expected to provide a degree of long-term effectiveness and permanence, with implementation of Alternative 8A, 8B or 9 expected to provide the highest degree of long-term effectiveness and permanence since these alternatives would treat the entire aquifer.

The aquifer anisotropy ratio was determined to be in the range of 27 to 100 less than the 1,000 ratio cited in previous reports. For some in-well vapor stripping design configurations, development of a circulation cell is required to achieve operational treatment effectiveness. Some designs using the in-well vapor stripping technology are possible that allow for effective treatment without reliance on the development of a circulation cell. Design of the in-well stripping wells would need to take into account that groundwater circulation may not be viable and that any treatment at the wellhead would need to effectively reduce the contamination to levels meeting or exceeding the

R2-0012166

RAOs before reintroducing water back into the aquifer. If properly designed, treatment without the use of circulation can still be as effective as the treatment provided for the comparable groundwater extraction and ex situ treatment alternatives. A pilot study is recommended for the in-well vapor stripping alternatives to verify the effectiveness of the technology prior to implementing the full scale remedy. In the event the pilot study determines that in-well vapor stripping would not be effective, economically or technically feasible the technology would be replaced with groundwater extraction and ex situ treatment.

Although iron and total hardness concentrations indicated a low potential for iron fouling and scaling, the alternatives using in-well vapor stripping may require additional maintenance to maintain their long term effectiveness and treatment efficiency due to changes in the geochemistry of the aquifer resulting from the technology. Changes can include a reduction in carbon dioxide from groundwater resulting in an increase in pH and subsequent mineral precipitation or a change in the redox potential causing iron precipitation.

The estimated time frames for operating the in-well vapor stripping and groundwater extraction and ex situ treatment systems for all the alternatives presented is estimated to be 30 years. This conservative estimate was used for the in-well vapor stripping alternatives as well as the groundwater extraction and treatment since layouts for Alternatives 4A through 7A and 9 locate wells down gradient of the plumes, providing a "flow through" treatment process instead of mass removal. Time frames therefore need to account for the time it takes contaminated groundwater to flow to the in-well vapor stripping wells.

6.5.4 Reduction of Toxicity, Mobility, or Volume

Alternatives 1, 2, and 3 would allow natural processes to dissipate the contaminants, but would not create any reduction of toxicity, mobility, or volume of contamination present in the groundwater down gradient of the NCIA, as no active remedial measures are included.

The implementation of an in-situ chemical treatment such as ISCO for all the active remedial alternatives would provide a greater measure of reduction in toxicity and volume of high concentrations (>10,000 µg/L). After applying an in-situ chemical treatment, these areas would be further treated using in-well vapor stripping or groundwater extraction and ex situ treatment.

Alternatives 4A, 4B, 5A, and 5B would result in a permanent decrease in the concentration, mobility, and volume of contaminants present in the aquifer. These alternatives address greater concentration areas within the targeted treatment zone (either upper or lower) with active treatment. Alternatives 6A, 6B, 7A, 7B, 8A 8B and 9 would result in a permanent decrease in the concentration, mobility, and volume of contaminants present in the aquifer. Contaminants under Alternative 4 through 9 would be treated via air stripping, transferring the contamination to the

R2-0012167

vapor phase. Vapor phase contaminants would be treated via adsorption onto granular activated carbon and ultimately destroyed during the carbon reactivation process.

For the in-well vapor stripping and groundwater extraction and ex situ treatment scenarios, reductions in toxicity, mobility, and volume of CVOCs would be the greatest under Alternatives 8A, 8B and 9 where the entire aquifer within OU1is targeted (i.e., treatment of the OU1 to depths of 285 feet bgs).

6.5.5 Short Term Impacts and Effectiveness

Alternatives 1, 2, and 3 would result in the least amount of short-term impacts to human health and the environment as the only site activities included (in Alternatives 2 and 3) are monitoring well installation and sampling.

All the active remedial alternatives include the application of in-situ chemical treatments such as ISCO to elevated CVOC concentrations. During in-situ chemical treatment implementation chemical reagents would require on site mixing which poses exposure risks to workers and the community. If a pressure application of in-situ chemical treatment is needed, additional exposure risks may be presented if preferential pathways to the surface exist. These pathways may provide a conduit to the surface for chemical reagents under pressure. To reduce these risks all previous monitoring wells and boreholes installed in the vicinity of area proposed for in-situ chemical treatment application would be inspected to verify proper abandonment and a site specific health and safety plan would be prepared and implemented. The plan would outline response actions for eliminating and cleaning up any reagent surfacing that occurs during implementation. The health and safety plan would also provide the MSDSs for chemical reagents and requirements for proper handling and storage of the reagents. Access agreements would be necessary to install injection points on private property. The installation of permanent injection points would cause short term disruptions to the community. Exposure to contaminants during injection point installation would be minimal and would be limited to contaminated water purged during well development and soil cuttings from drilling the injection points.

Alternatives 4A, 4B, 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B and 9 would cause short-term disruptions to the surrounding community due to construction of the remedial components. Alternatives 4A, 5A, 6A, 7A and 8A would cause more disruption to the community than the corresponding groundwater extraction and ex situ treatment alternatives since the number of wells required for the in-well vapor stripping system as compared to the groundwater extraction and ex situ treatment system are two to five times more wells. Additional trenching would also be required for the in-well vapor stripping alternatives if a centralized vapor treatment system is used.

Alternatives 4A, 4B, 5A, and 5B which are estimated to have construction time frames of approximately six months are considered to have less short-term impacts than Alternatives 6A, 6B,

R2-0012168

7A, 7B, 8A, 8B and 9. Because the latter require more supporting infrastructure, construction time frames are estimated to be between six months to one year for Alternatives 6A, 6B, 7A, 7B, 8A, 8B, and 9.

The potential hazards to workers implementing the remedy and the surrounding public due to implementation of these alternatives is expected to be minor for the active treatment alternatives. Some noise and traffic would be expected during the brief period of construction of Alternatives 4A, 4B, 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B and 9 with the least amount of disruption anticipated under Alternatives 4A and 4B and the most disruption under Alternatives 8A, 8B and 9. Of these three, Alternative 8B will be the least disruptive followed by Alternative 9 and Alternative 8A.

6.5.6 Implementability

All fourteen alternatives are readily implementable although some pose more challenges than others. Alternative 1 would be the easiest of the alternatives to implement (No Further Action). Alternative 2 involves monitoring well installation, a site characterization program, establishment of institutional measures, and long-term MNA monitoring. Alternative 3 is also straightforward, as only the construction of monitoring wells, establishment of institutional measures, and a long-term monitoring program would be required.

All active remedial alternatives include the implementation of in-situ chemical treatment such as ISCO to elevated concentrations of CVOCs (>10,000 µg/L). In-situ chemical treatments such as ISCO are readily available and proven technologies. Implementation of an in-situ chemical treatment should be completed by an experienced contractor familiar with the potential hazards of injecting chemical reagents into the groundwater. The effective distribution of reagents in the treatment zone and the reactivity of a particular oxidant with the contaminant(s) of concern are critical to the success of this technology. A robust site characterization, screening, and feasibility testing would be required, particularly related to understanding subsurface heterogeneities or preferential flow paths.

Alternatives 4A, 5A, 6A, 7A, 8A and 9 involve the installation of in-well vapor stripping wells and a centralized vapor treatment system building. In-well vapor stripping is a commercial technology patented to a small number of vendors which could limit competitive bidding. There are several variations of this technology. The depth of deepest contamination (estimated 285 feet bgs) would increase the design challenges of the in-well vapor stripping system and air injection would likely be limited to the upper portion (100 foot) of the water column in the well. Anisotropic aquifer conditions may limit the ability for in-well vapor stripping wells to establish a groundwater circulation cell within the aquifer. The conceptual design assumption in this Technical Memorandum is that groundwater would be treated to the NYS Class GA groundwater quality standards without the formation of a groundwater circulation cell. The disadvantage of this assumption is that the in-well vapor stripping system would need to achieve relatively high

R2-0012169

removal efficiencies before introducing the groundwater back into the upper aquifer. Typical in-well vapor stripping provides a treatment efficiency of approximately 90%. A removal efficiency of 95% or greater may be needed to reduce contamination levels to meet the NYS Class GA groundwater quality standards. The potential for in-well vapor stripping wells to meet the effluent standards is greater under Alternative 9 as the technology would only be used in areas with a maximum CVOC concentration of 1,000 µg/L.

Iron will dissolve into groundwater under anoxic or nearly anoxic conditions and precipitate out of groundwater as the dissolved oxygen levels increase. The in-well vapor stripping system would be susceptible to clogging of system components from precipitation of iron once the groundwater is oxygenated. Based on the iron concentrations measured in the aquifer (generally less than 1 mg/l) and observations made during the treatability testing conducted during the 2011 PDI, precipitation of iron from the groundwater does not appear to be an issue at this Site. A pilot study would be necessary to verify that the NYS Class GA groundwater quality standards can be consistently achieved by the in-well vapor stripping technology.

Although total hardness concentrations indicate a low potential for scaling, in-well vapor stripping wells may require additional cleaning due to changes in the geochemistry of the aquifer resulting from the technology. Changes can include a reduction in carbon dioxide from groundwater resulting in an increase in pH and subsequent mineral precipitation.

In-well vapor stripping wells and vaults can be located in streets or rights-of-way, which would require little or no land acquisition, but would require road opening permits from the Town. Vaults would need to be located around existing subsurface utilities which may be challenging in some areas. Coordination with the local Department of Public Works and subsurface investigation to adequately locate underground utilities would be required to identify suitable locations for these vaults. Assuming larger vaults (> 75 square feet needed to provide vapor treatment) would not be accepted or suitably fit into existing local roads and right of ways, it was assumed that a centralized vapor treatment plant would be used to treat vapors from the in-well vapor treatment wells. A suitable location and land acquisition for the treatment plant would need to be identified prior to implementing these alternatives. Use of a centralized vapor treatment building located adjacent to the Bowling Green water supply wells would require the installation of over 5,000 feet of vapor transmission pipe and between 13,000 to 22,000 feet of trench depending on the Alternative (4A requiring the least to 8A requiring the most). Piping would need to be adequately sized to minimize friction and head loss and one or more large blowers (25 HP) may be needed to convey contaminated vapor to the central treatment plant for the in-well vapor stripping alternatives. The use of large and/or multiple blowers would produce excess noise that would need to be mitigated through the use of blower silencers and/or construction of a sound proof building. Condensation sumps may also be necessary to collect condensate along the pipe line. Sumps would be installed along the transmission line in the roadway and would need to be accessible for emptying collected

R2-0012170

condensate for off-site disposal or discharge to a POTW. The location of two or more central vapor treatment locations in lieu of one centralized building may also be an option if suitable locations for multiple treatment locations are identified. Having multiple treatment system locations would reduce the size of the blower needed to pull a vacuum to draw vapors to the treatment system and reduce the length of transmission piping. Of the in-well alternatives, Alternative 4A would be the easiest to implement since it requires the least amount of infrastructure and only requires the installation of 16 in-well vapor stripping wells versus 72 stripping wells needed for Alternative 8A.

Alternatives 4B, 5B, 6B, 7B, 8B and 9 would include the installation of a groundwater extraction and ex situ treatment system, which is a commonly applied technology at inactive hazardous waste sites. Under each of these six groundwater extraction and ex situ treatment scenarios, land would need to be acquired for the installation of a central treatment building (3,200 - 4,000 square feet) and infiltration wells for the return of treated effluent back to the aquifer. As discussed for the in-well alternatives, wells would be installed along public roadways which would require little or no land acquisition, but permits would need to be obtained. Alternative 4B would be the easiest to implement of the groundwater extraction and ex situ treatment alternatives since it requires the least amount of infrastructure and requires installation of four wells versus 11 wells for Alternative 8B.

The groundwater extraction and ex situ treatment alternatives would require fewer disturbances to roadways as compared to the in-well vapor stripping well alternatives because the in-well alternatives require two to five times the number of treatment/removal wells. Both sets of alternatives would require installation of transmission lines for conveyance of contaminated media to a centralized treatment building. The groundwater extraction systems would require transmission of contaminated groundwater under pressure to a centralized treatment location. The in-well vapor stripping systems would require transmission of contaminated vapor under vacuum to a centralized treatment location. For the groundwater extraction system, the risk of a release of contaminated groundwater is greater for a pressurized force main relative to the vacuum transmission line of the in-well vapor stripping system. The vapor transmission line would need to be designed and installed to maintain obstruction free flow and manage liquid condensate increasing the implementability and complexity relative to a pressurized force main. A failure in the vapor transmission line could decrease the treatment efficiency of the in-well vapor stripping wells resulting in the potential for contaminated groundwater to be discharged into the upper aquifer. A potential for fine sand clogging of the in situ and ex situ treatment systems exists if the extraction and in-well vapor stripping wells are installed where the aquifer sands are smaller in size than the sand pack and/or well screen slot size resulting in fines entering and potentially clogging the monitoring well. Well screens and packing materials must be appropriately sized to ensure clogging won't occur.

R2-0012171

Alternative 9 would be a combination of both in-well vapor stripping wells and groundwater extraction wells. Under this alternative 20 in-well vapor stripping wells and six groundwater extraction wells would be installed. Implementation of this alternative would be similar to Alternatives 8A and 8B. However, Alternative 9 would be easier to implement as compared to Alternative 8A as there would be less in-well vapor stripping wells and therefore less difficulty in obtaining street closure permits and minimize construction activities.

6.5.7 Relative Cost

This section provides a comparison of the relative costs for each alternative by presenting them in order from the least expensive to the most expensive. The costs of each remedial alternative are summarized in Table 6-1.

Alternative 1, which includes no further action has the lowest present value cost of $0. Alternative 3 ($2.6 million) has the next lowest relative cost followed by Alternative 2 ($3.1 million).

Alternative 4A (remediation of upper portion of aquifer [to 175 feet bgs] with in-well vapor stripping) has an estimated present worth cost of $15.0 million. Alternative 5A (remediation of upper and deep portions of aquifer [to 200 feet bgs] with in-well vapor stripping) was found to have the fifth lowest estimated present worth cost of $15.7 million.

The sixth and seventh lowest estimated present worth costs were Alternative 4B (remediation of upper portion of the aquifer [to 175 feet bgs]), at $16.1 million and Alternative 5B (remediation of upper portion and deep portions of the aquifer [to 200 feet bgs]), at $16.3 million.

Alternative 6A (full plume remediation of upper portion of aquifer [to 175 feet bgs] with in-well vapor stripping), had the eight lowest estimated present worth cost of $20.5 million, and Alternative 7A (full plume remediation of upper and deep portions of aquifer [to 200 feet bgs] with in-well vapor stripping) had the ninth lowest estimated present worth cost of $23.8 million.

The tenth lowest estimated present worth cost was Alternative 9 (full plume remediation using combined technologies) of $22.9 million. Alternative 6B (full plume remediation of upper portion of aquifer [to 175 feet bgs]), $23.2 million and Alternative 8A (full plume remediation of upper portion and deep portions of the aquifer), $24.0 million had the eleventh and twelfth lowest costs, respectively

The most expensive alternatives were Alternative 7B (full plume remediation of upper and deep portion of aquifer [to 285 feet bgs] with groundwater extraction/air stripping), $24.1 million and Alternative 8B (full plume remediation of upper and deep portion of aquifer with groundwater extraction/air stripping), $24.2 million.

R2-0012172

For each active treatment technology, the systems that address the upper and deep portions of the aquifer were found to be more costly than the corresponding systems that address only the upper portion of the aquifer. An analysis of the two active treatment technologies conducted for this Technical Memorandum found that the in-well vapor stripping alternatives were typically less expensive than the comparative groundwater extraction and ex situ treatment alternatives.

Individual alternative cost tables for the active remedies are included in Tables 6-4 through 6-15.

R2-0012173

7.0 REFERENCES

NYSDEC Division of Environmental Remediation. Record of Decision, New Cassel Industrial Area Sites, Town of North Hempstead, Nassau County, New York, Off-site Groundwater South of the New Cassel Industrial Area, Operable Unit No. 3. October 2003.

Lawler, Matusky & Skelly Engineers, LLP (LMS). Remedial Investigation/Feasibility Study (RI/FS) Report, New Cassel Industrial Area, Offsite Groundwater, Town of North Hempstead, Nassau County. Prepared for New York State Department of Environmental Conservation (NYSDEC). September 2000.

Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR). Pre-Design Investigation Evaluation Report, New Cassel Industrial Area, Offsite Groundwater OU#3. Prepared for NYSDEC. March 2010.

Dvirka and Bartilucci Consulting Engineers (D&B). Pre-Design Investigation Report New Cassel Industrial Area Site Operable Unit No 3, Town of Hempstead, Nassau County, New York Site No. 1-30-043, Work Assignment No. D004446-6. Prepared for NYSDEC. June 2009.

USDA. U.S. Department of Agriculture Soil Survey of Nassau County, New York. United States Department of Agriculture, Soil Conservation Service; in cooperation with Cornell University Agricultural Experiment Station. 1987.

USEPA. Interim Final Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA. October 1988, OSWER Directive 9335.3-01. 1988.

USEPA. Hazard Ranking System Documentation Package, New Cassel/Hicksville Ground Water Contamination, Nassau County, New York. CERCLIS ID No.: NY0001095363. March 2011. Available online: http://www.epa.gov/superfund/sites/docrec/pdoc1832.pdf Accessed January 3, 2013.

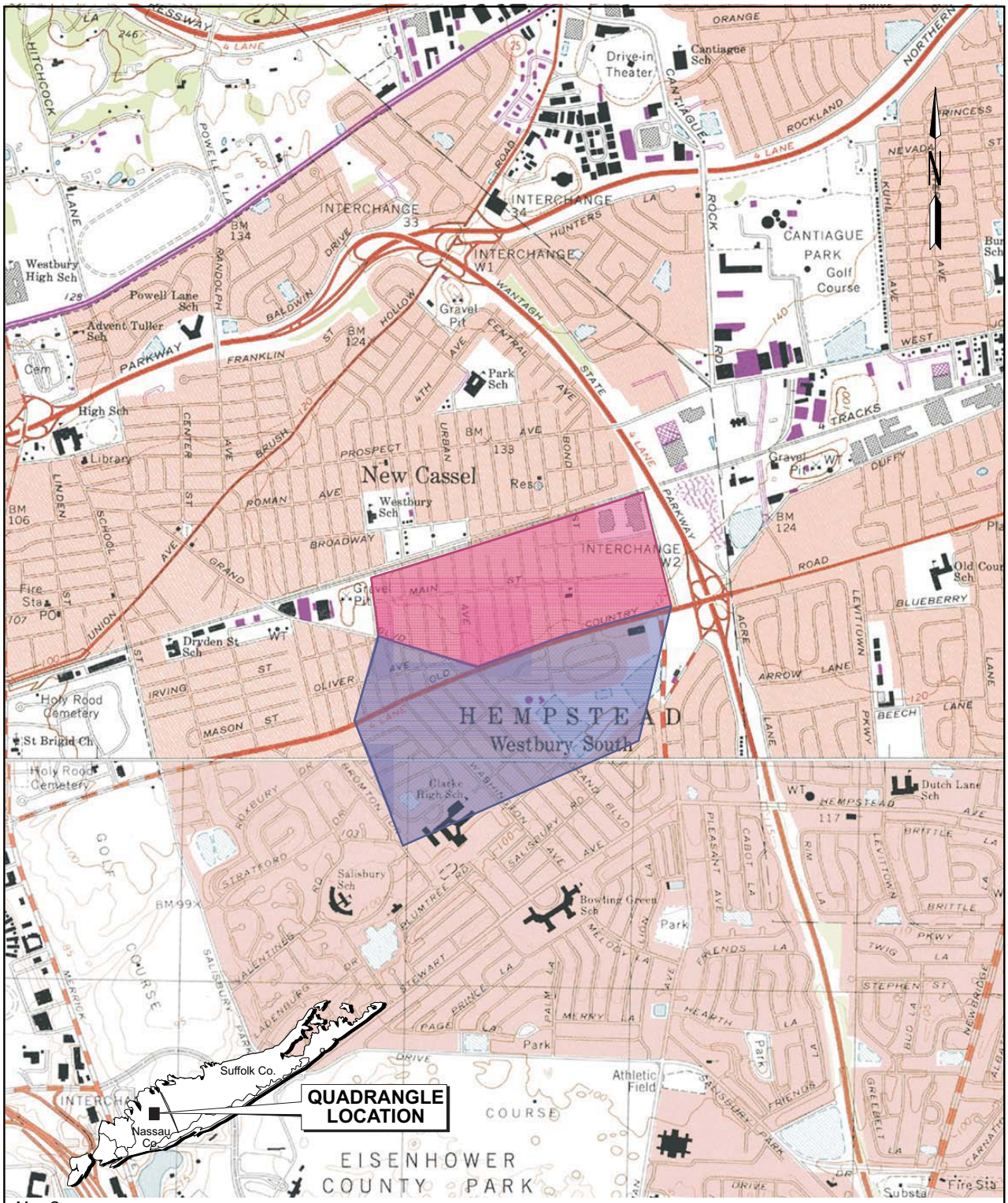
8.0 GLOSSARY OF ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirement
ART	Accelerated Remediation Technologies
ASTM	America Society for Testing and Materials
BG	Bowling Green
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
CAMP	Community Air Monitoring Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPP	Community Participation Plan
COCs	Contaminants of Concern
CVOC	chlorinated volatile organic compound
D&B	Dvirka and Bartilucci Consulting Engineers
DCA	Dichloroethane
DCE	Dichloroethene
DDC	Density Driven Convection
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FSMW	Frost Street Monitoring Well
GAC	granular activated carbon
GIS	geographic information system
gpd	gallons per day
gpm	gallons per minute
GRA	General Response Action
H_2S	hydrogen sulfide
HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc.
HP	horsepower
ISCO	In Situ Chemical Oxidation
K	hydraulic conductivity
LMS	Lawler Matusky and Skelly Engineers
LTM	Long Term Monitoring
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
mg/l	milligrams per liter
mgd	million gallons per day
MNA	Monitored Natural Attenuation
MW	monitoring well
NAAQS	National Ambient Air Quality Standards
NCIA	New Cassel Industrial Area
NPL	National Priorities List
NYAAQS	NY Ambient Air Quality Standards
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

R2-0012175

OU	Operable Unit
OSHA	Occupational Health and Safety Administration
PCE	tetrachloroethylene
PDI	Pre-Design Investigation
POTW	Publicly Owned Treatment Works
PSA	Preliminary Site Assessment
RAO	Remedial Action Objective
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
ROI	radius of influence
SPDES	State Pollutant Discharge Elimination System
TBC	To-Be-Considered
TCE	Trichloroethene
UIC	Underground Injection Control
USACE KC	Army Corp of Engineers Kansas City District
USGS	United States Geological Survey
UVB	Unterdruck-Verdampfer-Brunnen
µg/L	micrograms per liter
UGA	Upper Glacial Aquifer
VOC	volatile organic compound
1,1,1-TCA	1,1,1-Trichloroethane

R2-0012176



Map Source:
©1998-2006, Maptech Inc.
USGS 7.7-min. Quadrangle, Hicksville, NY, 1967/photorevised 1979, and Freeport, NY 1994.
\Fig1_SiteLocation.des

NCIA Study Area
OU1

0 2000 ft
SCALE (ft)

HDR|OBG JV	Site Location Map	Figure 2-1

TMW-6 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
65	0.94	< 0.5	< 0.5	1.3	1.7	< 0.5	0.23	1.1	2.9	< 0.5	**5**	< 0.5	< 0.5
85	2.2	< 0.5	< 0.5	1.9	2.7	< 0.5	0.33	1.3	4.6	< 0.5	**8.4**	< 0.5	< 0.5
105	2.3	< 0.5	< 0.5	1.3	3.4	< 0.5	0.47	1.8	**5.5**	< 0.5	**11**	< 0.5	< 0.5
125	**7.9**	< 0.5	< 0.5	0.86	**11**	< 0.5	< 0.5	**9.8**	**14**	< 0.5	**63**	< 0.5	< 0.5
145	4	< 0.5	< 0.5	1.5	**5.2**	< 0.5	< 0.5	1.6	**8.6**	< 0.5	**8.9**	< 0.5	< 0.5
165	1.8	< 0.5	< 0.5	1.3	2.1	< 0.5	0.23	0.91	3.5	< 0.5	**6.2**	< 0.5	< 0.5
185	3	< 0.5	< 0.5	3.6	4.3	< 0.5	< 0.5	**7.5**	**6.6**	< 0.5	**12**	< 0.5	< 0.5
205	**6.1**	< 0.5	< 0.5	**9.9**	**12**	**2.4**	0.45	**18**	**22**	< 0.5	**16**	< 0.5	< 0.5
225	**16**	< 0.5	0.37	**20**	**44**	< 0.5	0.4	0.81	**48**	< 0.5	2.7	< 0.5	< 0.5
245	**17**	< 0.5	0.35	**33**	**30**	< 0.5	0.33	0.84	**5.9**	< 0.5	**5.8**	< 0.5	< 0.5
265	**9.9**	< 0.5	< 0.5	**12**	**18**	< 0.5	0.22	0.95	**16**	< 0.5	2.4	< 0.5	< 0.5
285	4.8	< 0.5	< 0.5	**11**	**7.3**	< 0.5	0.21	0.68	**6.4**	< 0.5	1.2	< 0.5	< 0.5

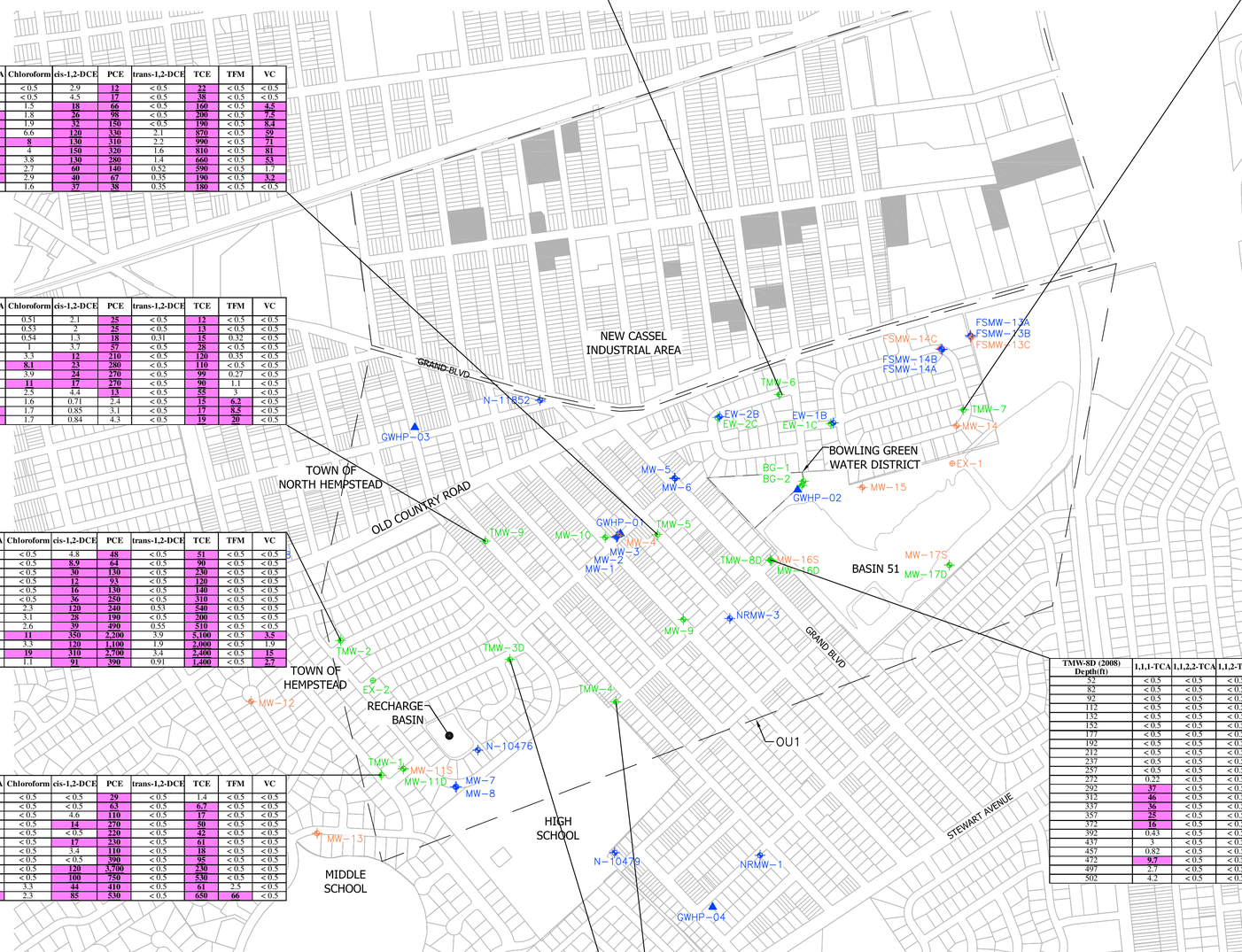
TMW-7 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
65	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**11**	**460**	< 0.5	**17**	< 0.5	< 0.5
85	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**10**	**470**	< 0.5	**14**	< 0.5	< 0.5
105	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**44**	**870**	< 0.5	**45**	< 0.5	< 0.5
125	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**36**	**840**	< 0.5	**41**	< 0.5	< 0.5
145	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**32**	**800**	< 0.5	**44**	< 0.5	< 0.5
165	0.22	< 0.5	< 0.5	0.35	0.3	< 0.5	< 0.5	**14**	**720**	< 0.5	**21**	< 0.5	< 0.5
185	1.8	< 0.5	< 0.5	0.9	2.4	< 0.5	0.25	**330**	**11,000**	1.4	**390**	< 0.5	1.9
205	2	< 0.5	< 0.5	1.1	3	< 0.5	0.34	**300**	**6,500**	1.3	**300**	< 0.5	1.8
225	1.6	< 0.5	< 0.5	**5.1**	2.7	< 0.5	0.66	1	**9.3**	< 0.5	**100**	< 0.5	< 0.5
245	1.7	< 0.5	< 0.5	**5.3**	3.4	< 0.5	0.65	1.2	**12**	< 0.5	**110**	< 0.5	< 0.5
265	0.44	< 0.5	< 0.5	0.5	0.88	< 0.5	< 0.5	0.82	**29**	< 0.5	**35**	< 0.5	< 0.5
285	0.63	< 0.5	< 0.5	1.5	1.1	< 0.5	0.36	0.58	**9.2**	< 0.5	**34**	< 0.5	< 0.5

TMW-5 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
65	**23**	< 0.5	< 0.5	**110**	**84**	< 0.5	< 0.5	2.9	**12**	< 0.5	**22**	< 0.5	< 0.5
85	**91**	< 0.5	< 0.5	**120**	**100**	< 0.5	< 0.5	4.5	**17**	< 0.5	**38**	< 0.5	< 0.5
105	**1,400**	< 0.5	0.38	**1,000**	**1,200**	< 0.5	1.5	**18**	**66**	< 0.5	**160**	< 0.5	**4.5**
125	**1,400**	< 0.5	< 0.5	**1,600**	**1,300**	**5**	1.8	**26**	**98**	< 0.5	**200**	< 0.5	**7.5**
145	**1,100**	< 0.5	0.85	**1,800**	**1,300**	**5.5**	1.9	**32**	**150**	< 0.5	**190**	< 0.5	**8.4**
165	**440**	< 0.5	**2.5**	**770**	**1,000**	**4.8**	6.6	**120**	**330**	2.1	**870**	< 0.5	**59**
185	**170**	< 0.5	**2.6**	**280**	**690**	**4.4**	**8**	**130**	**310**	2.2	**990**	< 0.5	**71**
205	**59**	< 0.5	**1.6**	**96**	**220**	**3.5**	4	**150**	**320**	1.6	**810**	< 0.5	**81**
225	**43**	< 0.5	**1.3**	**79**	**150**	**3.9**	3.8	**130**	**280**	1.4	**660**	< 0.5	**53**
245	**5.5**	< 0.5	0.4	**7.7**	**31**	**9.5**	2.7	**60**	**140**	0.52	**590**	< 0.5	1.7
265	**6.9**	< 0.5	< 0.5	**11**	**26**	**8.8**	2.9	**40**	**67**	0.35	**190**	< 0.5	**3.2**
285	**5.4**	< 0.5	< 0.5	**9.6**	**18**	< 0.5	1.6	**37**	**38**	0.35	**180**	< 0.5	< 0.5

TMW-9 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
60	< 0.5	< 0.5	< 0.5	0.4	0.53	< 0.5	0.51	2.1	**25**	< 0.5	**12**	< 0.5	< 0.5
80	< 0.5	< 0.5	< 0.5	0.36	0.63	< 0.5	0.53	2	**25**	< 0.5	**13**	< 0.5	< 0.5
100	0.43	< 0.5	< 0.5	0.4	0.58	< 0.5	0.54	1.3	**18**	0.31	**15**	0.32	< 0.5
120	0.4	< 0.5	< 0.5	0.65	1.1	< 0.5	1	3.7	**57**	< 0.5	**28**	< 0.5	< 0.5
140	1.4	< 0.5	< 0.5	1.2	2.8	< 0.5	3.3	**12**	**210**	< 0.5	**120**	0.35	< 0.5
160	1.3	< 0.5	< 0.5	1.7	2.6	< 0.5	**8.1**	**23**	**280**	< 0.5	**110**	< 0.5	< 0.5
180	1.1	< 0.5	< 0.5	1.8	2.5	< 0.5	3.9	**24**	**270**	< 0.5	**99**	0.27	< 0.5
200	1.6	< 0.5	< 0.5	3.5	3.4	< 0.5	**11**	**17**	**270**	< 0.5	**90**	1.1	< 0.5
220	0.79	< 0.5	< 0.5	2.9	1.9	< 0.5	2.5	4.4	**13**	< 0.5	**55**	3	< 0.5
240	**8.5**	< 0.5	< 0.5	**15**	**17**	0.55	1.6	0.71	2.4	< 0.5	**15**	**6.2**	< 0.5
260	**8.1**	< 0.5	< 0.5	**15**	**20**	**0.72**	1.7	0.85	3.1	< 0.5	**17**	**8.5**	< 0.5
280	**8.7**	< 0.5	< 0.5	**16**	**18**	**0.96**	1.7	0.84	4.3	< 0.5	**19**	**20**	< 0.5

TMW-2 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
65	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.8	**48**	< 0.5	**51**	< 0.5	< 0.5
85	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**8.9**	**64**	< 0.5	**90**	< 0.5	< 0.5
105	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**30**	**130**	< 0.5	**230**	< 0.5	< 0.5
125	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**12**	**93**	< 0.5	**120**	< 0.5	< 0.5
145	3.4	< 0.5	< 0.5	< 0.5	**5**	< 0.5	< 0.5	**16**	**130**	< 0.5	**140**	< 0.5	< 0.5
165	< 0.5	< 0.5	< 0.5	< 0.5	**18**	< 0.5	< 0.5	**36**	**250**	< 0.5	**310**	< 0.5	< 0.5
185	**7.6**	< 0.5	0.55	3.7	**15**	< 0.5	2.3	**120**	**240**	0.53	**540**	< 0.5	< 0.5
195	**7.8**	< 0.5	< 0.5	**7**	**14**	< 0.5	3.1	**28**	**190**	< 0.5	**200**	< 0.5	< 0.5
210	2.7	< 0.5	0.34	**6.8**	**7.6**	< 0.5	2.6	**39**	**490**	0.55	**510**	< 0.5	< 0.5
225	**6.7**	< 0.5	**1.1**	**6.6**	**18**	< 0.5	**11**	**350**	**2,200**	3.9	**5,100**	< 0.5	**3.5**
245	**21**	< 0.5	**1.0**	4.3	**36**	< 0.5	3.3	**120**	**1,100**	1.9	**2,000**	< 0.5	1.9
265	**88**	< 0.5	0.72	**13**	**200**	< 0.5	**19**	**310**	**2,700**	3.4	**2,400**	< 0.5	**15**
285	3.4	< 0.5	0.37	1.4	**7.6**	< 0.5	1.1	**91**	**590**	0.91	**1,400**	< 0.5	**2.7**

TMW-1 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
72	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**29**	< 0.5	1.4	< 0.5	< 0.5
85	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**63**	< 0.5	**6.7**	< 0.5	< 0.5
115	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.6	**110**	< 0.5	**17**	< 0.5	< 0.5
125	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**14**	**270**	< 0.5	**50**	< 0.5	< 0.5
145	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**220**	< 0.5	**42**	< 0.5	< 0.5
165	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**17**	**230**	< 0.5	**61**	< 0.5	< 0.5
185	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.4	**110**	**410**	< 0.5	**18**	< 0.5	< 0.5
205	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**390**	**590**	< 0.5	**95**	< 0.5	< 0.5
225	**21**	< 0.5	< 0.5	< 0.5	**44**	< 0.5	< 0.5	**120**	**3,700**	< 0.5	**230**	< 0.5	< 0.5
245	**18**	< 0.5	< 0.5	< 0.5	**35**	< 0.5	< 0.5	**100**	**750**	< 0.5	**530**	< 0.5	< 0.5
265	**5**	< 0.5	< 0.5	4.2	**9**	< 0.5	3.3	**44**	**410**	< 0.5	**61**	2.5	< 0.5
285	**18**	< 0.5	**1**	**9.5**	**35**	**2.1**	2.3	**85**	**530**	< 0.5	**650**	**66**	< 0.5



TMW-8D (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
52	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
82	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
92	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
112	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
132	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
152	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
177	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.27	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
192	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
212	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
237	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.58	< 0.5	< 0.5	< 0.5	< 0.5	0.66	< 0.5
257	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
272	0.22	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 0.5	1.6	< 0.5	1.2	< 0.5	< 0.5
292	**37**	**37**	< 0.5	< 0.5	**16**	**72**	< 0.5	< 0.5	**19**	**290**	< 0.5	**360**	< 0.5
312	**46**	< 0.5	< 0.5	< 0.5	**14**	**73**	< 0.5	< 0.5	**14**	**86**	< 0.5	**280**	< 0.5
337	**36**	< 0.5	< 0.5	**9.9**	**50**	< 0.5	< 0.5	**43**	**680**	< 0.5	**67**	< 0.5	< 0.5
357	**25**	< 0.5	< 0.5	**7.9**	**32**	< 0.5	< 0.5	**26**	**420**	< 0.5	**38**	< 0.5	< 0.5
372	**16**	< 0.5	< 0.5	**6.1**	**25**	< 0.5	< 0.5	**13**	**160**	< 0.5	**27**	< 0.5	< 0.5
392	0.43	< 0.5	< 0.5	0.57	0.54	< 0.5	< 0.5	< 0.5	0.47	< 0.5	0.32	< 0.5	< 0.5
437	3	< 0.5	< 0.5	**7.1**	4.6	< 0.5	0.7	**5.6**	**10**	< 0.5	**20**	< 0.5	< 0.5
457	0.82	< 0.5	< 0.5	1.3	0.96	< 0.5	1	**6.8**	**6.7**	< 0.5	**23**	< 0.5	< 0.5
472	**9.7**	< 0.5	< 0.5	**20**	**13**	< 0.5	0.41	**6.9**	**5.9**	< 0.5	**22**	< 0.5	< 0.5
497	2.7	< 0.5	< 0.5	3.2	4.2	< 0.5	< 0.5	**15**	**11**	< 0.5	**120**	< 0.5	< 0.5
502	4.2	< 0.5	< 0.5	< 0.5	4.2	< 0.5	< 0.5	2.2	**14**	< 0.5	**14**	< 0.5	< 0.5

TMW-3D (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
52	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
72	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
92	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
112	< 0.5	< 0.5	< 0.5	0.29	0.23	< 0.5	< 0.5	2.4	3.2	< 0.5	0.92	< 0.5	< 0.5
132	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.36	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
152	< 0.5	< 0.5	< 0.5	0.28	< 0.5	< 0.5	0.29	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
172	< 0.5	< 0.5	< 0.5	0.39	< 0.5	< 0.5	0.87	3.1	**7.1**	< 0.5	**5.2**	< 0.5	< 0.5
192	3.3	< 0.5	< 0.5	1.4	2.5	< 0.5	0.31	3.4	**7.9**	< 0.5	3.8	< 0.5	< 0.5
212	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**39**	**19**	< 0.5	**32**	< 0.5	< 0.5
232	**5.3**	< 0.5	< 0.5	**24**	**16**	< 0.5	**7.7**	**300**	**110**	< 0.5	**130**	< 0.5	< 0.5
252	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**13**	**13**	**13**	< 0.5	**23**	< 0.5	< 0.5
272	**10**	< 0.5	< 0.5	**14**	**29**	< 0.5	< 0.5	**220**	**440**	< 0.5	**220**	< 0.5	< 0.5
297	< 0.5	< 0.5	< 0.5	**12**	**21**	< 0.5	**8.5**	**160**	**360**	< 0.5	**180**	< 0.5	< 0.5
312	< 0.5	< 0.5	< 0.5	**24**	**39**	< 0.5	**9.8**	**230**	**380**	< 0.5	**130**	< 0.5	< 0.5
337	**11**	< 0.5	< 0.5	**23**	**55**	< 0.5	**34**	**380**	**360**	< 0.5	**620**	**51**	< 0.5
357	**120**	< 0.5	< 0.5	**46**	**300**	< 0.5	**29**	**360**	**340**	< 0.5	**900**	**14**	< 0.5
377	**200**	< 0.5	< 0.5	**46**	**450**	< 0.5	**14**	**210**	**160**	< 0.5	**930**	< 0.5	< 0.5
392	3.6	< 0.5	< 0.5	**7.9**	**7.8**	< 0.5	4	**50**	**22**	< 0.5	**130**	**20**	< 0.5
412	2.0	< 0.5	< 0.5	4.1	3	< 0.5	4.5	**36**	**27**	< 0.5	**110**	**36**	< 0.5
432	0.8	< 0.5	< 0.5	3.2	0.99	< 0.5	0.92	**5.6**	1.3	< 0.5	**19**	**38**	< 0.5
452	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
472	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
492	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
502	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

TMW-4 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2-DCA	Chloroform	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	TFM	VC
65	< 0.5	< 0.5	< 0.5	< 0.5	0.36	< 0.5	1.3	< 0.5	3.3	< 0.5	1.1	< 0.5	< 0.5
85	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.41	< 0.5	**9.1**	< 0.5	0.63	< 0.5	< 0.5
105	< 0.5	< 0.5	< 0.5	< 0.5	0.3	< 0.5	< 0.5	< 0.5	4.6	< 0.5	0.94	< 0.5	< 0.5
125	< 0.5	< 0.5	< 0.5	3.8	2.9	< 0.5	< 0.5	< 0.5	**57**	< 0.5	**17**	< 0.5	< 0.5
145	0.6	< 0.5	< 0.5	2.6	1.8	< 0.5	0.81	0.85	**47**	< 0.5	**8.9**	< 0.5	< 0.5
165	2	< 0.5	< 0.5	**13**	**7.1**	< 0.5	0.81	1.7	**40**	< 0.5	**16**	< 0.5	< 0.5
185	0.58	< 0.5	< 0.5	0.38	2.1	< 0.5	1	0.55	1.8	< 0.5	**11**	< 0.5	< 0.5
205	1.7	< 0.5	< 0.5	1.9	**11**	< 0.5	4.6	3.7	**11**	< 0.5	**56**	< 0.5	< 0.5
225	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	0.46	< 0.5	1.2	< 0.5	< 0.5
245	0.87	< 0.5	< 0.5	0.84	4.9	< 0.5	1.3	1.7	**5.8**	< 0.5	**38**	< 0.5	< 0.5
265	1.8	< 0.5	< 0.5	1.2	**8.1**	< 0.5	2.3	2.6	**9.4**	< 0.5	**65**	< 0.5	< 0.5
285	0.76	< 0.5	< 0.5	0.53	2.6	< 0.5	2.5	1.4	**8.1**	< 0.5	**29**	< 0.5	< 0.5

NYS CLASS GA GROUNDWATER QUALITY STANDARDS (ug/L)

Contaminant	ug/L
VOCs	
1,1,1-Trichloroethane (1,1,1-TCA)	5
1,1,2,2-Tetrachloroethane (1,1,2,2-TCA)	5
1,1,2-Trichloroethane (1,1,2-TCA)	1
1,1-Dichloroethane (1,1-DCA)	5
1,1-Dichloroethene (1,1-DCE)	5
1,2-Dichloroethane (1,2-DCA)	0.6
Chloroform	7
cis-1,2-Dichloroethylene (cis-1,2-DCE)	5
Tetrachloroethylene (PCE)	5
trans-1,2-Dichloroethene (trans-1,2-DCE)	5
Trichloroethylene (TCE)	5
Trichlorofluoromethane (TFM)	5
Vinyl Chloride (VC)	2

LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- GWHP-01 — HYDROPUNCH LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- ug/l — MICROGRAMS PER LITER
- FT — FEET

WELL IDENTIFICATION
SAMPLE DATE
ANALYTICAL PARAMETER

TMW-5 (2008) Depth(ft)	1,1,1-TCA	1,1,2,2-TCA	1,1,2-TCA	1,1-DCA
65	**73**	< 0.5	< 0.5	**110**
85	**91**	< 0.5	< 0.5	**120**
105	**1,400**	< 0.5	0.38	**1,000**

ANALYTICAL RESULT ug/L (BOLD, UNDERLINED AND HIGHLIGHT INDICATES CONCENTRATION GREATER THAN NYS GROUNDWATER STANDARD)

SAMPLE DEPTH

RESULTS LESS THAN DETECTION LIMIT

NOTES:

1. TEMPORARY MONITORING WELLS TMW–1 THROUGH TMW–9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.

2. MONITORING WELLS MW–1 THROUGH MW–9 WERE INSTALLED BY D&B IN 2008.

3. EARLY WARNING WELLS EW–1B, EW–2B, EW–1C AND EW–2C WERE INSTALLED BY THE NYSDEC IN 1998.

4. FROST STREET MONITORING WELLS FSMW–13A, B, AND C AND FSMW–14A, B, AND C WERE INSTALLED BY WALDEN ASSOCIATES IN DECEMBER 2004.

GRAPHIC SCALE

400 0 400 800

(IN FEET)
1 inch = 400 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Date: 01/23/13
Drawing code:
Plot scale:
CADD File Name:
Designed by: TC
Drawn by: SK
Checked by:
Submitted by: TC

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

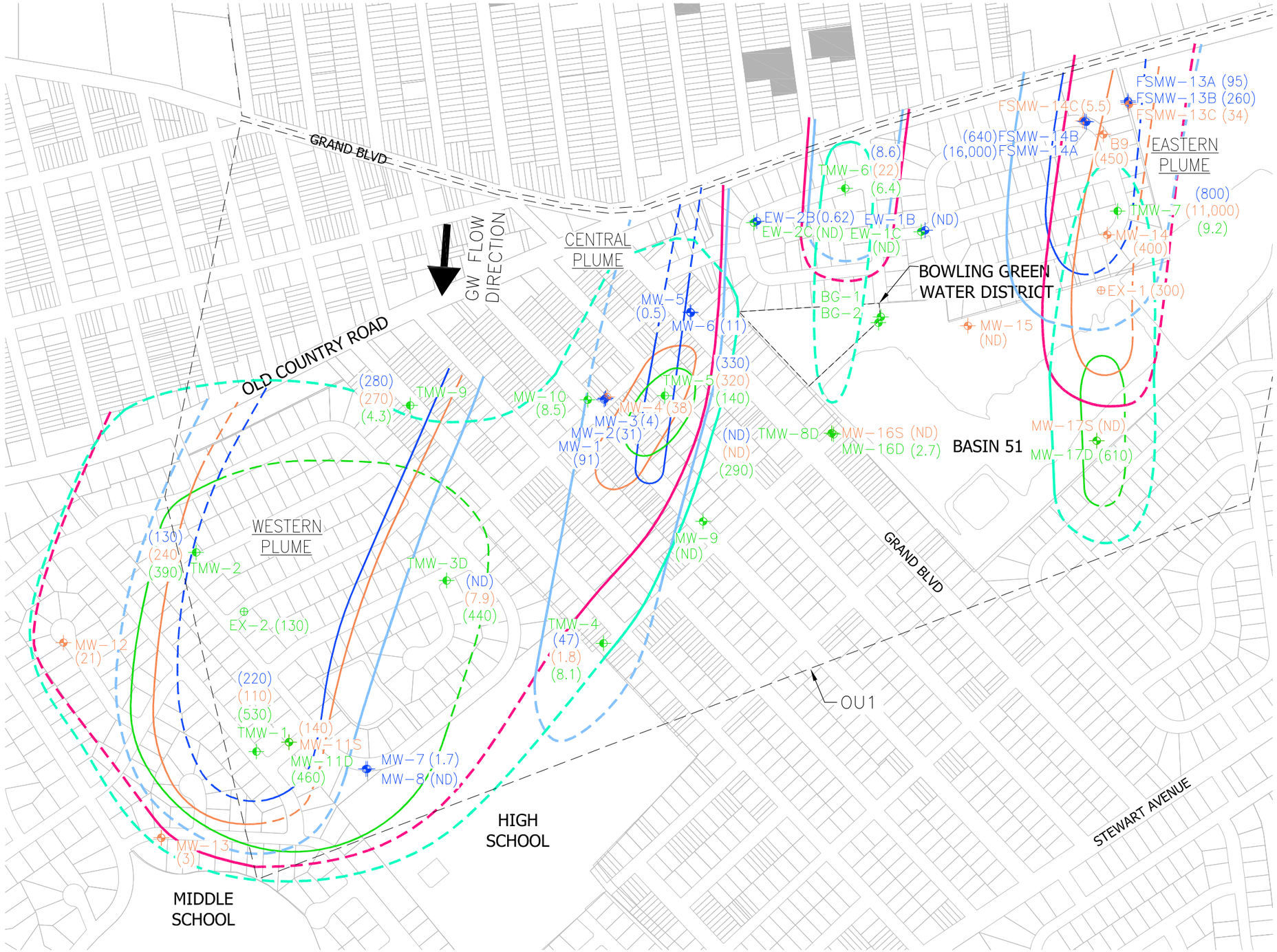
HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TEMPORARY WELLS

Sheet Reference Number:
3–1

R2-0012178



LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- BGS — BELOW GROUND SURFACE
- PPB — PART PER BILLION
- ug/l — MICROGRAMS PER LITER
- PCE — TETRACHLOROETHENE
- < 175 FEET BGS
- 175 – 250 FEET BGS
- > 250 FEET BGS
- 100 PPB (ug/l) PCE ISO CONCENTRATION CENTER AT 150 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (ug/l) PCE ISO CONCENTRATION CENTER AT 200 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (ug/l) PCE ISO CONCENTRATION CENTER AT 285 FEET BGS (DASHED WHERE INFERRED)
- (800) — PCE CONCENTRATION AT 150 FEET BGS
- (11,000) — PCE CONCENTRATION AT 200 FEET BGS
- (9.2) — PCE CONCENTRATION AT 285 FEET BGS

NOTES:

1. FIGURE DEPICTS MONITORING WELLS LOCATED WITHIN THE EPA OU1 AREA SOUTH OF OLD COUNTRY ROAD. NUMEROUS EXISTING MONITORING WELLS ARE FOUND NORTH OF OLD COUNTRY ROAD WITHIN INDUSTRIAL AREA THAT ARE NOT SHOWN.

2. TEMPORARY MONITORING WELLS TMW-1 THROUGH TMW-9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.

3. MONITORING WELLS MW-1 THROUGH MW-9 WERE INSTALLED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-1, MW-2, MW-5, AND MW-7 ARE BASED ON SAMPLES COLLECTED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-3, MW-4, MW-6, MW-8, AND MW-9 ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

4. EARLY WARNING WELLS EW-1B, EW-2B, EW-1C AND EW-2C WERE INSTALLED BY THE NYSDEC IN 1998. CONCENTRATIONS SHOWN FOR THESE MONITORING WELLS ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

5. CONCENTRATIONS SHOWN FOR THE FROST STREET MONITORING WELLS (FSMW) ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

6. BORING B-9 WAS COMPLETED BY WALDEN IN 2004 DURING INVESTIGATION ACTIVITIES FOR THE FROST STREET SITES. DURING INSTALLATION GROUNDWATER SAMPLES WERE COLLECTED AT MULTIPLE DEPTHS FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE BORING. THE CONCENTRATION SHOWN FOR THIS BORING IS BASED ON SAMPLES COLLECTED BY WALDEN IN 2004.

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawn by: SK
Drawing code:
Checked by:
Plot scale:
Submitted by: TC
CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

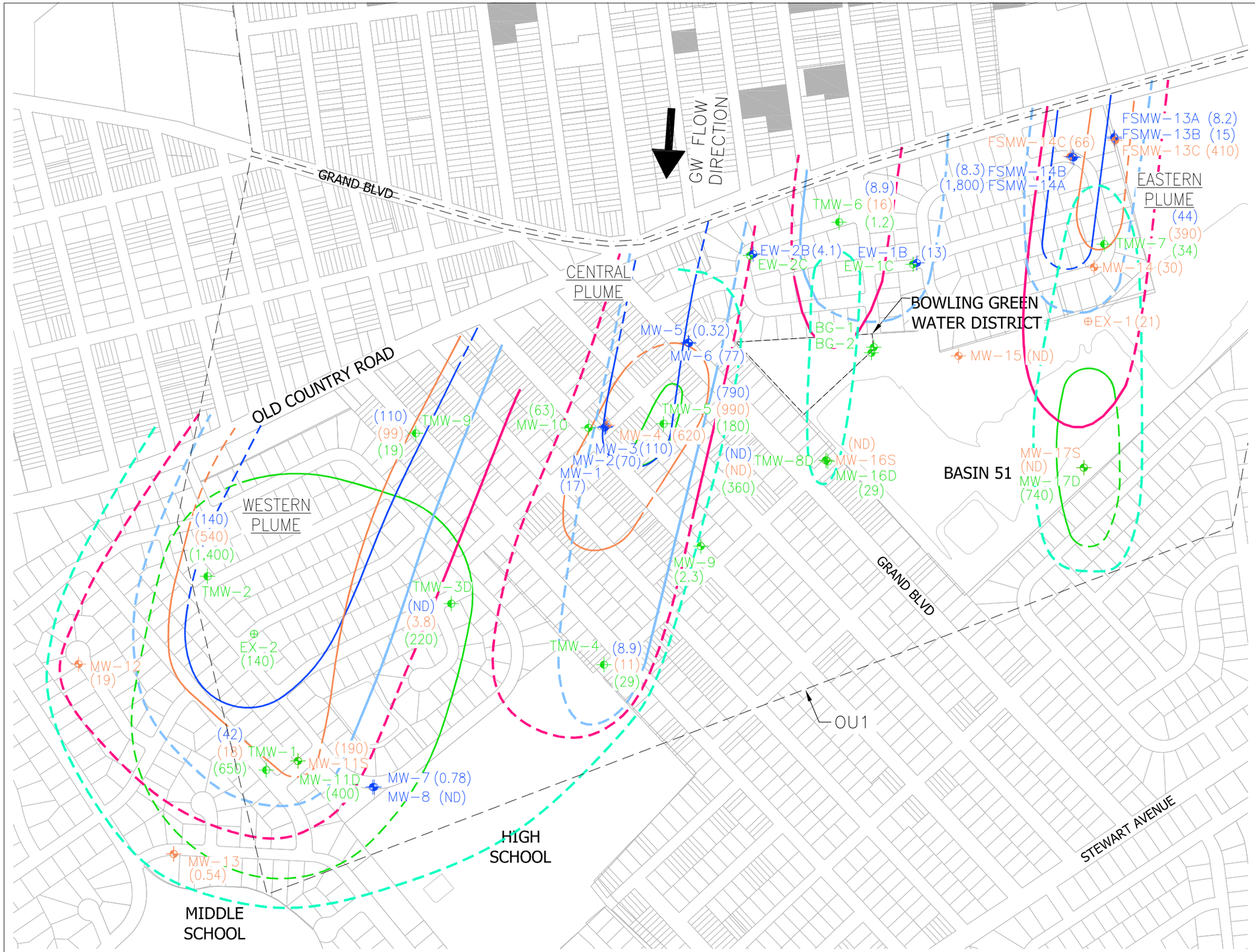
NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

PCE ISO-CONCENTRATION MAP

Sheet Reference Number:

3-2

R2-0012179



NOTES:

1. FIGURE DEPICTS MONITORING WELLS LOCATED WITHIN THE EPA OU1 AREA SOUTH OF OLD COUNTRY ROAD. NUMEROUS EXISTING MONITORING WELLS ARE FOUND NORTH OF OLD COUNTRY ROAD WITHIN INDUSTRIAL AREA THAT ARE NOT SHOWN.

2. TEMPORARY MONITORING WELLS TMW-1 THROUGH TMW-9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.

3. MONITORING WELLS MW-1 THROUGH MW-9 WERE INSTALLED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-1, MW-2, MW-5, AND MW-7 ARE BASED ON SAMPLES COLLECTED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-3, MW-4, MW-6, MW-8, AND MW-9 ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

4. EARLY WARNING WELLS EW-1B, EW-2B, EW-1C AND EW-2C WERE INSTALLED BY THE NYSDEC IN 1998. CONCENTRATIONS SHOWN FOR THESE MONITORING WELLS ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

5. CONCENTRATIONS SHOWN FOR THE FROST STREET MONITORING WELLS (FSMW) ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Drawn by: SK
Checked by:
Submitted by: TC
Date: 01/23/13
Drawing code:
Plot scale:
CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

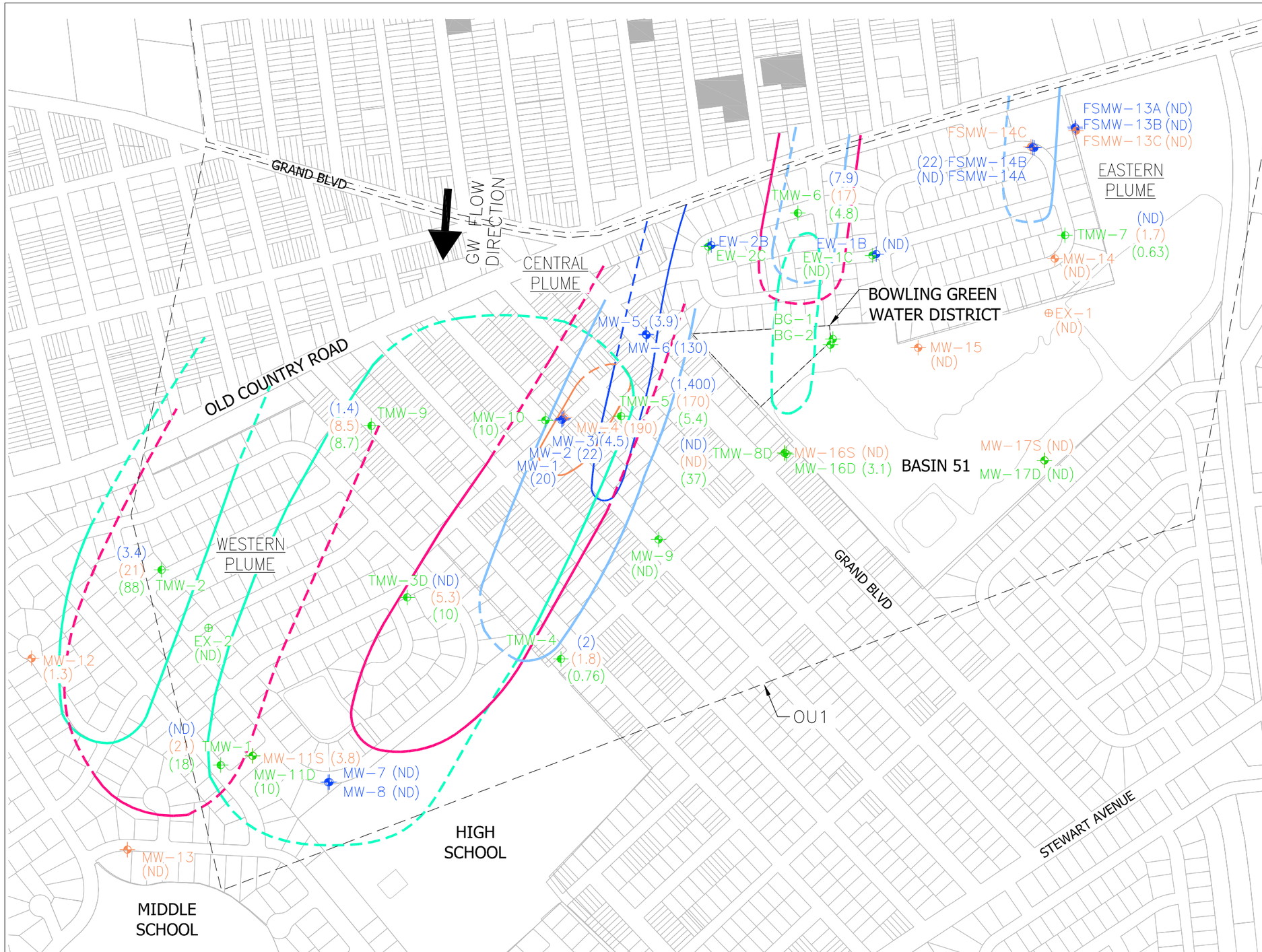
HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

TCE ISO-CONCENTRATION MAP

Sheet Reference Number:
3-3

R2-0012180



LEGEND:

TMW-7	TEMPORARY MONITORING WELL LOCATION
MW-5	MONITORING WELL LOCATION
	LIMIT OF OPERABLE UNIT 1 (OU1)
	LIMIT OF NEW CASSEL INDUSTRIAL AREA
	SOURCE AREA PROPERTIES
BGS	BELOW GROUND SURFACE
PPB	PART PER BILLION
ug/l	MICROGRAMS PER LITER
TCA	1,1,1 – TRICHLOROETHANE
	< 175 FEET BGS
	175 – 250 FEET BGS
	> 250 FEET BGS
	100 PPB (ug/l) TCA ISO CONCENTRATION CENTER AT 150 FEET BGS (DASHED WHERE INFERRED)
	100 PPB (ug/l) TCA ISO CONCENTRATION CENTER AT 200 FEET BGS (DASHED WHERE INFERRED)
	100 PPB (ug/l) TCA ISO CONCENTRATION CENTER AT 285 FEET BGS (DASHED WHERE INFERRED)
(800)	TCA CONCENTRATION AT 150 FEET BGS
(11,000)	TCA CONCENTRATION AT 200 FEET BGS
(9.2)	TCA CONCENTRATION AT 285 FEET BGS
	5 PPB TCA ISO CONCENTRATION CENTER AT 150 FT BGS (DASHED WHERE INFERRED)
	5 PPB TCA ISO CONCENTRATION CENTER AT 200 FT BGS (DASHED WHERE INFERRED)
	5 PPB TCA ISO CONCENTRATION CENTER AT 285 FT BGS (DASHED

NOTES:

1. FIGURE DEPICTS MONITORING WELLS LOCATED WITHIN THE EPA OU1 AREA SOUTH OF OLD COUNTRY ROAD. NUMEROUS EXISTING MONITORING WELLS ARE FOUND NORTH OF OLD COUNTRY ROAD WITHIN INDUSTRIAL AREA THAT ARE NOT SHOWN.

2. TEMPORARY MONITORING WELLS TMW-1 THROUGH TMW-9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.

3. MONITORING WELLS MW-1 THROUGH MW-9 WERE INSTALLED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-1, MW-2, MW-5, AND MW-7 ARE BASED ON SAMPLES COLLECTED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-3, MW-4, MW-6, MW-8, AND MW-9 ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

4. EARLY WARNING WELLS EW-1B, EW-2B, EW-1C AND EW-2C WERE INSTALLED BY THE NYSDEC IN 1998. CONCENTRATIONS SHOWN FOR THESE MONITORING WELLS ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

5. CONCENTRATIONS SHOWN FOR THE FROST STREET MONITORING WELLS (FSMW) ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawing code:
Drawn by: SK
Plot scale:
Checked by:
CADD File Name:
Submitted by: TC

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

TCA ISO-CONCENTRATION MAP

Sheet Reference Number:
3-4

R2-0012181

LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- BGS — BELOW GROUND SURFACE
- < 175 FEET BGS
- 175 – 250 FEET BGS
- > 250 FEET BGS

Existing Temporary and Permanent Monitoring Wells

Well ID	Well Depth (BGS)
BG-1 (Well #1)	527
BG-2 (Well #2)	583
EW-1B	164
EW-1C	516
EW-2B	142
EW-2C	514
FS MW-13A	79
FS MW-13B	129
FS MW-13C	249
FS MW-14A	139
FS MW-14B	169
FS MW-14C	249
GWHP-01	150
GWHP-02	150
GWHP-03	150
GWHP-04	150
MW-1	110
MW-2	130
MW-3	150
MW-4	200
MW-5	110
MW-6	130
MW-7	110
MW-8	139
MW-10	285
MW-11 S	225
MW-11 D	285
MW-12	225
MW-13	210
MW-14	205
MW-15	205
MW-16 S	225
MW-16 D	285
MW-17 S	225
MW-17 D	285
EX-1	205
EX-2	285
N-10476	130
N-10478	121
N-11852	95
NRMW-1	70
NRMW-3	70
TMW-1	285
TMW-2	285
TMW-3D	502
TMW-4	285
TMW-5	285
TMW-6	285
TMW-7	285
TMW-8D	502
TMW-9	280

NOTES:

1. FIGURE DEPICTS MONITORING WELLS LOCATED WITHIN THE EPA OU1 AREA SOUTH OF OLD COUNTRY ROAD. NUMEROUS EXISTING MONITORING WELLS ARE FOUND NORTH OF OLD COUNTRY ROAD WITHIN THE NEW CASSEL INDUSTRIAL AREA THAT ARE NOT SHOWN.

GRAPHIC SCALE

300 0 300 600

(IN FEET)
1 inch = 300 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawn by: SK
Drawing code:
Checked by:
Plot scale:
Submitted by: TC
CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

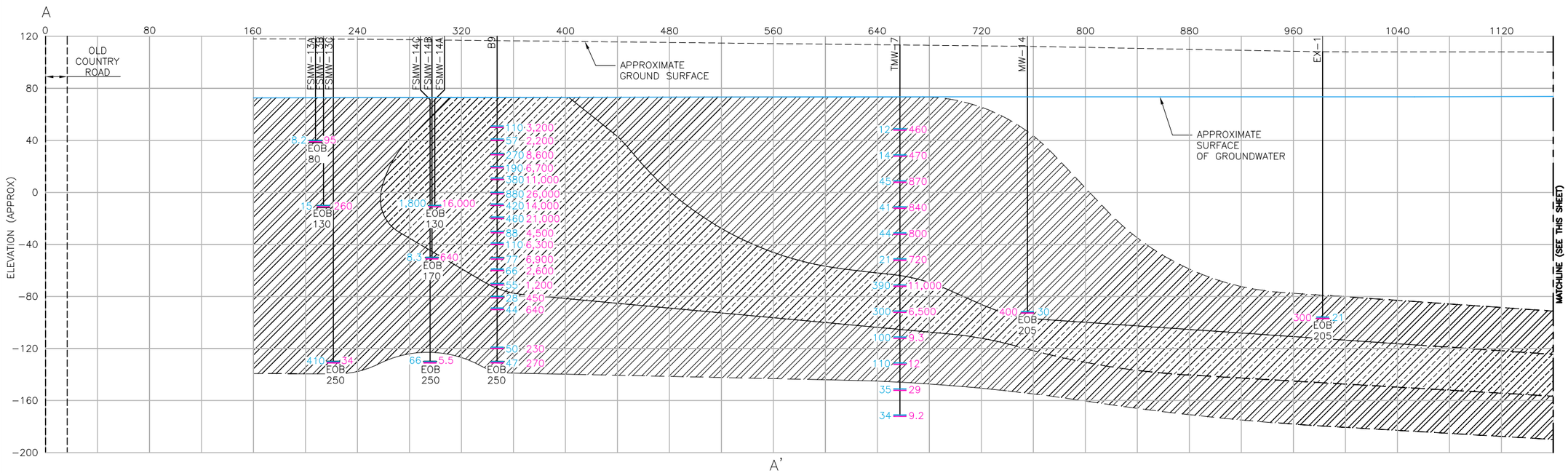
NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

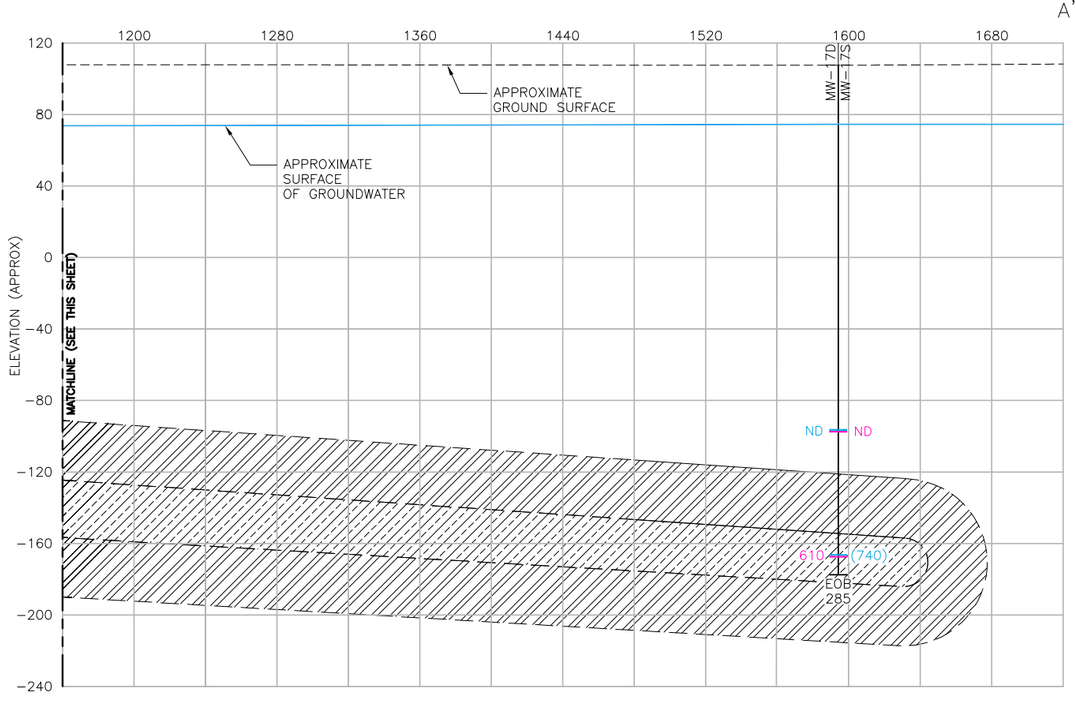
EASTERN PLUME CROSS SECTION PLAN VIEW

Sheet Reference Number:

3–5

R2-0012182





LEGEND

EOB	END OF BORING
BGS	BELOW GROUND SURFACE
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE
PPB	PARTS PER BILLION
ug/l	MICROGRAMS PER LITER
27	PCE GROUNDWATER SAMPLE RESULTS (PPB)
220	TCE GROUNDWATER SAMPLE RESULTS (PPB)

TOTAL PCE + TCE CONCENTRATIONS

- 100 TO 1000 PPB
- GREATER THAN 1000 PPB

NOTES:

1. TEMPORARY MONITORING WELLS TMW-1 THROUGH TMW-9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.

2. MONITORING WELLS MW-1 THROUGH MW-9 WERE INSTALLED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-1, MW-2, MW-5, AND MW-7 ARE BASED ON SAMPLES COLLECTED BY D&B IN 2008. CONCENTRATIONS SHOWN FOR MONITORING WELLS MW-3, MW-4, MW-6, MW-8, AND MW-9 ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

3. EARLY WARNING WELLS EW-1B, EW-2B, EW-1C AND EW-2C WERE INSTALLED BY THE NYSDEC IN 1998. CONCENTRATIONS SHOWN FOR THESE MONITORING WELLS ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

4. CONCENTRATIONS SHOWN FOR THE FROST STREET MONITORING WELLS (FSMW) ARE BASED ON SAMPLES COLLECTED BY HDR IN 2011.

5. BORING B-9 WAS COMPLETED BY WALDEN IN 2004 DURING INVESTIGATION ACTIVITIES FOR THE FROST STREET SITES. DURING INSTALLATION GROUNDWATER SAMPLES WERE COLLECTED AT MULTIPLE DEPTHS FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE BORING. THE CONCENTRATION SHOWN FOR THIS BORING IS BASED ON SAMPLES COLLECTED BY WALDEN IN 2004.

6. VERTICAL ELEVATIONS SHOWN ARE IN FEET ABOVE MEAN SEA LEVEL

VERTICAL GRAPHIC SCALE

40 0 40 80

(IN FEET)
1 inch = 40 ft.

HORIZONTAL GRAPHIC SCALE

40 0 40 80

(IN FEET)
1 inch = 40 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawn by: SK
Drawing code:
Checked by:
Plot scale:
Submitted by: TC
CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

EASTERN PLUME CROSS SECTION VIEW

Sheet Reference Number:
3-6

R2-0012183

MW-6 (110-130)	11/5/01	1/25/02	4/26/02	7/17/02	10/18/02	1/30/03	5/7/03	7/29/03	12/10/03	3/8/04	12/7/04	2/26/08	4/7/11
VOCs													
1,1,1-TCA	**240**	**89**	**96**	**90**	**122**	**170**	**23**	**270**	**300**	**480**	**2,300**	**1,400**	**140**
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	**52**	**36**	**33**	**29**	**31**	**47**	**8.4**	**68**	**83**	**130**	**1,700**	**970**	**160**
1,1-DCE	**270**	**72**	**100**	**99**	**135**	**150**	**36**	**190**	**180**	**290**	**970**	**840**	**140**
1,2-DCA	**0.8**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**1.6**
Chloroform	1.1	< 0.5	1	< 0.5	< 0.5	1	< 0.5	1.4	1.4	1	< 0.5	1.2	1.2
cis-1,2-DCE	**22**	**13**	**9**	**9**	**21**	**15**	2.5	**7.4**	**10**	**13**	**12**	**5.2**	**7.8**
PCE	**80**	**37**	**68**	**47**	**60**	**58**	**15**	**56**	**51**	**91**	**78**	**18**	**15**
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**210**	< 1.0
TCE	**93**	**54**	**43**	**51**	**59**	**89**	**27**	**45**	**60**	**110**	**76**	**59**	**91**
TFM	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**5**	0.94	< 1.0

EW-2B (132-142)	9/25/01	1/28/02	4/25/02	7/19/02	10/16/02	1/29/03	5/8/03	7/28/03	12/10/03	3/10/04	12/8/04	2/27/08	4/6/11
VOCs													
1,1,1-TCA	**85**	**16**	**8**	**5**	4	3	3.1	3.6	2.8	2	2	1.1	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	**150**	**24**	**9**	**5**	4	3	3.3	4.7	2.9	2	3	1.6	< 1.0
1,1-DCE	**43**	**10**	**8**	< 0.5	**7**	**5**	**5.5**	**5.9**	4.5	4	4	2.6	< 1.0
1,2-DCA	**0.7**	< 0.5	0.5	< 0.5	**0.6**	**0.7**	**0.67**	< 0.5	**0.66**	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	0.5	0.56	< 0.5	0.4	< 0.5	< 0.5	< 1.0
cis-1,2-DCE	**36**	**25**	**19**	**18**	**19**	**19**	**17**	**18**	**17**	**16**	**16**	**6.5**	0.72
PCE	**20**	**21**	**17**	**21**	**17**	**16**	**18**	**16**	**16**	**18**	**15**	**11**	0.62
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**140**	**130**	**100**	**84**	**98**	**110**	**93**	**95**	**74**	**89**	**77**	**42**	4.1
TFM	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	**51**	**32**	**24**	**29**	**32**	**28**	**29**	**37**	**27**	**25**	**34**	**11**	0.6

EW-1C (506-516)	9/25/01	1/28/02	4/25/02	7/18/02	10/16/02	1/29/03	5/8/03	7/30/03	12/11/03	3/10/04	12/8/04	2/27/08	4/8/11
VOCs													
1,1,1-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.25	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.47	< 1.0
1,1-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.34	< 1.0
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.3	< 0.5	0.39	< 1.0
cis-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.2	< 0.5	1.1	< 1.0
PCE	< 0.5	0.6	**5**	< 0.5	2	< 0.5	< 0.5	0.78	0.86	0.8	< 0.5	0.96	< 1.0
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**12**	**13**	**15**	**13**	**18**	**21**	**13**	**20**	**14**	**18**	**20**	**20**	< 1.0
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

MW-13A (69-79)	-/-/05	8/-/06	8/-/07	9/-/08
VOCs				
1,1,1-TCA	ND	< 40	< 0.10	< 0.10
1,1,2,2-TCA	NA	< 40	< 0.10	< 0.10
1,1,2-TCA	NA	< 40	< 0.10	< 0.10
1,1-DCA	ND	< 40	< 0.10	< 0.10
1,1-DCE	ND	< 40	< 0.10	< 0.10
1,2-DCA	NA	< 40	< 0.10	< 0.10
Chloroform	ND	< 40	< 0.10	< 0.10
cis-1,2-DCE	**21**	**12**	**20**	**8.2**
PCE	ND	**360**	**570**	**95**
trans-1,2-DCE	ND	< 40	< 0.10	< 0.10
TCE	**16**	**13**	**20**	**8.2**
TFM	NA	NA	NA	NA
VC	NA	< 40	< 0.10	< 0.10

MW-5 (90-110)	11/5/01	1/24/02	4/25/02	7/17/02	10/18/02	1/30/03	5/7/03	7/29/03	12/10/03	3/8/04	12/7/04	2/26/08
VOCs												
1,1,1-TCA	**15**	**15**	4	3	**7**	**39**	**190**	**35**	**31**	**64**	**560**	3.9
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DCA	1.5	2	0.8	< 0.5	2	**13**	**50**	**6.4**	**5.6**	**11**	**140**	1.1
1,1-DCE	**11**	**10**	3	2	**8**	**55**	**180**	**17**	**13**	**21**	**210**	2.2
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**0.99**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	< 0.5	< 0.5	0.3	< 0.5	< 0.5	< 0.5	1.2	0.55	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-DCE	< 0.5	0.5	1	**6**	**12**	**6**	**9.4**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
PCE	3.7	**16**	**25**	**19**	**9**	**18**	**64**	**11**	**5.6**	**7**	**14**	0.5
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TCE	2.5	2	2	1	**7**	**35**	**84**	2.6	1.4	1	**13**	0.32
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

EW-2C (504-514)	9/25/01	1/28/02	4/25/02	7/19/02	10/16/02	1/29/03	5/8/03	7/29/03	12/11/03	3/10/04	12/8/04	2/27/08	4/6/11
VOCs													
1,1,1-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.65
1,1-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
cis-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
PCE	< 0.5	< 0.5	< 0.5	1	< 0.5	0.8	1.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 1.0
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

EW-1B (154-164)	9/25/01	1/28/02	4/25/02	7/18/02	10/16/02	1/29/03	5/8/03	7/30/03	12/9/03	3/10/04	12/9/04	2/27/08	4/8/11
VOCs													
1,1,1-TCA	**40**	**59**	**52**	**41**	**59**	**34**	**40**	**31**	**28**	**25**	**13**	2.8	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	3.8	< 0.5	**10**	**7**	**8**	**6**	4.5	3.1	3.5	3	2	0.79	< 1.0
1,1-DCE	**39**	**45**	**39**	**38**	**47**	**31**	**31**	**28**	**23**	**19**	**15**	4.2	< 1.0
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	0.3	< 0.5	**9**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
cis-1,2-DCE	**58**	**87**	**64**	**44**	**68**	**53**	**50**	**39**	**39**	**38**	**29**	**7.4**	1
PCE	**630**	**1,000**	**780**	**640**	**830**	**470**	**670**	**420**	**390**	**500**	**370**	**74**	1.9
trans-1,2-DCE	0.6	< 0.5	< 0.5	0.8	< 0.5	0.7	0.51	0.52	0.49	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**66**	**120**	**91**	**67**	**87**	**64**	**71**	**40**	**39**	**48**	**32**	**17**	1.3
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

MW-13B (119-129)	-/-/05	8/-/06	8/-/07	9/-/08	4/11/11
VOCs					
1,1,1-TCA	ND	< 200	< 0.10	< 0.10	< 1.0
1,1,2,2-TCA	NA	< 200	< 0.10	< 0.10	< 1.0
1,1,2-TCA	NA	< 200	< 0.10	< 0.10	< 1.0
1,1-DCA	ND	< 200	< 0.10	< 0.10	< 1.0
1,1-DCE	ND	< 200	< 0.10	< 0.10	< 1.0
1,2-DCA	NA	< 200	< 0.10	< 0.10	< 1.0
Chloroform	ND	< 200	< 0.10	< 0.10	< 1.0
cis-1,2-DCE	**33**	**23**	**23**	**19**	**6.1**
PCE	**3,500**	**2,900**	**2,700**	**1,900**	**260**
trans-1,2-DCE	ND	< 200	< 0.10	ND	< 1.0
TCE	**86**	**69**	**65**	**50**	**17**
TFM	NA	NA	NA	NA	< 1.0
VC	NA	< 200	< 0.10	< 0.10	< 1.0

NYS CLASS GA GROUNDWATER QUALITY STANDARDS (ug/L)	
Contaminant	**ug/L**
VOCs	
1,1,1-Trichloroethane (1,1,1-TCA)	5
1,1,2,2-Tetrachloroethane (1,1,2,2-TCA)	5
1,1,2-Trichloroethane (1,1,2-TCA)	1
1,1-Dichloroethane (1,1-DCA)	5
1,1-Dichloroethene (1,1-DCE)	5
1,2-Dichloroethane (1,2-DCA)	0.6
Chloroform	7
cis-1,2-Dichloroethylene (cis-1,2-DCE)	5
Tetrachloroethylene (PCE)	5
trans-1,2-Dichloroethylene (trans-1,2-DCE)	5
Trichloroethylene (TCE)	5
Trichlorofluoromethane (TFM)	5
Vinyl Chloride (VC)	2

MW-4 (180-200)	11/2/01	1/24/02	4/24/02	7/16/02	10/17/02	2/3/03	5/6/03	7/30/03	12/9/03	3/10/04	12/7/04	2/25/08	4/5/11
VOCs													
1,1,1-TCA	**350**	**280**	**180**	**170**	**320**	**270**	**190**	**210**	**250**	**280**	**230**	**250**	**190**
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	**3.6**	**3**	< 0.5	**4**	**4**	**3**	**3**	**2.7**	< 0.5	< 0.5	**3**	**2**	**1.3**
1,1-DCA	**310**	**280**	**180**	**170**	**310**	**250**	**250**	**200**	**200**	**210**	**150**	**160**	**130**
1,1-DCE	**1,100**	**750**	**530**	**520**	**911**	**690**	**550**	**720**	**600**	**850**	**620**	**810**	**600**
1,2-DCA	**7**	< 0.5	< 0.5	< 0.5	**7**	**6**	**5.6**	**6.4**	**8.1**	**7**	**7**	**4.5**	**3.4**
Chloroform	2.4	3	< 0.5	**37**	4	3	3.2	3	< 0.5	3	3	1.6	1.1
cis-1,2-DCE	**82**	**64**	**43**	**38**	**64**	**57**	**57**	**43**	**45**	**47**	**36**	**31**	**20**
PCE	**150**	**130**	**38**	**77**	**130**	**120**	**99**	**110**	**120**	**140**	**150**	**140**	**38**
trans-1,2-DCE	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.54	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**1,000**	**790**	**550**	**480**	**895**	**760**	**750**	**680**	**680**	**780**	**630**	**910**	**620**
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

MW-13C (239-249)	-/-/05	8/-/06	8/-/07	9/-/08	4/11/11
VOCs					
1,1,1-TCA	ND	< 40	1.8	1.4	< 1.0
1,1,2,2-TCA	NA	< 40	< 0.10	< 0.10	< 1.0
1,1,2-TCA	NA	< 40	< 0.10	< 0.10	< 1.0
1,1-DCA	ND	< 40	0.72	0.88	1.8
1,1-DCE	ND	< 40	**5.3**	< 0.10	2.9
1,2-DCA	NA	< 40	< 0.10	< 0.10	< 1.0
Chloroform	ND	1	1.7	1.6	2.7
cis-1,2-DCE	3	**15**	**20**	**28**	**71**
PCE	**72**	**89**	**88**	**67**	**34**
trans-1,2-DCE	ND	< 40	< 0.10	2.0	1.1
TCE	**210**	**500**	**530**	**410**	**410**
TFM	NA	NA	NA	NA	< 1.0
VC	NA	< 40	< 0.10	< 0.10	< 1.0

LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- GWHP-01 — HYDROPUNCH LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- ug/l — MICROGRAMS PER LITER
- ND — NOT DETECTED (DETECTION LIMIT NOT AVAILABLE)
- NA — NOT AVAILABLE
- FT — FEET

WELL IDENTIFICATION / SAMPLE DEPTH INTERVAL / SAMPLE DATE

MW-1 (90-110)	11/2/01	1/24/02	4/25/02
VOCs			
1,1,1-TCA	**7.8**	4	**10**
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5
1,1,2-TCA	< 0.5	< 0.5	< 0.5

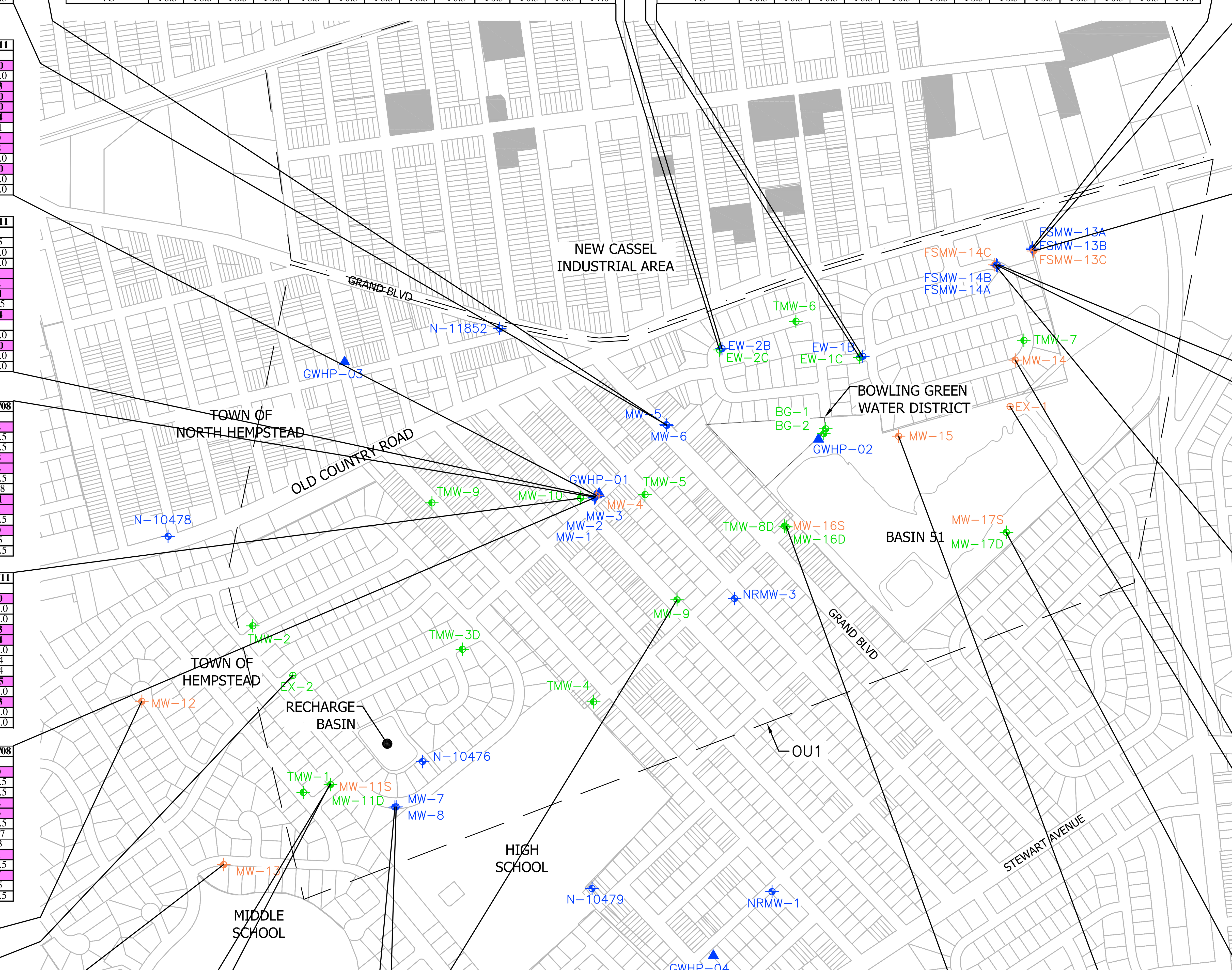
ANALYTICAL RESULT ug/L (BOLD AND HIGHLIGHT INDICATES CONCENTRATION GREATER THAN NYSDEC STANDARD)

RESULTS LESS THAN DETECTION LIMIT

ANALYTICAL PARAMETER

MW-3 (130-150)	11/2/01	1/24/02	4/24/02	7/16/02	10/16/02	2/3/03	5/6/03	7/30/03	12/9/03	3/10/04	12/7/04	2/25/08	4/5/11
VOCs													
1,1,1-TCA	**350**	**350**	**160**	**270**	**107**	**120**	**180**	**270**	**170**	**200**	**110**	**60**	4.5
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	**2.1**	**2**	< 0.5	**2**	0.8	**2**	**2**	**1.7**	< 0.5	< 0.5	**1**	**1**	< 1.0
1,1-DCA	**230**	**250**	**130**	**210**	**70**	**110**	**140**	**150**	**100**	**110**	**77**	**67**	**31**
1,1-DCE	**900**	**770**	**390**	**670**	**275**	**190**	**380**	**730**	**380**	**500**	**280**	**180**	**82**
1,2-DCA	**5.1**	< 0.5	< 0.5	< 0.5	**2**	**5**	**3.4**	**4.1**	< 0.5	< 0.5	**1**	< 0.5	**1.1**
Chloroform	5.7	3	< 0.5	< 0.5	2	4	4.1	4.1	< 0.5	3	2	1.4	0.55
cis-1,2-DCE	**54**	**40**	**25**	**40**	**21**	**34**	**32**	**34**	**29**	**30**	**23**	**13**	**9.4**
PCE	**67**	**74**	**28**	**70**	**22**	**27**	**55**	**73**	**51**	**55**	**34**	**37**	4
trans-1,2-DCE	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**1,200**	**1,000**	**490**	**920**	**322**	**440**	**700**	**1,000**	**580**	**700**	**440**	**310**	**110**
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

MW-14A (119-129)	-/-/05	8/-/06	8/-/07	9/-/08	4/12/11
VOCs					
1,1,1-TCA	ND	< 2000	**12**	< 5.0	< 1.0
1,1,2,2-TCA	NA	< 2000	< 0.10	< 5.0	< 1.0
1,1,2-TCA	ND	< 2000	< 0.10	< 5.0	< 1.0
1,1-DCA	ND	< 2000	1.2	< 5.0	< 1.0
1,1-DCE	ND	< 2000	**7.0**	< 5.0	2.2
1,2-DCA	NA	< 2000	< 0.10	< 5.0	< 1.0
Chloroform	ND	< 2000	< 0.10	**66**	< 1.0
cis-1,2-DCE	**500**	**460**	**700**	**570**	**600**
PCE	**48,000**	**32,000**	**75,000**	**58,000**	**16,000**
trans-1,2-DCE	ND	< 2000	5.9	< 5.0	**6.7**
TCE	**1,500**	**1,200**	**2,300**	**2,200**	**1,800**
TFM	NA	NA	NA	NA	< 1.0
VC	ND	< 2000	0.94	< 5.0	< 1.0



MW-14B (159-169)	-/-/05	8/-/06	8/-/07	9/-/08	4/12/11
VOCs					
1,1,1-TCA	**120**	< 400	**75**	**48**	**24**
1,1,2,2-TCA	NA	< 400	< 0.10	< 1.0	< 1.0
1,1,2-TCA	ND	< 400	< 0.10	< 1.0	< 1.0
1,1-DCA	ND	< 400	**11**	< 1.0	2.7
1,1-DCE	**44**	< 400	**36**	**13**	**9.9**
1,2-DCA	NA	< 400	< 0.10	< 1.0	< 1.0
Chloroform	ND	< 400	< 0.10	< 1.0	< 1.0
cis-1,2-DCE	ND	< 400	**28**	**22**	1.2
PCE	**9,000**	**3,600**	**13,000**	**13,000**	**640**
trans-1,2-DCE	ND	< 400	< 0.10	< 1.0	< 1.0
TCE	**89**	< 400	**91**	**140**	**8.3**
TFM	NA	NA	NA	NA	< 1.0
VC	ND	< 400	< 0.10	< 1.0	< 1.0

MW-2 (110-130)	11/2/01	1/24/02	4/24/02	7/16/02	10/18/02	2/3/03	5/6/03	7/30/03	12/9/03	3/10/04	12/7/04	2/25/08
VOCs												
1,1,1-TCA	**230**	**220**	**210**	**75**	**140**	**82**	**100**	**110**	**93**	**140**	**130**	**22**
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TCA	**1.5**	**2**	< 0.5	< 0.5	**1**	**2**	**1.4**	**1.2**	**1.3**	< 0.5	**2**	< 0.5
1,1-DCA	**140**	**140**	**140**	**52**	**95**	**63**	**83**	**70**	**65**	**87**	**53**	**28**
1,1-DCE	**540**	**440**	**480**	**190**	**420**	**130**	**230**	**310**	**220**	**250**	**300**	**62**
1,2-DCA	**2.2**	< 0.5	**2**	< 0.5	**2**	**2**	**2**	**1.6**	**1.5**	**1**	**1**	< 0.5
Chloroform	5.2	2	4	2	4	4	4.9	4.4	4.3	3	3	0.78
cis-1,2-DCE	**48**	**35**	**42**	**17**	**39**	**38**	**32**	**36**	**29**	**30**	**30**	**6.1**
PCE	**49**	**53**	**52**	**26**	**50**	**39**	**38**	**45**	**38**	**43**	**42**	**31**
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.77	0.53	< 0.5	< 0.5	< 0.5
TCE	**580**	**500**	**450**	**190**	**360**	**210**	**320**	**350**	**240**	**290**	**380**	**70**
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

MW-10 (275-285)	4/7/11
VOCs	
1,1,1-TCA	**10**
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	**13**
1,1-DCE	**24**
1,2-DCA	< 1.0
Chloroform	4.4
cis-1,2-DCE	3.4
PCE	**8.5**
trans-1,2-DCE	< 1.0
TCE	**63**
TFM	< 1.0
VC	< 1.0

MW-14C (239-249)	-/-/05	8/-/06	8/-/07	9/-/08	4/12/11
VOCs					
1,1,1-TCA	2	3	1.9	1.3	< 1.0
1,1,2,2-TCA	NA	< 10	< 0.10	< 0.10	< 1.0
1,1,2-TCA	ND	< 10	< 0.10	< 0.10	< 1.0
1,1-DCA	3	**5**	3.1	2.4	**5.4**
1,1-DCE	**6**	**8**	**5.5**	4.0	3
1,2-DCA	NA	< 10	< 0.10	< 0.10	< 1.0
Chloroform	2	1	1.3	1.1	2
cis-1,2-DCE	ND	**6**	**6.2**	**7.1**	**15**
PCE	**33**	**36**	**37**	**28**	**5.5**
trans-1,2-DCE	ND	< 10	< 0.10	< 0.10	< 1.0
TCE	**99**	**140**	**160**	**140**	**66**
TFM	NA	NA	NA	NA	< 1.0
VC	ND	< 10	< 0.10	< 0.10	< 1.0

MW-1 (90-110)	11/2/01	1/24/02	4/25/02	7/16/02	10/17/02	2/3/03	5/6/03	7/30/03	12/9/03	3/10/04	12/7/04	2/25/08
VOCs												
1,1,1-TCA	**7.8**	4	**10**	**10**	**15**	**16**	**7.8**	**5.9**	**7.6**	**10**	**8**	**20**
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DCA	2.8	2	**5**	4	**6**	**7**	3.5	2.5	3.7	**5**	**5**	**22**
1,1-DCE	**16**	**8**	**26**	**24**	**49**	**33**	**19**	**17**	**19**	**25**	**21**	**23**
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	< 0.5	< 0.5	1	2	2	1.3	< 0.5	1.3	2	1	0.47
cis-1,2-DCE	1.1	1	3	3	**5**	**5**	2.1	1.6	2.5	4	3	3.3
PCE	4.1	3	**9**	**9**	**13**	**10**	**5.8**	**7.6**	**8**	**10**	**7**	**91**
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TCE	**21**	**16**	**52**	**55**	**79**	**51**	**34**	**27**	**38**	**55**	**37**	**17**
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

MW-14 (185-205)	4/11/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	< 1.0
1,1-DCE	< 1.0
1,2-DCA	< 1.0
Chloroform	< 1.0
cis-1,2-DCE	**24**
PCE	**400**
trans-1,2-DCE	< 1.0
TCE	**31**
TFM	< 1.0
VC	< 1.0

EX-1 (185-205)	4/6/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	< 1.0
1,1-DCE	< 1.0
1,2-DCA	< 1.0
Chloroform	1.8
cis-1,2-DCE	**14**
PCE	**300**
trans-1,2-DCE	< 1.0
TCE	**23**
TFM	< 1.0
VC	< 1.0

MW-12 (215-225)	3/31/11
VOCs	
1,1,1-TCA	1.3
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	1.1
1,1-DCE	1.6
1,2-DCA	< 1.0
Chloroform	< 1.0
cis-1,2-DCE	4
PCE	**21**
trans-1,2-DCE	< 1.0
TCE	**19**
TFM	< 1.0
VC	< 1.0

EX-2 (265-285)	4/12/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	3.9
1,1-DCE	3.4
1,2-DCA	**0.84**
Chloroform	< 1.0
cis-1,2-DCE	**17**
PCE	**130**
trans-1,2-DCE	< 1.0
TCE	**140**
TFM	< 1.0
VC	< 1.0

MW-13 (205-210)	4/1/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	**5.2**
1,1-DCE	2.2
1,2-DCA	< 1.0
Chloroform	0.77
cis-1,2-DCE	1.4
PCE	3
trans-1,2-DCE	< 1.0
TCE	0.54
TFM	< 1.0
VC	< 1.0

MW-11S (215-225)	4/4/11
VOCs	
1,1,1-TCA	3.8
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	**7.4**
1,1-DCE	**22**
1,2-DCA	< 1.0
Chloroform	**26**
cis-1,2-DCE	**43**
PCE	**140**
trans-1,2-DCE	< 1.0
TCE	**190**
TFM	< 1.0
VC	< 1.0

MW-11D (275-285)	4/4/11
VOCs	
1,1,1-TCA	**10**
1,1,2,2-TCA	< 1.0
1,1,2-TCA	**1.2**
1,1-DCA	**11**
1,1-DCE	**26**
1,2-DCA	< 1.0
Chloroform	**48**
cis-1,2-DCE	**110**
PCE	**460**
trans-1,2-DCE	3.7
TCE	**400**
TFM	**7.9**
VC	< 1.0

MW-9 (310-315)	7/17/02	10/18/02	2/3/03	5/9/03	8/1/03	12/8/03	3/10/04	12/9/04	2/28/08	4/6/11
VOCs										
1,1,1-TCA	2	2	< 0.5	1.6	1.5	1.5	1	1	3.8	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.6	< 1.0
1,1-DCE	1	2	< 0.5	1.3	1.3	1.5	0.7	< 0.5	**6.9**	0.54
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	0.72	0.73	0.8	1	0.55	< 1.0
cis-1,2-DCE	0.8	1	1	0.81	0.67	0.63	< 0.5	< 0.5	3.6	0.6
PCE	1	1	2	0.67	1.1	1.3	0.6	< 0.5	4.7	< 1.0
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	**15**	**21**	**22**	**13**	**13**	**11**	**8**	**5**	**19**	2.3
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

MW-16D (275-285)	4/7/11
VOCs	
1,1,1-TCA	3.1
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	3.1
1,1-DCE	**6.3**
1,2-DCA	< 1.0
Chloroform	6.4
cis-1,2-DCE	**6.1**
PCE	2.7
trans-1,2-DCE	< 1.0
TCE	**29**
TFM	< 1.0
VC	< 1.0

MW-16S (215-225)	4/7/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	< 1.0
1,1-DCE	< 1.0
1,2-DCA	< 1.0
Chloroform	0.97
cis-1,2-DCE	< 1.0
PCE	< 1.0
trans-1,2-DCE	< 1.0
TCE	< 1.0
TFM	< 1.0
VC	< 1.0

MW-15 (185-205)	4/11/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	< 1.0
1,1-DCE	< 1.0
1,2-DCA	< 1.0
Chloroform	< 1.0
cis-1,2-DCE	< 1.0
PCE	< 1.0
trans-1,2-DCE	< 1.0
TCE	< 1.0
TFM	< 1.0
VC	< 1.0

MW-17D (275-285)	4/8/11
VOCs	
1,1,1-TCA	**36**
1,1,2,2-TCA	**24**
1,1,2-TCA	**5.9**
1,1-DCA	**11**
1,1-DCE	1.5
1,2-DCA	< 1.0
Chloroform	**57**
cis-1,2-DCE	**830**
PCE	**610**
trans-1,2-DCE	**41**
TCE	**740**
TFM	< 1.0
VC	< 1.0

MW-17S (215-225)	4/8/11
VOCs	
1,1,1-TCA	< 1.0
1,1,2,2-TCA	< 1.0
1,1,2-TCA	< 1.0
1,1-DCA	< 1.0
1,1-DCE	< 1.0
1,2-DCA	< 1.0
Chloroform	< 1.0
cis-1,2-DCE	< 1.0
PCE	< 1.0
trans-1,2-DCE	< 1.0
TCE	< 1.0
TFM	< 1.0
VC	< 1.0

MW-7 (90-110)	11/5/01	1/25/02	4/24/02	7/16/02	10/18/02	1/29/03	5/7/03	7/30/03	12/10/03	3/8/04	12/7/04	2/26/08
VOCs												
1,1,1-TCA	< 0.5	0.5	0.6	2	0.5	0.7	0.7	1.1	< 0.5	0.3	< 0.5	< 0.5
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-DCA	0.7	1	1	2	1	2	1.4	1.8	1	1	< 0.5	0.33
1,1-DCE	< 0.5	0.5	0.7	2	0.5	0.6	0.74	1.8	0.47	< 0.5	< 0.5	< 0.5
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-DCE	**23**	**18**	**15**	**18**	**22**	**27**	**15**	**19**	**12**	**12**	**8**	4.5
PCE	**5.2**	**6**	4	**6**	< 0.5	**7**	**5.3**	**7.8**	4.1	**5**	2	1.7
trans-1,2-DCE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
TCE	2	3	3	**8**	4	4	2.6	**6**	1.6	2	1	0.78
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

MW-8 (120-140)	11/5/01	1/25/02	4/24/02	7/17/02	10/18/02	1/29/03	5/7/03	7/30/03	12/10/03	3/8/04	12/7/04	2/26/08	4/5/11
VOCs													
1,1,1-TCA	0.7	0.7	0.8	< 0.5	1	1	1.3	1.4	1.3	1	1	0.41	< 1.0
1,1,2,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1,2-TCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
1,1-DCA	1.3	2	2	1	3	3	2.7	3.4	3	3	3	1.4	< 1.0
1,1-DCE	< 0.5	0.8	< 0.5	0.5	1	1	1.5	2.3	1.4	1	2	0.77	< 1.0
1,2-DCA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
Chloroform	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.57	< 0.5	< 0.5	0.3	< 0.5	0.25	< 1.0
cis-1,2-DCE	1.7	2	2	2	4	4	3.5	4.3	3.6	3	3	1	< 1.0
PCE	1.1	1	< 0.5	0.8	2	3	1.5	2.9	2.3	2	2	1.1	< 1.0
trans-1,2-DCE	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0
TCE	1.1	2	< 0.5	0.8	2	2	2.3	3.6	2.4	2	2	1.6	< 1.0
TFM	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 1.0
VC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 1.0

NOTES:

1. TEMPORARY MONITORING WELLS TMW-1 THROUGH TMW-9 WERE INSTALLED AND SAMPLED BY DVIRKA AND BARTILUCCI CONSULTING ENGINEERS (D&B) IN 2008. DURING INSTALLATION WELLS WERE SAMPLED AT MULTIPLE DEPTHS STARTING FROM THE GROUNDWATER TABLE TO THE TERMINAL DEPTH OF THE WELL.
2. MONITORING WELLS MW-1 THROUGH MW-9 WERE INSTALLED BY D&B IN 2008.
3. EARLY WARNING WELLS EW-1B, EW-2B, EW-1C AND EW-2C WERE INSTALLED BY THE NYSDEC IN 1998.
4. FROST STREET MONITORING WELLS FSMW-13A, B, AND C AND FSMW-14A, B, AND C WERE INSTALLED BY WALDEN ASSOCIATES IN DECEMBER 2004.

GRAPHIC SCALE

400 0 400 800

(IN FEET)
1 inch = 400 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC	Date: 01/23/13
Drawn by: SK	Drawing code:
Checked by:	Plot scale:
Submitted by: TC	CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - PERMANENT WELLS

Sheet Reference Number:

3-7

R2-0012184

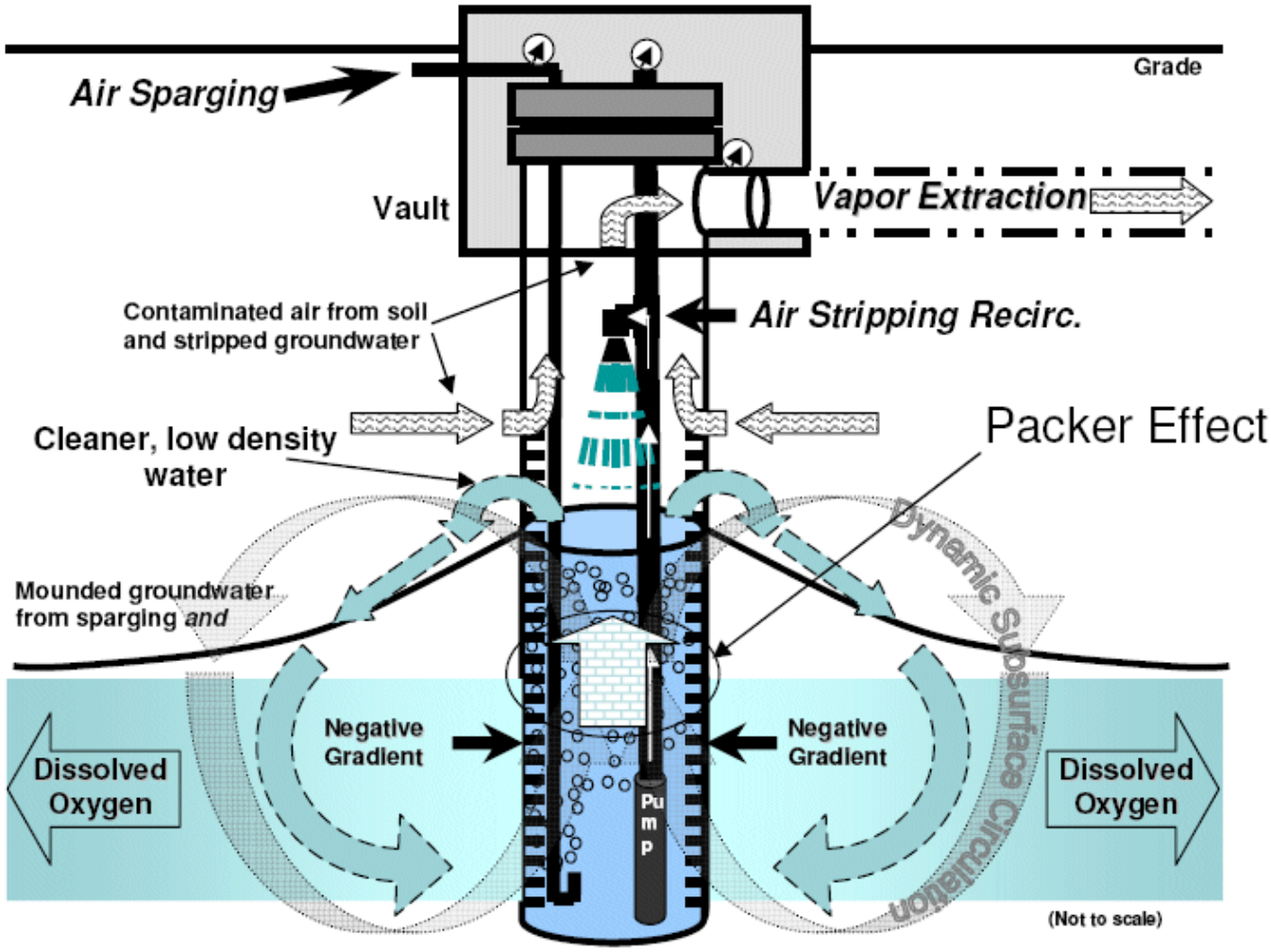
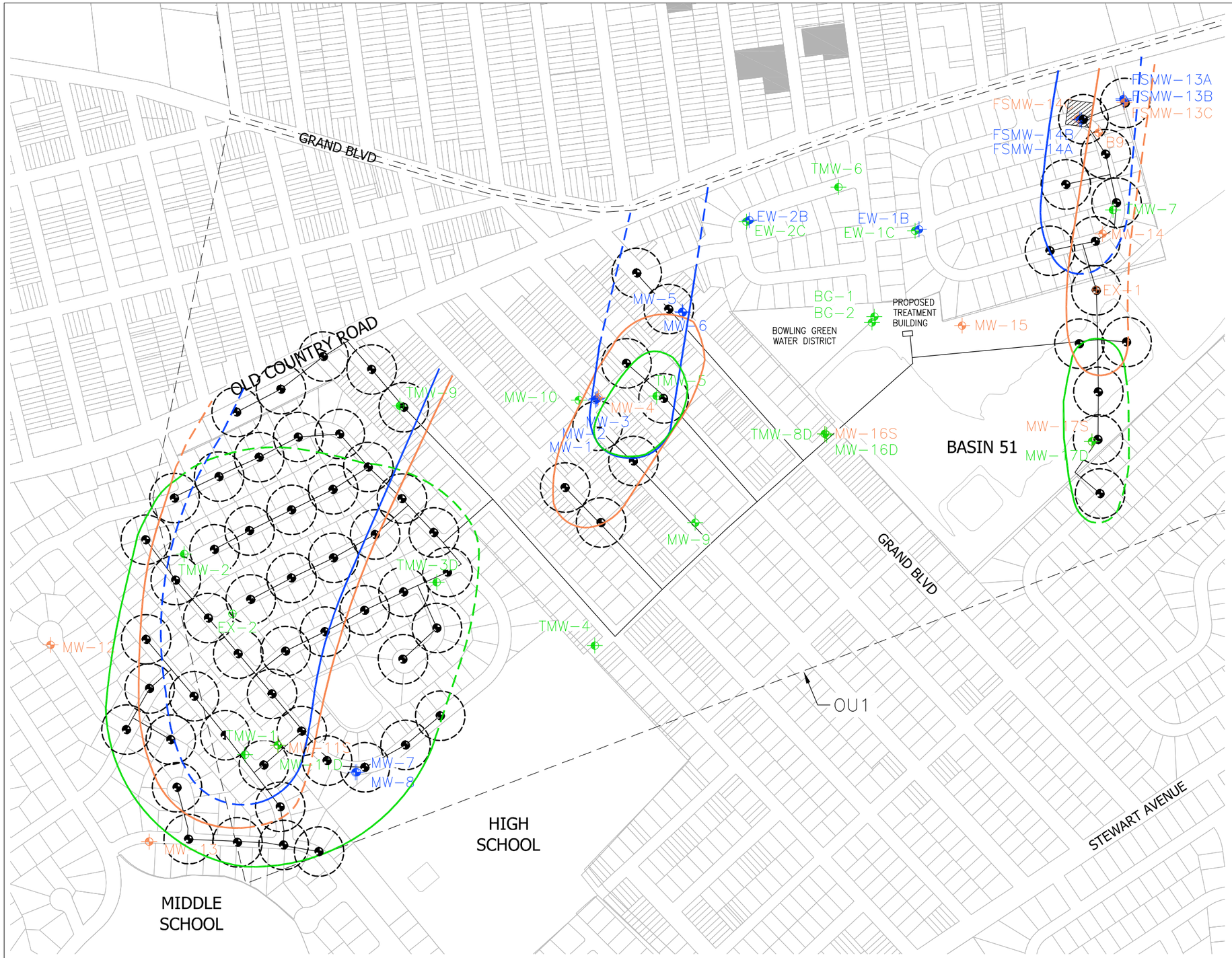


Diagram taken from http://artinwell.com/

HDR|OBG JV	**Typical ART In-Well Vapor Stripping System** **Supplemental Feasibility Study** **Technical Memorandum for OU1**	**Figure 5-1**



N

LEGEND:

TMW-7	TEMPORARY MONITORING WELL LOCATION
MW-5	MONITORING WELL LOCATION
	LIMIT OF OPERABLE UNIT 1 (OU1)
	LIMIT OF NEW CASSEL INDUSTRIAL AREA
	SOURCE AREA PROPERTIES
BGS	BELOW GROUND SURFACE
PPB	PART PER BILLION
ug/l	MICROGRAMS PER LITER
PCE	TETRACHLOROETHENE
ISCO	IN SITU CHEMICAL OXIDATION
	< 175 FEET BGS
	175 – 250 FEET BGS
	> 250 FEET BGS
CVOCs	CHLORINATED VOLATILE ORGANIC COMPOUNDS
	100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 150 FEET BGS (DASHED WHERE INFERRED)
	100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 200 FEET BGS (DASHED WHERE INFERRED)
	100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 285 FEET BGS (DASHED WHERE INFERRED)
	PROPOSED AIR LINE
	PROPOSED TREATMENT BUILDING
	PROPOSED IN-WELL VAPOR STRIPPING WELL
	PROPOSED AREA FOR ISCO

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawn by: SK
Drawing code:
Checked by:
Plot scale:
Submitted by: TC
CADD File Name:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

ALTERNATIVE 8A
IN-WELL VAPOR STRIPPING
FULL TREATMENT

Sheet Reference Number:

5–2

R2-0012186

LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- BGS — BELOW GROUND SURFACE
- PPB — PART PER BILLION
- ug/l — MICROGRAMS PER LITER
- CVOCs — CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ISCO — IN SITU CHEMICAL OXIDATION
- < 175 FEET BGS
- 175 – 250 FEET BGS
- > 250 FEET BGS
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 150 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 200 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 285 FEET BGS (DASHED WHERE INFERRED)
- PROPOSED AIR LINE
- PROPOSED TREATMENT BUILDING
- PROPOSED GROUNDWATER TRANSMISSION LINE
- PROPOSED AREA FOR ISCO
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 100 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 80 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 60 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 50 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 40 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 20 GPM

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawing code:
Drawn by: SK
Plot scale:
Checked by:
CADD File Name:
Submitted by: TC

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

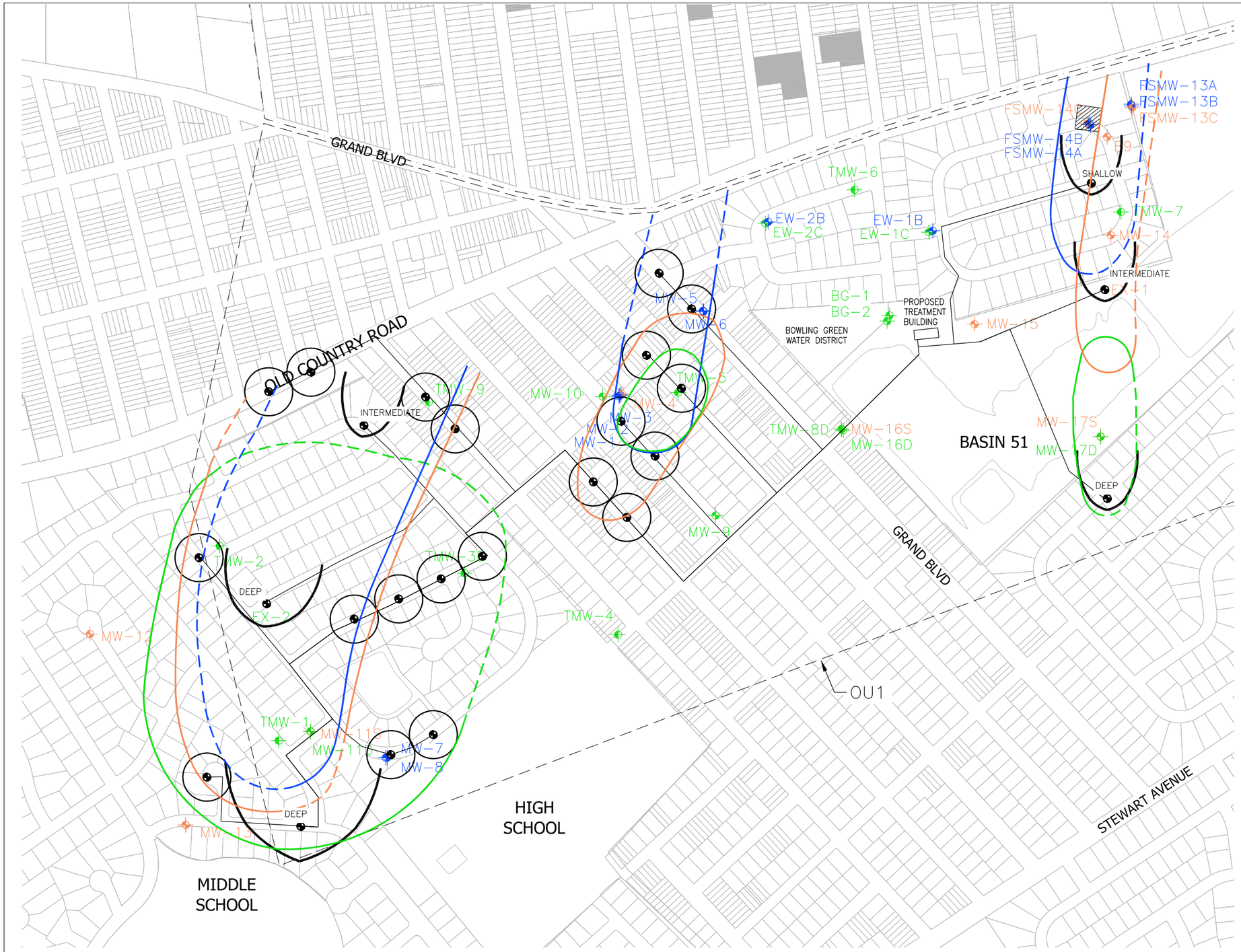
NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

ALTERNATIVE 8B
GROUNDWATER EXTRACTION / AIR STRIPPING FULL TREATMENT

Sheet Reference Number:

5–3

R2-0012187



N

LEGEND:

- TMW-7 — TEMPORARY MONITORING WELL LOCATION
- MW-5 — MONITORING WELL LOCATION
- LIMIT OF OPERABLE UNIT 1 (OU1)
- LIMIT OF NEW CASSEL INDUSTRIAL AREA
- SOURCE AREA PROPERTIES
- BGS — BELOW GROUND SURFACE
- PPB — PART PER BILLION
- ug/l — MICROGRAMS PER LITER
- CVOCs — CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ISCO — IN SITU CHEMICAL OXIDATION
- < 175 FEET BGS
- 175 – 250 FEET BGS
- > 250 FEET BGS
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 150 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 200 FEET BGS (DASHED WHERE INFERRED)
- 100 PPB (UG/L) CVOCs ISO CONCENTRATION CENTER AT 285 FEET BGS (DASHED WHERE INFERRED)
- PROPOSED TRANSMISSION PIPE
- PROPOSED TREATMENT BUILDING
- PROPOSED AREA FOR ISCO
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 60 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 40 GPM
- EXTRACTION WELL AND CAPTURE ZONE – PUMPED AT 20 GPM
- IN-WELL VAPOR STRIPPING WELL

GRAPHIC SCALE

200 0 200 400

(IN FEET)
1 inch = 200 ft.

US Army Corps of Engineers ®
Kansas City District

HDR

ORIGINAL SIGNED AND SEALED BY

SIGNATURE

Symbol	Description	Date	Appr.

Designed by: TC
Date: 01/23/13
Drawing code:
Drawn by: SK
Plot scale:
Checked by:
CADD File Name:
Submitted by: TC

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

HDR | OBG JV

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 1
NASSAU COUNTY, NEW YORK

ALTERNATIVE 9
COMBINED IN SITU AND EX SITU GROUNDWATER TREATMENT

Sheet Reference Number:

5–4

R2-0012188

Table 4-1: Summary of ARARs and TBCs

Citation	Title	Description
Chemical Specific ARARs and TBCs		
6NYCRR Part 703	New York State Groundwater Quality Standards	Provides numerical groundwater quality standards.
TOGS 1.1.1	Division of Water (DOW) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations	Provides numerical groundwater standards and guidance values in accordance with Part 703.
6NYCRR Part 750	State Pollution Discharge Elimination System (SPDES)	State program approved by USEPA for the control of wastewater and storm water discharges in accordance with the CWA. Regulates all point source discharges to groundwater and surface water.
40CFR Part 141	U.S. Environmental Protection Agency (USEPA) National Primary Drinking Water Standards	These federal standards include National Primary Drinking Water Standards promulgated under the authority of the Safe Drinking Water Act (SDWA) for the regulation of contaminants in all surface or groundwater utilized as potable water supplies.
NA	USEPA Drinking Water Health Advisories	Non-enforceable drinking water standards for concentrations of contaminants in drinking water.
Section 304(a) of the Clean Water Act	Federal Ambient Water Quality Criteria (AWQC)	Federal Ambient Water Quality Criteria (AWQC) for priority toxic pollutants. AWQCs are not legally enforceable, but may be referenced by states when developing enforceable water quality standards.
40 CFR Part 403	Sewage Discharge Pretreatment Standards	Require sewer districts to establish and enforce pretreatment standards for the users of their sewer system. A user is prohibited from discharging waste to the sewer that contains contaminants that exceed the pretreatment standards.
6NYCRR Part 375	Environmental Remediation Program	Provides regulatory framework for the development and implementation of the remedial program and sets forth general rand specific requirements for the remediation of inactive hazardous waste disposal sites, brownfield sites, and environmental restoration sites.
DER: 10	Technical Guidance for Site Investigation and Remediation	NYSDEC policy for the investigation and remediation process for NYSDEC's remedial programs.
NA	EPA's Health Effect Assessment Summary Tables (HEAST) and Integrated Risk Information System (IRIS).	Contain information used in risk assessment calculations, specifically in establishing the health risk of carcinogenic and non-carcinogenic chemicals. The most recent publications are available on the Internet.
40 CFR Part 50	National Primary and Secondary Ambient Air Quality Standards (NAAQS)	Defines air quality standards for pollutants considered to be harmful to public health and the environment. EPA has set limits for six primary pollutants which are called criteria pollutants. The CAA is considered a relevant SCG for the NCIA off-site groundwater only to the extent that remedial actions (e.g., groundwater treatment processes) undertaken emit constituents that are regulated by the CAA.
DAR-1	Policy DAR-1: Guidance for the Control of Toxic Ambient Air Contaminants	Provides guidance for the control of toxic ambient air contaminants in New York State. The guidelines outlined in this document are applicable to both chemical contaminants directly addressed by Federal or New York State (NYS) regulations and those for which no Federal or state ambient air quality standards exist.
29 CFR 1910, Subpart Z	Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs)	PELs are based on time-weighted average (TWA) concentrations to which workers may be exposed over an 8-hr exposure period without adverse effects.
NA	National Institute for Occupational Safety (NIOSH) and Health Immediately Dangerous to Life or Health (IDLH)	Concentration of a chemical in the air to which healthy adult workers could be exposed (if their respirators fail) without suffering permanent or escape-impairing health effects. Values are typically used as guide in making a decision whether a respirator should be used.
NA	American Conference of Governmental Industrial Hygienists Threshold Limit Values (TLVs)	A time-weighted average concentration under which most people can work consistently for 8 hours per day, over time, and receive no harmful effects.

Table 4-1: Summary of ARARs and TBCs

Location Specific ARARs and TBCs		
6NYCRR Part 602	Applications for Long Island Wells	Requires that any well installed in Kings, Queens, Nassau, or Suffolk Counties to withdraw water for any purpose other than a public water supply must have a permit if the total capacity of such a well or wells on any one property is in excess of 45 gallons per minute (64,800 gallons per day).
6NYCRR Part 370	New York State Protection of Sole Source Aquifer	Defines a sole source aquifer as being the principal drinking water source for an area. If contamination were to occur in such a sole source aquifer, it would pose a significant hazard to the health of the public.
40 CFR 149	Federal Protection of Sole Source Aquifer	The Code of Federal Regulations (40 CFR Part 149) describes the criteria for identifying critical aquifer protection areas pursuant to Section 1427 of the SDWA. Subpart 149.3 includes criteria that define a sole source aquifer and states that programs to reduce or prevent the contamination of sole source aquifers must be implemented when it is reasonably likely that contamination of such aquifers will occur.
Action Specific ARARs and TBCs		
	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 was amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986. CERCLA, specifically Section 121 (42 USC Part 9621, Cleanup Standards), states that the selected remedial alternative must attain a cleanup level that is protective of human health and the environment, cost effective, and utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.
40 CFR Parts 261-268 6NYCRR Parts 364 and 370-376	Resource Conservation and Recovery Act (RCRA) and New York State Hazardous Waste Regulations	The selected remedial alternative(s) may include activities that require the generation, storage, treatment, transport, and/or disposal of hazardous waste. A waste can be identified as hazardous under two categories: 1) a waste is a "listed" hazardous waste if it is specifically listed in 40 CFR Part 261 or 6 NYCRR Part 371, or 2) a waste is a "characteristically" hazardous waste if it exhibits the characteristic of ignitability, corrosivity, reactivity, or toxicity as defined in 40 CFR Part 261 or 6 NYCRR Part 371.
6NYCRR Parts 750-758	State Pollution Discharge Elimination System (SPDES)	Prohibit discharge of any pollutant to a water body, including groundwater, without first meeting the state pollutant discharge elimination system (SPDES) requirements. For the NCIA off-site groundwater, achieving SPDES requirements and periodic sampling would be necessary if a remediation system produced a liquid waste stream that required disposal to groundwater or the local storm water collection system.
40 CFR Parts 124 and 144-146.	Underground Injection Control	EPA's Underground Injection Control (UIC) Program under the SDWA regulates discharges to the subsurface to protect underground sources of drinking water from contamination. Requirements include permitting and limitations on contaminant concentrations.
NA	EPA Presumptive Remedies titled "Presumptive Response Strategy and Ex-situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites" (EPA 1996)	Presumptive remedies are preferred technologies for common categories of sites, based on historical patterns of remedy selection and EPA's scientific and engineering evaluation of performance data on technology implementation. The objective of the presumptive remedies initiative is to use past experience to streamline site investigation and speed up selection of cleanup actions. EPA presumptive remedy titled "Presumptive Response Strategy and Ex-situ Treatment Technologies for Contaminated Groundwater at CERCLA Sites" (EPA 1996), which identifies presumptive technologies for the ex-situ treatment component of a groundwater remedy that are expected to be used for sites where extraction and treatment is part of the remedy, should be considered in formulating and selecting remediation alternatives.
EPA/540/G-88/003	EPA Guidance on Remedial Action for Contaminated Groundwater at Superfund Sites	Provides information to make key decisions in developing, evaluating, and selecting groundwater remedial actions at Superfund sites (EPA 1988).
EPA/540/G-89/004	EPA Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA	Provides the methodology that the Federal Superfund program has established for characterizing the nature and extent of the risks posed by uncontrolled hazardous waste sites and for evaluating potential remedial options (EPA 1988).
NA	Risk Assessment Guidance for Superfund	The Risk Assessment Guidance for Superfund (Volume I, Human Health Evaluation Manual [Part A]) was developed by EPA to provide guidance for developing health risk information at Superfund sites and to support CERCLA's requirement to protect human health and the environment (EPA 1989).
DER:15	Presumptive/Proven Remedial Technologies	Provides guidance in implementing and complying with 6NYCRR section 375-1.8. Provides a brief description of generally accepted presumptive/proven remedial technologies.

Table 4-2: NYS Class GA Groundwater Quality Standards and Federal MCLs/MCLGs		
	Groundwater Standards µg/L	**Federal MCLs µg/L**
1,1,1-TCA	5	200
1,1,2,2- TCA	5	NS
1,1,2-TCA	1	5
1,1- DCA	5	NS
1,1-DCE	5	7
1,2-DCA	0.60	5
Benzene	1	5
Bromodichloro-methane	NS	NS
Carbon Tetrachloride	5	5
Chloroform	7	NS
Cis-1,2-DCE	5	70
PCE	5	5
Trans-1,2,-DCE	5	100
TCE	5	5
Vinyl Chloride	2	2

NS – No Standard
TCA – Trichloroethane
DCA – Dichloroethane
DCE – Dichloroethene
PCE – Tetracholorethene
TCE – Trichloroethene
MCLs – Maximum Contaminant Levels

Table 5-1: In-Well Vapor Stripping NYSDEC's FS Assumptions		
Well Depth	**Pump Rate**	**Radius of Influence**
80 ft bgs	40 gpm	120 ft
125 ft bgs	10 gpm	250 ft
140 ft bgs	40 gpm	175 ft
200 ft bgs	10 gpm	325 ft
225 ft bgs	10 gpm	510 ft

Table 5-2: Increase in In-Well Vapor Stripping Wells		
Alternative	**Original Number of Wells**	**Updated Number of Wells**
Alternative 4A	4	16
Alternative 5A	6	23
Alternative 6A	9	48
Alternative 7A	13	68*
Alternative 8A	11	72*

*Number of wells needed to cover three separate plume areas.

Table 5-3: Increase in Flow Rates		
Alternative	**Original Flow Rate**	**Updated Flow Rate**
Alternative 4B	100gpm	175gpm
Alternative 5B	100gpm	220gpm
Alternative 6B	260gpm	535gpm
Alternative 7B	280gpm	760gpm

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
1	**Alternative 1: No Action**	Minimal prevention of human contact through institutional controls only. Contaminants remain in the environment.	Will not quickly or actively achieve groundwater ARARs.	Does not provide long-term effectiveness or permanence; contaminants will remain in the groundwater.	May allow natural processes to dissipate groundwater contaminants, but will not create any reduction in the toxicity, mobility, or volume of groundwater contaminants as no active remedial measures are included.	Does not result in disruption of normal residential/institutional activities or pose a short term threat to health or the environment.	No major constraints to implementation of institutional measures.	Capital Cost: $0 Average Annual O&M: $0 Total Present Worth: $0
2	**Alternative 2: Monitored Natural Attenuation**	Minimal prevention of human contact through institutional controls. Contaminants anticipated to remain in groundwater for several years.	Relies solely on natural attenuation to achieve site ARARs. Will not quickly achieve groundwater ARARs.	Contaminants expected to remain in off-site groundwater for long period of time.	Relies on natural attenuation to reduce toxicity, mobility and volume of contamination present in the groundwater. There is some evidence of natural attenuation occurring in off-site groundwater; however, it is not as effective as active remedies in reducing toxicity, mobility, and volume of CVOCs.	Does not result in disruption of normal residential/institutional activities or pose a short term threat to health or the environment.	No major constraints to implementation of institutional measures and monitoring.	Capital Cost: $535,000 Average Annual O&M: $109,000 Total Present Worth: $3.1 million
3	**Alternative 3: Long Term Monitoring, Assessment, and Contingent Remediation**	Minimal prevention of human contact through institutional controls only. Contaminants remain in the environment. However, a technical evaluation of data and remedial options that is to be made annually may lead to implementation of an active remedy (i.e. Alternative 5A)	Will not quickly or actively achieve groundwater ARARs. However, a technical evaluation of data and remedial options that is to be made on a yearly basis may lead to implementation of an active remedy.	Does not provide long-term effectiveness or permanence; contaminants will remain in the groundwater. However, an annual technical evaluation of data and remedial options may lead to implementation of an active remedy.	May allow natural processes to dissipate groundwater contaminants, but will not create any reduction in the toxicity, mobility, or volume of groundwater contaminants as no active remedial measures are included. However, a technical evaluation of data and remedial options that is to be made on a yearly basis may lead to implementation of an active remedy.	Does not result in disruption of normal residential/institutional activities or pose a short term threat to health or the environment. However, an annual technical evaluation of data and remedial options may lead to implementation of an active remedy.	No major constraints to implementation of institutional measures and monitoring. However, the implementability of a remedial system (i.e. Alternative 5A) that may be installed in future years will be assessed.	Capital Cost: $555,000 Average Annual O&M: $86,000 Total Present Worth: $2.6 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
4A	**Alternative 4A: Remediation of upper portion of Aquifer (to 175 ft bgs) with In-Well Vapor Stripping/ Centralized Vapor Delivery and Treatment**	Protects human health and the environment by transferring contaminants from the water phase to the vapor phase and treating in ex situ. Prevents further down gradient migration of groundwater contaminants that exist at 175 ft bgs and shallower, but addresses only the greatest contamination areas (generally greater than 1,000 µg/L). Not as protective as other in-well vapor stripping alternatives. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Treats only areas having generally greater than 1,000 µg/L CVOCs concentrations. Natural attenuation anticipated to achieve groundwater standards over time. Only groundwater contamination in upper portion of aquifer is addressed. Air emissions will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The operating time for this in-well vapor stripping system is estimated at 30 years. Technology permanently removes captured CVOCs, but only areas having concentrations generally greater than 1,000 µg/L in the upper potion of aquifer are targeted. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces the mobility and volume of VOCs in the off-site groundwater through in-situ treatment of the groundwater, but less reduction than in Alternative 5, 6, 7 or 8. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 16 treatment wells and local subsurface vaults. Moderate piping/trenching for vapor transmission lines and treatment building. Will generate some noise and traffic, but less than other in-well vapor stripping alternatives. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available depending on site logistics. The anisotropy of the aquifer may affect the viability of technologies for this site. Treatment wells and vaults can be located in streets (little or no land acquisition required). Locating vaults will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $6,516,000 Average Annual O&M: $445,000 Total Present Worth: $15.0 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
4B	**Alternative 4B: Remediation of Upper Portion of Aquifer (to 175 ft bgs) with Groundwater Extraction/Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection**	Protects human health and the environment by extracting contaminated groundwater from the aquifer and treating it ex situ. Prevents further down gradient migration of groundwater contaminants that exist at 175 ft bgs and shallower, but addresses only the greatest contamination areas (generally greater than 1,000 µg/L). Not as protective as other pump and treat alternatives. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Treats only areas having generally greater than 1,000 µg/L CVOCs concentrations. Natural attenuation anticipated to achieve groundwater standards over time. Only groundwater contamination in upper portion of aquifer is addressed. Air emissions and treated effluent discharge will be controlled to meet ARARs. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time for this pump and treat system is 30 years. Technology permanently removes captured CVOCs, but only areas in upper portion of aquifer are targeted for treatment. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces volume and mobility of contaminants in groundwater through extraction. VOCs in extracted groundwater reduced by treatment. Less reduction than in Alternative 5, 6, 7 or 8. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 4 extraction wells, piping, and an approximately 3200 s.f. central treatment building. Less piping/trenching than other pump and treat alternatives. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented depending on site logistics. Treated water must be re-injected to subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $6,232,000 Average Annual O&M: $533,000 Total Present Worth: $16.1 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
5A	**Alternative 5A: Remediation of Upper and Deep Portions of Aquifer (to 200 ft bgs) with In-Well Vapor Stripping/ Centralized Vapor Delivery and Treatment**	Protects human health and the environment by transferring contaminants from the water phase to the vapor phase and treating it ex situ. Prevents further down gradient migration of contaminants, but addresses only the greatest contamination areas (generally greater than 1,000 µg/L). More protective than Alternative 4A, as both upper and deep portions of the aquifer are addressed. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Treats only areas having generally greater than 1,000 µg/L CVOCs concentrations. Natural attenuation anticipated to achieve groundwater standards over time. Air emissions will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The operating time for this in-well vapor stripping system is estimated at 30 years. Technology permanently removes captured CVOCs, but only areas in upper and deep portions of aquifer are targeted for treatment. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduced the mobility and volume of CVOCs in the off-site groundwater through in-situ treatment of the groundwater, but less reduction than in Alternative 6, 7 or 8. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 23 treatment wells and local subsurface vault. Moderate piping/trenching for vapor transmission lines and treatment building. Will generate some noise and traffic, but less than Alternative 6A and 7A. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available, depending on site logistics. The anisotropy of the aquifer may affect the viability of technologies for this site. Treatment wells can be located in streets (little or no land acquisition required). Land will need to be acquired for central vapor treatment building. Locating vaults will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $7,180,000 Average Annual O&M: $448,000 Total Present Worth: $15.7 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
5B	**Alternative 5B: Remediation of Upper and Deep Portions of Aquifer (to 200 ft bgs) with Groundwater Extraction/ Centralized Air Stripping and Vapor Treatment/Effluent Re-Injection**	Protects human health and the environment by extracting contaminated groundwater from the aquifer and treating it ex situ. Prevents further down gradient migration of groundwater contaminants, but addresses only the greatest contamination areas (generally greater than 1,000 µg/L). More protective than Alternative 4B as both upper and deep portions of the aquifer are addressed. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Treats only areas having generally greater than 1,000 µg/L CVOCs concentrations. Natural attenuation anticipated to achieve groundwater standards over time. Air emissions and treated effluent discharge will be controlled to meet ARARs. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time for this pump and treat system is 30 years. Technology permanently removed captured CVOCs, but only areas in upper and deep portions of aquifer are targeted for treatment. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduced volume and mobility of contaminants in groundwater through extraction. CVOCs in extracted groundwater reduced by treatment. Less reduction than in Alternative 6, 7 Or 8. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 4 extraction wells, piping, and an approximately 3200 s.f. central treatment building. Less piping/trenching than other pump and treat alternatives. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented depending on site logistics. Treated water must be re-injected to subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $6,301,000 Average Annual O&M: $536,000 Total Present Worth: $16.3 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
6A	**Alternative 6A: Full Plume Remediation of Upper Portion of Aquifer (to 175 ft bgs) with In-Well Vapor Stripping/ Centralized Vapor Delivery and Treatment**	Protects human health and the environment by transferring contaminants from the water phase to the vapor phase and treating it ex situ. Prevents further down gradient migration of contaminants that exist at 175 ft bgs and shallower. Class GA groundwater standards are achieved at designated depths. Thus, more protective than Alternative 4A. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. However, only contamination in upper portion of aquifer is addressed. Air emissions will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The operating time for this in-well vapor stripping system is estimated as 30 years. Technology permanently removes captured CVOCs. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces the mobility and volume of CVOCs in the off-site groundwater through in-situ treatment of the groundwater. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 48 treatment wells and local subsurface vaults. Moderate piping/trenching for vapor transmission lines and treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available, depending on site logistics. Treatment wells can be located in streets (little or no land acquisition required). Land will need to be acquired for central vapor treatment building. Locating vaults will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $9,033,000 Average Annual O&M: $609,000 Total Present Worth: $20.5 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
6B	**Alternative 6B: Full Plume Remediation of Upper Portion of Aquifer (to 175 ft bgs) with Groundwater Extraction/ Centralized Air Stripping and Vapor Treatment/ Effluent Re-Injection.**	Protects human health and the environment by extracting contaminated groundwater from the aquifer and treating it ex situ. Prevents further down gradient migration of groundwater contaminants that exist at 175 ft bgs and shallower. Class GA groundwater standards are achieved at designated depths. Thus, more protective than Alternative 4B. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. However, only contamination in upper portion of aquifer is addressed. Air emissions and treated effluent discharge will be controlled to meet ARARs. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time of this pump and treat system is 30 years. Technology permanently removes captured CVOCs. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduced volume and mobility of contaminants in groundwater through extraction. CVOCs in extracted groundwater reduced by treatment. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 12 extractions wells, piping, and an approximately 4000 s.f. central treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented depending on site logistics. Treated water must be re-injected to subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $8,388,000 Average Annual O&M: $807,000 Total Present Worth: $23.2 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
7A	**Alternative 7A: Full Plume Remediation of Upper and Deep Portions of Aquifer (to 200 ft bgs) with In-Well Vapor Stripping/ Centralized Vapor Delivery and Treatment**	Protects human health and the environment by transferring contaminants from the water phase to the vapor phase and treating it ex situ. Prevents further down gradient migration of contaminants. Class GA groundwater standards are achieved at designated depths. Both upper and deep portions of aquifer are addressed. Second most protective in-well vapor stripping alternative. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. Air emissions will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The operating time for this in-well vapor stripping system is estimated at 30 years. Technology permanently removes captured CVOCs. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces the mobility and volume of CVOCs in the off-site groundwater through in-situ treatment o f the groundwater. Most reduction of all in-well vapor stripping alternatives. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 68 treatment wells and local subsurface vaults. However, no extensive piping/trenching or large treatment building are required. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available, depending on site logistics. The anisotropy of the aquifer may affect the viability of technologies for this site. Treatment wells can be located in streets (little or no land acquisition required). Land will need to be acquired for central vapor treatment building. Locating vaults will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $11,657 ,000 Average Annual O&M: $645,000 Total Present Worth: $23.8 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
7B	**Alternative 7B: Full Plume Remediation of Upper and Deep Portions of Aquifer (to 200 ft bgs) with Groundwater Extraction/ Centralized Air Stripping and Vapor Treatment/ Effluent Re-Injection**	Protects human health and the environment by extracting contaminated groundwater from the aquifer and treating it ex situ. Prevents further down gradient migration of contaminants. Class GA groundwater standards are achieved at designated depths. Both upper and deep portions of aquifer are addressed. Second most protective pump and treat alternative. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. Air emissions and treated effluent discharge will be controlled to meet ARARs. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time for this pump and treat system is 30 years. Technology permanently removes captured CVOCs. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces volume and mobility of contaminants in groundwater through extraction. CVOCs in extracted groundwater reduced by treatment. Provides most reduction of all pump and treat alternatives. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 13 extractions wells, piping, and an approximately 4000 s.f. central treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented, depending on site logistics. Treated water must be re-injected to subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $8,883,000 Average Annual O&M: $827,000 Total Present Worth: $24.1 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
8A	**Alternative 8A: Full Plume Remediation of Upper and Deep Portions of Aquifer with In-Well Vapor Stripping/ Centralized Vapor Delivery and Treatment**	Protects human health and the environment by transferring contaminants from the water phase to the vapor phase and treating it ex situ. Prevents further down gradient migration of contaminants. Includes the full capture and treatment of contaminated off-site groundwater to greater designated depths to achieve Class GA groundwater standards. Most protective in-well vapor stripping alternative. Potential for upper aquifer contamination if treatment efficiencies are not properly met. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. Air emissions will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The operating time for this in-well vapor stripping system is estimated at 30 years. Lesser time frames may be possible under this remedy because it provides a higher coverage of the area than any other alternative. Technology permanently removes captured CVOCs. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces the mobility and volume of CVOCs in the off-site groundwater through in-situ treatment o f the groundwater. Most reduction of all in-well vapor stripping alternatives. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 72 treatment wells and local subsurface vaults. Moderate piping/trenching for vapor transmission lines and treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available, depending on site logistics. The anisotropy of the aquifer and depth of the contamination may affect the viability of technologies for this site. Treatment wells can be located in streets (little or no land acquisition required). Land will need to be acquired for central vapor treatment building. Locating vaults will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $11,728,000 Average Annual O&M: $652,000 Total Present Worth: $24.0 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
8B	**Alternative 8B: Full Plume Remediation of Upper and Deep Portions of Aquifer with Groundwater Extraction/ Centralized Air Stripping and Vapor Treatment/ Effluent Re-Injection**	Protects human health and the environment by extracting contaminated groundwater from the aquifer and treating it ex situ. Prevents further down gradient migration of contaminants. Includes the full capture and treatment of contaminated off-site groundwater to greater designated depths to achieve Class GA groundwater standards. Most protective pump and treat alternative. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. Air emissions and treated effluent discharge will be controlled to meet ARARs. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time for this pump and treat system is 30 years. Technology permanently removes captured CVOCs. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces volume and mobility of contaminants in groundwater through extraction. CVOCs in extracted groundwater reduced by treatment. Most reduction of all pump and treat alternatives. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 11 extractions wells, piping, and an approximately 4000 s.f. central treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented, depending on site logistics. Treated water must be re-injected to subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $8,862,000 Average Annual O&M: $834,000 Total Present Worth: $24.2 million

Table 6-1: Evaluation of Alternatives

Alt. No.	Alternative Name	Overall Protection of Public Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility or Volume of Contamination thru Treatment	Short Term Impact and Effectiveness	Implementability	Cost Effectiveness
9	**Alternative 9: Full Plume Remediation of Upper and Deep Portions of Aquifer with Groundwater Extraction/ Centralized Air Stripping, In-Well Vapor Stripping, and Vapor Treatment/ Effluent Re-Injection**	Protects human health and the environment by treating contaminated groundwater with either ex situ or in situ treatment. Prevents further down gradient migration of contaminants. Includes the full capture and treatment of contaminated off-site groundwater to greater designated depths to achieve Class GA groundwater standards. Potential for spreading contamination to the upper aquifer by in-well vapor stripping wells is less than other in-well alternatives because use of in-well vapor stripping will be restricted to concentrations of CVOCs less than 1,000 µg/L. In situ chemical treatment, such as ISCO would provide a rapid reduction of elevated concentrations (>10,000 µg/L) and would reduce the mass of contaminants in treated areas and reduce the treatment time for these areas. Proper handling and storage of chemical reagents would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Achieves applicable groundwater standards. Air emissions and treated effluent discharge will be controlled to meet ARARs. May need variations in the design to meet applicable effluent discharge limits for introducing treated groundwater into the upper aquifer. Injection of an in situ chemical treatment, such as ISCO into the aquifer would require compliance with EPA's Underground Injection Control (UIC) Program or an equivalency. Additional requirements may be required since the aquifer is designated as a sole source aquifer. Coordination would be necessary with the local authorities and permitting agencies to ensure all precautions are taken to protect the public water supply source.	The estimated operating time for this pump and treat system is 30 years. Technology permanently removes captured CVOCs. Special consideration during the design will be needed because aquifer anisotropy may prevent development of groundwater circulation thereby possibly affecting system efficiency. Fouling of in-wells may reduce long term effectiveness and require additional maintenance to maintain treatment efficiencies. Effectiveness of an in situ chemical treatment, such as ISCO is based on site characteristics and requires a robust site characterization and pilot study before implementing.	Reduces volume and mobility of contaminants in groundwater through extraction. CVOCs in extracted groundwater reduced by treatment. Most reduction of all pump and treat alternatives. Additional reduction of high CVOC concentration areas (>10,000 µg/L) will be achieved with use of an in situ chemical treatment, such as ISCO.	Will result in disruption of normal residential/institutional activities during implementation of 6 extraction wells, 20 in-well vapor stripping wells, piping, and an approximately 3200 s.f. central treatment building. Will generate some noise and traffic. Proper handling and storage of chemical reagents used for in situ chemical treatment would be essential to preventing any spills, leaks, or discharges to ground during implementation of ISCO and to prevent any contact of chemical reagents with residents.	Well and piping installation and treatment facility construction can be readily implemented, depending on site logistics. Extracted groundwater must be re-injected into the subsurface. Land will likely need to be acquired for central treatment building and wet wells for groundwater re-injection. Equipment for in-well vapor stripping technology is sold by a limited number of vendors. Equipment installation is readily implementable and available, depending on site logistics. The anisotropy of the aquifer and depth of the contamination may affect the viability of technologies for this site. Treatment wells can be located in streets (little or no land acquisition required). Locating vaults in streets will require coordination with local authorities and may be challenging in some areas due to existing subsurface utilities. In situ chemical treatment, such as ISCO is readily available and a proven technology. ISCO should be implemented by an experienced contractor Effectiveness is dependent on chemical contact with the CVOCs and requires a pilot study and robust site characterization.	Capital Cost: $10,044,000 Average Annual O&M: $680,000 Total Present Worth: $22.9 million

Table 6-2 Cost Estimate for Alternative 8B

Alternative 8B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 8B includes full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Mobilization and Demobilization**		$	250,000
2	**ISCO**		$	1,365,000
3	**Extraction Well Installation**		$	515,000
4	**Transmission Piping**		$	1,233,000
5	**Groundwater Treatment System**		$	925,000
6	**Treatment Plant Building**		$	1,200,000
7	**Infiltration Wells**		$	396,000
8	**Reporting and Institutional Controls**		$	175,000
	Sub-Total		$	6,059,000
	Contingency	25%	$	1,515,000
	Sub-Total		$	7,574,000
	Project Management	5%	$	378,701
	Remedial Design	6%	$	454,441
	Construction Management	6%	$	454,441
	TOTAL CAPITAL COST		$	8,862,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 5				
1	**Operation**		$	558,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	178,000
	Sub-Total		$	831,000
	Contingency	10%	$	83,000
	Sub-Total		$	914,000
	TOTAL ANNUAL O&M COSTS		$	914,000

Table 6-2 Cost Estimate for Alternative 8B

Alternative 8B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 8B includes full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	558,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	90,000
	Sub-Total		$	743,000
	Contingency	10%	$	74,000
	Sub-Total		$	817,000
	TOTAL ANNUAL O&M COSTS		$	817,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	1,900
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,112,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	8,862,000
2	**Total Annual O&M Cost**				
2.1	Year 1-5	1-5	$ 913,000	$	4,079,000
2.2	Years 6-30	6-30	$ 817,000	$	10,674,000
3	**Periodic Costs**			$	547,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	24,162,000

Table 6-3 Cost Estimate for Alternative 9

Alternative 9
COMBINED REMEDY

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 9 consists of full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with both in-well vapor stripping and groundwater extraction and ex situ treatment using air stripping. Elevated concentrations (>10,000ug/L) will be treated with ISCO. Contaminated vapor from in-well vapor stripping wells and contaminated groundwater from extraction wells will be treated at a centralized treatment system.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	984,000
5	**In Well Treatment System**		$	473,000
6	**Transmission Pipe**		$	1,508,000
7	**Groundwater Treatment System**		$	816,000
8	**Treatment Plant Building**		$	1,080,000
9	**Infiltration Wells**		$	104,000
10	**Reporting and Site Management**		$	175,000
	Sub-Total			$6,868,000
	Contingency	25%	$	1,717,000
	Sub-Total		$	8,585,000
	Project Management	5%	$	429,250
	Remedial Design	6%	$	515,100
	Construction Management	6%	$	515,100
	TOTAL CAPITAL COST		$	10,044,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	424,000
2	**Maintenance**		$	24,000
3	**Performance Monitoring**		$	66,000
4	**Monitoring and Institutional Controls**		$	177,600
	Sub-Total		$	691,600
	Contingency	10%	$	69,000
	Sub-Total		$	760,600
	TOTAL ANNUAL O&M COSTS		$	760,600

Table 6-3 Cost Estimate for Alternative 9

Alternative 9
COMBINED REMEDY

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 9 consists of full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with both in-well vapor stripping and groundwater extraction and ex situ treatment using air stripping. Elevated concentrations (>10,000ug/L) will be treated with ISCO. Contaminated vapor from in-well vapor stripping wells and contaminated groundwater from extraction wells will be treated at a centralized treatment system.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	424,000
2	**Maintenance**		$	24,000
3	**Performance Monitoring**		$	66,000
4	**Monitoring and Institutional Controls**		$	89,800
	Sub-Total		$	604,000
	Contingency	10%	$	60,000
	Sub-Total		$	664,000
	TOTAL ANNUAL O&M COSTS		$	664,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling - Vapor GAC**	1	$	950
2	**Carbon Profiling - Liquid GAC**	3	$	950
3	**Long Term Maintenance**	3	$	7,500
4	**Long Term Maintenance & Five Year Review**	5	$	65,000
5	**System Decommissioning**	30	$	1,543,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	10,044,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 760,930	$	3,399,000
2.2	**Year 6 - 30**	6-30	$ 664,155	$	8,682,000
3	**Periodic Costs**			$	792,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	22,917,000

Table 6-4 Cost Estimate for Alternative 1

Alternative 1
NO ACTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 1 consists of no action

Item No.	Description	Quantity	Total
CAPITAL COSTS:			
1	**No Capital Costs**		$ -
	Sub-Total		$ -
	Contingency	25%	$ -
	Sub-Total		$ -
	TOTAL CAPITAL COST		$ -

ANNUAL O&M COST:

Item No.	Description	Quantity	Total
1	**No O&M**		$ -
	Sub-Total		$ -
	Contingency	15%	$ -
	Sub-Total		$ -
	TOTAL ANNUAL O&M COST		$ -

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost	Present Value
1	**Capital Cost**	0		$ -
2	**Total Annual O&M Cost**	1-30		$ -
	TOTAL PRESENT VALUE OF ALTERNATIVE			$ -

Table 6-5 Cost Estimate for Alternative 2

Alternative 2
Natural Monitored Attenuation

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 2 consists of Monitored Natural Attenuation.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Site Characterization**		$	299,000
2	**Reporting and Institutional Controls**		$	105,000
	Sub-Total		$	404,000
	Contingency	25%	$	101,000
	Sub-Total		$	505,000
	Project Management	6%	$	30,300
	TOTAL CAPITAL COST		$	535,000
ANNUAL O&M COST:				
Item No.	**Description**	**Quantity**		**Total**
Years 1 - 2				
1	**MNA & Institutional Controls**		$	298,000
1.1	Quarterly Groundwater Monitoring			
	Sub-Total		$	298,000
	Contingency	10%	$	29,800
	Sub-Total		$	327,800
	TOTAL ANNUAL O&M COST		$	327,800
Years 3-5				
1	**MNA & Institutional Controls**			
1.1	Semiannual Groundwater Monitoring		$	151,000
	Sub-Total		$	151,000
	Contingency	10%	$	15,100
	Sub-Total		$	166,100
	TOTAL ANNUAL O&M COST		$	166,100

Table 6-5 Cost Estimate for Alternative 2

Alternative 2
Natural Monitored Attenuation

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 2 consists of Monitored Natural Attenuation.

Item No.	Description	Quantity		Total
Years 6-30				
1	**MNA & Institutional Controls**			
1.1	Annual Groundwater Monitoring		$	77,000
	Sub-Total		$	77,000
	Contingency	10%	$	7,700
	Sub-Total		$	84,700
	TOTAL ANNUAL O&M COST		$	84,700

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Long Term Maintenance & Five Year Review**	5	$	65,000
2	**Decommission Wells**	30	$	650,000

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	535,000
2	**Total Annual O&M Cost**				
2.1	**Years 1 - 2**	1-2	$ 349,580	$	619,000
2.2	**Years 3 - 5**	3-5	$ 176,990	$	424,000
2.3	**Years 6 - 30**	6-30	$ 89,595	$	1,100,000
3	**Periodic Costs**			$	398,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	3,076,000

Table 6-6 Cost Estimate for Alternative 3

Alternative 3
Long Term Monitoring

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 3 consists of long term monitoring, assessment and a contingency remediation if after review it is determined that implementation of active remedation is necessary.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Long Term Monitoring**		$	314,000
2	**Reporting and Institutional Controls**		$	105,000
	Sub-Total		$	419,000
	Contingency	25%	$	105,000
	Sub-Total		$	524,000
	Project Management	6%	$	31,400
	TOTAL CAPITAL COST		$	555,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 2				
1	**Long Term Monitoring & Institutional Controls**		$	254,000
1.1	Quarterly Groundwater Monitoring			
	Sub-Total		$	254,000
	Contingency	10%	$	25,400
	Sub-Total		$	279,400
	TOTAL ANNUAL O&M COST		$	279,400
Years 3-5				
1	**Long Term Monitoring & Institutional Controls**			
1.1	Semiannual Groundwater Monitoring		$	117,000
	Sub-Total		$	117,000
	Contingency	10%	$	11,700
	Sub-Total		$	128,700
	TOTAL ANNUAL O&M COST		$	128,700

Table 6-6 Cost Estimate for Alternative 3

Alternative 3
Long Term Monitoring

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 3 consists of long term monitoring, assessment and a contingency remediation if after review it is determined that implementation of active remedation is necessary.

Item No.	Description	Quantity		Total
Years 6-30				
1	**Long Term Monitoring & Institutional Controls**			
1.1	Annual Groundwater Monitoring		$	60,000
	Sub-Total		$	60,000
	Contingency	10%	$	6,000
	Sub-Total		$	66,000
	TOTAL ANNUAL O&M COST		$	66,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Long Term Maintenance & Five Year Review**	5	$	65,000
2	**Decommission Wells**	30	$	710,000

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	555,000
2	**Total Annual O&M Cost**				
2.1	**Years 1-2**	1-2	$ 253,748	$	479,000
2.2	**Years 3-5**	3-5	$ 129,074	$	330,000
2.3	**Years 6-30**	6-30	$ 65,637	$	858,000
3	**Periodic Costs**			$	417,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	2,639,000

Table 6-7 Cost Estimate for Alternative 4A

Alternative 4A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 4A consists of remediating the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	429,000
5	**In Well Treatment System**		$	399,000
6	**Vapor Transmission Pipe**		$	1,014,000
7	**Centralized Vapor Treatment System**		$	186,000
8	**Treatment Plant Building**		$	450,000
9	**Reporting and Site Management**		$	175,000
	Sub-Total		$	4,381,000
	Contingency	25%	$	1,095,000
	Sub-Total		$	5,476,000
	Project Management	5%	$	273,743
	Remedial Design	6%	$	437,989
	Construction Management	6%	$	328,492
	TOTAL CAPITAL COST		$	6,516,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	249,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	162,000
	Sub-Total		$	475,000
	Contingency	10%	$	48,000
	Sub-Total		$	523,000
	TOTAL ANNUAL O&M COSTS		$	523,000

Table 6-7 Cost Estimate for Alternative 4A

Alternative 4A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 4A consists of remediating the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	249,000
2	**Maintenance**		$	5,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	82,000
	Sub-Total		$	390,000
	Contingency	10%	$	39,000
	Sub-Total		$	429,000
	TOTAL ANNUAL O&M COSTS		$	429,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	950
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,059,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	6,516,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 523,050	$	2,336,000
2.2	**Year 6 - 30**	6-30	$ 429,025	$	5,609,000
3	**Periodic Costs**			$	529,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	14,990,000

Table 6-8 Cost Estimate for Alternative 4B

Alternative 4B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 4B consists of remediating the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Mobilization and Demobilization**		$	250,000
2	**ISCO**		$	1,365,000
3	**Extraction Well Installation**		$	174,000
4	**Transmission Piping**		$	358,200
5	**Groundwater Treatment System**		$	725,000
6	**Treatment Plant Building**		$	1,080,000
7	**Infiltration Wells**		$	133,500
8	**Reporting and Institutional Controls**		$	175,000
	Sub-Total		$	4,260,700
	Contingency	25%	$	1,065,000
	Sub-Total		$	5,325,700
	Project Management	5%	$	266,000
	Remedial Design	6%	$	320,000
	Construction Management	6%	$	320,000
	TOTAL CAPITAL COST		$	6,232,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 5				
1	**Operation**		$	309,000
2	**Maintenance**		$	14,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	162,000
	Sub-Total		$	551,000
	Contingency	10%	$	55,000
	Sub-Total		$	606,000
	TOTAL ANNUAL O&M COSTS		$	606,000

Table 6-8 Cost Estimate for Alternative 4B

Alternative 4B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 4B consists of remediating the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Years 6 - 30

Item No.	Description	Quantity		Total
1	**Operation**		$	309,000
2	**Maintenance**		$	14,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	82,000
	Sub-Total		$	471,000
	Contingency	10%	$	47,000
	Sub-Total		$	518,000
	TOTAL ANNUAL O&M COSTS		$	518,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling - Vapor Phase GAC**	1	$	950
2	**Carbon Profiling - Liquid Phase GAC**	3	$	950
3	**Long Term Maintenance**	3	$	7,500
4	**Long Term Maintenance & Five Year Review**	5	$	65,000
5	**System Decommissioning**	30	$	560,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	6,232,000
2	**Total Annual O&M Cost**				
2.1	Year 1-5	1-5	$ 606,000	$	2,709,000
2.2	Years 6-30	6-30	$ 518,000	$	6,777,000
3	**Periodic Costs**			$	411,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	16,129,000

Table 6-9 Cost Estimate for Alternative 5A

Alternative 5A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 5A consists of remediating the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	713,000
5	**In Well Treatment System**		$	509,000
6	**Vapor Transmission Pipe**		$	1,066,000
7	**Centralized Vapor Treatment System**		$	186,000
8	**Treatment Plant Building**		$	450,000
9	**Reporting and Site Management**		$	175,000
	Sub-Total		$	4,827,000
	Contingency	25%	$	1,207,000
	Sub-Total		$	6,034,000
	Project Management	5%	$	301,664
	Remedial Design	6%	$	482,662
	Construction Management	6%	$	361,997
	TOTAL CAPITAL COST		$	7,180,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	249,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	168,000
	Sub-Total		$	481,000
	Contingency	10%	$	48,000
	Sub-Total		$	529,000
	TOTAL ANNUAL O&M COSTS		$	529,000

Table 6-9 Cost Estimate for Alternative 5A

Alternative 5A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 5A consists of remediating the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	249,000
2	**Maintenance**		$	5,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	85,000
	Sub-Total		$	393,000
	Contingency	10%	$	39,000
	Sub-Total		$	432,000
	TOTAL ANNUAL O&M COSTS		$	432,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	950
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,135,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	7,180,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 529,000	$	2,364,000
2.2	**Year 6 - 30**	6-30	$ 432,000	$	5,649,000
3	**Periodic Costs**			$	553,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	15,746,000

Table 6-10 Cost Estimate for Alternative 5B

Alternative 5B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 5B consists of remediating the deep portion (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Mobilization and Demobilization**		$	250,000
2	**ISCO**		$	1,365,000
3	**Extraction Well Installation**		$	174,000
4	**Transmission Piping**		$	382,600
5	**Groundwater Treatment System**		$	725,000
6	**Treatment Plant Building**		$	1,080,000
7	**Infiltration Wells**		$	156,500
8	**Reporting and Institutional Controls**		$	175,000
	Sub-Total		$	4,308,100
	Contingency	25%	$	1,077,000
	Sub-Total		$	5,385,100
	Project Management	5%	$	269,256
	Remedial Design	6%	$	323,107
	Construction Management	6%	$	323,107
	TOTAL CAPITAL COST		$	6,301,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 5				
1	**Operation**		$	309,000
2	**Maintenance**		$	14,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	168,000
	Sub-Total		$	557,000
	Contingency	10%	$	56,000
	Sub-Total		$	613,000
	TOTAL ANNUAL O&M COSTS		$	613,000

Table 6-10 Cost Estimate for Alternative 5B

Alternative 5B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 5B consists of remediating the deep portion (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA by implementing groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Years 6 - 30

Item No.	Description	Quantity		Total
1	**Operation**		$	309,000
2	**Maintenance**		$	14,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	85,000
	Sub-Total		$	474,000
	Contingency	10%	$	47,000
	Sub-Total		$	521,000
	TOTAL ANNUAL O&M COSTS		$	521,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling - Vapor Phase GAC**	1	$	950
2	**Carbon Profiling - Liquid Phase GAC**	3	$	950
3	**Long Term Maintenance**	3	$	7,500
4	**Long Term Maintenance & Five Year Review**	5	$	65,000
5	**System Decommissioning**	30	$	590,000

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	6,301,000
2	**Total Annual O&M Cost**				
2.1	Year 1-5	1-5	$ 614,000	$	2,741,000
2.2	Years 6-30	6-30	$ 522,000	$	6,817,000
3	**Periodic Costs**			$	420,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	16,279,000

Table 6-11 Cost Estimate for Alternative 6A

Alternative 6A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 6A consists of full plume remediation of the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized vapor treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO. This alternative is similar to Alt 4A but includes full capture and treatment of contaminated off site groundwater.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	1,256,000
5	**In Well Treatment System**		$	993,000
6	**Vapor Transmission Pipe**		$	1,260,000
7	**Centralized Vapor Treatment System**		$	211,000
8	**Treatment Plant Building**		$	450,000
9	**Reporting and Site Management**		$	175,000
	Sub-Total		$	6,073,000
	Contingency	25%	$	1,518,000
	Sub-Total		$	7,591,000
	Project Management	5%	$	379,493
	Remedial Design	6%	$	607,188
	Construction Management	6%	$	455,391
	TOTAL CAPITAL COST		$	9,033,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	394,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	162,000
	Sub-Total		$	620,000
	Contingency	10%	$	62,000
	Sub-Total		$	682,000
	TOTAL ANNUAL O&M COSTS		$	682,000

Table 6-11 Cost Estimate for Alternative 6A

Alternative 6A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 6A consists of full plume remediation of the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized vapor treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO. This alternative is similar to Alt 4A but includes full capture and treatment of contaminated off site groundwater.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	394,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	82,000
	Sub-Total		$	540,000
	Contingency	10%	$	54,000
	Sub-Total		$	594,000
	TOTAL ANNUAL O&M COSTS		$	594,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	950
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,379,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	9,033,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 682,000	$	3,046,000
2.2	**Year 6 - 30**	6-30	$ 594,000	$	7,766,000
3	**Periodic Costs**			$	631,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	20,476,000

Table 6-12 Cost Estimate for Alternative 6B

Alternative 6B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 6B consists of full plume remediation of the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Mobilization and Demobilization**		$	250,000
2	**ISCO**		$	1,365,000
3	**Extraction Well Installation**		$	523,000
4	**Transmission Piping**		$	933,400
5	**Groundwater Treatment System**		$	925,000
6	**Treatment Plant Building**		$	1,200,000
7	**Infiltration Wells**		$	363,500
8	**Reporting and Institutional Controls**		$	175,000
	Sub-Total		$	5,734,900
	Contingency	25%	$	1,434,000
	Sub-Total		$	7,168,900
	Project Management	5%	$	358,456
	Remedial Design	6%	$	430,147
	Construction Management	6%	$	430,147
	TOTAL CAPITAL COST		$	8,388,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 5				
1	**Operation**		$	543,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	162,000
	Sub-Total		$	800,000
	Contingency	10%	$	80,000
	Sub-Total		$	880,000
	TOTAL ANNUAL O&M COSTS		$	880,000

Table 6-12 Cost Estimate for Alternative 6B

Alternative 6B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 6B consists of full plume remediation of the upper portion (to 175 ft bgs) of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	543,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	82,000
	Sub-Total		$	720,000
	Contingency	10%	$	72,000
	Sub-Total		$	792,000
	TOTAL ANNUAL O&M COSTS		$	792,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	1,900
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	952,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	8,388,000
2	**Total Annual O&M Cost**				
2.1	Year 1-5	1-5	$ 880,000	$	3,930,000
2.2	Years 6-30	6-30	$ 792,000	$	10,351,000
3	**Periodic Costs**			$	496,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	23,165,000

Table 6-13 Cost Estimate for Alternative 7A

Alternative 7A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 7A consists of full plume remediation of the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	2,594,000
5	**In Well Treatment System**		$	1,365,000
6	**Vapor Transmission Pipe**		$	1,314,000
7	**Centralized Vapor Treatment System**		$	211,000
8	**Treatment Plant Building**		$	450,000
9	**Reporting and Site Management**		$	175,000
	Sub-Total		$	7,837,000
	Contingency	25%	$	1,959,000
	Sub-Total		$	9,796,000
	Project Management	5%	$	489,785
	Remedial Design	6%	$	783,657
	Construction Management	6%	$	587,743
	TOTAL CAPITAL COST		$	11,657,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	424,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	168,000
	Sub-Total		$	656,000
	Contingency	10%	$	66,000
	Sub-Total		$	722,000
	TOTAL ANNUAL O&M COSTS		$	722,000

Table 6-13 Cost Estimate for Alternative 7A

Alternative 7A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 7A consists of full plume remediation of the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	424,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	85,000
	Sub-Total		$	573,000
	Contingency	10%	$	57,000
	Sub-Total		$	630,000
	TOTAL ANNUAL O&M COSTS		$	630,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	950
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,610,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	11,657,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 722,000	$	3,226,000
2.2	**Year 6 - 30**	6-30	$ 630,000	$	8,238,000
3	**Periodic Costs**			$	705,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	23,826,000

Table 6-14 Cost Estimate for Alternative 7B

Alternative 7B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 7B consists of full plume remediation of the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Mobilization and Demobilization**		$	250,000
2	**ISCO**		$	1,365,000
3	**Extraction Well Installation**		$	564,000
4	**Transmission Piping**		$	1,016,800
5	**Groundwater Treatment System**		$	1,000,000
6	**Treatment Plant Building**		$	1,200,000
7	**Infiltration Wells**		$	503,000
8	**Reporting and Institutional Controls**		$	175,000
	Sub-Total		$	6,073,800
	Contingency	25%	$	1,518,000
	Sub-Total		$	7,591,800
	Project Management	5%	$	379,659
	Remedial Design	6%	$	455,590
	Construction Management	6%	$	455,590
	TOTAL CAPITAL COST		$	8,883,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1 - 5				
1	**Operation**		$	558,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	168,000
	Sub-Total		$	821,000
	Contingency	10%	$	82,000
	Sub-Total		$	903,000
	TOTAL ANNUAL O&M COSTS		$	903,000

Table 6-14 Cost Estimate for Alternative 7B

Alternative 7B
PUMP AND TREAT WITH RE-INJECTION

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 7B consists of full plume remediation of the upper and deep portions (to 200 ft bgs) of the groundwater contamination plume down gradient of the NCIA with groundwater extraction and ex situ treatment using air stripping and vapor treatment at a centralized treatment plant. Treated effluent would be re-injected into the aquifer. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	558,000
2	**Maintenance**		$	29,000
3	**Performance Sampling**		$	66,000
4	**Monitoring and Institutional Controls**		$	85,000
	Sub-Total		$	738,000
	Contingency	10%	$	74,000
	Sub-Total		$	812,000
	TOTAL ANNUAL O&M COSTS		$	812,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	1,900
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,045,000

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	8,883,000
2	**Total Annual O&M Cost**				
2.1	Year 1-5	1-5	$ 903,000	$	4,033,000
2.2	Years 6-30	6-30	$ 812,000	$	10,614,000
3	**Periodic Costs**			$	525,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	24,055,000

Table 6-15 Cost Estimate for Alternative 8A

Alternative 8A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 8A consists of full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
CAPITAL COSTS:				
1	**Pilot / Treatability Study**		$	113,000
2	**Mobilization and Demobilization**		$	250,000
3	**ISCO**		$	1,365,000
4	**Well Installation**		$	2,709,000
5	**In Well Treatment System**		$	1,432,000
6	**Vapor Transmission Pipe**		$	1,314,000
7	**Centralized Vapor Treatment System**		$	211,000
8	**Treatment Plant Building**		$	450,000
9	**Reporting and Site Management**		$	175,000
	Sub-Total		$	8,019,000
	Contingency	25%	$	2,005,000
	Sub-Total		$	10,024,000
	Project Management	5%	$	501,200
	Remedial Design	6%	$	601,440
	Construction Management	6%	$	601,440
	TOTAL CAPITAL COST		$	11,728,000

ANNUAL O&M COST:

Item No.	Description	Quantity		Total
Years 1-5				
1	**Operation**		$	424,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	178,000
	Sub-Total		$	666,000
	Contingency	10%	$	67,000
	Sub-Total		$	733,000
	TOTAL ANNUAL O&M COSTS		$	733,000

Table 6-15 Cost Estimate for Alternative 8A

Alternative 8A
IN-WELL VAPOR STRIPPING

COST ESTIMATE SUMMARY

Site: New Cassel/Hicksville Groundwater Contamination Superfund Site (OU-1)
Location: Nassau County, NY
Phase: Supplemental Feasibility Study (-30% - +50%)
Base Year: 2013
Date: July 2013

Description: Alternative 8A consists of full plume remediation of the upper and deep portions of the groundwater contamination plume down gradient of the NCIA with in-well vapor stripping and centralized off-gas treatment. Elevated concentrations (>10,000 ug/L) will be treated with ISCO.

Item No.	Description	Quantity		Total
Years 6 - 30				
1	**Operation**		$	424,000
2	**Maintenance**		$	10,000
3	**Performance Monitoring**		$	54,000
4	**Monitoring and Institutional Controls**		$	90,000
	Sub-Total		$	578,000
	Contingency	10%	$	58,000
	Sub-Total		$	636,000
	TOTAL ANNUAL O&M COSTS		$	636,000

PERIODIC COSTS:

Item No.	Description	Year		Total
1	**Carbon Profiling**	1	$	950
2	**Long Term Maintenance & Five Year Review**	5	$	65,000
3	**System Decommissioning**	30	$	1,549,500

PRESENT VALUE ANALYSIS: Rate of Return: 7% Inflation Rate: 3%

Item No.	Cost Type	Year	Total Cost		Present Value
1	**Capital Cost**	0		$	11,728,000
2	**Total Annual O&M Cost**				
2.1	**Year 1 - 5**	1-5	$ 732,550	$	3,272,000
2.2	**Year 6 - 30**	6-30	$ 635,775	$	8,311,000
3	**Periodic Costs**			$	685,000
	TOTAL PRESENT VALUE OF ALTERNATIVE			$	23,996,000

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B
Sample ID			EW-1B-154-164-092501	EW-1B-154-164-012802	EW-1B-154-164-042502	EW-1B-154-164-071802	EW-1B-154-164-101602	EW-1B-154-164-012903	EW-1B-154-164-050803	EW-1B-154-164-073003	EW-1B-154-164-120903	EW-1B-154-164-031004	EW-1B-154-164-120904	EW-1B-154-164-022708
Sample Depth			154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164
Sampling Date			9/25/2001	1/28/2002	4/25/2002	7/18/2002	10/16/2002	1/29/2003	5/8/2003	7/30/2003	12/9/2003	3/10/2004	12/9/2004	2/27/2008
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	**40**	**59**	**52 D**	**41**	**59 D**	**34 D**	**40 D**	**31**	**28**	**25**	**13**	2.8
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	3.8	0.5 U	**10**	**7**	**8**	**6**	4.5	3.1	3.5	3 J	2 J	0.79
1,1-Dichloroethene	75-35-4	**5.0**	**39**	**45**	**39**	**38**	**47 D**	**31**	**31**	**28**	**23**	**19**	**15**	4.2
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
1,3-Dichlorobenzene	541-73-1	3.0	1.1	0.5 U	0.5 U	2	2	2	1.7	1	0.5 U	0.9 J	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.7	0.5 U	0.8	0.9	0.5 U	0.9	0.86	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1.6	0.5 U	1.3	NA	0.5 U	NA
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	0.71	1.1	NA	0.5 U	NA
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B	EW-1B
Sample ID			EW-1B-154-164-092501	EW-1B-154-164-012802	EW-1B-154-164-042502	EW-1B-154-164-071802	EW-1B-154-164-101602	EW-1B-154-164-012903	EW-1B-154-164-050803	EW-1B-154-164-073003	EW-1B-154-164-120903	EW-1B-154-164-031004	EW-1B-154-164-120904	EW-1B-154-164-022708
Sample Depth			154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164	154 -164
Sampling Date			9/25/2001	1/28/2002	4/25/2002	7/18/2002	10/16/2002	1/29/2003	5/8/2003	7/30/2003	12/9/2003	3/10/2004	12/9/2004	2/27/2008
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 J	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.3 J	0.5 U	**9**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**58 **D**	**87**	**64 D**	**44 D**	**68 D**	**53 D**	**50 D**	**39**	**39**	**38**	**29**	**7.4**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.57	1.8	0.5 U	0.5 U	0.5 U	4.1
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	**26**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 J	NA
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	NA	0.5 U	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**630 D**	**1000**	**780 D**	**640 D**	**830 D**	**470 D**	**670 D**	**420 D**	**390 D**	**500 D**	**370 D***	**74 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 J	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.6	0.5 U	0.5 U	0.8	0.5 U	0.7	0.51	0.52	0.49 J	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**66 D**	**120**	**91 D**	**67 D**	**87 D**	**64 D**	**71 D**	**40 D**	**39 D**	**48**	**32**	**17**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1B	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C
Sample ID			NCIA-EW-1B-GW-158-0	EW-1C-506-516-092502	EW-1C-506-516-012802	EW-1C-506-516-042502	EW-1C-506-516-071802	EW-1C-506-516-101602	EW-1C-506-516-012903	EW-1C-506-516-050803	EW-1C-506-516-073003	EW-1C-506-516-121103	EW-1C-506-516-031004	EW-1C-506-516-120804
Sample Depth			154-164	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516
Sampling Date			4/8/2011	9/25/2001	1/28/2002	4/25/2002	7/18/2002	10/16/2002	1/29/2003	5/8/2003	7/30/2003	12/11/2003	3/10/2004	12/8/2004
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	563-58-6	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	3 J
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
2-Butanone	78-93-3	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
2-Chlorotoluene	95-49-8	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
2-Hexanone	591-78-6	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
4-Chlorotoluene	106-43-4	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
Acetone	67-64-1	NA	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
Benzene	71-43-2	**1.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.3**
Bromobenzene	108-86-1	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Bromochloromethane	74-97-5	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Bromodichloromethane	75-27-4	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1B	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C	EW-1C
Sample ID			NCIA-EW-1B-GW-158-0	EW-1C-506-516-092502	EW-1C-506-516-012802	EW-1C-506-516-042502	EW-1C-506-516-071802	EW-1C-506-516-101602	EW-1C-506-516-012903	EW-1C-506-516-050803	EW-1C-506-516-073003	EW-1C-506-516-121103	EW-1C-506-516-031004	EW-1C-506-516-120804
Sample Depth			154-164	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516	506-516
Sampling Date			4/8/2011	9/25/2001	1/28/2002	4/25/2002	7/18/2002	10/16/2002	1/29/2003	5/8/2003	7/30/2003	12/11/2003	3/10/2004	12/8/2004
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.6	0.5 U	0.49 J	0.5 U	0.3 J	0.5 U
Chlorobenzene	108-90-7	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U
Chloromethane	74-87-3	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J	0.5 U
cis-1,3-Dichloropropene[2]	10061-01-5	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Dibromochloromethane	124-48-1	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Isopropylbenzene	98-82-8	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA
Methyl tert-Butyl Ether	1634-04-4	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA
Methylene Chloride	75-09-2	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4 J
n-Butylbenzene	104-51-8	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
n-Propylbenzene	103-65-1	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
o-Xylene	95-47-6	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 J
p-Xylene	106-42-3	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Styrene	100-42-5	5.0	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	1.9	0.5 U	0.6	**5**	0.5 U	2	0.5 U	0.5 U	0.78	0.86	0.8 J	0.5 U
Toluene	108-88-3	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 J
trans-1,2-Dichloroethene	156-60-5	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	1.3	**12**	**13**	**15**	**13**	**18**	**21**	**13**	**20**	**14**	**18**	**20**
Trichlorofluoromethane	75-69-4	**5.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1C	EW-1C	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B
Sample ID			EW-1C-506-516-022708	NCIA-EW-1C-GW-516-0	EW-2B-132-142-092501	EW-2B-132-142-012802	EW-2B-132-142-042502	EW-2B-132-142-071902	EW-2B-132-142-101602	EW-2B-132-142-012903	EW-2B-132-142-050803	EW-2B-132-142-072803	EW-2B-132-142-121003	EW-2B-132-142-031004
Sample Depth			506-516	506-516	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142
Sampling Date			2/27/2008	4/8/2011	9/25/2001	1/28/2002	4/25/2002	7/19/2002	10/16/2002	1/29/2003	5/8/2003	7/28/2003	12/10/2003	3/10/2004
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.25 J	1 U	**85 D**	**16**	**8**	**5**	4	3	3.1	3.6	2.8	2 J
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	27
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	0.47 J	1 U	**150 D**	**24**	**9**	**5**	4	3	3.3	4.7	2.9	2 J
1,1-Dichloroethene	75-35-4	**5.0**	0.34 J	1 U	**43 D**	**10**	**8**	0.5 U	**7**	**5**	**5.5**	**5.9**	4.5	4 J
1,1-Dichloropropene	563-58-6	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	**0.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.87**	0.5 U	0.5 U	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	1 U	**0.7**	0.5 U	0.5	0.5 U	**0.6**	**0.7**	**0.67**	0.5 U	**0.66**	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
2-Butanone	78-93-3	NA	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
2-Hexanone	591-78-6	NA	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
4-Methyl-2-Pentanone	108-10-1	NA	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Acetone	67-64-1	NA	0.5 U	4.6 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Benzene	71-43-2	**1.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Bromochloromethane	74-97-5	5.0	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Bromodichloromethane	75-27-4	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-1C	EW-1C	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B	EW-2B
Sample ID			EW-1C-506-516-022708	NCIA-EW-1C-GW-516-0	EW-2B-132-142-092501	EW-2B-132-142-012802	EW-2B-132-142-042502	EW-2B-132-142-071902	EW-2B-132-142-101602	EW-2B-132-142-012903	EW-2B-132-142-050803	EW-2B-132-142-072803	EW-2B-132-142-121003	EW-2B-132-142-031004
Sample Depth			506-516	506-516	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142	132-142
Sampling Date			2/27/2008	4/8/2011	9/25/2001	1/28/2002	4/25/2002	7/19/2002	10/16/2002	1/29/2003	5/8/2003	7/28/2003	12/10/2003	3/10/2004
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.89	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	1 U	1.3	0.5 U	0.5 U	0.5 U	0.9	1	1.1	0.78	1	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	1 U	2.6	0.5 U	**24**	**19**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.39 J	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5	0.56	0.5 U	0.4 J
Chloromethane	74-87-3	5.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	1.1	1 U	**36 ****	**25**	**19**	**18**	**19**	**19**	**17**	**18**	**17**	**16**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Dibromochloromethane	124-48-1	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	5 U	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	1 U	1.5	3 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
o-Xylene	95-47-6	**5.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Styrene	100-42-5	5.0	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	0.96	1 U	**20**	**21**	**17**	**21**	**17**	**16**	**18**	**16**	**16**	**18**
Toluene	108-88-3	**5.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**20 D**	1 U	**140 D**	**130**	**100 D**	**84 D**	**98**	**110 D**	**93 D**	**95 D**	**74 D**	**89**
Trichlorofluoromethane	75-69-4	**5.0**	5 U	1 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	1 U	**51 D**	**32**	**24**	**29**	**32**	**28**	**29**	**37**	**27**	**25**

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-2B	EW-2B	EW-2B	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C
Sample ID			EW-2B-132-142-120804	EW-2B-132-142-022708	NCIA-EW-2B-GW-131-0	EW-2C-504-514-092501	EW-2C-504-514-012802	EW-2C-504-514-042502	EW-2C-504-514-071902	EW-2C-504-514-101602	EW-2C-504-514-012903	EW-2C-504-514-050803	EW-2C-504-514-072903	EW-2C-504-514-121103
Sample Depth			132-142	132-142	132-142	132-142	504-514	504-514	504-514	504-514	504-514	504-514	504-514	504-514
Sampling Date			12/8/2004	2/27/2008	4/6/2011	9/25/2001	1/28/2002	4/25/2002	7/19/2002	10/16/2002	1/29/2003	5/8/2003	7/29/2003	12/11/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	2 J	1.1	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	31	20	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	3 J	1.6	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	4 J	2.6	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	563-58-6	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	NA	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-2B	EW-2B	EW-2B	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C	EW-2C
Sample ID			EW-2B-132-142-120804	EW-2B-132-142-022708	NCIA-EW-2B-GW-131-0	EW-2C-504-514-092501	EW-2C-504-514-012802	EW-2C-504-514-042502	EW-2C-504-514-071902	EW-2C-504-514-101602	EW-2C-504-514-012903	EW-2C-504-514-050803	EW-2C-504-514-072903	EW-2C-504-514-121103
Sample Depth			132-142	132-142	132-142	132-142	504-514	504-514	504-514	504-514	504-514	504-514	504-514	504-514
Sampling Date			12/8/2004	2/27/2008	4/6/2011	9/25/2001	1/28/2002	4/25/2002	7/19/2002	10/16/2002	1/29/2003	5/8/2003	7/29/2003	12/11/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.42 J	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**16**	**6.5**	0.72 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	5 U	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	0.5 U
m-Xylene	108-38-3	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**15**	**11**	0.62 J	0.5 U	0.5 U	0.5 U	1	0.5 U	0.8	1.8	0.5 U	0.5 U
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.63 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**77**	**42 D**	4.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	**34**	**11**	0.6 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-2C	EW-2C	EW-2C	EW-2C	EX-1	EX-1	EX-2	EX-2	FSMW-13B	FSMW-13B	FSMW-13C	FSMW-13C
Sample ID			EW-2C-504-514-031004	EW-2C-504-514-120804	EW-2C-504-514-022708	NCIA-EW-2C-GW-514-0	NCIA-EX-1-GW-205-0	NCIA-EX-1-GW-205-0	NCIA-EX-2-GW-285-0	NCIA-EX-2-GW-285-0	NCIA-FSMW-13B-GW-128-0	NCIA-FSMW-13B-GW-128-0	NCIA-FSMW-13C-GW-249-0	NCIA-FSMW-13C-GW-249-0
Sample Depth			504-514	504-514	504-514	504-514	205	205	285	285	128	249	249	249
Sampling Date			3/10/2004	12/8/2004	2/27/2008	4/6/2011	4/6/2011	4/6/2011	4/12/2011	4/12/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011
Dilution Factor			1	1	1	1	10	1	5	1	5	1	10	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,1-Dichloroethane	75-34-3	**5.0**	0.5 U	0.5 U	0.5 U	0.65 J	10 U	1 U	5 U	3.9	5 U	1 U	10 U	1.8
1,1-Dichloroethene	75-35-4	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	3.4	5 U	1 U	10 U	2.9
1,1-Dichloropropene	563-58-6	NA	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	**0.84 J**	5 U	1 U	10 U	1 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
1,3-Dichloropropane	142-28-9	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	0.5 U	0.5 U	0.5 U	5 U	50 U	5 U	25 U	2.9 J	25 U	5 U	50 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	0.5 U	0.5 U	0.5 U	5 U	50 U	5 U	25 U	5 U	25 U	5 U	50 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	0.5 U	0.5 U	0.5 U	5 U	50 U	5 U	25 U	5 U	25 U	5 U	50 U	5 U
Acetone	67-64-1	NA	0.5 U	0.5 U	0.5 U	5 U	50 U	5 U	30 D	15	25 U	5 U	50 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	**10 D**	**10**	5 U	1 U	10 U	1 U
Bromobenzene	108-86-1	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	NA	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			EW-2C	EW-2C	EW-2C	EW-2C	EX-1	EX-1	EX-2	EX-2	FSMW-13B	FSMW-13B	FSMW-13C	FSMW-13C
Sample ID			EW-2C-504-514-031004	EW-2C-504-514-120804	EW-2C-504-514-022708	NCIA-EW-2C-GW-514-0	NCIA-EX-1-GW-205-0	NCIA-EX-1-GW-205-0	NCIA-EX-2-GW-285-0	NCIA-EX-2-GW-285-0	NCIA-FSMW-13B-GW-128-0	NCIA-FSMW-13B-GW-128-0	NCIA-FSMW-13C-GW-249-0	NCIA-FSMW-13C-GW-249-0
Sample Depth			504-514	504-514	504-514	504-514	205	205	285	285	128	249	249	249
Sampling Date			3/10/2004	12/8/2004	2/27/2008	4/6/2011	4/6/2011	4/6/2011	4/12/2011	4/12/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011
Dilution Factor			1	1	1	1	10	1	5	1	5	1	10	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	**13 D**	**13**
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1.8	5 U	1 U	5 U	1 U	10 U	2.7
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	0.5 U	0.5 U	0.5 U	1 U	**12 D**	**14**	**17 D**	**16**	**5.7 D**	**6.1**	**71 D**	**61**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Cyclohexane	110-82-7	NA	NA	NA	5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Cymene	99-87-6	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Dibromomethane	74-95-3	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Hexachlorobutadiene	87-68-3	0.5	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
m,p-Xylene	136777-61-2	NA	NA	NA	5 U	2 U	20 U	2 U	10 U	2 U	10 U	2 U	20 U	2 U
Methyl Acetate	79-20-9	NA	0.5 U	NA	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	0.97 J	5 U	1 U	5 U	0.69 J	10 U	1 U
Methylcyclohexane	108-87-2	NA	0.5 U	NA	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1.2	5 U	1 U	10 U	1 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
t-Butylbenzene	98-06-6	5.0	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	0.5 U	0.5 U	0.5 U	1 U	**300 D**	**270 E**	**130 D**	**120 E**	**260 D**	**240 E**	**34 D**	**25**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	0.55 J	5 U	1 U	10 U	1 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1.1
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Trichloroethylene (TCE)	79-01-6	**5.0**	0.5 U	0.5 U	0.5 J	1 U	**21 D**	**23**	**140 D**	**120 E**	**15 D**	**17**	**410 D**	**330 E**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	1 U	10 U	1 U	5 U	1 U	5 U	1 U	10 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			FSMW-14A	FSMW-14A	FSMW-14B	FSMW-14B	FSMW-14C	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID			NCIA-FSMW-14A-GW-139-0	NCIA-FSMW-14A-GW-139-0	NCIA-FSMW-14B-GW-167-0	NCIA-FSMW-14B-GW-167-0	NCIA-FSMW-14C-GW-251-0	MW-1-90-110-110201	MW-1-90-110-012402	MW-1-90-110-042502	MW-1-90-110-071602	MW-1-90-110-101702	MW-1-90-110-020303	MW-1-90-110-050603
Sample Depth			139	139	167	167	251	90-110	90-110	90-110	90-110	90-110	90-110	90-110
Sampling Date			4/12/2011	4/12/2011	4/12/2011	4/12/2011	4/12/2011	11/2/2001	1/24/2002	4/25/2002	7/16/2002	10/17/2002	2/3/2003	5/6/2003
Dilution Factor			500	1	10	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	500 U	1 U	**24 D**	**22**	1 U	**7.8**	4	**10 J**	**10**	**15**	**16**	**7.8**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	500 U	1 U	10 U	2.7	**5.4**	2.8	2	**5**	4	**6**	**7**	3.5
1,1-Dichloroethene	75-35-4	**5.0**	500 U	2.2	**9.9 JD**	**8.3**	3	**16**	**8**	**26**	**24**	**49**	**33**	**19**
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	500 U	3.6	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	500 U	1.1	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	2500 U	5 U	50 U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	2500 U	5 U	50 U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	2500 U	5 U	50 U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	NA	2500 U	5 U	50 U	5 U	5 U	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			FSMW-14A	FSMW-14A	FSMW-14B	FSMW-14B	FSMW-14C	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID			NCIA-FSMW-14A-GW-139-0	NCIA-FSMW-14A-GW-139-0	NCIA-FSMW-14B-GW-167-0	NCIA-FSMW-14B-GW-167-0	NCIA-FSMW-14C-GW-251-0	MW-1-90-110-110201	MW-1-90-110-012402	MW-1-90-110-042502	MW-1-90-110-071602	MW-1-90-110-101702	MW-1-90-110-020303	MW-1-90-110-050603
Sample Depth			139	139	167	167	251	90-110	90-110	90-110	90-110	90-110	90-110	90-110
Sampling Date			4/12/2011	4/12/2011	4/12/2011	4/12/2011	4/12/2011	11/2/2001	1/24/2002	4/25/2002	7/16/2002	10/17/2002	2/3/2003	5/6/2003
Dilution Factor			500	1	10	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	500 U	1 U	10 U	1 U	**7.3**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	500 U	2.8	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	500 U	1 U	10 U	1 U	2	0.5	0.5 U	0.5 U	1	2	2	1.3
Chloromethane	74-87-3	5.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**600 D**	**500 E**	10 U	1.2	**15**	1.1 **	1	3	3	**5**	**5**	2.1
cis-1,3-Dichloropropene[2]	10061-01-5	NA	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	1000 U	2 U	20 U	2 U	2 U	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	500 U	1.4	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	500 U	1 U	10 U	1 U	1 U	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**16000 D**	**12000 E**	**640 D**	**510 E**	**5.5**	4.1	3	**9**	**9**	**13**	**10**	**5.8**
Toluene	108-88-3	**5.0**	500 U	1.1	10 U	0.53 J	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*
trans-1,2-Dichloroethene	156-60-5	**5.0**	500 U	**6.7**	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**1800 D**	**1800 E**	**8.3 JD**	**7.6**	**66**	**21**	**16**	**52 DJ**	**55 E**	**79**	**51 D**	**34**
Trichlorofluoromethane	75-69-4	**5.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	500 U	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-1	MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample ID			MW-1-90-110-073003	MW-1-90-110-120903	MW-1-90-110-031004	MW-1-90-110-120704	MW-1-90-110-022508	MW-2-110-130-110201	MW-2-110-130-012402	MW-2-110-130-042402	MW-2-110-130-071602	MW-2-110-130-101802	MW-2-110-130-020303	MW-2-110-130-050603
Sample Depth			90-110	90-110	90-110	90-110	90-110	110-130	110-130	110-130	110-130	110-130	110-130	110-130
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/18/2002	2/3/2003	5/6/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**5.9**	**7.6**	**10 J**	**8**	**20 D**	**230 D**	**220 D**	**210 D**	**75 E**	**140**	**82 D**	**100 D**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	0.5 U	2 J	5 U	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.5**	**2**	0.5 U	0.5 U	**1**	**2**	**1.4**
1,1-Dichloroethane	75-34-3	**5.0**	2.5	3.7	**5 J**	**5**	**22 D**	**140 D**	**140 D**	**140 D**	**52 E**	**95**	**63 D**	**83 D**
1,1-Dichloroethene	75-35-4	**5.0**	**17**	**19**	**25**	**21**	**23 D**	**540 D**	**440 D**	**480 D**	**190 E**	**420**	**130 D**	**230 D**
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U*	0.5 U	0.5 U	0.5 U	**2.2**	0.5 U	**2**	0.5 U	**2**	**2**	**2**
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-1	MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample ID			MW-1-90-110-073003	MW-1-90-110-120903	MW-1-90-110-031004	MW-1-90-110-120704	MW-1-90-110-022508	MW-2-110-130-110201	MW-2-110-130-012402	MW-2-110-130-042402	MW-2-110-130-071602	MW-2-110-130-101802	MW-2-110-130-020303	MW-2-110-130-050603
Sample Depth			90-110	90-110	90-110	90-110	90-110	110-130	110-130	110-130	110-130	110-130	110-130	110-130
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/18/2002	2/3/2003	5/6/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	2	0.5 U	0.8	0.9	0.7
Chloroform	67-66-3	**7.0**	0.5 U	1.3	2 J	1 J	0.47 J	5.2	2	4	2 B	4	4	4.9
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	1.6	2.5	4 J	3 J	3.3	**48 **E**	**35**	**42 D**	**17**	**39**	**38**	**32**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	0.55 B***	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	3.4	0.78	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.9	0.5 U	0.5 U	0.5 U	0.9	0.5 U	0.5 U*
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**7.6**	**8**	**10**	**7**	**91 D**	**49 ,JD**	**53 D**	**52 D**	**26**	**50**	**39**	**38 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**27**	**38**	**55**	**37**	**17**	**580 D**	**500 D**	**450 D**	**190 E**	**360**	**210 D**	**320 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-2	MW-2	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sample ID			MW-2-110-130-073003	MW-2-110-130-120903	MW-2-110-130-031004	MW-2-110-130-120704	MW-2-110-130-022508	MW-3-130-150-110201	MW-3-130-150-012402	MW-3-130-150-042402	MW-3-130-150-071602	MW-3-130-150-101602	MW-3-130-150-020303	MW-3-130-150-050603
Sample Depth			110-130	110-130	110-130	110-130	110-130	130-150	130-150	130-150	130-150	130-150	130-150	130-150
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/16/2002	2/3/2003	5/6/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**110 D**	**93 D**	**140**	**130**	**22 D**	**350 D**	**350 D**	**160 D**	**270 E**	**107 D**	**120 D**	**180 D**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	0.5 U	3 J	1.3	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	**1.2**	**1.3**	0.5 U	**2 J**	0.5 U	**2.1**	**2**	0.5 U	**2**	0.8	**2**	**2**
1,1-Dichloroethane	75-34-3	**5.0**	**70 D**	**65 D**	**87**	**53**	**28 D**	**230 D**	**250 D**	**130 D**	**210 E**	**70 D**	**110 D**	**140 D**
1,1-Dichloroethene	75-35-4	**5.0**	**310 D**	**220 D**	**250 D**	**300 D**	**62 D**	**900 D**	**770 D**	**390 D**	**670 E**	**275 D**	**190 D**	**380 D**
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	**1.6**	**1.5**	**1 J**	**1 J**	0.5 U	**5.1**	0.5 U	0.5 U	0.5 U	**2**	**5**	**3.4**
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4 B	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-2	MW-2	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-3
Sample ID			MW-2-110-130-073003	MW-2-110-130-120903	MW-2-110-130-031004	MW-2-110-130-120704	MW-2-110-130-022508	MW-3-130-150-110201	MW-3-130-150-012402	MW-3-130-150-042402	MW-3-130-150-071602	MW-3-130-150-101602	MW-3-130-150-020303	MW-3-130-150-050603
Sample Depth			110-130	110-130	110-130	110-130	110-130	130-150	130-150	130-150	130-150	130-150	130-150	130-150
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/16/2002	2/3/2003	5/6/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	**17**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.93
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.86	1.1	0.8 J	0.5 U	0.5 U	0.7	1	0.5 U	1	0.5 U	1	0.7
Chloroform	67-66-3	**7.0**	4.4	4.3	3 J	3 J	0.78	5.7	3	0.5 U	0.5 U	2	4	4.1
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**36**	**29**	**30**	**30**	**6.1**	**54 **E**	**40**	**25 **D**	**40 E**	**21**	**34**	**32**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	5 U	NA	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	0.27 BJ**	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.38 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.74	0.76	0.5 U	0.5 U	0.5 U	**7.1**	0.5 U	**50 D**	3	0.9	3	0.5 U*
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**45 D**	**38 D**	**43**	**42**	**31 D**	**67 E**	**74 D**	**28 D**	**70 E**	**22**	**27 D**	**55 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.77	0.53	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**350 D**	**240 D**	**290 D**	**380 D**	**70 D**	**1200 D**	**1000 D**	**490 D**	**920 E**	**322 D**	**440 D**	**700 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample ID			MW-3-130-150-073003	MW-3-130-150-120903	MW-3-130-150-031004	MW-3-130-150-120704	MW-3-130-150-022508	NCIA-MW-3-GW-150-0	MW-4-180-200-110201	MW-4-180-200-012402	MW-4-180-200-042402	MW-4-180-200-071602	MW-4-180-200-101702	MW-4-180-200-020303
Sample Depth			130-150	130-150	130-150	130-150	130-150	130-150	180-200	180-200	180-200	180-200	180-200	180-200
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	4/5/2011	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/17/2002	2/3/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**270 D**	**170**	**200 D**	**110**	**60 D**	4.5	**350 D**	**280 D**	**180 D**	**170 D**	**320**	**270 D**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	0.5 U	2 J	1.8	1 U	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	**1.7**	0.5 U	0.5 U	**1 J**	**1**	1 U	**3.6**	**3**	0.5 U	**4**	**4 J**	**3**
1,1-Dichloroethane	75-34-3	**5.0**	**150 D**	**100**	**110**	**77**	**67 D**	**31**	**310 D**	**280 D**	**180 D**	**170 D**	**310**	**250 D**
1,1-Dichloroethene	75-35-4	**5.0**	**730 D**	**380**	**500 D**	**280 D**	**180 D**	**82**	**1100 D**	**750 D**	**530 D**	**520 D**	**911 D**	**690 D**
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	**4.1**	0.5 U*	0.5 U	**1 J**	0.5 U	**1.1**	**7**	0.5 U	0.5 U	0.5 U	**7**	**6**
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.4 J	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA
Acetone	67-64-1	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA	NA	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-3	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample ID			MW-3-130-150-073003	MW-3-130-150-120903	MW-3-130-150-031004	MW-3-130-150-120704	MW-3-130-150-022508	NCIA-MW-3-GW-150-0	MW-4-180-200-110201	MW-4-180-200-012402	MW-4-180-200-042402	MW-4-180-200-071602	MW-4-180-200-101702	MW-4-180-200-020303
Sample Depth			130-150	130-150	130-150	130-150	130-150	130-150	180-200	180-200	180-200	180-200	180-200	180-200
Sampling Date			7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	4/5/2011	11/2/2001	1/24/2002	4/24/2002	7/16/2002	10/17/2002	2/3/2003
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U*	0.5 U	**15**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.98	0.5 U	0.5 J	0.5 U	0.5 U	1 U	0.7	1	0.5 U	0.5 U	0.5 U	1
Chloroform	67-66-3	**7.0**	4.1	0.5 U	3 J	2 J	1.4	0.55 J	2.4	3	0.5 U	**37 BD**	4 J	3
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**34 D**	**29**	**30**	**23**	**13**	**9.4**	**82 **E**	**64 D**	**43 **D**	**38 D**	**64**	**57 D**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	5 U	1 U	NA	NA	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	25	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	0.34 BJ**	2 U	NA	NA	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	0.5 U	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	0.5 U	NA	0.5 U	1 U	NA	NA	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	2.2	0.5 U	0.5 U	0.5 U	0.22 J	1 U	**8.9**	0.5 U	**55 D**	0.5 U	**7**	3
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**73 D**	**51**	**55**	**34**	**37 D**	4	**150 D**	**130 D**	**38 D***	**77 D**	**130**	**120 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**1000 D**	**580 D**	**700 D**	**440 D**	**310 D**	**110**	**1000 D**	**790 D**	**550 D**	**480 D**	**895 D**	**760 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5
Sample ID			MW-4-180-200-050603	MW-4-180-200-073003	MW-4-180-200-120903	MW-4-180-200-031004	MW-4-180-200-120704	MW-4-180-200-022508	NCIA-MW-4-GW-199-0	NCIA-MW-4-GW-199-0	MW-5-90-110-110501	MW-5-90-110-012402	MW-5-90-110-042502	MW-5-90-110-071702
Sample Depth			180-200	180-200	180-200	180-200	180-200	180-200	180-200	180-200	90-110	90-110	90-110	90-110
Sampling Date			5/6/2003	7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	4/5/2011	4/5/2011	11/5/2001	1/24/2002	4/25/2002	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	20	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**190 D**	**210 D**	**250**	**280 D**	**230 D**	**250 D**	**160 E**	**190 D**	**15**	**15**	4	3
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	0.5 U	7	18	1 U	20 U	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	**3**	**2.7**	0.5 U	0.5 U	**3 J**	**2**	**1.3**	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	**250 D**	**200 D**	**200**	**210 D**	**150 D**	**160 D**	**110**	**130 D**	1.5	2	0.8	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	**550 D**	**720 D**	**600 D**	**850 D**	**620 D**	**810 D**	**450 E**	**600 D**	**11**	**10**	3	2
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	20 U	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	20 U	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	**5.6**	**6.4**	**8.1**	**7 J**	**7**	**4.5**	**3.4**	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.38 J	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.4 J	0.5 U	0.41 J	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	100 U	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	100 U	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	100 U	NA	NA	NA	NA
Acetone	67-64-1	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	100 U	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.2 J	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-5
Sample ID			MW-4-180-200-050603	MW-4-180-200-073003	MW-4-180-200-120903	MW-4-180-200-031004	MW-4-180-200-120704	MW-4-180-200-022508	NCIA-MW-4-GW-199-0	NCIA-MW-4-GW-199-0	MW-5-90-110-110501	MW-5-90-110-012402	MW-5-90-110-042502	MW-5-90-110-071702
Sample Depth			180-200	180-200	180-200	180-200	180-200	180-200	180-200	180-200	90-110	90-110	90-110	90-110
Sampling Date			5/6/2003	7/30/2003	12/9/2003	3/10/2004	12/7/2004	2/25/2008	4/5/2011	4/5/2011	11/5/2001	1/24/2002	4/25/2002	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	20	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	20 U	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	1.2	0.5 U	0.5 U*	0.5 U	**39**	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	1.1	0.95	0.5 U	1 J	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	3.2	3	0.5 U	3 J	3 J	1.6	1.1	20 U	0.5 U	0.5 U	0.3 J	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**57 D**	**43 D**	**45**	**47**	**36**	**31 D**	**18**	**20 JD**	0.5 U	0.5	1	**6**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	5 U	1 U	20 U	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	0.41 BJ**	2 U	40 U	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	20 U	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	20 U	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U*	3.6	0.5 U	3 J	2 J	2	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**99 D**	**110 D**	**120**	**140**	**150**	**140 D**	**35**	**38 D**	3.7	**16**	**25**	**19**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.54	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**750 D**	**680 D**	**680 D**	**780 D**	**630 D**	**910 D**	**470 E**	**620 D**	2.5	2	2	1
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6	MW-6
Sample ID			MW-5-90-110-101802	MW-5-90-110-013003	MW-5-90-110-050703	MW-5-90-110-072903	MW-5-90-110-121003	MW-5-90-110-030804	MW-5-90-110-120704	MW-5-90-110-022608	MW-6-110-130-110501	MW-6-110-130-012502	MW-6-110-130-042602	MW-6-110-130-071702
Sample Depth			90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	110-130	90-110	110-130	110-130
Sampling Date			10/18/2002	1/30/2003	5/7/2003	7/29/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	11/5/2001	1/25/2002	4/26/2002	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**7**	**39**	**190 D**	**35**	**31**	**64**	**560 D**	3.9	**240 D**	**89 D**	**96 D**	**90 D**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	5 U	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	2	**13**	**50 D**	**6.4**	**5.6**	**11**	**140**	1.1	**52 D**	**36**	**33**	**29**
1,1-Dichloroethene	75-35-4	**5.0**	**8**	**55 D**	**180 D**	**17**	**13**	**21**	**210 D**	2.2	**270 D**	**72 D**	**100 D**	**99 D**
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	1 B	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	**0.99**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.8**	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U	NA	0.5 U
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6	MW-6
Sample ID			MW-5-90-110-101802	MW-5-90-110-013003	MW-5-90-110-050703	MW-5-90-110-072903	MW-5-90-110-121003	MW-5-90-110-030804	MW-5-90-110-120704	MW-5-90-110-022608	MW-6-110-130-110501	MW-6-110-130-012502	MW-6-110-130-042602	MW-6-110-130-071702
Sample Depth			90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	110-130	90-110	110-130	110-130
Sampling Date			10/18/2002	1/30/2003	5/7/2003	7/29/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	11/5/2001	1/25/2002	4/26/2002	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.74	0.5 U	0.5 U	0.5 U	**82**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.68	0.5 U	0.5 U	0.5 U	4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	1.2	0.55	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.5 U	1	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**12**	**6**	**9.4**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**22 ****	**13**	**9 ****	**9**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	5 U	NA	NA	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	0.42 J	NA	NA	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.72	0.5 U	0.5 U	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U*	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	**5 D**
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**9**	**18**	**64 D**	**11**	**5.6**	**7 J**	**14**	0.5 J	**80 D**	**37 D**	**68 E**	**47 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**7**	**35**	**84 D**	2.6	1.4	1 J	**13**	0.32 J	**93 D**	**54 D**	**43**	**51 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	1 J	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-7	MW-7
Sample ID			MW-6-110-130-101802	MW-6-110-130-013003	MW-6-110-130-050703	MW-6-110-130-072903	MW-6-110-130-121003	MW-6-110-130-030804	MW-6-110-130-120704	MW-6-110-130-022608	NCIA-MW-6-GW-128-0	NCIA-MW-6-GW-128-0	MW-7-90-110-110501	MW-7-90-110-012502
Sample Depth			110-130	90-110	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	90-110	90-110
Sampling Date			10/18/2002	1/30/2003	5/7/2003	7/29/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	4/7/2011	4/7/2011	11/5/2001	1/25/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	5	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	**122**	**170 D**	**23**	**270 D**	**300 D**	**480 D**	**2300 D**	**1400 D**	**140 E**	**130 D**	0.5 U	0.5
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	0.5 U	5 J	2.3	1 U	5 U	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	**31**	**47 D**	**8.4**	**68 D**	**83 D**	**130**	**1700 D**	**970 D**	**160 E**	**140 D**	0.7	1
1,1-Dichloroethene	75-35-4	**5.0**	**135**	**150 D**	**36**	**190 D**	**180 D**	**290 D**	**970 D**	**840 D**	**140 E**	**120 D**	0.5 U	0.5
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	5 U	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	5 U	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	0.5 U	0.5 U	0.5 U	**1.6**	5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	0.5 U
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	25 U	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	25 U	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	25 U	NA	NA
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	25 U	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-7	MW-7
Sample ID			MW-6-110-130-101802	MW-6-110-130-013003	MW-6-110-130-050703	MW-6-110-130-072903	MW-6-110-130-121003	MW-6-110-130-030804	MW-6-110-130-120704	MW-6-110-130-022608	NCIA-MW-6-GW-128-0	NCIA-MW-6-GW-128-0	MW-7-90-110-110501	MW-7-90-110-012502
Sample Depth			110-130	90-110	110-130	110-130	110-130	110-130	110-130	110-130	110-130	110-130	90-110	90-110
Sampling Date			10/18/2002	1/30/2003	5/7/2003	7/29/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	4/7/2011	4/7/2011	11/5/2001	1/25/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	5	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	5 U	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U*	0.5 U	**290 D**	0.5 U	1 U	5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	1.4	2	2 J	**22**	**9.8**	1 U	5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	1	0.5 U	1.4	1.4	1	0.5 U	1.2	1.2	5 U	0.5 U	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**21**	**15**	2.5	**7.4**	**10**	**13**	**12**	**5.2**	**7.8**	**5.2 D**	**23 ****	**18**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	5 U	1 U	5 U	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	0.29 BJ**	2 U	10 U	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	5 U	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.83	0.5 U	0.5 U	5.8	7.5	5.9 D	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	5 U	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	**12**	0.5 U	0.5 U*	0.58	0.5 U	**7**	0.5 U	1 U	5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**60**	**58 D**	**15**	**56 D**	**51 D**	**91**	**78**	**18**	**15**	**11 D**	**5.2**	**6**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**210 E**	1 U	5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**59**	**89 D**	**27**	**45 D**	**60 D**	**110**	**76**	**59 D**	**91**	**77 D**	2	3
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1 U	5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**5**	0.94	1 U	5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-8	MW-8
Sample ID			MW-7-90-110-042402	MW-7-90-110-071602	MW-7-90-110-101802	MW-7-90-110-012903	MW-7-90-110-050703	MW-7-90-110-073003	MW-7-90-110-121003	MW-7-90-110-030804	MW-7-90-110-120704	MW-7-90-110-022608	MW-8-120-140-110501	MW-8-120-140-012502
Sample Depth			90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	120-140	120-140
Sampling Date			4/24/2002	7/16/2002	10/18/2002	1/29/2003	5/7/2003	7/30/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	11/5/2001	1/25/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	0.6	2	0.5	0.7	0.7	1.1	0.5 U	0.3 J	0.5 U	0.5 U	0.7	0.7
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	5 U	NA	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1	2	1	2	1.4	1.8	1	1 J	0.5 U	0.33 J	1.3	2
1,1-Dichloroethene	75-35-4	**5.0**	0.7	2	0.5	0.6	0.74	1.8	0.47 J	0.5 U	0.5 U	0.5 U	0.5 U	0.8
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-8	MW-8
Sample ID			MW-7-90-110-042402	MW-7-90-110-071602	MW-7-90-110-101802	MW-7-90-110-012903	MW-7-90-110-050703	MW-7-90-110-073003	MW-7-90-110-121003	MW-7-90-110-030804	MW-7-90-110-120704	MW-7-90-110-022608	MW-8-120-140-110501	MW-8-120-140-012502
Sample Depth			90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	90-110	120-140	120-140
Sampling Date			4/24/2002	7/16/2002	10/18/2002	1/29/2003	5/7/2003	7/30/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	11/5/2001	1/25/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	NA	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**15 ****	**18**	**22**	**27**	**15**	**19**	**12**	**12**	**8**	4.5	1.7 **	2
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	NA	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25 J	NA	NA
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	2	0.5 U	2	1.6	3.7	1.1	0.8 J	0.5 U	0.35 J	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	NA	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	4	**6**	0.5 U	**7**	**5.3**	**7.8**	4.1	**5 J**	2 J	1.7	1.1	1
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	3	**8**	4	4	2.6	**6**	1.6	2 J	1 J	0.78	1.1	2
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-9
Sample ID			MW-8-120-140-042402	MW-8-120-140-071702	MW-8-120-140-101802	MW-8-120-140-012903	MW-8-120-140-050703	MW-8-120-140-073003	MW-8-120-140-121003	MW-8-120-140-030804	MW-8-120-140-120704	MW-8-120-140-022608	NCIA-MW-8-GW-139-0	MW-9-310-315-071702
Sample Depth			120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	310-315
Sampling Date			4/24/2002	7/17/2002	10/18/2002	1/29/2003	5/7/2003	7/30/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	4/5/2011	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,1,1-Trichloroethane	71-55-6	**5.0**	0.8	0.5 U	1	1	1.3	1.4	1.3	1 J	1 J	0.41 J	1 U	2
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	5 U	1 U	NA
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	2	1	3	3	2.7	3.4	3	3 J	3 J	1.4	1 U	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	0.5 U	0.5	1	1	1.5	2.3	1.4	1 J	2 J	0.77	1 U	1
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	NA
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-9
Sample ID			MW-8-120-140-042402	MW-8-120-140-071702	MW-8-120-140-101802	MW-8-120-140-012903	MW-8-120-140-050703	MW-8-120-140-073003	MW-8-120-140-121003	MW-8-120-140-030804	MW-8-120-140-120704	MW-8-120-140-022608	NCIA-MW-8-GW-139-0	MW-9-310-315-071702
Sample Depth			120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	120-140	310-315
Sampling Date			4/24/2002	7/17/2002	10/18/2002	1/29/2003	5/7/2003	7/30/2003	12/10/2003	3/8/2004	12/7/2004	2/26/2008	4/5/2011	7/17/2002
Dilution Factor			1	1	1	1	1	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	NA
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.57	0.5 U	0.5 U	0.3 J	0.5 U	0.25 J	1 U	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	2 **	2	4	4	3.5	4.3	3.6	3 J	3 J	1	1 U	0.8 **
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	1 U	NA
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5 U	2 U	NA
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	NA
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51	1 U	0.5 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	NA
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	0.5 U
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	0.5 U
Tetrachloroethylene(PCE)	127-18-4	**5.0**	0.5 U	0.8	2	3	1.5	2.9	2.3	2 J	2 J	1.1	1 U	1
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	0.5 U*	0.8	2	2	2.3	3.6	2.4	2 J	2 J	1.6	1 U	**15**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-10	MW-11D	MW-11D
Sample ID			MW-9-310-315-101802	MW-9-310-315-020303	MW-9-310-315-050903	MW-9-310-315-080103	MW-9-310-315-120803	MW-9-310-315-031004	MW-9-310-315-120904	MW-9-310-315-022808	NCIA-MW-9-GW-315-0	NCIA-MW-10-GW-284-0	NCIA-MW-11D-GW-285-0	NCIA-MW-11D-GW-285-0
Sample Depth			310-315	310-315	310-315	310-315	310-315	310-315	310-315	310-315	310-315	284	285	285
Sampling Date			10/18/2002	2/3/2003	5/9/2003	8/1/2003	12/8/2003	3/10/2004	12/9/2004	2/28/2008	4/6/2011	4/7/2011	4/4/2011	4/4/2011
Dilution Factor			1	1	1	1	1	1	1	1	1	1	20	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	2	0.5 U*	1.6	1.5	1.5	1 J	1 J	3.8	1 U	**10**	20 U	**10**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	5 U	1 U	1 U	14 JD	13
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	**1.2**
1,1-Dichloroethane	75-34-3	**5.0**	0.5 U	0.5 U*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.6	1 U	**13**	20 U	**11**
1,1-Dichloroethene	75-35-4	**5.0**	2	0.5 U*	1.3	1.3	1.5	0.7 J	0.5 U	**6.9**	0.54 J	**24**	**26 D**	**24**
1,1-Dichloropropene	563-58-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	**0.04**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,2,4-Trimethylbenzene	95-63-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,2-Dibromoethane	106-93-4	**0.0006**	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,3,5-Trimethylbenzene	108-67-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
1,3-Dichloropropane	142-28-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
2,2-Dichloropropane[3]	594-20-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	5 U	100 U	5 U
2-Chlorotoluene	95-49-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	5 U	100 U	5 U
4-Chlorotoluene	106-43-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	5 U	100 U	5 U
Acetone	67-64-1	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	5 U	5 U	100 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	**3.5**
Bromobenzene	108-86-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA	NA
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	2.7
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-10	MW-11D	MW-11D
Sample ID			MW-9-310-315-101802	MW-9-310-315-020303	MW-9-310-315-050903	MW-9-310-315-080103	MW-9-310-315-120803	MW-9-310-315-031004	MW-9-310-315-120904	MW-9-310-315-022808	NCIA-MW-9-GW-315-0	NCIA-MW-10-GW-284-0	NCIA-MW-11D-GW-285-0	NCIA-MW-11D-GW-285-0
Sample Depth			310-315	310-315	310-315	310-315	310-315	310-315	310-315	310-315	310-315	284	285	285
Sampling Date			10/18/2002	2/3/2003	5/9/2003	8/1/2003	12/8/2003	3/10/2004	12/9/2004	2/28/2008	4/6/2011	4/7/2011	4/4/2011	4/4/2011
Dilution Factor			1	1	1	1	1	1	1	1	1	1	20	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.5 U	0.72	0.73	0.8 J	1 J	0.55	1 U	4.4	**48 D**	**47**
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	3.2
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	1	1	0.81	0.67	0.63	0.5 U	0.5 U	3.6	0.6 J	3.4	**110 D**	**92**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Cyclohexane	110-82-7	NA	NA	NA	NA	NA	NA	NA	NA	5 U	1 U	1 U	20 U	1 U
Cymene	99-87-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	3.1
Dibromomethane	74-95-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Hexachlorobutadiene	87-68-3	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
m,p-Xylene	136777-61-2	NA	NA	NA	NA	NA	NA	NA	NA	5 U	2 U	2 U	40 U	2 U
Methyl Acetate	79-20-9	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	1 U	20 U	1 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.32 J	1 U	1 U	20 U	1 U
Methylcyclohexane	108-87-2	NA	NA	NA	NA	NA	NA	0.5 U	NA	0.5 U	1 U	1 U	20 U	1 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1.2
m-Xylene	108-38-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	0.52 J
p-Xylene	106-42-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
t-Butylbenzene	98-06-6	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	1	2	0.67	1.1	1.3	0.6 J	0.5 U	4.7	1 U	**8.5**	**460 D**	**350 E**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	3.7
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**21**	**22**	**13**	**13**	**11**	**8**	**5 J**	**19 D**	2.3	**63**	**400 D**	**330 E**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1 U	1 U	20 U	**7.9**
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	20 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-11S	MW-11S	MW-11S	MW-11S	MW-12	MW-13	MW-14	MW-14	MW-14	MW-14	MW-15	MW-16D
Sample ID			NCIA-MW-11S-GW-225-0	NCIA-MW-11S-GW-225-0	NCIA-MW-11S-GW-225-1	NCIA-MW-11S-GW-225-1	NCIA-MW-12-GW-225-0	NCIA-MW-13-GW-208-0	NCIA-MW-14-GW-200-0	NCIA-MW-14-GW-200-0	NCIA-MW-14-GW-200-1	NCIA-MW-14-GW-200-1	NCIA-MW-15-GW-204-0	NCIA-MW-16D-GW-285-0
Sample Depth			225	225	225	225	225	208	200	200	200	200	204	285
Sampling Date			4/4/2011	4/4/2011	4/4/2011	4/4/2011	3/31/2011	4/1/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011	4/7/2011
Dilution Factor			10	1	5	1	1	1	10	1	10	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	10 U	3.8	5 U	3.7	1.3	1 U	10 U	1 U	10 U	1 U	1 U	3.1
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	10 U	3.6	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	**1.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	**5.0**	10 U	**7.4**	5 U	**6.8**	1.1	**5.2**	10 U	1 U	10 U	1 U	1 U	3.1
1,1-Dichloroethene	75-35-4	**5.0**	**22 D**	**19**	**17 D**	**17**	1.6	2.2	10 U	1 U	10 U	1 U	1 U	**6.3**
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	**0.0006**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	3.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	**0.6**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	1.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	50 U	5 U	25 U	5 U	5 U	5 U	50 U	5 U	50 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	50 U	5 U	25 U	5 U	5 U	5 U	50 U	5 U	50 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	50 U	5 U	25 U	5 U	5 U	5 U	50 U	5 U	50 U	5 U	5 U	5 U
Acetone	67-64-1	NA	50 U	5 U	25 U	5 U	5 U	5 U	50 U	5 U	50 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	75-27-4	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Bromoform	75-25-2	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Bromomethane	74-83-9	5.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-11S	MW-11S	MW-11S	MW-11S	MW-12	MW-13	MW-14	MW-14	MW-14	MW-14	MW-15	MW-16D
Sample ID			NCIA-MW-11S-GW-225-0	NCIA-MW-11S-GW-225-0	NCIA-MW-11S-GW-225-1	NCIA-MW-11S-GW-225-1	NCIA-MW-12-GW-225-0	NCIA-MW-13-GW-208-0	NCIA-MW-14-GW-200-0	NCIA-MW-14-GW-200-0	NCIA-MW-14-GW-200-1	NCIA-MW-14-GW-200-1	NCIA-MW-15-GW-204-0	NCIA-MW-16D-GW-285-0
Sample Depth			225	225	225	225	225	208	200	200	200	200	204	285
Sampling Date			4/4/2011	4/4/2011	4/4/2011	4/4/2011	3/31/2011	4/1/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011	4/11/2011	4/7/2011
Dilution Factor			10	1	5	1	1	1	10	1	10	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	5.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Chloroethane	75-00-3	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Chloroform	67-66-3	**7.0**	**26 D**	**25**	**25 D**	**23**	1 U	0.77 J	10 U	1 U	10 U	1 U	1 U	6.4
Chloromethane	74-87-3	5.0	10 U	2	5 U	1.9	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**43 D**	**41**	**38 D**	**38**	4	1.4	**23 D**	**23**	**24 D**	**23**	1 U	**6.1**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Cyclohexane	110-82-7	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	0.75 J	10 U	0.8 J	1 U	1 U
Ethylbenzene	100-41-4	5.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
m,p-Xylene	136777-61-2	NA	20 U	2 U	10 U	2 U	2 U	2 U	20 U	2 U	20 U	2 U	2 U	2 U
Methyl Acetate	79-20-9	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Methyl tert-Butyl Ether	1634-04-4	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1.6	10 U	1.7	2.7	3.6
Methylcyclohexane	108-87-2	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**140 D**	**120**	**120 D**	**100**	**21**	3	**380 D**	**330 E**	**400 D**	**350 E**	1 U	2.7
Toluene	108-88-3	**5.0**	10 U	0.5 J	5 U	1 U	1 U	0.86 J	10 U	1 U	10 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**190 D**	**170 E**	**170 D**	**160 E**	**19**	0.54 J	**30 D**	**30**	**30 D**	**31**	1 U	**29**
Trichlorofluoromethane	75-69-4	**5.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	**2.0**	10 U	1 U	5 U	1 U	1 U	1 U	10 U	1 U	10 U	1 U	1 U	1 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-16S	MW-17D	MW-17D	MW-17S	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1
Sample ID			NCIA-MW-16S-GW-225-0	NCIA-MW-17D-GW-287-0	NCIA-MW-17D-GW-287-0	NCIA-MW-17S-GW-228-0	TMW-1-72-08292008	TMW-1-85-08302008	TMW-1-115-08302008	TMW-1-125-08282008	TMW-1-145-08282008	TMW-1-165-08282008	TMW-1-185-08282008	TMW-1-205-08272008
Sample Depth			225	287	287	228	72	85	115	125	145	165	185	205
Sampling Date			4/7/2011	4/8/2011	4/8/2011	4/8/2011	8/29/2008	8/29/2008	8/29/2008	8/28/2008	8/28/2008	8/28/2008	8/28/2008	8/27/2008
Dilution Factor			1	10	1	1	2.5	5	10	40	40	40	10	40
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	1 U	**34 D**	**36**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	1 U	**24 D**	**23**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	1 U	**5.9 ,JD**	**5.4**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1 U	10 U	**11**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	1 U	10 U	1.5	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	50 U	4.1 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	NA	NA	NA	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	1 U	9.2 JD	11	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	1 U	10 U	1.5	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			MW-16S	MW-17D	MW-17D	MW-17S	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1	TMW-1
Sample ID			NCIA-MW-16S-GW-225-0	NCIA-MW-17D-GW-287-0	NCIA-MW-17D-GW-287-0	NCIA-MW-17S-GW-228-0	TMW-1-72-08292008	TMW-1-85-08302008	TMW-1-115-08302008	TMW-1-125-08282008	TMW-1-145-08282008	TMW-1-165-08282008	TMW-1-185-08282008	TMW-1-205-08272008
Sample Depth			225	287	287	228	72	85	115	125	145	165	185	205
Sampling Date			4/7/2011	4/8/2011	4/8/2011	4/8/2011	8/29/2008	8/29/2008	8/29/2008	8/28/2008	8/28/2008	8/28/2008	8/28/2008	8/27/2008
Dilution Factor			1	10	1	1	2.5	5	10	40	40	40	10	40
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	1 U	10 U	2.7	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.97 J	**57 D**	**54**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	5.0	1 U	10 U	1.4	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	1 U	**830 D**	**630 E**	1 U	0.5 U	0.5 U	4.6 J	**14 J**	0.5 U	**17 J**	3.4 J	0.5 U
cis-1,3-Dichloropropene[2]	10061-01-5	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	1 U	5.4 JD	6.2	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	1 U	**16 D**	**15**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	2 U	20 U	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	1 U	**610 D**	**530 E**	1 U	**29**	**63**	**110**	**270**	**220**	**230**	**110**	**390**
Toluene	108-88-3	**5.0**	0.52 J	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	1 U	**41 D**	**40**	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	1 U	**740 D**	**580 E**	1 U	1.4	**6.7**	**17**	**50**	**42**	**61**	**18**	**95**
Trichlorofluoromethane	75-69-4	**5.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	1 U	10 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-1	TMW-1	TMW-1	TMW-1	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2
Sample ID			TMW-1-225-08272008	TMW-1-245-08272008	TMW-1-265-08262008	TMW-1-285-08262008	TMW-2-65-08212008	TMW-2-85-08212008	TMW-2-105-08202008	TMW-2-125-08202008	TMW-2-145-08202008	TMW-2-165-08212008	TMW-2-185-08212008	TMW-2-195-08212008
Sample Depth			225	245	265	285	65	85	105	125	145	165	185	195
Sampling Date			8/27/2008	8/27/2008	8/26/2008	8/26/2008	2/21/2008	2/21/2008	2/20/2008	2/20/2008	2/20/2008	2/21/2008	2/20/2008	2/21/2008
Dilution Factor			0.1	40	0.025	0.025	4	8	40	10	10	40	0.025	0.025
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	**21**	**18 J**	**5**	**18**	0.5 U	0.5 U	0.5 U	0.5 U	3.4 J	0.5 U	**7.6**	**7.8**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	41	0.5 U	0.55	4.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	**1**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.55	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	0.5 U	0.5 U	4.2	**9.5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7	**7**
1,1-Dichloroethene	75-35-4	**5.0**	**44**	**35**	**9**	**35 D**	0.5 U	0.5 U	0.5 U	0.5 U	**5 J**	**18 J**	**15**	**14**
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.75**	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.71	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	**2.1**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	**31**	0.5 U	0.47 J	**8.1**	**1.4 J**	**2.5 J**	0.5 U	0.5 U	**3 J**	**34**	**120 D**	**36 D**
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-1	TMW-1	TMW-1	TMW-1	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-2
Sample ID			TMW-1-225-08272008	TMW-1-245-08272008	TMW-1-265-08262008	TMW-1-285-08262008	TMW-2-65-08212008	TMW-2-85-08212008	TMW-2-105-08202008	TMW-2-125-08202008	TMW-2-145-08202008	TMW-2-165-08212008	TMW-2-185-08212008	TMW-2-195-08212008
Sample Depth			225	245	265	285	65	85	105	125	145	165	185	195
Sampling Date			8/27/2008	8/27/2008	8/26/2008	8/26/2008	2/21/2008	2/21/2008	2/20/2008	2/20/2008	2/20/2008	2/21/2008	2/20/2008	2/21/2008
Dilution Factor			0.1	40	0.025	0.025	4	8	40	10	10	40	0.025	0.025
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.38 J	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	3.3	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.3	3.1
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**120**	**100**	**44 D**	**85 D**	4.8	**8.9**	**30**	**12**	**16**	**36**	**120 D**	**28 D**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.7	0.78
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.62	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.79	0.45 J
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	1.2 B	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	1.3	**15**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**6.5**	4.9
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**3700 D**	**750**	**410 D**	**530 D**	**48**	**64**	**130**	**93**	**130**	**250 B**	**240 D**	**190 D**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	4.2	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.37 J
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.53	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**230**	**530**	**61 D**	**650 D**	**51**	**90**	**230**	**120**	**140**	**310**	**540 D**	**200 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	2.5	**66 D**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D
Sample ID			TMW-2-210-08202008	TMW-2-225-08192008	TMW-2-245-08192008	TMW-2-265-08192008	TMW-2-285-08192008	TMW-3D-52-10012008	TMW-3D-72-10012008	TMW-3D-92-10022008	TMW-3D-112-10022008	TMW-3D-132-10032008	TMW-3D-152-10032008	TMW-3D-172-10032008
Sample Depth			210	225	245	265	285	52	72	92	112	132	152	172
Sampling Date			2/20/2008	2/20/2008	2/20/2008	2/20/2008	2/20/2008	10/1/2008	10/1/2008	10/2/2008	10/2/2008	10/3/2008	10/3/2008	10/3/2008
Dilution Factor			0.04	0.025	0.0025	0.005	0.00625	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	2.7	**6.7**	**21 E**	**88 D**	3.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 J
1,1,2-Trichloroethane	79-00-5	**1.0**	0.34 J	**1.1**	**1**	0.72	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	**6.8**	**6.6**	4.3	**13**	1.4	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.28 J	0.39 J
1,1-Dichloroethene	75-35-4	**5.0**	**7.6**	**18**	**36 E**	**200 D**	**7.6**	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.57	**6.1**	**3.8**	**7.5**	**28 DJ**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-2	TMW-2	TMW-2	TMW-2	TMW-2	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D
Sample ID			TMW-2-210-08202008	TMW-2-225-08192008	TMW-2-245-08192008	TMW-2-265-08192008	TMW-2-285-08192008	TMW-3D-52-10012008	TMW-3D-72-10012008	TMW-3D-92-10022008	TMW-3D-112-10022008	TMW-3D-132-10032008	TMW-3D-152-10032008	TMW-3D-172-10032008
Sample Depth			210	225	245	265	285	52	72	92	112	132	152	172
Sampling Date			2/20/2008	2/20/2008	2/20/2008	2/20/2008	2/20/2008	10/1/2008	10/1/2008	10/2/2008	10/2/2008	10/3/2008	10/3/2008	10/3/2008
Dilution Factor			0.04	0.025	0.0025	0.005	0.00625	1	1	1	1	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	1.9	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	2.6	**11**	3.3	**19**	1.1	1.2	0.5 U	0.5 U	0.5 U	0.36 J	0.29 J	0.87
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**39 D**	**350 D**	**120 D**	**310 D**	**91 D**	0.5 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U	3.1
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	4	3.6	0.88	3.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.33 J	0.5 U	0.55	0.5 U	0.5 U	0.5 U	0.53	0.42 J	0.48 J	2
Methylcyclohexane	108-87-2	NA	0.5 U	2.4	2.2	0.5 U	1.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.41 B	0.33 B	1.6 B	0.6 B	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.49 J	**35 E**	**22 E**	4.4	**11**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**490 D**	**2200 D**	**1100 D**	**2700 D**	**390 D**	0.5 U	0.5 U	0.5 U	3.2	0.5 U	0.5 U	**7.1**
Toluene	108-88-3	**5.0**	0.5 U	0.37 J	0.5 U	0.43 J	0.34 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.55	3.9	1.9	3.4	0.91	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**510 D**	**5100 D**	**2000 D**	**2400 D**	**1400 D**	0.5 U	0.5 U	0.5 U	0.92	0.5 U	0.5 U	**5.2**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	**3.5**	1.9	**15**	**2.7**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D
Sample ID			TMW-3D-192-10062008	TMW-3D-212-10062008	TMW-3D-232-10062008	TMW-3D-252-10072008	TMW-3D-272-10072008	TMW-3D-297-10082008	TMW-3D-312-10082008	TMW-3D-337-10082008	TMW-3D-357-10092008	TMW-3D-377-10092008	TMW-3D-392-10102008	TMW-3D-412-10102008
Sample Depth			192	212	232	252	272	297	312	337	357	377	392	412
Sampling Date			10/6/2008	10/6/2008	10/6/2008	10/7/2008	10/7/2008	10/8/2008	10/8/2008	10/8/2008	10/9/2008	10/9/2008	10/10/2008	10/10/2008
Dilution Factor			1	40	20	40	40	40	40	40	0.5	0.5	10	8
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	3.3	0.5 U	**5.3 J**	0.5 U	**10 J**	0.5 U	0.5 U	**11 J**	**120**	**200**	3.6 J	2 J
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1.4	0.5 U	**24**	0.5 U	**14 J**	**12 J**	**24**	**23**	**46**	**46**	**7.9**	4.1
1,1-Dichloroethene	75-35-4	**5.0**	2.5	0.5 U	**16**	0.5 U	**29**	**21**	**39**	**55**	**300**	**450**	**7.8**	3 J
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.62	0.62	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.31 J	0.31	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D
Sample ID			TMW-3D-192-10062008	TMW-3D-212-10062008	TMW-3D-232-10062008	TMW-3D-252-10072008	TMW-3D-272-10072008	TMW-3D-297-10082008	TMW-3D-312-10082008	TMW-3D-337-10082008	TMW-3D-357-10092008	TMW-3D-377-10092008	TMW-3D-392-10102008	TMW-3D-412-10102008
Sample Depth			192	212	232	252	272	297	312	337	357	377	392	412
Sampling Date			10/6/2008	10/6/2008	10/6/2008	10/7/2008	10/7/2008	10/8/2008	10/8/2008	10/8/2008	10/9/2008	10/9/2008	10/10/2008	10/10/2008
Dilution Factor			1	40	20	40	40	40	40	40	0.5	0.5	10	8
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.31 J	0.5 U	**7.7 J**	0.5 U	0.5 U	**8.5 J**	**9.8 J**	**34**	**29**	**14 J**	4 J	4.5
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	3.4	**39**	**300**	**13 J**	**220**	**160**	**230**	**380**	**360**	**210**	**50**	**36**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	10 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	3.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**19 BJ**	**16 BJ**	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**7.9**	**19 J**	**110**	**13 J**	**440**	**360**	**380**	**360**	**340**	**160**	**22**	**27**
Toluene	108-88-3	**5.0**	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	3.8	**32**	**130**	**23**	**220**	**180**	**130**	**620**	**900 D**	**930 D**	**130**	**110**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**51**	**14 J**	0.5 U	**20**	**36**
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4
Sample ID			TMW-3D-432-10102008	TMW-3D-452-10112008	TMW-3D-472-10112008	TMW-3D-492-10112008	TMW-3D-502-10112008	TMW-4-65-08042008	TMW-4-85-08042008	TMW-4-105-08042008	TMW-4-125-08042008	TMW-4-145-08012008	TMW-4-165-08012008	TMW-4-185-08012008
Sample Depth			432	452	472	492	502	65	85	105	125	145	165	185
Sampling Date			10/10/2008	10/11/2008	10/11/2008	10/11/2008	10/11/2008	8/4/2008	8/4/2008	8/4/2008	8/4/2008	8/1/2008	8/1/2008	8/1/2008
Dilution Factor			2	1	1	1	1	4	8	40	10	10	40	0.025
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.8 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.6	2	0.58
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	3.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.8	2.6	**13**	0.38 J
1,1-Dichloroethene	75-35-4	**5.0**	0.99 J	0.5 U	0.5 U	0.5 U	0.5 U	0.36 J	0.5 U	0.3 J	2.9	1.8	**7.1**	2.1
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-3D	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-4
Sample ID			TMW-3D-432-10102008	TMW-3D-452-10112008	TMW-3D-472-10112008	TMW-3D-492-10112008	TMW-3D-502-10112008	TMW-4-65-08042008	TMW-4-85-08042008	TMW-4-105-08042008	TMW-4-125-08042008	TMW-4-145-08012008	TMW-4-165-08012008	TMW-4-185-08012008
Sample Depth			432	452	472	492	502	65	85	105	125	145	165	185
Sampling Date			10/10/2008	10/11/2008	10/11/2008	10/11/2008	10/11/2008	8/4/2008	8/4/2008	8/4/2008	8/4/2008	8/1/2008	8/1/2008	8/1/2008
Dilution Factor			2	1	1	1	1	4	8	40	10	10	40	0.025
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.92 J	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.41 J	0.5 U	0.5 U	0.81	0.81	1
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**5.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.85	1.7	0.55
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	1.3	0.5 U	0.5 U	0.5 U	0.5 U	3.3	**9.1**	4.6	**57**	**47 D**	**40 D**	1.8
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.57	0.5 U	0.5 U	0.5 U	0.69	0.54	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**19**	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.63	0.94	**17**	**8.9**	**16**	**11**
Trichlorofluoromethane	75-69-4	**5.0**	**38**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5
Sample ID			TMW-4-205-08012008	TMW-4-225-08012008	TMW-4-245-07312008	TMW-4-265-07312008	TMW-4-285-07312008	TMW-5-65-08132008	TMW-5-85-08132008	TMW-5-105-08012008	TMW-5-125-08122008	TMW-5-145-08122008	TMW-5-165-08122008	TMW-5-185-08122008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			8/1/2008	8/1/2008	7/31/2008	7/31/2008	7/31/2008	8/13/2008	8/13/2008	8/12/2008	8/12/2008	8/12/2008	8/12/2008	8/12/2008
Dilution Factor			0.025	0.04	0.025	0.0025	0.005	8	8	0.0125	0.0125	0.017	0.02	0.02
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	1.7	0.5 U	0.87	1.8	0.76	**73**	**91**	**1400 D**	**1400 D**	**1100 D**	**440 D**	**170 D**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.3	8.8	18	31 D	40 D
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.38 J	0.5 U	0.85	**2.5**	**2.6**
1,1-Dichloroethane	75-34-3	**5.0**	1.9	0.5 U	0.84	1.2	0.53	**110**	**120**	**1000 D**	**1600 D**	**1800 D**	**770 D**	**280 D**
1,1-Dichloroethene	75-35-4	**5.0**	**11**	0.5 U	4.9	**8.1**	2.6	**84**	**100**	**1200 DB**	**1300 DB**	**1300 DB**	**1000 DB**	**690 DB**
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**5**	**5.5**	**4.8**	**4.4**
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.41 J	0.3 J	0.56	0.66
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-4	TMW-4	TMW-4	TMW-4	TMW-4	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-5
Sample ID			TMW-4-205-08012008	TMW-4-225-08012008	TMW-4-245-07312008	TMW-4-265-07312008	TMW-4-285-07312008	TMW-5-65-08132008	TMW-5-85-08132008	TMW-5-105-08012008	TMW-5-125-08122008	TMW-5-145-08122008	TMW-5-165-08122008	TMW-5-185-08122008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			8/1/2008	8/1/2008	7/31/2008	7/31/2008	7/31/2008	8/13/2008	8/13/2008	8/12/2008	8/12/2008	8/12/2008	8/12/2008	8/12/2008
Dilution Factor			0.025	0.04	0.025	0.0025	0.005	8	8	0.0125	0.0125	0.017	0.02	0.02
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.6	1.3
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.49 J	1	1.2
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**12**	**14**	**14**	**5.3**	0.5 U
Chloroform	67-66-3	**7.0**	4.6	1	1.3	2.3	2.5	0.5 U	0.5 U	1.5	1.8	1.9	6.6	**8**
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	3.7	0.5 U	1.7	2.6	1.4	2.9 J	4.5	**18**	**26 DJ**	**32 E**	**120 D**	**130 D**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.68	0.63	1.1	0.68	0.59	0.5 U	3.5 J	1.9	1.3	1.8	0.35 J	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 B	**5.2 B**	**8.6 B**	**5.6 B**	4.2 B
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**11**	0.46 J	**5.8**	**9.4**	**8.1**	**12**	**17**	**66 D**	**98 D**	**150 D**	**330 D**	**310 D**
Toluene	108-88-3	**5.0**	0.56	0.5 U	3	1.9	2.8	0.5 U	0.5 U	0.5 U	0.36 J	0.5 U	0.33 J	0.35 J
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1	2.2
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**56 D**	1.2	**38 D**	**65 D**	**29 D**	**22**	**38**	**160 D**	**200 D**	**190 D**	**870 D**	**990 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**4.5**	**7.5**	**8.4**	**59 D**	**71 D**

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6
Sample ID			TMW-5-205-08112008	TMW-5-225-08112008	TMW-5-245-08112008	TMW-5-265-08082008	TMW-5-285-08082008	TMW-6-65-06252008	TMW-6-85-08242008	TMW-6-105-06242008	TMW-6-125-06242008	TMW-6-145-06242008	TMW-6-165-06242008	TMW-6-185-06232008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			8/11/2008	8/11/2008	8/11/2008	8/8/2008	8/8/2008	6/25/2008	6/24/2008	6/24/2008	6/24/2008	6/24/2008	6/24/2008	6/23/2008
Dilution Factor			0.02	0.025	0.02	0.05	0.05	1	1	1	0.125	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	**59 D**	**43 D**	**5.5**	**6.9**	**5.4**	0.94	2.2	2.3	**7.9**	4	1.8	3
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	59 D	47 D	7.9	5.9	0.79	0.5 U	0.5 U	0.6	3.1	0.5 U	0.56	0.26 J
1,1,2-Trichloroethane	79-00-5	**1.0**	**1.6**	**1.3**	0.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	**96 D**	**79 D**	**7.7**	**11**	**9.6**	1.3	1.9	1.3	0.86	1.5	1.3	3.6
1,1-Dichloroethene	75-35-4	**5.0**	**220 D**	**150 D**	**31 D**	**26 D**	**18**	1.7	2.7	3.4	**11**	**5.2**	2.1	4.3
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	**3.5**	**3.9**	**9.5**	**8.8**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.35 J	0.3 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	**3.5**	**4.5**	0.5 U	0.4 J	0.5 U	0.55	0.51	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-5	TMW-5	TMW-5	TMW-5	TMW-5	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-6
Sample ID			TMW-5-205-08112008	TMW-5-225-08112008	TMW-5-245-08112008	TMW-5-265-08082008	TMW-5-285-08082008	TMW-6-65-06252008	TMW-6-85-08242008	TMW-6-105-06242008	TMW-6-125-06242008	TMW-6-145-06242008	TMW-6-165-06242008	TMW-6-185-06232008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			8/11/2008	8/11/2008	8/11/2008	8/8/2008	8/8/2008	6/25/2008	6/24/2008	6/24/2008	6/24/2008	6/24/2008	6/24/2008	6/23/2008
Dilution Factor			0.02	0.025	0.02	0.05	0.05	1	1	1	0.125	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.32 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.79	0.82	0.53	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	1.8	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	4	3.8	2.7	2.9	1.6	0.23 J	0.33 J	0.47 J	0.5 U	0.5 U	0.23 J	0.5 U
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7	4.3	2.4	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**150 D**	**130 D**	**60 D**	**40 D**	**37 D**	1.1	1.3	1.8	**9.8**	1.6	0.91	**7.5**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.3 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.36 J	0.3 J	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	2.5 B	2.6 B	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**320 D**	**280 D**	**140 D**	**67 D**	**38 D**	2.9	4.6	**5.5**	**14**	**8.6**	3.5	**6.6**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	2.6	1.1	1.5	0.79	0.28 J	0.5 U	0.4 J	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	1.6	1.4	0.52	0.35 J	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**810 D**	**660 D**	**590 D**	**190 D**	**180 D**	**5**	**8.4**	**11**	**63 D**	**8.9**	**6.2**	**12**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	**81 D**	**53 D**	1.7	**3.2**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7
Sample ID			TMW-6-205-06232008	TMW-6-225-06232008	TMW-6-245-06232008	TMW-6-265-06202008	TMW-6-285-06202008	TMW-7-65-07072008	TMW-7-85-07072008	TMW-7-105-07072008	TMW-7-125-07072008	TMW-7-145-07072008	TMW-7-165-07022008	TMW-7-185-07032008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			6/23/2008	6/23/2008	6/23/2008	6/20/2008	6/20/2008	7/7/2008	7/7/2008	7/7/2008	7/7/2008	7/7/2008	7/2/2008	7/2/2008
Dilution Factor			0.4	0.2	0.4	1	1	50	50	0.5	0.5	0.5	0.02	0.001
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	**6.1**	**16**	**17**	**9.9**	4.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.22 J	1.8
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.37 J	0.35 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	**9.9**	**20**	**33 D**	**12**	**11**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.9
1,1-Dichloroethene	75-35-4	**5.0**	**12**	**44 D**	**30 D**	**18**	**7.3**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.3 J	2.4
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.69
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.46 J
1,2-Dichloroethane	107-06-2	**0.6**	**2.4**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-6	TMW-6	TMW-6	TMW-6	TMW-6	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-7
Sample ID			TMW-6-205-06232008	TMW-6-225-06232008	TMW-6-245-06232008	TMW-6-265-06202008	TMW-6-285-06202008	TMW-7-65-07072008	TMW-7-85-07072008	TMW-7-105-07072008	TMW-7-125-07072008	TMW-7-145-07072008	TMW-7-165-07022008	TMW-7-185-07032008
Sample Depth			205	225	245	265	285	65	85	105	125	145	165	185
Sampling Date			6/23/2008	6/23/2008	6/23/2008	6/20/2008	6/20/2008	7/7/2008	7/7/2008	7/7/2008	7/7/2008	7/7/2008	7/2/2008	7/2/2008
Dilution Factor			0.4	0.2	0.4	1	1	50	50	0.5	0.5	0.5	0.02	0.001
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.2
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.45 J	0.4 J	0.33 J	0.22 J	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 J
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**18**	0.81	0.84	0.95	0.68	**11 J**	**10 J**	**44**	**36**	**32**	**14**	**330 DJ**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.8	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**22 D**	**48 D**	**5.9**	**16**	**6.4**	**460**	**470**	**870 D**	**840 D**	**800 D**	**720 DB**	**11000 DB**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	2.9
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**16**	2.7	**5.8**	2.4	1.2	**17 J**	**14 J**	**45**	**41**	**44**	**21 DJ**	**390 DJ**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.9

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D
Sample ID			TMW-7-205-07032008	TMW-7-225-07012008	TMW-7-245-07012008	TMW-7-265-07012008	TMW-7-285-06302008	TMW-8D-52-10292008	TMW-8D-82-10302008	TMW-8D-92-10302008	TMW-8D-112-10312008	TMW-8D-132-10312008	TMW-8D-152-11032008	TMW-8D-177-11032008
Sample Depth			205	225	245	265	285	52	82	92	112	132	152	177
Sampling Date			7/2/2008	7/1/2008	7/1/2008	7/1/2008	6/30/2008	10/29/2008	10/30/2008	10/30/2008	10/31/2008	10/31/2008	11/3/2008	11/3/2008
Dilution Factor			0.002	0.1	0.1	0.4	0.4	1	1	1	20	20	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	2	1.6	1.7	0.44 J	0.63	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1.1	**5.1**	**5.3**	0.5 J	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	**5.0**	3	2.7	3.4	0.88	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-7	TMW-7	TMW-7	TMW-7	TMW-7	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D
Sample ID			TMW-7-205-07032008	TMW-7-225-07012008	TMW-7-245-07012008	TMW-7-265-07012008	TMW-7-285-06302008	TMW-8D-52-10292008	TMW-8D-82-10302008	TMW-8D-92-10302008	TMW-8D-112-10312008	TMW-8D-132-10312008	TMW-8D-152-11032008	TMW-8D-177-11032008
Sample Depth			205	225	245	265	285	52	82	92	112	132	152	177
Sampling Date			7/2/2008	7/1/2008	7/1/2008	7/1/2008	6/30/2008	10/29/2008	10/30/2008	10/30/2008	10/31/2008	10/31/2008	11/3/2008	11/3/2008
Dilution Factor			0.002	0.1	0.1	0.4	0.4	1	1	1	20	20	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	**10**	**11**	1.6	**5.7**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.65	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.3	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.34 J	0.66	0.65	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**300 D**	1	1.2	0.82	0.58	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.34 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 JB	0.5 U	0.5 U	**7 BJ**	**5.4 BJ**	0.23 BJ	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**6500 DB**	**9.3**	**12**	**29 D**	**9.2 B**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	**5.0**	2.6	**5.6**	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**300 D**	**100 D**	**110 D**	**35 D**	**34 D**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	1.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D
Sample ID			TMW-8D-192-11042008	TMW-8D-212-11042008	TMW-8D-237-11062008	TMW-8D-257-11072008	TMW-8D-272-11072008	TMW-8D-292-11102008	TMW-8D-312-11102008	TMW-8D-337-11102008	TMW-8D-357-11112008	TMW-8D-372-11112008	TMW-8D-392-11112008	TMW-8D-437-11132008
Sample Depth			192	212	237	257	272	292	312	337	357	372	392	437
Sampling Date			11/4/2008	11/4/2008	11/6/2008	11/7/2008	11/7/2008	11/10/2008	11/10/2008	11/10/2008	11/11/2008	11/11/2008	11/11/2008	11/13/2008
Dilution Factor			1	1	1	10	1	0.4	0.5	0.2	0.25	10	1	2
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.22 J	**37**	**46**	**36**	**25**	**16**	0.43 J	3
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**16**	**14**	**9.9**	**7.9**	**6.1**	0.57	**7.1**
1,1-Dichloroethene	75-35-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**72**	**73**	**50**	**32**	**25**	0.54	4.6
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-8D
Sample ID			TMW-8D-192-11042008	TMW-8D-212-11042008	TMW-8D-237-11062008	TMW-8D-257-11072008	TMW-8D-272-11072008	TMW-8D-292-11102008	TMW-8D-312-11102008	TMW-8D-337-11102008	TMW-8D-357-11112008	TMW-8D-372-11112008	TMW-8D-392-11112008	TMW-8D-437-11132008
Sample Depth			192	212	237	257	272	292	312	337	357	372	392	437
Sampling Date			11/4/2008	11/4/2008	11/6/2008	11/7/2008	11/7/2008	11/10/2008	11/10/2008	11/10/2008	11/11/2008	11/11/2008	11/11/2008	11/13/2008
Dilution Factor			1	1	1	10	1	0.4	0.5	0.2	0.25	10	1	2
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	0.5 U	0.5 U	0.58	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7 J
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**19**	**14**	**43**	**26**	**13**	0.5 U	**5.6**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	1.6	**290 D**	**86**	**680 D**	**420 D**	**160**	0.47 J	**10**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	0.5 U	0.5 U	0.66	0.5 U	1.2	**360 D**	**280 D**	**67**	**38**	**27**	0.32 J	**20**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9
Sample ID			TMW-8D-457-11132008	TMW-8D-472-11132008	TMW-8D-497-11142008	TMW-8D-502-11142008	TMW-9-60-07212008	TMW-9-80-07212008	TMW-9-100-07212008	TMW-9-120-07212008	TMW-9-140-07182008	TMW-9-160-07182008	TMW-9-180-07182008	TMW-9-200-07172008
Sample Depth			457	472	497	502	60	80	100	120	140	160	180	200
Sampling Date			11/13/2008	11/13/2008	11/14/2008	11/14/2008	7/21/2008	7/21/2008	7/21/2008	7/21/2008	7/18/2008	7/18/2008	7/18/2008	7/17/2008
Dilution Factor			1.6	1.6	10	10	0.4	0.4	0.5	0.2	0.05	0.04	0.04	0.04
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.82	**9.7**	2.7 J	4.2 J	0.5 U	0.5 U	0.43 J	0.4 J	1.4	1.3	1.1	1.6
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.89	1	0.87	1.5	9.6	13	7.5	4.4
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	1.3	**20**	3.2 J	0.5 U	0.4 J	0.36 J	0.4 J	0.65	1.2	1.7	1.8	3.5
1,1-Dichloroethene	75-35-4	**5.0**	0.96	**13**	4.2 J	4.2 J	0.53	0.63	0.58	1.1	2.8	2.6	2.5	3.4
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U	6.3	5 U	6.7	5 U	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.32 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-8D	TMW-8D	TMW-8D	TMW-8D	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9	TMW-9
Sample ID			TMW-8D-457-11132008	TMW-8D-472-11132008	TMW-8D-497-11142008	TMW-8D-502-11142008	TMW-9-60-07212008	TMW-9-80-07212008	TMW-9-100-07212008	TMW-9-120-07212008	TMW-9-140-07182008	TMW-9-160-07182008	TMW-9-180-07182008	TMW-9-200-07172008
Sample Depth			457	472	497	502	60	80	100	120	140	160	180	200
Sampling Date			11/13/2008	11/13/2008	11/14/2008	11/14/2008	7/21/2008	7/21/2008	7/21/2008	7/21/2008	7/18/2008	7/18/2008	7/18/2008	7/17/2008
Dilution Factor			1.6	1.6	10	10	0.4	0.4	0.5	0.2	0.05	0.04	0.04	0.04
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.55	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	1	0.41 J	0.5 U	0.5 U	0.51	0.53	0.54	1	3.3	**8.1**	3.9	**11**
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.55	0.5 U	0.39 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	**6.8**	**6.9**	**15**	2.2 J	2.1	2	1.3	3.7	**12**	**23 D**	**24 D**	**17**
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.39 J	1.5	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.74	1.3	3.9	1.1	0.22 J	0.5 U	0.35 J
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.33 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	3.2 BJ	2.9 BJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.9	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**6.7**	**5.9**	**11**	**14**	**25 D**	**25 D**	**18 D**	**57 D**	**210 D**	**280 D**	**270 D**	**270 DB**
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.31 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**23**	**24**	**120**	**14**	**12**	**13**	**15**	**28 D**	**120 D**	**110 D**	**99 D**	**90 D**
Trichlorofluoromethane	75-69-4	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.32 J	0.5 U	0.35 J	0.5 U	0.27 J	1.1
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-9	TMW-9	TMW-9	TMW-9
Sample ID			TMW-9-220-07172008	TMW-9-240-07172008	TMW-9-260-07162008	TMW-9-280-07162008
Sample Depth			220	240	260	280
Sampling Date			7/17/2008	7/17/2008	7/16/2008	7/16/2008
Dilution Factor			0.2	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards [1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
1,1,1,2-Tetrachloroethane	630-20-6	5.0	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	**5.0**	0.79	**8.5**	**8.1**	**8.7**
1,1,2,2-Tetrachloroethane	79-34-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	**5.0**	2.9	**15**	**15**	**16**
1,1-Dichloroethene	75-35-4	**5.0**	1.9	**17**	**20**	**18**
1,1-Dichloropropene	563-58-6	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	**0.04**	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	NA	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	5.0	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.0	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	106-93-4	**0.0006**	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	**0.6**	0.5 U	0.55	**0.72**	**0.96**
1,2-Dichloropropane	78-87-5	1.0	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	5.0	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	3.0	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	142-28-9	5.0	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	3.0	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane[3]	594-20-7	5.0	NA	NA	NA	NA
2-Butanone	78-93-3	NA	5 U	5 U	5 U	5 U
2-Chlorotoluene	95-49-8	5.0	NA	NA	NA	NA
2-Hexanone	591-78-6	NA	5 U	5 U	5 U	5 U
4-Chlorotoluene	106-43-4	5.0	NA	NA	NA	NA
4-Methyl-2-Pentanone	108-10-1	NA	5 U	5 U	5 U	5 U
Acetone	67-64-1	NA	5 U	5 U	5 U	5 U
Benzene	71-43-2	**1.0**	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	108-86-1	5.0	NA	NA	NA	NA
Bromochloromethane	74-97-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	NA	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	5.0	0.5 U	0.5 U	0.5 U	0.5 U

Table 1 - Groundwater Samples Analytical Results (VOCs)
New Cassel/Hicksville Groundwater Contamination Superfund Site
Town of Hempstead, Nassau County, New York

Well ID			TMW-9	TMW-9	TMW-9	TMW-9
Sample ID			TMW-9-220-07172008	TMW-9-240-07172008	TMW-9-260-07162008	TMW-9-280-07162008
Sample Depth			220	240	260	280
Sampling Date			7/17/2008	7/17/2008	7/16/2008	7/16/2008
Dilution Factor			0.2	1	1	1
ISS Pilot Test Implementation	CAS #	NYSDEC Class GA Standards[1] (ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Carbon Disulfide	75-15-0	60.0	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	56-23-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	75-00-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	67-66-3	**7.0**	2.5	1.6	1.7	1.7
Chloromethane	74-87-3	5.0	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethylene[3]	156-59-2	**5.0**	4.4	0.71	0.85	0.84
cis-1,3-Dichloropropene[2]	10061-01-5	NA	0.5 U	0.5 U	0.5 U	0.5 U
Cyclohexane	110-82-7	NA	0.5 U	0.5 U	0.5 U	0.5 U
Cymene	99-87-6	5.0	NA	NA	NA	NA
Dibromochloromethane	124-48-1	NA	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	74-95-3	5.0	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	5.0	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	87-68-3	0.5	NA	NA	NA	NA
Isopropylbenzene	98-82-8	5.0	0.5 U	0.5 U	0.5 U	0.5 U
m,p-Xylene	136777-61-2	NA	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Acetate	79-20-9	NA	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-Butyl Ether	1634-04-4	NA	0.42 J	0.5 U	0.5 U	0.5 U
Methylcyclohexane	108-87-2	NA	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
m-Xylene	108-38-3	5.0	NA	NA	NA	NA
n-Butylbenzene	104-51-8	5.0	NA	NA	NA	NA
n-Propylbenzene	103-65-1	5.0	NA	NA	NA	NA
o-Xylene	95-47-6	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
p-Xylene	106-42-3	5.0	NA	NA	NA	NA
Sec-Butylbenzene	135-98-8	5.0	NA	NA	NA	NA
Styrene	100-42-5	5.0	0.5 U	0.5 U	0.5 U	0.5 U
t-Butylbenzene	98-06-6	5.0	NA	NA	NA	NA
Tetrachloroethylene(PCE)	127-18-4	**5.0**	**13 B**	2.4 B	3.1	4.3
Toluene	108-88-3	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**5.0**	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene[2]	10061-02-6	NA	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethylene (TCE)	79-01-6	**5.0**	**55 D**	**15**	**17**	**19**
Trichlorofluoromethane	75-69-4	**5.0**	3	**6.2**	**8.5**	**20**
Vinyl Chloride	75-01-4	**2.0**	0.5 U	0.5 U	0.5 U	0.5 U

Notes:

1 : NYSDEC TOGS 1.1.1 Class Ga Groundwater Standards

2 : Applies to the sum of cis- and trans-1,3-dichloropropene, CAS Nos. 10061-01-5 and 10061-02-6, respectively.

3 : Result reported as a sum of 2,2 -dichloropropane and cis-1,2-dichloroethene.

NA : Not Available.

U : The compound was not detected at the indicated concentration.

U* : Result qualified as non-detect based on validation criteria.

J : Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL. The concentration given is an approximate value.

B : The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P : For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* : For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

E : Indicates the analyte‘s concentration exceeds the calibrated range of the instrument for that specific analysis, value estimated.

D : The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

D* : Result quailfied as estimated based on vaildation criteria.

10 : Values that are highlighted, bold and underlined exceed NYSDEC TOGS 1.1.1 Class Ga Groundwater Standards.

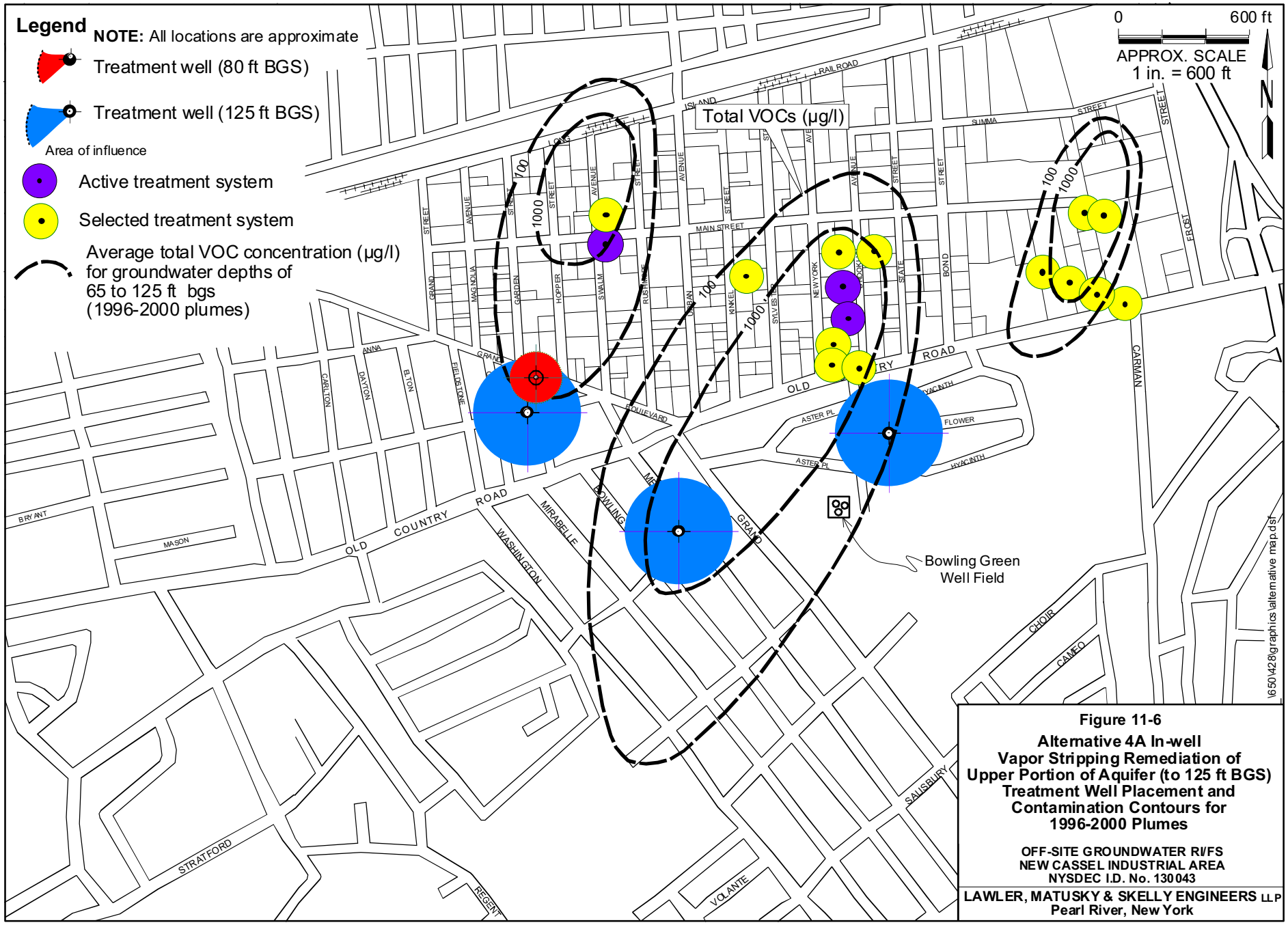


Figure 11-6

Alternative 4A In-well Vapor Stripping Remediation of Upper Portion of Aquifer (to 125 ft BGS) Treatment Well Placement and Contamination Contours for 1996-2000 Plumes

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

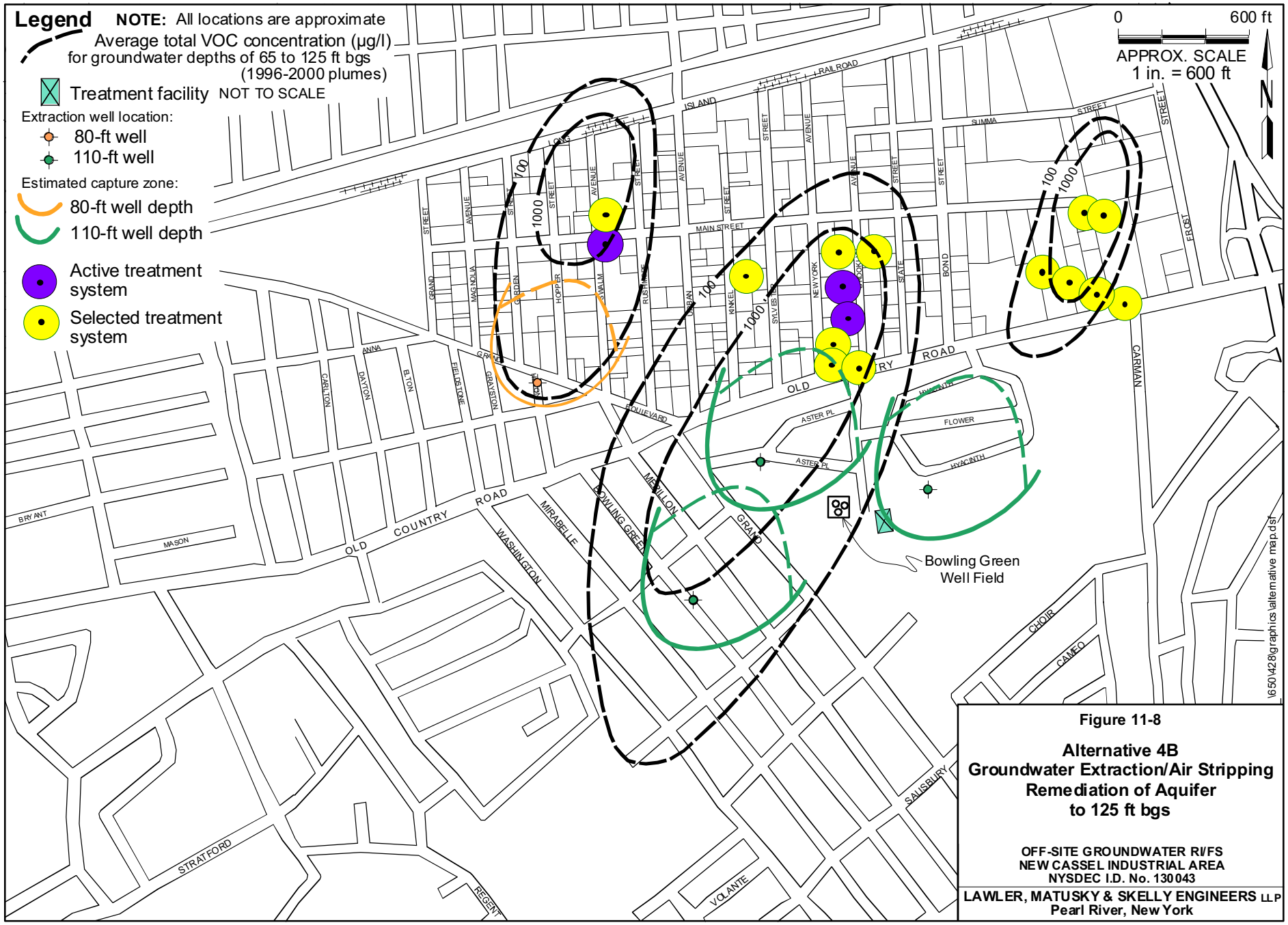


Figure 11-8

Alternative 4B
Groundwater Extraction/Air Stripping Remediation of Aquifer to 125 ft bgs

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

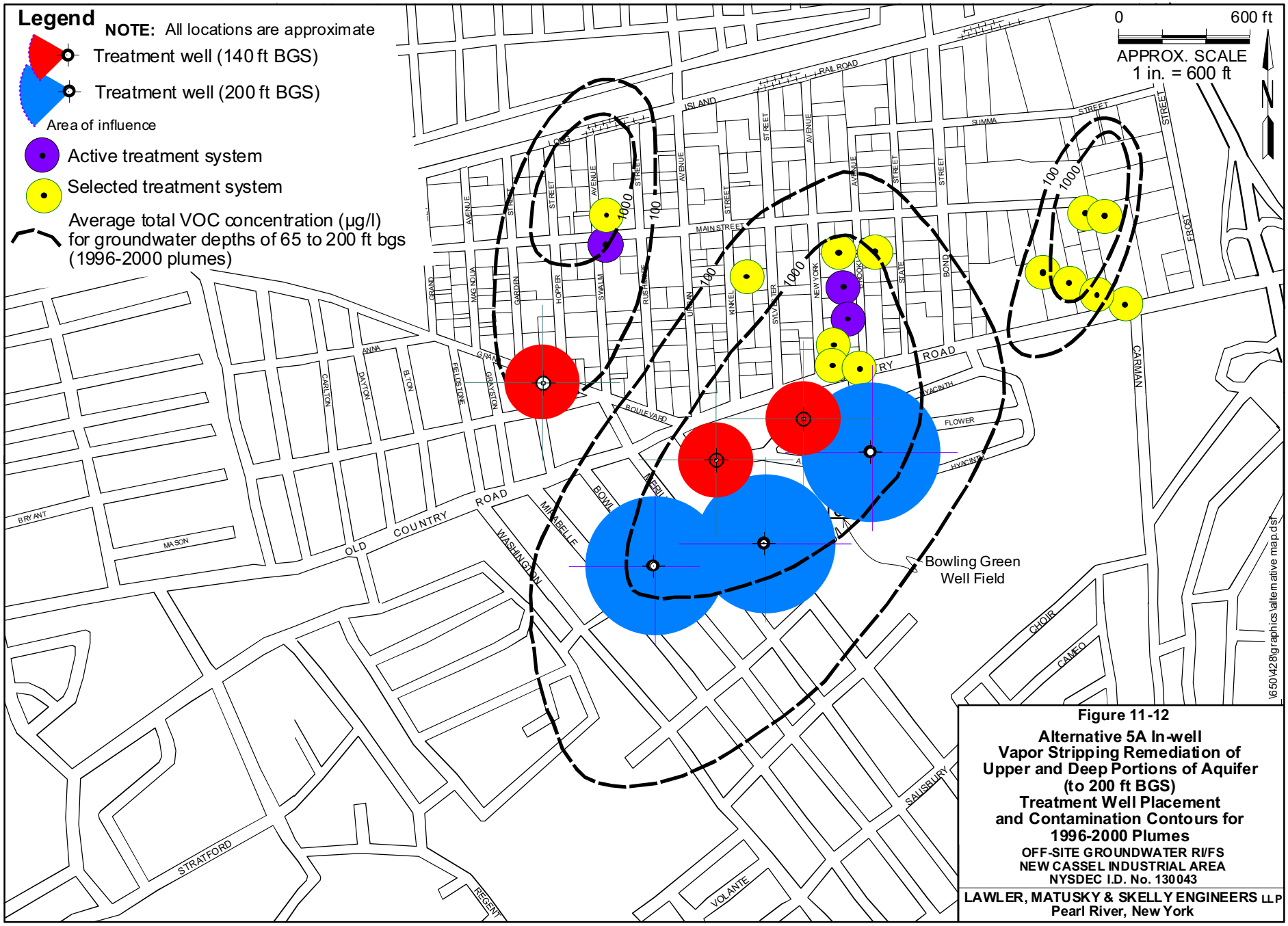


Figure 11-12

Alternative 5A In-well Vapor Stripping Remediation of Upper and Deep Portions of Aquifer (to 200 ft BGS) Treatment Well Placement and Contamination Contours for 1996-2000 Plumes

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

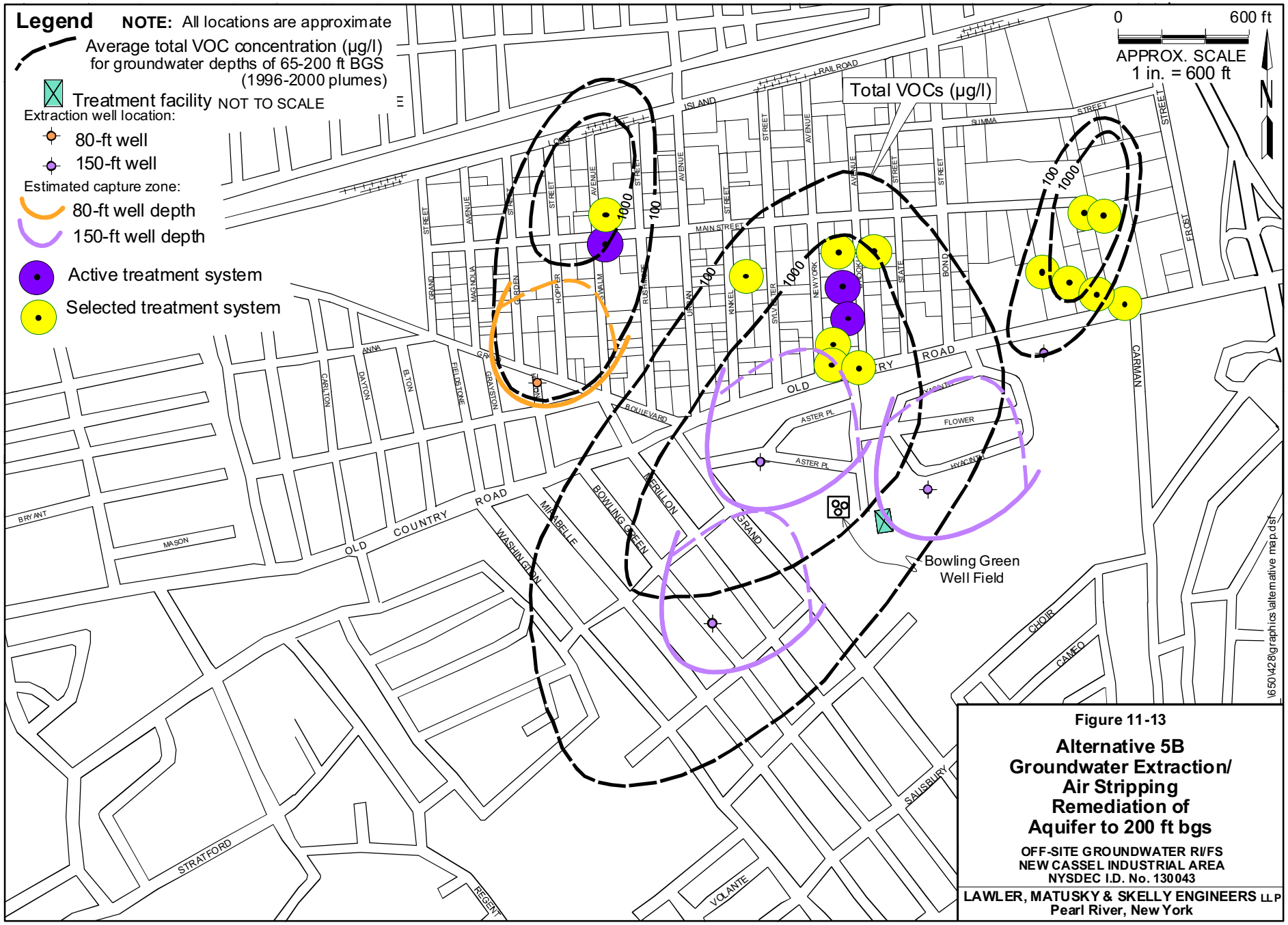


Figure 11-13

Alternative 5B Groundwater Extraction/ Air Stripping Remediation of Aquifer to 200 ft bgs

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

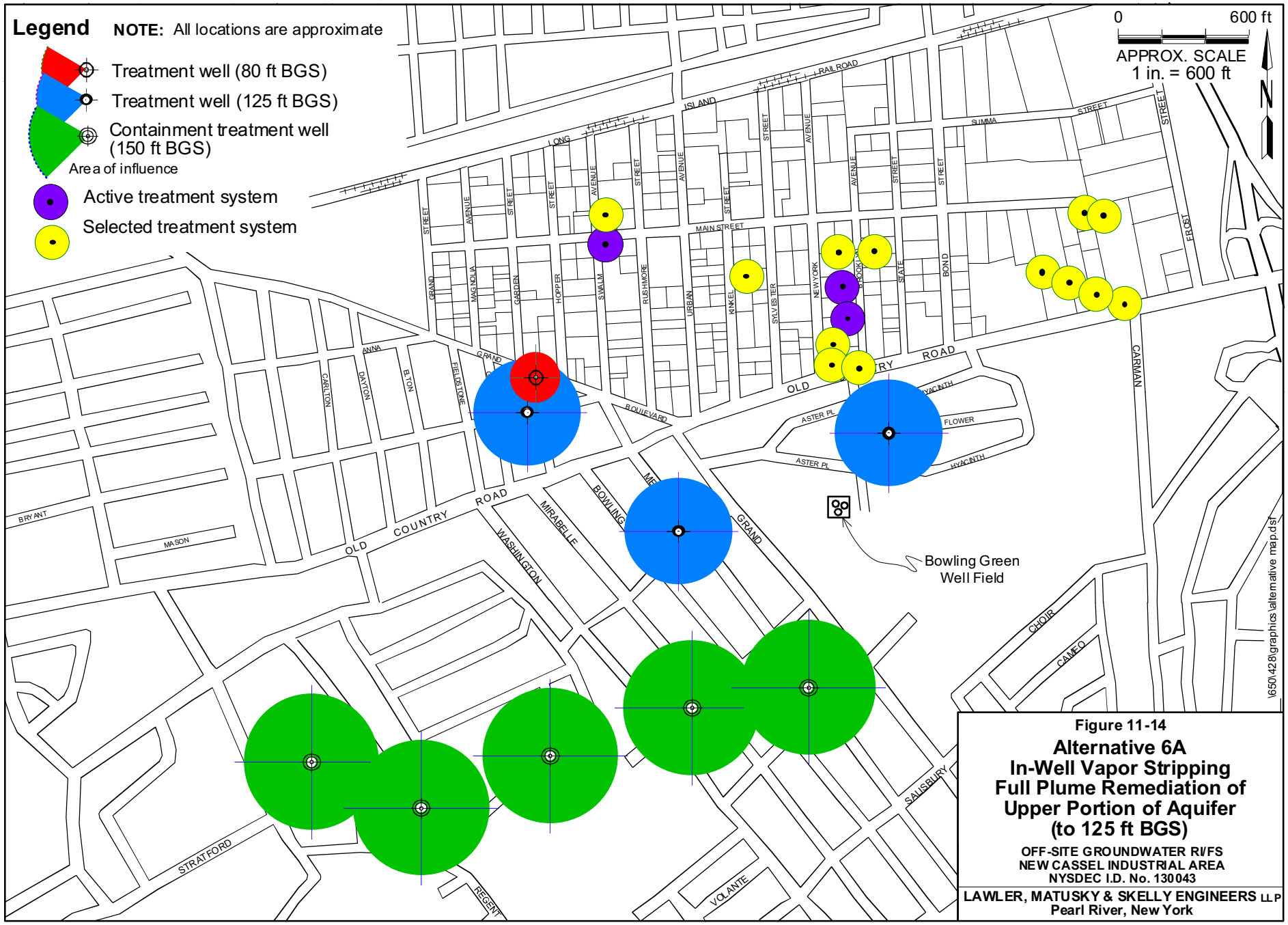


Figure 11-14

Alternative 6A
In-Well Vapor Stripping
Full Plume Remediation of Upper Portion of Aquifer (to 125 ft BGS)

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

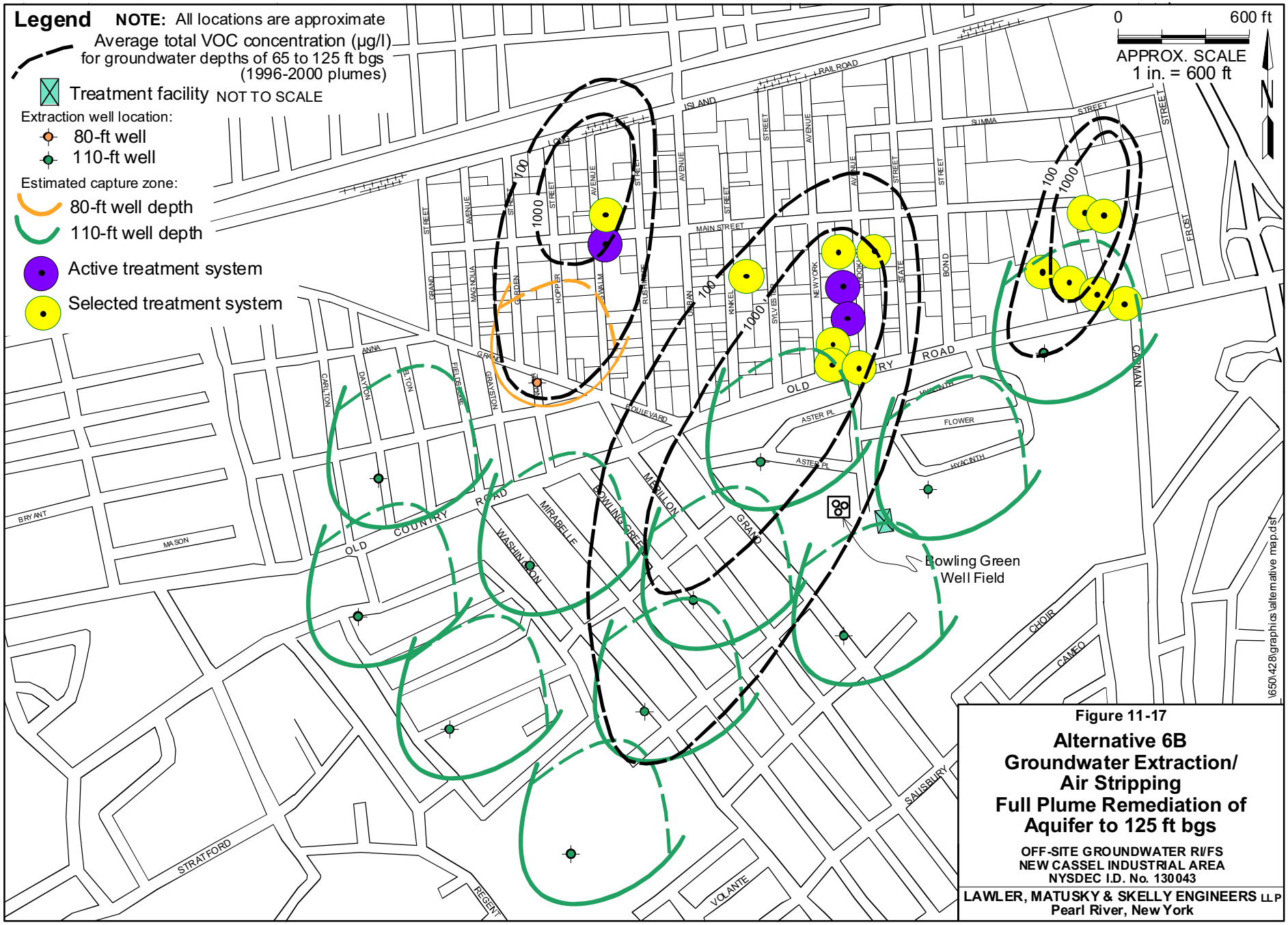


Figure 11-17

Alternative 6B
Groundwater Extraction/
Air Stripping
Full Plume Remediation of
Aquifer to 125 ft bgs

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

Figure 11-20
Alternative 7A
In-well Vapor Stripping Full Plume Remediation of Upper and Deep Portions of Aquifer (to 200 ft BGS) Treatment Well Placement and Contamination Contours for 1996-2000 Plumes
OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043
LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York

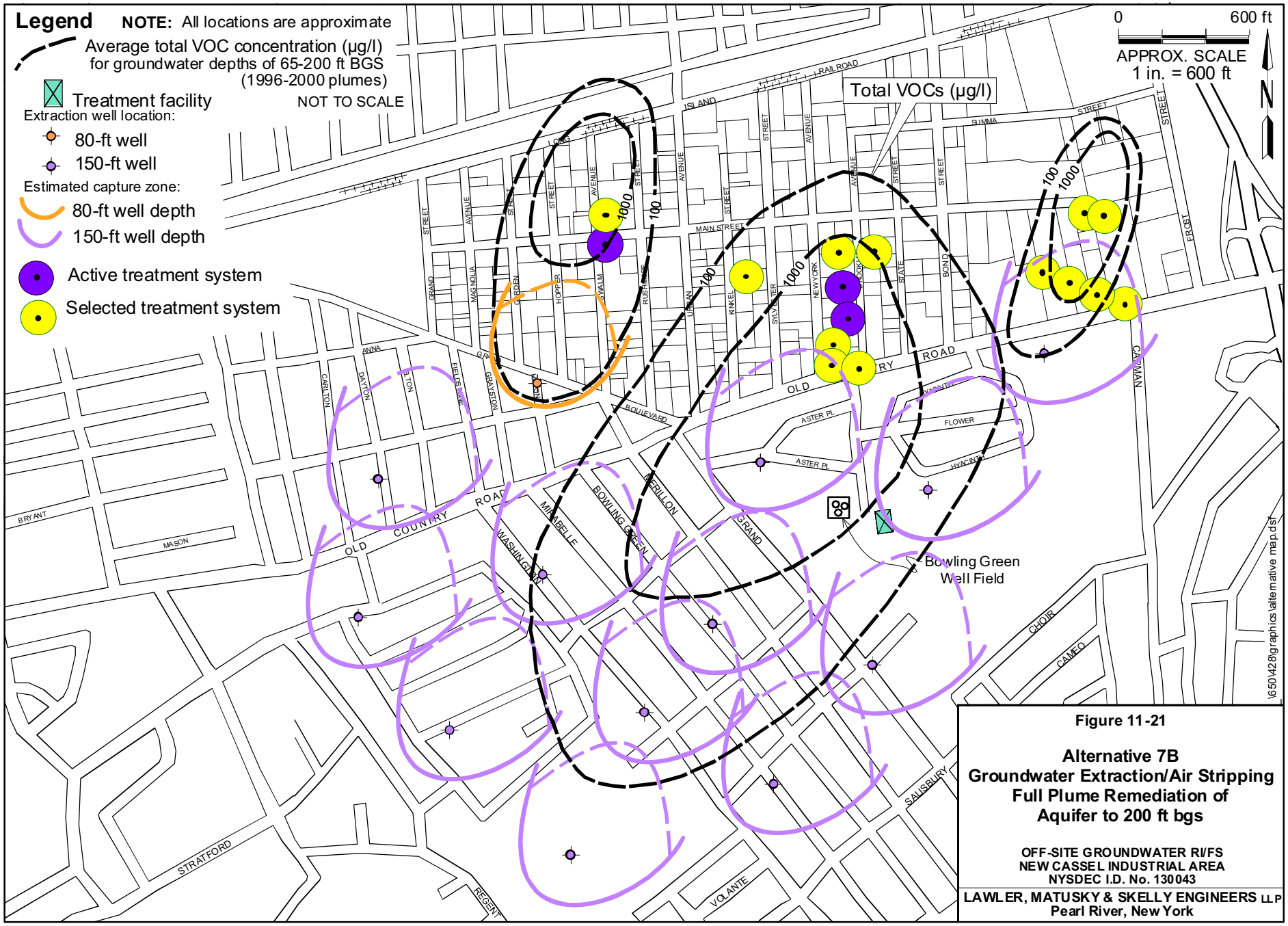


Figure 11-21

Alternative 7B
Groundwater Extraction/Air Stripping
Full Plume Remediation of
Aquifer to 200 ft bgs

OFF-SITE GROUNDWATER RI/FS
NEW CASSEL INDUSTRIAL AREA
NYSDEC I.D. No. 130043

LAWLER, MATUSKY & SKELLY ENGINEERS LLP
Pearl River, New York