nationalgrid

James F. Morgan
Lead Senior Environmental Engineer
Environmental Department

October 9, 2009

Mr. Anthony Karwiel
Remedial Bureau C, 11th Floor
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

Re: National Grid
Hiawatha Boulevard Former MGP Site
Syracuse, New York
Site No. 734059
Feasibility Study Report

Dear Mr. Karwiel:

Please find the enclosed revised Feasibility Study (FS) Report prepared by ARCADIS for the Hiawatha Boulevard former manufactured gas plant (MGP) site. The report was previously submitted to the New York State Department of Environmental Conservation (NYSDEC) in "draft" format in October 2008 and in "final" format in May 2009. The report has since been revised to address comments from the NYSDEC, including those discussed most recently during a September 11, 2009 telephone conference call. While the previous FS Report recommended implementation of an active remedy only for groundwater at the site, the enclosed report now recommends remedies to actively address both soil and groundwater. This revised FS Report also includes additional information supporting the effectiveness of enhanced bioremediation at degrading constituents in groundwater that is saline and has a pH above typical values.

An electronic copy of the full report in portable document format is included on the CD attached to the report binder. Following NYSDEC approval of the report, copies will be provided to the document repository.

Please do not hesitate to call me at (315) 428-3101 if you have any questions or require additional information.

Sincerely,

James F. Morgan

James F. Morgan
Lead Senior Environmental Engineer

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ARCADIS
Infrastructure, environment, buildings

National Grid

Feasibility Study Report

Hiawatha Boulevard Former MGP Site

Syracuse, New York

May 2009

Revised October 2009

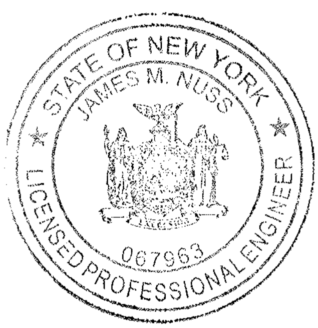
ARCADIS

Feasibility Study Report

Hiawatha Boulevard Former MGP Site
Syracuse, New York

Certification

I, James M. Nuss, P.E., am a professional engineer in the State of New York. To the best of my knowledge, and based on my inquiry of the persons involved in preparing this document under my direction, certify that this Feasibility Study Report for the Hiawatha Boulevard former manufactured gas plant site was completed in general accordance with the 2003 Administrative Order on Consent (Index #A4-0473-0000) between National Grid and the New York State Department of Environmental Conservation. This Feasibility Study Report identifies and evaluates potential remedial alternatives to address environmental conditions at the site.



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Our Ref.:
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Date:
October 2009

ARCADIS

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Acronyms and Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirements
ARCADIS	ARCADIS of New York, Inc.
BAF	Biologically Aerated Filter
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
BTU	British Thermal Unit
CAMP	Community Air Monitoring Plan
CDF	Confined Disposal Facility
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cf	Cubic Feet
CFR	Code of Federal Regulations
COC	Constituent of Concern
CWG	Carbureted Water Gas
cy	Cubic Yard
DER	Department of Environmental Remediation
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
FS	Feasibility Study

FWIA	Fish and Wildlife Impact Analysis
gpm	gallons per minute
GRA	General Response Action
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HRFS	High Rate Flocculated Sedimentation
IRM	Interim Remedial Measure
ISS	In-Situ Stabilization
LDR	Land Disposal Restriction
LTTD	Low Temperature Thermal Destruction
MGP	Manufactured Gas Plant
MNA	Monitored Natural Attenuation
NAPL	Non-Aqueous Phase Liquid
NCP	National Contingency Plan
NYCRR	New York State Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation & Maintenance
OBG	O'Brien & Gere, Inc.
OSHA	Occupational Safety and Health Administration

PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
PRAP	Proposed Remedial Action Plan
PSA	Preliminary Site Assessment
PSD	Prevention of Significant Deterioration
QA/QC	Quality Assurance/Quality Control
RAO	Remedial Action Objective
RCRA	Resource Conservation Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SCG	Standards, Criteria & Guidelines
SCO	Soil Cleanup Objective
SLERA	Screening Level Ecological Risk Assessment
SMP	Site Management Plan
SPLP	Synthetic Precipitation Leaching Procedure
SRI	Supplemental Remedial Investigation
STP	Sewage Treatment Plant

SVI	Soil Vapor Investigation
SVOC	Semi-Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memorandum
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TOGS	Technical and Operational Guidance Series
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
UTS	Universal Treatment Standards
UV	Ultraviolet
VOC	Volatile Organic Compound

1. Introduction

This Feasibility Study Report (FS Report) evaluates potential remedial alternatives to address constituents of interest in soil and groundwater at the Hiawatha Boulevard Former Manufactured Gas Plant (MGP) Site (the site) located in Syracuse, New York (Figure 1). These impacted media, generally related to byproducts and wastes associated with the former MGP operations such as coal tar and spent purifier wastes, are present primarily within the eastern portion of the site. The primary constituents of interest identified in these media at concentrations greater than standards/guidance values include benzene, toluene, ethylbenzene, and xylenes (BTEX); polycyclic aromatic hydrocarbons (PAHs); and cyanide. Certain non-MGP-related constituents (including chlorinated solvents at concentrations slightly greater than standards) have also been identified in groundwater at the site.

This FS Report has been prepared by ARCADIS of New York, Inc. (ARCADIS) in accordance with the requirements of the Order on Consent ("Consent Order") between Niagara Mohawk (acquired by and now referred to as National Grid) and the New York State Department of Environmental Conservation (NYSDEC) (Index No. A4-0473-0000, signed by NYSDEC on November 7, 2003). The overall objective of this FS Report is to use the information from previous investigations at the site to develop, evaluate, and recommend remedial alternatives that are protective of human health and the environment, and comply with State and Federal standards, criteria, and guidance that are applicable or relevant and appropriate to the remedial alternatives.

This FS Report has been prepared in general accordance with the following guidance, directives, and other publications, where appropriate:

- Applicable provisions of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) regulations contained in Part 300 of Title 40 of the Code of Federal Regulations (40 CFR 300).
- The United States Environmental Protection Agency (USEPA) guidance document titled "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (CERCLA Interim Final 1988).
- NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4025 titled, "Guidelines for Remedial Investigations/Feasibility Studies," dated March 31, 1989.
- NYSDEC TAGM 4030 titled "Selection of Remedial Actions at Inactive Hazardous Waste Sites," revised May 15, 1990 (TAGM 4030).

- NYSDEC Division of Environmental Remediation's (DER) "Draft DER-10 Technical Guidance for Site Investigation and Remediation," dated December 2002.

- 6 New York State Codes, Rules, and Regulations (NYCRR) Part 375 titled "Environmental Remediation Programs" dated December 14, 2006.

The site investigations of the Hiawatha Boulevard former MGP site were also conducted consistent with the data requirements and guidance for developing soil cleanup objectives (SCOs) presented in the NYSDEC TAGM 4046 titled "Determination of Soil Cleanup Objectives and Cleanup Levels" (NYSDEC, 1994). In December 2006, the NYSDEC's Environmental Remediation Program (6 NYCRR Part 375) replaced TAGM 4046. The objectives of both programs are consistent, but 6 NYCRR Part 375 also considers land use in establishing SCOs. The SCOs for industrial land use (the current and long-term future use of the site), which were not available under TAGM 4046, have been considered in this FS. The data generated by the previous investigations under TAGM 4046 have adequately defined the nature and extent of MGP-related impacts for purposes of this FS.

A "draft" version of the FS Report was submitted to the NYSDEC in October 2008. The report was subsequently revised to address comments provided in letters from the NYSDEC dated November 21, 2008 and March 2, 2009 and additional comments that were discussed with the NYSDEC on March 20, 2009. A finalized version of the FS Report was submitted to the NYSDEC on May 1, 2009.

Following the May 2009 submission of the FS Report, the NYSDEC determined that an active remedial alternative would be required not only for groundwater (as recommended in the report), but also for soil. The NYSDEC proposed potential limits for the soil remedy in e-mail correspondence to National Grid and ARCADIS dated July 29, 2009. National Grid proposed certain changes to the limits that were provided to the NYSDEC with supporting data and information in e-mail correspondence from ARCADIS dated August 26, 2009. The limits were further revised based on discussions during a September 11, 2009 conference call with the NYSDEC and are included in this revised FS Report. The NYSDEC provided concurrence with the revised limits in e-mail correspondence dated September 23, 2009.

This revised FS Report also includes additional information related to the effectiveness of enhanced bioremediation at degrading constituents in saline groundwater where pH is above typical values. This is in response to a request from the NYSDEC during the September 11, 2009 telephone conference call.

Copies of the correspondence related to the FS Report revisions are included on the CD included with this report.

1.1 Purpose and Report Organization

The FS Report has been organized into the following sections:

Section		Purpose
Section 1 –	Introduction	Provides background information relevant to the development of the FS Report and remedial alternatives evaluated.
Section 2 –	Identification of Standards, Criteria & Guidelines (SCGs)	Identifies the SCGs to be considered in the identification of remedial action objectives (RAOs) and remedial alternatives.
Section 3 –	Remedial Action Objectives	Develops and presents RAOs based on previous investigations and applicable SCGs.
Section 4 –	Identification and Screening of Technologies and Development of Remedial Alternatives	Identifies and presents screening results for General Response Actions (GRAs) and remedial technology types and processes. An assembled list of potential remedial alternatives for meeting the RAOs for the site are presented in this section based on the results of the screening.
Section 5 –	Detailed Evaluation of Remedial Alternatives	Describes the NYSDEC and NCP criteria used to evaluate the remedial alternatives, and presents a detailed analysis of each remedial alternative for each media.
Section 6 –	Comparative Analysis of Alternatives	Presents a comparative analysis of each of the remedial alternatives.
Section 7 –	Selection of Preferred Remedial Alternative	Identifies the recommended remedial alternative for the site.
Section 8 –	References	Presents a list of the references cited in the FS Report.

1.2 Background Information

This section presents relevant background information used to develop and evaluate the remedial alternatives for the site. A description of locations and physical setting of the site is presented below, followed by a summary of relevant historical information, a discussion of potential future land use, and a summary of previous investigations.

1.2.1 Location and Physical Setting

The Hiawatha Boulevard former MGP site is located in an industrial/commercial area at the southeast end of Onondaga Lake, within the City of Syracuse, Onondaga County, New York (see Figure 1). The former MGP was located on the northern portion of property currently owned by Onondaga County and occupied by the Metropolitan Sewage Treatment Plant (Metro STP). Much of the Site is currently occupied by sewage treatment structures, including clarifiers, aeration tanks, and an ammonia and phosphorous removal facility that contains the Operations Center, the Biologically Aerated Filter (BAF) building, the High Rate Flocculated Sedimentation (HRFS) building, the ultraviolet (UV) disinfection building, and the Chemical Building (hereinafter, the "Main Building Complex"). The remainder of the Site is primarily covered by driveways, paved parking lots, and the County Maintenance Building. The existing site layout and limits of the former MGP are shown on Figure 2 (refer to the bold/dashed black line for the MGP limits).

Until 2000, National Grid owned a four-acre parcel on the site. The former National Grid property was occupied by a Service Center that included a garage and offices for maintenance crews. These structures were unrelated to the current County Maintenance Building, which is on a separate, adjacent parcel. The National Grid garage and offices pre-dated the County Maintenance Building, which was constructed as part of treatment plant upgrades in the 1970s. In 2000, the National Grid property was sold to Onondaga County as part of the initial site preparations for Onondaga County's construction of a NYSDEC mandated Ammonia Removal/Stage II Phosphorous facility. The Service Center building and maintenance garage structures on the former National Grid property were subsequently demolished by the County in 2000 prior to initiation of the County's construction project.

Onondaga County completed construction of the Ammonia Removal/Stage II Phosphorous facility in 2005. The entire site has been substantially altered due to the county's construction project including an IRM (hereafter "the Soil/Groundwater Removal IRM") that included the following principal activities: (1) excavation of soils to depths of 15 to 20 feet within and immediately around the footprint of the facility and associated subsurface piping; and (2) extensive excavation dewatering and treatment of the extracted groundwater. Further information about the Soil/Groundwater Removal IRM is presented in Subsection 1.2.3.

The site topography is generally flat resulting from the historical fill operations that pre-dated and preceded MGP activities (e.g., Solvay waste beds) and construction activities associated with the expansion of the Metro STP in the mid-1970s. The site elevation is approximately 7 feet above the adjacent Onondaga Lake. An elevated CSX rail line is located adjacent to the western edge of the property, between the site and Onondaga Lake. Access to Metro STP property is restricted by chain-link fences that surround the perimeter of the property and entrances that are monitored via security cameras. Entrance gates are kept closed outside of normal business hours.

Current surrounding land use in the site vicinity is primarily retail, commercial, or light industrial in nature. The area to the north and northeast of the site is primarily occupied by the Carousel Mall and the vacant land associated with the former “Oil City,” which included numerous petroleum bulk storage facilities undergoing remediation and redevelopment. Commercial properties including a warehouse, junkyards, small retail establishments, such as gas stations, a metal recycling facility, trucking companies, and other business establishments, are found to the east and south of the site. Also located to the east of the site adjacent to the Barge Canal are the sediment dredge spoils/dewatering basins previously used during past navigational dredging of the Barge Canal by the United States Army Corps of Engineers (USACE).

1.2.2 Historic Site Operations

A chronological history of the former MGP property and surrounding area is presented in the *Remedial Investigation Report* (ARCADIS, 2003) and summarized below.

The salt industry, chemical industry, urban development, and transportation corridors have all caused changes in the lake and its shoreline. The first major development affecting the site area occurred in the early 1800s when the lake level was lowered to drain marshlands adjacent to the lake in order to accommodate the Erie Canal. The lake level was raised in the 1850s to its present day location. In the late 1800s, the site was used by Solvay Process as a fill area for waste. The Solvay Process waste resulted from the manufacture of sodium carbonate (soda ash), sodium bicarbonate, and calcium chloride.

Numerous 80-foot long piles were driven to support the large MGP foundations on the accumulated fill that characterized the site. The Hiawatha Boulevard former MGP was operated by several companies between 1924 and 1958.

Vertical coal gas producing units were constructed between 1925 and 1926 (capacity 6 million cubic feet [cf]). Additionally, a 48,000-ton coal stockpile was maintained to provide adequate gas production during coal strikes, and the coal gas produced at the Hiawatha Boulevard MGP was supplemented with carbureted water gas (CWG) from the Erie Boulevard MGP during this time. Relief holders were constructed between 1931 and 1941 (capacity 12 million cf). A 635,000 gallon gas oil tank and a 635,000 gallon tar tank had been constructed in 1942. Coal gas production had ceased by 1947, and the CWG plant was left to produce gas on a standby basis during peak demand, and consisted of a 500,000 cf relief holder, a 6 million cf holder, and two 3 million cf water gas generators. Demolition of the coal gas plant was performed by 1948.

Removal of the former coke breaker house, the coal breaker house, the coke screen and bins, the corresponding conveyor system, and coal purifier boxes was performed by 1951. The relief holder was removed by 1953, and several gas, tar and ammonia tanks remained. Two water gas sets were also converted to Hi-BTU oil gas units. One of the two booster houses burned down in January 1957 and the former ammonia concentrator house, the blower house, and the cyanogen scrubber were removed by 1958. On June 20, 1958, the New York State Public Service Commission authorized National Grid to dismantle the standby CWG plant at the former Hiawatha Boulevard MGP. The 6 million cf holder was demolished in 1961.

A portion of the former MGP property was sold in 1967 to facilitate expansion of Onondaga County's Metro STP. Construction began on the expansion in the 1970s and included new wastewater treatment facilities (primary and secondary clarifiers, aeration tanks, etc.) in the western portion of the MGP footprint. The County Maintenance Building was also constructed at that time. As previously mentioned, National Grid maintained an operational Service Center consisting of a garage, an office, and a meter house on a four acre portion of the former MGP site until it was sold to Onondaga County in 2000. The former MGP site is now entirely occupied by the Metro STP.

1.2.3 Future Land Use

As indicated above, there have been various upgrades to the Metro STP over the years, particularly in the 1970s and early 2000s. Further expansions and upgrades are foreseeable as wastewater treatment technologies advance and allowable effluent limits are reduced. For instance, additional treatment facilities may be needed for further phosphorous removal to meet potential reduced phosphorous effluent limits by December 2012, pending feasibility and testing of technologies. Based on discussions with Metro STP personnel, if Onondaga County were to expand the Metro STP in the future (such as for additional phosphorous treatment), the expansion would likely be in the northeastern portion of the property, in the area currently occupied by the County Maintenance Building and surrounding parking lots/driveways.

1.2.4 Summary of Previous Investigations and Remedial Activities

Previous investigations conducted at and in the vicinity of the site include the following:

- Preliminary Subsurface Investigation for Proposed Onondaga County STP conducted by O'Brien & Gere Engineers, Inc. (OBG) in 1971 and 1972.

- Niagara Mohawk Substrate Sampling and Analysis conducted by National Grid in 1985.

- USEPA Preliminary Site Assessment (PSA) conducted by the NUS Corporation in 1987.
- Sediment Sampling and Testing in the Barge Canal conducted by the USACE in 1994.
- Preliminary Site Assessment/Interim Remedial Measures (PSA/IRM) Study conducted by ARCADIS between 1995 and 1998.
- Remedial Investigation (RI) conducted by ARCADIS between 2000 and 2003.
- Supplemental Remedial Investigation (SRI) conducted by ARCADIS between 2005 and 2006.
- Pre-FS Additional Investigation conducted by ARCADIS in March 2008.
- Soil Vapor Investigation (SVI) conducted by ARCADIS in May 2008.

As indicated above, a Soil/Groundwater Removal IRM was completed in support of Onondaga County's construction of the Ammonia Removal/Stage II Phosphorous facility. The Soil/ Groundwater Removal IRM were performed from September 2001 through February 2003.

Summaries of the previous investigation and IRM activities are presented below.

Preliminary Subsurface Investigation for Proposed Onondaga County Sewage Treatment Plant

OBG conducted a subsurface soil investigation from March 1970 to May 1971 on a large, multi-parcel project site which included a majority of the former MGP site. The purpose of the investigation was to characterize the project site for pending construction of upgrades to the STP to be owned and operated by Onondaga County. OBG subcontracted Soil Testing, Inc. to perform the work that consisted of numerous borings to depths of 270 feet below ground level. There was no environmental sampling or analysis performed as part of this investigation.

Niagara Mohawk Substrate Sampling and Analysis Program

In 1985, a test pit sampling program was conducted as part of the design for a proposed fuel island installation at National Grid's service center. Three soil samples were collected from a test pit in the area of the proposed fuel island along the western side of National Grid's property. Laboratory analysis indicated the samples contained arsenic (up to 8.23 parts per million [ppm]) and selenium (up to 3.8 ppm) that were both within the background concentrations for the eastern United States. A second round of sampling closer to the actual construction excavation (near the southwest corner of the property) did not indicate elevated levels of arsenic and selenium.

USEPA Preliminary Site Assessment

In 1987, the USEPA retained NUS Corporation to conduct a PSA at the former MGP. A site visit and walk-around was conducted on November 9, 1987, but no environmental samples were obtained for analysis. The *Preliminary Site Assessment Report* (USEPA 1987) concluded with the statement "no further action is recommended."

USACE Sediment Sampling in Barge Canal

Sediment samples were collected by USACE in 1994 from several sampling locations in the Barge Canal. Organic compounds, metals, and total petroleum hydrocarbons were identified at each sediment sampling location. Based on the concentrations and distribution of chemical constituents identified in the USACE sediment samples, which were typical of upstream/ background conditions, sediment sampling in the Barge Canal was not required by the NYSDEC as part of the subsequent MGP site investigations. Work activities performed and results obtained for the sediment sampling are summarized in the report titled *Final Data Report, Sediment Sampling and Testing, Onondaga Lake Inlet (Barge Canal Terminal Area), Syracuse, New York*, prepared by Acres International on behalf of USACE, dated January 1995 (USACE, 1995). Information related to the sediment handling is presented in Subsection 1.3.4.4.

Preliminary Site Assessment/Interim Remedial Measures

The Hiawatha Boulevard Former MGP site was the subject of a PSA/IRM study conducted between August 1995 and September 1998. The work was performed in accordance with a NYSDEC-approved Work Plan (National Grid, 1995). The PSA/IRM study characterized subsurface conditions and the nature and occurrence of chemical constituents in soil and groundwater at the site, as well as near-shore sediments in Onondaga Lake. The field sampling programs included soil and groundwater sampling onsite to assess the presence and nature of site related by-products and other chemical constituents, and offsite sampling of sediments along the shoreline of Onondaga Lake. The study also included a fish and wildlife impact assessment (FWIA), and a preliminary risk assessment to evaluate potential exposure pathways of constituents detected in soil and groundwater onsite. The results of the PSA/IRM are summarized in the *Preliminary Site Assessment/Interim Remedial Measures Study Report* (ARCADIS G&M, 1998). Based upon the results of the PSA/IRM study, the conclusion was drawn that characterization of the site conditions was insufficient to fully evaluate the extent of impacts, and an RI was recommended.

Remedial Investigation

The RI was conducted in phases between 2000 and 2003 pursuant to the RI/FS Work Plan and supplemental remedial investigation work plans approved by NYSDEC (ARCADIS G&M, 1999, 2000, 2002). The RI further characterized conditions and the nature and occurrence of chemical constituents in soil and groundwater at the site. The subsurface soil investigation initially consisted of a soil boring and sampling program within the eastern portion of the site and was then expanded to focus on the site characterization within the footprint for construction of the County's Ammonia Removal/Phase II Phosphorus Removal facility. Monitoring wells were installed for the purpose of further investigating impacts adjacent to the northern portion of the site. Temporary monitoring wells were installed within the footprint of the County's proposed construction to provide data to evaluate pumping rates and treatment for excavation dewatering. Soil quality data (including laboratory geotechnical data) were obtained for further site characterization and in-situ waste profiling to establish specifications for excavation of impacted soils during the Soil/Groundwater Removal IRM. A baseline human health risk assessment (HHRA) and screening level ecological risk assessment (SLERA) were also completed as part of the RI.

The RI further characterized site geology/hydrogeology and the extent of MGP-related impacts to soil and groundwater. The RI concluded that near-shore sediment samples collected from Onondaga Lake during the PSA and groundwater data collected during the RI indicate that the site has not impacted lake sediments adjacent to the site. ARCADIS recommended supplemental investigation and data collection activities be conducted to provide sufficient information for development and analysis of remedial alternatives in the FS.

Soil/Groundwater Removal IRM

The Soil/Groundwater Removal IRM was performed between September 2001 and February 2003 and resulted in: (1) the excavation and disposal of approximately 110,000 tons of soil from within the building footprint for the Onondaga County Metro STP's Ammonia Removal/Stage II Phosphorus Removal facility and from the footprint for subsurface pipelines connecting to the facility; and (2) excavation dewatering, which involved pumping and onsite treatment of more than 283 million gallons of impacted groundwater.

The soil excavation resulted in the removal of soils that contained non-aqueous phase liquid (NAPL), sheens, and total PAHs at concentrations above 500 ppm. Excavation depths ranged from 14 to 25 feet below ground surface (bgs). Based on the data generated as part of the RI, the excavated soil was transported to the Seneca Meadows Landfill in Waterloo, New York and the High Acres Landfill in Fairport, New York and disposed as a nonhazardous waste.

Impacted water pumped from around the excavation area was treated in a temporary onsite water treatment system prior to discharge under permit to the Metro STP. From September 2001 to May 2002, approximately 85 million gallons of water was extracted and treated. Dewatering during that period was performed at between 175 and 450 gallons per minute (gpm), with an overall average dewatering rate of 250 gpm. An additional 198 million gallons of water was extracted and treated between May 2002 and February 2003 (after the major soil removal activities were completed). Based on the volume of water extracted and duration of pumping from May 2002 to February 2003, the overall average dewatering rate for that period was over 450 gpm.

Supplemental Remedial Investigation

The SRI was conducted between July 2005 and February 2006 pursuant to the SRI Work Plan approved by the NYSDEC (ARCADIS, 2004). The SRI further characterized subsurface conditions and the nature and occurrence of chemical constituents in soil and groundwater at the site, including potential changes to groundwater conditions as a result of the extensive dewatering performed as part of the Soil/Groundwater Removal IRM. Monitoring wells were installed for the purpose of further evaluating groundwater flow patterns and the distribution of dissolved phase constituents in groundwater, particularly in the area adjacent to the Barge Canal. Select soil samples from the monitoring well boreholes were analyzed for various chemical constituents and geotechnical parameters. The investigation also included groundwater level measurements, NAPL monitoring, hydraulic conductivity testing, bail down tests, and air monitoring.

The SRI concluded that PAH impacts in subsurface soil and BTEX, naphthalene, and cyanide impacts in groundwater were limited to the eastern portion of the site, with some groundwater impacts along the Barge Canal. Data showed that groundwater in the western portion of the site (adjacent to Onondaga Lake) was not impacted. The *Supplemental Remedial Investigation Report* (ARCADIS, 2006) concluded that the nature and extent of impacts at the site had been adequately characterized during the PSA and RI to allow for the development of RAOs and for the evaluation of remedial alternatives for the site in an FS. Quarterly groundwater monitoring was performed between May and November 2006 after the SRI Report was submitted.

Pre-FS Additional Investigation

The Pre-FS Additional Investigation field work was conducted in March 2008 pursuant to discussions during a March 7, 2008 FS Scoping Meeting with the NYSDEC and New York State Department of Health (NYSDOH) and the work plan contained in a March 24, 2008 letter from National Grid, which was approved by the NYSDEC on April 1, 2008. The Pre-FS Additional

Investigation was conducted to further evaluate groundwater quality (particularly in the deep interval downgradient from and near the location of the former 6 million cf dry seal gas holder), further evaluate the extent to which certain MGP structures (500,000 cf relief gas holder and tar separator) were removed as part of the treatment plant upgrades in the 1970s, and further evaluate the interaction between groundwater and surface water in the Barge Canal.

The field investigation included groundwater level measurements, NAPL monitoring, and groundwater sampling and analysis. A review of historic documents and information was performed to assess the extent to which the MGP structures were removed during the previous construction. Analytical results from the additional and previous groundwater sampling and understanding of subsurface conditions were used to calculate the mass flux of constituents from site groundwater to the Barge Canal.

Results obtained for the Pre-FS Additional Investigation are summarized in letters from National Grid to the NYSDEC dated April 4 and 25, 2008 (National Grid, 2008a, 2008b). As summarized in those letters, NAPL was not found in any groundwater monitoring wells. The flux evaluation determined that the concentrations of constituents in groundwater mixing with the Barge Canal surface water do not exceed the Class C surface water quality standards presented in the NYSDEC Division of Water, Technical and Operational Guidance Series document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1), dated June 1998 (last revised June 2004). Class C is the designation for surface water in the Barge Canal adjacent to the site. As indicated in the document titled New York State Water Quality 2006 (NYSDEC, January 2007), the best usage of Class C waters is fishing. Class C waters are suitable for fish propagation and survival and for primary and secondary contact recreation. Further information regarding the flux evaluation is presented in Subsection 1.3.4.5 of this report. The Pre-FS Additional Investigation also concluded that the construction of Metro STP upgrades in the 1970s would have resulted in the removal of subsurface foundations and materials below the 500,000 cf relief gas holder and tar separator.

Based on the findings of the Pre-FS Additional Investigation, it was concluded that the site was sufficiently characterized for the preparation of an FS. In a letter dated June 4, 2008, the NYSDEC agreed that no further soil or groundwater investigation was needed.

Soil Vapor Investigation

The SVI field activities were implemented by ARCADIS in May 2008. The activities were implemented in accordance with the *Soil Vapor Investigation Work Plan* (ARCADIS, 2008a), which was conditionally approved by the NYSDEC on April 1, 2008. The SVI was performed to evaluate the potential presence, concentration, and distribution of MGP-related volatile organic compounds (VOCs) and other non MGP-related VOCs in onsite soil vapor, and to evaluate the potential for vapor intrusion into existing onsite buildings.

One or more VOC constituents were identified in the soil vapor samples collected at each sampling location. Some of the VOCs identified in the soil vapor samples were unrelated to or not necessarily related to former MGP operations. Overall, the VOC concentrations in the soil vapor samples were relatively low, and concentrations inside the buildings (if any) would be even lower due to attenuation mechanisms. Based on the low VOC levels in the soil vapor samples and ongoing petroleum and solvent use necessary for normal facility operations, the *Soil Vapor Investigation Report* (ARCADIS, 2008b) concluded that no further soil vapor investigation was required. The NYSDEC and NYSDOH agreed with that conclusion in an August 22, 2008 letter to National Grid that provided report approval.

1.3 Site Characterization/Nature and Extent of Impacts

As previously noted, the PSA/IRM Report, RI Report, SRI Report, and Pre-FS Additional Investigation letter report summarized the results of numerous environmental investigations and related remedial efforts (e.g., IRM) that have been conducted within the site to address certain MGP-related impacts.

As the focus of the alternatives evaluation in this FS is on soil and groundwater, the tables and figures provided with this report present information and data related to the soil and groundwater investigations. Soil and groundwater sampling locations are shown on Figure 3. An analytical sample summary, which identifies soil and groundwater samples collected as part of the PSA/IRM, RI, SRI, and Pre-FS Additional Investigation and corresponding analyses, is included as Table 1. Construction details for the monitoring wells are summarized in Table 2. Subsurface intervals where NAPL, staining, sheens, or odors were encountered within the soil borings are summarized in Table 3. Soil sampling locations and intervals exhibiting Solvay waste and corresponding sampling intervals are identified in Table 4. Water level data is summarized in Table 5. Field parameter measurements obtained during groundwater sampling are presented in Table 6. Comprehensive soil and groundwater analytical results are presented in Tables 7 and 8. Analytical results for constituents in Toxicity Characteristic Leaching Procedure (TCLP) extract are presented in Table 9.

For sediment and surface water data and information, prior reports are incorporated by reference in this document.

A discussion of the site geology is provided below, followed by a discussion of hydrogeology, groundwater usage, and the nature and extent of MGP-related impacts.

1.3.1 Geology

Subsurface investigations have identified four principle geologic units of interest to this investigation. In order of increasing depth from the ground surface, these geologic units are presented in Table 1-1.

Table 1-1
Generalized Geologic Column

Thickness Range (feet)	Stratigraphic Unit
2-5	Fill - The surficial unit, which varies in composition and texture throughout the site and consists of poorly sorted clay, sand, silt, gravel, brick, wood, ash, cobbles, and chunks of concrete. Fill was identified in each boring completed as part of the PSA/IRM, RI, and SRI.
2-12	Solvay Process Waste (Solvay waste) – White to pink or gray in color and consists predominantly of silt and fine sand sized material with a chalky consistency (2 to 12 feet thick, see Table 4). Solvay waste was also identified in each soil boring and nearly every monitoring well boring completed at part of the PSA/IRM, RI, and SRI.
30-50	Sand Unit - Native silty fine to coarse sand gray to brown with varying amounts of shells. The silt content increased significantly with depth.
>10	Silt/Clay Unit – In the few borings that extended through the sand unit, a silt and clay unit was encountered below the sand. The surface of this unit is generally encountered between 40 and >50 feet bgs. This unit “fines” downward in that the clay content of the unit generally increases with increased depth however the transition to an increased clay content is variable across the site. Based on several geotechnical borings completed as part of the mid-1970s expansion of the Metro STP (which were generally completed to depths of 230 feet to 270 feet bgs), the depth at which clay was first observed (identified as “little clay” or “some clay”) was variable, and was as shallow as 35 feet bgs at a location in the western portion of the site (TH-314) and as deep as 130 feet bgs at a location in the eastern portion of the site (TH-311). Boring logs for those geotechnical borings and figures showing boring locations are included in the *Subsurface Investigation Report on Proposed Metropolitan Syracuse Sewage Treatment Plant* (Onondaga Soil Testing, Inc., 1971).

1.3.2 Hydrogeology

The major hydrologic features near the site are Onondaga Lake and the Barge Canal, which discharges into the lake. The Barge Canal receives its flow from Onondaga Creek, which drains highly developed, heavily commercialized and industrialized landscapes as it passes south to north through the city. Onondaga Creek, like the Barge Canal, is classified by the NYSDEC as a Class C water body.

As identified during the previous investigations, saturated conditions are first encountered within the fill or Solvay waste layer. The water-level data indicate that the water table beneath the site generally occurs at a depth of approximately 5 to 10 feet bgs. Water levels recorded in the shallow "S" series wells (see Table 5) and surface water elevation data from the Barge Canal were used to construct a water table contour map for the fill/Solvay Waste unit (Figure 4) for March 20, 2008. Water levels recorded in the "D" series wells were used to construct a water table contour map for the sand unit (Figure 5) for March 20, 2008.

As indicated by the water table contour maps for March 20, 2008 and the contour maps developed for the RI and SRI, the horizontal direction of groundwater flow is from the southeastern corner of the site to the northeast and to the northwest. The flow directions diverge along a groundwater divide that trends northwest-southeast through the site from the area of well MW-6 to the area of well MW-22. The general horizontal hydraulic gradients calculated during the SRI (as reported in Section 4.1.2.1 of the SRI Report) are presented in Table 1-2.

TABLE 1-2

HORIZONTAL HYDRAULIC GRADIENTS

Hydrostratigraphic Zone	Horizontal Hydraulic Gradient (feet/feet)	
	To Canal	To Lake
Fill/Solvay	0.016	0.005
Sand	0.01	0.005

Groundwater and surface water elevation data indicate that the Barge Canal in the vicinity of the site acts as a gaining stream, meaning that groundwater flows from beneath the site into the canal. Across most of the site, the elevation of the potentiometric surface for the sand unit was generally lower than the water table, indicating a slight downward vertical component of flow across the Solvay waste layer to the underlying sand unit. In general, the groundwater levels at each well cluster were higher than the adjacent surface water elevation indicating a component of groundwater flow from the fill/Solvay waste layer and upper sand unit to the Barge Canal. Within the sand unit, an upward component of flow is indicated by the presence of an upward vertical gradient from the deeper MW-11D_2 well to the shallower MW-11D well during both the March 2003 and May 2003 monitoring events.

1.3.3 Groundwater Usage

As indicated in the RI Report, the City of Syracuse derives its potable water supply from Skaneateles Lake. While the sand and gravel deposits within the area are capable of producing large well yields, high salinity and total dissolved solids (TDS) levels render groundwater derived from these deposits unusable for human consumption. In fact, chloride concentrations identified from sampling and analysis of deep groundwater beneath the site averaged just over 9,400 ppm (arithmetic average) and were as high as 67,000 ppm. These values are well-above the groundwater quality standard of 250 ppm for chloride. TDS concentrations in deep groundwater beneath the site averaged 18,200 ppm (arithmetic average) and were as high as 71,300 ppm. These values are well-above the 1,000 ppm upper limit for freshwater as presented in TOGS 1.1.1.

The Onondaga County Department of Health and City of Syracuse reported that there are no known wells in the City used for potable water supply. Additionally, as indicated in the RI Report, the City of Syracuse Office of Development, City of Syracuse City Engineer, and the Director's Office of the Onondaga County Planning Agency were contacted regarding any "master plan" or "future plan" that has been prepared for the City of Syracuse or Onondaga County, which would have included plans for groundwater development. None of the City or County offices contacted indicated that there was such a planning document or any planned future use of groundwater. The only documented use of groundwater has been for former industrial/commercial purposes. None of these wells are now in use or were located in the immediate vicinity of the site.

1.3.4 Nature and Extent of MGP-Related Impacts

The site investigations consisted of sampling surface and subsurface soils, groundwater, and soil vapor within onsite sampling locations and sediment and surface water from offsite locations. This section summarizes the nature and extent of MGP-related impacts in media sampled as part of these investigations.

1.3.4.1 Surface and Subsurface Soil

A discussion of impacted surface and subsurface soils is presented below.

<u>Surface Soil</u>

Surface soil samples were collected from five separate locations during the PSA/IRM activities, including one location in the southern portion of the site (southwest of the Ammonia Removal/ Stage II Phosphorous facility constructed in 2005) and four offsite locations southeast of the site.

Overall, concentrations identified in the surface soil samples were less than or generally consistent with the unrestricted use and industrial use SCOs presented in 6 NYCRR Part 375-6.8(a) and (b), effective December 14, 2006 (hereinafter the “unrestricted use SCOs” and “industrial use SCOs”).

Subsurface Soil

A total of 385 subsurface soil samples were collected from 50 soil borings, 2 test pits, 16 monitoring wells, and 14 bottom and 20 sidewall IRM verification soil sampling locations as part of the PSA/IRM, RI, and SRI. Up to 9 soil samples from each soil boring were submitted for laboratory analysis. Soil samples collected as part of the investigations were analyzed for BTEX/VOCs, PAHs/SVOCs, metals, cyanide, pesticides, PCBs, and constituents in extract generated by TCLP sample extraction. Subsurface soil samples were collected throughout the site, but primarily focused on areas that were not covered with treatment facilities (i.e., the eastern portion of the site [including the footprint of the Soil/Groundwater Removal IRM and the parking lots between the Soil/Groundwater Removal IRM and Hiawatha Boulevard], the northern portion of the site near the Barge Canal, and the western portion of the site near Onondaga Lake. The Soil/Groundwater Removal IRM resulted in removal of soils corresponding to 65 subsurface soil samples from 19 locations.

BTEX, PAHs (primarily naphthalene), and cyanide were detected in several of the soil samples collected as part of the previous investigations. For purposes of evaluating the soil analytical results, the results have been compared (in Table 7) to the unrestricted use and industrial use soil cleanup objectives presented 6 NYCRR Part 375-6.8(a) and (b). The unrestricted use SCOs provide a baseline for comparison of the results. The industrial use SCOs are applicable to the site given that the current and future site use is industrial. Soils remaining at the site that exhibit BTEX, PAHs, or cyanide at concentrations exceeding the industrial use SCOs are primarily within the eastern portion of the site at depths generally starting at and extending below the water table.

Sampling locations where total PAHs were identified in one or more intervals at concentrations greater than 500 ppm (excluding intervals where soil was removed as part of the Soil/Groundwater Removal IRM) are shown by the color-coded “dots” on Figures 6 and 7 (for unsaturated and saturated soil, respectively). The 500 ppm total PAH value is consistent with the SVOC “cap” value presented in 6 NYCRR Part 375-6.8(b) and the NYSDEC Technical and Administrative Guidance Memorandum titled “Determination of Soil Cleanup Objectives and Cleanup Levels,” HWR-94-4046, dated January 24, 1994 (TAGM 4046).

No constituents were identified in leachate generated by TCLP sample extraction at concentrations exceeding the regulatory limits presented in 6 NYCRR Part 371 (refer to Table 9 for TCLP sample results).

1.3.4.2 NAPL

Several of the recovered soil samples contained visual evidence of NAPL. With respect to the presence of NAPL, the investigations provided information that can be summarized as follows:

- NAPL was observed in several soil borings and monitoring well borings, primarily located in the eastern portion of the site. Soil at several of these soil boring/monitoring well locations was removed during the Soil/Groundwater Removal IRM. Soil exhibiting NAPL was generally found to the east and northeast of the Soil/Groundwater Removal IRM excavation area, near MW-7, MW-8, and SB-50.

- For the most part, the NAPL was identified to be within thin lenses within the lower portion of the Solvay waste layer and upper part of the sand unit (generally 8 to 28 feet bgs). At locations where NAPL was observed in soil, such soil typically occurs below the water table.

- DNAPL was previously identified in two wells located in the eastern portion of the site (MW-7D and MW-8D). The DNAPL measured in these wells was approximately 1.6 to 1.9 feet thick. Monitoring well MW-7D was damaged during the Soil/Groundwater Removal IRM and replaced during the Supplemental RI. DNAPL was not encountered in the MW-7D replacement well in the 9 monitoring events completed since the well was installed. DNAPL was removed from well MW-8D in May 2006 and was not encountered in the well in the 5 monitoring events thereafter.

Sampling locations where NAPL has been observed in unsaturated and saturated soil at the site (excluding soil removed as part of the Soil/Groundwater Removal IRM) are indicated by the “orange dots” on Figures 6 and 7, respectively.

NAPL was not observed in any of the borings between the IRM excavation area and monitoring wells along the Barge Canal, and the maximum total PAH concentrations in soil samples collected from these borings, with one exception, ranged only from 2.1 ppm to 9.9 ppm (total PAHs were identified in one sample at a concentration of 29 ppm). This information indicates that there is no apparent “source” material between the excavation and the wells.

NAPL was not observed in any of the borings in the western portion of the former MGP site near the former 6 million cf holder, the 500,000 cf relief holder, and the tar separators, and the maximum total PAH concentrations identified in soil samples collected from these borings ranged only from 0.58 ppm to 2.5 ppm. Extensive soil removal was performed in the area of these former structures in the 1970s expansion to the treatment plant. This information supports that there is no apparent “source” material near these former structures.

1.3.4.3 Dissolved Constituents in Groundwater

Part of the investigations involved the installation and sampling of monitoring wells throughout the site between March 1998 and March 2008. These activities were performed to assess the nature and extent of MGP-related impacts to water quality. A total of 64 permanent groundwater monitoring wells (in 30 clusters) were installed during the PSA/IRM, RI, and SRI activities. This includes 30 shallow wells, 30 deep wells, and 4 till wells. Both onsite and offsite wells were installed, with a total of 31 wells located onsite and 33 offsite wells located along the Barge Canal and Onondaga Lake. Several rounds of groundwater sampling have been performed at the permanent wells, starting with an initial event in March 1998 and continuing with events in May 1998, October/November 2000, February 2002, March/April 2003, 4 quarterly events in 2006, and one event in March 2008. The samples have been analyzed for MGP-related and non-MGP-related constituents and certain biogeochemical parameters.

Laboratory analytical results for the groundwater samples collected to date, including comparisons to the groundwater quality standards/guidance values presented in TOGS 1.1.1, are presented in Table 8. A summary of the groundwater analytical results obtained to date for BTEX, PAHs, and cyanide -- at levels that exceed the groundwater quality standards/guidance values -- is shown on Figure 8. Findings of the groundwater sampling for BTEX, PAHs, and cyanide are presented below, followed by findings of the groundwater sampling for biogeochemical parameters.

<u>Assessment of Groundwater Analytical Results for BTEX, PAHs, and Cyanide</u>

As indicated by the groundwater analytical results, BTEX, PAHs, and cyanide have been identified in a number of wells at concentrations exceeding the groundwater quality standards/ guidance values. Findings of the groundwater sampling and analysis for these constituents are summarized below.

- Within the shallow groundwater (within the fill/Solvay unit), the highest BTEX, PAH, and cyanide concentrations are generally in the northeastern portion of the site, near MW-11S, MW-12S, MW-23S, and MW-24S.

- The highest BTEX, PAH, and cyanide concentrations overall were identified in the sand unit beneath the Solvay waste layer at certain wells in the eastern portion of the site (at wells MW-7D and MW-8D). BTEX and PAHs were either not detected or were identified at lower concentrations in deeper wells (greater than 50 feet) within the sand unit.

While there are a number of locations where groundwater contains BTEX, PAHs (primarily naphthalene), or cyanide at concentrations exceeding groundwater quality standards/guidance values, the concentrations are generally not more than an order or two of magnitude greater than the standards/guidance values. Data for the most recent sampling events at the shallow and deep wells in this area are summarized below.

Groundwater Analytical Results for Shallow Wells:

- At locations where BTEX were identified at concentrations exceeding standards, the concentrations were generally no more than approximately 20 to 30 ppb, with a few minor exceptions:

  - In the northeast corner of the site, xylenes were identified at concentrations of 74 ppb, 110 ppb, and 120 ppb at MW-32S, MW-11S, and MW-23S, respectively; and benzene was identified at a concentration of 970 ppb at MW-32S.

  - In the northwest corner of the site, xylenes were identified at a concentration of 1,000 ppb at MW-27S.

  For reference, the groundwater quality standard for benzene is 1 ppb and for the remaining BTEX constituents is 5 ppb.

- Naphthalene was identified at concentrations of no more than 50 ppb (vs. a guidance value of 10 ppb), with a few minor exceptions: it was identified in the northeast portion of the site at 160 ppb, 460 ppb, and 730 ppb (MW-24S, MW-11S, and MW-23S, respectively) and in the northwest portion of the site at 1,000 ppb (MW-27S).

- Cyanide was identified at concentrations exceeding the 200 ppb groundwater quality standard at only a few locations – each in the northeast portion of the site – with a maximum of just over 1,000 ppb.

Groundwater Analytical Results for Deep Wells in the Sand Unit:

- BTEX concentrations in the deep wells were generally between approximately 20 and 200 ppb, except for the following:
  - In the northeast corner of the site, benzene was identified at concentrations of 340 ppb, 630 ppb, and 970 ppb at MW-11D, MW-12D, and MW-32D, respectively; and xylenes were identified at concentrations of 410 and 1,300 ppb at MW-31D and MW-8D, respectively.
  - In the northwest area of the site, benzene was identified at concentrations of 660 and 1,200 ppb at MW-19D and MW-27D, respectively; and xylenes were identified at a concentration of 590 ppb at MW-3D.
- Naphthalene concentrations were generally less than or near the 10 ppb groundwater guidance value, except at: (1) the line of wells along the eastern property boundary starting with MW-23D to the north and continuing south to MW-6D (with concentrations between 360 ppb and 4,500 ppb, with one value outside this range at 13,000 ppb); and (2) two wells in the northwestern area of the site (MW-3D and MW-22D, with concentrations of 1,400 ppb and 380 ppb, respectively).
- Cyanide was identified at concentrations exceeding the 200 ppb groundwater quality standard at only three locations – each in the northeastern portion of the site (MW-7D, MW-8D, and MW-31D), with a maximum of 550 ppb.

Groundwater impacts in the eastern portion of the site are attributed to soils in the area that contain NAPL and elevated concentrations of MGP-related constituents. Groundwater impacts between the IRM excavation area and the Barge Canal are residual and attributed to a source that was removed by the aggressive and intensive soil and groundwater removal program. Groundwater impacts in the area of the former holders and tar separators are attributed to limited residually-impacted soils that may remain following the extensive soil removal performed as part of the 1970's treatment plant expansion.

The existing analytical data for well clusters MW-13S/13D and MW-14S/14D along the edge of Onondaga Lake provide evidence that groundwater containing constituents at concentrations exceeding standards/guidance values has not migrated westward to the lake. PAHs were identified in the third well cluster along the edge of the lake (MW-15S/15D) at concentrations slightly greater than standards/guidance values, but the concentrations were qualified as "estimated" because they were less than the laboratory reporting limit. The absence of PAHs in well clusters MW-1S/1D and MW-33S/33D, which are located across the railroad tracks and upgradient from MW-15S/15D, supports that the low, estimated levels of PAHs at MW-15S/15D are not likely related to the former MGP.

Assessment of Groundwater Analytical Results for Biogeochemical Parameters

Assessment of the biogeochemical data obtained as part of the RI identified reducing conditions, which are a strong indicator of microbial activity in the site subsurface. The data collected and evaluated included: (1) laboratory analytical results for nitrate, nitrite, sulfate, sulfide, methane, total and dissolved iron, total and dissolved manganese, potassium, chloride, and sodium; and (2) field parameter measurements for dissolved oxygen, oxidation-reduction potential, specific conductance, and pH. The biogeochemical data assessment considered terminal electron accepting processes, including oxygen reduction, denitrification (nitrate reduction), iron and manganese reduction, sulfate reduction, and methanogenesis (carbon dioxide reduction). The microbial utilization of electron acceptors other than oxygen provides evidence that the naturally occurring microbial communities in the site subsurface are active enough to create reducing conditions.

In general, nitrate, iron, and manganese reduction generally occur in mildly reducing environments, and sulfate reduction and methanogenesis occur in more strongly reducing environments. The greatest evidence of microbial activity is in the deeper water-bearing unit beneath the site (the sand unit), where data show that both sulfate reduction and methanogenesis is occurring. There is also evidence of microbial activity in the shallow water-bearing unit beneath the site (fill/Solvay waste). The data show that nitrate, iron, and manganese reduction is occurring in the fill/Solvay waste, but there is little or no sulfate reduction or methanogensis in the unit.

Field measurements of pH in shallow and deep groundwater have generally been between 7 and 10, but have been greater than 10 at certain wells. The pH range for most bacteria is from 6 to 9, but there are bacteria that can tolerate pH of 10 (Atlas, 1984). For instance, a diverse group of heterotrophic bacteria were identified at pH of 10.5 during an investigation of microbial diversity in groundwater in deep artesian wells (Stevens, et.al., 1992). Although the pH has been elevated above the ‘optimal range’ for microbial degradation at several shallow and deep wells at this site, it is still within a range where natural processes can occur to degrade MGP-related compounds at a majority of locations (and can be neutralized to create an optimal environment for microbial degradation, if needed).

1.3.4.4 Sediment

As part of the PSA/IRM field investigation, sediment samples were collected from 7 offsite near-shore sampling locations in Onondaga Lake, west of the site. Chemicals detected in the PSA/IRM sediment samples collected from Onondaga Lake included PAHs, dichloro-benzenes, and certain metals that were not detected in groundwater samples collected from monitoring wells along Onondaga Lake or at the site. The comparison of sediment and groundwater analytical data supports that groundwater beneath the site has not impacted lake sediment and that impacts in lake sediment are non-MGP related.

As previously mentioned, sediment samples were collected by USACE in 1994 from several sampling locations in the Barge Canal. Organic compounds, metals, and total petroleum hydrocarbons were identified at each sediment sampling location. The concentrations and distribution of chemical constituents identified in the USACE sediment samples were typical of upstream/background conditions. Based on these findings, the NYSDEC did not require sediment sampling in the Barge Canal as part of the MGP site investigations. Work activities performed and results obtained for the sediment sampling are summarized in the report titled *Final Data Report, Sediment Sampling and Testing, Onondaga Lake Inlet (Barge Canal Terminal Area), Syracuse, New York*, prepared by Acres International on behalf of USACE, dated January 1995 (USACE, 1995). Further assessment of the sediment analytical results and a determination that the sediments were suitable for placement in a confined disposal facility (CDF) are presented in the *Finding of No Significant Impact and Environmental Assessment* (USACE, 1996). The CDF selected by the USACE for the sediment disposal was a strip of land located adjacent to the Barge Canal, immediately east of Hiawatha Boulevard, and had previously been used for sediment disposal.

1.3.4.5 Surface Water

A mass flux evaluation was performed as part of the Pre-FS Additional Investigation to determine the flux of constituents of interest from groundwater beneath the former MGP site to the Barge Canal surface water. The evaluation was performed using: (1) existing groundwater analytical data; (2) hydraulic conductivity test data and other geologic/hydrogeologic data and information from the RI and SRI; and (3) streamflow data from the United States Geologic Survey (USGS). As part of the evaluation, mixing concentrations for BTEX, naphthalene, and cyanide were calculated and compared to the Class C surface water quality standards/guidance values presented in TOGS 1.1.1. Details of the mass flux evaluation are presented in an April 25, 2008 letter from National Grid to the NYSDEC. Based on the evaluation, the mixing concentrations calculated for each constituent of interest do not exceed the respective Class C surface water quality standards/guidance values.

1.3.4.6 Soil Vapor

As indicated in Subsection 1.2.3, concentrations of VOCs identified in soil vapor at the site were low. The data and information obtained as part of the SVI indicated that the potential for a vapor intrusion is low. The NYSDEC agreed that no further soil vapor investigation was required for this industrial site.

1.3.5 Baseline Human Health Risk Assessment

The baseline HHRA was completed to assess potential current and future risks to human health associated with chemicals at the site. The baseline HHRA environmental media of interest included subsurface soil, groundwater, and (even though unrelated to the site) near-shore sediment in Onondaga Lake.

The HHRA determined that potential human receptors that could be exposed to constituents of interest included future construction workers and utility workers. All predicted non-cancer hazards and cancer risks for construction and utility workers, based on exposure to subsurface soil and groundwater, were acceptable. As mentioned earlier in this report, there are no active users of groundwater at or in the vicinity of the site. All predicted non-cancer hazards and cancer risks for waders, based on exposure to sediment in Onondaga Lake, were acceptable. For further details related to the HHRA, refer to Section 8 of the NYSDEC-approved *Remedial Investigation Report* (ARCADIS, 2003).

1.3.6 Screening-Level Ecological Risk Assessment

The SLERA was completed to evaluate whether ecological receptors would potentially be at risk from exposure to chemicals in environmental media. The environmental media of interest for the SLERA included sediment, surface soil, subsurface soil, and groundwater.

The SLERA determined that the site offers no ecologically relevant habitat for fish and wildlife. In addition, no rare, threatened, and endangered species have been documented on or near the site. It was determined that ecological hazards were not associated with onsite soils or groundwater due to the absence of suitable terrestrial habitat and any complete pathways of exposure. It was also determined that PAHs and metals in sediment (although unrelated to the site) potentially pose low to moderate ecological hazards. For further details related to the SLERA, refer to Section 8 of the NYSDEC-approved *Remedial Investigation Report* (ARCADIS, 2003).

2. Identification of Standards, Criteria and Guidelines (SCGs)

2.1 General

One component involved in identifying, evaluating, and selecting remedial alternatives is a review of standards, criteria, and guidelines (SCGs) that may be applicable to the site and/or contemplated remedial alternatives. Understanding federal, state, and local SCGs assists in identifying remedial objectives for the site, the type of remedial alternatives that may be appropriate, and the scope and extent to which each retained alternative would be designed and implemented.

The SCGs that have been identified for the project are presented in this section.

2.1.1 Definition of SCGs

"Standards and criteria" are cleanup standards, standards of control, and other substantive environmental requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance.

"Guidelines" are non-promulgated criteria, advisories and/or guidance that are not legal requirements and do not have the same status as "standards and criteria"; however, remedial alternatives should consider guidance documents that, based on professional judgment, may be applicable to the project.

It is important to consider SCGs in the FS Report. Doing so allows for the development of each alternative to a reasonably accurate level of detail and provides for a common basis for comparison among alternatives.

2.1.2 Types of SCGs

SCGs have been categorized into the following classifications:

- Chemical-Specific SCGs – These SCGs are typically health- or risk-based numerical values that establish allowable concentrations for constituents associated with the impacted media (soil, groundwater, etc.).

- Action-Specific SCGs – These SCGs are typically technology- or activity-based requirements related to the performance of remediation activities. These types of SCGs typically influence the implementation aspects of a given alternative.

- Location-Specific SCGs – These SCGs include regulations related to activities conducted in floodplains, wetlands, and navigable waters. Location-specific SCGs also include local requirements such as noise mitigation requirements, building permit conditions for permanent or semi-permanent facilities constructed during the remedial activities (if any), sewer discharge requirements, street closing policy, etc.

The SCGs identified for the site are presented in Table 10 and summarized below.

2.2 SCGs

Site-specific SCGs are presented below.

2.2.1 Chemical-Specific SCGs

Because the existing and anticipated future use of this site is industrial, the industrial use SCOs presented in 6 NYCRR Part 375-6.8(b) are applicable for chemical constituents in soil at the site.

Although groundwater in the area of the site is not currently, and will not likely in the future, be used as a potable water supply or salt production, it is subject to the Class GA Groundwater Standards defined in 6 NYCRR Parts 700-705. In the area of the site, there are fresh and saline groundwaters. Fresh groundwater is defined in 6 NYCRR Part 700 as having a chloride concentration equal to or less than 250 ppm or TDS concentration equal to or less than 1,000 ppm. Groundwaters with higher chloride and TDS concentrations are defined as saline groundwaters. Through naturally occurring conditions, the deep groundwater in the area of the site meets NYSDEC's definition of saline groundwaters, with average chloride and TDS concentrations of just over 9,400 ppm and 18,200 ppm, respectively (see Section 1.3.3 and Table 8).

Fresh groundwaters are classified by NYSDEC as Class GA. NYSDEC standards for Class GA groundwaters identify acceptable levels of constituents in fresh groundwater based on potable use. The Class GA groundwater standards are presented in TOGS 1.1.1, which also provides a compilation of guidance values for use where there are no standards.

Saline groundwaters are defined as Class GSA, with best usage defined (NYCRR Part 701.16) as a source of potable mineral waters, or conversion to fresh potable waters, or as a raw material for the manufacture of sodium chloride or its derivatives or similar products. NYSDEC also defines another type of saline groundwaters, Class GSB, which are saline groundwaters that have chloride concentrations in excess of 1,000 ppm or TDS in excess of 2,000 ppm and their best use is as a receiving water for disposal of wastes. The average chloride and TDS concentrations in the deep groundwater meet the definition of a Class GSB saline groundwater. However, this classification shall not be assigned to any groundwaters of the State, unless a determination is made by the commissioner (6 NYCRR Part 701.18). There are no specific chemical standards for GSA or GSB groundwaters identified in TOGS 1.1.1. For the purposes of this FS, Class GA fresh water standards and guidance values for potable use are conservatively applied to the saline groundwater, which is not suitable for human consumption or likely to be used in the future for salt production.

Another set of chemical-specific SCGs that potentially apply to site soil if the soil is to be excavated (and then considered under the Resource Conservation and Recovery Act [RCRA] to be a "waste" that is generated) are the RCRA-regulated levels for TCLP constituents, as outlined in Title 40 of the Code of Federal Regulations (40 CFR) Part 261 and 6 NYCRR Part 371. The TCLP constituent levels are a set of numerical criteria at which solid waste subject to disposition is considered a hazardous waste by the characteristic of toxicity. In addition, the hazardous characteristics of ignitability, reactivity, and corrosivity also may apply depending on the results of waste characterization activities. Based on the TCLP soil sampling performed as part of the previous investigations at the site, constituents have not been identified at concentrations exceeding the TCLP constituent levels in leachate generated by TCLP sample extraction. Based on that data, soil removed as part of the Soil/Groundwater Removal IRM was transported for offsite disposal as a nonhazardous waste and, if additional soil were to be removed in the future, the data support that it also would be transported for offsite disposal as a nonhazardous waste.

2.2.2 Action-Specific SCGs

Action-specific SCGs include topics such as general health and safety requirements and handling and disposing of hazardous waste (including permitting, manifesting, transportation and disposal, and treatment and disposal facility operations).

Remedial actions conducted within the site would need to comply with applicable requirements established by the Occupational Safety and Health Administration (OSHA). General industry standards, which specify training requirements for workers involved with hazardous waste operations and time-weighted average concentrations for worker exposure to various compounds, are outlined under OSHA (29 CFR 1910). The types of safety equipment and procedures to be followed during site remediation are specified under 29 CFR 1926, and recordkeeping and reporting-related regulations are outlined under 29 CFR 1904. Trenching and excavation requirements are outlined under 29 CFR 1926 (Parts 650-652). In addition to the requirements outlined under OSHA, the preparedness and prevention procedures, contingency plan, and emergency procedures outlined under RCRA (40 CFR 264) are potentially relevant and appropriate to those remedial alternatives that include the generation, treatment, or storing hazardous wastes.

Another set of action-specific SCGs are land disposal restrictions (LDRs), which regulate land disposal of hazardous wastes. The LDRs are applicable to alternatives involving the disposal of hazardous waste (if any). Because MGP wastes resulted from historical operations that ended before the passage of RCRA, MGP-impacted material is only considered a hazardous waste in New York if it is removed (generated) and it exhibits a characteristic of a hazardous waste. However, if the MGP-impacted material only exhibits the hazardous characteristic of toxicity for benzene (D018), it is conditionally exempt from the hazardous waste management requirements (6 NYCRR Parts 370-374 and 376) when destined for thermal treatment in accordance with the requirements set forth in NYSDEC's TAGM 4061 titled, "Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants" (NYSDEC, 2002b). If MGP-related hazardous wastes are destined for land disposal in New York, the state hazardous waste regulations apply, including LDRs and alternative LDR treatment standards for hazardous waste soil.

The LDR for hazardous waste soils is a 90% reduction in constituent concentration capped at 10 times the Universal Treatment Standards (10xUTS). This means that if concentrations of constituents in excavated soil exceed 10xUTS, the soil would have to be treated to reduce constituent concentrations to below 10xUTS prior to land disposal. Under the Phase IV, Part 2 regulations promulgated by the USEPA in 1998, characteristically hazardous MGP-impacted soil may be rendered non-hazardous after generation at the remediation site by mixing the soil with clean materials to render the impacted soil amenable to treatment and to reduce concentrations of the chemical constituents in soil to less than the hazardous characteristic(s). Following mixing, the soil would no longer be considered a hazardous waste, but would still have to meet the LDR requirements.

The United States Department of Transportation (USDOT) and New York State rules for the transport of hazardous materials are provided under 49 CFR Parts 107 and 171.1 through 172.558 and 6 NYCRR 372.3. These rules include procedures for packaging, labeling, manifesting, and transporting of hazardous materials and would potentially be applicable to the transport of hazardous materials under any remedial alternative. New York State requirements for waste transporter permits are included in 6 NYCRR Part 364, along with standards for the collection, transport, and delivery of regulated wastes within New York. The transport of waste materials offsite would need to be properly permitted.

Based on the TCLP data generated by the previous investigations (as previously discussed), it is unlikely that additional soil removed from the site would exhibit the hazardous characteristic of toxicity. Therefore, the action-specific SCGs related to hazardous waste management (LDRs/ UTSs, USDOT transportation requirements, etc.) would not be applicable.

2.2.3 Location-Specific SCGs

Location-specific SCGs include local requirements such as building permit conditions for permanent or semi-permanent facilities constructed during the remedial activities (if any), and influent requirements of the STP if water is to be treated at the site and discharged to the STP. Location-specific SCGs also generally include floodplain and wetland regulations, restrictions promulgated under the National Historic Preservation Act, Endangered Species Act, and other federal acts. However, as indicated by the SLERA performed as part of the RI (refer to the *Remedial Investigation Report* [ARCADIS, 2003] for details), a review of NYSDEC Freshwater Wetlands Maps and National Wetland Inventory Maps and a field reconnaissance during the RI confirmed the absence of wetlands within the site boundaries. In addition, the SLERA indicated that rare, threatened, and endangered species have not been documented on or near the site.

3. Remedial Action Objectives

This section presents the RAOs that have been developed for the site. Based on considerations specific to the site (e.g., detected constituents, site use, and potential exposure pathways), RAOs are identified to maintain and/or achieve conditions that are protective of public health and the environment. The RAOs that have been developed for the site are consistent with the remedy selection process described in 6 NYCRR Part 375 and guidance presented in the documents titled *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (CERCLA Interim Final 1988) and *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (DER-10 2002). The RAOs are based on the results of the completed investigations, the SCGs presented in Section 2 of this FS Report, and the conclusions drawn from the baseline HHRA and SLERA. The RAOs were used to identify the remedial alternatives presented in Section 4 of this FS Report. The RAOs developed for the site are presented in the following table, and further discussed in the text that follows the table.

TABLE 3-1
REMEDIAL ACTION OBJECTIVES

Media	Constituents/ Materials of Concern	Remedial Action Objectives
Soil	BTEX PAHs NAPL	RAOs for Public Health Protection: - Prevent ingestion/direct contact with impacted subsurface soil. - Prevent inhalation of or exposure of persons to constituents volatilizing from soil.
		RAO for Environmental Protection: - Prevent the migration of chemical constituents that would result in exceedances of groundwater or surface water quality standards.
Groundwater	BTEX PAHs Cyanide	RAOs for Public Health Protection: - Prevent ingestion of groundwater with constituent levels exceeding Class GA water quality standards. - Prevent contact with, or inhalation of, volatiles from impacted groundwater.
		RAO for Environmental Protection: - Restore the groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable. - Prevent offsite migration of groundwater containing MGP-related constituents at concentrations exceeding Class GA water quality standards, to the extent practicable.

Based on the reconnaissance and sampling performed as part of the Soil Vapor Investigation, which identified ongoing petroleum and solvent use inside the Main Building Complex and County Maintenance Building and a low potential for soil vapor intrusion, an RAO is not needed for soil vapor.

The subsections below describe the development of the RAOs identified for the site.

3.1.1 Soil

The majority of the former MGP site is covered by wastewater treatment facilities, buildings, driveways, paved parking lots, concrete sidewalks, landscaping, and mowed lawn, with no exposed surface soil. Accordingly, RAOs specific to surface soil are not required.

Based on the findings of the HHRA, potential direct contact with subsurface soil is likely to occur only during construction/excavation activities (including utility work). Inhalation of or exposure to constituents volatilizing from soil could occur during such activities. The HHRA indicated that predicted non-cancer hazards and cancer risks for construction and utility workers, based on exposure to subsurface soil, were acceptable. Although predicted risks were determined to be acceptable, two RAOs have been developed for subsurface soil to reduce potential exposures from direct contact and inhalation.

An RAO was also developed for subsurface soil to be protective of the environment. This third RAO focuses on the potential for MGP-related constituents in soil to adversely affect groundwater at the site. This RAO considers the potential for MGP-related constituents to serve as a “source” of impacts to groundwater. The development of remedial alternatives to address this RAO (Section 4) considers existing groundwater data and current/future potential exposure pathways.

3.1.2 Groundwater

The first RAO for groundwater considers potential ingestion of constituents in groundwater at concentrations exceeding groundwater quality standards. This pathway is already limited because groundwater is not currently used for potable purposes at or in the vicinity of the site (the area is supplied by public water). As previously mentioned, high salinity and TDS levels render the groundwater unusable for human consumption. In addition, existing provisions in place in Title 10, Part 5 of the New York State Sanitary Code (10 NYCRR Part 5-1.31) restrict the use of groundwater when public water is available.

The second RAO for groundwater addresses potential contact with or inhalation of constituents or NAPL in groundwater. As mentioned in Section 1, groundwater at the site is relatively shallow at approximately 5 to 10 feet bgs. As a result, there is a potential for human exposure to impacted groundwater via direct contact or inhalation of volatiles during construction/excavation work and operation and maintenance of a treatment system. This potential exposure pathway could be mitigated by using properly trained personnel and personal protective equipment. The remedial alternatives evaluated in Section 5 of this report also address this RAO via the establishment of institutional controls.

The third RAO for groundwater is for environmental protection and focuses on restoring groundwater to pre-disposal/pre-release conditions, to the extent practicable, by decreasing (to the extent practical) the extent or magnitude of constituents and NAPL in soil. In doing so, it is expected that overall groundwater conditions would improve and the concentrations of constituents in groundwater would be reduced.

The fourth RAO for groundwater addresses offsite migration of groundwater that contains MGP-related constituents at concentrations exceeding the Class GA water quality standards/guidance values. The development of groundwater remedial measures to address this RAO focuses on groundwater flowing toward the Barge Canal. Although the mass flux evaluation performed as part of the Pre-FS Additional Investigation indicated that constituent concentrations in groundwater currently flowing from the site toward the Barge Canal do not result in exceedances of Class C surface water quality standards/guidance values, measures will be considered that would prevent, to the extent practicable, groundwater flowing from the site from containing MGP-related constituents at concentrations exceeding Class GA levels.

4. Identification and Screening of Technologies and Development of Remedial Alternatives

This section identifies remedial alternatives to achieve the RAOs described in Section 3.1. As an initial step, general response actions (GRAs) are identified to address impacted soil and groundwater. GRAs are medium-specific and describe actions that will satisfy the RAOs, and may include various actions such as treatment, containment, institutional controls, excavation, or any combination of such actions. From the GRAs, potential remedial technology types and process options are identified and screened to determine those that are the most appropriate for the site. Technologies/process options that are retained following the screening are used to develop remedial alternatives. Detailed evaluations of these remedial alternatives are presented in Section 5.

According to the USEPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988a), the term "technology type" refers to general categories of technologies while "technology process options" refers to specific processes within each technology type. For each GRA identified, a series of technology types and associated process options has been assembled. In accordance with the USEPA's guidance document, each technology type and associated processes are briefly described and evaluated against preliminary and secondary screening criteria. This approach was used to determine if the application of a particular technology type or process option is applicable given the site-specific conditions for remediation of the impacted media. Based on this screening, remedial technology types and process options were eliminated or retained and subsequently combined into potential remedial alternatives for further, more detailed evaluation. This approach is consistent with the screening and selection process provided in the NYSDEC's TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites* (NYSDEC, 1990).

The NYSDEC Division of Environmental Remediation's (DER's) *Presumptive/Proven Remedial Technologies* (DER-15) allows for use of industry experience related to remedial cleanups to focus the evaluation of technologies to those that have been proven to be both feasible and cost-effective for specific site types or constituents. The objective of DER-15 is to use experience gained at remediation sites and scientific and engineering evaluation of performance data to make remedy selection quicker and consistent. In addition, known future use of the former MGP property by Metro STP was considered during the screening process.

4.1 General Response Actions

Based on the RAOs identified in Section 3.1, the following site-specific GRAs were established for subsurface soil and groundwater at the site:

- No Further Action
- Institutional Controls
- In-Situ Containment/Controls
- In-Situ Treatment
- Removal
- Ex-Situ Onsite Treatment
- Offsite Treatment and/or Disposal

Within each of these GRAs, remedial technology types were identified for each impacted medium (soil and groundwater) as described below. A No Further Action GRA has been included and retained throughout the screening evaluation as required by USEPA and NCP guidance.

4.2 Identification of Remedial Technologies

Remedial technologies potentially applicable for achieving the RAOs for the site were identified through a variety of sources including vendor information, engineering experience and review of available literature, including the following documents:

- NYSDEC TAGM 4030, titled “Selection of Remedial Actions at Inactive Hazardous Waste Sites” (NYSDEC, 1990).
- *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (Interim Final)* (USEPA, 1988a).
- *Technology Screening Guide for Treatment of CERCLA Soils and Sludges* (USEPA, 1988b).
- Technology Briefs – Data Requirements for Selecting Remedial Action Technologies, (USEPA, various dates).
- *Remediation Technologies Screening Matrix and Reference Guide* (USEPA and United States Air Force [USAF], 1993).
- *Management of Manufactured Gas Plant Sites* (Gas Research Institute, 1996).

4.3 Screening of Remedial Technologies

The following subsections summarize the preliminary and secondary screening evaluations for the identified remedial technologies.

4.3.1 Preliminary Screening

Preliminary screening focuses the number of potentially applicable technology types on the basis of technical implementability and effectiveness (long- and short-term). Technical implementability was evaluated using site characterization information collected during the site investigations, including the types and concentrations of impacts and subsurface conditions, to screen out technology types and process options that could not effectively be implemented at the site. The general effectiveness of a technology is measured by its ability to meet the established RAOs.

4.3.1.1 Surface Soil

As presented in Section 1.3.5, complete exposure pathways do not exist for human exposure to surface soil. RAOs, therefore, were developed to reflect potential exposure to subsurface soil containing MGP-related constituents. Maintaining the existing surface cover material at the former MGP property would achieve these RAOs and therefore will be retained throughout the screening process and included in each alternative. Screening of additional technology types and process options for surface soil is therefore not necessary.

4.3.1.2 Subsurface Soil

The following remedial technologies were identified to address the GRAs identified for subsurface soil:

- No Further Action – No additional active remedial measures would be implemented to address the subsurface soils.
- Institutional Controls – Remedial technologies associated with this GRA consist of non-intrusive administrative controls focused on minimizing contact with impacted subsurface soil.
- In-Situ Containment/Controls – Remedial technologies associated with this GRA include addressing the mobility and/or exposure to impacted subsurface soil without physical removal from the ground surface. Remedial technology types evaluated under the preliminary screening process consisted of surface control, capping, and containment.

- In-Situ Treatment – Remedial technologies associated with this GRA involve treating impacted subsurface soil without physical removal. Remedial technology types evaluated for the site included immobilization, chemical treatment, and biological treatment.

- Removal – Technologies associated with this GRA involve removal of impacted subsurface soil from the ground.

- Ex-Situ Onsite Treatment – Remedial technology types associated with this GRA consider the treatment of materials after they have been removed from the ground. Ex-situ onsite treatment technologies evaluated under the preliminary screening evaluation consist of immobilization, extraction (thermal desorption), and thermal destruction.

- Offsite Treatment and/or Disposal – Remedial technology types associated with this GRA consider the offsite treatment of impacted subsurface soil following removal from the ground. These remedial treatment technologies consisted of recycle/reuse, extraction (thermal desorption) and disposal.

4.3.1.3 Groundwater

The following remedial technologies were identified to address the GRAs identified for groundwater:

- No Further Action – No additional active remedial measures would be implemented to address groundwater.

- Institutional Controls – Remedial technology types associated with this GRA generally consist of non-intrusive administrative controls focused on minimizing contact or use of the groundwater. Institutional controls evaluated under the preliminary screening consisted of groundwater use restrictions in the form of governmental and/or proprietary controls, enforcement and/or permit controls.

- Monitored Natural Attenuation – Remedial technology types associated with this GRA involve monitoring to evaluate the extent to which constituents in groundwater are being degraded by microbial activity in the site subsurface.

- In-Situ Containment/Controls – Remedial technology types associated with this GRA involve addressing constituents in groundwater without physically extracting the groundwater. Remedial technology types evaluated under the preliminary screening process consisted of hydraulic control and physical containment.

- In-Situ Treatment – Remedial technology types associated with this GRA involve treating constituents in groundwater without physically extracting the groundwater. Remedial technology types evaluated included biological treatment, chemical treatment, and extraction (i.e., in-situ stripping).

- Removal – Remedial technology types associated with this GRA consider removal of groundwater for treatment. The technology type evaluated under the preliminary screening process was groundwater extraction.

- Ex-Situ Onsite Treatment – Remedial technology types associated with this GRA consider the treatment of groundwater after it has been removed. Ex-situ onsite remedial treatment technologies evaluated to address the extracted groundwater under the preliminary screening evaluation consisted of chemical treatment and physical treatment.

- Offsite Treatment and/or Disposal – Remedial technology types associated with this GRA consider the offsite treatment and disposal of site groundwater that has been removed. Technology process options evaluated to address groundwater consisted of discharge to the Metro STP and discharge to a commercially operated treatment facility.

4.3.2 Secondary Screening

To advance the alternatives development process, process options for subsurface soil and groundwater were subject to a secondary screening. The objective of the secondary screening was to identify, when possible, one process option to represent each technology type and for comparison to the following secondary screening criteria:

- Effectiveness – This criterion is used to evaluate each process option in terms of:
  - Effectiveness at reducing the toxicity, mobility, and/or volume of chemical constituents in the impacted medium.
  - Impacts to human health and the environment during the construction and implementation phase.
  - Reliability with respect to the nature and extent of impacts and conditions at the site.

- Implementability – This criterion encompasses both the technical and administrative feasibility of implementing a process option. Because technical implementability was used during the preliminary screening, this subsequent, more detailed evaluation places more emphasis on the institutional aspects of implementability (e.g., the ability to obtain necessary permits for offsite actions, the availability of treatment, storage, and disposal services, etc.). This criterion also evaluates the ability to construct the process option, and availability of specific equipment and technical specialists to design, implement and operate and maintain the equipment.

- Relative Cost – This criterion evaluates the overall cost required to implement the remedial technology. As a screening tool, relative capital and operation and maintenance (O&M) costs are used rather than detailed cost estimates. For each technology process option, relative costs are presented as low, moderate, or high, and made on the basis of engineering judgment and industry experience.

The results of the secondary screening of technology types and process options are presented in the subsections below.

4.3.2.1 Subsurface Soil

This section identifies the remedial technology types and process options that were retained for subsurface soil for further evaluation.

<u>No Further Action</u> – Consistent with NCP and USEPA guidance documents, the No Further Action alternative must be developed and examined as a baseline to which other remedial alternatives are compared. Although this technology does not include active remedial measures, natural attenuation processes would potentially reduce the toxicity, mobility, and volume of impacts to the environment over an extended period of time. However, monitoring of site conditions would not be conducted to document the natural attenuation processes. No action is required to implement the technology, and there is no cost associated with it.

<u>Institutional Controls</u> – Institutional controls (e.g., governmental, proprietary, enforcement, or permit controls and/or informational devices such as signs, postings, etc.) were retained for further evaluation. One element of the institutional controls for soil would be a SMP that would identify requirements (e.g., environmental oversight, personal protective equipment requirements, and excavation procedures) for conducting intrusive activities at the former MGP and for handling and disposing of potentially impacted materials that may be encountered during subsurface activities. Although this technology does not include active remedial measures, natural attenuation processes would potentially reduce the toxicity, mobility, and volume of impacts to the environment over an extended period of time. Institutional controls would not treat, contain, or remove impacted subsurface soil, but would support a reduced potential for contact with, inhalation or ingestion of, MGP-related constituents of interest. Additionally, institutional

controls could enhance the effectiveness and implementability of other technologies/process options. This technology is readily implementable and has a low relative cost.

In-Situ Containment/Controls – Surface controls (vegetation, pavement, buildings) were retained for further consideration. The existing cover materials on the former MGP site will continue to limit exposure to subsurface soil containing constituents of interest.

Other capping options evaluated during the secondary screening included clay/soil, asphalt and multimedia caps. Capping options are easily implemented, and their relative costs are comparable (moderate to high). However, no capping options were retained for further evaluation because capping would not reduce toxicity or volume of impacts or prevent further migration of MGP-related constituents to a greater extent than the current surface conditions. In addition, given the foreseeable future use of the property, maintaining the existing cover materials is considered protective, and more cost effective, than each of the capping technology types.

Containment options included sheetpile and slurry walls. Neither sheetpile nor slurry walls were retained for further evaluation as a stand-alone technology. While both process options would contain, and therefore reduce the migration (i.e., mobility) of constituents in soil, neither would effectively treat nor remove the constituents. Underground obstructions and utilities (refer to Figure 9 for subsurface utility locations in the northeastern portion of the site) make these options difficult to implement. In addition, these process options could potentially affect existing site conditions by, for example, creating a hydraulic mound and/or change in groundwater flow direction. Therefore, additional measures (e.g., groundwater extraction) would also likely be needed. The relative cost of this technology is high.

In-Situ Treatment – The in-situ remedial treatment technologies identified for subsurface soil include immobilization, steam injection/extraction (steam injection to mobilize constituents followed by extraction), chemical treatment, and biological treatment.

Solidification/stabilization is considered effective for immobilizing constituents of interest and was retained for further evaluation. The technology is potentially implementable with moderate capital and O&M costs, pending confirmation via bench-scale testing. The presence of physical subsurface obstructions such as underground utility lines, historic foundations, and/or debris, and onsite vehicular and pedestrian traffic could affect the implementability and effectiveness of solidification/stabilization. In addition, the proximity of the area that would be subject to solidification/stabilization to the existing STP facilities may limit the implementability of this technology. The possibility of Metro STP plant expansion in the future would need to be considered when selecting an ISS grout mix for design.

Various steam injection/extraction options were not retained due to concerns regarding potential mobilization of NAPL, reliability of vapor recovery, available space for treatment equipment, the presence and proximity of underground utilities, and potential public acceptance issues.

The chemical treatment option considered was chemical oxidation. A bench-scale and/or pilot-scale treatability study would be required to estimate oxidant demand and delivery. Anticipated high oxidant demand would limit the cost-effectiveness of this option. Multiple treatments with highly reactive oxidants would be required. In addition, there is limited space available onsite for process chemical storage, and proximity to underground utilities onsite is a concern. Rebound of concentrations would also likely occur following treatment. Therefore, this option was not retained for further evaluation.

Biological treatment options include biodegradation, enhanced biodegradation, and biosparging. These options are not effective for treating NAPL or reducing concentrations of heavier PAHs adsorbed to subsurface soil. Therefore, biological treatment options for subsurface soil were not retained for further consideration.

Removal – Excavation of subsurface soil was retained for further evaluation. This technology type and process option is a proven process for removing impacted material. Excavation of soil is considered implementable. However, site-specific constraints (e.g., existing Metro STP structures, underground utilities, size of unoccupied areas at the site, and logistics of site, etc.) could limit the extent to which excavation could be implemented. Equipment and labor capable of soil excavation is readily available, and while it has a high capital cost, O&M costs are considered low.

Offsite Treatment and/or Disposal – Remedial technology types and process options eliminated from evaluation consisted of recycle/reuse (asphalt concrete batch plant, brick/concrete manufacture, and co-burn in a utility boiler), and extraction (low-temperature thermal destruction [LTTD]). Offsite disposal was retained due to the ease of implementability and effectiveness. In addition, multiple offsite treatment technologies could be utilized to treat or dispose of media with different concentrations of impacts. The relative cost of these technologies is moderate to high.

4.3.2.2 Groundwater

This section describes the basis of selection for representative groundwater remedial technology types and process options that were retained for further evaluation. As previously mentioned, groundwater at and in the vicinity of the site is not used for potable water, and the greatest potential for human contact with impacted groundwater is related to potential future excavation/

construction activities that would encounter groundwater and operation and maintenance of a treatment system.

No Further Action – Consistent with the requirements of the NCP, the No Further Action alternative was retained as a remedial technology during the secondary screening step. Although this technology does not include active remedial measures, natural attenuation processes would potentially reduce the toxicity, mobility, and volume of impacts to the environment over an extended period of time. However, monitoring of site conditions would not be conducted to document the natural attenuation processes. No action is required to implement the technology, and there is no cost associated with it.

Institutional Controls – Institutional controls for groundwater involving use restrictions (in the form of governmental, proprietary, enforcement or permit controls and/or informational devices [e.g., signs, postings, etc.] and notification requirements) were retained for further evaluation. One element of the institutional controls for groundwater would be an SMP that would identify guidelines to be followed for proper management of impacted groundwater that may be encountered and extracted during future intrusive activities. Institutional controls, in and of themselves, would not call for the treatment, containment, or removal of site groundwater, although natural attenuation of constituents in groundwater would occur over an extended period of time and would not be affected by institutional controls. Institutional controls would also support a reduction in potential human exposure to groundwater containing constituents of interest and could enhance the effectiveness of other technologies/technology process options. Institutional controls are readily implementable and have a low relative cost.

Monitored Natural Attenuation – Monitored natural attenuation was retained for further evaluation. Under this technology, remedial activities would not be performed to contain or remove constituents in site groundwater. However, constituents in groundwater would be subject to degradation by microbial activity. Based on the sampling and analysis for geochemical parameters performed during the previous investigations, a reducing environment is present in a majority of the aquifer and provides opportunities for microbial communities to naturally degrade dissolved BTEX and PAHs in groundwater. Natural attenuation of the groundwater impacts would be appropriate in the absence of an ongoing contribution or "source" of BTEX and PAHs and is supported by the site data. Long-term monitoring would be performed to evaluate the effectiveness of MNA over an extended period of time. The reduction of constituent concentrations in groundwater could be supported by measures to further address certain impacted subsurface soil.

Protection of the environment would be achieved through natural attenuation. Although BTEX and certain PAHs were identified at concentrations exceeding groundwater quality standards/

guidance values in several wells along and just past the northern property boundary (along the edge of the Barge Canal), the mass flux evaluation demonstrated that concentrations of constituents in groundwater flowing from the site to the Barge Canal do not result in exceedances of Class C surface water quality standards. Over time, concentrations of these constituents are anticipated to decrease due to attenuation.

The existing analytical data for well clusters MW-13S/13D and MW-14S/14D along the edge of Onondaga Lake provide evidence that groundwater containing constituents at concentrations exceeding standards/guidance values has not migrated westward to the lake. PAHs were identified in the third well cluster along the edge of the lake (MW-15S/15D) at concentrations slightly greater than standards/guidance values, but the concentrations were qualified as "estimated" because they were less than the laboratory reporting limit. The absence of PAHs in well clusters MW-1S/1D and MW-33S/33D, which are located across the railroad tracks and upgradient from MW-15S/15D, supports that the low, estimated levels of PAHs at MW-15S/15D are not likely related to the former MGP.

The relative cost to implement monitored natural attenuation is low.

<u>In-Situ Treatment</u> – The in-situ remedial treatment technologies identified for groundwater include biological treatment, chemical treatment, and extraction (in-situ stripping).

The biological treatment option evaluated during the secondary screening consisted of enhanced bioremediation. This technology was retained because it could potentially: (1) reduce concentrations of dissolved BTEX and PAHs in groundwater; (2) result in only minimal impacts to human health and the environment during implementation; and (3) be implemented for a relatively low- to moderate-cost. As previously discussed in Section 1.3.4.3, existing data support that natural degradation by existing microbial communities is occurring. The rate and extent to which the dissolved constituents in groundwater are degraded could be increased by enhancements (e.g., introduction of oxygen and/or other amendments, as appropriate) to increase microbial activity. Because enhanced bioremediation would involve application of innocuous materials into the subsurface (e.g., oxygen) and would require only a minimal amount of construction and O&M, it would present only minor risks to short- and long-term human health associated with construction and implementation. Enhanced bioremediation would require bench-scale and pilot testing to verify the reliability, effectiveness, and approximate timeframe to achieve RAOs.

The chemical treatment option evaluated during the secondary screening included chemical oxidation. This option was eliminated from further consideration primarily because of concerns over its potential effectiveness at reducing dissolved phase concentrations over the long-term, potential negative impacts to human health and the environment associated with construction and implementation, and high costs. Continued dissolution of constituents from NAPL and “residually-impacted soil” (soil that exhibits trace NAPL and/or constituents at concentrations slightly greater than SCOs but is inaccessible due to building or treatment facility foundations) would require multiple/frequent costly treatments over a long period of time (i.e., until all NAPL has dissolved). These treatments would increase the potential for negative short- and long-term human health impacts to construction workers and Metro STP personnel via: (1) handling of potentially dangerous materials (chemical oxidant) required for treatment system operation; and (2) contacting subsurface impacts during O&M of treatment systems. Also, from an implementability standpoint, a large amount of chemical oxidant would be required to overcome the demand from natural organic material in the subsurface, and delivery of chemical oxidant to impacted areas may be difficult due to heterogeneities and obstructions in the subsurface. Other concerns with this alternative are as follows: (1) between individual treatment applications, groundwater migrating offsite may contain constituents at concentrations exceeding cleanup objectives (due to dissolution of constituents from NAPL/ residually-impacted soil); and (2) during or after individual treatment applications, chemical oxidant could potentially migrate to the Barge Canal if it were not completely consumed.

The extraction options evaluated during the secondary screening included dynamic underground stripping (DUS) and hydrous pyrolysis/oxidation (HPO). DUS involves injection of steam and air into the subsurface to create a “steam front” to sweep constituents toward extraction wells. Extracted vapors are then treated (e.g., using carbon, steam boilers, etc.). HPO is based on the principles of DUS and involves rapidly oxidizing constituents at steam temperatures. In HPO, constituents are destroyed in place without the surface treatment that is required in DUS. These options were not retained due to concerns over their potential effectiveness and reliability, particularly at this site where impacts are relatively shallow. These technologies rely on boiling the subsurface environment, which would be difficult in shallow soils without adequate cover to insulate the zone being treated by steam. Use of steam to heat the subsurface requires a considerable amount of energy, and therefore results in high costs. Other concerns with implementing these technologies include the mobilization and recovery of dissolved constituents, the reliability of vapor recovery, and potential public acceptance issues.

<u>In-Situ Containment/Controls</u> – Containment of the aqueous plume was considered as an alternate to plume restoration to attain groundwater quality standards, but was not retained. Containment by pumping and treating impacted groundwater would not be technically feasible given the high pumping rates that would be needed over a large area for an extended period of time. Pumping volumes would also include flow from the adjacent water bodies, greatly increasing the volume of water that would need to be handled/treated to attain full containment. Containment of the aqueous plume via pumping combined with the installation of a barrier wall

was also considered. Based on review of available information (including geotechnical borings completed as part of the treatment plant expansion in the 1970s and the borings completed as part of the PSA, RI, and SRI), the depth of a suitable lower hydraulic conductivity layer (e.g., silty clay or clay) unit for installation of a containment barrier is variable and potentially excessive. Therefore, it would not be cost effective to install a barrier wall with the intent of containing onsite groundwater. Containment would not effectively treat or remove MGP-related impacts. The relative costs of the containment technologies would be high to extremely high.

<u>Groundwater Removal, Ex-Situ Onsite Treatment, and Offsite Treatment and/or Disposal</u> – Each of these technology types/process options were not retained for further evaluation as a standalone alternative. Groundwater removal and treatment/disposal is a component of certain soil removal alternatives, but only in the capacity to remove groundwater and surface water entering the excavation areas.

The primary objectives of groundwater removal would be to recover dissolved phase constituents from groundwater while maintaining hydraulic control of the site. However, as previously mentioned, groundwater extraction (without the aid of physical barriers) to maintain hydraulic control of the site would not be feasible. Subsurface site conditions would necessitate extremely high groundwater extraction rates, particularly close to the adjacent water bodies. While groundwater containing dissolved phase MGP-related compounds would be captured and treated, the continued dissolution of MGP-related impacts from NAPL to groundwater would require constant, expensive treatment. The high costs would be related to the unique site conditions (the presence of MGP-related constituents, high groundwater pH, salinity, etc.) and large flow rates that would necessitate a treatment facility separate and independent from the existing Metro STP facility. Furthermore, the Metro STP may not be able to continuously accept the volume of water that would be discharged following pre-treatment in a separate onsite facility.

Conclusion of treatment would depend on nearly complete dissolution of NAPL, which is not likely in the foreseeable future (even with soil remediation). Recall that even with the extensive dewatering performed as part of the IRM (283 million gallons of water were pumped and treated onsite from September 2001 through February 2003), post-IRM groundwater monitoring indicated that there were little to no decreases in groundwater concentrations hydraulically downgradient from the Soil/Groundwater Removal IRM excavation area, and concentrations in this groundwater were still elevated relative to applicable standards. Further groundwater removal and treatment would therefore be anticipated to have limited effectiveness in: (1) reducing the concentrations of constituents in groundwater; or (2) reducing the size of the impacted groundwater area. In addition, based on the existing footprint of the Metro STP and potential for future expansion, space needed to construct long-term treatment facilities required under this option would be relatively limited. The relative cost of these technologies/process options is high to extremely high.

4.4 Development of Remedial Alternatives

This section uses the screened technologies presented in Section 4.3 to develop remedial alternatives for the site. The assembled subsurface soil and the groundwater remedial alternatives are summarized in Sections 4.4.1 and 4.4.2, respectively.

4.4.1 Soil Remedial Alternatives

Five remedial alternatives, SM1 through SM5, have been identified to address the RAOs for subsurface soil at the site. In keeping with NCP and USEPA requirements, Alternative SM1, No Further Action, is provided as a basis for comparison for the other alternatives. Alternative SM2, Institutional Controls, in the form of governmental, proprietary, enforcement, or permit controls is evaluated as a subsurface alternative. Alternative SM3, In-Situ Stabilization (ISS) and Institutional Controls, consists of stabilizing the majority of the remaining identified MGP-impacted materials and implementing institutional controls. This alternative focuses on the northeastern portion of the site where, based on existing data, most of the soil exhibiting NAPL and PAHs at concentrations greater than 500 ppm remains at the site. In the process of developing the remedial alternatives, two removal-based alternatives were considered (Alternatives SM4 and SM5), which also include institutional controls. Alternative SM4 includes the removal of soil from the same area included under Alternative SM3. Alternative SM5 focuses on soil that exhibits constituents at concentrations exceeding the industrial use SCOs presented in 6 NYCRR Part 375-6.8(b).

The soil removal alternatives do not consider excavation to unrestricted use SCOs because: (1) the site is currently zoned industrial; (2) the site is currently, and will for the long term into the future be, used for industrial purposes; and (3) attainment of the industrial use SCOs would meet the program goal under 6 NYCRR Part 375 of eliminating a significant threat.

Brief descriptions of the potential remedial alternatives for subsurface soils are presented below. Detailed descriptions are presented in Section 5.

4.4.1.1 Alternative SM1 – No Further Action

Under this alternative, no additional active remedial measures would be conducted.

4.4.1.2 Alternative SM2 – Institutional Controls

This alternative includes implementation of a land use restriction (in the form of a deed restriction or environmental easement), preparation of an SMP, and maintenance of the chain-link fence that currently exists around the property boundary. In addition, impacted soil would continue to be covered by wastewater treatment facilities, buildings, driveways, paved parking lots, concrete sidewalks, landscaping, mowed lawn, etc.

4.4.1.3 Alternative SM3 – In-Situ Soil Stabilization and Institutional Controls

The ISS under this alternative involves mixing Portland cement or other pozzolanic materials into the soil to form a solidified matrix to: (1) reduce leaching and mobility of MGP-related constituents; (2) minimize the amount of free liquids in the soil pore space; and (3) decrease the hydraulic conductivity of the soil. ISS would be applied to soil in the northeastern portion of the site (east of the Main Complex Building and the County Maintenance Building) within the limits shown on Figure 9. As shown on Figure 9, ISS would be performed to depths of approximately 22 or 24 feet bgs, depending on location, within an approximately 20,600 sf contiguous area. This area encompasses the following sampling locations (outside of the locations at the site where soil has already been removed as part of the Soil/Groundwater Removal IRM): (1) each location where NAPL without limiting qualifiers (e.g., “black sticky NAPL”, “product”, “thick product”, etc.) has been identified; (2) most locations where only trace NAPL (e.g., “lenses”, “laminations”, etc.) has been identified; and (3) most locations where total PAHs have been detected at concentrations greater than 500 ppm. Certain soil remaining immediately adjacent to or below the Main Building Complex is residually-impacted, but is not accessible for stabilization under this alternative.

Subsurface conditions encountered in the proposed ISS treatment area are illustrated in cross-section view on the charts presented in Attachment A (refer to Figure A-1 of this attachment for a cross-section location map). These charts support the selection of the remedial limits under this alternative. Chart 1 shows: (1) each soil boring location in the northeastern portion of the site; (2) locations/intervals where NAPL (without limiting qualifiers) was observed; (3) locations/intervals where total PAHs were detected at concentrations greater than 500 ppm; and (3) remedial limits proposed under the alternative. Chart 2 presents the same information as Chart 1, but also adds: (1) all intervals at each boring location where samples were collected for laboratory analysis; and (2) depictions of where NAPL in trace amounts (e.g., lenses, laminations, etc.) was encountered.

This alternative would also involve jet grouting near subsurface utilities, implementation of a quality assurance/quality control (QA/QC) program, establishment of the same institutional controls described for Alternative SM2, and other activities as detailed in Section 5.

4.4.1.4 Alternative SM4 – Focused Soil Excavation and Institutional Controls

This alternative involves excavating unsaturated and saturated subsurface soil for offsite disposal. Soil would be removed from the same area proposed under Alternative SM3 for ISS (refer to Figure 9). The volume of soil to be removed under this alternative is approximately 17,400 cubic yards (cy). This alternative would involve temporary relocation of subsurface utilities, installation of a sidewall support system (e.g., sheetpile wall), excavation dewatering, water treatment, soil stabilization, waste characterization and verification soil sampling, air monitoring and dust/vapor control, site restoration, establishment of the same institutional controls described for Alternative SM2, and other activities as detailed in Section 5.

4.4.1.5 Alternative SM5 – Soil Excavation to Industrial SCOs and Institutional Controls

This alternative is essentially the same as Alternative SM4, except excavation would occur in a larger area. Soil would be removed from the eastern portion of the site, including around the Main Building Complex and the County Maintenance Building, where constituents have been identified in soil at concentrations exceeding the industrial use SCOs presented in 6 NYCRR Part 375-6.8(b). With one minor exception, soils exhibiting constituents at concentrations exceeding the industrial use SCOs were not identified in other areas of the site. The exception is soil at 20- to 22-feet bgs at location SB-21 (below the foundation for the Main Building Complex) where benzo(a)pyrene was identified at a concentration of 2.7 ppm, which is slightly above the 1.1 ppm industrial use SCO.

The removal under Alternative SM5 would be within an 85,000 sf area and would extend to depths ranging from approximately 5 to 30 feet bgs. The volume of soil to be removed under this alternative is approximately 60,900 cy. The approximate excavation limits under this alternative are shown on Figure 10. This alternative would also include the same institutional controls described for Alternative SM2.

Based on the larger size of the excavation areas and their locations under this alternative as compared to Alternative SM4, this alternative would require: (1) re-location of more underground utilities; (2) installation of more sheetpile wall for excavation sidewall support and dewatering; (3) more soil handling and disposal; (4) more dewatering/water treatment; (5) more waste characterization and verification soil sampling; and (5) greater interference and disruption of Metro STP operations.

4.4.2 Groundwater Remedial Alternatives

Three remedial alternatives have been developed for addressing impacted groundwater at the Hiawatha Boulevard site and are presented below.

4.4.2.1 Alternative GW1 – No Further Action

Under this alternative, no active remedial measures would be performed.

4.4.2.2 Alternative GW2 – Institutional Controls and Monitored Natural Attenuation

This alternative would address constituents of interest in groundwater by use restrictions (e.g., in the form of a deed restriction or environmental easement). In addition, long-term groundwater monitoring would be performed under this alternative to evaluate the effectiveness of MNA over an extended period of time. Existing groundwater use laws [10 NYCRR 5-1.31(b)], which prohibit the installation of private wells where public supply is available (unless approval is expressly granted by the public water authority), would continue to minimize potential human exposure to constituents in groundwater at concentrations exceeding the groundwater quality standards/ guidance values.

4.4.2.3 Alternative GW3 – Enhanced Bioremediation and Institutional Controls

This alternative involves amending groundwater to enhance naturally occurring biodegradation processes along the northern property boundary (hydraulically upgradient from the Barge Canal and within/downgradient from the two areas where the highest concentrations of BTEX and PAHs have been identified in groundwater). Because of the unique site conditions, the alternative would include a step-wise approach consisting of bench-scale treatability studies and pilot studies to determine the appropriate methodology for full-scale implementation. The bench-scale treatability studies would evaluate and compare the potential effectiveness of aerobic and anaerobic degradation of BTEX and PAHs in groundwater. In addition, the bench-scale treatability studies would assess the effect of pH (and changes to pH) and salinity on the biodegradation rates of BTEX and PAHs in site groundwater. Adjusting the groundwater pH to within the optimal range could potentially double the rate of hydrocarbon degradation (Sheehan, 1998). Following evaluation of the bench-scale treatability study results, pilot studies would be designed and conducted to gather data needed to assess parameters for full-scale design and implementation of the biodegradation treatment process anticipated to be most suited for reducing the BTEX and PAH concentrations in groundwater. Based on the outcome of the pilot studies (and follow-up pre-design investigation if needed), the enhanced bioremediation remedy identified as the most effective at achieving the groundwater RAO for environmental protection would be selected.

This alternative also involves trenching, installation of underground piping, construction of an enclosure (shed) to house treatment equipment and instrumentation, establishment of institutional controls similar to those described for Alternative GW2, and other activities as detailed in Section 5.

5. Detailed Evaluation of Remedial Alternatives

This section further evaluates the remedial alternatives identified in Section 4. These remedial alternatives were evaluated with respect to the criteria specified in TAGM 4025, which incorporate the NCP by reference, and the USEPA guidance document titled, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988). The evaluation criteria are arranged in the order specified in TAGM 4030. These criteria encompass statutory requirements and include other gauges of overall feasibility and acceptability of remedial alternatives.

The detailed evaluation of each remedial alternative presented in this section consists of an assessment of the following seven criteria:

- Compliance with SCGs
- Overall Protection of Human Health and the Environment
- Short-Term Effectiveness
- Long-Term Effectiveness
- Reduction of Toxicity, Mobility, or Volume
- Implementability
- Cost

As indicated in 6 NYCRR Part 375-1.8(f), other criteria to be considered when evaluating potential remedial alternatives are land use and community acceptance. Land use may be considered in the FS provided there is reasonable certainty associated with such land use. The community acceptance assessment will be completed by the NYSDEC after community comments on the PRAP are received. The results of the evaluation are typically considered when the NYSDEC selects a preferred remedial alternative and are typically presented in a Responsiveness Summary completed by the NYSDEC. The Responsiveness Summary is part of the Record of Decision (ROD) for the project and responds to all comments and questions raised during a public meeting associated with the PRAP, as well as comments received during the associated public comment period.

In addition to assessing each potential remedial alternative against the seven criteria presented above, the detailed analysis of the remedial alternatives presented in this section also includes a detailed technical description of each remedial alternative. In addition, unique engineering aspects (if any) of the physical components of the remedial alternative are discussed.

5.1 Description of Evaluation Criteria

A brief description of each of the seven evaluation criteria is presented in the following sections.

5.1.1 Compliance with SCGs

This evaluation criterion evaluates each remedial alternative with respect to New York State SCGs and Federal Applicable or Relevant and Appropriate Requirements (ARARs) that were identified in Section 2. Compliance with the following types of SCGs was considered:

- Chemical-specific SCGs
- Action-specific SCGs
- Location-specific SCGs

5.1.2 Overall Protection of Human Health and the Environment

This criterion assesses the protection of human health and the environment provided by each alternative. The assessment of overall protectiveness draws on the analysis of other criteria evaluated for each alternative (specifically short- and long-term effectiveness and compliance with SCGs). It also considers the manner in which the alternative achieves protection over time, the degree to which site risks would be reduced, and the manner in which each source of impacts would be eliminated, reduced, or controlled.

5.1.3 Short-Term Effectiveness

The short-term effectiveness of a remedial alternative is evaluated relative to its potential effect on human health and the environment during the construction and implementation phases. The evaluation of each alternative with respect to its short-term effectiveness considered the following:

- Potential short-term impacts to the community during implementation.

- Potential short-term impacts to workers during implementation and the effectiveness and reliability of protective measures.

- Potential short-term environmental impacts and the effectiveness of mitigation measures to be used.

- Time required to achieve the RAOs for protection of health and the environment.

5.1.4 Long-Term Effectiveness

This criterion evaluates the remedial alternative in terms of the potential risks remaining at the site after the remedial activities have been completed. The following factors were assessed during the evaluation of long-term effectiveness:

- Environmental impacts from untreated waste or treatment residuals remaining at the completion of the remedial alternative.

- The adequacy and reliability of controls (if any) that would be used to manage treatment residuals or remaining untreated waste at the completion of the remedial alternative.

- The risks remaining at the completion of the remedial alternative.

- The ability of the alternative to meet RAOs established for the site.

5.1.5 Reduction of Toxicity, Mobility, and Volume

This evaluation criterion addresses the degree to which the remedial alternative would permanently reduce the toxicity, mobility, or volume of the impacts present in the site media. This criterion addresses the preference for remedial actions that permanently and significantly reduce the toxicity of impacts, irreversibly reduce the mobility of the impacts, and/or reduce the total volume of media containing impacts. The evaluation focused on the following factors:

- The process the remedy would employ and the amount of materials that would be treated.

- The anticipated ability of the remedy to reduce the toxicity, mobility, or volume of impacts present in site media.

- The nature and quantity of residuals that would remain after treatment.

- The relative amount of MGP-related residuals that would be destroyed, treated, or recycled.

- The degree to which the treatment is irreversible.

5.1.6 Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing the remedial alternative, including the availability of the various services and materials required for implementation. The following analysis factors were considered during the implementability evaluation:

- *Technical Feasibility* – This refers to the relative ease of implementing or completing the remedial alternative based on site-specific conditions. In addition, the ease of construction, operational reliability, and ability to monitor the effectiveness of the remedial alternative are considered.

- *Administrative Feasibility* – This refers to items such as coordination with other agencies and availability of services and materials, such as treatment, storage and disposal services, as well as required technical specialists and contractor services.

5.1.7 Cost

This criterion refers to the total cost to implement the remedial alternative on the basis of present worth analysis. The total cost of each alternative represents the sum of the direct capital costs (materials, equipment and labor), indirect capital costs (engineering, licenses or permits and contingency allowances), and O&M costs (operating labor, energy, chemicals and sampling and analysis).

The present worth costs were estimated with expected accuracies of -30 to +50 percent in accordance with both NYSDEC and USEPA guidance. Because detailed remedial design activities have not been performed, a 20 percent contingency has been included to each alternative account for potential changes in scope (and costs) that may be identified during the design and implementation activities. Present value costs are calculated for alternatives expected to last more than 2 years. In accordance with USEPA guidance, a 7 percent discount rate (before taxes and after inflation) was used to calculate present worth.

5.2 Detailed Evaluation of Alternatives

This section presents a detailed description of the retained alternatives for subsurface soil and groundwater, and an evaluation of each alternative with respect to the seven evaluation criteria described in Section 5.1.

5.2.1 Subsurface Soil

Five soil alternatives were developed for detailed analysis:

- Alternative SM1 – No Further Action
- Alternative SM2 – Institutional Controls
- Alternative SM3 – In-Situ Soil Stabilization and Institutional Controls
- Alternative SM4 – Focused Soil Excavation and Institutional Controls
- Alternative SM5 – Soil Excavation to Industrial SCOs and Institutional Controls

5.2.1.1 Alternative SM1 - No Further Action

Technical Description

Alternative SM1 involves no further action beyond the extensive removal activities performed as part of the Soil/Groundwater Removal IRM, in which 110,000 tons of soil were excavated and transported for offsite disposal and 283 million gallons of water were pumped and treated onsite prior to discharge to the Metro STP. Alternative SM1 serves as the baseline for comparison of the overall effectiveness of the other remedial alternatives. The site would be allowed to remain in its current condition. The existing cover material (i.e., grass/vegetation, asphalt, and Metro STP structures) and fencing on the former MGP property would be maintained.

Compliance with SCGs

- *Chemical-Specific SCGs*: Because removal or treatment is not included as part of this alternative, RAOs that relate to chemical-specific SCGs would not be met.
- *Action-Specific SCGs*: Action-specific SCGs are not applicable because the No Further Action alternative does not involve the implementation of active remedial measures.

- *Location-Specific SCGs*: Location-specific SCGs are not applicable because the No Further Action alternative does not involve the implementation of active remedial measures.

Overall Protection of Human Health and the Environment

The No Further Action alternative is not considered an effective or "stand alone" means of achieving the RAOs. The No Further Action Alternative does not include any additional activities to address MGP-related constituents at the site. Therefore, the alternative would not be effective in meeting the RAOs established for the site. However, to the extent to which current conditions are already protective of human health and the environment, and such conditions remain in the future, aspects of the RAOs would be achieved. For instance, existing ground surface cover in the form of grass/vegetation, asphalt, and Metro STP structures prevents direct contact with, or ingestion of, soil by site workers and prevents exposures to soil via wind-blown dust. However, the alternative would not address exposures to construction workers performing subsurface excavation/construction activities.

This alternative would involve natural degradation processes to reduce concentrations of constituents of interest in soil. The timing and extent of improvements (if any) has not been estimated.

Short-Term Effectiveness

No remedial activities would be performed under the No Further Action alternative. Therefore, there would be no short-term environmental impacts or risks to onsite workers or the community (or construction workers, because there would not be any workers performing any remedial activities) associated with implementation of the alternative.

Long-Term Effectiveness

Based on current conditions, there is a potential for construction worker exposure to MGP-impacted subsurface soil during future intrusive activities (e.g., during excavation to repair or replace existing subsurface utilities/structures or install new underground facilities). The No Further Action alternative does not include actions or measures to address MGP-related impacts in subsurface soil or potential human exposure. Therefore, the No Further Action alternative is not considered to be effective at addressing RAOs related to potential direct contact, ingestion, or inhalation human health exposure pathways, and would not meet the RAO related to preventing the migration of chemical constituents from soil.

Reduction of Toxicity, Mobility, or Volume

MGP-impacted subsurface soil would be left in place and not actively treated (other than by natural processes), recycled, or destroyed. Reduction of toxicity, mobility, and mass of the impacted subsurface soil would potentially occur over an extended period of time as a result of natural processes.

Implementability

The No Further Action alternative does not involve any active remedial response and poses no technical or administrative implementability concerns.

Cost

There are no costs associated with Alternative SM1.

5.2.1.2 Alternative SM2 – Institutional Controls

Technical Description

The Institutional Controls alternative would not involve active remedial measures to remove, treat, or contain MGP-impacted subsurface soil at the site. However, the existing cover material (i.e., grass/vegetation, asphalt, and existing Metro STP structures) and fencing around the site would be maintained. Institutional controls would be implemented to limit disturbance of the ground cover materials and place health and safety requirements on subsurface activities. The institutional controls would include: (1) a land use restriction in the form of a deed restriction or environmental easement; and (2) an SMP.

As mentioned in Subsection 4.5.1.2, the land use restriction would: (1) restrict future use of the site to industrial activities; (2) notify future property owners of the presence of MGP-related constituents in soil at the site; and (3) notify future property owners of the applicability of the SMP. The SMP would be prepared to: (1) address possible future disturbances of site soil (to minimize the performance of intrusive subsurface activities without appropriate controls and measures); (2) identify known locations of MGP-impacted soil at the site; and (3) set forth the inspection and maintenance activities for the perimeter fencing and vegetation/cover materials.

The SMP would be a means to address potential future soil excavation in connection with a possible future expansion to the Metro STP. The area northeast of the Main Building Complex and County Maintenance Building has been identified by Onondaga County as a candidate location for future treatment plant expansion, if needed, to meet future discharge requirements (although plans for a treatment facility expansion have not been developed). The SMP would include a requirement for developing a remedial plan that would identify proposed excavation limits and details of the soil removal (e.g., waste characterization sampling, verification sampling, excavation sidewall support, offsite transportation and disposal, dewatering, backfilling, etc.). The SMP would require that the remedial plan be provided to the NYSDEC for review and approval prior to implementation. Costs for excavation are not included under this alternative because they cannot be predicted at this time.

The actual land use restriction implemented under this alternative would be determined in consultation with Onondaga County and the NYSDEC. Periodic reports would be filed with the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

Compliance with SCGs

- *Chemical-Specific SCGs*: While exceedances of certain chemical-specific SCGs would exist, such exceedances do not necessarily equate to a current risk to human health or the environment. Measures to address potential exposure pathways would be implemented as part of this alternative (e.g., restricting land use to industrial, requiring adherence to provisions of the SMP).

- *Action-Specific SCGs*: Action-specific SCGs are not applicable because the Institutional Controls alternative does not involve the implementation of active remedial measures.

- *Location-Specific SCGs*: Location-specific SCGs are not applicable because the Institutional Controls alternative does not involve the implementation of active remedial measures.

Overall Protection of Human Health and the Environment

This alternative would meet the RAOs related to protecting human health and may meet the RAO related to protecting the environment in the long-term. The existing ground surface cover in the form of grass/vegetation, asphalt, and Metro STP structures would continue to prevent direct contact with, or ingestion of, soil by site workers and prevent exposures to soil via wind-blown dust. These cover materials would continue to be maintained under this alternative per requirements of the SMP. Potential exposures to construction workers performing subsurface excavation/construction activities would also be addressed by the SMP. The land use restriction would notify future property owners of the constituents of interest in soil and the applicability of the SMP.

This alternative would involve natural degradation processes to reduce concentrations of constituents of interest in soil. The timing and extent of improvements (if any) is uncertain, as discussed further below.

Short-Term Effectiveness

No active remediation would be performed under the Institutional Controls alternative. Therefore, there would be no short-term environmental impacts or risks to onsite workers or the community associated with implementation of the alternative.

Long-Term Effectiveness

As mentioned above, the Institutional Controls alternative would involve natural degradation processes to reduce concentrations of constituents of interest in soil. The reduction of concentrations of MGP-related constituents via natural processes is permanent, although it cannot currently be predicted and would not be documented/monitored. Through the establishment of a land use restriction and SMP, this alternative would effectively meet the RAOs related to potential direct contact, ingestion, or inhalation human health exposure pathways, but may not meet the RAO related to preventing the migration of chemical constituents from subsurface soil (eliminating or reducing MGP-related constituents).

The land use restriction and SMP would be kept in place, unchanged, unless site conditions or soil cleanup objectives for industrial site use were to change. The SMP would set forth the actions to be taken to protect the health and safety of site workers and the community and properly handle impacted materials under a variety of site maintenance/future construction scenarios (utility repair or installation, building expansion/construction, landscaping, maintenance activities, etc.). If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of impacted material to be left in place.

Reduction of Toxicity, Mobility, or Volume

MGP-impacted subsurface soil would be left in place and not actively treated (other than by natural processes), recycled, or destroyed. Reduction of toxicity, mobility, and mass of the impacted subsurface soil would potentially occur over an extended period of time as a result of natural processes.

Implementability

This alternative would be both technically and administratively implementable. No permit approvals, and only minimal coordination with other agencies would be required.

Cost

The capital costs associated with this alternative are related to preparing the appropriate documentation for the land use restriction and preparing the SMP. Annual O&M costs associated with this alternative include costs associated with inspection and maintenance of ground cover materials and preparation of an annual certification report. The total estimated 30-year present worth cost for implementation of this alternative is approximately $292,000. A detailed breakdown of the estimated costs associated with this alternative is presented in Table 11.

5.2.1.3 Alternative SM3 – In-Situ Soil Stabilization and Institutional Controls

Technical Description

The ISS alternative would involve treating impacted soils via immobilization. ISS would be applied to soil in the northeastern portion of the site within the limits shown on Figure 9. ISS would be performed to depths of approximately 22 or 24 feet bgs, depending on location, within an approximately 20,600 sf area. As discussed in Subsection 4.4.1.3, ISS under this alternative would address the following sampling locations (outside the locations at the site where soil has already been removed as part of the Soil/Groundwater Removal IRM): (1) each location where NAPL without limiting qualifiers (e.g., "black sticky NAPL", "product", "thick product", etc.) has been identified; (2) most locations where only trace NAPL (e.g., "lenses", "laminations", etc.) has been identified; and (3) most locations where total PAHs have been detected at concentrations greater than 500 ppm.

ISS would be performed by mixing a fluid cement/pozzolanic grout into a column of soil without excavating or removing the soil. ISS treatment would limit potential future impacts from soil to groundwater by: (1) reducing the leaching/mobility of constituents in soil; (2) minimizing the amount of free liquids in the soil pore space; and (3) reducing the hydraulic conductivity of the soil. With less soil pore space and reduced conductivity, the potential mobility of pore-filling liquids (water, NAPL) would be reduced in the treated area. There are several methods for implementing ISS, two of which are described below:

- One method involves using a large crane or excavator-mounted drill to turn a special mixing tool into the soil while cement-bentonite grout is pumped through the tool and mixed into the soil. The resulting material is generally a homogeneous mixture of soil and grout that hardens to become a weakly-cemented material. The mixing tool for an application such as the Hiawatha Boulevard site may be 6 to 12 feet in diameter. In order to create continuous zones of treatment, the columns of mixed soil and cement are overlapped to provide continuity.

- Another method consists of jet-grouting, whereby a fluid cement-bentonite grout would be injected into a column of soil using high pressure. This approach is usually used to form a panel of solidified soil as part of a grout cutoff wall or in the vicinity of subsurface obstructions (e.g., foundations, utilities) to obtain immobilization without the need for excavating the soil.

Spoils, consisting of a mixture of soil, groundwater, and grout, would be generated by ISS, whether performed using the mixing tool method or jet-grouting method. The volume of spoils generated is estimated as 15% of the soil volume treated by the mixing tool method or 100% of the soil volume treated by the jet-grouting method. The spoils would be managed, as appropriate, prior to transportation for offsite disposal.

Prior to full-scale implementation of ISS, a bench-scale study may be required to evaluate the effectiveness of various cement-bentonite mixtures (i.e., soil stabilization mixtures) at reducing the leachability and permeability of the impacted soil (including Solvay waste) at the site. The bench-scale testing activities would consist of testing various mixtures of blast furnace slag, Portland cement, bentonite, and water for compatibility with the constituents of interest in soil at the site. Solidification mixtures would be tested for density, permeability, strength, and leachability of VOCs and SVOCs (using the synthetic precipitation leaching procedure [SPLP]).

As an initial step in ISS full-scale application, the surface cover material (asphalt pavement) and upper several feet of soil (5 feet is assumed for purposes of estimating a cost for this alternative) would be removed, characterized, and transported for offsite disposal. The soil removal would allow room for: (1) the soil volume increase (bulking) that would occur when stabilizing agents are added; and (2) placement of clean imported sand/gravel backfill and replacement cover materials. Specific design details would be addressed as part of the remedial design. In addition, jet grouting near subsurface utilities and obstacles would be performed in connection with ISS implementation.

Post-ISS quality assurance/quality control (QA/QC) sampling and analysis would be performed to verify that performance criteria are met for the stabilized soil columns (i.e., unconfined compressive strength, permeability, and PAH concentrations in SPLP extract). For the purposes of estimating a cost for this alternative, it is assumed that QA/QC activities would include: (1) sampling approximately 20% of the solidified columns; (2) analyzing each of the samples for unconfined compressive strength (UCS); and (3) analyzing 10% of the samples for permeability and PAHs in SPLP extract. Long-term O&M would consist of monitoring constituent concentrations in the groundwater downgradient of ISS treatment areas and periodically collecting cores from the solidified material to assess the integrity of the material. If performance criteria are not specifically met in some locations, columns could be over-bored, and additional stabilizing agents could be added.

This alternative would also include the same institutional controls provided under Alternative SM2 (as described above in Subsection 5.2.1.2) because soil at the site would still contain chemical constituents at concentrations exceeding soil cleanup objectives.

<u>Compliance with SCGs</u>

- *Chemical-Specific SCGs*: ISS would not meet the SCOs presented in 6 NYCRR Part 375-6.8. ISS would also not be expected to meet applicable SCGs for site groundwater (standards/guidance values presented in TOGS 1.1.1). However, the potential for dissolution of chemical constituents from the solidified material would be greatly reduced. Also, free liquids (e.g., impacted groundwater) within the stabilized material would be reduced. Measures to further address potential exposure pathways would be implemented through a land use restriction and SMP.

- *Action-Specific SCGs*: Action-specific SCGs that apply to this alternative are associated with ISS monitoring, transportation and disposal of impacted soil, and OSHA health and safety requirements. Workers and work activities that occur during implementation of this alternative must comply with OSHA requirements for training, safety equipment and procedures, monitoring, recordkeeping, and reporting as identified in 29 CFR 1910, 29 CFR 1926, and 29 CFR 1904. Compliance with action-specific SCGs would be accomplished by following a NYSDEC-approved Remedial Design/Remedial Action (RD/RA) Plan and site-specific HASP. Measures would be taken (as appropriate) to control levels of airborne particulate matter during soil excavation activities, in accordance with 40 CFR 50 National Ambient Air Quality Standards.

  Waste materials generated during implementation of this alternative (i.e., excavated soil and spoils from soil mixing and grouting) would be characterized to determine appropriate offsite disposal requirements. If any of the materials were to be characterized as a hazardous waste (although not currently anticipated based on existing data), then the RCRA UTSs/LDRs and USDOT requirements for the packaging, labeling, transportation, and disposal of hazardous or regulated materials may be applicable. However, if the MGP-impacted material only exhibited the hazardous characteristic of toxicity for benzene (D018), it would be conditionally exempt from the hazardous waste management requirements (6 NYCRR Parts 370-374 and 376) when destined for thermal treatment in accordance with the requirements set forth in TAGM 4061. Compliance with these requirements would be achieved by utilizing licensed waste transporters and properly permitted disposal facilities.

- *Location-Specific SCGs*: Remedial activities at the site would be conducted in accordance with local building/construction codes and ordinances. Other location-specific SCGs that may pertain to this option are related to reducing flood storage within the floodplain of the Barge Canal.

Overall Protection of Human Health and the Environment

Implementation of the ISS alternative would meet the soil RAOs related to protecting human health and the environment. Contact with or ingestion of impacted soil would be minimized because it would be bound up in a solidified/stabilized matrix. In addition, the several feet of clean fill material placed over the solidified/stabilized soil would prevent direct contact with, or ingestion of, soil by site workers. Remaining soil that exhibits MGP-related impacts would continue to be below cover materials and generally inaccessible for human exposure. The land use restriction would further mitigate potential exposure by notifying future site owners of the constituents of interest in soil and the applicability of the SMP. The SMP would mitigate potential exposure to soil at the site by identifying known locations of constituents at concentrations exceeding SCOs and setting forth actions to address possible future disturbances of subsurface soil.

ISS would minimize future impacts to groundwater and minimize potential contact with, or ingestion of, impacted groundwater since the impacted groundwater within the treatment area would be contained (and/or completely bound) within the solidified/stabilized material.

Short-Term Effectiveness

During implementation of this alternative, onsite remedial construction workers may potentially be exposed to impacted soil by ingestion, dermal contact, and/or inhalation. Potential exposure of onsite workers to chemical constituents would be minimized by the use of personal protective equipment (PPE), as specified in a site-specific health and safety plan (HASP) that would be developed during the remedial design. Air monitoring would be performed during implementation of this alternative to determine the need for additional engineering controls (e.g., use of water sprays and/or foam to suppress dust/vapors/odors following removal of cover materials, modifying the rate of construction activities, etc.) and to confirm that dust or volatilized organic vapors are within acceptable levels, as specified in the site-specific HASP.

The community would not have access to the site during implementation of the remedial activities because the site is currently and would continue to be fenced. Risks to the community also would be minimized by providing security around the work area and implementing a Community Air Monitoring Plan (CAMP) to minimize the potential migration of volatile organic vapors or impacted dust from the site. In addition, actions would be taken, if needed, to minimize potential MGP nuisance odors. The ISS treatment activities may require several months to complete.

Long-Term Effectiveness

Implementation of the ISS alternative could meet the soil RAOs related to protecting human health and the environment over the long-term. Contact with or ingestion of impacted soil would be minimized in the long-term because it would be bound up in a solidified/stabilized matrix. Potential exposures to future construction workers performing subsurface excavation/ construction activities would also be addressed by the SMP. In addition, the several feet of clean fill material placed over the solidified/stabilized soil would prevent direct contact with, or ingestion of, soil by site workers. The cover materials (asphalt pavement, grass, etc.) would be maintained in accordance with requirements of the SMP.

One long-term concern for this alternative is related to the area selected for ISS. This area has been identified by Onondaga County as a potential location for future treatment plant expansion, if needed. If treatment facilities were to be constructed in this area in the future (plans have not been developed), then excavation for foundations would be made more difficult due to the solidified mass created by the ISS. The stabilized soil excavated for the foundations would likely require offsite transportation and disposal, resulting in additional remedial expense on top of the original stabilization expense. However, an ISS material mixture that would allow for such future excavation could be designed based on findings of the treatability study. The typical minimum UCS requirement for ISS-treated soil is 50 pounds per square inch (psi), which is well-within the range for a small excavator to handle. If the stabilized soil were to be excavated in the future, it would likely require pre- and/or post-excavation characterization sampling to evaluate disposal requirements.

Verification of the long-term effectiveness and permanence of the ISS would potentially require a long-term monitoring plan. Long-term effectiveness of the ISS could potentially be inhibited by the presence of subsurface utilities and other obstructions (e.g., concrete/demolition debris and foundations for historic structures) that might impede or otherwise prevent installation of the auger or jet grout probe to the required depth. Subsurface obstructions could potentially create “blind” areas within the “monolith” where constituents of interest may not be immobilized. This would be a concern if the areas of refusal were above areas identified for stabilization/ solidification.

Nonetheless, the land use restriction and SMP would be kept in place, unchanged, unless site conditions or soil cleanup objectives for industrial site use were to change. The SMP would set forth the actions to be taken to protect the health and safety of site workers and the community and properly handle impacted materials under a wide variety of site maintenance/future development scenarios (utility repair or installation, building construction, landscaping, maintenance activities, etc.). If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of impacted material to be left in place.

Reduction of Toxicity, Mobility, or Volume

ISS would reduce the mobility of constituents in impacted soil through the stabilization of these constituents. The toxicity of the immobilized soil would be reduced since the constituents of interest would be encapsulated within the grout monolith. The volume of constituents would not change with the stabilization/solidification activities.

By minimizing the mobility of constituents of interest in soil, ISS would limit the potential future migration of constituents from soil to groundwater. In addition, since ISS would extend to soils below the water table, saturated soils that might otherwise result in groundwater quality impacts would be contained (and/or completely bound) within the solidified/stabilized matrix.

Implementability

Soil solidification/stabilization is technically feasible and a proven technology. Remedial contractors that perform this technology are available. However, this type of equipment and skilled labor is usually provided by “specialty-type” contractors. A difficulty associated with this technology is the presence of subsurface utilities and potential obstructions (foundations or debris). In some cases, subsurface utility relocation might be required, which would disturb facility operations. Jet-grouting (or alternative immobilization methods) could potentially be used to stabilize soil near utilities in some cases. Obstructions could impede or prevent the advancement of and potentially damage the drilling/injecting equipment used for ISS. Technical problems could result in schedule delays (e.g., equipment failure, treatment difficulties, coordination issues, etc.), but could be minimized with proper advanced planning and coordination of the remedial activities. The time associated with successful implementation of this technology would be several months, and the long-term monitoring and maintenance could last 30 years or more.

The biggest challenge from an implementation standpoint would be to plan and coordinate activities to minimize the disruption to Metro STP operations. The stabilization area encompasses most of the parking lot associated with the County Maintenance Building and additional space would be required for equipment/material staging under this alternative. Equipment and materials needed for ISS could be staged north of the County Maintenance Building, but access to the east side of the building (the main entrance) would be blocked by the implementation of this alternative and parking would be lost for the duration of the remedial activities.

The previous remedial activities at the site (the Soil/Groundwater Removal IRM) were conducted before the existing ammonia/phosphorous removal facilities were constructed. Implementation of ISS with these facilities now in-place and operational, presents logistical issues that did not exist at the time of the IRM.

Cost

The capital costs associated with this alternative include a treatability (bench-scale) study, mobilization, site preparation, solidification/stabilization, site restoration, and preparation of the SMP and appropriate documentation for the land use restriction. Annual O&M costs associated with this alternative include costs associated with inspection and maintenance of ground cover materials and preparation of an annual certification report. The total estimated 30-year present worth cost for implementation of this alternative is approximately $6,690,000. A detailed breakdown of the estimated costs for this alternative is presented in Table 12.

5.2.1.4 Alternative SM4 – Focused Soil Excavation and Institutional Controls

Technical Description

This alternative would address impacted unsaturated and saturated soil at the site through removal. Soil would be removed from the northeastern portion of the site within the same area identified above for Alternative SM3. The removal would be performed within an approximately 20,600 sf area to depths of 22 or 24 feet bgs, depending on location. The approximate soil removal volume is 17,410 cy. The removal limits under this alternative are shown on Figure 9.

Prior to excavation, a temporary sheetpile wall would be installed around the perimeter of the proposed excavation area to stabilize excavation sidewalls (and to comply with OSHA requirements) and permit soil removal to the target depths. Underground utilities in the area (including natural gas and water lines) would need to be temporarily relocated in connection with installation of the sheetpile wall. The location of the sheetpile wall would be determined based on visual characterization and/or laboratory analytical results obtained for in-situ pre-excavation verification soil sampling.

The majority of the soil to be removed under this alternative is under the water table. Therefore, it would be necessary to dewater the excavation (as was done for the Soil/Groundwater Removal IRM). A temporary onsite wastewater treatment system would be provided for pre-treatment of the groundwater recovered during dewatering, and the treated effluent would be discharged to the Metro STP. Based on the findings of the dewatering study performed in support of the Soil/Groundwater Removal IRM, actual pumping rates during the Soil/Groundwater Removal IRM, and the generally greater excavation depths under this alternative vs. the Soil/Groundwater Removal IRM, it is assumed that the dewatering rate under this Alternative would be up to 500 gpm. It is assumed that the temporary onsite wastewater system would likely involve oil-water separation, filtration, air stripping, and vapor-phase carbon adsorption. Details related to the water treatment, handling, and discharge would be determined during remedial design.

The excavation of impacted soils would generally be conducted using conventional construction equipment, such as excavators, front-end loaders, dump trucks, etc. Given the large size of the excavation area and limited available space onsite for staging, the excavated soil would be pre-characterized for offsite transportation and disposal. For purposes of the FS (and consistency with the Soil/Groundwater Removal IRM), it is assumed that samples would be collected at a frequency of 1 per 500 cy of soil excavation.

Soil removed from the excavation would be direct-loaded for offsite disposal, to the extent possible. Alternatively, the soil would be stockpiled in a lined material staging area (or portion of the excavation area) for stabilization, if needed, prior to offsite disposal. Specifics of the handling approach would be determined during remedial design. Based on the results of characterization sampling performed in connection with the previous Soil/Groundwater Removal IRM, it is anticipated that all soil removed from this area would be characterized as non-hazardous. Upon reaching target depths, verification soil samples may be collected from the bottom of the excavation for visual characterization and/or laboratory analysis. Following receipt of results indicating that the cleanup objectives have been achieved, the excavated areas would be backfilled with select fill, compacted, and restored to grade. The paved parking lots and driveways in the area would then be restored.

A foam spray or other vapor control measures would be used to suppress odors and volatile organic vapors originating from the excavation and the excavated soil, as needed. A CAMP would be followed throughout the completion of these activities to document airborne particulate and volatile organic vapor concentrations surrounding the excavation area.

This alternative would also include the same institutional controls provided under Alternative SM2 (as described above in Subsection 5.2.1.2) because certain soil at the site would still contain chemical constituents at concentrations exceeding soil cleanup objectives.

<u>Compliance with SCGs</u>

- *Chemical-Specific SCGs*: The more significantly impacted soil at the site would be removed under this alternative, but soil remaining in certain areas would still exhibit constituents at concentrations exceeding the SCOs presented in 6 NYCRR Part 375-6.8. The dewatering under this alternative would also result in the capture, removal, and treatment of impacted groundwater at the site. Applicable SCGs for groundwater would not be met due to other residually-impacted material remaining beneath the site.

  Another chemical-specific SCG that may apply for this alternative is associated with discharging treated groundwater to the Metro STP (and/or to surface water, if necessary). A discharge permit would need to be obtained from the Metro STP, and the treated water would need to meet influent requirements.

- *Action-Specific SCGs*: Action-specific SCGs that apply to this alternative are associated with the excavation and disposal of the impacted soil, removal and treatment of groundwater from the excavations, monitoring requirements, and OSHA health and safety requirements. Workers and worker activities that occur during implementation of this alternative must comply with OSHA requirements for training, safety equipment and procedures, monitoring, recordkeeping, and reporting as identified in 29 CFR 1910, 29 CFR 1926, and 29 CFR 1904. Compliance with action-specific SCGs would be accomplished by following a NYSDEC-approved RD/RA Plan and site-specific HASP. Measures would be taken (as appropriate) to control levels of airborne particulate matter during soil excavation activities, in accordance with 40 CFR 50 National Ambient Air Quality Standards.

  Additional SCGs applicable to this alternative are associated with the transportation and disposal of the excavated materials. Transportation of the excavated materials would be completed in accordance with procedures identified in 6 NYCRR 364 and 372, 49 CFR 107, and 40 CFR 262, 263, 171, and 172. Disposal activities would be completed in accordance with 6 NYCRR 372, 373, and 376 and 40 CFR 262, 263, 170-179, and 270.

  National Ambient Air Quality Standards (including particulate levels) would be applicable and adhered to during excavation activities. The implementation of this option would result in the generation of air emissions from the operation of a temporary groundwater treatment system. The SCGs applicable to air emissions include the prevention of significant deterioration

(PSD) air emission provisions contained in 40 CFR 51 and all relevant requirements under the Clean Air Act contained in 40 CFR 1-99. In addition, New York State regulations regarding air emissions would apply. To comply with these SCGs, a temporary groundwater treatment system would be designed and operated such that PSD limits would not be exceeded and the system would comply with all state and federal air emission requirements.

Process residuals generated during the implementation of this remedial alternative and not reused (e.g., activated carbon used in the temporary groundwater treatment system) would be characterized to determine the appropriate offsite disposal requirements. If any of the materials are characterized as a hazardous waste, then the RCRA, UTS/LDR, and USDOT requirements for the packaging, labeling, transportation, and disposal of hazardous or regulated materials may be applicable. Compliance with these requirements would be achieved by utilizing a licensed waste transporter and properly permitted disposal facilities.

- *Location-Specific SCGs*: Remedial activities would be designed and conducted in accordance with local codes and ordinances.

Overall Protection of Human Health and the Environment

Implementation of this alternative would meet the soil RAOs related to protecting human health and the environment. Contact with or ingestion of the most-impacted soil would be minimized because it would be physically removed from the site and treated/disposed at permitted facilities. Remaining soil that exhibits MGP-related impacts would continue to be below cover materials and generally inaccessible for human exposure. The land use restriction would further mitigate potential exposure by notifying future site owners of the constituents of interest remaining in soil and the applicability of the SMP. The SMP would mitigate potential exposure to soil at the site by identifying known locations of constituents at concentrations exceeding SCOs and setting forth actions to address possible future disturbances of subsurface soil.

The soil excavation would minimize future impacts to groundwater since the most-impacted material would have been removed and impacted groundwater in the area of the soil excavation would be captured and treated.

Short-Term Effectiveness

During the implementation of this alternative, onsite remedial workers may be exposed to chemical constituents in soil and groundwater by ingestion, dermal contact, and/or inhalation. Potential exposure of onsite workers to chemical constituents would be minimized by the use of PPE, as specified in a site-specific HASP. Air monitoring would be performed during implementation of this alternative to determine the need for additional engineering controls (e.g., use of water sprays/foam suppressants to suppress dust/vapors/odors during soil excavation, performing excavation work within temporary enclosures, modifying the rate of construction activities, etc.) and to confirm that dust or volatilized organic vapors are within acceptable levels, as specified in the site-specific HASP.

The community would not have access to the site during the implementation of the remedial activities as the site is currently and would continue to be fenced. Risks to the community also would be minimized by providing security at the site and implementing a CAMP to minimize the potential migration of volatile organic vapors or impacted dust from the site. In addition, actions would be taken, if needed, to minimize potential MGP nuisance odors.

The excavated soil would pose a risk while onsite and during transportation from the site to the treatment/disposal facility since it would be more accessible to human exposure. Under this alternative, traffic resulting from the transportation of approximately 17,410 cy of impacted soil for offsite disposal (approximately 871 one-way truckloads for soil removal and importing clean fill materials) would pose a potential nuisance to the community and increase the risk for accidents and spills. The transportation activities would be managed to minimize en-route risks to the community. Waste transport trucks would have watertight tailgates with a gasket between the box and the tailgate regardless of the designation of the load.

Based on the extent of remedial activities described herein, soil removal activities under this remedial alternative may require approximately six months to one year to complete.

Long-Term Effectiveness

Implementation of this alternative would meet the soil RAOs related to protecting human health and the environment over the long-term, in part, by taking away the most-impacted soil remaining at the site. Contact with or ingestion of impacted soil would be minimized because the excavation would result in permanent removal of impacted soil from the site. Dissolution of constituents from the soil to groundwater would be minimized because the impacted soil would be removed and replaced with clean backfill.

The land use restriction and SMP under this alternative would address remaining residually-impacted soil. The land use restriction would be kept unchanged, unless site conditions or soil cleanup objectives for industrial site use were to change. The SMP would set forth the actions to be taken to protect the health and safety of site workers and the community and properly handle impacted materials under a wide variety of site maintenance/future development scenarios (utility repair or installation, building construction, landscaping, maintenance activities, etc.). If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of impacted material to be left in place.

Reduction of Toxicity, Mobility, or Volume

Implementation of this alternative would reduce the toxicity, mobility, and volume of impacted soil and groundwater beneath the site primarily because: (1) impacted unsaturated and saturated soil would be removed and replaced with clean backfill; and (2) groundwater from the area exhibiting the most impacts would be captured and treated. Concentrations of chemical constituents remaining in subsurface soil outside the excavation limits would potentially be reduced over an extended period of time via natural attenuation over time.

Implementability

Impacted soil removal and treatment is technically feasible. Remedial contractors for the removal of the impacted soil are readily available. Major difficulties associated with this alternative are: (1) the extensive relocation of subsurface utilities (including natural gas and water lines) that would be required; (2) the potential need to remove subsurface obstructions to drive sheetpile (or other excavation reinforcements) to required embedment depths; (3) managing and treating a substantial amount of water that would accumulate within the excavation (particularly considering heterogeneity in the subsurface which could mean more permeable/conductive soils in areas); (4) the need to stabilize excavated soils to eliminate free liquids (water) in preparation for offsite transport; (5) controlling odors that would potentially be generated during excavation in close proximity to Hiawatha Boulevard; and (6) securing a sufficient number of waste haulers to expeditiously transport the excavated soil for offsite disposal.

The biggest challenge from an implementation standpoint would be to plan and coordinate activities to minimize the disruption to Metro STP operations. The excavation area encompasses most of the parking lot associated with the County Maintenance Building and additional space would be required for impacted soil staging, for equipment/material staging, and for an onsite temporary water treatment facility under this alternative. Waste hauling vehicles would present additional traffic and related concerns, including associated greenhouse gas emissions, safety concerns (risk of accidents or spills), roadway wear and tear, and congestion from ongoing waste shipments during implementation of the remedy.

There is a likelihood that technical problems could lead to schedule delays (i.e., equipment failure, water treatment difficulties, traffic issues, etc.) but could be minimized with proper advance planning and coordination of the remedial activities.

A test boring program would be implemented in connection with design of this alternative to confirm that excavation reinforcements (e.g., sheetpiling) can be driven into the subgrade at the required locations and depths. The anticipated time necessary to complete the activities associated with this alternative is approximately six months to one year, not including the pre-design soil boring program or time to obtain necessary permits to conduct these activities.

<u>Cost</u>

The capital costs associated with this alternative include a test boring program, site preparation, groundwater dewatering well construction, temporary groundwater treatment system construction and operation (through excavation activities), soil excavation, soil stabilization, transportation, and treatment/disposal. Annual O&M costs associated with this alternative include costs associated with inspection and maintenance of ground cover materials and preparation of an annual certification report. The total estimated 30-year present worth cost for implementation of this alternative is approximately $18,700,000. A detailed breakdown of the estimated costs for this alternative is presented in Table 13.

5.2.1.5 Alternative SM5 – Soil Excavation to Industrial SCOs and Institutional Controls

<u>Technical Description</u>

Alternative SM5 represents a larger removal of impacted soil than Alternative SM4 and is the most aggressive soil remedial alternative. Alternative SM5 includes the excavation/removal of unsaturated and saturated soil, to the extent practical, that exhibits constituents at concentrations exceeding the industrial use SCOs for individual constituents as presented in 6 NYCRR Part 375-6.8(b). The removal of soil exhibiting constituents at concentrations exceeding industrial use SCOs would also result in removal of soil exhibiting NAPL (which has mainly been identified in thin lenses within the lower portion of the Solvay waste layer and upper part of the sand unit [generally 8 to 28 feet bgs] at the site).

The soil removal under Alternative 5 would be within an 85,000 sf area and would extend to depths ranging from approximately 5 to 30 feet bgs. The volume of soil to be removed under this alternative is approximately 60,900 cy. The approximate excavation limits under this alternative are shown on Figure 10. Although soil under a certain portion of the Main Building Complex exhibits concentrations exceeding the industrial use SCOs, that soil is not accessible and would not be addressed under this alternative.

Alternative SM5 would involve the same elements included under Alternative SM4, including pre-excavation verification soil sampling, in-situ waste characterization sampling, utility relocation, pre-design test boring program, installation of sidewall support systems (e.g., sheeting/bracing), excavation, air monitoring/vapor control, offsite transportation and disposal, excavation dewatering and water treatment, backfilling, restoration, etc. However, the excavation under Alternative SM5 would cover a larger area and extend to greater depths than under Alternative SM4. As shown on Figure 10, the excavation area under Alternative SM5 encompasses the majority of the parking lots in the eastern portion of the site and extends around the County Maintenance Building (around the east, south, and west sides) and extends up to the edge of the Main Building Complex in several places (south of the complex and north/northeast of the complex).

Based on the larger size of the excavation areas and their locations under this alternative as compared to Alternative SM4, this alternative would at least require: (1) re-location of more underground utilities (particularly near the Main Building Complex); (2) installation of more sheetpile wall for excavation sidewall support and dewatering; (3) more soil handling and offsite disposal; (4) more dewatering/water treatment; and (5) more waste characterization and verification sampling.

Groundwater modeling performed in support of the Soil/Groundwater Removal IRM supported that a dewatering rate of 175 gpm or greater would be needed. Dewatering was ultimately performed at rates of between 175 and 450 gpm, with an overall average of 250 gpm. It is assumed that a more robust excavation dewatering and treatment system would be required under Alternative SM5 than under Alternative SM4 and the Soil/Groundwater Removal IRM because nearly half of the excavation under this Alternative SM5 would be to depths of between 20 and 30 feet bgs (when only a small portion of the Soil/Groundwater Removal IRM excavation extended to depths of 20 feet, and the maximum depth of excavation under Alternative SM4 is 24 feet). For purposes of estimating a cost for Alternative SM4, it is assumed that a dewatering/treatment rate of 750 gpm or more would be needed.

This alternative would also include the same institutional controls provided under Alternative SM2 (as described above in Subsection 5.2.1.2) because certain soil at the site would still contain chemical constituents at concentrations exceeding unrestricted use soil cleanup objectives.

Compliance with SCGs

- *Chemical-Specific SCGs*: This alternative would address all soil where existing data shows that concentrations exceed the industrial use SCOs presented in 6 NYCRR Part 375-6.8(b), except for soil below certain portions of the Main Building Complex. The dewatering under this alternative would also result in the capture, removal, and treatment of impacted groundwater at the site. Applicable SCGs for groundwater would not be met due to residually-impacted material remaining beneath the site in various areas.

  Another chemical-specific SCG that may apply for this alternative is associated with discharging treated groundwater to the Metro STP (and/or to surface water, if necessary). A discharge permit would need to be obtained from the Metro STP, and the treated water would need to meet influent requirements.

- *Action-Specific SCGs*: Action-specific SCGs that apply to this alternative are associated with the excavation and disposal of the impacted soil, removal and treatment of groundwater from the excavations, monitoring requirements, and OSHA health and safety requirements, and would be the same as under Alternative SM4 (refer to the discussion under Alternative SM4 for details).

- *Location-Specific SCGs*: Remedial activities would be designed and conducted in accordance with local codes and ordinances.

Overall Protection of Human Health and the Environment

Implementation of this alternative would meet the soil RAOs related to protecting human health and the environment. Contact with or ingestion of soil exhibiting constituents at concentrations exceeding industrial use SCOs would be minimized because most of it would be physically removed from the site and treated/disposed at permitted facilities. The remaining soil that exhibits constituents at concentrations exceeding the industrial use SCOs is below the Main Building Complex and is inaccessible.

The land use restriction would further mitigate potential exposure by notifying future site owners of the constituents of interest in soil and the applicability of the SMP. The SMP would mitigate potential exposure to soil at the site by identifying known locations of constituents at concentrations exceeding SCOs and setting forth actions to address possible future disturbances of subsurface soil.

The soil excavation would minimize future impacts to groundwater since impacted material would have been removed and impacted groundwater in the area of the soil excavation would be captured and treated.

Short-Term Effectiveness

As with Alternative SM4, during the implementation of this alternative, onsite remedial workers may be exposed to chemical constituents in soil and groundwater by ingestion, dermal contact, and/or inhalation. Potential exposure of onsite workers to chemical constituents would be minimized by the use of PPE, as specified in a site-specific HASP. Air monitoring would be performed during implementation of this alternative to determine the need for additional engineering controls (e.g., use of water sprays/foam suppressants to suppress dust/vapors/odors during soil excavation, performing excavation work within temporary enclosures, modifying the rate of construction activities, etc.) and to confirm that dust or volatilized organic vapors are within acceptable levels, as specified in the site-specific HASP.

The community would not have access to the site during the implementation of the remedial activities as the site is currently and would continue to be fenced. Risks to the community also would be minimized by providing security at the site and implementing a CAMP to minimize the potential migration of volatile organic vapors or impacted dust from the site. In addition, actions would be taken, if needed, to minimize potential MGP nuisance odors.

The excavated soil would pose a risk while onsite and during transportation from the site to the treatment/disposal facility since it would be more accessible to human exposure. Under this alternative, traffic resulting from the transportation of approximately 60,900 cy of impacted soil for offsite disposal (approximately 3,050 one-way truckloads for soil removal and importing clean fill materials) would pose a potential nuisance to the community and increase the risk for accidents and spills. The transportation activities would be managed to minimize en-route risks to the community. Waste transport trucks would have watertight tailgates with a gasket between the box and the tailgate regardless of the designation of the load.

Based on the extent of remedial activities described herein, soil removal activities under this remedial alternative may require greater than one year to complete.

Long-Term Effectiveness

Implementation of this alternative would meet the soil RAOs related to protecting human health and the environment over the long-term, in part, by taking away soil exhibiting constituents at concentrations exceeding the SCOs for industrial land use and replacing that soil with clean fill and various cover materials (asphalt, vegetation, etc.).

Contact with or ingestion of impacted soil would be minimized because the excavation would result in permanent removal of impacted soil from the site. Dissolution of constituents from the soil to groundwater would be minimized because the impacted soil would be removed and replaced with clean backfill.

The land use restriction and SMP under this alternative would address remaining residually-impacted soil.

Reduction of Toxicity, Mobility, or Volume

Implementation of this alternative would reduce the toxicity, mobility, and volume of impacted soil and groundwater beneath the site primarily because: (1) impacted unsaturated and saturated soil would be removed and replaced with clean backfill; and (2) groundwater from the area exhibiting the most impacts would be captured and treated. Concentrations of chemical constituents remaining in subsurface soil outside the excavation limits would potentially be reduced over an extended period of time via natural attenuation over time.

Implementability

Impacted soil removal and treatment is technically feasible. Remedial contractors for the removal of the impacted soil are readily available. Major difficulties associated with this alternative are: (1) excavation in close proximity to existing buildings (the Main Complex Building and County Maintenance Building); (2) the extensive relocation of subsurface utilities (including natural gas and water lines) that would be required; (3) the potential need to remove subsurface obstructions to drive sheetpile (or other excavation reinforcements) to required embedment depths; (4) managing and treating a substantial amount of water that would accumulate within the excavation (particularly considering heterogeneity in the subsurface which could mean more permeable/conductive soils in areas); (5) the need to stabilize excavated soils to eliminate free liquids (water) in preparation for offsite transport; (6) controlling odors that would potentially be generated during excavation in close proximity to Hiawatha Boulevard; and (7) securing a sufficient number of waste haulers to expeditiously transport the excavated soil for offsite disposal.

The biggest challenge from an implementation standpoint would be to plan and coordinate activities to minimize the disruption to Metro STP operations. At best, the disruption under this alternative would be severe. The excavation areas are large and additional space would be required for equipment/material staging and for an onsite temporary water treatment facility. The excavation would be further complicated by soil removal extending up to (and around) three sides of the County Maintenance Building and up to (and around) parts of the east and south sides of the Main Building Complex. With access essentially cut off to the County Maintenance Building under this alternative, operations inside the building would need to be temporarily relocated. The lack of access to portions of the Main Building Complex would present operational and safety concerns (unloading areas for receipt of chemical/product inventory needed for treatment operations would be blocked and the main entrance to the offices would be blocked).

Waste hauling vehicles would present additional traffic and related concerns, including associated greenhouse gas emissions, safety concerns (risk of accidents or spills), roadway wear and tear, and congestion from ongoing waste shipments during implementation of the remedy.

There is a likelihood that technical problems could lead to schedule delays (i.e., equipment failure, water treatment difficulties, traffic issues, etc.) but could be minimized with proper advance planning and coordination of the remedial activities.

A test boring program would be implemented in connection with design of this alternative to confirm that excavation reinforcements (e.g., sheetpiling) can be driven into the subgrade at the required depths. The anticipated time necessary to complete the activities associated with this alternative is approximately 1½ years, not including the pre-design soil boring program or time to obtain necessary permits to conduct these activities.

Cost

The capital costs associated with this alternative include a test boring program, site preparation, groundwater dewatering well construction, temporary groundwater treatment system construction and operation (through excavation activities), soil excavation, soil stabilization, transportation, and treatment/disposal. Annual O&M costs associated with this alternative include costs associated with inspection and maintenance of ground cover materials and preparation of an annual certification report. The total estimated 30-year present worth cost for implementation of this alternative is approximately $54,700,000. A detailed breakdown of the estimated costs for this alternative is presented in Table 14.

5.2.2 Groundwater

Three groundwater alternatives were developed for detailed analysis and include:

- Alternative GW1 – No Further Action.
- Alternative GW2 – Monitored Natural Attenuation and Institutional Controls.
- Alternative GW3 – Enhanced Bioremediation and Institutional Controls.

5.2.2.1 Alternative GW1 – No Further Action

Technical Description

Alternative GW1 involves no further action related to groundwater beyond the extensive dewatering and treatment performed as part of the Soil/Groundwater Removal IRM, in which 283 million gallons of water were pumped and treated onsite prior to discharge to the Metro STP. Alternative GW1 serves as the baseline for comparison of the overall effectiveness of the groundwater remedies. This alternative would involve natural attenuation processes to reduce concentrations of constituents of interest in groundwater. However, no monitoring would be performed to evaluate the timing and extent of natural degradation.

Compliance with SCGs

- *Chemical-Specific SCGs*: The Class GA groundwater quality standards presented in 6 NYCRR Parts 700-705 and in NYSDEC TOGS 1.1.1 are applicable chemical-specific SCGs for this alternative. Due to the natural salinity of the deep groundwater, concentrations of TDS and chloride are, and will continue to be, well-above groundwater quality standards. Natural attenuation processes may result in reduced concentrations of MGP-related constituents in groundwater, but it is unlikely that groundwater quality standards would be achieved.
- *Action-Specific SCGs*: Action-specific SCGs are not applicable because this alternative does not involve the implementation of active remedial measures.
- *Location-Specific SCGs*: Location-specific SCGs are not applicable because this alternative does not involve the implementation of active remedial measures.

Overall Protection of Human Health and the Environment

Existing groundwater use laws [10 NYCRR 5-1.31(b)] prohibit the installation of private wells where public water supply is available, unless approval is expressly granted by the public water authority. These laws would continue to minimize potential human exposure to VOCs in groundwater at concentrations exceeding standards/guidance values.

This alternative would not address exposures to construction workers performing intrusive activities below the water table (such as activities to repair existing, or install new, subsurface utilities/facilities).

Although there are constituents in groundwater at concentrations exceeding standards/guidance values, the mass flux evaluation demonstrated that concentrations of constituents in groundwater flowing from the site to the Barge Canal do not result in exceedances of applicable surface water quality standards. As previously summarized in Section 1.3.4.3, a reducing environment is present in the subsurface and provides opportunities for microbial communities to naturally degrade BTEX and PAHs in groundwater. Natural attenuation processes over time may result in decreases in concentrations of constituents of interest in groundwater.

Short-Term Effectiveness

No remedial activities would be performed under the No Further Action alternative. Therefore, there would be no short-term environmental impacts or risks to onsite workers or the community (or construction workers, because there would not be any construction workers) associated with implementation of the alternative.

Long-Term Effectiveness

Based on current conditions, there is a potential for construction worker exposure to impacted groundwater during future intrusive activities (e.g., during excavation below the water table to repair existing, or install new, subsurface utilities/facilities). The No Further Action Alternative does not include actions or measures to address potential construction worker exposure to impacted groundwater. Therefore, the No Further Action alternative is not considered to be effective at addressing the RAO related to potential direct contact or inhalation of volatiles from groundwater.

Reduction of Toxicity, Mobility, or Volume

Constituents of interest in groundwater would not be actively treated (other than by natural processes), recycled, or destroyed. Reduction of toxicity, mobility, and the volume of impacted groundwater would potentially occur over an extended period of time as a result of natural processes.

Implementability

The No Further Action alternative does not involve any active remedial response and poses no technical or administrative implementability concerns.

Cost

There are no costs associated with Alternative GW1.

5.2.2.2 Alternative GW2 – Institutional Controls

Technical Description

Alternative GW2 consists of use restrictions on groundwater, natural attenuation processes to reduce concentrations of constituents of interest in groundwater, and long-term groundwater monitoring to evaluate changes in groundwater conditions. As discussed earlier in this report, data from the RI indicates that there are microbial communities and conditions which support natural degradation of BTEX and PAHs in groundwater.

A land use restriction (e.g., in the form of a deed restriction or environmental easement) would notify future property owners of the presence of MGP-related constituents in groundwater at the site, restrict the use of onsite groundwater, and notify the owners of the applicability of an SMP. Existing groundwater use laws [10 NYCRR 5-1.31(b)], which prohibit the installation of private wells where public supply is available (unless approval is expressly granted by the public water authority), would continue to minimize potential human exposure to constituents in groundwater at concentrations exceeding the groundwater quality standards/guidance values. The use restriction would apply to groundwater beneath the site and, if acceptable to the Canal Corporation, to groundwater beneath the strip of land owned by the Canal Corporation and located between the site and the Barge Canal.

An SMP would be prepared under this alternative to: (1) identify areas of impacted groundwater associated with the site; and (2) address possible future intrusive activities that would result in the potential for contact with impacted groundwater (to minimize the performance of work below the water table and/or dewatering without appropriate controls and measures).

Long-term monitoring would be performed under this alternative to evaluate the effectiveness of MNA over an extended period of time. Samples would be collected from selected existing monitoring wells and analyzed for constituents of interest. The results of the groundwater monitoring would be summarized and presented to the NYSDEC in annual reports. After a five year period, an evaluation of the long-term monitoring would be made and presented to the NYSDEC. Based on the analytical results and trends in groundwater constituent concentrations, National Grid would propose modifications to the monitoring program. For the purposes of this FS Report, it is assumed that annual sampling to document monitored natural attenuation would be conducted for an additional 25 years (i.e., for a total of 30 years).

Current and future property owners would be required to complete and submit annual certification to the NYSDEC that administrative and engineering controls were put in place as part of the site remedy, are still place, have not been altered, and are still effective.

Compliance with SCGs

- *Chemical-Specific SCGs:* The Class GA groundwater quality standards presented in 6 NYCRR Parts 700-705 and in NYSDEC TOGS 1.1.1 are applicable chemical-specific SCGs for this alternative. Due to the natural salinity of the deep groundwater, concentrations of TDS and chloride are, and will continue to be, well-above groundwater quality standards. Natural attenuation processes may result in reduced concentrations of MGP-related constituents in groundwater, but it is unlikely that groundwater quality standards would be achieved.

- *Action-Specific SCGs*: Action-specific SCGs that potentially apply to this alternative are associated with periodic groundwater monitoring, including the handling, transportation, and disposal of waste material (i.e., purge water) in accordance with NYSDEC and NYSDOT requirements, and performance of work in accordance with OSHA health and safety requirements.

- *Location-Specific SCGs*: Location-specific SCGs are not applicable to this alternative because it does not include active remedial measures.

Overall Protection of Human Health and the Environment

The existing groundwater use laws under 10 NYCRR 5-1.31(b) would continue to minimize potential human exposure to MGP-related constituents in groundwater at concentrations exceeding standards/guidance values. In addition, the SMP to be prepared (and referenced in a land use restriction) would address exposures to construction workers performing intrusive activities below the water table, such as activities to repair existing, or install new, subsurface utilities/facilities. The SMP would identify requirements for use of personal protective equipment and proper management of impacted groundwater that may be encountered.

Although there are constituents in groundwater at concentrations exceeding standards/guidance values, the mass flux evaluation demonstrated that concentrations of constituents in groundwater flowing from the site to the Barge Canal do not result in exceedances of applicable surface water quality standards. As previously summarized in Section 1.3.4.3, a reducing environment is present in the subsurface and provides opportunities for microbial communities to naturally degrade BTEX and PAHs in groundwater. Natural attenuation processes over time may result in decreases in concentrations of constituents of interest in groundwater.

Short-Term Effectiveness

Monitoring would be the only field work performed pursuant to this alternative. Personnel performing groundwater monitoring would use PPE and follow requirements of a site-specific HASP.

There would be no short-term environmental impacts or risks to onsite workers or the community (or construction workers, because there would not be any construction) associated with implementation of this alternative.

Long-Term Effectiveness

Natural attenuation processes may be effective over the long-term at reducing concentrations of constituents of interest in groundwater. As previously discussed, a reducing environment is present in the aquifer and provides opportunities for microbial communities to naturally degrade BTEX and PAHs. Long-term monitoring would be performed to evaluate changes in groundwater conditions.

Through the establishment of a land use restriction and SMP, this alternative would meet the groundwater RAOs related to potential direct contact, ingestion, and inhalation human health exposure pathways. The land use restriction and SMP would be kept in place, unchanged, unless site conditions were to change and make these measures unnecessary. If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of groundwater exhibiting constituents at concentrations exceeding standards.

Reduction of Toxicity, Mobility, or Volume

MGP-impacted groundwater would not be contained, removed, or actively treated (other than by natural processes). Reduction of the toxicity, mobility, and volume of impacted groundwater would likely be reduced over an extended period of time via natural attenuation processes.

Implementability

This alternative would be both technically and administratively implementable. No permit approvals, and only minimal coordination with other agencies would be required.

Cost

The capital costs associated with this alternative are related to preparing the appropriate documentation for the land use restriction and preparing the SMP. Annual O&M costs associated with this alternative include costs associated with periodic groundwater monitoring/reporting and preparation of an annual certification report. The total estimated 30-year present worth cost for implementation of this alternative is approximately $902,000. A detailed breakdown of the estimated costs associated with this alternative is presented in Table 15.

5.2.2.3 Alternative GW3 – Enhanced Bioremediation and Institutional Controls

Technical Description

Alternative GW3 involves treating impacted groundwater by enhancing microbial degradation. This alternative also involves monitoring and institutional controls (i.e., a land use restriction and SMP as described for Alternative GW2) for groundwater containing MGP-related constituents at concentrations exceeding Class GA groundwater quality standards/guidance values.

Background information related to bioremediation is presented below, followed by the conceptual enhanced bioremediation approach for this site.

Enhanced Bioremediation Background Information

Aquifers impacted by aromatic hydrocarbons (such as the aquifer at the Hiawatha Boulevard former MGP site) are typically anaerobic because the natural levels of dissolved oxygen (DO) existing in the aquifer from rainfall infiltration or other mechanisms are consumed by indigenous microbes. DO is the most thermodynamically favorable electron acceptor for microorganisms and is preferentially utilized over other electron acceptors, such as nitrate, ferric iron, manganese (IV), sulfate, or carbon dioxide. In aquifers impacted by aromatic hydrocarbons, utilization of DO by native microorganisms is associated with consumption of dissolved hydrocarbons, which serve as electron donors. However, dissolved hydrocarbons can be consumed by microorganisms utilizing other electron acceptors, although typically at a slower rate than if DO is utilized as the electron acceptor.

Enhancement of natural biodegradation processes is a proven effective technology for remediation of dissolved hydrocarbons in groundwater. Bioremediation under aerobic conditions proceeds at a faster rate than under anaerobic conditions because microorganisms derive a greater amount of energy when using oxygen (as compared to other electron acceptors) to metabolize hydrocarbons. However, transitioning an aquifer from anaerobic to aerobic conditions can be complicated and may not be able to be achieved completely due to subsurface conditions (e.g., oxygen sinks and preferential pathways) and delivery system considerations. Therefore, treatability studies would be conducted under this alternative to evaluate the enhancement of aerobic and anaerobic degradation of BTEX and PAHs in site groundwater. The treatability studies would also evaluate the effects of elevated pH and salinity on the degradation rates and potential amendments to optimize the degradation rates, as indicated below.

- The elevated groundwater pH is within the range required for microbial degradation of MGP-related compounds for most locations, as described in Section 1.3.4.3..Amendment with compounds to adjust the pH may need to be implemented to create a more favorable environment for microbial degradation. Such amendment could potentially double the rate of degradation, as described in Section 4.4.2.3.

- The elevated groundwater salinity levels may slow initial growth of microbes, but would ultimately be expected to have little to no effect on the microbial community once it is established, and a slightly saline environment could potentially be beneficial for degradation of MGP-related compounds. The ability of brackish and saltwater microbes to actively degrade a wide variety of hydrocarbons has been well established and is easily demonstrated, and there are many common soil bacteria that are readily adaptable to highly saline environments (King et al, 1998).

There are numerous oxygen delivery technologies, such as air sparging, pure oxygen sparging, oxygen diffusion through permeable tubing, down-well electrolytic oxygen generation, dilute hydrogen peroxide injection, oxygenated water recirculation (OWR), and application of oxygen-releasing materials (PermeOx®, ORC®). There are also multiple technologies to provide amendments to enhance anaerobic degradation processes. Upon evaluating the treatability study results, pilot studies would be designed and implemented to further evaluate those treatments with the most potential for effectively addressing BTEX and PAHs in site groundwater. The results of the pilot studies (and follow-up pre-design investigation if needed) would be used to select the technology(ies) that are most appropriate to address site BTEX and PAHs in site groundwater for the enhanced bioremediation treatment program.

Consideration will be given to the by-products of the enhanced bioremediation program. For example, dissolved iron in groundwater can result in the formation of precipitates when groundwater is amended with oxygen and may also cause fouling of wells/treatment equipment. This, in turn, may affect the delivery due to reduced transmissivity.

Enhanced Bioremediation Conceptual Approach

This alternative would focus on the northern property boundary (hydraulically upgradient from the Barge Canal and within/downgradient from the two areas where the highest concentrations of BTEX and PAHs have been identified in groundwater). Treatment would be performed in two separate areas (Treatment Areas 1 and 2) as shown on Figure 11. Active treatment would not be performed between Treatment Areas 1 and 2 because concentrations of BTEX and PAHs at this area are considerably lower, and for the most part, only slightly exceed Class GA water quality standards/guidance values.

For purposes of estimating a cost for this alternative, it is assumed that groundwater treatment in Treatment Areas 1 and 2 would be performed as follows:

- Treatment Area 1: Groundwater in this area would be treated by diffusing oxygen through gas permeable tubing installed in a series of application wells. One application well would be installed every 10 feet over a total distance of 450 feet (for a total of 45 application wells). The wells would be installed approximately 25 feet from the property boundary. Subsurface piping would be installed to connect the down-well permeable tubing to a series of oxygen tanks in a centrally-located treatment shed.

- Treatment Area 2: Groundwater in this area would be treated by inserting an oxygen releasing compound in a series of boreholes that would subsequently be backfilled. One borehole would be installed every 5 feet over a distance of 750 feet during each of two applications (i.e., for a total of 150 borings per application and 300 borings in total). Each borehole would be completed to a depth of 25 feet bgs and backfilled with a mixture of slurry-grout and slow release oxygen compound to approximately 5 feet bgs (i.e., the water table).

Treatment would focus on groundwater at depths of between approximately 5 and 25 feet bgs in Treatment Areas 1 and 2. The treatment approach, including quantity, configuration, locations, spacing, and depths of the boreholes/application wells, is subject to change and would be determined during the Remedial Design. Soil cuttings generated during drilling would be characterized and transported for proper offsite disposal.

Enhanced bioremediation would be expected to reduce the flux of constituents from site groundwater to the Barge Canal by: (1) reducing concentrations of MGP-related constituents in groundwater; and (2) to a lesser extent, degrading residual NAPL located within and hydraulically downgradient from the treatment zone. Groundwater monitoring would be performed under this alternative to evaluate potential changes in groundwater conditions. Samples would be collected and analyzed for BTEX, PAHs, and biogeochemical parameters, as appropriate. Modifications to the enhanced bioremediation treatment would be made, as needed, based on monitoring results and may include: (1) operational enhancements (such as increasing oxygen content supplied to the application wells; (2) installing additional application wells along the northern property boundary; and/or (3) installing additional boreholes for slow release oxygen compound application.

After overall groundwater quality improves and concentrations of MGP-related constituents meet Class GA water quality standards/guidance values or reach asymptotic levels near those values, then: (1) treatment operations would be scaled back; (2) project closeout criteria would be developed; (3) SMP practices would be continued (if needed); and (4) changes to the site monitoring program and reporting would be evaluated.

<u>Compliance with SCGs</u>

- *Chemical-Specific SCGs*: The Class GA groundwater quality standards presented in 6 NYCRR Parts 700-705 and in NYSDEC TOGS 1.1.1 are applicable chemical-specific SCGs for this alternative. Due to the natural salinity of the deep groundwater, concentrations of TDS and chloride are, and will continue to be, well-above groundwater quality standards. However, the enhanced bioremediation is expected to result in reduced concentrations of MGP-related constituents in groundwater, which could come close to or meet groundwater quality standards.

- *Action-Specific SCGs*: Action-specific SCGs that apply to this alternative are associated with completing soil borings, installing application wells, excavating trenches and installing piping, diffusing oxygen into groundwater, monitoring groundwater conditions, and transporting waste materials for offsite disposal. Workers and work activities that occur during implementation of this alternative must comply with OSHA requirements for training, safety equipment and procedures, monitoring, recordkeeping, and reporting as identified in 29 CFR 1910, 29 CFR 1926, and 29 CFR 1904. Compliance with action-specific SCGs would be accomplished by following a NYSDEC-approved RD/RA Plan and site-specific HASP. Measures would be taken (as appropriate) to control levels of airborne particulate matter during activities that disturb soil (excavation/trenching, grading, drilling, etc.), in accordance with 40 CFR 50 National Ambient Air Quality Standards.

Waste materials generated during implementation of this alternative (i.e., excavated soil and spoils from trenching/soil borings) would be characterized to determine appropriate offsite disposal requirements. If any of the materials were to be characterized as a hazardous waste (although not currently anticipated based on existing data), then the RCRA UTSs/LDRs and USDOT requirements for the packaging, labeling, transportation, and disposal of hazardous or regulated materials may be applicable. However, if the MGP-impacted material only exhibited the hazardous characteristic of toxicity for benzene (D018), it would be conditionally exempt from the hazardous waste management requirements (6 NYCRR Parts 370-374 and 376) when destined for thermal treatment in accordance with the requirements set forth in TAGM 4061. Compliance with these requirements would be achieved by utilizing licensed waste transporters and properly permitted disposal facilities.

Diffusing oxygen into groundwater may require submitting inventory information about the proposed injection wells/activities to the USEPA Underground Injection Control Program.

- *Location-Specific SCGs*: Remedial activities would be designed and conducted in accordance with local codes and ordinances.

<u>Overall Protection of Human Health and the Environment</u>

Implementation of the enhanced bioremediation alternative could meet the groundwater RAOs related to protecting human health and the environment. Concentrations of MGP-related constituents in groundwater would likely be reduced by stimulating degradation by existing microbial communities in the subsurface. This, in turn, could reduce or eliminate offsite migration of MGP-related constituents at concentrations exceeding Class GA water quality standards.

Although constituents currently in groundwater are at concentrations exceeding standards/ guidance values, the mass flux evaluation demonstrated that concentrations of constituents in groundwater flowing from the site to the Barge Canal do not result in exceedances of applicable surface water quality standards. The mass flux would be further reduced by implementation of this alternative.

Existing groundwater use laws under 10 NYCRR 5-1.31(b) would continue to minimize potential human exposure to MGP-related constituents (and chloride/TDS) in groundwater at concentrations exceeding standards/guidance values. In addition, the SMP to be prepared (and referenced in a land use restriction) would address exposures to construction workers performing intrusive activities below the water table, such as activities to repair existing, or install new, subsurface utilities/facilities. The SMP would identify requirements for use of personal protective equipment and proper management of impacted groundwater that may be encountered.

Short-Term Effectiveness

During subsurface work under this alternative (drilling, installation of application wells, trenching, etc), onsite remedial construction workers may potentially be exposed to impacted soil by ingestion, dermal contact, and/or inhalation. Potential exposure of onsite workers to chemical constituents would be minimized by the use of PPE, as specified in a site-specific HASP that would be developed during the remedial design. Air monitoring would be performed during the construction under this alternative to determine the need for additional engineering controls (e.g., use of water sprays and/or foam to suppress dust/vapors/odors following removal of cover materials, modifying the rate of construction activities, etc.) and to confirm that dust or volatilized organic vapors are within acceptable levels, as specified in the site-specific HASP.

The community would not have access to the site during implementation of the remedial activities because the site is currently and would continue to be fenced. Risks to the community also would be minimized by providing security around the work area and implementing a CAMP to minimize the potential migration of volatile organic vapors or impacted dust from the site. In addition, actions would be taken, if needed, to minimize potential MGP nuisance odors. Construction of facilities needed for the enhanced bioremediation system at the site may require a few months to complete.

Monitoring would also be performed pursuant to this alternative. The anticipated reduction in concentrations of MGP-related constituents in groundwater would not take place in the short-term. It is expected to take at least several months or years to occur.

Personnel performing groundwater monitoring would use PPE and follow requirements of a site-specific HASP.

Long-Term Effectiveness

Enhanced bioremediation may be effective over the long-term at reducing concentrations of MGP-related constituents in groundwater. Existing microbial communities in the subsurface would be stimulated to increase the natural degradation of MGP-related constituents. Long-term monitoring would be performed to evaluate changes in groundwater conditions.

Direct contact, ingestion, and inhalation human health exposures to MGP-impacted groundwater would be reduced in the long-term through the enhanced bioremediation (and other measures as needed) because concentrations would be reduced. However, there would continue to be the potential for exposure to high groundwater salinity levels (i.e., concentrations of TDS and chloride exceeding groundwater quality standards). Potential exposures would be further addressed via the establishment of a land use restriction and SMP. The land use restriction and SMP would be kept in place, unchanged, unless site conditions were to change and make these measures unnecessary. If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer.

Operation of the enhanced bioremediation system and establishment of institutional controls could be expected to adequately and reliably provide for the management of groundwater exhibiting constituents at concentrations exceeding standards.

Reduction of Toxicity, Mobility, or Volume

Enhanced bioremediation would reduce the toxicity of MGP-related constituents in groundwater through the treatment of these constituents. The volume of constituents in groundwater would decrease as a result of the enhanced bioremediation. The mobility of constituents in groundwater would not be affected by this alternative because groundwater flow rates and patterns would not be changed.

By reducing the toxicity and volume of constituents of interest in groundwater, this alternative limits the potential impacts to human health and the environment. Natural attenuation of residual impacts in groundwater hydraulically upgradient from the treatment zone would potentially occur over the long-term and further reduce the toxicity, mobility, and volume of impacts.

Implementability

Enhanced bioremediation is technically feasible and a proven technology. The boreholes and application wells envisioned under this alternative can be installed relatively quickly and easily with minor disruption to existing facility operations. Trenching to install piping to each well can also be performed relatively easily. The treatment system would be constructed to allow for continuous automatic operation. Periodic O&M would be performed to verify that the system is operating as designed and to collect groundwater samples to evaluate treatment system performance and potential modifications.

It is anticipated that concentrations of MGP-related constituents in groundwater could be reduced under this alternative within a matter of a few years time (potentially to levels that are consistent with groundwater quality standards or asymptotic levels that are close to standards). The time associated with successful implementation of the enhanced bioremediation would be upwards of 5 years and potentially longer. Long-term monitoring and maintenance could last 30 years or more.

<u>Cost</u>

The capital costs associated with this alternative include bench-scale and pilot testing, installation of application and monitoring wells, installation of enhanced bioremediation treatment equipment and facilities (treatment shed), site restoration, and preparation of the land use restriction and SMP.

Annual O&M costs associated with this alternative include costs associated with system monitoring and maintenance (refilling oxygen tanks, periodic groundwater monitoring/reporting) and preparation of an annual report summarizing treatment system O&M and results for groundwater monitoring. Note that costs associated with expansion of the treatment system, if needed, are not included under this alternative. The total estimated 30-year present worth cost for implementation of this alternative is approximately $3,250,000. The cost for this alternative could potentially be double this amount if a more aggressive approach such as oxygenated water recirculation were to be selected and implemented based on the outcome of the pilot studies or pre-design investigation. A detailed breakdown of the estimated costs for this alternative (based on the conceptual approach described above) is presented in Table 16.

6. Comparative Analysis of Alternatives

6.1 General

This section presents the comparative analysis of each remedial alternative using the seven evaluation criteria identified in Section 5.2. The comparative analysis identifies the advantages and disadvantages of each alternative relative to each other and with respect to the seven criteria. The results of the comparative analysis were used as a basis for recommending remedial alternatives for addressing the RAOs identified for the site.

6.2 Comparative Analysis – Subsurface Soil Alternatives

This section provides a comparative analysis of the five subsurface soil alternatives:

- Alternative SM1 – No Further Action.
- Alternative SM2 – Institutional Controls.
- Alternative SM3 – In-Situ Soil Stabilization and Institutional Controls.
- Alternative SM4 – Focused Soil Excavation and Institutional Controls.
- Alternative SM5 – Soil Excavation to Industrial SCOs and Institutional Controls.

6.2.1 Compliance with SCGs

<u>Chemical-Specific SCGs</u>

Under each soil remedial alternative, there would continue to be exceedances of certain chemical-specific SCGs as follows: (1) Alternatives SM1 and SM2 generally involve natural degradation processes with no removal or treatment, and the timing and extent of improvement (if any) by natural degradation processes in soil is uncertain; (2) Alternative SM3 involves stabilization/solidification and would result in chemical constituents being immobilized in soil (not removed); and (3) Alternatives SM4 and SM5 involve removal, but the existing data indicates that there would continue to be exceedances of the industrial use SCOs at several subsurface locations in the northeastern portion of the site under Alternative SM4 and below a small section of the Main Complex Building under Alternative SM5.

However, such exceedances under the alternatives do not necessarily equate to a current risk to human health or the environment. Measures to address potential exposure pathways would be implemented under Alternatives SM2 through SM5 (e.g., restricting land use to industrial, requiring adherence to provisions of an SMP).

Action-Specific SCGs

Action-specific SCGs are not applicable to Alternatives SM1 and SM2 because they do not involve the implementation of active remedial measures. For Alternatives SM3, SM4, and SM5, health and safety-related SCGs would be addressed by following a site-specific HASP during remedy implementation. In addition, appropriate procedures would be followed to comply with SCGs related to the handling and disposal of impacted soil (including transportation and disposal, permitting, manifesting, and disposal facilities) and air emissions. Action-specific SCGs would be achieved for each of the alternatives.

Location-Specific SCGs

Location-specific SCGs are not applicable to Alternatives SM1 and SM2 because they do not involve the implementation of active remedial measures. For Alternatives SM3, SM4, and SM5, potentially applicable location-specific SCGs include the acquisition of regulatory approvals/ permits (including local building permits). The requirements of these approvals/permits would be met during the design and implementation phases of these alternatives.

6.2.2 Overall Protection of Human Health and the Environment

Current conditions are already protective of human health and the environment to an extent. For instance, existing ground surface cover in the form of grass/vegetation, asphalt pavement, and Metro STP structures prevents direct contact with, or ingestion of, soil by site workers and prevents exposures to soil via wind-blown dust. In addition, a significant amount of impacted soil (110,000 tons) has already been removed as part of the Soil/Groundwater Removal IRM, and existing data indicates that the remaining soil impacts are generally limited to: (1) thin lenses of NAPL within the lower portion of the Solvay waste layer and upper part of the sand unit in the northeastern portion of the site; and (2) exceedances of industrial use SCOs (generally by less than an order of magnitude, with few exceptions) at locations in the northeastern portion of the site. As discussed earlier in this report, no constituents were identified in leachate generated by TCLP sample extraction at concentrations exceeding regulatory limits presented in 6 NYCRR Part 371. Naturally-occurring degradation processes could potentially reduce concentrations of constituents of interest in soil.

As indicated in Section 1.3.5, the HHRA determined that potential human receptors that could be exposed to constituents of interest in soil include future construction workers and subsurface utility workers. Potential exposures to these workers would be addressed by the land use restriction and SMP included under each alternative, except Alternative SM1.

Potential exposure would be even further limited under Alternatives SM3, SM4, and SM5 by the active remedial measures to address soil (and potentially by Alternative SM2 if excavation were to occur in the future in connection with a treatment plant expansion in the northeastern portion of the site – although plans for a treatment plant expansion have not been developed at this time). Contact with or ingestion of soil would be further minimized under Alternative SM3 because the soil would be bound up in a solidified/stabilized matrix. Contact with or ingestion of impacted soil would be further minimized under Alternatives SM4 and SM5 because the soil would be removed and transported for offsite disposal. The exposure potential would be reduced more under Alternative SM4 than under Alternative SM3 (due to soil removal instead of stabilization), and more under Alternative SM5 than Alternative SM4 (due to a larger soil removal volume).

Under each of the alternatives, there is a potential for constituents of interest in remaining impacted soil to migrate to groundwater. The potential migration of chemical constituents from soil to groundwater would be further limited under Alternatives SM3 through SM5, as follows:

- ISS under Alternative SM3 would result in chemical constituents in soil being bound in a stabilized/solidified matrix within the treatment area.

- The excavation under Alternatives SM4 and SM5 would result in the permanent removal of some of the most-impacted soil remaining at the site, but there would still be impacted soil in certain locations under both alternatives, including under the Main Building Complex.

As previously mentioned, the SMP under Alternative SM2 would include a requirement for developing and implementing a remedial plan in connection with a potential future treatment plant expansion into the northeastern section of the site. The remedial plan would identify areas and depths of impacted soil to be removed and transported for offsite disposal in connection with the expansion. Such excavation, if it were to be performed in the future, would also further limit potential exposure.

6.2.3 Short Term Effectiveness

There are no short-term negative impacts associated with Alternatives SM1 and SM2. Potential short-term impacts under Alternatives SM3 through SM5 are primarily associated with the soil disturbance that would occur during stabilization/solidification, excavation, and offsite transportation and disposal, and include: (1) remedial construction worker exposure to soil containing constituents of interest; (2) community exposure to MGP nuisance odors, volatile organic vapors, or dust from the site; (3) increased risks for accidents and spills; (4) increased noise; and (5) increased wear on public roadways.

The magnitude of the short-term impacts are related to the volume of material handled under the alternatives, and are therefore highest under Alternative SM5, second highest under Alternative SM4, and third highest under Alternative SM3. Appropriate measures would be implemented to mitigate risks under Alternatives SM3 through SM5 and would include, but are not limited to, advance planning, using PPE, implementing a HASP and CAMP that include an air monitoring program, and implementing engineering controls such as water sprays and/or foam (as needed) to keep dust and organic vapors within acceptable levels.

It is anticipated that the amount of time needed to implement the alternatives would be: a couple months for Alternative SM2, several months for Alternative SM3, approximately 6 months to 1 year for Alternative SM4, and greater than 1 year for Alternative SM5. Each of the action alternatives for soil would disrupt facility operations. However, the disruption would be less under Alternative SM3 than under Alternatives SM4 and SM5 primarily because of: (1) the shorter timeframe involved with remedy implementation; (2) the smaller footprint required for impacted soil staging; and (3) the smaller amount of vehicle traffic associated with hauling impacted materials from the site. Access to the east side of the County Maintenance Building (the main entrance) would be blocked by Alternatives SM3 and SM4 (although for a shorter period under Alternative SM3). Access to the County Maintenance Building would essentially be completely cut off by Alternative SM5, and access to portions of the Main Building Complex would also be cut off by Alternative SM5. This loss of access, in turn, would present operational and safety concerns (unloading areas for receipt of chemical/product inventory needed for facility treatment operations would be blocked and the main entrance to the offices would be blocked).

6.2.4 Long-Term Effectiveness

Alternative SM1 would not effectively meet the RAOs related to potential direct contact, ingestion, and inhalation human health exposure pathways. Over the long-term, Alternatives SM2 through SM5 would effectively meet these RAOs, alone, by the institutional controls (land use restriction and SMP) that are included with these alternatives.

The institutional controls would be kept in place, unchanged, unless site conditions or soil cleanup objectives for industrial site use were to change. The SMP would set forth the actions to be taken to protect the health and safety of site workers and the community and properly handle impacted materials under a variety of site maintenance/future construction scenarios (utility repair or installation, building expansion/construction, landscaping, maintenance activities, etc.). If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of impacted material to be left in place. Periodic reports would be filed with the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

Alternatives SM3, SM4, and SM5 would also involve active remedial measures, including stabilization and/or excavation, in response to the RAO related to environmental protection (the potential migration of chemical constituents for soil). Alternative SM5 is the largest in terms of scope and coverage area and would result in removal of a significant amount of soil that exhibits little or no NAPL. Alternatives SM3 and SM4 target the most-impacted soil remaining at the site, which will result in removal of potential continuing contributions to groundwater quality impacts in the northeastern portion of the site. The additional soil removal under Alternative SM5 would likely add little benefit in terms of long-term effectiveness as compared to Alternatives SM3 and SM4. Under each alternative, there would still be some amount of impacted soil remaining following completion of the alternative (e.g., under the Main Building Complex and in certain other locations).

As previously mentioned, a long-term concern for Alternative SM3 is related to the area selected for ISS. This area has been identified by Onondaga County as a potential candidate location for future treatment plant expansion, if needed. If treatment facilities were to be constructed in this area in the future (plans have not been developed), then excavation for foundations would be made more difficult due to the solidified mass created by the ISS. The stabilized soil excavated for the foundations would likely require offsite transportation and disposal, resulting in additional remedial expense on top of the original stabilization expense. However, an ISS material mixture could be selected that would allow for such future excavation, if needed.

6.2.5 Reduction of Toxicity, Mobility, or Volume

Alternatives SM1 and SM2 would involve natural degradation processes to reduce concentrations of constituents of interest in subsurface soil. The timing and extent of improvements (if any) is uncertain. Reduction of toxicity, mobility, and mass of the impacted subsurface soil would potentially occur over an extended period of time as a result of natural processes.

Alternatives SM3, SM4, and SM5 would involve active remedial measures to address impacted subsurface soil. Under Alternative SM3, ISS would reduce the mobility and toxicity of constituents in soil (through stabilization of these constituents and encapsulation in a grout monolith), but the volume of impacted soil would remain unchanged. Under Alternatives SM4 and SM5, excavation would reduce the toxicity, mobility, and volume of chemical constituents in soil at the site, as the soil would be transported for offsite disposal and imported clean backfill would be provided to restore the excavated areas. Alternatives SM3, SM4, and SM5 would each limit potential future migration of constituents from soil to groundwater by minimizing the mobility of constituents of interest in soil (Alternative SM3) or removing the impacted soil (Alternatives SM4 and SM5).

6.2.6 Implementability

Each of the alternatives could be implemented at the site. Alternative SM2 would be the most straightforward action alternative to implement. Alternatives SM3, SM4, and SM5 would be considerably more difficult to implement for a number of reasons, most of which are related to working at an active municipal wastewater treatment facility that covers the footprint of the former MGP. The most difficult action alternative to implement would be Alternative SM5, followed by Alternative SM4, and then Alternative SM3 (Alternative SM2 would be the easiest, as indicated above).

- Overall, the greatest challenge from an implementability standpoint for Alternatives SM3, SM4, and SM5 would be to plan and coordinate activities to minimize the disruption to Metro STP operations.

    - The soil removal/stabilization area under Alternatives SM3 and SM4 encompasses most of the parking lot associated with the County Maintenance Building and additional space would be required for equipment/material staging under these alternatives. Equipment and materials needed for ISS could be staged north of the County Maintenance Building, but access to the east side of the building (the main entrance) would be blocked by the implementation of these alternatives and parking would be lost for the duration of the remedial activities.

    - Excavation under Alternative SM5 would be further complicated by soil removal extending up to (and around) three sides of the County Maintenance Building and up to (and around) parts of the east and south sides of the Main Building Complex. With access essentially cut off to the County Maintenance Building under this alternative, operations inside the building would need to be temporarily relocated. The lack of access to portions of the Main Building Complex would present operational and safety concerns (unloading areas for receipt of chemical/product inventory needed for treatment operations would be blocked and the main entrance to the offices would be blocked).

- The presence of numerous subsurface utilities (including natural gas, electric, sanitary/storm sewer, and water lines as shown on Figures 9 and 10) and potential subsurface foundations within the removal/treatment areas would also present a difficulty with implementing ISS and excavation. These features would interfere with drilling/injection operations for ISS and sheetpile wall installation for excavation sidewall support. Jet grouting in close proximity to utilities would be required under Alternative SM3, and relocation of subsurface utilities would be required under Alternatives SM4 and SM5.

- Excavation under Alternatives SM4 and SM5 would be complicated by the need to dewater, handle, load, transport, and dispose of large volumes of soil, and the need to pump and treat large volumes of groundwater that would otherwise flood the excavation.

- ISS under Alternative SM3 would require a treatability study to determine the appropriate stabilization agent and injection technology. Stabilization performed following the treatability study and design would create a large solidified mass that would make future excavation for a treatment plant expansion into the area more difficult. However, an ISS material mixture could be selected that would allow for such future excavation by conventional equipment such as a small excavator.

The previous remedial activities at the site (the Soil/Groundwater Removal IRM) were conducted before the existing ammonia/phosphorous removal facilities were constructed. Implementation of Alternative SM3, SM4, or SM5 with these facilities now in-place and operational, presents logistical issues that did not exist at the time of the IRM. Because the remedial limits under these alternatives cover most of, or a portion of, the existing parking lots associated with the County Maintenance Building and the Main Building Complex and certain driveway entrances to these buildings, access to these structures would be limited and parking would be lost for the duration of the remedial activities. The loss of building access presents issues as discussed above.

6.2.7 Cost

The following table summarizes the estimated costs associated with each of the five subsurface soil remedial alternatives.

Alternative	Estimated Capital Cost (Rounded)	Estimated Present Worth O&M Cost (Rounded)	Estimated Total Cost (Rounded)
SM1	$0	$0	$0
SM2	$97,500	$200,000	$292,000
SM3	$6,490,000	$200,000	$6,690,000
SM4	$18,550,000	$200,000	$18,700,000
SM5	$54,500,000	$200,000	$54,700,000

As indicated in the table above, total costs associated with implementing the action Alternatives are ranked as follows (in order from lowest to highest cost): SM2, SM3, SM4, and SM5.

6.3 Comparative Analysis – Groundwater Alternatives

This section provides a comparative analysis of the three groundwater alternatives:

- Alternative GW1 – No Further Action.
- Alternative GW2 – Monitored Natural Attenuation and Institutional Controls.
- Alternative GW3 – Enhanced Bioremediation and Institutional Controls.

6.3.1 Compliance with SCGs

Chemical-Specific SCGs

For each alternative, the Class GA groundwater quality standards/guidance values presented in 6 NYCRR Parts 700-705 and in NYSDEC TOGS 1.1.1 are applicable chemical-specific SCGs. Alternatives GW1 and GW2 include natural attenuation processes for reductions in concentrations of constituents of interest in groundwater, but it is unlikely that standards would be met, as described in the secondary screening discussion under Subsection 4.4.2.2. Alternative GW3 includes active groundwater treatment and would be expected to reduce concentrations of MGP-related constituents in groundwater, which could come close to or would meet groundwater quality standards.

Action-Specific SCGs

Action-specific SCGs are not applicable to Alternative GW1 because it does not involve the implementation of active remedial measures. Action-specific SCGs that potentially apply to

Alternative GW2 are associated with periodic groundwater monitoring. For Alternative GW3, appropriate procedures would be followed to comply with action-specific SCGs related to completing soil borings, installing application wells, excavating trenches and installing piping, monitoring groundwater conditions, and transporting waste materials for offsite disposal.

Location-Specific SCGs

Location-specific SCGs are not applicable to either Alternative GW1 or GW2. For Alternative GW3, remedial activities would be designed and conducted in accordance with local codes and ordinances.

6.3.2 Overall Protection of Human Health and the Environment

Under each alternative, the existing groundwater use laws under 10 NYCRR 5-1.31(b) would continue to minimize potential human exposure to constituents in groundwater at concentrations exceeding Class GA standards/guidance values.

The SMP to be prepared under Alternatives GW2 and GW3 (and referenced in a land use restriction) would address exposures to construction workers performing intrusive activities below the water table, such as activities to repair existing, or install new, subsurface utilities/facilities. The SMP would identify requirements for use of personal protective equipment and proper management of impacted groundwater that may be encountered. An SMP would not be prepared under Alternative GW1.

Although there are MGP-related constituents in groundwater at concentrations exceeding Class GA standards/guidance values, the mass flux evaluation demonstrated that concentrations of constituents in groundwater flowing from the site to the Barge Canal do not result in exceedances of applicable surface water quality standards.

As previously indicated, a reducing environment is present at a majority of locations in the subsurface and provides opportunities for microbial communities to naturally degrade BTEX and PAHs. Under Alternatives GW1 and GW2, natural attenuation processes over time may result in decreases in concentrations of MGP-related constituents in groundwater. Under Alternative GW3, existing microbial degradation would be enhanced by the addition of oxygen/amendments. Therefore, MGP-related constituents in groundwater would be degraded faster under Alternative GW3 than under Alternatives GW1 and GW2. Because groundwater concentrations would be reduced more under Alternative GW3 than under Alternatives GW1 and GW2, Alternative GW3 would provide a higher level of protection to human health and the environment.

6.3.3 Short Term Effectiveness

There would be no active remedial measures implemented under Alternatives GW1 and GW2, other than groundwater monitoring under Alternative GW2. Therefore, there would be no short-term environmental impacts or risks to onsite workers or the community (or construction workers, because there would not be any construction) associated with implementation of these alternatives. Personnel performing groundwater monitoring under Alternative GW2 would use PPE and follow requirements of a site-specific HASP.

Under Alternative GW3, there would be potential short-term effects to site workers and the community as a result of subsurface construction work, including drilling of borings, installation of application wells, and trenching. However, these short-term effects are considered minimal and could easily be mitigated through the use of advance planning, PPE, a site-specific HASP, and a CAMP. An air monitoring program would be implemented and engineering controls such as water sprays and/or foam would be used (as needed) to keep dust and organic vapors within acceptable levels.

Construction of facilities needed for the enhanced bioremediation system under Alternative GW3 would require a few months to complete. As indicated above, there would be no construction under Alternatives GW1 or GW2.

6.3.4 Long-Term Effectiveness

Under Alternatives GW1 and GW2, natural attenuation processes may be effective over the long-term at reducing concentrations of constituents of interest in groundwater. As previously discussed, a reducing environment is present at a majority of locations in the aquifer and provides opportunities for microbial communities to naturally degrade BTEX and PAHs. Long-term monitoring would be performed under Alternative GW2 (but not Alternative GW1) to evaluate changes in groundwater conditions.

Based on current conditions, there is a potential for construction worker exposure to impacted groundwater during future intrusive activities (e.g., during excavation below the water table to repair existing, or install new, subsurface utilities/facilities). Alternative GW1 does not include actions or measures to address potential construction worker exposure to impacted groundwater.

Under Alternative GW3, existing microbial degradation would be enhanced and MGP-related constituents in groundwater would be degraded to a greater extent than under Alternatives GW1 and GW2. Because groundwater concentrations would be reduced more under Alternative GW3, this alternative would provide a higher level of protection to human health and the environment than Alternatives GW1 and GW2 and would also be more effective in the long-term.

Through the establishment of a land use restriction and SMP, Alternatives GW2 and GW3 would meet the groundwater RAOs related to potential direct contact, ingestion, and inhalation human health exposure pathways. The land use restriction and SMP would be kept in place, unchanged, unless site conditions were to change and make these measures unnecessary. If changes were to occur that would require modifications to the land use restriction/SMP, such modifications would be presented to the NYSDEC for review and approval, as appropriate. Both the land use restriction and SMP would be apparent to possible future site owners during comprehensive due diligence activities performed in connection with property transfer. Taken together, these institutional controls could be expected to adequately and reliably provide for the management of groundwater exhibiting constituents at concentrations exceeding standards.

6.3.5 Reduction in Toxicity, Mobility, and Volume

MGP-impacted groundwater would not be contained, removed, or treated (other than by ongoing natural processes) under Alternatives GW1 and GW2. Reduction of the toxicity, mobility, and volume of impacted groundwater would likely take place over an extended period of time via natural attenuation processes under Alternatives GW1 and GW2.

Under Alternative GW3, active treatment would be conducted in the form of enhanced bioremediation and would reduce the toxicity and volume of MGP-related constituents in groundwater. The active treatment under Alternative GW3 would be expected to result in lower concentrations than could be achieved by natural processes without enhancement. Therefore, Alternative GW3 is considered the most effective groundwater alternative for this evaluation criterion.

6.3.6 Implementability

Alternatives GW1, GW2, and GW3 are considered technically and administratively implementable. Alternative GW2 would be the most straightforward action alternative to implement. Alternative GW3 would involve construction and O&M related to actively treating groundwater, and would involve more labor hours and effort to implement than the other groundwater alternatives. The enhanced bioremediation under Alternative GW3 could be implemented with relatively little disruption to facility operations.

6.3.7 Cost

The following table summarizes the estimated costs associated with each of the groundwater remedial alternatives.

Alternative	Estimated Capital Cost (Rounded)	Estimated Present Worth O&M Cost (Rounded)	Estimated Total Cost (Rounded)
GW1	$0	$0	$0
GW2	$97,500	$804,000	$902,000
GW3	$1,340,000 to $2,680,000	$1,905,000 to $3,810,000	$3,250,000 to $6,500,000

As indicated in the table above, total costs associated with implementing Alternative GW3 are higher than costs for implementing the other action alternative (GW2).

The final cost for Alternative GW3 could be double the $3,250,000 estimate shown in Table 16 if pilot testing were to show that a more aggressive groundwater bioremediation approach (e.g., oxygenated water recirculation) were to be needed.

7. Selection of Preferred Remedial Alternative

This section presents the preferred remedial alternatives to address soil and groundwater conditions at the site.

7.1 Preferred Soil Remedial Alternative

Based on the comparative analysis of the five soil remedial alternatives presented in Section 6, Alternative SM3 would cost-effectively achieve the best balance of the seven NYSDEC evaluation criteria, and is therefore the preferred alternative. Via the soil stabilization, land use restriction, and SMP, Alternative SM3 will achieve the RAOs related to protection of human health and the environment. Alternative SM3 is implementable, has few short-term negative impacts, will be effective over the long-term, will be conducive to future expansion of the Metro STP (if future expansion is required), and will be implemented for a significantly lower cost than Alternatives SM4 and SM5. The key advantages of Alternative SM3 over the other alternatives evaluated in this FS Report are summarized below.

- Alternative SM3 provides greater protection of the environment (i.e., groundwater quality) than Alternatives SM1 and SM2. The active remedial measures included under Alternative SM3 will result in the most impacted soil being immobilized, and groundwater within the treatment area will be contained (and/or completely bound) within the solidified/stabilized material. This will result in a reduction in the mobility and toxicity of impacts from approximately 14,500 cy of soil.

- Alternative SM3 is more easily implemented than Alternatives SM4 and SM5, and is equally- or nearly equally-protective of human health and the environment over the long-term. The additional actions under Alternatives SM4 and SM5 (soil excavation) would result in significantly increased short-term risks related to increased soil volume/handling and construction (e.g., worker exposure, injury, odors, noise, spills, traffic, etc.), and the “potential” added benefits of those actions do not outweigh those risks. Impacts from residually-impacted soil remaining under Alternative SM3 could be addressed by a groundwater remedial program (refer to Subsection 7.2).

- Alternative SM3 will result in the smallest disruption to Metro STP operations of the active remedial alternatives. Specifically, Alternative SM3 will, as compared to Alternatives SM4 and SM5: (1) require no re-location of subsurface utilities that are necessary for facility operations; (2) result in less vehicle (truck) traffic at the site (and less potential for related accidents and spills); and (3) result in fewer MGP odors that would need to be controlled at the site. Alternative SM3 will also, as compared to Alternative SM5: (1) require less work in close proximity to the existing buildings and fewer restrictions on access to certain portions of the buildings; (3) remove fewer paved areas (i.e., driveways and parking lots) needed for access to areas of the facility and for employee/visitor parking.

The additional costs for Alternatives SM4 and SM5 (nearly 3 to 8 times greater than Alternative SM3) are not justified considering that Alternative SM3 is protective of human health and the environment, is appropriate for the existing land use and potential facility expansion, and can be readily implemented.

7.2 Preferred Groundwater Remedial Alternative

Based on the comparative analysis of the three groundwater remedial alternatives presented in Section 6, Alternative GW3 would cost-effectively achieve the best balance of the seven NYSDEC evaluation criteria, and is therefore the preferred alternative. The enhanced bioremediation under Alternative GW3 is expected to reduce concentrations faster and to a greater extent than could be achieved by natural processes without enhancement. This greater reduction in concentrations will:

- Provide an incremental reduction in the toxicity and volume of MGP-related constituents in groundwater compared to the other alternatives.

- Provide an incremental increase in the level of protection to human health and the environment compared to the other alternatives.

The reduction under Alternative GW3 would occur via natural means (i.e., introduction of oxygen and other amendments to enhance the activity of the native microbial community) and would not involve significant pumping/dewatering or introduction of potentially hazardous chemicals into the subsurface to degrade the MGP-related constituents. Although Alternative GW3 costs more than the other alternatives, it is relatively easily implemented, has few short-term negative impacts, and will be effective over the long-term, particularly when coupled with Alternative SM3.

Although it may be possible to achieve Class GA groundwater quality standards/guidance values for MGP-related constituents under Alternative GW3, concentrations of TDS and chloride in deeper deposits below the site will continue to be well-above groundwater quality standards because of the naturally high salinity. Groundwater derived from these deposits will continue to be unusable for human consumption.

The land use restriction proposed under the preferred soil remedial alternative will be expanded to notify future property owners of the presence of constituents of interest in groundwater and prohibit groundwater use. The SMP proposed under the preferred soil remedial alternative will be expanded to include the necessary elements to address groundwater. Coupled together, Alternative SM3 and GW3 will be protective of human health and the environment.

7.3 Recommended Alternative Cost Estimate

The following table summarizes the total estimated costs associated with the preferred subsurface soil and groundwater alternatives.

Alternative	Estimated Capital Cost (Rounded)	Estimated Present Worth O&M Cost (Rounded)	Estimated Total Cost (Rounded)
SM3	$6,489,000	$200,000	$6,690,000
GW3	$1,340,000 to $2,680,000	$1,905,000 to $3,810,000	$3,250,000 to $6,500,000
Total Present Worth Cost Estimate:			**$9,940,000 to 13,190,000**

The range of costs for the preferred groundwater alternative reflects the possibility of implementing a more aggressive enhanced groundwater bioremediation treatment approach such as oxygenated water recirculation, if needed, based on the outcome of the pilot studies or pre-design investigation.

Note that the costs presented above do not include additional remedial measures that may be needed if Onondaga County expands the Metro STP into the northeast portion of the site in the future. This would likely include, but not be limited to, soil excavation within the footprint of the expansion, excavation dewatering, water treatment, soil dewatering, and waste transportation and disposal. The cost of such additional remedial work is anticipated to be consistent with the costs for Alternatives SM3 and SM4 ($6.7 million to $18.7 million, respectively).

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Tables

TABLE 1
SUMMARY OF SAMPLING LOCATIONS AND LABORATORY ANALYSES

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
Surface Soil Samples												
SS-1	- -		7/18/1995	X	X							
SS-3	- -		7/18/1995	X	X							
SS-4	- -		7/18/1995	X	X							
SS-5	- -		3/31/1998	X	X			X				
SS-6	- -		3/31/1998	X	X	X		X				
Subsurface Soil Samples												
SB-1	10-12		2/19/1998	X	X		X					
	16-18		2/19/1998	X	X	X	X	X	X	X		
	22-24		2/19/1998	X	X		X					
SB-2	12-14	X	7/13/1995	X	X	X	X	X	X			
	14-16	X	7/13/1995	X	X		X					
SB-3	14-16	X	2/27/1998	X	X	X	X	X	X	X		
SB-4	12-14	X	7/13/1995	X	X		X					
	14-16	X	7/13/1995	X	X	X	X	X	X			
	30-32		7/13/1995	X	X		X					
	38-40		7/13/1995	X	X		X					
SB-5	4-6	X	7/14/1995	X	X	X	X	X	X			
	20-22		7/14/1995	X	X		X					
SB-6	8-10	X	7/18/1995	X	X	X	X	X	X			
	22-24		7/18/1995	X	X		X					
SB-7	12-14		2/26/1998	X	X		X					
	14-16		2/26/1998	X	X		X					
	20-22		2/26/1998	X	X	X	X	X	X	X		
SB-8	18-20		2/26/1998	X	X		X					
SB-9	2-4		2/24/2000	X	X		X					
	6-8		2/24/2000							X		
	10-12		2/24/2000	X	X		X					
	14-16		2/24/2000	X	X		X					
	20-22		2/24/2000	X	X		X					
	28-30		2/24/2000	X	X		X					
	38-40		2/24/2000	X	X		X					
	48-50		2/24/2000	X	X		X					
SB-10	2-4	X	2/24/2000	X	X		X					
	6-8	X	2/24/2000	X	X		X					
	10-12	X	2/24/2000							X		
	14-16	X	2/24/2000	X	X		X					
	20-22		2/24/2000	X	X		X					
	28-30		2/24/2000	X	X		X					
	38-40		2/24/2000	X	X		X					
	48-50		2/24/2000	X	X		X					
DUP-4 [SB-10]	14-16	X	2/24/2000	X	X		X					
SB-11	2-4	X	2/28/2000	X	X		X					
	6-8	X	2/28/2000	X	X		X					
	10-12	X	2/28/2000	X	X		X					
	12-14	X	2/28/2000							X		
	14-16	X	2/28/2000	X	X		X					
	20-22		2/28/2000	X	X		X					
	28-30		2/28/2000	X	X		X					
	38-40		2/28/2000	X	X		X					
	48-50		2/28/2000	X	X		X					

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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
SB-12	2-4	X	2/28/2000	X	X		X					
	6-8	X	2/28/2000							X		
	10-12	X	2/28/2000	X	X		X					
	14-16	X	2/28/2000	X	X		X					
	20-22		2/28/2000	X	X		X					
	28-30		2/28/2000	X	X		X					
	38-40		2/28/2000	X	X		X					
	48-50		2/28/2000	X	X		X					
SB-13	2-4	X	3/15/2000	X	X		X					
	6-8	X	3/15/2000	X	X		X					
	10-12	X	3/15/2000	X	X		X					
	14-16	X	3/15/2000							X		
	20-22		3/15/2000	X	X		X					
	28-30		3/15/2000	X	X		X					
	38-40		3/15/2000							X		
	48-50		3/15/2000	X	X		X					
SB-14	2-4		2/24/2000	X	X		X					
	6-8		2/24/2000	X	X		X					
	8-10		2/24/2000							X		
	14-16		2/24/2000	X	X		X					
	20-22		2/24/2000	X	X		X					
	28-30		2/24/2000	X	X		X					
	38-40		2/24/2000	X	X		X					
	48-50		2/24/2000	X	X		X					
DUP-3 [SB-14]	2-4		2/24/2000	X	X		X					
SB-15	2-4	X	3/2/2000	X	X		X					
	6-8	X	3/2/2000	X	X		X					
	8-10	X	3/2/2000							X		
	10-12	X	3/2/2000	X	X		X					
	14-16	X	3/2/2000	X	X		X					
	20-22		3/2/2000	X	X		X					
	28-30		3/2/2000	X	X		X					
	38-40		3/2/2000	X	X		X					
	48-50		3/2/2000	X	X		X					
DUP-7 [SB-15]	6-8	X	3/2/2000		X		X					
SB-16	2-4	X	3/3/2000							X		
	6-8	X	3/3/2000	X	X		X					
	10-12	X	3/3/2000	X	X		X					
	14-16	X	3/3/2000	X	X		X					
	20-22		3/3/2000	X	X		X					
	28-30		3/3/2000							X		
	38-40		3/3/2000	X	X		X					
	48-50		3/3/2000	X	X		X					
SB-17	2-4	X	2/29/2000							X		
	6-8	X	2/29/2000	X	X		X					
	10-12	X	2/29/2000	X	X		X					
	14-16	X	2/29/2000	X	X		X			X		
	20-22		2/29/2000	X	X		X					
	28-30		2/29/2000	X	X		X					
	38-40		2/29/2000	X	X		X					
	48-50		2/29/2000	X	X		X					
SB-18	2-4	X	3/16/2000							X		
	6-8	X	3/16/2000	X	X		X					
	10-12	X	3/16/2000	X	X		X					
	14-16	X	3/16/2000	X	X		X					
	20-22		3/16/2000	X	X		X					
	28-30		3/16/2000	X	X		X					
	38-40		3/16/2000	X	X		X					
	48-50		3/16/2000	X	X		X					

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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
SB-19	2-4		3/16/2000	X	X		X					
	6-8		3/16/2000	X	X		X					
	10-12		3/16/2000							X		
	14-16		3/16/2000	X	X		X					
	20-22		3/16/2000	X	X		X					
	26-28		3/16/2000							X		
	28-30		3/16/2000	X	X		X					
	38-40		3/16/2000	X	X		X					
	48-50		3/16/2000	X	X		X					
SB-20	2-4		2/22/2000	X	X		X					
	8-10		2/22/2000	X	X		X					
	10-12		2/22/2000	X	X		X					
	14-16		2/22/2000	X	X		X					
	18-20		2/22/2000							X		
	20-22		2/22/2000	X	X		X					
	28-30		2/22/2000	X	X		X					
	38-40		2/22/2000	X	X		X					
	48-50		2/22/2000	X	X		X					
SB-21	2-4	X	2/21/2000	X	X		X					
	6-8	X	2/21/2000	X	X		X					
	10-12	X	2/21/2000	X	X		X					
	14-16	X	2/21/2000	X	X		X					
	16-18		2/22/2000							X		
	20-22		2/21/2000	X	X		X					
	28-30		2/21/2000	X	X		X					
	34-36		2/22/2000							X		
	38-40		2/21/2000	X	X		X					
	48-50		2/21/2000	X	X		X					
DUP-1 [SB-21]	14-16	X	2/21/2000	X	X		X					
SB-22	2-4	X	3/6/2000				X					
	6-8	X	3/6/2000				X					
	10-12	X	3/6/2000	X			X					
	14-16	X	3/6/2000							X		
	20-22		3/6/2000	X			X					
	28-30		3/6/2000	X			X					
	38-40		3/6/2000	X	X		X					
	42-44		3/6/2000							X		
	48-50		3/6/2000	X	X		X					
DUP-8 [SB-22]	6-8	X	3/6/2000				X					
SB-23	2-4	X	2/29/2000	X	X		X					
	6-8	X	2/29/2000	X	X		X					
	10-12	X	2/29/2000	X	X		X					
	20-22		2/29/2000	X	X		X					
	28-30		2/29/2000	X	X		X					
	38-40		2/29/2000	X	X		X					
	48-50		2/29/2000	X	X		X					
DUP-5 [SB-23]	6-8	X	2/29/2000	X	X		X					
SB-24	2-4		3/20/2000	X	X		X					
	6-8		3/20/2000	X	X		X					
	10-12		3/20/2000	X	X		X					
	12-14		3/20/2000							X		
	14-16		3/20/2000	X	X		X					
	20-22		3/20/2000	X	X		X					
	28-30		3/20/2000	X	X		X					
	34-36		3/20/2000							X		
	38-40		3/20/2000	X	X		X					
	48-50		3/20/2000	X	X		X					

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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
SB-25	2-4		3/17/2000	X	X		X					
	6-8		3/17/2000	X	X		X					
	10-12		3/17/2000	X	X		X					
	12-14		3/17/2000							X		
	14-16		3/17/2000	X	X		X					
	20-22		3/17/2000	X	X		X					
	28-30		3/17/2000	X	X		X					
	38-40		3/17/2000	X	X		X					
	48-50		3/17/2000	X	X		X					
DUP-15 [SB-25]	20-22		3/17/2000	X	X		X					
SB-26	2-4		2/24/2000	X	X		X					
	6-8		2/24/2000	X	X		X					
	10-12		2/24/2000	X	X		X					
	14-16		2/24/2000							X		
	20-22		2/24/2000	X	X		X					
	26-28		2/24/2000							X		
	28-30		2/24/2000	X	X		X					
	38-40		2/24/2000	X	X		X					
	48-50		2/24/2000	X	X		X					
DUP-2 [SB-26]	14-16		2/24/2000							X		
SB-27	2-4	X	3/2/2000	X	X		X					
	6-8	X	3/2/2000	X	X		X					
	10-12	X	3/2/2000	X	X		X					
	12-14	X	3/2/2000							X		
	14-16	X	3/2/2000	X	X		X					
	18-20		3/2/2000							X		
	20-22		3/2/2000	X	X		X					
	28-30		3/2/2000	X	X		X					
	38-40		3/2/2000	X	X		X					
	48-50		3/2/2000	X	X		X					
SB-28	2-4	X	3/1/2000	X	X		X					
	6-8	X	3/1/2000	X	X		X					
	10-12	X	3/1/2000	X	X		X					
	14-16	X	3/1/2000							X		
	20-22		3/1/2000	X	X		X					
	28-30		3/1/2000	X	X		X					
	38-40		3/1/2000	X	X		X					
	48-50		3/1/2000	X	X		X					
SB-29	2-4	X	3/1/2000							X		
	6-8	X	3/1/2000	X	X		X					
	10-12	X	3/1/2000	X	X		X					
	14-16	X	3/1/2000	X	X		X					
	20-22		3/1/2000	X	X		X					
	28-30		3/1/2000							X		
	38-40		3/1/2000	X	X		X					
	48-50		3/1/2000	X	X		X					
DUP-6 [SB-29]	10-12	X	3/1/2000	X	X		X					
SB-30	2-4		3/13/2000		X							
	6-8		3/13/2000	X	X							
	10-12		3/13/2000	X	X							
	14-16		3/13/2000							X		
	20-22		3/13/2000	X	X							
	24		3/13/2000	X								
	28-30		3/13/2000	X	X							
	38-40		3/13/2000	X	X							
	48-50		3/13/2000	X	X							
DUP-11 [SB-30]	20-22		3/13/2000	X	X							

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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
SB-31	2-4		3/7/2000	X	X		X					
	6-8		3/7/2000	X	X		X					
	10-12		3/7/2000							X		
	12-14		3/7/2000							X		
	14-16		3/7/2000	X	X		X					
	20-22		3/7/2000	X	X		X					
	28-30		3/7/2000	X	X		X					
	38-40		3/7/2000	X	X		X					
	48-50		3/7/2000	X	X		X					
SB-32	2-4		3/8/2000	X	X		X					
	6-8		3/8/2000	X	X		X					
	10-12		3/8/2000	X	X		X					
	12-14		3/8/2000							X		
	14-16		3/8/2000	X	X		X					
	20-22		3/8/2000	X	X		X					
	22-24		3/8/2000	X	X		X					
	24-26		3/8/2000							X		
	28-30		3/8/2000	X	X		X					
	38-40		3/8/2000	X	X		X					
	48-50		3/8/2000	X	X		X					
SB-33	6-8		3/14/2000	X	X		X					
	10-12		3/14/2000							X		
	14-16		3/14/2000	X	X		X					
	20-22		3/14/2000	X	X		X					
	28-30		3/14/2000	X	X		X					
	38-40		3/14/2000	X	X		X					
	48-50		3/14/2000	X	X		X					
DUP-13 [SB-33]	38-40		3/14/2000	X	X		X					
SB-34	2-4		3/6/2000	X	X		X					
	6-8		3/6/2000	X	X		X					
	10-12		3/6/2000	X	X		X					
	12-14		3/6/2000							X		
	14-16		3/6/2000	X	X		X					
	18-20		3/6/2000							X		
	20-22		3/6/2000	X	X		X					
	28-30		3/6/2000	X	X		X					
	38-40		3/6/2000	X	X		X					
	48-50		3/6/2000	X	X		X					
DUP-9 [SB-34]	12-14		3/6/2000							X		
SB-35	2-4		3/8/2000	X			X					
	6-8		3/8/2000	X	X		X					
	16-18		3/8/2000	X			X			X		
	18-20		3/8/2000	X	X		X					
	28-30		3/8/2000	X	X		X					
	38-40		3/8/2000	X	X		X					
	48-50		3/8/2000	X	X		X					
DUP-10 [SB-35]	6-8		3/8/2000	X	X		X					
SB-35A	10-12		3/9/2000	X	X		X					
	14-16		3/9/2000	X	X		X					
SB-36	2-4		3/15/2000	X	X							
	6-8		3/15/2000	X	X							
	10-12		3/15/2000	X	X		X					
	14-16		3/15/2000	X	X		X					
	18-20		3/15/2000							X		
	20-22		3/15/2000	X	X		X					
	28-30		3/15/2000	X	X		X					
	38-40		3/15/2000	X	X		X					
	48-50		3/15/2000	X	X		X					
DUP-14 [SB-36]	6-8		3/15/2000	X	X							
DUP-15 [SB-36]	10-12		3/15/2000	X	X		X					

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SB-37	2-4		3/9/2000	X	X		X					
	6-8		3/9/2000	X	X		X					
	10-12		3/9/2000	X	X		X					
	14-16		3/9/2000	X	X		X					
	18-20		3/9/2000	X	X		X					
	20-22		3/9/2000							X		
	28-30		3/9/2000	X	X		X					
	38-40		3/9/2000	X	X		X					
	48-50		3/9/2000	X	X		X					
SB-38	2-4		3/13/2000	X	X							
	6-8		3/13/2000	X	X							
	10-12		3/13/2000	X	X							
	14-16		3/13/2000	X	X							
	16-18		3/13/2000							X		
	20-22		3/13/2000	X	X							
	28-30		3/13/2000	X	X							
	38-40		3/13/2000	X	X		X					
	48-50		3/13/2000	X	X		X					
DUP-12 [SB-38]	16-18		3/13/2000							X		
SB-39	2-4		3/9/2000	X	X		X					
	6-8		3/9/2000				X			X		
	10-12		3/9/2000	X	X		X					
	14-16		3/9/2000	X	X		X					
	20-22		3/9/2000							X		
	28-30		3/9/2000	X	X		X					
	38-40		3/9/2000	X	X		X					
	48-50		3/9/2000	X	X		X					
SB-40	2-4		3/23/2000	X	X		X					
	6-8		3/23/2000							X		
	10-12		3/23/2000	X	X		X					
	14-16		3/23/2000	X	X		X					
	20-22		3/23/2000							X		
	28-30		3/23/2000	X	X		X					
	38-40		3/23/2000	X	X		X					
	48-50		3/23/2000	X	X		X					
SB-41	2-4		3/22/2000	X	X		X					
	6-8		3/22/2000	X	X		X					
	10-12		3/22/2000	X	X		X					
	14-16		3/22/2000	X	X		X					
	20-22		3/22/2000							X		
	28-30		3/22/2000	X	X		X					
	38-40		3/22/2000	X	X		X					
	48-50		3/22/2000	X	X		X					
SB-42	2-4		3/21/2000	X	X		X					
	6-8		3/21/2000	X	X		X					
	10-12		3/21/2000	X	X		X					
	14-16		3/21/2000	X	X		X					
	20-22		3/21/2000							X		
	28-30		3/21/2000	X	X		X					
	38-40		3/21/2000	X	X		X					
	48-50		3/21/2000	X	X		X					
SB-43	2-4		3/24/2000	X	X		X					
	6-8		3/24/2000	X	X		X					
	10-12		3/24/2000	X	X		X					
	14-16		3/24/2000	X	X		X					
	20-22		3/24/2000							X		
	28-30		3/24/2000	X	X		X					
	38-40		3/24/2000	X	X		X					
	48-50		3/24/2000	X	X		X					
DUP-20 [SB-43]	28-30		3/24/2000	X	X		X					

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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
SB-44	2-4		3/28/2000	X	X		X					
	10-12		3/28/2000	X	X		X					
	14-16		3/28/2000	X	X		X					
	20-22		3/28/2000	X	X		X					
	24-26		3/28/2000							X		
	28-30		3/28/2000	X	X		X					
	38-40		3/28/2000	X	X		X					
	48-50		3/28/2000	X	X		X					
SB-45	2-4		3/27/2000	X	X		X					
	6-8		3/27/2000	X	X		X					
	10-12		3/27/2000	X	X		X					
	14-16		3/27/2000	X	X		X					
	20-22		3/27/2000							X		
	28-30		3/27/2000	X	X		X					
	38-40		3/27/2000	X	X		X					
	48-50		3/27/2000	X	X		X					
DUP-21 [SB-45]	38-40		3/27/2000	X	X		X					
SB-46	2-4		3/27/2000	X			X					
	6-8		3/27/2000	X			X					
	10-12		3/27/2000	X	X		X					
	14-16		3/27/2000	X	X		X					
	20-22		3/27/2000	X	X		X					
	22-24		3/27/2000							X		
	28-30		3/27/2000	X	X		X					
	38-40		3/27/2000	X	X		X					
	48-50		3/27/2000	X	X		X					
SB-47	2-4		3/22/2000	X	X		X					
	6-8		3/22/2000	X	X		X					
	10-12		3/22/2000	X	X		X					
	14-16		3/22/2000	X	X		X					
	20-22		3/22/2000							X		
	28-30		3/22/2000	X	X		X					
	38-40		3/22/2000	X	X		X					
	48-50		3/22/2000	X	X		X					
DUP-19 [SB-47]	28-30		3/22/2000	X	X		X					
SB-48	2-4		3/23/2000	X	X		X					
	10-12		3/23/2000	X	X		X					
	14-16		3/23/2000	X	X		X					
	16-18		3/23/2000							X		
	20-22		3/23/2000	X	X		X					
	28-30		3/23/2000	X			X					
	38-40		3/23/2000	X			X					
	48-50		3/23/2000	X			X					
SB-49	2-4		3/20/2000	X	X		X					
	6-8		3/20/2000	X	X		X					
	10-12		3/21/2000							X		
	14-16		3/20/2000	X	X		X					
	18-20		3/20/2000							X		
	20-22		3/20/2000	X	X		X					
	28-30		3/21/2000	X	X		X					
	38-40		3/21/2000	X	X		X					
	48-50		3/21/2000	X	X		X					
DUP-17 [SB-49]	10-12		3/21/2000							X		
DUP-18 [SB-49]	48-50		3/21/2000	X	X		X					

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SB-50	2-4		3/28/2000	X	X		X					
	6-8		3/28/2000	X	X		X					
	10-12		3/28/2000	X	X		X					
	14-16		3/28/2000	X	X		X					
	16-18		3/28/2000							X		
	20-22		3/28/2000	X	X		X					
	28-30		3/28/2000	X	X		X					
	38-40		3/28/2000	X	X		X					
	48-50		3/28/2000	X	X		X					
DUP-22 [SB-50]	16-18		3/28/2000							X		
T1	10-15		7/1/2001	X								
T2	5-10		7/1/2001	X								
MW-1D	18-20		2/25/1998	X	X		X					
MW-2D	22-24		2/24/1998	X	X		X					
DUP-3 [MW-2D]	22-24		2/20/1998	X	X		X					
MW-3D	12-14		2/20/1998	X	X		X					
	18-20		2/20/1998	X	X	X	X	X	X	X		
MW-4D	21-23		2/23/1998	X	X	X	X	X	X	X		
	27-29		2/23/1998	X	X		X					
MW-5D	14-16		2/18/1998	X	X		X					
	18-20		2/18/1998	X	X	X	X	X	X	X		
	26-28		2/18/1998	X	X		X					
MW-6S	10-12		7/20/1995	X	X	X	X	X	X			
DUP [MW-6S]	10-12		7/20/1995	X	X	X	X	X	X			
MW-7D	8-10		7/18/1995	X	X		X					
	20-22		7/18/1995	X	X	X	X	X	X			
	26-28		7/18/1995	X	X		X					
MW-8D	20-22		2/17/1998	X	X	X	X	X	X	X		
	22-24		2/17/1998	X	X		X					
DUP-1 [MW-8D]	20-22		2/17/1998	X	X	X	X	X	X			
DUP-2 [MW-8D]	22-24		2/17/1998	X	X		X					
MW-18D	10-14		12/20/2002	X	X	X	X	X	X			
MW-19S	5-6		1/7/2003	X	X	X	X	X	X			
MW-19D	16-17		1/7/2003	X	X	X	X	X	X			
MW-20D	26-30		12/27/2002	X	X	X	X	X	X			
DUP-1 [MW-20D]	26-30		12/27/2002	X	X	X	X	X	X			
MW-21S	0-8		12/30/2002	X	X	X	X	X	X			
MW-21D	22-26		12/30/2002	X	X	X	X	X	X			
MW-22S	6-7		1/6/2003	X	X	X	X	X	X			
MW-22D	22-23		1/6/2003	X	X	X	X	X	X			
B-1	15		2/6/2002	X	X							
B-2	15		1/16/2002	X	X							
B-3	15		1/16/2002	X	X							
B-4	15		1/31/2002	X	X							
B-5	15		2/6/2002	X	X							
B-6	15		12/3/2001	X	X							
DUP-1 [B-6]	15		12/3/2001	X	X							
B-7	15		12/3/2001	X	X							
B-8	15		1/28/2002	X	X							
B-9	15		11/16/2001	X	X							
B-10	15		11/16/2001	X	X							
B-11	15		11/16/2001	X	X							
B-12	20		1/4/2002	X	X							
V-1	7.5		11/23/2001	X	X							
V-2	7.5		12/27/2001	X	X							
V-3	7.5		11/13/2001	X	X							
V-4	7.5		11/13/2001	X	X							
V-5	7.5		10/30/2001	X	X							
V-6	7.5		10/30/2001	X	X							
V-7	7.5		10/25/2001	X	X							
V-8	7.5		10/20/2001	X	X							

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V-9	7.5		10/22/2001	X	X							
V-10	7.5		10/23/2001	X	X							
V-11	7.5		10/23/2001	X	X							
V-12	7.5		10/24/2001	X	X							
V-13	7.5		11/26/2001	X	X							
V-14	17.5		1/4/2002	X	X							
V-14-2	17.5		1/4/2002	X	X							
V-15	17.5		1/4/2002	X	X							
V-16	17.5		1/4/2002	X	X							
V-17	17.5		1/4/2002	X	X							
SE-EW-1	- -		10/2/2001	X	X							
SE-SW-1	- -		10/2/2001	X	X							
SE-B-1	- -		10/2/2001	X	X							
SE-B-2	- -		10/2/2001	X	X							
Groundwater Samples												
MW-1S	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/24/2000	X	X	X	X	X			X	X
	- -		4/21/2003	X	X	X	X	X			X	X
MW-1D	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/25/2000	X	X	X	X	X			X	X
	- -		4/21/2003	X	X	X	X	X			X	X
MW-2S	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/24/2000	X	X	X	X	X			X	X
	- -		4/10/2003	X	X	X	X	X			X	X
MW-2D	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/24/2000	X	X	X	X	X			X	X
	- -		4/10/2003	X	X	X	X	X			X	X
MW-3S	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/24/2000	X	X	X	X	X			X	X
	- -		4/9/2003	X	X	X	X	X			X	X
	- -		2/7/2006	X	X		X				X (N/S)	
MW-3D	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/24/2000	X	X	X	X	X			X	X
	- -		4/9/2003	X	X	X	X	X			X	X
	- -		2/6/2006	X	X		X				X (N/S)	
	- -		3/24/2008 3/25/2008	X	X							
DUP-1 [MW-3D]	- -		3/30/1998	X	X	X	X	X	X		X*	
DUP-1 [MW-3D]	- -		5/20/1998	X	X	X	X	X	X		X*	
MW-3D$_2$	- -		4/10/2003	X	X	X	X	X			X	X
MW-4S	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/26/2000	X	X	X	X	X			X	X
	- -		4/22/2003	X	X	X	X	X			X	X
	- -		2/1/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/13/2006	X	X		X					
DUP3 [MW-4S]	- -		4/22/2003	X	X	X	X	X			X	X

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MW-4D	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/26/2000	X	X	X	X	X			X	X
	- -		4/22/2003	X	X	X	X	X			X	X
	- -		2/6/2006	X	X		X				X (N/S)	
	- -		5/12/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/16/2006	X	X		X					
DUP1 [MW-4D]	- -		10/26/2000	X	X	X	X	X			X	
MW-5S	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/26/2000	X	X	X	X	X			X	X
	- -		4/9/2003	X	X	X	X	X			X	X
	- -		2/2/2006	X	X		X				X (N/S)	
DUP2 [MW-5S]	- -		4/9/2003	X	X	X	X	X			X	X
MW-5D	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/26/2000	X	X	X	X	X			X	X
	- -		4/10/2003	X	X	X	X	X			X	X
	- -		1/25/2006	X	X		X				X (N/S)	
MW-101 [MW-5D]	- -		1/25/2006	X	X		X				X (N/S)	
MW-6S	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/30/2000	X	X	X	X	X			X	X
	- -		4/8/2003	X	X	X	X	X			X	X
	- -		2/7/2006	X	X		X				X (N/S)	
	- -		5/11/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/16/2006	X	X		X					
MW-6D	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/30/2000	X	X	X	X	X			X	X
	- -		4/8/2003	X	X	X	X	X			X	X
	- -		2/8/2006	X	X		X				X (N/S)	
	- -		5/15/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/17/2006	X	X		X					
MW-102 [MW-6D]	- -		5/15/2006	X	X		X					
DUP111706 [MW-6D]	- -		11/17/2006	X	X		X					
MW-7S	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/31/2000	X	X	X	X	X			X	X
	- -		4/23/2003	X	X	X	X	X			X	X
	- -		2/6/2006	X	X		X				X (N/S)	
	- -		5/12/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/13/2006	X	X		X					
MW-7D	- -		3/31/1998	X	X	X	X	X	X		X*	
	- -		5/21/1998	X	X	X	X	X	X		X*	
	- -		10/27/2000	X	X	X	X	X			X	
	- -		4/23/2003	X	X	X	X	X			X	X
	- -		2/7/2006	X	X		X				X (N/S)	
	- -		5/15/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/16/2006	X	X		X					
MW-102 [MW-7D]	- -		8/17/2006	X	X		X					
MW-8S	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		4/21/2003	X	X	X	X	X			X	X
	- -		2/7/2006	X	X		X				X (N/S)	
	- -		5/15/2006	X	X		X					
	- -		8/17/2006	X	X							
	- -		11/17/2006	X								

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MW-8D	- -		3/30/1998	X	X	X	X	X	X		X*	
	- -		5/20/1998	X	X	X	X	X	X		X*	
	- -		10/31/2000	X	X	X	X	X			X	X
	- -		4/21/2003	X	X	X	X	X			X	X
DUP2 [MW-8D]	- -		10/31/2000	X	X	X	X	X			X	X
MW-9S	- -		10/30/2000	X	X	X	X	X			X	X
MW-9D	- -		10/27/2000	X	X	X	X	X			X	
MW-10S	- -		10/31/2000	X	X	X	X	X			X	X
MW-10D	- -		10/31/2000	X	X	X	X	X			X	X
MW-11S	- -		11/1/2000	X	X	X	X	X			X	X
	- -		3/25/2003	X	X	X	X	X			X	X
	- -		1/30/2006	X	X		X				X (N/S)	
	- -		5/9/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/14/2006	X	X		X					
MW-11D	- -		11/1/2000	X	X	X	X	X			X	X
	- -		3/25/2003	X	X	X	X	X			X	X
	- -		1/26/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/15/2006	X	X		X					
DUP [MW-11D]	- -		3/25/2003	X	X	X	X	X			X	X
MW-11D_2	- -		3/26/2003	X	X	X	X	X			X	X
MW-12S	- -		11/1/2000	X	X	X	X	X			X	X
	- -		3/26/2003	X	X	X	X	X			X	X
	- -		1/31/2006	X	X		X				X (N/S)	
	- -		5/9/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/15/2006	X	X		X					
	- -		3/27/2008				X					
DUP-3 [MW-12S]	- -		3/27/2008				X					
MW-12D	- -		11/2/2000	X	X	X	X	X			X	X
	- -		3/26/2003	X	X	X	X	X			X	X
	- -		1/27/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/14/2006	X	X		X					
MW-12D_2	- -		3/26/2003	X	X	X	X	X			X	X
MW-13S	- -		2/6/2002	X	X	X	X	X	X		X	X
MW-13D	- -		2/6/2002	X	X	X	X	X	X		X	X
DUP1 [MW-13D]	- -		2/6/2002	X	X	X	X	X	X		X	X
MW-14S	- -		2/7/2002	X	X	X	X	X	X		X	X
MW-14D	- -		2/7/2002	X	X	X	X	X	X		X	X
MW-15S	- -		2/7/2002	X	X	X	X	X	X		X	X
MW-15D	- -		2/7/2002	X	X	X	X	X	X		X	X
MW-18S	- -		3/27/2003	X	X	X	X	X			X	X
	- -		1/27/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/15/2006	X	X		X					
MW-18D	- -		3/27/2003	X	X	X	X	X			X	X
	- -		2/7/2006	X	X		X				X (N/S)	
	- -		5/15/2006	X	X		X					
	- -		8/22/2006	X	X		X					
	- -		11/16/2006	X	X		X					
MW-103 [MW-18D]	- -		8/22/2006	X	X		X					
MW-19S	- -		3/27/2003	X	X	X	X	X			X	X
	- -		2/3/2006	X	X		X				X (N/S)	

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MW-19D	- -		3/27/2003	X	X	X	X	X			X	X
	- -		1/31/2006	X	X		X				X (N/S)	
	- -		3/24/2008	X	X							
MW-102 [MW-19D]	- -		1/31/2006	X	X		X				X (N/S)	
MW-19D$_2$	- -		4/8/2003	X	X	X	X	X			X	X
MW-20S	- -		4/23/2003	X	X	X	X	X			X	X
	- -		2/2/2006	X	X		X				X (N/S)	
MW-20D	- -		4/23/2003	X	X	X	X	X			X	X
	- -		1/25/2006	X	X		X				X (N/S)	
MW-21S	- -		4/10/2003	X	X	X	X	X			X	X
MW-21D	- -		4/10/2003	X	X	X	X	X			X	X
MW-22S	- -		3/28/2003	X	X	X	X	X			X	X
	- -		2/2/2006	X	X		X				X (N/S)	
	- -		3/24/2008	X	X							
MW-22D	- -		4/8/2003	X	X	X	X	X			X	X
	- -		1/24/2006	X	X		X				X (N/S)	
	- -		3/24/2008	X	X							
MW-23S	- -		1/30/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/15/2006	X	X		X					
	- -		3/27/2008	X	X		X					
MW-23D	- -		1/26/2006	X	X		X				X (N/S)	
	- -		5/9/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/14/2006	X	X		X					
	- -		3/26/2008	X	X		X					
MW-24S	- -		1/30/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/14/2006	X	X		X					
	- -		3/26/2008	X	X		X					
MW-24D	- -		1/26/2006	X	X		X				X (N/S)	
	- -		5/9/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/15/2006	X	X		X					
	- -		3/26/2008	X	X		X					
MW-25S	- -		1/31/2006	X	X		X				X (N/S)	
	- -		5/11/2006	X	X		X					
	- -		8/18/2006	X	X		X					
	- -		11/15/2006	X	X		X					
	- -		3/26/2008	X	X		X					
MW-25D	- -		1/27/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/14/2006	X	X		X					
	- -		3/26/2008	X	X		X					
MW-26S	- -		1/31/2006	X	X		X				X (N/S)	
	- -		3/27/2008	X	X							
MW-26D	- -		1/27/2006	X	X		X				X (N/S)	
	- -		3/25/2008	X	X							
MW-27S	- -		1/31/2006	X	X		X				X (N/S)	
	- -		3/25/2008	X	X							
MW-27D	- -		2/2/2006	X	X		X				X (N/S)	
	- -		3/25/2008	X	X							
DUP-032508 [MW-27D]	- -		3/25/2008	X	X							
MW-28S	- -		1/31/2006	X	X		X				X (N/S)	
	- -		3/25/2008	X	X							
MW-28D	- -		2/3/2006	X	X		X				X (N/S)	
	- -		3/25/2008	X	X							

TABLE 1
SUMMARY OF SAMPLING LOCATIONS AND LABORATORY ANALYSES

NATIONAL GRID
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Location	Depth	Soil Removed During IRM	Date	VOCs/ BTEX	SVOCs/ PAHs	Metals	Cyanide	Pesticides	PCBs	TCLP Parameters	Wet Chemistry	Dissolved Gas Analysis
MW-30S	- -		2/6/2006	X	X		X				X (N/S)	
	- -		5/11/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/16/2006	X	X		X					
MW-30D	- -		2/8/2006	X	X		X				X (N/S)	
	- -		5/12/2006	X	X		X					
	- -		8/17/2006	X	X		X					
	- -		11/17/2006	X	X		X					
MW-101 [MW-30D]	- -		5/12/2006	X	X		X					
MW-31S	- -		2/7/2006	X	X		X				X (N/S)	
	- -		5/11/2006	X	X		X					
	- -		8/15/2006	X	X		X					
	- -		11/17/2006	X	X		X					
MW-31D	- -		2/8/2006	X	X		X				X (N/S)	
	- -		5/12/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/16/2006	X	X		X					
	- -		3/24/2008 3/26/2008				X					
MW-103 [MW-31D]	- -		2/8/2006	X	X		X				X (N/S)	
MW-101 [MW-31D]	- -		8/16/2006	X	X		X					
MW-32S	- -		1/30/2006	X	X		X				X (N/S)	
	- -		5/10/2006	X	X		X					
	- -		8/16/2006	X	X		X					
	- -		11/15/2006	X	X		X					
	- -		3/27/2008	X	X							
DUP111506 [MW-32S]	- -		11/15/2006	X	X		X					
MW-32D	- -		1/26/2006	X	X		X				X (N/S)	
	- -		5/11/2006	X	X		X					
	- -		8/22/2006	X	X		X					
	- -		11/14/2006	X	X		X					
	- -		3/27/2008	X	X							
DUP-2 [MW-32D]	- -		3/27/2008	X	X							
MW-33S	- -		2/1/2006	X	X		X				X (N/S)	
MW-33D	- -		1/25/2006	X	X		X				X (N/S)	
TMW-10DR	- -		5/31/2001	X	X	X	X	X	X			
TMW-10D_2	- -		5/31/2001	X	X	X	X	X	X			
TMW-10D_3	- -		5/31/2001	X	X	X	X	X	X			
TMW-16S	- -		10/31/2000	X	X	X	X	X			X	X
TMW-16D	- -		10/31/2000	X	X	X	X	X			X	X
TMW-17S	- -		6/4/2001	X	X	X	X	X	X			
TMW-17D_1	- -		6/4/2001	X	X	X	X	X	X			
TMW-17D_2	- -		6/4/2001	X	X	X	X	X	X			
TMW-18D_1	- -		6/1/2001	X	X	X	X	X	X			
TMW-18D_2	- -		6/1/2001	X	X	X	X	X	X			
TMW-19D_1	- -		6/1/2001	X	X	X	X	X	X			
TMW-19D_2	- -		5/30/2001	X	X	X	X	X	X			

TABLE 1
SUMMARY OF SAMPLING LOCATIONS AND LABORATORY ANALYSES

NATIONAL GRID
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Notes:
1. Samples were collected by ARCADIS on the dates indicated.
2. DUP = Blind duplicate [corresponding sampling location is identified in brackets].
3. Gas Analysis = CO_2, CO, CH_4, and O_2.
4. TCLP Parameters = VOCs, SVOCs and Metals.
5. Wet Chemistry = Chloride, nitrate/nitrite, sulfate/sulfide, and BOD/COD.
   - * = Wet Chemistry parameters plus alkalinity (CaCO3), carbonate (CaCO3), hardness (CaCO3), oil & grease, pH, and total dissolved solids (TDS).
6. Samples were analyzed by TestAmerica Laboratories, Inc. (TestAmerica) located in Shelton, Connecticut.
7. Samples were submitted for laboratory analysis of one or more of the following constituents:
   - Volatile Organic Compounds (VOCs)/Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) using United States Environmental Protection Agency (USEPA) SW-846 Method 8260.
   - Semi Volatile Organic Compounds (SVOCs)/Polynuclear Aromatic Hydrocarbons (PAHs) using USEPA SW-846 Method 8270.
   - Metals using USEPA SW-846 Methods 6010 and 7471.
   - Cyanide by USEPA SW-846 Method 9012 and Method 335.4.
   - Available cyanide by USEPA OIA 1677.
   - Pesticides by USEPA Method 8080.
   - Polychlorinated Biphenyls (PCBs) using USEPA SW-846 Method 8082.
   - Toxic Characteristic Leaching Procedure (TCLP) extraction by USEPA SW-846 Methods 1311 and analysis by:
     - VOCs using USEPA SW-846 Method 8260.
     - SVOCs using USEPA SW-846 Method 8270.
     - Metals using USEPA SW-846 Method 6010 and 7471.
   - Wet Chemistry by:
     - Sulfate (SO_4) using Method 9036.
     - Sulfide using USEPA Method 9031.
     - Nitrite (NO_2) and nitrate (NO_3) using USEPA Method 9200.
     - Biochemical oxygen demand (BOD) using USEPA Method 405.1.
     - Chemical oxygen demand (COD) using USEPA Method 410.1.
     - Chloride using USEPA Method 9250.
     - Dissolved organic carbon (DOC) average quads using USEPA Method 9060.
     - Total organic carbon (TOC) using USEPA Method 9060.
   - Dissolved Gas by using AM-15.01.
8. - - = A depth is not applicable for the sample.
9. A check-mark (**X**) indicates analysis was conducted.
10. **X**(N/S) = only nitrate/nitrite and sulfate/sulfide were analyzed.

TABLE 2
MONITORING WELL CONSTRUCTION DETAILS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location ID	Material Screened/ Location	Date Completed	Northing Coordinate ft.	Easting Coordinate ft.	Measuring Point Elev. ft. NAVD 88	Ground Surface Elev. ft. NAVD 88	Stickup Length ft. ags	Well Diam. in.	Casing/Screen Type	Screen Slot Size in.	Screen Length ft.	Depth to Screened Interval (ft. bgs) Top	Bottom	Well Depth ft. bgs	Type of Hyraulic Conductivity Slug Test In	Out	Estimated Hydraulic Conductivity (K) cm/sec	Estimated Hydraulic Conductivity (K) ft/day
MW-1S	sand and gravel (Fill)*	2/26/98	928163.64	1117076.17	372.26	370.14	2.1	2	PVC	0.01	5	4	9	10		X	6.60E-03	18.72
MW-1D	sand and gravel	2/25/98	928158.15	1117078.58	372.27	370.41	1.9	2	PVC	0.01	10	22	32	34	X	X	3.43E-04 2.54E-04	0.97 0.72
MW-2S	sand and cobbles (Solvay waste)*	2/25/98	928381.87	1117473.80	371.21	368.77	2.4	2	PVC	0.01	5	4	9	10	X	X	4.17E-03 1.6E-03	11.83 4.65
MW-2D	sand, gravel, and cobbles	2/24/98	928376.08	1117477.98	371.53	369.18	2.3	2	PVC	0.01	10	22	32	34	X		2.23E-04	0.63
MW-3S	sand and gravel (Solvay waste)*	2/23/98	928523.22	1117718.06	370.19	367.91	2.3	2	PVC	0.01	5	4	9	10	X	X	7.09E-04 1.25E-03	2.01 3.55
MW-3D	sand and gravel	2/20/98	928516.66	1117713.18	370.02	367.93	2.1	2	PVC	0.01	10	12	22	24	X	X	1.31E-03 8.93E-04	3.71 2.53
MW-3D$_2$	sand, silt, and clay	1/2/03	928538.28	1117721.38	369.78	367.92	1.9	2	PVC	0.01	10	50	60	60	X	X	5.41E-07 5.41E-07	0.002 0.002
MW-4S	sand, gravel, and cobbles (Solvay waste)*	2/24/98	928617.29	1117010.45	370.66	371.41	NA	2	PVC	0.01	5	4	9	10		X	9.2E-04	2.62
MW-4D	sand	2/23/98	928615.52	1117013.64	370.90	371.36	NA	2	PVC	0.01	10	22	32	34	X	X	3.00E-04 3.28E-04	0.85 0.93
MW-5S	sand, clay, and gravel	2/19/98	928941.09	1117477.76	370.42	369.36	1.1	2	PVC	0.01	5	4	9	10	X	X	5.21E-04 4.60E-04	1.48 1.30
MW-5D	sand	2/18/98	928937.73	1117481.40	371.48	369.32	2.2	2	PVC	0.01	10	18	28	30	X	X	5.57E-04 5.28E-04	1.58 1.50
MW-6S	sand, gravel, silt, brick, and asphalt (Fill/Solvay waste)*	7/19/95	929339.15	1116517.20	375.05	373.71	1.3	2	PVC	0.01	5	4	9	10	X	X	8.51E-04 3.25E-04	2.41 0.92
MW-6D	sand, silt, gravel, and clay	7/18/95	929342.61	1116519.67	375.33	373.49	1.8	2	PVC	0.01	10	17	27	29	X	X	2.74E-03 2.57E-03	7.76 7.29
MW-7S	sand, silt, and gravel (Solvay waste)*	7/18/95	- -	- -	375.27	373.18	2.1	2	PVC	0.01	5	5	10	10	- -	- -	- -	- -
	sand, silt, and concrete (Solvay waste)*	8/31/05	929484.90	1116742.49	374.96	373.40	- -	4	PVC	0.01	5	5	10	11	X	X	2.41E-02 2.13E-02	68.31 60.34
MW-7D	sand, silt, and clay	7/18/95	- -	- -	374.59	373.00	1.6	2	PVC	0.01	10	13	23	26	- -	- -	- -	- -
	sand and silt	8/30/05	929487.93	1116745.73	374.34	373.40	- -	4	PVC	0.01	10	13	23	24	X	X	1.64E-04 3.55E-04	0.47 1.01
MW-8S	sand, clay, and gravel	2/18/98	929625.03	1116925.88	375.75	373.65	2.1	2	PVC	0.01	5	4	9	9	X	X	5.58E-03 4.93E-03	15.83 13.98
MW-8D	sand and gravel	2/17/98	929629.63	1116925.12	375.84	373.62	2.2	2	PVC	0.01	10	16	26	28	X	X	1.63-E03 1.68-E03	4.63 4.78
TMW-9S	Fill/Solvay waste	4/3/2000	- -	- -	- -	- -	- -	2	PVC	0.01	5	5	10	12.5	- -	- -	- -	- -
TMW-9D	sand	4/3/2000	- -	- -	- -	- -	- -	2	PVC	0.01	10	18	28	29.8	- -	- -	- -	- -
TMW-10S	Solvay waste	3/30/2000	- -	- -	- -	- -	- -	2	PVC	0.01	5	5	10	12.3	- -	- -	- -	- -
TMW-10D	sand	3/30/2000	- -	- -	- -	- -	- -	2	PVC	0.01	10	14	24	26	- -	- -	- -	- -
TMW-10DR	sand, silt, and gravel	5/16/2001	- -	- -	- -	- -	- -	2	PVC	0.01	10	18	28	30	- -	- -	- -	- -
TMW-10D$_2$	sand, silt, and gravel	5/15/2001	- -	- -	- -	- -	- -	2	PVC	0.01	10	30	40	42	- -	- -	- -	- -
TMW-10D$_3$	sand and silt	5/14/2001	- -	- -	- -	- -	- -	2	PVC	0.01	10	50	60	62	- -	- -	- -	- -
MW-11S	sand, silt, and gravel (Solvay waste)*	9/18/2000	929667.67	1116987.03	373.71	371.67	2.0	2	PVC	0.01	5	5	10	10	X	X	2.00E-02 8.41E-03	56.58 23.83
MW-11D	sand and silt*	9/18/2000	929671.71	1116984.71	373.49	371.64	1.9	2	PVC	0.01	10	16	26	26	X	X	5.19E-04 3.88E-04	1.47 1.10
MW-11D$_2$	sand, silt, and gravel	12/9/2002	929656.09	1116989.38	373.99	371.56	2.4	2	PVC	0.01	10	50	60	60	X	X	1.49E-03 1.94E-03	4.23 5.50
MW-12S	sand and clay (Solvay waste)*	9/19/2000	929452.37	1117159.06	372.18	370.13	2.1	2	PVC	0.01	5	5	10	10	X		7.46E-04	2.11

TABLE 2
MONITORING WELL CONSTRUCTION DETAILS

NATIONAL GRID
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FEASIBILITY STUDY REPORT

Location ID	Material Screened/ Location	Date Completed	Northing Coordinate ft.	Easting Coordinate ft.	Measuring Point Elev. ft. NAVD 88	Ground Surface Elev. ft. NAVD 88	Stickup Length ft. ags	Well Diam. in.	Casing/Screen Type	Screen Slot Size in.	Screen Length ft.	Depth to Screened Interval (ft. bgs) Top	Bottom	Well Depth ft. bgs	Type of Hyraulic Conductivity Slug Test In	Out	Estimated Hydraulic Conductivity (K) cm/sec	Estimated Hydraulic Conductivity (K) ft/day
MW-12D	sand, silt, and clay	9/19/2000	929456.54	1117158.42	371.97	370.01	2.0	2	PVC	0.01	10	16	26	26	X	X	1.31E-03 7.49E-04	3.72 2.12
MW-12D$_2$	sand, silt, and clay	12/17/2002	929445.20	1117166.39	372.32	369.90	2.4	2	PVC	0.01	10	50	60	60	X	X	1.17E-03 2.61E-03	3.32 7.40
MW-13S	sand, silt, and clay	8/7/2001	928440.14	1117906.33	365.83	363.83	2.0	2	PVC	0.01	10	4	14	14	X		1.62E-03	4.60
MW-13D	sand, silt, and clay	8/7/2001	928434.77	1117896.93	366.12	363.87	2.3	2	PVC	0.01	10	16	26	26	X	X	5.17E-04 7.72E-04	1.46 2.19
MW-14S	sand, silt, and gravel	8/8/2001	928291.71	1117663.82	366.25	364.35	1.9	2	PVC	0.01	10	4	14	14	X		5.12E-04	1.45
MW-14D	sand and silt	8/8/2001	928292.43	1117667.71	366.40	364.50	1.9	2	PVC	0.01	10	16	26	26	X	X	5.80E-04 5.14E-04	1.64 1.46
MW-15S	sand, silt, and gravel	8/9/2001	928065.46	1117246.37	366.27	364.32	1.9	2	PVC	0.01	10	4	14	15	X	X	2.87E-03 8.25E-02	8.12 233.86
MW-15D	sand and silt	8/9/2001	928066.97	1117248.74	366.42	364.32	2.1	2	PVC	0.01	10	16	26	26		X	4.50E-04	1.28
TMW-16S	Fill/Solvay waste	3/30/2000	- -	- -	373.97	- -	- -	2	PVC	0.01	5	5	10	12	X	X	3.88E-03 1.06E-03	11.00 3.00
TMW-16D	sand	3/30/2000	- -	- -	373.63	- -	- -	2	PVC	0.01	10	16	26	28	X	X	3.61E-03 4.67E-03	10.23 13.24
TMW-17S	sand and gravel	5/18/2001	- -	- -	373.98	- -	- -	2	PVC	0.01	5	5	10	12	- -	- -	- -	- -
TMW-17D$_1$	sand, silt, and gravel	5/18/2001	- -	- -	373.65	- -	- -	2	PVC	0.01	10	14	24	26	- -	- -	- -	- -
TMW-17D$_2$	sand and silt	5/17/2001	- -	- -	373.58	- -	- -	2	PVC	0.01	10	30	40	42	- -	- -	- -	- -
MW-18S	sand and silt (Solvay waste)	12/19/2002	929288.29	1117299.81	371.07	369.00	2.1	2	PVC	0.01	5	5	10	10	X	X	1.96E-02 1.27E-02	55.67 35.99
MW-18D	sand, silt, gravel, and clay	12/20/2002	929294.17	1117294.78	371.46	369.00	2.5	2	PVC	0.01	10	16	26	26	X	X	2.18E-04 2.56E-04	0.62 0.73
TMW-18D$_1$	sand, silt, and gravel	5/16/2001	- -	- -	374.64	- -	- -	2	PVC	0.01	10	10	20	22	- -	- -	- -	- -
TMW-18D$_2$	sand and silt	5/16/2001	- -	- -	374.99	- -	- -	2	PVC	0.01	10	30	40	42	- -	- -	- -	- -
MW-19S	sand and gravel	1/9/2003	928776.79	1117673.59	369.01	366.61	2.4	2	PVC	0.01	5	5	10	10	X	X	5.45E-04 5.02E-04	1.55 1.42
MW-19D	sand and silt	1/7/2003	928772.57	1117677.17	369.10	366.61	2.5	2	PVC	0.01	10	16	26	26	X	X	7.63E-05 5.97E-05	0.22 0.17
MW-19D$_2$	silt and clay	1/9/2003	928768.26	1117678.92	368.63	366.61	2.0	2	PVC	0.01	10	50	60	60	X	X	3.64E-07 6.86E-07	0.001 0.002
TMW-19D$_1$	sand, silt, and gravel	5/17/2001	- -	- -	374.25	- -	- -	2	PVC	0.01	10	14	24	26	- -	- -	- -	- -
TMW-19D$_2$	sand and silt	5/14/2001	- -	- -	374.22	- -	- -	2	PVC	0.01	10	30	40	42	- -	- -	- -	- -
MW-20S	(Solvay waste)	12/27/2002	928702.42	1117613.61	370.80	368.32	2.5	2	PVC	0.01	5	5	10	10	X	X	1.24E-04 8.51E-05	0.35 0.24
MW-20D	sand, silt, and gravel	12/27/2002	928697.33	1117615.06	370.69	368.25	2.4	2	PVC	0.01	10	20	30	30	X	X	2.52E-04 1.64E-04	0.71 0.47
MW-21S	silt and gravel (Solvay waste)	12/30/2002	928464.25	1117629.78	370.81	368.66	2.1	2	PVC	0.01	5	5	10	10	X	X	6.68E-03 4.35E-03	18.92 12.32
MW-21D	sand, silt, and gravel	12/30/2002	928460.48	1117623.94	370.45	368.60	1.8	2	PVC	0.01	10	16	26	26	X	X	2.73E-04 1.34E-04	0.77 0.39
MW-22S	(Solvay waste)	1/6/2003	928556.33	1117807.47	369.92	367.43	2.5	2	PVC	0.01	5	5	10	10	X	X	1.00E-03 5.26E-04	2.85 1.49
MW-22D	sand, silt, and gravel	1/6/2003	928561.97	1117811.82	369.87	367.43	2.4	2	PVC	0.01	10	16	26	26	X	X	6.65E-04 4.56E-04	1.89 1.29
MW-23S	sand and silt (Fill/Solvay waste)*	8/26/2005	929676.42	1117006.81	372.49	370.06	2.4	2	PVC	0.02	5	3	8	8	X	X	6.25E-04 6.10E-04	1.77 1.73

TABLE 2
MONITORING WELL CONSTRUCTION DETAILS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location ID	Material Screened/ Location	Date Completed	Northing Coordinate ft.	Easting Coordinate ft.	Measuring Point Elev. ft. NAVD 88	Ground Surface Elev. ft. NAVD 88	Stickup Length ft. ags	Well Diam. in.	Casing/Screen Type	Screen Slot Size in.	Screen Length ft.	Depth to Screened Interval (ft. bgs) Top	Bottom	Well Depth ft. bgs	Type of Hyraulic Conductivity Slug Test In	Out	Estimated Hydraulic Conductivity (K) cm/sec	Estimated Hydraulic Conductivity (K) ft/day
MW-23D	sand, gravel, and silt	8/26/2005	929678.89	1117005.68	372.57	370.02	2.6	2	PVC	0.02	10	15	25	26	X	X	4.33E-03 1.15E-03	12.29 3.27
MW-24S	sand and silt (Fill/Solvay waste)*	8/26/2005	929456.13	1117179.03	372.21	369.48	2.7	2	PVC	0.02	5	5	10	10	X	X	1.14E-02 5.82E-03	32.31 16.49
MW-24D	sand, clay, and silt	8/26/2005	929463.66	1117172.72	372.38	369.60	2.8	2	PVC	0.02	10	16	26	26	X	X	1.57E-04 1.31E-04	0.44 0.37
MW-25S	sand, silt, and clay (Fill/Solvay waste)*	8/24/2005	929303.48	1117313.99	371.73	369.35	2.4	2	PVC	0.02	5	5	10	10	X	X	3.20E-04 1.91E-03	0.91 5.42
MW-25D	sand	8/24/2005	929309.22	1117308.81	371.63	369.25	2.4	2	PVC	0.02	10	16	26	26	X	X	3.66E-04 2.09E-04	1.04 0.59
MW-26S	sand (Fill/Solvay)*	8/24/2005	929119.33	1117454.90	371.08	368.45	2.6	2	PVC	0.02	5	5	10	10	X	X	2.97E-04 2.54E-04	0.84 0.72
MW-26D	sand	8/24/2005	929113.80	1117457.63	371.09	368.50	2.6	2	PVC	0.02	10	18	28	28	X	X	2.82E-04 2.19E-04	0.80 0.62
MW-27S	sand and silt (Fill/Solvay waste)*	8/23/2005	928947.69	1117578.20	369.87	367.08	2.8	2	PVC	0.02	5	5	10	10	X	X	1.17E-03 1.65E-03	3.30 4.67
MW-27D	sand	8/23/2005	928943.71	1117580.81	369.62	366.80	2.8	2	PVC	0.02	10	16	26	26	X	X	2.51E-04 1.02E-04	0.71 0.29
MW-28S	sand, silt, and gravel (Solvay waste)*	8/23/2005	928789.10	1117685.50	369.40	366.90	2.5	2	PVC	0.02	5	5	10	10	X	X	1.90E-03 2.05E-03	5.39 5.81
MW-28D	sand	8/23/2005	928784.62	1117690.28	369.56	367.03	2.5	2	PVC	0.02	10	20	30	30	X	X	1.64E-04 1.43E-04	0.46 0.40
MW-30S	sand (Fill/Solvay)*	8/30/2005	929543.16	1116812.37	373.44	373.65	NA	4	PVC	0.02	5	5	10	10	X	X	1.11E-03 5.03E-04	3.14 1.43
MW-30D	sand and silt	8/30/2005	929540.34	1116807.27	373.47	373.64	NA	4	PVC	0.02	10	12	22	24	- -	- -	- -	- -
MW-31S	sand, silt, and gravel (Solvay waste)*	8/29/2005	929589.88	1116883.78	373.73	373.81	NA	4	PVC	0.02	7	3	10	11	X	X	1.11E-03 2.83E-04	3.14 0.80
MW-31D	sand and gravel	8/29/2005	929586.69	1116879.18	373.65	373.84	NA	4	PVC	0.02	10	16	26	27	X	X	1.75E-04 1.44E-04	0.50 0.41
MW-32S	sand (Fill/Solvay)*	8/26/2005	929542.75	1117100.93	372.97	370.51	2.5	2	PVC	0.02	5	4.5	9.5	9.5	X	X	3.48E-04 3.27E-04	0.99 0.93
MW-32D	sand	8/26/2005	929547.79	1117096.99	372.95	370.50	2.4	2	PVC	0.02	10	16	26	26	X	X	7.72E-05 3.03E-05	0.22 0.09
MW-33S	sand (Fill/Solvay)*	8/22/2005	928291.06	1117303.06	372.51	368.93	3.6	2	PVC	0.02	5	7	12	12	X	X	2.52E-04 2.13E-03	0.71 0.60
MW-33D	sand, clay, and silt	8/22/2005	928288.41	1117299.13	371.54	368.79	2.8	2	PVC	0.02	10	20	30	30	X	X	8.81E-05 5.15E-05	0.25 0.15

Notes:
1. MW = Monitoring Well; R = Replacement Well; S = Shallow Well; D = Deep Well.
2. All elevations refer to North American Vertical Datum (NAVD) 1988 based on United States Geological Survey (USGS) Mon # S-34.
3. Depths are in feet below ground surface (bgs).
4. Stickup lengths are in feet above ground surface (ags).
5. - - = Data is not available.
6. TMW Temporary Monitoring Well initially located within the excavated footprint.
7. TMW 9S/9D were located outside the excavation footprint but destroyed during construction.
8. * = boring logs for associated deep well used to determine material screened.
9. NA = Not applicable.

TABLE 3
SOIL SAMPLING LOCATIONS EXHIBITING NAPL, STAINING, SHEENS, OR ODORS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-1		
8-10	Odor	
16-32	Odor	**X** (16-18 & 22-24)
SB-2		
8-10	Black staining	
10-12	Light blue and black staining	
12-14	Black staining	**X** (12-14)
14-16	Trace black staining	**X** (14-16)
SB-3		
12-14	Faint odor	
22-24	Sulfur odor	
24-28	Strong sulfur odor	
SB-4		
8-12	Odor	
12-14	Product with staining and odor	**X** (12-14)
14-20	Product and sheen	**X** (14-16)
22-24	Trace product	
24-26	Product and sheen	
26-28	Some staining and sheen	
28-30	Trace product with some staining	
30-32	Some sheen	**X** (30-32)
32-34	Trace product with slight odor	
34-42	Slight odor	**X** (38-40)
44-46	Faint odor	
SB-5		
2-4	Some dark staining	
10-12	Faint discoloration (brown and pink)	
12-14	Some brown discoloration	
SB-6		
6-8	1" of thick product	
8-10	Top 6" of thick product	**X** (8-10)
10-12	Product and odor in upper sample	
14-16	Thick product	
18-20	Thick product	
SB-7		
10-12	Slight sheen and odor	
12-16	Slight staining and odor	**X** (12-14 & 14-16)
18-22	Odor and slight sheen	**X** (20-22)
22-24	Odor	
24-26	Slight odor	
32-34	Slight odor	
SB-8		
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SB-9		
4-6	Slight MGP odor	
6-8	Sheen and strong MGP odor	**X** (6-8)
14-16	Slight MGP odor	**X** (14-16)
18-22	Sulfur organic odor	**X** (20-22)
22-24	Slight organic sulfuric odor	
26-28	Strong sulfur organic odor	
38-40	Slight organic sulfuric odor	**X** (38-40)
SB-10		
6-10	Slight odor	**X** (6-8)
16-18	Faint MGP odor	
20-26	Slight organic sulfuric odor	**X** (20-22)
26-30	Strong organic sulfur odor	**X** (28-30)
30-32	Slight organic sulfuric odor	
34-38	Slight organic sulfuric odor	

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-11		
8-10	Slight organic sulfuric odor	
14-16	MGP odor	X (14-16)
16-18	Slight MGP odor	
18-20	MGP odor	
22-24	Slight MGP odor and slight sulfur organic odor	
24-26	Slight MGP odor and sulfur organic odor	
26-28	Slight MGP odor and strong sulfur organic odor	
28-32	Strong sulfur odor	X (28-30)
32-34	Slight sulfur organic odor	
34-36	Strong sulfur organic odor	
36-40	Slight sulfur organic odor	X (38-40)
SB-12		
12-14	Slight MGP odor	
16-24	Strong sulfur organic odor	X (20-22)
24-26	Slight sulfur organic odor	
26-28	Strong sulfur organic odor	
28-40	Slight organic sulfuric odor	X (28-30 & 38-40)
SB-13		
10-12	Slight organic sulfuric odor	X (10-12)
14-20	Strong organic sulfur odor	X (14-16)
28-38	Very strong sulfur odor	X (28-30)
40-44	Slight organic sulfuric odor	
SB-14		
20-22	Slight MGP odor	X (20-22)
22-26	Slight organic sulfuric odor	
SB-15		
6-8	Strong MGP odor	X (6-8 & DUP-7)
8-12	Strong MGP odor and sheen	X (8-10 & 10-12)
12-16	Slight MGP odor	X (14-16)
18-20	Slight MGP odor	
20-22	Slight organic sulfuric odor	X (20-22)
26-28	Slight organic sulfuric odor	
SB-16		
8-12	Slight organic sulfuric odor	X (10-12)
12-14	Slight MGP odor	
14-16	Very slight MGP odor	X (14-16)
18-20	Very slight organic sulfur odor	
26-28	Slight organic sulfuric odor	
SB-17		
10-22	Slight MGP odor	X (10-12)(14-16)(20-22)
24-26	Slight organic sulfuric odor	
26-30	Strong organic sulfur odor	X (28-30)
42-44	Slight organic sulfuric odor	
46-48	Slight organic sulfuric odor	
SB-18		
18-20	Slight organic sulfuric odor	
20-30	Strong organic sulfur odor	X (20-22 & 28-30)
30-34	Slight organic sulfuric odor	
SB-19		
0-2	Slight MGP odor	
18-20	Slight organic sulfuric odor	
20-30	Strong organic sulfur odor	X (20-22)(26-28)(28-30)
30-32	Slight organic sulfuric odor	
SB-20		
8-12	Organic sulfur odor	X (8-10 & 10-12)
12-14	Very slight organic sulfur odor	
18-22	Slight MGP odor	X (18-20 & 20-22)
22-24	Slight organic sulfuric odor	
28-30	Slight organic sulfuric odor	X (28-30)
32-34	Slight organic sulfuric odor	

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-21		
6-8	Slight MGP odor	X (6-8)
10-12	Slight MGP odor	X (10-12)
12-14	Strong MGP odor	
14-16	Strong MGP odor and sheen	X (14-16 & DUP-1)
16-18	MGP odor and sheen	X (16-18)
18-20	Trace sheen	
20-22	Sheen	X (20-22)
22-24	MGP odor and sheen	
26-28	Slight MGP odor	
28-30	MGP odor	X (28-30)
32-38	Slight MGP odor	X (34-36)
38-42	Very slight MGP odor	X (38-40)
42-46	Slight MGP odor	
46-48	Very slight MGP odor	
SB-22		
6-8	Strong MGP odor	X (6-8 & DUP-8)
8-10	Slight MGP odor	
10-14	Very slight MGP odor	X (10-12)
14-16	Very slight organic sulfur odor	X (14-16)
24-30	Strong organic sulfur odor	X (28-30)
32-34	Organic sulfur odor	
SB-23		
14-16	Very slight MGP odor	
18-22	Strong organic sulfur odor	X (20-22)
24-26	Very strong organic sulfur odor	
34-36	Slight organic sulfuric odor	
40-46	Slight organic sulfuric odor	
SB-24		
14-16	Very slight MGP odor	X (14-16)
16-18	Slight organic sulfuric odor	
22-24	Slight organic sulfuric odor	
24-28	Strong organic sulfur odor	
SB-25		
8-10	Petroleum like odor	
10-12	Non-MGP petroleum like odor, oily appearance without sheen, slight organic sulfur odor	X (10-12)
12-14	Slight MGP odor	X (12-14)
14-16	Slight non-MGP petroleum like odor, oily appearance without sheen	X (14-16)
16-18	Slight organic sulfuric odor	
20-22	Strong organic sulfur odor	X (20-22 & DUP-15)
22-28	Slight organic sulfuric odor	
SB-26		
14-16	Slight MGP odor	X (14-16 & DUP-2)
18-20	Slight MGP odor	
20-22	MGP odor	X (20-22)
22-24	Slight odor	
24-26	Strong odor	
26-28	Slight MGP odor	X (26-28)
28-30	Slight odor	X (28-30)
30-32	Very faint odor	
32-34	Slight odor	
SB-27		
12-18	Slight MGP odor	X (12-14 & 14-16)
18-20	Strong MGP odor	X (18-10)
20-22	Very slight MGP odor	X (20-22)
22-24	Slight MGP odor	
24-26	Slight MGP odor and organic sulfur odor	
26-36	Slight MGP odor	X (28-30)
36-38	Slight organic sulfuric odor	

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed	
SB-28			
10-16	Slight MGP odor	X	(10-12 & 14-16)
16-18	Strong organic sulfur odor		
18-20	Slight organic sulfuric odor		
20-22	Slight MGP odor and slight sulfur organic odor	X	(20-22)
22-24	Very slight MGP odor		
24-28	Very strong organic sulfur odor		
28-30	Slight organic sulfuric odor	X	(28-30)
SB-29			
12-14	Slight MGP odor		
16-18	Slight organic sulfuric odor		
22-24	Strong organic sulfur odor		
24-26	Very strong organic sulfur odor		
26-28	Strong organic sulfur odor		
44-46	Slight sulfur organic odor		
SB-30			
14-16	Slight MGP odor	X	(14-16)
16-18	Slight MGP odor and sulfur organic odor		
18-22	Slight organic sulfuric odor	X	(20-22 & DUP-11)
22-24	Slight MGP odor	X	(24)
SB-31			
8-10	Strong MGP odor and strong "garbage" odor		
10-12	Thin bed of NAPL, sheen, and strong MGP odor	X	(10-12)
12-14	Strong odor and sheen throughout	X	(12-14)
14-16	Strong odor and sheen	X	(14-16)
16-20	Slight odor		
20-22	Slight organic sulfuric odor	X	(20-22)
22-28	Slight odor		
SB-32			
12-18	Strong MGP odor	X	(12-14 & 14-16)
18-20	Slight MGP odor		
20-22	Strong MGP odor	X	(20-22)
22-24	Slight MGP odor	X	(22-24)
24-26	Strong MGP odor	X	(24-26)
26-28	Slight MGP and organic sulfur odor		
28-30	Very slight MGP odor	X	(28-30)
SB-33			
10-12	NAPL with strong MGP odors	X	(10-12)
12-14	Trace NAPL and sheen		
14-16	Product with sheen and strong MGP odor	X	(14-16)
16-18	Strong sheen throughout and strong MGP odor		
18-20	1" lense of NAPL and sheen		
20-22	1/2" lense of NAPL with a sheen and strong MGP odor	X	(20-22)
22-24	Strong odor		
24-26	Slight MGP odor		
SB-34			
8-10	"Lemon-sweet" odor with yellow solvay		
12-14	Very slight odor	X	(12-14 & DUP-9)
14-18	Very slight odor	X	(14-16)
18-22	Slight organic sulfuric odor	X	(18-20 & 20-22)
22-24	Strong organic sulfur odor		
24-26	Slight organic sulfuric odor		
26-28	Organic sulfur odor		
32-34	Slight organic sulfuric odor		
SB-35			
6-8	Non-MGP petroleum like odor	X	(6-8 & DUP-10)
8-10	NAPL and a strong non-MGP like odor		
10-12	Large wooden posted coated in NAPL with a strong non-MGP petroleum like odor		
12-16	Wood fragments coated in NAPL with a strong non-MGP petroleum like odor and a sheen		
16-18	NAPL with a strong non-MGP petroleum like odor	X	(16-18)
18-24	Strong MGP odor	X	(18-20 & 20-22)
24-28	Strong odor		
28-32	Very slight odor	X	(28-30)

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-35A		
6-8	Strong non-MGP petroleum odor with gray/black staining	
8-10	Strong non-MGP petroleum odor	
10-12	Strong non-MGP petroleum odor with sticky and oily soil	X (10-12)
12-14	Very faint non-MGP petroleum odor	
14-16	Strong non-MGP petroleum odor	X (14-16)
SB-36		
6-8	Strong non-MGP petroleum odor	X (6-8 & DUP-14)
8-10	NAPL, strong MGP odor, and strong non-MGP petroleum-like odor	
10-12	Product with strong MGP odor	X (10-12 & DUP-15)
12-14	NAPL with strong MGP odor and sheen	
14-18	Trace NAPL throughout with a sheen and strong MGP odor	X (14-16)
18-20	Trace NAPL with a sheen and strong MGP odor	X (18-20)
20-22	Slight MGP odor	X (20-22)
22-32	Slight organic sulfuric odor	X (28-30)
SB-37		
8-10	1/2" black sticky NAPL with a strong non-MGP petroleum-like oil	
10-12	Sheen with strong non-MGP petroleum like odor	X (10-12)
12-14	Slight non-MGP petroleum like odor	
14-16	Faint MGP odor	X (14-16)
16-18	Very faint odor	
18-20	NAPL with sheen and strong odor	X (18-20)
20-22	1/2" lense of NAPL with a sheen and strong MGP odor	X (20-22)
22-26	Some sheen with a slight odor	
26-28	Faint odor	
28-30	Very faint odor	X (28-30)
30-32	Slight odor	
SB-38		
6-8	Slight non-MGP petroleum like odor	X (6-8)
8-10	Strong non-MGP petroleum like odor	
10-12	Very faint MGP odor	X (10-12)
12-14	2 lenses of NAPL with a sheen and strong MGP odor throughout	
14-16	NAPL with a slight MGP odor throughout	X (14-16)
16-18	NAPL with a strong MGP odor and sheen throughout	X (16-18 & DUP-12)
18-24	Trace NAPL throughout with a sheen and strong MGP odor	X (20-22)
24-26	Slight MGP odor	
26-28	Faint MGP odor	
28-30	Very faint MGP odor	X (28-30)
30-32	Slight organic sulfuric odor	
SB-39		
4-6	Product with strong non-MGP petroleum-like odor	
6-8	Strong MGP petroleum-like odor	X (6-8)
8-10	Strong MGP-naphthalene odor	
10-12	Slight odor	X (10-12)
12-14	Very slight odor	
14-16	Slight odor	X (14-16)
16-18	Sheen seen at bottom of sample	
18-20	NAPL with sheen and strong odor	
20-22	Trace NAPL with a sheen and strong MGP odor	X (20-22)
22-26	Sheen and strong odor	
26-30	Strong odor	X (28-30)
32-34	Faint odor	
34-36	Slight organic sulfuric odor	
SB-40		
4-6	Strong non-MGP "sour" odor	
6-8	Slight sheen and slight non-MGP petroleum-like odor	X (6-8)
8-10	Very faint sheen	
10-12	Faint non-MGP petroleum like odor	X (10-12)
12-14	Slight non-MGP petroleum like odor	
14-16	Slight organic sulfuric odor	X (14-16)
16-20	Slight MGP odor	
20-22	NAPL and sheen throughout	X (20-22)
22-24	Strong odor	
24-26	Faint odor	

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-41		
2-4	Some blue "purifier waste"	**X** (2-4)
10-12	Slight odor	**X** (10-12)
12-14	Faint odor	
18-20	Strong MGP odor	
20-22	Slight organic sulfuric odor	**X** (20-22)
24-26	Strong organic sulfur odor	
26-28	Slight organic sulfuric odor	
28-30	Strong organic sulfur odor	**X** (28-30)
SB-42		
12-14	Slight MGP odor	
14-16	Slight to strong odor with sheen and NAPL towards the bottom	**X** (14-16)
16-20	NAPL with sheen and strong odor throughout	
20-22	NAPL and faint odor	**X** (20-22)
22-26	Faint odor	
26-28	Slight odor	
SB-43		
6-8	Strong non-MGP petroleum like odor	**X** (6-8)
8-10	Slight non-MGP petroleum like odor	
10-12	Strong non-MGP petroleum like odor and very faint sheen throughout	**X** (10-12)
12-14	Strong MGP odor and faint non-MGP petroleum like odor	
14-16	Strong odor	**X** (14-16)
16-18	Very faint odor	
18-22	Trace NAPL with a sheen and strong MGP odor	**X** (20-22)
22-24	Strong odor	
24-26	Very faint odor	
SB-44		
8-18	Slight odor	**X** (10-12 & 14-16)
18-20	Very faint odor with spotty sheen	
20-22	2mm lamination of NAPL	**X** (20-22)
22-24	NAPL globules with sheen blossoms and faint odor	
24-26	Faint odor	**X** (24-26)
26-28	Very faint odor	
36-38	Faint odor	
SB-45		
10-12	"Globules of green substance" with slight odor	**X** (10-12)
14-16	Trace odor	**X** (14-16)
16-18	Faint odor	
20-22	1/2" of NAPL with sheen and strong odor	**X** (20-22)
22-24	Slight odor	
24-26	Strong organic sulfur odor	
SB-46		
16-18	Very faint odor	
18-20	Strong organic sulfur odor	
26-28	Slight odor	
28-32	Very faint odor	**X** (28-30)
SB-47		
8-10	Black product with strong non-MGP petroleum like odor	
12-14	Slight non-MGP petroleum like odor on top and faint MGP odor on bottom	
14-16	Faint MGP odor	**X** (14-16)
16-18	Strong MGP odor	
18-20	Strong odor	
20-22	1/2" lense of NAPL with a sheen and strong MGP odor	**X** (20-22)
22-24	Trace NAPL with slight odor and sheen	
24-26	Slight odor	
26-28	Faint odor	
30-32	Slight organic sulfuric odor	

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Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
SB-48		
4-6	Non-MGP petroleum like odor	
8-10	Strong non-MGP petroleum like odor	
10-12	Trace sheen and trace MGP odor	X (10-12)
12-14	Trace NAPL, trace sheen, and trace odor	
14-16	Slight sheen and odor	X (14-16)
16-18	NAPL lense with strong odor and sheen throughout	X (16-18)
18-20	Trace NAPL and sheen on topd 4" with strong odor	
20-26	Slight odor	X (20-22)
26-30	Trace odor	X (28-30)
SB-49		
4-6	Slight non-MGP petroleum-like odor, bottom 2" black, product	
6-8	Slight non-MGP petroleum-like odor, some black product at 0.5' down	X (6-8)
8-10	Slight non-MGP petroleum-like odor	
10-12	1/2" pocket of thin NAPL in middle of sample with a strong petroleum odor throughout	X (10-12 & DUP-17)
12-14	Faint non-MGP petroleum like odor	
14-16	Slight MGP odor in bottom 3"	X (14-16)
16-18	Slight MGP odor	
18-20	Trace NAPL with slight odor and sheen	X (18-20)
20-22	Thin lenses of NAPL with sheen and strong odor throughout	X (20-22)
22-26	Faint odor	
26-28	Slight odor	
30-32	Faint odor	
SB-50		
8-10	Black NAPL smeared thoughout with a slight non-MGP Petroleum like odor	
10-12	Slight non-MGP petroleum like odor on top and 3" of yellow-green watery substance with a sweet odor on bottom	X (10-12)
12-14	Slight odor in bottom 3"	
14-16	Sheen and faint organic sulfuric odor	X (14-16)
18-20	Faint odor	
20-22	Faint organic sulfur odor	X (20-22)
22-26	Slight organic sulfuric odor	
MW-1D		
30-34	Strong odor	
MW-2D		
22-34	Sulfur odor	X (22-24 & DUP-3)
MW-3D		
14-14.5	Slight odor	
20-24	Strong sulfur odor	
MW-3D$_2$		
52-60	Strong organic odor	
MW-4D		
29-31	Sufur odor	
MW-5S		
--	--	
MW-5D		
4-6	Odor	
14-18	Odor	X (14-16)
18-20	Strong odor	X (18-20)
20-24	Odor	
24-26	Odor with a strong sulfur odor	
26-28	Odor with a strong sulfur odor	X (26-28)
28-30	Very strong odor	
MW-6D		
--	--	
MW-7D (1995)*		
10-12	Faint odor and faint sheen with trace product observed at bottom 1"	
16-18	Faint odor and product at tip	
18-20	Sheen with two 1" lenses of product	
20-22	Sheen and trace product	X (20-22)
22-24	Trace sheen	
MW-7D (2005)*		
2-4	Thin NAPL lense	
18-20	2 thin lense of NAPL with a sheen and strong MGP odor throughout	
20-22	2 thin lense of NAPL with a strong MGP odor throughout	
MW-8S		
- -	- -	

TABLE 3
SOIL SAMPLING LOCATIONS EXHIBITING NAPL, STAINING, SHEENS, OR ODORS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
MW-8D		
10-12	Staining	
12-14	Sheen	
18-22	Sheen with staining	**X** (20-22 & DUP-1)
22-24	Sheen with strong odor	**X** (22-24 & DUP-2)
24-26	Slight sheen	
26-28	Slight sheen with strong odor	
MW-9		
8-12	Slight odor in the lower 6"	
12-14	Slight odor	
14-16	Faint odor	
16-20	Slight organic sulfur odor	
20-22	Strong sulfur odor	
MW-9 (relocated 10' towards Hiawatha)		
14-16	Sheen near bottom 2"	
16-20	Slight odor	
20-24	Strong odor	
24-26	Slight odor in top 1'	
MW-10		
6-8	Stained with product bottom 1", slight odor, sheen	
8-10	Trace small product globules in bottom 1", slight odor	
10-12	Strong odor, trace product	
12-14	Slight odor, trace sheen blossoms and product	
14-16	Sheen	
16-18	Sheen throughout, vertical seams of product in upper 6", strong odor	
18-20	Sheen throughout, 2 thin (5 mm) lenses of product down 1.5', strong odor	
20-24	Slight odor	
MW-10DR		
- -	Refer to MW-10D_3 (0-30 feet)	
MW-10D_2		
- -	Refer to MW-10D_3 (0-40 feet)	
MW-10D_3		
4-8	Coal tar and a sheen	
8-10	Some stringers of product	
10-12	Some product	
12-14	Few globules of product	
14-16	Sheen	
16-20	Strong MGP odor with some staining	
22-24	Strong MGP odor	
24-26	Few globules of product with a strong MGP and some staining	
26-32	Strong MGP odor	
32-34	Moderate MGP odor	
34-40	Medium MGP odor	
40-44	Slight organic sulfuric odor	
MW-11		
0-2	Black ash	
2-4	Black ash (top 2"), cinders	
8-12	Slight MGP odor	
14-16	Strong MGP odor	
16-22	Slight MGP odor	
22-28	MGP odor	
MW-11D_2		
14-16	Slight odor	
MW-12		
4-6	Slight MGP odor	
6-10	Faint MGP odor	
10-18	Slight organic/MGP odor	
18-26	Slight MGP odor	

TABLE 3
SOIL SAMPLING LOCATIONS EXHIBITING NAPL, STAINING, SHEENS, OR ODORS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
MW-12D$_2$		
--	--	
MW-13S		
--	--	
MW-13D		
8-10	Medium organic odor	
10-20	Slight organic odor	
MW-14S		
10-12	Slight organic odor	
12-14	Strong organic odor	
MW-14D		
8-10	Slight organic odor	
10-12	Medium organic odor	
12-16	Slight organic odor	
18-22	Medium organic odor	
22-24	Slight organic odor	
MW-15S		
8-12	Slight organic odor	
12-14	Medium organic odor	
MW-15D		
6-10	Slight organic odor	
10-14	Medium organic odor	
14-26	Organic odor	
MW-17S		
- -	Refer to MW-17D$_2$ (0-12 feet)	
MW-17D$_1$		
- -	Refer to MW-17D$_2$ (0-26 feet)	
MW-17D$_2$		
16-18	Slight MGP odor	
22-24	Slight organic odor	
MW-18S		
6-8	Slight organic odor	
8-10	Organic odor	
MW-18D		
10-20	Organic odor	**X** (10-14)
20-26	Slight organic odor	
MW-19S		
6-10	Slight organic odor	
MW-19D$_1$		
10-18	Slight organic odor	**X** (16-17)
18-20	Strong organic odor	
20-22	Medium organic odor	
22-26	Slight organic odor	
MW-19D$_2$		
26-28	Slight organic odor	
28-30	Strong organic odor	
30-34	Slight organic odor	
34-36	Strong organic odor	
36-40	Slight organic odor	
48-58	Slight organic odor	
58-60	Slight odor	
MW-20S		
--	--	
MW-20D		
10-14	Slight organic odor	
14-20	Medium organic odor	
20-30	Strong organic odor	**X** (26-30 & DUP-1)
MW-21S		
--	--	
MW-21D		
18-26	Slight organic odor	**X** (22-26)
MW-22S		
--	--	
MW-22D		
--	--	

TABLE 3
SOIL SAMPLING LOCATIONS EXHIBITING NAPL, STAINING, SHEENS, OR ODORS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
MW-23D		
0-2	Trace coal	
8-10	Slight MGP odor	
10-14	MGP odor	
14-18	4 lenses of NAPL with a strong MGP odor	
18-20	Slight sulfur odor	
20-24	Sulfur odor	
24-26	Slight odor	
MW-24D		
8-10	Sulfur odor	
10-12	Sulfur odor on top with a sweet organic odor lower	
12-14	Trace sweet organic odor	
16-18	Sweet odor and a sulfur odor	
18-20	Sulfur odor	
22-26	Sulfur odor	
MW-25D		
8-20	Sweet odor	
20-26	Sulfur odor	
MW-26D		
10-12	Sweet odor	
16-22	Sulfur odor	
24-26	Sulfur odor	
26-28	Strong sulfur odor	
MW-27D		
6-8	Sweet odor	
8-10	Strong sulfur odor	
10-14	Sulfur odor	
16-26	Sulfur odor	
MW-28D		
14-18	Sulfur odor	
20-30	Sulfur odor	
MW-30D		
8-10	Thin NAPL lenses with strong MGP odor throughout	
10-12	Thin NAPL lenses with sheen and strong MGP odor throughout	
12-14	Sulfur odor	
14-16	Thin NAPL lenses with strong MGP odor throughout	
18-20	2 NAPL lenses with strong MGP odor and sheen throughout	
20-22	NAPL lens with strong MGP odor	
22-24	Sulfur odor	
MW-31D		
8-12	Thin NAPL lenses with a strong odor	
12-14	Strong odor	
14-16	Slight sulfur odor	
16-18	2 lenses of NAPL with a strong MGP odor and sheen throughout	
20-22	2 lenses of NAPL with a strong MGP odor	
22-24	Lens of NAPL with a slight odor and strong sheen	
24-28	Sulfur odor	
MW-32D		
10-14	Sulfur odor	
16-22	Strong sulfur odor	
22-26	Sulfur odor	
MW-33D		
16-22	Sulfur odor	
22-24	Strong sulfur odor	
26-28	Strong sulfur odor	
28-30	Sulfur odor	
TMW-18D$_1$		
- -	Refer to boring log MW-18D$_2$ (0-20 feet)	
TMW-18D$_2$		
16-28	Slight MGP odor	
32-38	Slight MGP odor	

TABLE 3
SOIL SAMPLING LOCATIONS EXHIBITING NAPL, STAINING, SHEENS, OR ODORS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sample ID/ Depth Interval	Description	Depth of Sample Analyzed
TMW-19D$_1$		
- -	Refer to boring log MW-19D$_2$ (0-26 feet)	
TMW-19D$_2$		
16-42	Slight MGP odor	

Notes:
1. Samples were collected by ARCADIS.
2. Sampling descriptions are from the field sampling team at the time of sample collection.
3. Samples SB-2, SB-4, SB-6, and MW-7D were collected in July 1995. Samples SB-1, SB-7, MW-2D, MW-5D, and MW-8D were collected in February 1998. Samples MW-18D, MW-20D, and MW-21D were collected in December 2002. Samples MW-19D1 was collected in January 2003. All other samples were collected during February and March 2000.
4. Borings drilled by Parratt-Wolff, Inc. (Parratt-Wolff) of East Syracuse, New York,
5. -- = No observed impacts.
6. * = MW-7D was reconstructed in 2005.
7. DUP = indicates a blind duplicate sample was collected
8. **X** = Analysis was conducted.

TABLE 4
SAMPLING LOCATIONS IN SOLVAY WASTE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Soil Boring Location	Depth of Solvay Waste, if encountered (ft bgs)	Soil Sampling Interval in Solvay Waste (ft bgs)	BTEX/PAH Concentrations > Industrial SCOs	NAPL Observed	Soil Removed as Part of IRM
SB-1	4 - 6.5				
SB-2	3.7 - 4.1				**X**
	10 - 11				**X**
	11.8 - 12.7	12-14			**X**
SB-3	5 - 13				**X**
SB-4	8 - 14	12-14	**X (P)**	**X (12-14)**	**X**
SB-5	2.8 - 4	4-6			**X**
	6 - 12.7				**X**
SB-6	4 - 5				**X**
	6.2 - 6.9			**X (6-8)**	**X**
	7 - 11	8-10	**X (P)**	**X (8-12)**	**X**
	12 - 12.5				**X**
	14 - 15.5			**X (14-16)**	**X**
	16 - 17.5				
	18 - 19			**X (18-20)**	
SB-7	4 - 8				
	12 - 12.5	12-14	**X (P)**		
SB-8	4 - 6				
	8 - 13				
SB-9	5.5 - 12	6-8, 10-12			
SB-10	4 - 13	6-8 10-12	**X (P)**		**X**
SB-11	4 - 13.8	6-8, 10-12, 12-14			**X**
SB-12	2 - 13.5	2-4, 6-8, 10-12			**X**
SB-13	10 - 11.8	10-12			**X**
	12 - 18	14-16			**X**
	19.5 - 20.7	20-22			
SB-14	4 - 12	6-8, 8-10			
SB-15	5.9 - 11.5	6-8 8-10 10-12	**X (P)**		**X**
SB-16	4.2 - 7.9	6-8	**X (P)**		**X**
	8 - 12.1	10-12	**X (P)**		**X**
SB-17	2 - 11.5	6-8, 10-12			**X**
SB-18	4 - 12	6-8, 10-12			**X**
SB-19	3.2 - 12	2-4, 6-8, 10-12			
SB-20	4 - 12.5	8-10, 10-12			
SB-21	6 - 12	6-8 10-12	**X (P)** **X (P)**		**X**
SB-22	2 - 9.5	2-4, 6-8			**X**
SB-23	5 - 10	6-8			**X**
SB-24	4 - 11.8	6-8, 10-12			
SB-25	8 - 9				

Soil Boring Location	Depth of Solvay Waste, if encountered (ft bgs)	Soil Sampling Interval in Solvay Waste (ft bgs)	BTEX/PAH Concentrations > Industrial SCOs	NAPL Observed	Soil Removed as Part of IRM
SB-26	2 - 13	2-4, 6-8, 10-12			
SB-27	2 - 11.5	2-4, 6-8, 10-12			**X**
SB-28	4 - 6				**X**
	7.8 - 10.2	6-8 10-12	**X (P)** **X (P)**		**X**
SB-29	4 - 9.5	6-8			**X**
SB-30	2.5 - 12	2-4, 6-8, 10-12			
SB-31	8 - 11	10-12		**X (10-12)**	
SB-32	7.8 - 10.5	6-8, 10-12			
SB-33	6 - 10	6-8	**X (P)**		
SB-34	2 - 11	2-4, 6-8, 10-12			
SB-35	7.7 - 8	6-8	**X (P)**		
SB-35A	10 - 11.5	10-12	**X (P)**	**X (10-12)**	
SB-36	2 - 9.8	2-4 6-8	**X (P)**	**X (8-10)**	
SB-37	8 - 10			**X (8-10)**	
SB-38	2 - 10	2-4 6-8	**X (P)**		
SB-39	2.5 - 11	2-4, 6-8, 10-12			
SB-40	4 - 6				
SB-41	2 - 3	2-4	**X (P)**		
	4 - 10	6-8			
SB-42	6 - 12	6-8, 10-12			
SB-43	4 - 8	6-8	**X (P)**		
SB-44	8 - 14	10-12			
SB-45	4 - 11	6-8 10-12	**X (P)**		
SB-46	2 - 8	2-4, 6-8			
SB-47	8 - 10			**X (8-10)**	
SB-48	5 - 6				
	8 - 10				
SB-49	4 - 10	6-8		**X (4-8)**	
SB-50	3.8 - 4	2-4	**X (P)**		
	6 - 10	6-8	**X (P)**	**X (8-10)**	

TABLE 4
SAMPLING LOCATIONS IN SOLVAY WASTE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Soil Boring Location	Depth of Solvay Waste, if encountered (ft bgs)	Soil Sampling Interval in Solvay Waste (ft bgs)	BTEX/PAH Concentrations > Industrial SCOs	NAPL Observed	Soil Removed as Part of IRM
MW-1D	10 - 16.5				
MW-2D	0 - 4				
	6 - 17				
MW-3D	3.2 - 14	12-14			
MW-4D	8 - 17				
MW-5S	2 - 10				
MW-5D	7 - 13				
MW-6D	6 - 10				
MW-7D (1995)	4.5 - 10.3	8-10		**X (10-12)**	
MW-7D (2005)	2 - 4			**X (2-4)**	
	6 - 11.3	8-10			
	12 - 12.4				
MW-8S	5.2 - 10				
MW-8D	6 - 12.7				
MW-10D$_3$	8 - 13			**X (4-14)**	
MW-11D$_2$	2 - 10				
MW-12D$_2$	2 - 10				
MW-18S	2 - 7.8				
MW-19S	0 - 4				
MW-20S	2 - 10				
MW-21S	2 - 8	0-8	**X (P)**		
MW-21D	10 - 16				
MW-22S	2 - 10	6-7			
MW-22D	10 - 15.5				

Soil Boring Location	Depth of Solvay Waste, if encountered (ft bgs)	Soil Sampling Interval in Solvay Waste (ft bgs)	BTEX/PAH Concentrations > Industrial SCOs	NAPL Observed	Soil Removed as Part of IRM
MW-23D	0.9 - 1.4				
	2 - 6.3				
	8 - 8.5				
MW-24D	0 - 8.7				
MW-25D	0.4 - 9.9				
MW-26D	0.6 - 5.2				
	5.4 - 10.4				
MW-28D	2.5 - 8.8				
MW-30D	8 - 9.1			**X (8-10)**	
	10 - 10.3			**X (10-12)**	
	14 - 14.3			**X (14-16)**	
MW-31D	8.2 - 9.8			**X (8-10)**	
	10 - 12			**X (10-12)**	
MW-32D	0 - 6.8				
	8 - 9.2				
MW-33D	1.3 - 1.6				
	2 - 2.3				
	3.2 - 3.3				
	6 - 7.3				
	7.4 - 8.5				
	8.6 - 17.8				
	18 - 19.3				
	20 - 20.3				

Notes:
1. ft bgs = feet below ground surface.
2. BTEX = Benzene, toluene, ethylbenzene, and xylenes.
3. PAHs = Polycyclic aromatic hydrocarbons.
4. NAPL = Non-aqeous phase liquid.
5. **X** = Indicates the sample exceeded 6 NYCRR Part 375 Industrial Soil Cleanup Objectives (SCOs) are from Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375-6.8(a) and (b), effective December 14, 2006.
6. **(P)** = Sample exceeded Industrial SCOs for PAHs.
7. **(18-20)** = Number in parenthesis represents the observed depth of NAPL bgs.

TABLE 5
WATER LEVEL DATA

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location	Reference Point Elevation (feet AMSL)	Depth to Groundwater (feet bgs)												
		3/20/1998	5/30/1998	5/14/2001	5/25/2001	6/26/2001	7/24/2001	3/25/2003	5/20/2003	1/23/2006	5/8/2006	8/14/2006	11/13/2006	3/20/2008
MW-1S	372.26	5.56	7.12	7.00	7.10	6.95	7.42	7.19	7.45	6.79	7.71	7.00	6.76	6.57
MW-1D	372.37	7.05	7.63	7.53	7.76	7.53	7.91	7.43	7.88	6.54	7.16	7.25	7.15	7.12
MW-2S	371.21	5.11	5.94	5.39	5.56	5.29	5.76	5.95	6.22	5.15	5.21	- -	- -	4.83
MW-2D	371.53	6.14	6.65	6.35	7.26	6.35	6.65	6.64	7.05	5.71	6.00	- -	- -	5.98
MW-3S	370.19	4.82	6.61	4.98	5.35	4.89	5.30	5.40	5.68	4.60	4.80	5.26	4.45	4.03
MW-3D	370.02	5.10	5.58	5.74	5.93	5.71	5.98	5.18	6.09	4.98	5.50	5.80	5.15	4.82
MW-3D_2	369.78	- -	- -	- -	- -	- -	- -	- -	- -	5.82	6.00	6.05	5.99	5.95
MW-4S	370.66	3.45	4.52	3.86	3.72	3.66	4.06	5.23	5.29	2.89	3.03	3.50	3.42	3.70
MW-4D	370.9	4.21	5.21	- -	4.45	4.16	- -	5.45	5.55	3.20	3.46	4.20	3.50	4.05
MW-5S	371.42	5.04	6.03	5.31	5.57	5.22	5.65	5.90	6.31	4.02	4.41	4.96	4.00	4.10
MW-5D	371.48	5.91	6.56	6.12	6.50	6.02	6.48	6.18	6.73	5.30	5.74	6.08	5.39	5.27
MW-6S	374.92	NA	8.20	8.75	8.85	8.70	9.00	7.96	8.14	5.31	7.90	- -	7.94	8.41
MW-6D	375.15	8.20	9.00	9.15	9.28	9.07	9.46	9.00	9.61	8.33	8.94	- -	8.60	8.74
MW-7S	374.96	6.70	8.15	9.35	9.37	9.61	9.75	7.15	8.51	5.19	5.37	5.97	5.47	5.35
MW-7D	374.34	7.93	8.08	8.75	8.76	8.86	9.03	7.66	8.56	5.65	5.99	6.50	6.03	6.08
MW-8S	375.75	9.31	10.59	11.35	11.13	DRY	- -	9.27	10.59	9.76	10.43	10.81	10.30	9.55
MW-8D*	375.84	9.78	10.95	11.62	11.64	11.85	11.78	9.79	10.90	10.00	10.83	11.00	10.27	9.69
MW-11S	373.71	- -	- -	10.09	10.10	10.20	10.40	8.02	9.39	8.79	9.65	10.25	9.16	8.35
MW-11D	373.49	- -	- -	9.38	9.40	9.45	9.62	7.44	8.71	7.73	8.50	8.71	8.05	7.40
MW-11D_2	373.99	- -	- -	- -	- -	- -	- -	- -	- -	- -	9.26	9.41	8.75	8.20
MW-12S	372.18	- -	- -	8.48	8.90	8.60	8.81	6.88	8.11	6.92	7.85	8.72	7.27	6.46
MW-12D	371.97	- -	- -	7.80	7.92	7.74	7.98	6.05	7.12	6.53	7.42	7.55	6.81	6.40
MW-12D_2	372.32	- -	- -	- -	- -	- -	- -	- -	- -	6.64	7.42	7.51	6.92	6.49
MW-13S	365.83	- -	- -	- -	- -	- -	- -	1.27	- -	2.20	2.90	3.11	2.40	- -
MW-13D	366.12	- -	- -	- -	- -	- -	- -	2.03	- -	2.23	3.09	2.99	2.60	- -
MW-14S	366.25	- -	- -	- -	- -	- -	- -	1.71	- -	2.20	2.70	2.75	2.42	- -
MW-14D	366.40	- -	- -	- -	- -	- -	- -	2.07	- -	2.48	3.01	3.00	2.70	- -
MW-15S	366.27	- -	- -	- -	- -	- -	- -	2.71	- -	2.39	2.94	2.79	2.50	- -
MW-15D	366.42	- -	- -	- -	- -	- -	- -	2.07	- -	2.20	2.90	2.87	2.53	- -
MW-18S	371.07	- -	- -	- -	- -	- -	- -	6.84	8.01	6.66	8.39	8.67	7.53	6.85
MW-18D	371.46	- -	- -	- -	- -	- -	- -	6.27	7.40	7.50	7.50	7.75	6.83	6.25
MW-19S	369.01	- -	- -	- -	- -	- -	- -	4.03	5.27	4.18	5.11	5.76	4.33	3.51
MW-19D	369.10	- -	- -	- -	- -	- -	- -	4.21	5.34	4.01	4.92	- -	4.12	5.86
MW-19D_2	368.63	- -	- -	- -	- -	- -	- -	- -	- -	4.40	4.85	4.62	4.55	4.44
MW-20S	370.80	- -	- -	- -	- -	- -	- -	5.12	5.58	3.63	4.03	4.62	3.84	3.80
MW-20D	370.69	- -	- -	- -	- -	- -	- -	5.38	5.80	3.90	4.52	4.91	4.31	4.24
MW-21S	370.81	- -	- -	- -	- -	- -	- -	5.50	5.81	5.28	5.25	5.53	5.05	4.70
MW-21D	370.45	- -	- -	- -	- -	- -	- -	5.72	4.89	4.53	4.93	5.17	4.71	4.64
MW-22S	369.92	- -	- -	- -	- -	- -	- -	5.20	6.29	5.75	6.43	6.69	5.65	5.14
MW-22D	369.87	- -	- -	- -	- -	- -	- -	5.18	6.46	5.75	6.40	6.54	5.89	5.40
MW-23S	372.49	- -	- -	- -	- -	- -	- -	- -	- -	8.25	9.10	9.53	8.47	7.69
MW-23D	372.57	- -	- -	- -	- -	- -	- -	- -	- -	6.57	7.43	7.55	6.89	6.29
MW-24S	372.21	- -	- -	- -	- -	- -	- -	- -	- -	7.01	7.92	8.78	7.35	6.79
MW-24D	372.38	- -	- -	- -	- -	- -	- -	- -	- -	7.44	8.41	8.98	7.74	7.14
MW-25S	371.73	- -	- -	- -	- -	- -	- -	- -	- -	7.80	8.75	9.01	7.83	7.20
MW-25D	371.63	- -	- -	- -	- -	- -	- -	- -	- -	7.30	8.22	8.48	7.58	6.94
MW-26S	371.08	- -	- -	- -	- -	- -	- -	- -	- -	7.12	8.73	8.08	6.84	6.42
MW-26D	371.09	- -	- -	- -	- -	- -	- -	- -	- -	6.81	8.55	8.17	7.27	6.51
MW-27S	369.87	- -	- -	- -	- -	- -	- -	- -	- -	5.71	6.40	6.70	5.74	5.05
MW-27D	369.62	- -	- -	- -	- -	- -	- -	- -	- -	5.22	6.10	6.74	5.49	4.99
MW-28S	369.40	- -	- -	- -	- -	- -	- -	- -	- -	5.13	6.06	6.85	5.22	4.53

TABLE 5
WATER LEVEL DATA

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location	Reference Point Elevation (feet AMSL)	Depth to Groundwater (feet bgs)												
		3/20/1998	5/30/1998	5/14/2001	5/25/2001	6/26/2001	7/24/2001	3/25/2003	5/20/2003	1/23/2006	5/8/2006	8/14/2006	11/13/2006	3/20/2008
MW-28D	369.56	- -	- -	- -	- -	- -	- -	- -	- -	4.78	5.85	6.00	5.22	4.71
MW-30S	373.44	- -	- -	- -	- -	- -	- -	- -	- -	5.37	5.80	6.31	5.95	5.53
MW-30D	373.47	- -	- -	- -	- -	- -	- -	- -	- -	6.08	6.50	6.99	6.51	6.41
MW-31S	373.73	- -	- -	- -	- -	- -	- -	- -	- -	6.85	7.40	7.72	7.36	6.84
MW-31D	373.65	- -	- -	- -	- -	- -	- -	- -	- -	6.95	7.54	7.95	7.38	6.88
MW-32S	372.97	- -	- -	- -	- -	- -	- -	- -	- -	8.81	9.71	10.03	8.94	8.08
MW-32D	372.95	- -	- -	- -	- -	- -	- -	- -	- -	8.05	9.21	9.48	8.57	7.95
MW-33S	371.51	- -	- -	- -	- -	- -	- -	- -	- -	5.07	5.28	5.70	5.21	5.04
MW-33D	371.54	- -	- -	- -	- -	- -	- -	- -	- -	5.40	5.75	5.90	5.72	5.70
TMW-16S	373.97	- -	- -	7.03	7.35	6.96	7.73	6.96	7.73	- -	- -	- -	- -	- -
TMW-16D	373.63	- -	- -	6.80	- -	6.70	7.44	6.70	7.44	- -	- -	- -	- -	- -
TMW-17S	373.98	- -	- -	7.02	7.30	6.93	7.79	6.93	7.79	- -	- -	- -	- -	- -
TMW-17D_1	373.65	- -	- -	6.74	7.00	6.65	7.57	6.65	7.57	- -	- -	- -	- -	- -
TMW-17D_2	373.63	- -	- -	8.25	8.24	8.16	8.95	8.16	8.95	- -	- -	- -	- -	- -
TMW-18D_1	374.64	- -	- -	7.77	8.30	7.50	8.92	7.50	8.92	- -	- -	- -	- -	- -
TMW-18D_2	374.99	- -	- -	10.05	10.06	9.94	10.65	9.94	10.65	- -	- -	- -	- -	- -
TMW-19D_1	374.25	- -	- -	8.61	8.09	8.41	9.33	8.41	9.33	- -	- -	- -	- -	- -
TMW-19D_2	374.22	- -	- -	9.04	9.32	8.95	9.68	8.95	9.68	- -	- -	- -	- -	- -

TABLE 5
WATER LEVEL DATA

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location	Reference Point Elevation (feet AMSL)	Groundwater Elevation (feet, AMSL)												
		3/20/1998	5/30/1998	5/14/2001	5/25/2001	6/26/2001	7/24/2001	3/25/2003	5/20/2003	1/23/2006	5/8/2006	8/14/2006	11/13/2006	3/20/2008
MW-1S	372.26	366.70	365.14	365.26	365.16	365.31	364.84	365.07	364.81	365.47	364.55	365.26	365.5	365.69
MW-1D	372.37	365.32	364.74	364.84	364.61	364.84	364.46	364.84	364.39	365.83	365.21	365.12	365.22	365.25
MW-2S	371.21	366.10	365.27	365.82	365.65	365.92	365.45	365.26	364.99	366.06	366.00	- -	- -	366.38
MW-2D	371.53	365.39	364.88	365.18	364.27	365.18	364.88	364.89	364.48	365.82	365.53	- -	- -	365.55
MW-3S	370.19	365.37	363.58	365.21	364.84	365.30	364.89	364.79	364.51	365.59	365.39	364.93	365.74	366.16
MW-3D	370.02	364.92	364.44	364.28	364.09	364.31	364.04	364.84	363.93	365.04	364.52	364.22	364.87	365.20
MW-3D_2	369.78	- -	- -	- -	- -	- -	- -	- -	- -	363.96	363.78	363.73	363.79	363.83
MW-4S	370.66	367.21	366.14	366.80	366.94	367.00	366.60	365.43	365.37	367.77	367.63	367.16	367.24	366.96
MW-4D	370.9	366.69	365.69	- -	366.45	366.74	- -	365.45	365.35	367.70	367.44	366.7	367.4	366.85
MW-5S	371.42	366.38	365.39	366.11	365.85	366.20	365.77	364.52	364.11	367.40	367.01	366.46	367.42	367.32
MW-5D	371.48	365.57	364.92	365.36	364.98	365.46	365.00	365.30	364.75	366.18	365.74	365.4	366.09	366.21
MW-6S	374.92	NA	366.72	366.17	366.07	366.22	365.92	366.96	366.78	369.61	367.02	- -	366.98	366.51
MW-6D	375.15	366.95	366.15	366.00	365.87	366.08	365.69	366.15	365.54	366.82	366.21	- -	366.55	366.41
MW-7S	374.96	368.26	366.81	365.61	365.59	365.38	365.21	367.81	366.45	369.77	369.59	368.99	369.49	369.61
MW-7D	374.34	366.41	366.26	365.59	365.58	365.48	365.31	366.68	365.78	368.69	368.35	367.84	368.31	368.26
MW-8S	375.75	366.44	365.16	364.40	364.62	- -	- -	366.48	365.16	365.99	365.32	364.94	365.45	366.20
MW-8D*	375.84	366.06	364.89	364.22	364.20	363.99	364.06	366.05	364.94	365.84	365.01	364.84	365.57	366.15
MW-11S	373.71	- -	- -	363.62	363.61	363.51	363.31	365.69	364.32	364.92	364.06	363.46	364.55	365.36
MW-11D	373.49	- -	- -	364.11	364.09	364.04	363.87	366.05	364.78	365.76	364.99	364.78	365.44	366.09
MW-11D_2	373.99	- -	- -	- -	- -	- -	- -	- -	- -	- -	364.73	364.58	365.24	365.79
MW-12S	372.18	- -	- -	363.70	363.28	363.58	363.37	365.30	364.07	365.26	364.33	363.46	364.91	365.72
MW-12D	371.97	- -	- -	364.17	364.05	364.23	363.99	365.92	364.85	365.44	364.55	364.42	365.16	365.57
MW-12D_2	372.32	- -	- -	- -	- -	- -	- -	- -	- -	365.68	364.90	364.81	365.4	365.83
MW-13S	365.83	- -	- -	- -	- -	- -	- -	364.56	- -	363.63	362.93	362.72	363.43	- -
MW-13D	366.12	- -	- -	- -	- -	- -	- -	364.09	- -	363.89	363.03	363.13	363.52	- -
MW-14S	366.25	- -	- -	- -	- -	- -	- -	364.54	- -	364.05	363.55	363.5	363.83	- -
MW-14D	366.40	- -	- -	- -	- -	- -	- -	364.33	- -	363.92	363.39	363.4	363.7	- -
MW-15S	366.27	- -	- -	- -	- -	- -	- -	363.56	- -	363.88	363.33	363.48	363.77	- -
MW-15D	366.42	- -	- -	- -	- -	- -	- -	364.35	- -	364.22	363.52	363.55	363.89	- -
MW-18S	371.07	- -	- -	- -	- -	- -	- -	364.23	363.06	364.41	362.68	362.4	363.54	364.22
MW-18D	371.46	- -	- -	- -	- -	- -	- -	365.19	364.06	363.96	363.96	363.71	364.63	365.21
MW-19S	369.01	- -	- -	- -	- -	- -	- -	364.98	363.74	364.83	363.90	363.25	364.68	365.50
MW-19D	369.10	- -	- -	- -	- -	- -	- -	364.89	363.76	365.09	364.18	- -	364.98	363.24
MW-19D_2	368.63	- -	- -	- -	- -	- -	- -	- -	- -	364.23	363.78	364.01	364.08	364.19
MW-20S	370.80	- -	- -	- -	- -	- -	- -	365.68	365.22	367.17	366.77	366.18	366.96	367.00
MW-20D	370.69	- -	- -	- -	- -	- -	- -	365.31	364.89	366.79	366.17	365.78	366.38	366.45
MW-21S	370.81	- -	- -	- -	- -	- -	- -	365.31	365.00	365.53	365.56	365.28	365.76	366.11
MW-21D	370.45	- -	- -	- -	- -	- -	- -	364.73	365.56	365.92	365.52	365.28	365.74	365.81
MW-22S	369.92	- -	- -	- -	- -	- -	- -	364.72	363.63	364.17	363.49	363.23	364.27	364.78
MW-22D	369.87	- -	- -	- -	- -	- -	- -	364.69	363.41	364.12	363.47	363.33	363.98	364.47
MW-23S	372.49	- -	- -	- -	- -	- -	- -	- -	- -	364.24	363.39	362.96	364.02	364.80
MW-23D	372.57	- -	- -	- -	- -	- -	- -	- -	- -	366.00	365.14	365.02	365.68	366.28
MW-24S	372.21	- -	- -	- -	- -	- -	- -	- -	- -	365.20	364.29	363.43	364.86	365.42
MW-24D	372.38	- -	- -	- -	- -	- -	- -	- -	- -	364.94	363.97	363.4	364.64	365.24
MW-25S	371.73	- -	- -	- -	- -	- -	- -	- -	- -	363.93	362.98	362.72	363.9	364.53
MW-25D	371.63	- -	- -	- -	- -	- -	- -	- -	- -	364.33	363.41	363.15	364.05	364.69
MW-26S	371.08	- -	- -	- -	- -	- -	- -	- -	- -	363.96	362.35	363	364.24	364.66
MW-26D	371.09	- -	- -	- -	- -	- -	- -	- -	- -	364.28	362.54	362.92	363.82	364.58
MW-27S	369.87	- -	- -	- -	- -	- -	- -	- -	- -	364.16	363.47	363.17	364.13	364.82
MW-27D	369.62	- -	- -	- -	- -	- -	- -	- -	- -	364.40	363.52	362.88	364.13	364.63
MW-28S	369.40	- -	- -	- -	- -	- -	- -	- -	- -	364.27	363.34	362.55	364.18	364.87

TABLE 5
WATER LEVEL DATA

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Location	Reference Point Elevation (feet AMSL)	Groundwater Elevation (feet, AMSL)												
		3/20/1998	5/30/1998	5/14/2001	5/25/2001	6/26/2001	7/24/2001	3/25/2003	5/20/2003	1/23/2006	5/8/2006	8/14/2006	11/13/2006	3/20/2008
MW-28D	369.56	- -	- -	- -	- -	- -	- -	- -	- -	364.78	363.71	363.56	364.34	364.85
MW-30S	373.44	- -	- -	- -	- -	- -	- -	- -	- -	368.07	367.64	367.13	367.49	367.91
MW-30D	373.47	- -	- -	- -	- -	- -	- -	- -	- -	367.39	366.97	366.48	366.96	367.06
MW-31S	373.73	- -	- -	- -	- -	- -	- -	- -	- -	366.88	366.33	366.01	366.37	366.89
MW-31D	373.65	- -	- -	- -	- -	- -	- -	- -	- -	366.70	366.11	365.7	366.27	366.77
MW-32S	372.97	- -	- -	- -	- -	- -	- -	- -	- -	364.16	363.26	362.94	364.03	364.89
MW-32D	372.95	- -	- -	- -	- -	- -	- -	- -	- -	364.90	363.74	363.47	364.38	365.00
MW-33S	371.51	- -	- -	- -	- -	- -	- -	- -	- -	366.44	366.23	365.81	366.3	366.47
MW-33D	371.54	- -	- -	- -	- -	- -	- -	- -	- -	366.14	365.79	365.64	365.82	365.84
TMW-16S	373.97	- -	- -	366.94	366.62	367.01	366.24	367.01	366.24	- -	- -	- -	- -	- -
TMW-16D	373.63	- -	- -	366.83	- -	366.93	366.19	366.93	366.19	- -	- -	- -	- -	- -
TMW-17S	373.98	- -	- -	366.96	366.68	367.05	366.19	367.05	366.19	- -	- -	- -	- -	- -
TMW-17D_1	373.65	- -	- -	366.91	366.65	367.00	366.08	367.00	366.08	- -	- -	- -	- -	- -
TMW-17D_2	373.63	- -	- -	365.33	365.34	365.42	364.63	365.42	364.63	- -	- -	- -	- -	- -
TMW-18D_1	374.64	- -	- -	366.87	366.34	367.14	365.72	367.14	365.72	- -	- -	- -	- -	- -
TMW-18D_2	374.99	- -	- -	364.94	364.93	365.05	364.34	365.05	364.34	- -	- -	- -	- -	- -
TMW-19D_1	374.25	- -	- -	365.64	366.16	365.84	364.92	365.84	364.92	- -	- -	- -	- -	- -
TMW-19D_2	374.22	- -	- -	365.18	364.90	365.27	364.54	365.27	364.54	- -	- -	- -	- -	- -

TABLE 5
WATER LEVEL DATA

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Notes:
1. MW = Monitoring Well; TMW = Temporary Monitoring Well; R = Replacement Well; S = Shallow Well; D = Deep Well.
2. - - = Data is not available.
3. Depth to groundwater measurements are presented in feet below ground surface (bgs).
4. Groundwater elevations are presented in feet above mean sea level (AMSL).
5. All elevations refer to NAVD 1988 Datum-based on USGS Mon # S-34.
6. *1.60 feet of DNAPL detected in January 200; 1.74 feet in May 2006.
7. Water level measurements during the Interim Remedial Measure (11/7/2001 through 4/5/2002) are not shown.
8. NA = monitoring well was damaged.

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-1S	3/31/1998	14.2	8.1	520	- -	- -	- -
	5/20/1998	21.0	8.7	4,140	- -	- -	- -
	10/25/2000	17.4	7.8	769*	0.13	- -	-241
	4/21/2003	9.30	7.0	1.53*	2.27	0	268
MW-1D	3/31/1998	19.3	8.4	3,400	- -	- -	- -
	5/20/1998	20.1	9.0	174.6	- -	- -	- -
	10/25/2000	13.8	7.3	OR	0.33	- -	-354
	4/21/2003	13.2	6.9	41.8*	1.21	12.9	-364
MW-2S	3/30/1998	15.7	8.8	21.6	- -	- -	- -
	5/20/1998	18.2	10.9	211	- -	- -	- -
	10/25/2000	18.4	10	4,630*	0.25	- -	-426
	4/10/2003	6.7	8.5	0.964*	5.17	14.1	154
MW-2D	3/31/1998	18.4	8.4	885	- -	- -	- -
	5/20/1998	19.5	8.6	2,200	- -	- -	- -
	10/25/2000	14.8	6.5	OR	0.25	- -	-356
	4/10/2003	13.2	9.1	16.7*	1.24	29.1	-417
MW-3S	3/30/1998	17.1	10.7	151.8	- -	- -	- -
	5/20/1998	18.0	11.5	80.3	- -	- -	- -
	10/25/2000	17.2	8.8	918*	1.37	- -	-97
	4/9/2003	8.9	8.2	1.41*	5.55	0	223
	2/7/2006	8.4	7.4	1.01*	1.45	47.8	-119
MW-3D	3/30/1998	20.1	9.2	235	- -	- -	- -
	5/20/1998	19.0	10.6	4,340	- -	- -	- -
	10/25/2000	14.9	10	6,610*	0.28	- -	-451
	4/9/2003	11.9	13.0	10.3*	1.25	11.0	-338
	2/6/2006	12.2	12.7	10*	0.52	15.8	-458
	3/24/2008	7.9	12.6	4.663	0.20	0.43	-305.5
	3/25/2008	7.4	12.9	5.174	0.19	0.30	-291.4
MW-3D$_2$	4/9/2003	12.4	12.6	>99.9*	1.17	50.10	-464
MW-4S	3/31/1998	18.2	7.7	306	- -	- -	- -
	5/21/1998	15.6	11.0	10,090	- -	- -	- -
	10/26/2000	17.9	9.4	326*	2.69	- -	-301
	4/22/2003	12.3	11.1	1.27*	2.90	0	-66
	2/1/2006	7.5	8.2	0.301	14.43	0	133
	5/10/2006	12.3	8.2	0.23*	10.25	22.1	65
	8/17/2006	25.1	8.8	0.366*	0.00	0	-175
	11/13/2006	18.9	9.1	76.7*	0.84	0	190

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-4D	3/31/1998	18.7	7.5	3,800	- -	- -	- -
	5/21/1998	15.8	8.0	2,250	- -	- -	- -
	10/26/2000	15.2	6.9	OR	0.17	- -	-381
	4/22/2003	14.4	6.6	>99.9*	1.20	0	-364
	2/6/2006	13.1	6.7	99.9*	0.03	42.8	-370
	5/12/2006	13.6	6.4	99.9*	0.00	78.0	-373
	8/15/2006	18.1	6.5	OR	0.0	44.0	-366
	11/16/2006	16.0	5.8	>9.99*	0.35	0.0	-365
MW-5S	3/30/1998	16.3	8.8	83.3	- -	- -	- -
	5/20/1998	20.8	11.8	165.3	- -	- -	- -
	10/26/2000	21.5	9.7	949*	1.2	- -	-269
	4/9/2003	7.9	8.7	0.492*	5.68	22.8	23
	2/2/2006	9.4	8.0	2.85*	4.34	0	27
MW-5D	3/30/1998	18.9	8.2	424	- -	- -	- -
	5/20/1998	21.2	8.9	139.1	- -	- -	- -
	10/26/2000	15.7	7.8	18,170*	0.14	- -	-401
	4/10/2003	12.7	11.4	7.28*	1.00	0	-396
	1/25/2006	13.3	8.6	23.6*	0	0	-730
MW-6S	5/21/1998	13.1	10.4	840	- -	- -	- -
	10/30/2000	13.9	8.9	886	4.3	- -	-167
	4/8/2003	10.4	7.6	3.98	17.15	0	77
	2/7/2006	9.2	7.5	2.41*	0	0	31
	5/11/2006	12.4	7.1	1.08*	1.02	0	70
	8/17/2006	23.3	7.2	0.503*	0.25	1.71	19
	11/16/2006	16.8	7.2	0.664*	0.29	0.2	65
MW-6D	3/31/1998	15.8	9.5	124.5	- -	- -	- -
	5/21/1998	14.6	10.9	70.0	- -	- -	- -
	10/30/2000	14.8	9.5	2,530*	0.24	4.7	-453
	4/8/2003	12.6	12.4	7.53*	1.12	0	-409
	2/8/2006	13.4	12.3	3.98*	0.51	0	-455
	5/15/2006	12.3	12.9	4.26*	0	0	-443
	8/16/2006	16.3	11.9	3.53*	0.45	4.95	-271
	11/17/2006	15.7	12.0	3.36*	0.1	0	-201
MW-7S	3/31/1998	14.8	8.5	1,823	- -	- -	- -
	5/21/1998	12.8	9.1	30.0	- -	- -	- -
	10/27/2000	15.8	7.3	1,397*	1.33	- -	-96
	4/23/2003	6.7	6.8	1.77	5.33	0	-8
	2/6/2006	6.5	8.0	1.82*	0	443	-141
	5/12/2006	15.1	7.9	1.56*	0	252	-75
	8/15/2006	23.9	7.3	1.82*	0	140	-125
	11/12/2006	16.5	7.4	2.03	0.85	85	-8

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-7D	3/31/1998	18.8	9.2	171	- -	- -	- -
	5/21/1998	17.8	10.2	1,200	- -	- -	- -
	10/27/2000	15.1	7.8	780*	3.81	- -	-174
	4/23/2003	8.6	11.4	1.97	3.60	0	-191
	2/7/2006	13.4	12.1	2.57*	0	0	-400
	5/15/2006	13.1	12.6	2.94*	0	12.6	-351
	8/17/2006	15.0	11.3	2.23*	0.43	14.73	-177
	11/16/2006	15.1	11.2	2.01*	0.02	0	-306
MW-8S	3/30/1998	16.4	9.2	0.80	- -	- -	- -
	5/29/1998	15.2	13.3	5,400	- -	- -	- -
	4/23/2003	7.9	11.2	0.61	9.30	39.3	-45
	2/7/2006	13.7	8.4	0.977*	7.05	156	51
	5/15/2006	13.9	6.0	0.525*	14.15	183	104
	8/17/2006	20.4	7.9	0.303*	4.25	20.13	71
	11/17/2006	- -	- -	- -	- -	- -	- -
MW-8D	3/30/1998	21.8	8.0	960	- -	- -	- -
	5/20/1998	19.1	8.5	0.81	- -	- -	- -
	10/31/2000	13.1	8.3	1,005*	0.57	16.7	-282
	4/21/2003	10.9	11.7	2.31	14.38	9.8	-218
MW-9S	10/30/2000	16.4	9.2	609*	2.15	- -	-109
MW-9D	10/27/2000	15.9	8.0	859*	0.18	- -	-341
MW-10S	10/31/2000	18.4	7.5	733*	0.63	- -	-2
MW-10D	10/31/2000	15.6	9.4	1,227*	0.38	- -	-366
MW-10DR	5/31/2001	15.4	11.9	1.342*	0.22	6.3	-58
MW-10D_2	5/31/2001	15.4	9.3	7.39*	0.41	- -	8
MW-10D_3	5/31/2001	15.8	6.7	10.0*	0.69	- -	214
MW-11S	11/1/2000	10	9.4	1,448*	5.9	- -	-215
	3/25/2003	12.2	11.7	3.18*	5.58	130	-181
	1/30/2006	15.7	12.5	5.21*	0.5	0	-274
	5/9/2006	14.2	12.9	4.4*	0	85	-263
	8/16/2006	13.2	12.4	4.96*	0.35	180	-266
	11/14/2006	15.1	9.8	0.214*	2.88	96.6	110
MW-11D	11/1/2000	12.8	8.7	1,194*	0.45	47.7	-309
	3/25/2003	12.6	10.9	5.94*	0.79	158	-215
	1/26/2006	11.6	8.6	3.34*	0.2	152	-250
	5/10/2006	13.5	8.3	2.6*	0	0	-270
	8/17/2006	14.6	8.1	2.6*	0	14	-266
	11/15/2006	13.0	7.0	0.252*	0.79	72.9	-267
MW-11D_2	3/26/2003	11.4	9.4	>99.9	0.79	316	-108
MW-12S	11/1/2000	11.0	10.1	1,830*	4.28	388	-263
	3/26/2003	10.2	12.5	5.99*	3.65	190	-252
	1/31/2006	10.8	12.1	5.3*	0.6	19.4	-269
	5/9/2006	12.1	13.2	6.94*	1.27	150	-255
	8/15/2006	19.9	11.5	3.82*	0	91	-438
	11/15/2006	14.3	7.5	4.18*	0.48	1.5	-234
	3/27/2008	4.7	7.8	2.555	0.95	3.66	-207.6

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-12D	11/2/2000	11.9	7.4	7,980*	0.51	- -	-134
	3/26/2003	12.3	12.3	12.4*	0.51	71.1	-327
	1/27/2006	12.0	8.1	6.47*	0.8	0	-262
	5/10/2006	13.1	8.1	7.8*	0	0	-262
	8/16/2006	13.6	7.6	6.54*	-270	4.95	0.02
	11/14/2006	12.0	7.7	7.6*	0	17	-252
MW-12D$_2$	3/26/2003	12.0	9.1	>99.9*	0.92	111	-114
MW-13S	2/6/2002	9.6	5.5	0*	4.20	99.2	168
MW-13D	2/6/2002	11.3	5.0	0*	3.86	125	196
MW-14S	2/7/2002	10.4	1.8	14.0*	0	2.3	-15
MW-14D	2/7/2002	11.2	0.7	79.7*	0	10.5	-21
MW-15S	2/7/2002	9.1	13.3	6.50*	0	28.0	-402
MW-15D	2/7/2002	10.9	0.8	- -	0.32	14.8	-3.4
MW-16S	10/31/2000	16.8	9.0	1,078*	2.84	- -	-81
MW-16D	10/31/2000	14.2	9.4	1,089*	0.46	- -	-383
MW-17S	6/4/2001	14.1	12.2	2.34*	1.82	- -	109
MW-17D	6/4/2001	15.6	11.7	1.272*	0.38	- -	-108
MW-17D2	6/4/2001	15.5	9.2	42.4*	0.29	- -	-46
MW-18S	3/27/2003	10.8	14.1	6.68	0.62	80.2	-367
	1/27/2006	11.4	12.7	5.85*	0.1	0	-480
	5/10/2006	14.1	12.8	4.1*	0	619	-509
	8/15/2006	21.9	11.4	3.04*	1.46	43.51	-26.5
	11/15/2006	14.2	10.8	0.533*	0.55	62.2	-436
MW-18D	3/27/2003	12.8	12.5	29.6	0.41	49.9	-356
	2/7/2006	11.2	7.5	21.3*	0.87	186	-390
	5/15/2006	10.8	7.4	38.6*	0.46	343	-348
	8/22/2006	11.1	6.5	43.1*	0.59	60.12	-317
	11/16/2006	11.3	6.9	3.13	1.19	0	-362
MW-19S	3/27/2003	10.2	14.5	5.42	0.54	123	-406
	2/3/2006	12.4	12.4	4.33*	0.94	0	-361
MW-19D	3/27/2003	14.3	15.8	65.3	0.32	37.2	-535
	1/31/2006	12.5	7.1	72.3*	0.3	165	-401
	3/24/2008	10.9	6.7	41.47	0	5.01	-317.2
MW-19D$_2$	4/7/2003	8.8	12.9	>99.9*	1.62	104	-462
MW-20S	4/23/2003	7.4	12.5	5.51*	2.91	0	-163
	2/2/2006	12.0	11.9	3.13*	6.8	0	-146
MW-20D	4/23/2003	9.6	9.5	79.9*	1.21	30.3	-434
	1/25/2006	13.8	6.7	50.1*	0	17.4	-691
MW-21S	4/10/2003	7.0	8.8	1.76*	1.77	22.7	-2
MW-21D	4/10/2003	13.3	12.9	10.7*	0.96	73.5	-505
MW-22S	3/28/2003	12.6	10.9	7.66*	7.14	150	-124
	2/2/2006	14.7	12.0	2.32*	2.95	48	-80
	3/24/2008	6.5	9.4	0.371	7.72	3.73	48.7
MW-22D	4/8/2003	11.3	12.5	44.6*	1.18	12.4	-526
	1/24/2006	11.9	8.8	56.1*	0	120	-741
	3/24/2008	10.1	9.9	22.35	0.14	9.59	-247.6

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-23S	1/30/2006	13.7	12.6	5.99*	2.7	0	-257
	5/10/2006	18.7	12.4	3.40*	0.00	6.8	-397
	8/17/2006	13.4	11.8	3.36*	0.00	210	-252
	11/15/2006	15.4	10.9	0.569*	0.63	42.0	-354
	3/27/2008	8.1	12.5	1.773	2.41	5.22	-178.0
MW-23D	1/26/2006	11.5	8.5	3.28*	5.8	0	-175
	5/9/2006	14.0	8.5	2.76*	0.11	230.0	-225
	8/16/2006	14.7	8.2	2.70*	0.0	140	-297
	11/14/2006	12.3	7.2	0.358*	0.70	328	-78
	3/26/2008	10.7	8.5	0.716	0.25	20.3	-139.9
MW-24S	1/30/2006	10.4	12.5	7.19*	1.76	0	-257
	5/10/2006	13.1	12.8	6.72*	0.0	49.6	-318
	8/16/2006	18.2	11.7	4.62*	0.25	3.47	-162
	11/14/2006	13.6	11.5	5.98*	0.05	13	-219
	3/26/2008	4.5	12.8	6.368	4.35	1.20	-235.8
MW-24D	1/26/2006	11.2	8.3	8.49*	1.31	305	-287
	5/9/2006	16.0	8.2	9.08*	0.0	134.0	-300
	8/15/2006	14.6	7.3	8.09*	0.02	89.35	-141
	11/15/2006	13.1	7.4	9.12*	0.00	110	-176
	3/26/2008	6.3	7.5	8.333	0.44	8.09	-233.2
MW-25S	1/31/2006	10.1	12.5	8.67*	1.1	0	-375
	5/11/2006	17.5	13.1	12.1*	0.0	48.0	-411
	8/18/2006	23.1	12.1	8.68*	0.67	160	-281
	11/15/2006	15.3	11.1	0.95*	0.55	51.9	-299
	3/26/2008	8.0	12.9	3.483	3.07	4.28	-230.6
MW-25D	1/27/2006	10.7	8.9	33.3*	0.9	47.1	-445
	5/10/2006	14.6	7.7	26.1*	0.00	329	-398
	8/15/2006	16.7	7.0	37.5*	0.42	28.63	-337
	11/14/2006	11.9	7.1	3.92*	0.55	0.0	-372
	3/26/2008	10.0	7.3	8.677	0.31	18.8	-356.9
MW-26S	1/31/2006	11.4	12.8	10.1*	1.3	2.8	-193
	3/27/2008	9.8	12.9	3.321	1.68	5.65	-51.3
MW-26D	1/27/2006	12.1	7.8	99.9*	0.69	56.4	-418
	3/25/2008	11.5	6.4	61.34	0	27.2	-335.9
MW-27S	1/31/2006	10.2	9.7	1.02*	0.55	19.6	-444
	3/25/2008	10.2	9.3	0.446	0.09	6.59	-255.3
MW-27D	2/2/2006	12.8	7.0	99.9*	0.91	98	-407
	3/25/2008	11.0	6.4	55.16	0	36.6	-343.4
MW-28S	1/31/2006	9.0	12.1	3.43*	0.33	88	-375
	3/25/2008	4.9	12.5	2.349	0.20	14.1	-261.9
MW-28D	2/3/2006	10.3	6.6	99.9*	0	93.3	-373
	3/25/2008	7.3	6.0	91.10	-0.23	31.6	-289.1
MW-30S	2/6/2006	6.9	7.4	2.2*	4.01	33.3	29
	5/11/2006	15.5	7.1	1.82*	0.31	0.0	-146
	8/16/2006	22.8	7.0	1.69*	0.02	7.93	-191
	11/16/2006	17.9	6.2	0.253*	1.35	0	-223

TABLE 6
GROUNDWATER QUALITY PARAMETERS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Sampling Location	Date	Temp. (°C)	pH (S.U.)	Cond. (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-30D	2/8/2006	12.1	9.7	0.855*	0.88	38.2	-390
	5/12/2006	13.6	9.2	0.549*	0.0	11.0	-356
	8/17/2006	19.3	8.9	0.714*	0.0	160	-371
	11/16/2006	15.4	9.4	0.567*	0.0	90.1	-377
MW-31S	2/7/2006	11.3	6.9	2.59*	0	9.6	-10
	5/11/2006	15.9	7.1	2.64*	0.0	11.7	-174
	8/15/2006	21.5	6.4	1.96*	0.25	19.09	-96
	11/17/2006	16.7	6.5	2.53*	3.80	0.00	-91
MW-31D	2/8/2006	10.5	10.5	1.08*	0	2.6	-88
	5/12/2006	13.1	11.6	1.26*	0.00	27.1	-437
	8/16/2006	16.7	11.1	1.19*	0.0	69	-403
	11/16/2006	15.4	9.8	0.133*	0.57	0.0	-430
	3/24/2008	7.5	11.2	0.806	0.13	2.61	-249.0
	3/26/2008	8.2	11.0	0.861	0.16	3.36	-234.2
MW-32S	1/30/2006	13.2	11.5	1.6*	2.5	138.5	-287
	5/10/2006	14.4	9.9	1.04*	0.10	41.3	-273
	8/16/2006	20.8	8.6	1.39*	0.0	310	-294
	11/15/2006	14.8	11.3	2.43*	3.24	0.20	-229
	3/27/2008	6.2	11.8	1.203	0.64	11.30	-214.9
MW-32D	1/26/2006	11.2	9.5	6.3*	1.18	336	-310
	5/11/2006	14.2	9.2	7.31*	0.0	151.0	-304
	8/22/2006	16.1	8.3	6.74*	0.21	88.9	-266
	11/14/2006	12.2	8.3	6.93*	0.08	75	-187
	3/27/2008	6.2	8.5	4.727	0.30	8.03	-208.7
MW-33S	2/1/2006	11.8	11.5	7.46*	0.5	139	-235
MW-33D	1/25/2006	12.2	11.0	63.2*	0	147	-846
TMW-18D1	6/1/2001	14.7	11.9	1.60	0.24	- -	-138
TMW-18D2	6/1/2001	15.6	8.5	17.1	0.38	- -	80
TMW-19D1	5/30/2001	15.4	12.8	3.98	0.22	2.2	-165
TMW-19D2	5/30/2001	15.6	8.2	3.16	0.19	2.71	28

Notes:
1. Field parameters recorded immediately before groundwater samples were collected.
2. Temperature reported in degrees Celsius (°C).
3. pH reported in Standard Units (S.U.).
4. Specific Conductivity reported in milliSiemens per centimeter (mS/cm).
5. Dissolved Oxygen (DO) reported in milligrams per liter (mg/L).
6. Turbidity reported in Nephelometric Turbidity Units (NTU).
7. Oxidation/Reduction Potential (ORP) reported in millivolts (mV).
8. OR = Out of range.
9. * = Sampling logs do not specify whether the conductivity value is in mg/L or micrograms per liter (ug/L).

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-1			SB-2		SB-3	SB-4				SB-5		SB-6		SB-7		
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	10 - 12	16 - 18	22 - 24	12 - 14	14 - 16	14 - 16	12 - 14	14 - 16	30 - 32	38 - 40	4 - 6	20 - 22	8 - 10	22 - 24	12 - 14	14 - 16	20 - 22
Date Collected:			02/19/98	02/19/98	02/19/98	07/13/95	07/13/95	02/27/98	07/13/95	07/13/95	07/13/95	07/13/95	07/14/95	07/14/95	07/18/95	07/18/95	02/26/98	02/26/98	02/26/98
X = Soil Removed During IRM:						X	X	X	X	X			X		X				
Volatile Organics																			
2-Butanone	0.12	1,000	NA	<0.010	NA	<0.010	NA	<0.010	NA	<1.2	NA	NA	<0.010	NA	<1.2	NA	NA	NA	<0.010
Acetone	0.05	1,000	NA	0.021 B	NA	0.038	NA	**0.053**	NA	**53 B**	NA	NA	0.021	NA	**33 B**	NA	NA	NA	**0.25 B**
Benzene	0.06	89	0.0040 J	0.017	**0.79**	<0.010	<0.010	<0.010	**9.5**	**30**	**0.58 J**	0.022	<0.010	<0.010	<1.2	<1.2	<0.010	0.0080 J	<0.010
Carbon Disulfide	- -	- -	NA	<0.010	NA	<0.010	NA	<0.010	NA	<1.2	NA	NA	<0.010	NA	<1.2	NA	NA	NA	0.015 J
Chlorobenzene	1.1	1,000	NA	<0.010	NA	<0.010	NA	<0.010	NA	<1.2	NA	NA	<0.010	NA	<1.2	NA	NA	NA	<0.010
Chloroform	0.37	700	NA	<0.010	NA	<0.010	NA	<0.010	NA	<1.2	NA	NA	<0.010	NA	<1.2	NA	NA	NA	<0.010
Ethylbenzene	1	780	0.0040 J	0.024	<0.010	<0.010	<0.010	<0.010	**2.6**	**11**	<1.2	0.0020 J	<0.010	0.040	<1.2	<1.2	0.35	0.30	0.097 J
Methylene Chloride	0.05	1,000	NA	<0.010	NA	<0.010	NA	<0.010	NA	**4.9**	NA	NA	<0.010	NA	**2.0 J**	NA	NA	NA	<0.010
Styrene	- -	- -	NA	<0.010	NA	<0.010	NA	<0.010	NA	51	NA	NA	<0.010	NA	<1.2	NA	NA	NA	0.076 J
Tetrachloroethene	1.3	300	NA	<0.010	NA	<0.010	NA	<0.010	NA	<1.2	NA	NA	<0.010	NA	<1.2	NA	NA	NA	<0.010
Toluene	0.7	1,000	0.0030 J	0.063	<0.010	0.0040 J	<0.010	0.00080 J	**11**	**76**	**1.6**	0.030	0.0090 J	0.079	<1.2	<1.2	0.18	0.20	<0.010
Xylenes (total)	0.26	1,000	0.011 J	0.13	<0.010	<0.010	<0.010	<0.010	**62**	**140 E**	**2.0**	0.031	<0.010	**0.30**	<1.2	**0.86 J**	**7.6**	**5.9 E**	**2.0**
Total BTEX	- -	- -	0.022 J	0.23	0.79	0.0040 J	<0.010	0.00080 J	85	260	4.2 J	0.085 J	0.0090 J	0.42	<1.2	0.86 J	8.1	6.4 J	2.1 J
Total VOCs	- -	- -	0.022 J	0.26	0.79	0.042 J	<0.010	0.054 J	85	370	4.2 J	0.085 J	0.030 J	0.42	35 J	0.86 J	8.1	6.4 J	2.4 J
Semivolatile Organics																			
2,4-Dimethylphenol	- -	- -	NA	<0.33	NA	0.023 J	NA	<0.33	NA	17 J	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
2-Chloronaphthalene	- -	- -	NA	<0.33	NA	<0.33	NA	0.036 J	NA	<0.33	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
2-Methylnaphthalene	- -	- -	0.026 J	0.041 J	<0.33	0.14 J	<0.33	0.029 J	120	280	3.1	0.12 J	<0.33	0.62	100 J	2.1 J	75	29	7.4
2-Methylphenol	0.33	1,000	NA	<0.33	NA	0.024 J	NA	<0.33	NA	**12 J**	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
3,3'-Dichlorobenzidine	- -	- -	NA	<0.33	NA	<0.33	NA	<0.33	NA	<0.33	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
4-Methylphenol	0.33	1,000	NA	<0.33	NA	0.070 J	NA	<0.33	NA	**25 J**	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
4-Nitroaniline	- -	- -	NA	<0.80	NA	<0.80	NA	<0.80	NA	<0.80	NA	NA	<0.80	NA	<0.80	NA	NA	NA	<0.80
Acenaphthene	20	1,000	<0.33	<0.33	<0.33	0.079 J	<0.33	<0.33	**86 J**	**23 J**	0.26 J	<0.33	<0.33	0.047 J	**40 J**	0.088 J	5.4 J	2.6 J	0.17 J
Acenaphthylene	100	1,000	<0.33	0.020 J	<0.33	0.10 J	<0.33	<0.33	**150 J**	**170**	1.8 J	0.059 J	0.046 J	0.16 J	**110 J**	0.46 J	39	16	3.7 J
Anthracene	100	1,000	0.056 J	0.069 J	<0.33	0.30 J	<0.33	0.018 J	**150 J**	**120 J**	1.4 J	0.057 J	0.064 J	0.040 J	**190**	0.24 J	23	8.8 J	<0.33
Benzo(a)anthracene	1	11	0.10 J	0.17 J	<0.33	0.46 J	<0.33	0.022 J	**120 J**	**80 J**	0.92 J	0.042 J	0.33 J	0.061 J	**190**	0.23 J	**12 J**	**4.5 J**	<0.33
Benzo(a)pyrene	0	1.1	**0.084 J**	**0.13 J**	<0.33	**0.64 J**	<0.33	**0.27 J**	**76 J**	**53 J**	**0.64 J**	**0.030 J**	**0.40 J**	**0.081 J**	**120 J**	**0.15 J**	**8.3 J**	**3.3 J**	<0.33
Benzo(b)fluoranthene	1	11	0.067 J	0.12 J	<0.33	0.54 J	<0.33	0.022 J	**55 J**	**41 J**	0.39 J	0.024 J	0.38 J	0.062 J	**100 J**	0.11 J	**6.3 J**	**2.6 J**	<0.33
Benzo(g,h,i)perylene	100	1,000	0.080 J	0.087 J	<0.33	0.14 J	<0.33	0.076 J	12 J	9.1 J	0.099 J	0.0070 J	0.14 J	0.12 J	27 J	0.047 J	2.4 J	0.89 J	<0.33
Benzo(k)fluoranthene	0.8	110	0.089 J	0.14 J	<0.33	0.43 J	<0.33	0.038 J	**87 J**	**50 J**	0.64 J	0.025 J	0.40 J	0.070 J	**120 J**	0.16 J	**9.2 J**	**3.7 J**	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	0.62 B	0.62 B	NA	0.40 JB	NA	0.12 JB	NA	0.14 JB	NA	NA	0.47 JB	NA	<0.33	NA	NA	NA	<0.33
Butylbenzylphthalate	- -	- -	NA	<0.33	NA	<0.33	NA	<0.33	NA	<0.33	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
Carbazole	- -	- -	NA	0.031 J	NA	0.23 J	NA	0.084 J	NA	110 J	NA	NA	0.019 J	NA	49 J	NA	NA	NA	2.0 J
Chrysene	1	110	0.10 J	0.17 J	<0.33	0.53 J	<0.33	0.036 J	**99 J**	**66 J**	0.76 J	0.042 J	0.39 J	0.066 J	**170**	0.21 J	**9.8 J**	**3.8 J**	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	<0.33	<0.33	<0.33	0.13 J	<0.33	<0.33	**18 J**	**12 J**	0.14 J	0.0070 J	0.11 J	0.022 J	**37 J**	<0.33	**1.4 J**	**0.52 J**	<0.33
Dibenzofuran	7	1,000	NA	0.030 J	NA	0.22 J	NA	0.040 J	NA	**100 J**	NA	NA	<0.33	NA	**200**	NA	NA	NA	0.42 J
Diethylphthalate	- -	- -	NA	<0.33	NA	0.020 JB	NA	<0.33	NA	<0.33	NA	NA	0.24 JB	NA	<0.33	NA	NA	NA	<0.33
Di-n-Butylphthalate	- -	- -	NA	<0.33	NA	0.12 JB	NA	0.016 JB	NA	<0.33	NA	NA	0.071 JB	NA	<0.33	NA	NA	NA	<0.33
Fluoranthene	100	1,000	0.28 J	0.38 J	<0.33	0.74	<0.33	0.059 J	**340**	**220**	2.4	0.10 J	0.51 J	0.098 J	**520**	0.55 J	33	13	<0.33
Fluorene	30	1,000	0.020 J	0.031 J	<0.33	0.20 J	<0.33	0.018 J	**200**	**130 J**	1.3 J	0.048 J	<0.33	0.17 J	**270**	0.32 J	**34**	12	0.30 J
Indeno(1,2,3-cd)pyrene	0.5	11	0.048 J	0.093 J	<0.33	0.33 J	<0.33	0.13 J	**39 J**	**24 J**	0.30 J	0.016 J	0.27 J	0.056 J	**73 J**	0.079 J	**3.7 J**	**1.5 J**	<0.33
Naphthalene	12	1,000	0.12 J	0.40 J	<0.33	1.0 B	<0.33	0.094 J	**710 B**	**830 B**	8.3 B	0.95 B	0.023 J	1.0	**140 J**	**13**	**150**	**61**	**33**
Phenanthrene	100	1,000	0.20 J	0.28 J	<0.33	1.2	<0.33	0.11 J	**550**	**400**	4.6	0.19 J	0.14 J	0.15 J	**840**	0.86 J	60	24	0.13 J
Phenol	0.33	1,000	NA	<0.33	NA	<0.33	NA	<0.33	NA	**16 J**	NA	NA	<0.33	NA	<0.33	NA	NA	NA	<0.33
Pyrene	100	1,000	0.24 J	0.34 J	<0.33	0.71	<0.33	0.33 J	**200**	**150**	1.9 J	0.10 J	0.49 J	0.094 J	**340**	0.41 J	21 J	8.0 J	0.11 J
Total PAHs	- -	- -	1.5 J	2.5 J	<0.33	7.7 J	<0.33	1.3 J	3,000 J	2,700 J	29 J	1.8 J	3.7 J	2.9 J	3,400 J	19 J	490 J	200 J	45 J
Total SVOCs	0	- -	**2.1 J**	**3.2 J**	<0.33	**8.8 J**	<0.33	**1.6 J**	**3,000 J**	**2,900 J**	**29 J**	**1.8 J**	**4.5 J**	**2.9 J**	**3,600 J**	**19 J**	**490 J**	**200 J**	**47 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-1			SB-2		SB-3	SB-4				SB-5		SB-6		SB-7		
Sample Depth(Feet): Date Collected:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	10 - 12 02/19/98	16 - 18 02/19/98	22 - 24 02/19/98	12 - 14 07/13/95	14 - 16 07/13/95	14 - 16 02/27/98	12 - 14 07/13/95	14 - 16 07/13/95	30 - 32 07/13/95	38 - 40 07/13/95	4 - 6 07/14/95	20 - 22 07/14/95	8 - 10 07/18/95	22 - 24 07/18/95	12 - 14 02/26/98	14 - 16 02/26/98	20 - 22 02/26/98
X = Soil Removed During IRM:						X	X	X	X	X			X		X				
Inorganics																			
Aluminum	- -	- -	NA	2,660	NA	7,610	NA	1,090	NA	3,840	NA	NA	5,480	NA	4,500	NA	NA	NA	2,860
Antimony	- -	- -	NA	1.60 B	NA	<14.4	NA	<0.880	NA	<11.9	NA	NA	<13.7	NA	<11.2	NA	NA	NA	1.40 B
Arsenic	13	16	NA	<0.640	NA	3.80 B	NA	<0.590	NA	4.80	NA	NA	4.70	NA	6.50	NA	NA	NA	1.40 B
Barium	350	10,000	NA	67.5	NA	77.6 B	NA	66.5	NA	49.4 B	NA	NA	26.6 B	NA	20.0 B	NA	NA	NA	78.7
Beryllium	7.2	2,700	NA	<0.320	NA	<0.440	NA	<0.290	NA	<0.360	NA	NA	<0.410	NA	<0.340	NA	NA	NA	<0.330
Cadmium	2.5	60	NA	<0.320	NA	<1.30	NA	<0.290	NA	<1.10	NA	NA	<1.20	NA	<1.00	NA	NA	NA	<0.330
Calcium	- -	- -	NA	157,000 E	NA	221,000 E	NA	165,000 E	NA	232,000 E	NA	NA	260,000 E	NA	264,000 E	NA	NA	NA	204,000 E
Chromium	- -	- -	NA	4.30	NA	12.4	NA	2.00 B	NA	5.90	NA	NA	8.50	NA	9.00	NA	NA	NA	5.30
Cobalt	- -	- -	NA	2.40 B	NA	3.60 B	NA	0.880 B	NA	2.40 B	NA	NA	3.40 B	NA	2.40 B	NA	NA	NA	3.00 B
Copper	50	10,000	NA	5.10 B	NA	26.4	NA	1.10 B	NA	22.0	NA	NA	**52.7**	NA	46.7	NA	NA	NA	6.20 B
Cyanide	27	10,000	3.71	0.800	0.780	**33.0**	9.90	<0.500	**63.5**	22.4	<0.660	<0.570	5.20	1.90	17.3	<1.60	<0.890	<0.880	<0.500
Iron	- -	- -	NA	6,880 E	NA	11,600 E	NA	2,660	NA	4,890 E	NA	NA	6,890 E	NA	4,420 E	NA	NA	NA	9,030
Lead	63	3,900	NA	6.00	NA	**73.4 E**	NA	2.00	NA	15.4 E	NA	NA	25.9 E	NA	18.1 E	NA	NA	NA	4.80
Magnesium	- -	- -	NA	6,540 E	NA	11,200 E	NA	4,410	NA	8,330 E	NA	NA	13,600 E	NA	21,900 E	NA	NA	NA	7,190
Manganese	1,600	10,000	NA	224	NA	690 EN	NA	452	NA	601 EN	NA	NA	791 EN	NA	709 EN	NA	NA	NA	384
Mercury	0.18	5.7	NA	<0.120	NA	**0.310 N**	NA	<0.120	NA	<0.170	NA	NA	**0.240 N**	NA	**0.300 N**	NA	NA	NA	<0.150
Nickel	30	10,000	NA	7.80 B	NA	13.1 B	NA	4.00 B	NA	7.50 B	NA	NA	11.0 B	NA	9.10 B	NA	NA	NA	9.30 B
Potassium	- -	- -	NA	854 BE	NA	1,120 E	NA	398 BE	NA	770 E	NA	NA	161 BE	NA	59.1 BE	NA	NA	NA	705 BE
Selenium	3.9	6,800	NA	<0.640	NA	1.50 BNW	NA	<0.590	NA	<0.360	NA	NA	<0.410	NA	1.80 N	NA	NA	NA	<0.660
Silver	2	6,800	NA	<0.320	NA	<0.870	NA	<0.290	NA	<0.720	NA	NA	<0.830	NA	<0.680	NA	NA	NA	<0.330
Sodium	- -	- -	NA	1,100 BE	NA	1,480	NA	896 BE	NA	8,730	NA	NA	1,870	NA	3,100	NA	NA	NA	1,160 BE
Thallium	- -	- -	NA	<0.640	NA	<1.70	NA	<0.590	NA	<1.40	NA	NA	<1.60	NA	<1.40	NA	NA	NA	<0.660
Vanadium	- -	- -	NA	4.00 B	NA	16.2 BE	NA	1.60 B	NA	9.70 BE	NA	NA	15.4 BE	NA	12.6 BE	NA	NA	NA	3.80 B
Zinc	109	10,000	NA	43.8	NA	77.4	NA	15.9	NA	40.9	NA	NA	47.2	NA	52.0	NA	NA	NA	39.6
PCBs																			
Aroclor-1242	- -	- -	NA	<0.033	NA	<0.033	NA	<0.033	NA	<0.033	NA	NA	<0.033	NA	<0.033	NA	NA	NA	<0.033
Aroclor-1248	- -	- -	NA	<0.033	NA	<0.033	NA	<0.033	NA	<0.033	NA	NA	<0.033	NA	<0.033	NA	NA	NA	<0.033
Aroclor-1254	- -	- -	NA	<0.033	NA	<0.033	NA	<0.033	NA	<0.033	NA	NA	<0.033	NA	<0.033	NA	NA	NA	<0.033
Aroclor-1260	- -	- -	NA	<0.033	NA	<0.033	NA	<0.033	NA	<0.033	NA	NA	<0.033	NA	<0.033	NA	NA	NA	<0.033
Total PCBs	- -	- -	NA	<0.067	NA	<0.067	NA	<0.067	NA	<0.067	NA	NA	<0.067	NA	<0.067	NA	NA	NA	<0.067
Pesticides																			
4,4'-DDD	0.0033	180	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
4,4'-DDE	0.0033	120	NA	<0.0033	NA	0.00060 JP	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
4,4'-DDT	0.0033	94	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
Aldrin	0.005	1.4	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	NA	NA	<0.0017
Alpha-Chlordane	0.094	47	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	NA	NA	<0.0017
Delta-BHC	0.04	1,000	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	NA	NA	<0.0017
Dieldrin	0.005	2.8	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
Endosulfan II	2.4	920	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	0.060	NA	NA	NA	<0.0033
Endosulfan Sulfate	2.4	920	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	0.084	NA	NA	NA	<0.0033
Endrin	0.014	410	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
Endrin Ketone	- -	- -	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	NA	NA	<0.0033
Gamma-Chlordane	- -	- -	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	NA	NA	<0.0017
Heptachlor	0.042	29	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	NA	NA	<0.0017
Methoxychlor	- -	- -	NA	<0.017	NA	<0.017	NA	<0.017	NA	<0.017	NA	NA	<0.017	NA	<0.017	NA	NA	NA	<0.017

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-8	SB-9							SB-10						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	18 - 20 02/26/98	2 - 4 02/24/00	10 - 12 02/24/00	14 - 16 02/24/00	20 - 22 02/24/00	28 - 30 02/24/00	38 - 40 02/24/00	48 - 50 02/24/00	2 - 4 02/24/00 X	6 - 8 02/24/00 X	14 - 16 02/24/00 X	20 - 22 02/24/00	28 - 30 02/24/00	38 - 40 02/24/00	48 - 50 02/24/00
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.038	0.00050 J	0.00060 J	0.0010 J	0.0020 J	**0.12**	0.035	0.048	0.0020 J	<0.0050 J	0.00080 J [<0.0050]	<0.0050	0.016	0.010	<0.0050
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	0.045	<0.0060	<0.012	0.0010 J	0.00080 J	0.0020 J	0.00050 J	<0.0050	0.0010 J	<0.0050 J	<0.0050 [<0.0050]	<0.0050	0.00060 J	<0.0050	<0.0050
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.082	0.0010 J	0.00070 J	0.0020 J	0.0050 J	0.16	0.031	0.00040 J	0.0050 J	0.00040 J	0.0020 J [0.00080 J]	0.0030 J	0.015	0.00030 J	<0.0050
Xylenes (total)	0.26	1,000	**0.42**	0.00060 J	0.0020 J	0.0090 J	0.0090 J	0.041	0.0070	<0.0050	0.025	0.0060 J	0.0020 J [0.0040 J]	0.014 J	0.0050 J	<0.0050	<0.0050
Total BTEX	- -	- -	0.59	0.0021 J	0.0033 J	0.013 J	0.017 J	0.32 J	0.074 J	0.048 J	0.033 J	0.0064 J	0.0048 J [0.0048 J]	0.017 J	0.037 J	0.010 J	<0.0050
Total VOCs	- -	- -	0.59	0.0021 J	0.0033 J	0.013 J	0.017 J	0.32 J	0.074 J	0.048 J	0.033 J	0.0064 J	0.0048 J [0.0048 J]	0.017 J	0.037 J	0.010 J	<0.0050
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.012 J	0.071 J	0.025 J	0.18 J	0.16 J	0.0040 J	0.0060 J	0.016 J	1.1 J	25 J	0.36 J [0.39 J]	0.61	<0.33	<0.33	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.33	<1.6	0.27 J	0.031 J	0.030 J	<0.44	0.0030 J	0.011 J	0.24 J	3.8 J	0.046 J [0.030 J]	0.012 J	<0.33	<0.33	<0.33
Acenaphthylene	100	1,000	<0.33	0.27 J	0.15 J	0.036 J	0.047 J	0.0030 J	0.012 J	0.022 J	4.7	9.9 J	0.20 J [0.19 J]	0.22 J	<0.33	<0.33	<0.33
Anthracene	100	1,000	<0.33	0.76 J	0.35 J	0.0090 J	0.034 J	0.0040 J	0.024 J	0.065 J	4.5	34 J	0.062 J [0.036 J]	<0.33	<0.33	<0.33	<0.33
Benzo(a)anthracene	1	11	<0.33	**3.6**	0.37 J	0.0050 J	0.037 J	0.0070 J	0.038 J	0.078 J	**24**	**2.0 J**	0.018 J [0.019 J]	0.0060 J	<0.33	<0.33	<0.33
Benzo(a)pyrene	0	1.1	**0.020 J**	**2.1**	**0.24 J**	**0.0040 J**	**0.026 J**	**0.0050 J**	**0.035 J**	**0.065 J**	**23**	**14 J**	**0.017 J [0.021 J]**	<0.33	<0.33	<0.33	<0.33
Benzo(b)fluoranthene	1	11	<0.33	**2.4**	0.19 J	0.0030 J	0.020 J	0.0050 J	0.030 J	0.059 J	**22**	**12 J**	0.012 J [0.014 J]	<0.33	<0.33	<0.33	<0.33
Benzo(g,h,i)perylene	100	1,000	0.096 J	1.2 J	0.090 J	0.43 J	0.013 J	0.0020 J	0.020 J	0.037 J	18	7.4 J	<0.33 [0.012 J]	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	0.8	110	<0.33	**3.1**	0.27 J	0.0050 J	0.034 J	0.0060 J	0.033 J	0.068 J	**19**	**14 J**	0.019 J [0.022 J]	<0.33	<0.33	<0.33	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	<0.33	**3.3**	0.34 J	0.0040 J	0.033 J	0.0070 J	0.036 J	0.071 J	**23**	**16 J**	0.016 J [0.016 J]	0.0050 J	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	<0.33	**0.47 J**	0.036 J	**0.43 J**	<0.55	<0.44	0.0060 J	0.016 J	**7.8**	**2.9 J**	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	<0.33	7.6	0.91 J	0.010 J	0.082 J	0.011 J	0.071 J	0.17 J	25	45 J	0.046 J [0.044 J]	0.016 J	<0.33	<0.33	<0.33
Fluorene	30	1,000	<0.33	0.056 J	0.41 J	0.062 J	0.056 J	0.0040 J	0.012 J	0.032 J	0.74 J	**31 J**	0.30 J [0.19 J]	0.010 J	<0.33	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	<0.33	**1.3 J**	0.096 J	0.43 J	0.013 J	0.0020 J	0.021 J	0.041 J	**19**	**8.8 J**	0.0090 J [0.011 J]	<0.33	<0.33	<0.33	<0.33
Naphthalene	12	1,000	1.9	0.10 J	0.080 J	0.65 J	1.7	0.055 J	0.016 J	0.037 J	0.80 J	**16 J**	0.72 [0.71]	3.0	0.028 J	0.012 J	0.0070 J
Phenanthrene	100	1,000	<0.33	3.9	0.35 J	0.011 J	0.064 J	0.010 J	0.055 J	0.13 J	8.4	81 J	0.32 J [0.19 J]	0.018 J	0.0090 J	<0.33	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.017 J	5.0	0.71 J	0.0080 J	0.061 J	0.010 J	0.052 J	0.10 J	25	26 J	0.030 J [0.026 J]	0.0090 J	<0.33	<0.33	<0.33
Total PAHs	- -	- -	2.1 J	35 J	4.9 J	2.3 J	2.4 J	0.14 J	0.47 J	1.0 J	230 J	350 J	2.2 J [1.9 J]	3.9 J	0.037 J	0.012 J	0.0070 J
Total SVOCs	0	- -	**2.1 J**	**35 J**	**4.9 J**	**2.3 J**	**2.4 J**	**0.14 J**	**0.47 J**	**1.0 J**	**230 J**	**350 J**	**2.2 J [1.9 J]**	**3.9 J**	**0.037 J**	**0.012 J**	**0.0070 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-8	SB-9							SB-10						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	18 - 20	2 - 4	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			02/26/98	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00
X = Soil Removed During IRM:											X	X	X				
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	1.96	17.9 J	8.56 J	<0.740 J	<1.72 J	<0.610 J	<0.570 J	0.570	1.45	**30.0 J**	2.47 [2.03]	2.36	0.690	0.590	0.590
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-11								SB-12						
Sample Depth(Feet):	Unrestricted	Industrial	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:	(Exceedences	(Exceedences	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00	02/28/00
X = Soil Removed During IRM:	in bold)	shaded)	X	X	X	X					X	X	X				
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0060 J	<0.0050 J	**0.070 J**	0.0020 J	**0.062**	**0.34**	0.00080 J	<0.0050	<0.0050 J	0.0010 J	0.0020 J	0.042	**0.17**	0.0040 J	<0.0050
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050 J	<0.0050 J	0.0070 J	0.0010 J	0.012	0.029	<0.0050	<0.0050	<0.0050 J	0.00060 J	<0.0070	0.0080	0.0010 J	<0.0050	<0.0050
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0060 J	0.00030 J	0.051 J	0.0040 J	0.081	0.32	0.0010 J	0.00020 J	<0.0050 J	0.0030 J	0.0020 J	0.046	0.073	<0.0050	0.00020 J
Xylenes (total)	0.26	1,000	0.0010 J	0.0010 J	0.089 J	0.017	0.16	0.26	0.0040 J	<0.0050	<0.0050 J	0.012 J	0.0020 J	0.090	0.022	<0.0050	<0.0050
Total BTEX	- -	- -	0.013 J	0.0013 J	0.22 J	0.024 J	0.32	0.95	0.0058 J	0.00020 J	<0.0050	0.017 J	0.0060 J	0.19	0.27 J	0.0040 J	0.00020 J
Total VOCs	- -	- -	0.013 J	0.0013 J	0.22 J	0.024 J	0.32	0.95	0.0058 J	0.00020 J	<0.0050	0.017 J	0.0060 J	0.19	0.27 J	0.0040 J	0.00020 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.20 J	0.022 J	0.64 J	0.51	0.85	0.045 J	<0.33	<0.33	0.018 J	0.96 J	0.041 J	<0.54	<0.53	<0.33	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.034 J	0.016 J	0.069 J	0.074 J	0.077 J	<0.33	<0.33	<0.33	<0.33 J	0.10 J	<0.47	<0.54	<0.53	<0.33	<0.33
Acenaphthylene	100	1,000	0.10 J	0.061 J	0.32 J	0.24 J	0.40 J	0.0080 J	<0.33	<0.33	<0.33 J	0.47 J	0.012 J	<0.54	<0.53	<0.33	<0.33
Anthracene	100	1,000	0.14 J	0.090 J	0.18 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33 J	0.22 J	<0.47	<0.54	<0.53	<0.33	<0.33
Benzo(a)anthracene	1	11	0.39	0.36 J	0.20 J	<0.33	0.0090 J	<0.33	<0.33	<0.33	0.014 J	0.22 J	<0.47	<0.54	<0.53	<0.33	<0.33
Benzo(a)pyrene	0	1.1	**0.37 J**	**0.37 J**	**0.21 J**	<0.33	**0.010 J**	<0.33	<0.33	<0.33	<0.33 J	**0.18 J**	<0.47	<0.54	<0.53	<0.33	<0.33
Benzo(b)fluoranthene	1	11	0.30 J	0.30 J	0.14 J	<0.33	0.0090 J	<0.33	<0.33	<0.33	0.015 J	0.12 J	<0.47	<0.54	<0.53	<0.33	<0.33
Benzo(g,h,i)perylene	100	1,000	0.31 J	0.21 J	0.12 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	0.10 J	0.47 J	<0.54	<0.53	<0.33 J	<0.33 J
Benzo(k)fluoranthene	0.8	110	0.36 J	0.37 J	0.17 J	<0.33	0.010 J	<0.33	<0.33	<0.33	0.016 J	0.22 J	<0.47	<0.54	<0.53	<0.33	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.48	0.42 J	0.24 J	<0.33	0.0090 J	<0.33	<0.33	<0.33	0.014 J	0.20 J	<0.47	<0.54	<0.53	<0.33	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	0.11 J	<0.33 J	<0.33 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33 J	**0.87 J**	<0.47	<0.54	<0.53	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.63	0.44 J	0.42 J	0.0050 J	0.019 J	<0.33	<0.33	<0.33	0.026 J	0.64 J	<0.47	<0.54	<0.53	<0.33	<0.33
Fluorene	30	1,000	0.030 J	0.019 J	0.28 J	0.34 J	0.18 J	<0.33	<0.33	<0.33	<0.33 J	0.34 J	0.024 J	<0.54	<0.53	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	0.27 J	0.20 J	0.11 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	<0.33 J	0.11 J	<0.47	<0.54	<0.53	<0.33 J	<0.33 J
Naphthalene	12	1,000	0.13 J	0.072 J	1.5 J	0.95	2.0	2.1	0.022 J	<0.33	0.013 J	1.8 J	0.083 J	2.0	0.14 J	<0.33	<0.33
Phenanthrene	100	1,000	0.46 J	0.12 J	0.55 J	0.018 J	0.029 J	<0.33	<0.33	<0.33	0.028 J	1.2 J	<0.47	<0.54	0.0090 J	<0.33	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.58	1.5	1.0	<0.33	0.018 J	<0.33	<0.33	<0.33	0.017 J	0.44 J	<0.47	<0.54	<0.53	<0.33	<0.33
Total PAHs	- -	- -	4.9 J	4.6 J	6.2 J	2.1 J	3.6 J	2.2 J	0.022 J	<0.33	0.16 J	8.2 J	0.63 J	2.0	0.15 J	<0.33	<0.33
Total SVOCs	0	- -	**4.9 J**	**4.6 J**	**6.2 J**	**2.1 J**	**3.6 J**	**2.2 J**	**0.022 J**	<0.33	**0.16 J**	**8.2 J**	**0.63 J**	**2.0**	**0.15 J**	<0.33	<0.33

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-11								SB-12						
Sample Depth(Feet): / Date Collected:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 02/28/00	6 - 8 02/28/00	10 - 12 02/28/00	14 - 16 02/28/00	20 - 22 02/28/00	28 - 30 02/28/00	38 - 40 02/28/00	48 - 50 02/28/00	2 - 4 02/28/00	10 - 12 02/28/00	14 - 16 02/28/00	20 - 22 02/28/00	28 - 30 02/28/00	38 - 40 02/28/00	48 - 50 02/28/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X				
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	0.610	**56.9 J**	**151 J**	0.740	0.680	1.36	0.740	0.620	1.91	**49.2**	<0.690	<1.64 J	<1.59 J	0.720	0.630
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-13						SB-14						
Sample Depth(Feet): Date Collected:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/15/00	6 - 8 03/15/00	10 - 12 03/15/00	20 - 22 03/15/00	28 - 30 03/15/00	48 - 50 03/15/00	2 - 4 02/24/00	6 - 8 02/24/00	14 - 16 02/24/00	20 - 22 02/24/00	28 - 30 02/24/00	38 - 40 02/24/00	48 - 50 02/24/00
X = Soil Removed During IRM:			X	X	X										
Volatile Organics															
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0014 J	<0.0056	0.014	0.0042 J	0.046	<0.0066	0.0080 [0.0050 J]	0.0090 J	0.0040 J	0.059	0.018	0.042	0.00040 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0060	<0.0056	0.0026 J	<0.0086	0.0047 J	<0.0066	0.0020 J [0.0010 J]	0.0010 J	0.00070 J	0.028 J	0.033	0.0010 J	<0.0060
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0023 J	0.0016 J	0.015	0.0083 J	0.044	<0.0066	0.018 J [0.0080 J]	0.0060 J	0.0050 J	0.092	0.12	0.0060 J	0.0010 J
Xylenes (total)	0.26	1,000	<0.0060	0.0013 J	0.043	0.0068 J	0.034	<0.0066	0.040 J [0.024 J]	0.015 J	0.011	0.11	0.25	0.013	0.0030 J
Total BTEX	- -	- -	0.0037 J	0.0029 J	0.075 J	0.019 J	0.13 J	<0.0066	0.068 J [0.038 J]	0.031 J	0.021 J	0.29 J	0.42	0.062 J	0.0044 J
Total VOCs	- -	- -	0.0037 J	0.0029 J	0.075 J	0.019 J	0.13 J	<0.0066	0.068 J [0.038 J]	0.031 J	0.021 J	0.29 J	0.42	0.062 J	0.0044 J
Semivolatile Organics															
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.46 J	0.40 J	0.23 J	0.036 J	<0.51	<0.43	78 J [92 J]	0.50 J	0.67 J	2.4	0.019 J	0.0040 J	0.0020 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.63 J	0.16 J	<0.63	<0.47	<0.51	<0.43	**24 J [34 J]**	0.25 J	0.14 J	0.074 J	<1.6	<0.42	<0.42
Acenaphthylene	100	1,000	<1.2	0.11 J	0.042 J	<0.47	<0.51	<0.43	**200 [260 J]**	1.1 J	0.90	0.81	0.017 J	0.0040 J	0.0020 J
Anthracene	100	1,000	1.6	0.57 J	0.062 J	<0.47	<0.51	<0.43	**310 [380]**	1.7 J	1.4	0.10 J	0.016 J	0.0070 J	0.0030 J
Benzo(a)anthracene	1	11	**3.7**	**2.0**	0.15 J	0.025 J	<0.51	<0.43	**570 [660]**	**1.6 J**	**1.6**	0.12 J	0.022 J	0.010 J	0.0060 J
Benzo(a)pyrene	0	1.1	**3.3**	**1.9**	**0.12 J**	**0.022 J**	<0.51	<0.43	**440 [460]**	**1.1 J**	**1.1**	**0.090 J**	**0.015 J**	**0.0070 J**	**0.0030 J**
Benzo(b)fluoranthene	1	11	**3.5**	**2.0**	0.086 J	<0.47	<0.51	<0.43	**300 [370]**	0.78 J	0.95	0.072 J	0.011 J	0.0060 J	0.0030 J
Benzo(g,h,i)perylene	100	1,000	2.0	1.0	<0.63	<0.47	<0.51	<0.43	**260 [270 J]**	0.46 J	0.43 J	0.032 J	<1.6	0.0020 J	<0.42
Benzo(k)fluoranthene	0.8	110	**3.1**	**1.8**	0.13 J	<0.47	<0.51	<0.43	**540 [520]**	**1.4 J**	**1.1**	0.10 J	0.021 J	0.0080 J	0.0040 J
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**3.7**	**2.1**	0.16 J	0.022 J	<0.51	<0.43	**480 [560]**	**1.4 J**	**1.4**	0.10 J	0.018 J	0.0090 J	0.0050 J
Dibenzo(a,h)anthracene	0.33	1.1	**0.78 J**	**0.37 J**	<0.63	<0.47	<0.51	<0.43	**83 J [92 J]**	0.16 J	0.18 J	0.013 J	<1.6	<0.42	<0.42
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	7.0	3.8	0.28 J	0.039 J	<0.51	<0.43	**1,200 [1,400]**	3.8 J	4.1	0.33 J	0.052 J	0.021 J	0.011 J
Fluorene	30	1,000	0.74 J	0.24 J	<0.63	<0.47	<0.51	<0.43	**140 J [180 J]**	1.1 J	0.91	0.089 J	0.011 J	0.0050 J	0.0030 J
Indeno(1,2,3-cd)pyrene	0.5	11	**1.8**	**1.0**	0.063 J	<0.47	<0.51	<0.43	**260 [290 J]**	0.50 J	0.49 J	0.034 J	0.0060 J	0.0030 J	<0.42
Naphthalene	12	1,000	0.94 J	0.61 J	1.7	0.24 J	0.089 J	<0.43	**160 J [170 J]**	0.39 J	0.66 J	2.1	9.1	0.029 J	0.0060 J
Phenanthrene	100	1,000	5.9	2.4	0.16 J	0.081 J	<0.51	<0.43	**740 J [930 J]**	4.0 J	3.3	0.19 J	0.044 J	0.019 J	0.010 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	6.1	2.9	0.30 J	0.032 J	<0.51	<0.43	**980 J [1,400 J]**	3.0 J	2.8	0.22 J	0.037 J	0.017 J	0.0090 J
Total PAHs	- -	- -	45 J	23 J	3.5 J	0.50 J	0.089 J	<0.43	6,800 J [8,100 J]	23 J	22 J	6.9 J	9.4 J	0.15 J	0.067 J
Total SVOCs	0	- -	**45 J**	**23 J**	**3.5 J**	**0.50 J**	**0.089 J**	<0.43	**6,800 J [8,100 J]**	**23 J**	**22 J**	**6.9 J**	**9.4 J**	**0.15 J**	**0.067 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-13						SB-14						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	20 - 22	28 - 30	48 - 50	2 - 4	6 - 8	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			03/15/00	03/15/00	03/15/00	03/15/00	03/15/00	03/15/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00	02/24/00
X = Soil Removed During IRM:			X	X	X										
Inorganics															
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	2.50	8.60	3.00	1.60	<0.770	<0.660	21.8 J [18.7 J]	2.87 J	<0.670 J	<1.57 J	<2.91 J	<0.650 J	<0.620 J
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs															
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides															
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-15								SB-16					
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	6 - 8	10 - 12	14 - 16	20 - 22	38 - 40	48 - 50
Date Collected:			03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/03/00	03/03/00	03/03/00	03/03/00	03/03/00	03/03/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X			
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.011	<12 J	0.0050 J	0.0010 J	**0.35**	**0.062**	**0.081**	0.0050 J	<0.012 J	0.00090 J	0.00060 J	**0.074**	**0.12**	0.0020 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0060	<12 J	0.029 J	0.030	0.052	0.0050 J	0.0030 J	<0.0050	<0.012 J	<0.011 J	0.0010 J	0.019	<0.0060	<0.0060
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0010 J	<12 J	0.016 J	0.0040 J	**1.3**	0.068	0.014	0.00030 J	0.00040 J	0.00040 J	0.0040 J	0.15	0.0020 J	<0.0060
Xylenes (total)	0.26	1,000	<0.0060	**0.47 J**	0.26 J	0.083	**0.72**	0.052	0.020	<0.0050	<0.012 J	<0.011 J	0.024	0.26	0.00090 J	<0.0060
Total BTEX	- -	- -	0.012 J	0.47 J	0.31 J	0.12 J	2.4	0.19 J	0.12 J	0.0053 J	0.00040 J	0.0013 J	0.030 J	0.50	0.12 J	0.0020 J
Total VOCs	- -	- -	0.012 J	0.47 J	0.31 J	0.12 J	2.4	0.19 J	0.12 J	0.0053 J	0.00040 J	0.0013 J	0.030 J	0.50	0.12 J	0.0020 J
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.0030 J	15 J [2.3 J]	6.9 J	5.8	5.8	0.017 J	0.013 J	<0.33	8.8 J	2.1 J	1.2 J	0.92	<0.40	0.011 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.42	**23 J [9.1 J]**	0.57 J	3.9	0.55 J	<0.33	<0.33	<0.33	18 J	8.1 J	0.20 J	0.11 J	<0.40	0.0030 J
Acenaphthylene	100	1,000	0.0090 J	51 J [61 J]	1.9 J	1.1 J	4.5	0.0070 J	<0.33	<0.33	93 J	30 J	0.91 J	0.61	0.0020 J	0.020 J
Anthracene	100	1,000	0.0060 J	**140 J [74 J]**	1.2 J	1.2 J	0.66 J	0.014 J	0.0060 J	<0.33	**210 J**	75	0.48 J	0.32 J	0.0020 J	0.029 J
Benzo(a)anthracene	1	11	0.012 J	**95 [90 J]**	0.63 J	0.39 J	0.10 J	<0.33	<0.33	<0.33	**170 J**	**71**	0.70 J	0.40 J	0.0030 J	0.089 J
Benzo(a)pyrene	0	1.1	**0.018 J**	**70 [80 J]**	**0.55 J**	**0.27 J**	**0.065 J**	<0.33	<0.33	<0.33	**120 J**	**50**	**0.53 J**	**0.30 J**	**0.0030 J**	**0.070 J**
Benzo(b)fluoranthene	1	11	0.021 J	**61 J [58 J]**	0.39 J	0.21 J	0.054 J	<0.33	<0.33	<0.33	**100 J**	**40**	0.52 J	0.20 J	0.0060 J	0.070 J
Benzo(g,h,i)perylene	100	1,000	0.014 J	18 J [38 J]	0.22 J	0.095 J	0.020 J	<0.33	<0.33	<0.33	41 J	18 J	0.17 J	0.048 J	<0.40	0.022 J
Benzo(k)fluoranthene	0.8	110	0.023 J	**83 [90 J]**	0.54 J	0.28 J	0.060 J	<0.33	<0.33	<0.33	**120 J**	**57**	0.52 J	0.38 J	0.0030 J	0.073 J
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.015 J	**75 [75 J]**	0.55 J	0.31 J	0.072 J	<0.33	<0.33	<0.33	**140 J**	**57**	0.57 J	0.39 J	0.0050 J	0.080 J
Dibenzo(a,h)anthracene	0.33	1.1	0.0070 J	**9.0 J [15 J]**	0.066 J	0.039 J	<2.1	<0.33	<0.33	<0.33	**17 J**	**6.9 J**	0.082 J	0.025 J	<0.40	0.011 J
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.015 J	**210 [190 J]**	1.4 J	1.2 J	0.29 J	0.016 J	0.012 J	<0.33	**460 J**	**160**	1.2 J	0.74	0.0060 J	0.14 J
Fluorene	30	1,000	<0.42	**160 [71 J]**	2.8 J	3.0	2.6	0.016 J	<0.33	<0.33	**120 J**	**60**	1.1 J	0.53	<0.40	0.016 J
Indeno(1,2,3-cd)pyrene	0.5	11	0.013 J	**22 J [40 J]**	0.20 J	0.11 J	0.025 J	<0.33	<0.33	<0.33	**480 J**	**20 J**	0.21 J	0.068 J	<0.40	0.026 J
Naphthalene	12	1,000	0.015 J	**14 J [2.7 J]**	12 J	10	12	0.85	0.17 J	0.011 J	9.0 J	2.6 J	2.7 J	3.9	0.011 J	0.11 J
Phenanthrene	100	1,000	0.0080 J	**360 J [140 J]**	4.1 J	5.0	2.3	0.033 J	0.019 J	0.0080 J	**490 J**	**190**	1.3 J	0.69	0.0080 J	0.070 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.016 J	**180 J [140 J]**	1.2 J	0.67 J	0.16 J	0.011 J	0.0080 J	<0.33	**270 J**	100	1.2 J	0.59	0.0070 J	0.14 J
Total PAHs	- -	- -	0.20 J	1,600 J [1,200 J]	35 J	34 J	29 J	0.96 J	0.23 J	0.019 J	2,900 J	950 J	14 J	10 J	0.056 J	0.98 J
Total SVOCs	0	- -	**0.20 J**	**1,600 J [1,200 J]**	**35 J**	**34 J**	**29 J**	**0.96 J**	**0.23 J**	**0.019 J**	**2,900 J**	**950 J**	**14 J**	**10 J**	**0.056 J**	**0.98 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-15								SB-16					
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/02/00 X	6 - 8 03/02/00 X	10 - 12 03/02/00 X	14 - 16 03/02/00 X	20 - 22 03/02/00	28 - 30 03/02/00	38 - 40 03/02/00	48 - 50 03/02/00	6 - 8 03/03/00 X	10 - 12 03/03/00 X	14 - 16 03/03/00 X	20 - 22 03/03/00	38 - 40 03/03/00	48 - 50 03/03/00
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<0.640	**30.4 J [12.2 J]**	3.23 J	<0.690	1.19	0.600	0.610	0.610	**175 J**	**74.6 J**	6.67	0.730	<0.610	<0.590
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-17							SB-18						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8 02/29/00 X	10 - 12 02/29/00 X	14 - 16 02/29/00 X	20 - 22 02/29/00	28 - 30 02/29/00	38 - 40 02/29/00	48 - 50 02/29/00	6 - 8 03/16/00 X	10 - 12 03/16/00 X	14 - 16 03/16/00 X	20 - 22 03/16/00	28 - 30 03/16/00	38 - 40 03/16/00	48 - 50 03/16/00
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.013 J	0.0010 J	0.0040 J	0.032	**0.15**	0.034	0.00080 J	<0.012	0.0037 J	<0.0068	0.017	**0.26**	0.033	<0.0057
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	0.013 J	<0.0070	0.00060 J	0.0060 J	<0.0060	<0.0060	<0.0060	<0.012	0.0052 J	<0.0068	0.0037 J	<0.0068	<0.0058	<0.0057
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0010 J	0.0030 J	0.0060 J	0.027	0.047	0.0010 J	0.00050 J	0.0037 J	0.013	0.0032 J	0.029	0.052	<0.0058	<0.0057
Xylenes (total)	0.26	1,000	0.013 J	0.0040 J	0.011	0.093	0.00070 J	<0.0060	<0.0060	0.0065 J	0.039	0.0028 J	0.052	<0.0068	<0.0058	<0.0057
Total BTEX	- -	- -	0.040 J	0.0080 J	0.022 J	0.16 J	0.20 J	0.035 J	0.0013 J	0.010 J	0.061 J	0.0060 J	0.10 J	0.31	0.033	<0.0057
Total VOCs	- -	- -	0.040 J	0.0080 J	0.022 J	0.16 J	0.20 J	0.035 J	0.0013 J	0.010 J	0.061 J	0.0060 J	0.10 J	0.31	0.033	<0.0057
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.82 J	0.31 J	0.059 J	0.052 J	<0.42	<0.39	<0.37	0.041 J	0.60	0.034 J	<0.56	<0.44	<0.38	<0.38
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.82 J	0.080 J	0.0080 J	<0.50	<0.42	<0.39	<0.37	<0.75	0.014 J	<0.45	<0.56	<0.44	<0.38	<0.38
Acenaphthylene	100	1,000	0.82 J	0.061 J	0.023 J	0.018 J	<0.42	<0.39	<0.37	<0.75	0.020 J	<0.45	<0.56	<0.44	<0.38	<0.38
Anthracene	100	1,000	0.82 J	0.091 J	<0.42	0.018 J	<0.42	<0.39	<0.37	<0.75	0.091 J	<0.45	<0.56	<0.44	<0.38	<0.38
Benzo(a)anthracene	1	11	0.82 J	0.074 J	<0.42	0.028 J	<0.42	<0.39	<0.37	<0.75	0.32 J	<0.45	<0.56	<0.44	<0.38	<0.38
Benzo(a)pyrene	0	1.1	**0.82 J**	**0.14 J**	<0.42	**0.020 J**	<0.42	<0.39	<0.37	<0.75	**0.24 J**	<0.45	<0.56	<0.44	<0.38	<0.38
Benzo(b)fluoranthene	1	11	0.82 J	0.086 J	<0.42	0.018 J	<0.42	<0.39	<0.37	<0.75	0.16 J	<0.45	<0.56	<0.44	<0.38	<0.38
Benzo(g,h,i)perylene	100	1,000	0.82 J	0.12 J	<0.42	<0.50	<0.42	<0.39	<0.37	<0.75	<0.58	<0.45	<0.56	<0.44	<0.38	<0.38
Benzo(k)fluoranthene	0.8	110	**0.82 J**	0.12 J	<0.42	0.023 J	<0.42	<0.39	<0.37	<0.75	0.24 J	<0.45	<0.56	<0.44	<0.38	<0.38
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.82 J	0.10 J	<0.42	0.027 J	<0.42	<0.39	<0.37	<0.75	0.31 J	<0.45	<0.56	<0.44	<0.38	<0.38
Dibenzo(a,h)anthracene	0.33	1.1	**0.82 J**	<0.63	<0.42	<0.50	<0.42	<0.39	<0.37	<0.75	<0.58	<0.45	<0.56	<0.44	<0.38	<0.38
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.024 J	0.30 J	<0.42	0.063 J	<0.42	<0.39	<0.37	<0.75	0.44 J	<0.45	<0.56	<0.44	<0.38	<0.38
Fluorene	30	1,000	0.82 J	0.085 J	0.022 J	0.016 J	<0.42	<0.39	<0.37	<0.75	0.014 J	<0.45	<0.56	<0.44	<0.38	<0.38
Indeno(1,2,3-cd)pyrene	0.5	11	**0.82 J**	0.089 J	<0.42	<0.50	<0.42	<0.39	<0.37	<0.75	0.11 J	<0.45	<0.56	<0.44	<0.38	<0.38
Naphthalene	12	1,000	0.024 J	0.83	0.17 J	0.68	<0.42	<0.39	<0.37	<0.75	0.40 J	0.090 J	0.56 J	<0.44	<0.38	<0.38
Phenanthrene	100	1,000	0.026 J	0.74	<0.42	0.090 J	<0.42	<0.39	<0.37	0.043 J	0.32 J	<0.45	<0.56	<0.44	<0.38	<0.38
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.020 J	0.15 J	<0.42	0.048 J	<0.42	<0.39	<0.37	<0.75	0.49 J	<0.45	<0.56	<0.44	<0.38	<0.38
Total PAHs	- -	- -	11 J	3.4 J	0.28 J	1.1 J	<0.42	<0.39	<0.37	0.084 J	3.8 J	0.12 J	0.56 J	<0.44	<0.38	<0.38
Total SVOCs	0	- -	**11 J**	**3.4 J**	**0.28 J**	**1.1 J**	<0.42	<0.39	<0.37	**0.084 J**	**3.8 J**	**0.12 J**	**0.56 J**	<0.44	<0.38	<0.38

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-17							SB-18						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	03/16/00	03/16/00	03/16/00	03/16/00	03/16/00	03/16/00	03/16/00
X = Soil Removed During IRM:			X	X	X					X	X	X				
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	14.9 J	2.66 J	<0.660 J	<0.810 J	<0.600 J	<0.620 J	<0.590 J	**69.5**	**42.1**	1.60	<0.810	<0.570	<0.530	<0.570
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Location ID:	6 NYCRR PART 375 SCOs		SB-19							SB-20							
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	8 - 10	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			03/16/00	03/16/00	03/16/00	03/16/00	03/16/00	03/16/00	03/16/00	02/22/00	02/22/00	02/22/00	02/22/00	02/22/00	02/22/00	02/22/00	02/22/00
X = Soil Removed During IRM:																	
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0077	<0.013	0.0019 J	0.036	**0.17**	<0.0060	<0.0060	0.0060 J	0.0030 J	0.013	0.0020 J	0.018 J	**0.070**	0.052	0.0010 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0077	<0.013	<0.0075	0.0099	<0.0076	<0.0060	<0.0060	0.0060 J	0.0060 J	0.076	0.018	0.30	0.034	0.0070	<0.0060
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	<0.0077	<0.013	0.0024 J	0.048	0.051	<0.0060	<0.0060	0.0030 J	0.0050 J	0.078	0.048	0.45	0.23	0.0080	0.00070 J
Xylenes (total)	0.26	1,000	<0.0077	<0.013	0.0065 J	0.12	<0.0076	<0.0060	<0.0060	0.0060 J	0.033	**0.44**	0.13	**1.9**	**0.37**	0.027	0.0010 J
Total BTEX	- -	- -	<0.0077	<0.013	0.011 J	0.21	0.22	<0.0060	<0.0060	0.021 J	0.047 J	0.61	0.20 J	2.7 J	0.70	0.094	0.0027 J
Total VOCs	- -	- -	<0.0077	<0.013	0.011 J	0.21	0.22	<0.0060	<0.0060	0.021 J	0.047 J	0.61	0.20 J	2.7 J	0.70	0.094	0.0027 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.12 J	<0.72	<0.45	<0.48	<0.51	<0.41	0.024 J	0.22 J	0.015 J	0.17 J	1.1	2.2	<1.6	0.060 J	0.013 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.025 J	<0.72	<0.45	<0.48	<0.51	<0.41	<0.38	0.23 J	0.61	0.37 J	0.070 J	0.16 J	<1.6	<0.39	<0.38
Acenaphthylene	100	1,000	0.079 J	<0.72	<0.45	<0.48	<0.51	<0.41	<0.38	3.8 J	0.22 J	0.20 J	0.26 J	0.91	<1.6	0.015 J	<0.38
Anthracene	100	1,000	0.097 J	<0.72	<0.45	<0.48	<0.51	<0.41	0.051 J	11	0.25 J	0.13 J	0.029 J	0.029 J	<1.6	<0.39	<0.38
Benzo(a)anthracene	1	11	0.83	<0.72	<0.45	<0.48	<0.51	<0.41	0.24 J	**29**	0.90	0.46 J	0.022 J	<0.55	<1.6	<0.39	<0.38
Benzo(a)pyrene	0	1.1	**0.67**	<0.72	<0.45	**0.035 J**	<0.51	<0.41	**0.13 J**	**20**	**0.79 J**	**0.65**	**0.023 J**	<0.55	<1.6	<0.39	<0.38
Benzo(b)fluoranthene	1	11	0.43 J	<0.72	<0.45	<0.48	<0.51	<0.41	0.16 J	**24**	0.72 J	0.53 J	0.020 J	<0.55	<1.6	0.011 J	<0.38
Benzo(g,h,i)perylene	100	1,000	0.33 J	<0.72	<0.45	<0.48	<0.51	<0.41	<0.38	1.7 J	0.080 J	0.084 J	<0.55	<0.55	<1.6 J	<0.39	<0.38
Benzo(k)fluoranthene	0.8	110	0.51 J	<0.72	<0.45	<0.48	<0.51	<0.41	0.14 J	**22**	**1.1 J**	0.70	0.025 J	<0.55	<1.6	0.0080 J	<0.38
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	1.0	<0.72	<0.45	<0.48	<0.51	<0.41	0.22 J	**22**	0.73	0.47 J	0.021 J	<0.55	<1.6	0.011 J	<0.38
Dibenzo(a,h)anthracene	0.33	1.1	0.098 J	<0.72	<0.45	<0.48	<0.51	<0.41	<0.38	**1.1 J**	<0.49 J	<0.64 J	<0.55	<0.55	<1.6	<0.39	<0.38
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.83	<0.72	<0.45	<0.48	<0.51	<0.41	0.50	37	1.0	0.54 J	0.036 J	<0.55	<1.6	0.0080 J	<0.38
Fluorene	30	1,000	<0.55	<0.72	0.039 J	<0.48	<0.51	<0.41	<0.38	2.1 J	0.33 J	0.21 J	0.18 J	0.42 J	<1.6	<0.39	<0.38
Indeno(1,2,3-cd)pyrene	0.5	11	0.28 J	<0.72	<0.45	<0.48	<0.51	<0.41	0.034 J	**2.5 J**	0.098 J	0.074 J	<0.55	<0.55	<1.6 J	<0.39	<0.38
Naphthalene	12	1,000	0.084 J	<0.72	<0.45	0.15 J	<0.51	<0.41	0.045 J	<0.22	0.42 JB	0.85 B	0.65 B	2.5 B	8.6 B	2.5 B	0.31 JB
Phenanthrene	100	1,000	0.75	<0.72	0.026 J	<0.48	<0.51	<0.41	0.16 J	29	0.46 J	0.28 J	0.094 J	<0.55	<1.6	0.013 J	<0.38
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	1.3	<0.72	<0.45	<0.48	<0.51	<0.41	0.35 J	36	0.96	0.57 J	0.041 J	<0.55	<1.6	0.011 J	<0.38
Total PAHs	- -	- -	7.4 J	<0.72	0.065 J	0.19 J	<0.51	<0.41	2.1 J	240 J	8.7 J	6.3 J	2.6 J	6.2 J	8.6	2.6 J	0.32 J
Total SVOCs	0	- -	**7.4 J**	<0.72	**0.065 J**	**0.19 J**	<0.51	<0.41	**2.1 J**	**240 J**	**8.7 J**	**6.3 J**	**2.6 J**	**6.2 J**	**8.6**	**2.6 J**	**0.32 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-19							SB-20								
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/16/00	6 - 8 03/16/00	14 - 16 03/16/00	20 - 22 03/16/00	28 - 30 03/16/00	38 - 40 03/16/00	48 - 50 03/16/00	2 - 4 02/22/00	8 - 10 02/22/00	10 - 12 02/22/00	14 - 16 02/22/00	20 - 22 02/22/00	28 - 30 02/22/00	38 - 40 02/22/00	48 - 50 02/22/00
Inorganics																		
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	1.50	**91.6**	<0.560	<0.660	<0.760	<0.480	<0.560	<0.590 J	<0.680 J	<0.820 J	<0.650 J	<1.67 J	<0.620 J	<0.600 J	<0.630 J
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-21								SB-22						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X				
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0010 J	0.0010 J	0.0010 J	<1.8 [<1.9]	0.0020 J	0.053	**0.14**	<0.0070	NA	NA	0.011	0.0030 J	0.020	0.0090	0.00070 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0080	<0.017	0.0050 J	<1.8 [<1.9]	0.0060 J	0.022 J	0.023 J	<0.0070	NA	NA	0.0060 J	0.0020 J	0.0070	<0.0050	<0.0060
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0050 J	0.0020 J	0.0020 J	0.27 J [0.23 J]	0.0080 J	0.12	0.14	<0.0070	NA	NA	0.024	0.0090	0.039	0.00040 J	<0.0060
Xylenes (total)	0.26	1,000	0.0020 J	0.0040 J	0.020	**0.52 J [0.78 J]**	0.075	**0.28**	0.20	<0.0070	NA	NA	0.066	0.022	0.080	0.00040 J	<0.0060
Total BTEX	- -	- -	0.0080 J	0.0070 J	0.028 J	0.79 J [1.0 J]	0.091 J	0.48 J	0.50 J	<0.0070	NA	NA	0.11 J	0.036 J	0.15	0.0098 J	0.00070 J
Total VOCs	- -	- -	0.0080 J	0.0070 J	0.028 J	0.79 J [1.0 J]	0.091 J	0.48 J	0.50 J	<0.0070	NA	NA	0.11 J	0.036 J	0.15	0.0098 J	0.00070 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.33 J	74 J	0.16 J	5.4 [5.6]	5.9	0.044 J	0.25 J	0.018 J	NA	NA	NA	NA	NA	<0.33	0.0030 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	2.0	**51 J**	2.4 J	0.80 J [0.45 J]	0.85 J	<1.6	0.025 J	<0.38	NA	NA	NA	NA	NA	<0.33	<0.38
Acenaphthylene	100	1,000	0.63 J	**290**	7.9	4.6 J [3.0 J]	5.0	<1.6	0.14 J	0.0090 J	NA	NA	NA	NA	NA	0.0070 J	0.0040 J
Anthracene	100	1,000	2.9	**480**	10	3.7 J [1.5 J]	6.3	<1.6	0.16 J	0.013 J	NA	NA	NA	NA	NA	0.018 J	0.0080 J
Benzo(a)anthracene	1	11	**3.8**	**470**	**14**	**2.3 J [0.76 J]**	**4.3**	<1.6	0.13 J	0.010 J	NA	NA	NA	NA	NA	0.041 J	0.033 J
Benzo(a)pyrene	0	1.1	**3.2 J**	**300**	**9.2**	**1.5 J [0.50 J]**	**2.7**	<1.6	**0.083 J**	<0.38	NA	NA	NA	NA	NA	**0.030 J**	**0.024 J**
Benzo(b)fluoranthene	1	11	**3.9 J**	**230**	**7.7**	**1.1 J [0.34 J]**	**2.3 J**	<1.6	0.055 J	0.0070 J	NA	NA	NA	NA	NA	0.023 J	0.025 J
Benzo(g,h,i)perylene	100	1,000	0.69 J	23 J	0.87 J	0.39 J [0.29 J]	0.48 J	<1.6 J	0.036 J	<0.38	NA	NA	NA	NA	NA	0.016 J	0.0080 J
Benzo(k)fluoranthene	0.8	110	**6.7 J**	**380**	**11**	**1.6 J [0.58 J]**	**2.8**	<1.6	0.11 J	<0.38	NA	NA	NA	NA	NA	0.040 J	0.026 J
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**3.4**	**340**	**10**	**1.7 J [0.55 J]**	**3.2**	<1.6	0.086 J	0.0080 J	NA	NA	NA	NA	NA	0.034 J	0.033 J
Dibenzo(a,h)anthracene	0.33	1.1	**1.7 J**	**16 J**	**0.58 J**	0.22 J [0.12 J]	0.28 J	<1.6 J	0.017 J	<0.38	NA	NA	NA	NA	NA	<0.33	0.0040 J
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	5.5	**740**	23	4.8 J [2.1 J]	9.6	<1.6	0.28 J	0.029 J	NA	NA	NA	NA	NA	0.093 J	0.064 J
Fluorene	30	1,000	3.0	**360**	11	4.5 J [2.7 J]	5.5	<1.6	0.16 J	<0.38	NA	NA	NA	NA	NA	<0.33	0.0030 J
Indeno(1,2,3-cd)pyrene	0.5	11	**0.58 J**	**41 J**	**1.4 J**	**0.62 J [0.36 J]**	**0.73 J**	<1.6 J	0.047 J	<0.38	NA	NA	NA	NA	NA	0.018 J	0.0090 J
Naphthalene	12	1,000	0.25 J	**66 J**	0.31 J	**7.6 J [14 J]**	8.5	8.2	2.5	0.042 J	NA	NA	NA	NA	NA	0.27 J	0.039 J
Phenanthrene	100	1,000	9.8	**1,100**	28	11 J [5.1 J]	16	0.032 J	0.44	0.034 J	NA	NA	NA	NA	NA	0.022 J	0.014 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	5.5	**570**	19	3.8 J [1.5 J]	6.9	<1.6	0.18 J	0.018 J	NA	NA	NA	NA	NA	0.050 J	0.052 J
Total PAHs	- -	- -	54 J	5,500 J	160 J	56 J [40 J]	81 J	8.3 J	4.7 J	0.19 J	NA	NA	NA	NA	NA	0.66 J	0.35 J
Total SVOCs	0	- -	**54 J**	**5,500 J**	**160 J**	**56 J [40 J]**	**81 J**	**8.3 J**	**4.7 J**	**0.19 J**	NA	NA	NA	NA	NA	**0.66 J**	**0.35 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-21								SB-22						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	02/21/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00	03/06/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X				
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	19.7 J	**60.9 J**	**31.4 J**	10.4 J [2.57 J]	<0.930 J	<0.630 J	<1.37 J	<0.700 J	11.1	**46.8 [19.1]**	4.33	1.63	0.590	0.630	<1.20
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-23							SB-24								
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 02/29/00 X	6 - 8 02/29/00 X	10 - 12 02/29/00 X	20 - 22 02/29/00	28 - 30 02/29/00	38 - 40 02/29/00	48 - 50 02/29/00	2 - 4 03/20/00	6 - 8 03/20/00	10 - 12 03/20/00	14 - 16 03/20/00	20 - 22 03/20/00	28 - 30 03/20/00	38 - 40 03/20/00	48 - 50 03/20/00
Volatile Organics																		
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0040 J	0.0020 J [0.014 J]	0.0040 J	0.0030 J	**0.16 J**	0.0070 J	<0.0050	0.0018 J	<0.011	<0.0089	<0.0071	0.0040 J	0.051	0.041	0.0097
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	0.0050 J	0.014 J [0.014 J]	0.0010 J	<0.0070	0.0020 J	<0.0070	<0.0050	<0.0059	<0.011	<0.0089	<0.0071	0.0053 J	<0.0065	<0.0060	<0.0067
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0070 J	0.0020 J [<0.0050 J]	0.0060 J	0.0020 J	0.23	0.0010 J	0.00060 J	0.014	<0.011	0.0028 J	<0.0071	0.0089	0.022	0.0026 J	<0.0067
Xylenes (total)	0.26	1,000	0.0010 J	0.0050 J [0.014 J]	0.0080	0.0050 J	0.028	<0.0070	0.00040 J	<0.0059	<0.011	<0.0089	0.0019 J	0.084	<0.0065	<0.0060	<0.0067
Total BTEX	- -	- -	0.017 J	0.023 J [0.042 J]	0.019 J	0.010 J	0.42 J	0.0080 J	0.0010 J	0.016 J	<0.011	0.0028 J	0.0019 J	0.10 J	0.073	0.044 J	0.0097
Total VOCs	- -	- -	0.017 J	0.023 J [0.042 J]	0.019 J	0.010 J	0.42 J	0.0080 J	0.0010 J	0.016 J	<0.011	0.0028 J	0.0019 J	0.10 J	0.073	0.044 J	0.0097
Semivolatile Organics																		
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.22 J	<0.82 [0.89 J]	0.18 J	0.037 J	<0.78	<0.41	<0.33	0.23 J	<0.73	0.043 J	0.16 J	0.065 J	<0.41	<0.40	<0.40
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.16 J	<0.82 [0.89 J]	0.017 J	<0.50	<0.78	<0.41	<0.33	0.42 J	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Acenaphthylene	100	1,000	0.054 J	<0.82 [0.018 J]	0.050 J	<0.50	<0.78	<0.41	<0.33	0.040 J	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Anthracene	100	1,000	0.42	<0.82 [0.026 J]	0.10 J	0.0040 J	<0.78	<0.41	<0.33	0.93	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Benzo(a)anthracene	1	11	**1.4**	0.018 J [0.12 J]	0.17 J	0.0080 J	<0.78	<0.41	<0.33	**2.5**	<0.73	0.055 J	<0.54	<0.48	<0.41	<0.40	<0.40
Benzo(a)pyrene	0	1.1	**1.5**	**<0.82 [0.89 J]**	**0.12 J**	<0.50	<0.78	<0.41	<0.33	**2.2**	<0.73	**0.042 J**	<0.54	<0.48	<0.41	<0.40	<0.40
Benzo(b)fluoranthene	1	11	**1.7**	<0.82 [0.044 J]	0.087 J	<0.50	<0.78	<0.41	<0.33	**1.8**	<0.73	0.042 J	<0.54	<0.48	<0.41	<0.40	<0.40
Benzo(g,h,i)perylene	100	1,000	0.32 J	<0.82 [0.89 J]	<0.50	<0.50	<0.78	<0.41	<0.33	1.2	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Benzo(k)fluoranthene	0.8	110	**1.6**	<0.82 [0.052 J]	0.10 J	<0.50	<0.78	<0.41	<0.33	**2.5**	<0.73	0.052 J	<0.54	<0.48	<0.41	<0.40	<0.40
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**1.6**	0.017 J [0.15 J]	0.17 J	0.0080 J	<0.78	<0.41	<0.33	**2.4**	<0.73	0.087 J	<0.54	<0.48	<0.41	<0.40	<0.40
Dibenzo(a,h)anthracene	0.33	1.1	0.12 J	**<0.82 [0.89 J]**	<0.50	<0.50	<0.78	<0.41	<0.33	**0.52 J**	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	2.0	0.23 J [0.92 J]	0.41 J	0.021 J	<0.78	<0.41	<0.33	4.3	<0.73	0.12 J	<0.54	<0.48	<0.41	<0.40	<0.40
Fluorene	30	1,000	0.14 J	<0.82 [0.89 J]	0.044 J	<0.50	<0.78	<0.41	<0.33	0.42 J	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Indeno(1,2,3-cd)pyrene	0.5	11	0.36	**<0.82 [0.89 J]**	0.022 J	<0.50	<0.78	<0.41	<0.33	**1.2**	<0.73	<0.80	<0.54	<0.48	<0.41	<0.40	<0.40
Naphthalene	12	1,000	0.13 J	<0.82 [0.047 J]	0.26 J	0.45 J	<0.78	<0.41	<0.33	0.33 J	<0.73	0.063 J	0.24 J	0.82	<0.41	<0.40	0.021 J
Phenanthrene	100	1,000	1.4	0.029 J [0.080 J]	0.37 J	0.014 J	<0.78	<0.41	<0.33	3.6	<0.73	0.17 J	0.041 J	<0.48	<0.41	<0.40	<0.40
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	1.8	0.12 J [1.1 J]	0.38 J	0.016 J	<0.78	<0.41	<0.33	4.6	<0.73	0.085 J	<0.54	<0.48	<0.41	<0.40	<0.40
Total PAHs	- -	- -	15 J	0.41 J [8.8 J]	2.5 J	0.56 J	<0.78	<0.41	<0.33	29 J	<0.73	0.76 J	0.44 J	0.89 J	<0.41	<0.40	0.021 J
Total SVOCs	0	- -	**15 J**	**0.41 J [8.8 J]**	**2.5 J**	**0.56 J**	<0.78	<0.41	<0.33	**29 J**	<0.73	**0.76 J**	**0.44 J**	**0.89 J**	<0.41	<0.40	**0.021 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-23							SB-24							
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	02/29/00	03/20/00	03/20/00	03/20/00	03/20/00	03/20/00	03/20/00	03/20/00	03/20/00
X = Soil Removed During IRM:			X	X	X												
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<1.07 J	**78.8 J [122 J]**	<1.36 J	<0.740 J	<0.620 J	<0.680 J	0.610	11.6	15.1	**75.4**	<0.800	<0.690	<0.510	<0.540	<0.560
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-25								SB-26						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/17/00	6 - 8 03/17/00	10 - 12 03/17/00	14 - 16 03/17/00	20 - 22 03/17/00	28 - 30 03/17/00	38 - 40 03/17/00	48 - 50 03/17/00	2 - 4 02/24/00	6 - 8 02/24/00	10 - 12 02/24/00	20 - 22 02/24/00	28 - 30 02/24/00	38 - 40 02/24/00	48 - 50 02/24/00
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0061	<0.0062	0.010	0.0020 J	0.026 [0.014]	**0.098**	0.0083	<0.0057	<0.012	<0.014	0.00050 J	**0.13**	<0.0060	0.00080 J	0.0060
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0061	<0.0062	0.0090	0.014	0.0060 J [0.0044 J]	<0.0060	<0.0063	<0.0057	<0.012	<0.014	0.0050 J	0.38	0.0070	0.00070 J	0.00050 J
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0014 J	<0.0062	<0.0081	0.0033 J	0.036 [0.026]	0.0027 J	<0.0063	<0.0057	0.00050 J	0.00070 J	0.0040 J	0.55	0.0080	0.0010 J	0.00070 J
Xylenes (total)	0.26	1,000	<0.0061	<0.0062	0.0030 J	0.082	0.093 [0.072]	<0.0060	<0.0063	<0.0057	<0.012	<0.014	0.034 J	**2.3**	0.038	0.0050 J	0.0030 J
Total BTEX	- -	- -	0.0014 J	<0.0062	0.022 J	0.10 J	0.16 J [0.12 J]	0.10 J	0.0083	<0.0057	0.00050 J	0.00070 J	0.044 J	3.4	0.053	0.0075 J	0.010 J
Total VOCs	- -	- -	0.0014 J	<0.0062	0.022 J	0.10 J	0.16 J [0.12 J]	0.10 J	0.0083	<0.0057	0.00050 J	0.00070 J	0.044 J	3.4	0.053	0.0075 J	0.010 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.95	0.27 J	<0.53	0.037 J	<0.54 [0.0077 J]	<0.43	<0.41	<0.40	<0.65	<0.92	0.012 J	0.0080 J	1.6	0.017 J	0.0050 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.057 J	<0.39	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	<0.65	<0.92	0.82 J	0.0030 J	0.082 J	<0.38	<0.39
Acenaphthylene	100	1,000	0.017 J	0.062 J	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	<0.65	0.018 J	0.82 J	0.0090 J	0.21 J	0.0030 J	<0.39
Anthracene	100	1,000	0.20 J	0.20 J	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	<0.65	0.039 J	0.0040 J	0.016 J	<0.39	0.0010 J	<0.39
Benzo(a)anthracene	1	11	0.74	0.60	<0.53	0.033 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.046 J	0.18 J	0.026 J	0.023 J	<0.39	0.0040 J	<0.39
Benzo(a)pyrene	0	1.1	**0.57**	**0.39**	<0.53	**0.030 J**	<0.54 [<0.57]	<0.43	<0.41	<0.40	**0.059 J**	**0.19 J**	**0.016 J**	**0.016 J**	<0.39	**0.0040 J**	<0.39
Benzo(b)fluoranthene	1	11	0.54	0.63	<0.53	0.026 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.044 J	0.16 J	0.030 J	0.012 J	<0.39	0.0050 J	<0.39
Benzo(g,h,i)perylene	100	1,000	0.28 J	0.30 J	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.048 J	0.14 J	0.014 J	0.0060 J	<0.39	0.0030 J	<0.39
Benzo(k)fluoranthene	0.8	110	0.77	0.76	<0.53	0.028 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.054 J	0.21 J	0.022 J	0.021 J	<0.39	0.0040 J	<0.39
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.80	0.77	<0.53	0.033 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.042 J	0.16 J	0.047 J	0.020 J	0.0080 J	0.0060 J	0.0020 J
Dibenzo(a,h)anthracene	0.33	1.1	0.13 J	0.16 J	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	<0.65	0.055 J	**0.82 J**	<0.39	<0.39	<0.38	<0.39
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	1.5	1.0	<0.53	0.044 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.047 J	0.24 J	0.052 J	0.050 J	0.0020 J	0.0060 J	0.0020 J
Fluorene	30	1,000	0.11 J	0.076 J	0.026 J	0.066 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	<0.65	<0.92	0.82 J	0.013 J	0.0030 J	<0.38	<0.39
Indeno(1,2,3-cd)pyrene	0.5	11	0.30 J	0.32 J	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.045 J	0.15 J	0.013 J	0.0070 J	<0.39	0.0020 J	<0.39
Naphthalene	12	1,000	0.60	0.39	0.028 J	0.15 J	0.21 J [0.34]	<0.43	<0.41	<0.40	<0.65	<0.92	0.010 J	0.014 J	3.0	0.16 J	0.030 J
Phenanthrene	100	1,000	0.98	0.80	<0.53	<0.49	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.015 J	0.13 J	0.056 J	0.045 J	0.010 J	0.0060 J	0.0020 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	1.4	1.1	<0.53	0.048 J	<0.54 [<0.57]	<0.43	<0.41	<0.40	0.063 J	0.27 J	0.056 J	0.039 J	0.0050 J	0.0070 J	0.0030 J
Total PAHs	- -	- -	9.9 J	7.8 J	0.054 J	0.50 J	0.21 J [0.35 J]	<0.43	<0.41	<0.40	0.46 J	1.9 J	3.6 J	0.30 J	4.9 J	0.23 J	0.044 J
Total SVOCs	0	- -	**9.9 J**	**7.8 J**	**0.054 J**	**0.50 J**	**0.21 J [0.35 J]**	<0.43	<0.41	<0.40	**0.46 J**	**1.9 J**	**3.6 J**	**0.30 J**	**4.9 J**	**0.23 J**	**0.044 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-25								SB-26						
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/17/00	6 - 8 03/17/00	10 - 12 03/17/00	14 - 16 03/17/00	20 - 22 03/17/00	28 - 30 03/17/00	38 - 40 03/17/00	48 - 50 03/17/00	2 - 4 02/24/00	6 - 8 02/24/00	10 - 12 02/24/00	20 - 22 02/24/00	28 - 30 02/24/00	38 - 40 02/24/00	48 - 50 02/24/00
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	**35.1**	23.1	6.50	5.10	<0.790 [<0.780]	<0.630	<0.580	<0.550	<2.30 J	25.9 J	13.9 J	1.40	1.12	<0.570 J	<0.600 J
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-27								SB-28						
Sample Depth(Feet): Date Collected:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/02/00	6 - 8 03/02/00	10 - 12 03/02/00	14 - 16 03/02/00	20 - 22 03/02/00	28 - 30 03/02/00	38 - 40 03/02/00	48 - 50 03/02/00	2 - 4 03/01/00	6 - 8 03/01/00	10 - 12 03/01/00	20 - 22 03/01/00	28 - 30 03/01/00	38 - 40 03/01/00	48 - 50 03/01/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X				
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.010 J	<0.010 J	0.022 J	0.0020 J	0.029	0.0090	0.0010 J	**0.067**	0.00050 J	0.0020 J	0.00090 J	0.0010 J	**0.11**	**0.093**	0.00060 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.010 J	<0.010 J	0.0040 J	0.00080 J	0.023	0.0090	0.0010 J	0.00080 J	<0.0050	<0.0050	0.00090 J	0.0010 J	0.0010 J	0.061	0.00060 J
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	<0.010 J	<0.010 J	0.044 J	0.0070	0.053	0.012	0.00060 J	0.00070 J	0.00040 J	0.0020 J	0.0020 J	0.0020 J	0.14	0.099	0.00090 J
Xylenes (total)	0.26	1,000	<0.010 J	<0.010 J	0.052 J	0.015	**0.34**	0.098	0.0010 J	0.0010 J	<0.0050	0.00060 J	0.010	0.015	0.026	0.16	0.0020 J
Total BTEX	- -	- -	<0.010	<0.010	0.12 J	0.025 J	0.45	0.13	0.0036 J	0.070 J	0.00090 J	0.0046 J	0.014 J	0.019 J	0.28 J	0.41	0.0041 J
Total VOCs	- -	- -	<0.010	<0.010	0.12 J	0.025 J	0.45	0.13	0.0036 J	0.070 J	0.00090 J	0.0046 J	0.014 J	0.019 J	0.28 J	0.41	0.0041 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	<0.73 J	0.050 J	2.6 J	0.56	2.2	0.27 J	0.016 J	0.017 J	0.29 J	1.2 J	2.3	2.3	0.0090 J	0.016 J	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.73 J	0.018 J	0.26 J	0.050 J	0.11 J	0.0090 J	0.0020 J	<0.40	0.23 J	6.0 J	0.16 J	0.19 J	<0.33	<0.33	<0.33
Acenaphthylene	100	1,000	<0.73 J	0.26 J	1.0 J	0.28 J	1.0	0.084 J	0.011 J	0.0070 J	1.3 J	6.4 J	1.1	1.1	<0.33	<0.33	<0.33
Anthracene	100	1,000	<0.73 J	0.32 J	0.52 J	0.035 J	<1.0	<0.80	0.013 J	0.010 J	4.2	24	0.42 J	0.049 J	<0.33	0.0090 J	<0.33
Benzo(a)anthracene	1	11	0.0060 J	0.99 J	0.35 J	<0.44	<1.0	<0.80	0.010 J	0.012 J	**12**	**38**	**1.9**	<0.33	<0.33	0.057 J	<0.33
Benzo(a)pyrene	0	1.1	**0.0090 J**	**0.98 J**	**0.31 J**	<0.44	<1.0	<0.80	**0.0090 J**	**0.0090 J**	**11**	**34**	**1.9**	<0.33	<0.33	**0.058 J**	<0.33
Benzo(b)fluoranthene	1	11	0.010 J	0.81 J	0.28 J	<0.44	<1.0	<0.80	0.0080 J	0.0090 J	**14**	**40**	**1.8**	<0.33	<0.33	0.053 J	<0.33
Benzo(g,h,i)perylene	100	1,000	0.0070 J	0.94 J	0.23 J	<0.44	<1.0	<0.80	0.0040 J	0.0040 J	1.0 J	3.5 J	0.21 J	<0.33	<0.33	0.023 J	<0.33
Benzo(k)fluoranthene	0.8	110	0.010 J	**1.1 J**	0.27 J	<0.44	<1.0	<0.80	0.0090 J	0.010 J	**21**	**54**	**2.4**	<0.33	<0.33	0.069 J	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.011 J	1.0 J	0.34 J	<0.44	<1.0	0.0040 J	0.010 J	0.013 J	**11**	**39**	**2.0**	<0.33	<0.33	0.061 J	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	<0.73 J	0.30 J	0.067 J	<0.44	<1.0	<0.80	<0.39	0.0020 J	**0.55 J**	**2.1 J**	0.097 J	<0.33	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.0050 J	1.4	0.70 J	0.011 J	<1.0	0.0050 J	0.023 J	0.025 J	17	62	2.3	0.011 J	<0.33	0.050 J	<0.33
Fluorene	30	1,000	<0.73 J	0.035 J	0.75 J	0.19 J	0.23 J	0.013 J	0.015 J	0.0070 J	1.2 J	11	0.68 J	0.89	<0.33	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	0.0070 J	**0.84 J**	0.20 J	<0.44	<1.0	<0.80	0.0040 J	0.0040 J	**1.3 J**	**4.3 J**	0.26 J	<0.33	<0.33	0.026 J	<0.33
Naphthalene	12	1,000	0.0050 J	0.054 J	2.6 J	1.1	6.9	4.2	1.3	0.13 J	0.37 J	0.60 J	4.7	2.8	0.25 J	2.0	<0.33
Phenanthrene	100	1,000	0.0040 J	0.46 J	2.9 J	0.18 J	0.0060 J	0.012 J	0.035 J	0.032 J	9.9	59	1.1	0.17 J	<0.33	0.029 J	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.0050 J	1.6	0.59 J	0.0070 J	<1.0	0.0070 J	0.016 J	0.022 J	13	48	2.3	0.010 J	<0.33	0.053 J	<0.33
Total PAHs	- -	- -	0.079 J	11 J	14 J	2.4 J	10 J	4.6 J	1.5 J	0.31 J	120 J	430 J	26 J	7.5 J	0.26 J	2.5 J	<0.33
Total SVOCs	0	- -	**0.079 J**	**11 J**	**14 J**	**2.4 J**	**10 J**	**4.6 J**	**1.5 J**	**0.31 J**	**120 J**	**430 J**	**26 J**	**7.5 J**	**0.26 J**	**2.5 J**	<0.33

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-27								SB-28						
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/02/00	03/01/00	03/01/00	03/01/00	03/01/00	03/01/00	03/01/00	03/01/00
X = Soil Removed During IRM:			X	X	X	X					X	X	X				
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	1.45 J	5.95 J	**65.9 J**	<0.680 J	<0.820	<0.590	<0.600	<0.610	0.630	0.940	0.830	0.790	0.640	0.560	0.590
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-29						SB-30							
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8 03/01/00 X	10 - 12 03/01/00 X	14 - 16 03/01/00 X	20 - 22 03/01/00	38 - 40 03/01/00	48 - 50 03/01/00	2 - 4 03/13/00	6 - 8 03/13/00	10 - 12 03/13/00	20 - 22 03/13/00	24 03/13/00	28 - 30 03/13/00	38 - 40 03/13/00	48 - 50 03/13/00
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0050	0.00040 J [<0.0050]	0.00050 J	<0.0050	0.0020 J	<0.0050	NA	<0.012 J	0.0048 J	<0.0071 J [<0.012 J]	<0.0079	0.0021 J	<0.0058	<0.0059
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	NA	<0.012 J	0.012 J	0.026 J [0.077 J]	<0.0079	0.0094	0.0012 J	<0.0059
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.00070 J	0.00080 J [0.00070 J]	0.00080 J	0.00040 J	0.00040 J	0.00040 J	NA	<0.012 J	0.011 J	0.0055 J [0.012 J]	<0.0079	0.020	0.0025 J	<0.0059
Xylenes (total)	0.26	1,000	<0.0050	0.00090 J [0.00070 J]	<0.0050	0.0010 J	0.00060 J	<0.0050	NA	<0.012 J	0.050 J	**0.23 J [0.49 J]**	<0.0079	0.059	0.0047 J	<0.0059
Total BTEX	- -	- -	0.00070 J	0.0021 J [0.0014 J]	0.0013 J	0.0014 J	0.0030 J	0.00040 J	NA	<0.012	0.078 J	0.26 J [0.58 J]	<0.0079	0.091 J	0.0084 J	<0.0059
Total VOCs	- -	- -	0.00070 J	0.0021 J [0.0014 J]	0.0013 J	0.0014 J	0.0030 J	0.00040 J	NA	<0.012	0.078 J	0.26 J [0.58 J]	<0.0079	0.091 J	0.0084 J	<0.0059
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.062 J	0.34 J [0.16 J]	0.21 J	0.55	<0.33	<0.33	<0.55	<0.82 J	0.15 J	0.54 J [1.4 J]	NA	0.28 J	0.081 J	<0.39
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.33	0.015 J [<0.33]	0.018 J	0.023 J	<0.33	<0.33	<0.55	<0.82 J	<0.97 J	0.037 J [0.090 J]	NA	0.13 J	<0.37	<0.39
Acenaphthylene	100	1,000	0.013 J	0.091 J [0.043 J]	0.034 J	0.065 J	<0.33	<0.33	<0.55	<0.82 J	<0.97 J	0.096 J [0.24 J]	NA	0.063 J	<0.37	<0.39
Anthracene	100	1,000	0.036 J	0.027 J [0.082 J]	0.035 J	0.018 J	<0.33	<0.33	<0.55	<0.82 J	<0.97 J	<0.47 [<0.49]	NA	0.48 J	0.019 J	<0.39
Benzo(a)anthracene	1	11	0.029 J	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.030 J	<0.82 J	0.085 J	<0.47 [<0.49]	NA	**1.8**	0.050 J	<0.39
Benzo(a)pyrene	0	1.1	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	**0.059 J**	<0.82 J	<0.97 J	<0.47 [<0.49]	NA	**1.6**	**0.039 J**	<0.39
Benzo(b)fluoranthene	1	11	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.035 J	<0.82 J	0.096 J	<0.47 [<0.49]	NA	**1.6**	0.035 J	<0.39
Benzo(g,h,i)perylene	100	1,000	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.048 J	<0.82 J	<0.97 J	<0.47 [<0.49]	NA	0.90	<0.37	<0.39
Benzo(k)fluoranthene	0.8	110	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.043 J	<0.82 J	0.069 J	<0.47 [<0.49]	NA	**1.6**	0.035 J	<0.39
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.072 J	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.041 J	0.048 J	0.15 J	<0.47 [<0.49]	NA	**1.8**	0.044 J	<0.39
Dibenzo(a,h)anthracene	0.33	1.1	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	<0.55	<0.82 J	<0.97 J	<0.47 [<0.49]	NA	**0.36 J**	<0.37	<0.39
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.077 J	0.021 J [0.058 J]	<0.33	<0.33	<0.33	<0.33	<0.55	0.078 J	0.17 J	<0.47 [<0.49]	NA	2.6	0.076 J	<0.39
Fluorene	30	1,000	<0.33	0.097 J [0.055 J]	0.14 J	0.073 J	<0.33	<0.33	<0.55	<0.82 J	<0.97 J	0.054 J [0.19 J]	NA	0.18 J	<0.37	<0.39
Indeno(1,2,3-cd)pyrene	0.5	11	<0.33	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.038 J	<0.82 J	<0.97 J	<0.47 [<0.49]	NA	**0.91**	0.017 J	<0.39
Naphthalene	12	1,000	0.038 J	0.74 [0.35 J]	0.088 J	1.2	0.024 J	<0.33	<0.55	<0.82 J	0.13 J	2.7 [3.0]	NA	0.42 J	1.3	<0.39
Phenanthrene	100	1,000	0.52 J	0.028 J [0.28 J]	0.16 J	0.056 J	<0.33	<0.33	<0.55	<0.82 J	0.58 J	<0.47 [<0.49]	NA	1.8	0.047 J	<0.39
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.071 J	<0.33 [0.040 J]	<0.33	<0.33	<0.33	<0.33	0.045 J	0.049 J	0.13 J	<0.47 [<0.49]	NA	2.6	0.069 J	<0.39
Total PAHs	- -	- -	0.92 J	1.4 J [1.1 J]	0.69 J	2.0 J	0.024 J	<0.33	0.34 J	0.18 J	1.6 J	3.4 J [4.9 J]	NA	19 J	1.8 J	<0.39
Total SVOCs	0	- -	**0.92 J**	**1.4 J [1.1 J]**	**0.69 J**	**2.0 J**	**0.024 J**	<0.33	**0.34 J**	**0.18 J**	**1.6 J**	**3.4 J [4.9 J]**	NA	**19 J**	**1.8 J**	<0.39

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-29						SB-30							
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8 03/01/00 X	10 - 12 03/01/00 X	14 - 16 03/01/00 X	20 - 22 03/01/00	38 - 40 03/01/00	48 - 50 03/01/00	2 - 4 03/13/00	6 - 8 03/13/00	10 - 12 03/13/00	20 - 22 03/13/00	24 03/13/00	28 - 30 03/13/00	38 - 40 03/13/00	48 - 50 03/13/00
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	**71.3**	0.730 [0.720]	0.640	0.790	0.670	0.650	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-31							SB-32								
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/07/00	6 - 8 03/07/00	14 - 16 03/07/00	20 - 22 03/07/00	28 - 30 03/07/00	38 - 40 03/07/00	48 - 50 03/07/00	2 - 4 03/08/00	6 - 8 03/08/00	10 - 12 03/08/00	14 - 16 03/08/00	20 - 22 03/08/00	22 - 24 03/08/00	28 - 30 03/08/00	38 - 40 03/08/00	48 - 50 03/08/00
Volatile Organics																		
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.00050 J	0.0040 J	0.0080	0.0040 J	0.013	0.0020 J	<0.0050	0.0010 J	<0.0050	0.0020 J	0.0090	0.034 J	0.024 J	0.019	0.0020 J	0.0020 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050	0.0020 J	0.071	0.042	0.032	0.0020 J	<0.0050	<0.0050	0.00040 J	<0.0050	0.0050 J	0.094	0.13	0.042	0.0040 J	0.0040 J
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0010 J	0.0080	0.047	0.020	0.049	0.0020 J	<0.0050	0.0020 J	<0.0050	0.0020 J	0.0080	0.17	0.19	0.026	0.0010 J	0.0030 J
Xylenes (total)	0.26	1,000	0.0010 J	0.030	0.26	**0.50**	0.19	0.0060	<0.0050	0.00040 J	0.0020 J	0.0040 J	0.068	**0.97**	**1.5**	0.17	0.0090	0.017
Total BTEX	- -	- -	0.0025 J	0.044 J	0.39	0.57 J	0.28	0.012 J	<0.0050	0.0034 J	0.0024 J	0.0080 J	0.090 J	1.3 J	1.8 J	0.26	0.016 J	0.026 J
Total VOCs	- -	- -	0.0025 J	0.044 J	0.39	0.57 J	0.28	0.012 J	<0.0050	0.0034 J	0.0024 J	0.0080 J	0.090 J	1.3 J	1.8 J	0.26	0.016 J	0.026 J
Semivolatile Organics																		
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	1.1 J	5.7	21	2.4	0.18 J	<0.33	<0.33	<0.33	0.033 J	1.2	12	6.4 J	1.7 J	0.073 J	0.0080 J	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.98 J	1.3 J	2.8 J	0.26 J	<0.33	<0.33	<0.33	<0.33	0.020 J	0.11 J	1.0 J	3.2 J	<0.33	0.011 J	<0.33	<0.33
Acenaphthylene	100	1,000	6.6	9.3	13	1.0	0.027 J	<0.33	<0.33	<0.33	0.18 J	0.38 J	0.74 J	0.10 J	0.34 J	0.0090 J	<0.33	<0.33
Anthracene	100	1,000	5.8	12	15	<0.33	<0.33	<0.33	<0.33	<0.33	0.20 J	0.28 J	0.80 J	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)anthracene	1	11	**12**	**13**	**10**	0.029 J	<0.33	<0.33	<0.33	<0.33	0.52	0.35 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)pyrene	0	1.1	**12**	**12**	**7.8**	**0.029 J**	<0.33	<0.33	<0.33	<0.33	**0.44 J**	**0.37 J**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(b)fluoranthene	1	11	**11**	**10**	**5.9**	0.020 J	<0.33	<0.33	<0.33	<0.33	0.47 J	0.32 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(g,h,i)perylene	100	1,000	12	10	4.3 J	<0.33	<0.33	<0.33	<0.33	<0.33	0.46 J	0.074 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	0.8	110	**15**	**10**	**9.1**	0.035 J	<0.33	<0.33	<0.33	<0.33	0.50	0.34 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**14**	**13**	**8.6**	0.020 J	<0.33	<0.33	<0.33	<0.33	0.55	0.44 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	**4.8**	**3.7**	**1.5 J**	<0.33	<0.33	<0.33	<0.33	<0.33	0.15 J	0.033 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	19	24	22	0.048 J	0.0050 J	0.013 J	<0.33	<0.33	0.81	0.53	0.072 J	<0.33	<0.33	<0.33	<0.33	<0.33
Fluorene	30	1,000	1.2 J	9.2	14	1.2	<0.33	<0.33	<0.33	<0.33	0.033 J	0.54	5.1	0.77 J	<0.33	<0.33	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	**12**	**10**	**4.9**	<0.33	<0.33	<0.33	<0.33	<0.33	0.43 J	0.093 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Naphthalene	12	1,000	1.5 J	**13**	**25**	5.5	2.6	0.024 J	<0.33	<0.33	0.085 J	1.3	11	**50**	**36**	4.7	0.20 J	0.012 J
Phenanthrene	100	1,000	12	28	37	0.22 J	0.012 J	0.011 J	<0.33	<0.33	0.32 J	1.4	4.1	0.13 J	<0.33	0.010 J	0.0040 J	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	14	16	15	0.026 J	0.0070 J	0.010 J	<0.33	<0.33	0.80	0.49	0.032 J	<0.33	<0.33	<0.33	<0.33	<0.33
Total PAHs	- -	- -	160 J	200 J	220 J	11 J	2.8 J	0.058 J	<0.33	<0.33	6.0 J	8.3 J	35 J	61 J	38 J	4.8 J	0.21 J	0.012 J
Total SVOCs	0	- -	**160 J**	**200 J**	**220 J**	**11 J**	**2.8 J**	**0.058 J**	<0.33	<0.33	**6.0 J**	**8.3 J**	**35 J**	**61 J**	**38 J**	**4.8 J**	**0.21 J**	**0.012 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-31							SB-32										
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	22 - 24	28 - 30	38 - 40	48 - 50
Date Collected:			03/07/00	03/07/00	03/07/00	03/07/00	03/07/00	03/07/00	03/07/00	03/08/00	03/08/00	03/08/00	03/08/00	03/08/00	03/08/00	03/08/00	03/08/00	03/08/00
X = Soil Removed During IRM:																				
Inorganics																				
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	16.4	7.58	1.45	1.70	1.17	0.610	0.650	0.520	9.56	7.21	0.640	1.78	0.760	0.600	0.600	0.590
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																				
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																				
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-33						SB-34							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8 03/14/00	14 - 16 03/14/00	20 - 22 03/14/00	28 - 30 03/14/00	38 - 40 03/14/00	48 - 50 03/14/00	2 - 4 03/06/00	6 - 8 03/06/00	10 - 12 03/06/00	14 - 16 03/06/00	20 - 22 03/06/00	28 - 30 03/06/00	38 - 40 03/06/00	48 - 50 03/06/00
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.012 J	<3.5	<0.75	0.019	<0.0057 [0.0014 J]	<0.0062	<0.0050	<0.0050	0.022	0.0080	0.012	0.017	0.00030 J	<0.0050
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.012 J	<3.5	0.83	0.029	<0.0057 [0.0013 J]	<0.0062	<0.0050	<0.0050	0.027	0.011	0.013	0.048	0.00080 J	<0.0050
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	<0.012 J	<3.5	0.34 J	0.064	<0.0057 [0.0011 J]	<0.0062	<0.0050	<0.0050	0.0060 J	0.0040 J	0.023	0.086	0.00060 J	<0.0050
Xylenes (total)	0.26	1,000	<0.012 J	<3.5	**15**	**0.33**	0.0093 [0.016]	0.017	<0.0050	<0.0050	0.062	0.026	0.084	**0.27**	0.0030 J	<0.0050
Total BTEX	- -	- -	<0.012	<3.5	16 J	0.44	0.0093 [0.020 J]	0.017	<0.0050	<0.0050	0.12 J	0.049 J	0.13	0.42	0.0047 J	<0.0050
Total VOCs	- -	- -	<0.012	<3.5	16 J	0.44	0.0093 [0.020 J]	0.017	<0.0050	<0.0050	0.12 J	0.049 J	0.13	0.42	0.0047 J	<0.0050
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.089 J	63 E	7.6 E	0.031 J	0.068 J [0.018 J]	0.038 J	0.22 J	0.23 J	0.30 J	0.66	1.4	0.12 J	<0.33	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.80 J	2.4	0.34 J	<0.38	<0.43 [<0.37]	<0.39	0.11 J	0.031 J	0.030 J	0.12 J	0.15 J	<0.33	<0.33	<0.33
Acenaphthylene	100	1,000	0.48 J	21 E	3.2	<0.38	0.020 J [<0.37]	<0.39	0.77	0.12 J	0.10 J	0.36 J	0.55	0.017 J	<0.33	<0.33
Anthracene	100	1,000	0.14 J	8.7 E	0.75	<0.38	<0.43 [<0.37]	<0.39	0.32 J	0.069 J	0.064 J	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)anthracene	1	11	**1.6 J**	**4.7 E**	0.39 J	<0.38	<0.43 [<0.37]	<0.39	0.42 J	0.14 J	0.027 J	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)pyrene	0	1.1	**2.8 J**	**3.4**	**0.27 J**	<0.38	<0.43 [<0.37]	<0.39	**0.44 J**	**0.12 J**	**0.018 J**	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(b)fluoranthene	1	11	**2.5 J**	**2.6**	0.23 J	<0.38	<0.43 [<0.37]	<0.39	0.34 J	0.17 J	0.0060 J	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(g,h,i)perylene	100	1,000	1.7 J	1.2	0.13 J	<0.38	<0.43 [<0.37]	<0.39	0.83	0.20 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	0.8	110	**2.6 J**	**3.4**	0.25 J	<0.38	<0.43 [<0.37]	<0.39	0.41 J	0.17 J	0.011 J	<0.33	<0.33	<0.33	<0.33	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**1.5 J**	**3.7**	0.33 J	<0.38	<0.43 [<0.37]	<0.39	0.55 J	0.20 J	0.027 J	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	**0.63 J**	**0.45 J**	0.050 J	<0.38	<0.43 [<0.37]	<0.39	**0.38 J**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	2.5 J	0.55	1.2	<0.38	<0.43 [<0.37]	<0.39	0.43 J	0.17 J	0.17 J	0.0050 J	0.012 J	<0.33	<0.33	<0.33
Fluorene	30	1,000	0.042 J	13 E	1.6	<0.38	0.022 J [<0.37]	<0.39	0.083 J	0.14 J	0.15 J	0.57	0.66	<0.33	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	**1.9 J**	**1.5**	0.14 J	<0.38	<0.43 [<0.37]	<0.39	**0.82**	0.14 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Naphthalene	12	1,000	0.22 J	**210 E**	**31 E**	2.2	0.60 [0.20 J]	0.28 J	0.55 J	0.086 J	0.36 J	0.39 J	1.9	3.4	0.15 J	<0.33
Phenanthrene	100	1,000	0.24 J	27 E	2.4	0.026 J	0.039 J [<0.37]	<0.39	0.54 J	0.36 J	0.22 J	0.13 J	0.050 J	0.0090 J	<0.33	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	1.5 J	0.38 J	0.66	<0.38	<0.43 [<0.37]	<0.39	0.41 J	0.12 J	0.11 J	<0.33	0.0070 J	0.0050 J	<0.33	<0.33
Total PAHs	- -	- -	20 J	370 J	51 J	2.3 J	0.75 J [0.22 J]	0.32 J	7.6 J	2.5 J	1.6 J	2.2 J	4.7 J	3.6 J	0.15 J	<0.33
Total SVOCs	0	- -	**20 J**	**370 J**	**51 J**	**2.3 J**	**0.75 J [0.22 J]**	**0.32 J**	**7.6 J**	**2.5 J**	**1.6 J**	**2.2 J**	**4.7 J**	**3.6 J**	**0.15 J**	<0.33

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-33						SB-34							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	6 - 8 03/14/00	14 - 16 03/14/00	20 - 22 03/14/00	28 - 30 03/14/00	38 - 40 03/14/00	48 - 50 03/14/00	2 - 4 03/06/00	6 - 8 03/06/00	10 - 12 03/06/00	14 - 16 03/06/00	20 - 22 03/06/00	28 - 30 03/06/00	38 - 40 03/06/00	48 - 50 03/06/00
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	20.1 J	9.60	<0.780	<0.560	<0.640 [<0.570]	<0.490	4.80	**44.4**	**28.3**	1.38	1.55	1.19	0.650	0.600
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-35							SB-35A		SB-36						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/08/00	6 - 8 03/08/00	16 - 18 03/08/00	18 - 20 03/08/00	28 - 30 03/08/00	38 - 40 03/08/00	48 - 50 03/08/00	10 - 12 03/09/00	14 - 16 03/09/00	2 - 4 03/15/00	6 - 8 03/15/00	10 - 12 03/15/00	14 - 16 03/15/00	20 - 22 03/15/00	28 - 30 03/15/00	38 - 40 03/15/00	48 - 50 03/15/00
Volatile Organics																		
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.00030 J	0.00040 J [0.00050 J]	0.0070	0.0020 J	0.011	0.051	<0.0050	0.0030 J	0.00050 J	<0.0050	0.00090 J [0.0010 J]	**<0.0050 J [0.17 J]**	**0.19 J**	0.059 J	**0.068**	**0.12**	**0.12**
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050	<0.0050 [0.0020 J]	0.010	0.012	0.024	0.00040 J	<0.0050	<0.0050	0.0020 J	<0.0050	<0.0050 [<0.0050]	<0.0050 J [0.36 J]	0.34 J	0.64 J	0.041	0.0020 J	<0.0050
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0010 J	<0.0050 [0.0030 J]	0.0090	0.0050 J	0.041	0.0010 J	<0.0050	0.00060 J	0.00070 J	0.00030 J	0.00050 J [0.00080 J]	0.14 J [0.41 J]	0.24 J	**1.2 J**	0.041	0.0020 J	<0.0050
Xylenes (total)	0.26	1,000	0.0020 J	<0.0050 [0.024]	0.052	0.075	0.24	0.0040 J	<0.0050	0.0010 J	0.010	<0.0050	<0.0050 [<0.0050]	**2.3 J [11 J]**	**12**	**13**	0.23	0.018	0.0020 J
Total BTEX	- -	- -	0.0033 J	0.00040 J [0.030 J]	0.078	0.094 J	0.32	0.056 J	<0.0050	0.0046 J	0.013 J	0.00030 J	0.0014 J [0.0018 J]	2.4 J [12 J]	13 J	15 J	0.38	0.14 J	0.12 J
Total VOCs	- -	- -	0.0033 J	0.00040 J [0.030 J]	0.078	0.094 J	0.32	0.056 J	<0.0050	0.0046 J	0.013 J	0.00030 J	0.0014 J [0.0018 J]	2.4 J [12 J]	13 J	15 J	0.38	0.14 J	0.12 J
Semivolatile Organics																		
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	NA	0.43 J [0.46 J]	NA	1.9	0.21 J	0.011 J	<0.33	0.21 J	3.0	0.070 J	<0.33 J [<0.33 J]	670 [140]	160 J	0.088 J	0.041 J	0.028 J	0.022 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	NA	0.18 J [0.16 J]	NA	0.12 J	<0.33	<0.33	<0.33	0.32 J	0.21 J	<0.33	6.2 J [4.3 J]	**32 J [6.8 J]**	8.0 J	<0.33	<0.33	<0.33	<0.33
Acenaphthylene	100	1,000	NA	0.65 J [0.73 J]	NA	0.68 J	0.037 J	<0.33	<0.33	0.20 J	0.83	0.052 J	21 J [7.2 J]	**140 J [31 J]**	51 J	0.072 J	0.0090 J	<0.33	<0.33
Anthracene	100	1,000	NA	1.1 [0.97 J]	NA	0.081 J	<0.33	<0.33	<0.33	0.54	0.50	0.015 J	49 J [29 J]	**150 J [32 J]**	35 J	0.014 J	0.0070 J	<0.33	<0.33
Benzo(a)anthracene	1	11	NA	**2.8 [5.0]**	NA	0.021 J	<0.33	<0.33	<0.33	**2.9**	<0.33	0.10 J	**26 J [14 J]**	**69 J [12 J]**	**18 J**	<0.33	<0.33	<0.33	<0.33
Benzo(a)pyrene	0	1.1	NA	**2.8 [4.8]**	NA	**0.010 J**	<0.33	<0.33	<0.33	**2.6**	<0.33	**0.087 J**	**18 J [9.0 J]**	**53 J [7.9 J]**	**12 J**	<0.33	<0.33	<0.33	<0.33
Benzo(b)fluoranthene	1	11	NA	**2.3 [4.9]**	NA	0.0090 J	<0.33	<0.33	<0.33	**2.0**	<0.33	0.13 J	**18 J [8.4 J]**	**38 J [5.4 J]**	**10 J**	<0.33	<0.33	<0.33	<0.33
Benzo(g,h,i)perylene	100	1,000	NA	2.0 [3.2]	NA	<0.33	<0.33	<0.33	<0.33	1.3	<0.33	0.084 J	8.1 J [4.3 J]	28 J [4.4 J]	6.3 J	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	0.8	110	NA	**2.9 [4.4]**	NA	0.010 J	<0.33	<0.33	<0.33	**2.4**	<0.33	0.10 J	**17 J [9.1 J]**	**82 J [12 J]**	**17 J**	<0.33	<0.33	<0.33	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	NA	**3.1 [4.9]**	NA	0.014 J	<0.33	0.0060 J	<0.33	**2.7**	<0.33	0.14 J	**23 J [12 J]**	**56 J [9.7 J]**	**15 J**	<0.33	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	NA	**0.67 J [0.92 J]**	NA	<0.33	<0.33	<0.33	<0.33	**0.36 J**	<0.33	0.026 J	**3.0 J [1.4 J]**	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	NA	4.3 [8.3]	NA	0.077 J	<0.33	<0.33	<0.33	2.6	0.083 J	0.072 J	79 J [40 J]	**230 J [45 J]**	56 J	0.022 J	0.010 J	0.0090 J	0.0070 J
Fluorene	30	1,000	NA	0.29 J [0.22 J]	NA	0.40 J	<0.33	<0.33	<0.33	0.38 J	1.3	0.0090 J	**72 J [38 J]**	**240 J [51 J]**	**57 J**	0.020 J	0.010 J	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	NA	**1.9 [3.0]**	NA	<0.33	<0.33	<0.33	<0.33	**1.2**	<0.33	0.076 J	**8.5 J [4.6 J]**	**29 J [4.4 J]**	**6.3 J**	<0.33	<0.33	<0.33	<0.33
Naphthalene	12	1,000	NA	0.97 J [0.88 J]	NA	4.1	10	0.58	0.022 JB	0.82 B	2.8 B	0.40 J	1.0 J [0.40 J]	**2,800 [530]**	**760**	0.36 J	2.8	0.24 J	0.11 J
Phenanthrene	100	1,000	NA	2.8 [2.5]	NA	0.26 J	<0.33	0.0050 J	<0.33	0.77	2.0	0.036 J	**130 J [76 J]**	**400 J [78 J]**	93 J	0.039 J	0.023 J	0.016 J	0.011 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	NA	4.5 [8.1]	NA	0.056 J	<0.33	0.0040 J	0.0030 J	3.1	0.030 J	0.15 J	54 J [42 J]	**130 J [27 J]**	33 J	0.014 J	0.0080 J	0.0070 J	<0.33
Total PAHs	- -	- -	NA	34 J [53 J]	NA	7.7 J	10 J	0.61 J	0.025 J	24 J	11 J	1.6 J	530 J [300 J]	5,200 J [1,000 J]	1,300 J	0.63 J	2.9 J	0.30 J	0.15 J
Total SVOCs	0	- -	NA	**34 J [53 J]**	NA	**7.7 J**	**10 J**	**0.61 J**	**0.025 J**	**24 J**	**11 J**	**1.6 J**	**530 J [300 J]**	**5,200 J [1,000 J]**	**1,300 J**	**0.63 J**	**2.9 J**	**0.30 J**	**0.15 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-35							SB-35A		SB-36							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/08/00	6 - 8 03/08/00	16 - 18 03/08/00	18 - 20 03/08/00	28 - 30 03/08/00	38 - 40 03/08/00	48 - 50 03/08/00	10 - 12 03/09/00	14 - 16 03/09/00	2 - 4 03/15/00	6 - 8 03/15/00	10 - 12 03/15/00	14 - 16 03/15/00	20 - 22 03/15/00	28 - 30 03/15/00	38 - 40 03/15/00	48 - 50 03/15/00
Inorganics																			
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	0.550	4.35 [18.7]	0.680	0.670	0.590	0.690	0.680	1.45	0.640	NA	NA	NA	0.590	1.10	0.530	0.600	0.600
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																			
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																			
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-37								SB-38									
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/09/00	6 - 8 03/09/00	10 - 12 03/09/00	14 - 16 03/09/00	18 - 20 03/09/00	28 - 30 03/09/00	38 - 40 03/09/00	48 - 50 03/09/00	2 - 4 03/13/00	6 - 8 03/13/00	10 - 12 03/13/00	14 - 16 03/13/00	20 - 22 03/13/00	28 - 30 03/13/00	38 - 40 03/13/00	48 - 50 03/13/00
Volatile Organics																				
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0010 J	<0.0050 J	<0.0050	0.00050 J	<1.0	0.016	0.0030 J	0.060	<0.0086	<0.011	<0.0087	<0.70	<0.80	0.0067 J	<0.0057	0.053
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050	<0.0050 J	<0.0050	<0.0050	**3.2**	0.024	0.0020 J	0.00060 J	<0.0086	<0.011	<0.0087	<0.70	0.78 J	0.042	<0.0057	<0.0064
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0030 J	0.00060 J	<0.0050	0.0010 J	**1.7 J**	0.012	0.0030 J	0.0020 J	<0.0086	<0.011	<0.0087	<0.70	0.47 J	0.060	<0.0057	0.0029 J
Xylenes (total)	0.26	1,000	0.00030 J	0.00050 J	<0.0050	0.0020 J	**34**	0.14	0.018	0.0070	<0.0086	<0.011	<0.0087	<0.70	**12**	**0.53**	<0.0057	<0.0064
Total BTEX	- -	- -	0.0043 J	0.0011 J	<0.0050	0.0035 J	39 J	0.19	0.026 J	0.070 J	<0.0086	<0.011	<0.0087	<0.70	13 J	0.64 J	<0.0057	0.056 J
Total VOCs	- -	- -	0.0043 J	0.0011 J	<0.0050	0.0035 J	39 J	0.19	0.026 J	0.070 J	<0.0086	<0.011	<0.0087	<0.70	13 J	0.64 J	<0.0057	0.056 J
Semivolatile Organics																				
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	<0.33	<0.33	0.25 J	1.4	160	<0.33	0.0080 J	0.098 J	0.37 J	<0.77 J	0.30 J	19 E	130 E	0.79	<0.37	<0.40
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.33	0.0080 J	0.18 J	0.21 J	9.3 J	<0.33	<0.33	0.0060 J	0.13 J	<0.77 J	0.038 J	3.5	5.2 E	0.032 J	<0.37	<0.40
Acenaphthylene	100	1,000	<0.33	<0.33	0.097 J	0.54	89 J	<0.33	<0.33	0.039 J	1.6	<0.77 J	0.10 J	0.42 J	32 E	0.33 J	<0.37	<0.40
Anthracene	100	1,000	0.0020 J	0.017 J	0.69	0.17 J	31 J	<0.33	<0.33	0.018 J	1.0	<0.77 J	0.51	21 E	19 E	0.096 J	<0.37	<0.40
Benzo(a)anthracene	1	11	0.011 J	0.041 J	1.0	0.12 J	**19 J**	<0.33	<0.33	0.012 J	**5.9 E**	0.31 J	0.59	**14 E**	**12 E**	0.077 J	<0.37	<0.40
Benzo(a)pyrene	0	1.1	**0.010 J**	**0.034 J**	**0.81**	**0.079 J**	**13 J**	<0.33	<0.33	**0.0090 J**	**5.1 E**	**0.23 J**	**0.087 J**	**10 E**	**7.7 E**	**0.52**	<0.37	<0.40
Benzo(b)fluoranthene	1	11	0.013 J	0.038 J	0.70	0.077 J	**8.8 J**	<0.33	<0.33	0.0090 J	**6.6 E**	0.20 J	0.087 J	**12 E**	**10 E**	0.40 J	<0.37	<0.40
Benzo(g,h,i)perylene	100	1,000	0.0060 J	0.017 J	0.32 J	0.033 J	5.4 J	<0.33	<0.33	0.0040 J	2.9	<0.77 J	<0.47	4.0 E	3.0	0.16 J	<0.37	<0.40
Benzo(k)fluoranthene	0.8	110	0.011 J	0.033 J	**0.83**	0.091 J	**15 J**	<0.33	<0.33	0.0090 J	**4.1 E**	0.22 J	0.10 J	**7.1 E**	**4.1 E**	0.41	<0.37	<0.40
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.013 J	0.046 J	0.98	0.11 J	**16 J**	<0.33	<0.33	0.014 J	**5.2 E**	0.29 J	0.43 J	**11 E**	**8.8 E**	0.066 J	<0.37	<0.40
Dibenzo(a,h)anthracene	0.33	1.1	<0.33	0.0070 J	0.11 J	0.014 J	<0.33	<0.33	<0.33	<0.33	**1.1**	<0.77 J	<0.47	**1.7**	**1.8**	0.060 J	<0.37	<0.40
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.025 J	0.11 J	2.6	0.41 J	47 J	<0.33	<0.33	0.040 J	14 E	0.58 J	1.4	41 E	31 E	0.11 J	<0.37	<0.40
Fluorene	30	1,000	<0.33	0.0070 J	0.54	0.98	**53 J**	<0.33	<0.33	0.028 J	0.40 J	<0.77 J	0.31 J	22 E	29 E	0.17 J	<0.37	<0.40
Indeno(1,2,3-cd)pyrene	0.5	11	0.0050 J	0.015 J	0.33 J	0.036 J	**6.6 J**	<0.33	<0.33	0.0040 J	**3.1**	0.16 J	<0.47	**4.5 E**	**3.6**	0.17 J	<0.37	<0.40
Naphthalene	12	1,000	<0.33	0.012 JB	0.31 JB	0.34 JB	**690 B**	**40 B**	0.079 JB	0.45 B	1.6	0.084 J	0.24 J	9.6 E	**360 E**	12 E	0.11 J	0.088 J
Phenanthrene	100	1,000	0.010 J	0.070 J	1.8	0.79	100	<0.33	0.0060 J	0.062 J	3.6	<0.77 J	1.4	52 E	49 E	0.28 J	<0.37	<0.40
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.018 J	0.072 J	1.9	0.25 J	50 J	<0.33	<0.33	0.022 J	9.2 E	0.54 J	1.1	22 E	20 E	0.095 J	<0.37	<0.40
Total PAHs	- -	- -	0.12 J	0.53 J	13 J	5.7 J	1,300 J	40	0.093 J	0.82 J	66 J	2.6 J	6.7 J	260 J	730	16 J	0.11 J	0.088 J
Total SVOCs	0	- -	**0.12 J**	**0.53 J**	**13 J**	**5.7 J**	**1,300 J**	**40**	**0.093 J**	**0.82 J**	**66 J**	**2.6 J**	**6.7 J**	**260 J**	**730**	**16 J**	**0.11 J**	**0.088 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-37								SB-38							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/09/00	6 - 8 03/09/00	10 - 12 03/09/00	14 - 16 03/09/00	18 - 20 03/09/00	28 - 30 03/09/00	38 - 40 03/09/00	48 - 50 03/09/00	2 - 4 03/13/00	6 - 8 03/13/00	10 - 12 03/13/00	14 - 16 03/13/00	20 - 22 03/13/00	28 - 30 03/13/00	38 - 40 03/13/00	48 - 50 03/13/00
Inorganics																		
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	0.500	0.550	1.34	1.30	1.58	0.560	0.620	0.560	NA	NA	NA	NA	NA	NA	<0.530	<0.540
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																		
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																		
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-39							SB-40					
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	28 - 30	38 - 40	48 - 50	2 - 4	10 - 12	14 - 16	28 - 30	38 - 40	48 - 50
Date Collected:			03/09/00	03/09/00	03/09/00	03/09/00	03/09/00	03/09/00	03/09/00	03/23/00	03/23/00	03/23/00	03/23/00	03/23/00	03/23/00
X = Soil Removed During IRM:															
Volatile Organics															
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0050 J	NA	0.00040 J	0.0010 J	0.027	0.025	0.0020 J	<0.0068	<0.0069	0.0031 J	0.024	0.0024 J	<0.0057
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0050 J	NA	0.0090	0.012	0.031	<0.0050	<0.0050	<0.0068	<0.0069	0.028	0.061	0.0028 J	<0.0057
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.00030 J	NA	0.0010 J	0.0040 J	0.097	0.00070 J	0.00040 J	0.021	0.0022 J	0.0087	0.046	0.0076	0.0031 J
Xylenes (total)	0.26	1,000	0.00050 J	NA	0.065	0.083	**0.40**	0.0050 J	0.00090 J	0.0015 J	0.0020 J	0.10	**0.33**	0.041	0.014
Total BTEX	- -	- -	0.00080 J	NA	0.075 J	0.10 J	0.56	0.031 J	0.0033 J	0.023 J	0.0042 J	0.14 J	0.46	0.054 J	0.017 J
Total VOCs	- -	- -	0.00080 J	NA	0.075 J	0.10 J	0.56	0.031 J	0.0033 J	0.023 J	0.0042 J	0.14 J	0.46	0.054 J	0.017 J
Semivolatile Organics															
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	<0.33 J	NA	4.6 J	1.4	0.42 J	0.031 J	0.0090 J	0.17 J	<0.46	0.95	<1.6	0.068 J	0.085 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	<0.33 J	NA	0.15 J	0.082 J	<0.33	<0.33	<0.33	<0.42	0.24 J	0.064 J	<1.6	<0.39	<0.38
Acenaphthylene	100	1,000	0.0090 J	NA	0.78 J	0.32 J	0.096 J	0.014 J	0.0040 J	<0.42	<0.46	0.37 J	<1.6	0.024 J	0.026 J
Anthracene	100	1,000	<0.33 J	NA	0.22 J	0.084 J	0.024 J	0.0080 J	<0.33	<0.42	0.22 J	0.034 J	<1.6	<0.39	<0.38
Benzo(a)anthracene	1	11	0.010 J	NA	0.45 J	<0.33	<0.33	0.0050 J	<0.33	0.45	0.093 J	<0.51	<1.6	<0.39	<0.38
Benzo(a)pyrene	0	1.1	**0.012 J**	NA	**0.43 J**	<0.33	<0.33	**0.0040 J**	<0.33	**0.15 J**	<0.46	<0.51	<1.6	<0.39	<0.38
Benzo(b)fluoranthene	1	11	0.015 J	NA	0.30 J	<0.33	<0.33	0.0050 J	<0.33	0.90	<0.46	<0.51	<1.6	<0.39	<0.38
Benzo(g,h,i)perylene	100	1,000	0.011 J	NA	0.23 J	<0.33	<0.33	<0.33	<0.33	0.47	<0.46	<0.51	<1.6	<0.39	<0.38
Benzo(k)fluoranthene	0.8	110	0.010 J	NA	0.44 J	<0.33	<0.33	0.0040 J	<0.33	**1.0**	0.064 J	<0.51	<1.6	<0.39	<0.38
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.013 J	NA	0.46 J	<0.33	<0.33	0.0060 J	<0.33	0.72	0.11 J	<0.51	<1.6	<0.39	<0.38
Dibenzo(a,h)anthracene	0.33	1.1	<0.33 J	NA	0.085 J	<0.33	<0.33	<0.33	<0.33	0.24 J	<0.46	<0.51	<1.6	<0.39	<0.38
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	<0.33 J	NA	0.91 J	<0.33	0.038 J	0.015 J	<0.33	0.12 J	0.35 J	<0.51	<1.6	<0.39	0.018 J
Fluorene	30	1,000	<0.33 J	NA	0.60 J	0.33 J	0.041 J	0.013 J	<0.33	<0.42	0.28 J	0.34 J	<1.6	<0.39	0.023 J
Indeno(1,2,3-cd)pyrene	0.5	11	0.011 J	NA	0.25 J	<0.33	<0.33	<0.33	<0.33	**0.60**	<0.46	<0.51	<1.6	<0.39	<0.38
Naphthalene	12	1,000	<0.33	NA	**22 B**	4.3 B	10 B	0.15 JB	0.034 JB	0.76	<0.46	2.3	6.8	0.45	0.36 J
Phenanthrene	100	1,000	<0.33 J	NA	0.70 J	0.57 J	0.081 J	0.026 J	0.0070 J	0.11 J	<0.46	0.20 J	<1.6	0.032 J	0.046 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.0080 J	NA	0.73 J	<0.33	<0.33	0.0090 J	<0.33	0.082 J	0.24 J	<0.51	<1.6	0.018 J	<0.38
Total PAHs	- -	- -	0.099 J	NA	33 J	7.1 J	11 J	0.29 J	0.054 J	5.8 J	1.6 J	4.3 J	6.8	0.59 J	0.56 J
Total SVOCs	0	- -	**0.099 J**	NA	**33 J**	**7.1 J**	**11 J**	**0.29 J**	**0.054 J**	**5.8 J**	**1.6 J**	**4.3 J**	**6.8**	**0.59 J**	**0.56 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-39							SB-40						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/09/00	6 - 8 03/09/00	10 - 12 03/09/00	14 - 16 03/09/00	28 - 30 03/09/00	38 - 40 03/09/00	48 - 50 03/09/00	2 - 4 03/23/00	10 - 12 03/23/00	14 - 16 03/23/00	28 - 30 03/23/00	38 - 40 03/23/00	48 - 50 03/23/00
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	1.32 J	**36.5 J**	0.640	0.730	0.630	0.630	0.600	1.90 N	<0.710	<0.760 N	<0.510 N	<0.460 N	<0.510 N
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-41							SB-42						
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/22/00	6 - 8 03/22/00	10 - 12 03/22/00	14 - 16 03/22/00	28 - 30 03/22/00	38 - 40 03/22/00	48 - 50 03/22/00	2 - 4 03/21/00	6 - 8 03/21/00	10 - 12 03/21/00	14 - 16 03/21/00	28 - 30 03/21/00	38 - 40 03/21/00	48 - 50 03/21/00
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0069	<0.011 J	<0.0075	0.0019 J	0.021 J	**0.067**	0.0021 J	<0.0054	<0.011	<0.025	<2.2	**0.068**	0.0028 J	<0.0052
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0069	<0.011 J	0.0027 J	0.0068 J	0.025 J	0.033	<0.0057	<0.0054	0.16	0.29	<2.2	0.15	0.0020 J	<0.0052
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0017 J	<0.011 J	<0.0075	0.0028 J	0.031	0.023	0.0013 J	<0.0054	0.066	0.11	<2.2	0.30	0.0020 J	0.0015 J
Xylenes (total)	0.26	1,000	<0.0069	<0.011 J	0.0047 J	0.016	0.16	0.18	0.0023 J	<0.0054	**1.0**	**1.8**	<2.2	**1.6**	0.010	0.0039 J
Total BTEX	- -	- -	0.0017 J	<0.011	0.0074 J	0.028 J	0.24 J	0.30	0.0057 J	<0.0054	1.2	2.2	<2.2	2.1	0.017 J	0.0054 J
Total VOCs	- -	- -	0.0017 J	<0.011	0.0074 J	0.028 J	0.24 J	0.30	0.0057 J	<0.0054	1.2	2.2	<2.2	2.1	0.017 J	0.0054 J
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.41 J	<0.71 J	<0.49	0.12 J	<1.0	0.028 J	<0.39	0.065 J	1.8	0.83	16 E	0.50	0.32 J	<0.39
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.12 J	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	<0.70	0.082 J	1.6	<0.38	0.029 J	<0.39
Acenaphthylene	100	1,000	<2.2	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	0.017 J	0.41 J	0.25 J	11 E	0.20 J	0.17 J	<0.39
Anthracene	100	1,000	2.0 J	<0.71 J	0.079 J	<0.48	<1.0	<0.38	<0.39	<0.36	0.34 J	0.21 J	5.8 E	0.029 J	0.086 J	<0.39
Benzo(a)anthracene	1	11	**7.6**	<0.71 J	<0.49	0.029 J	<1.0	0.021 J	<0.39	<0.36	0.22 J	0.34 J	**4.1 E**	0.033 J	0.056 J	<0.39
Benzo(a)pyrene	0	1.1	**5.7**	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	**0.14 J**	**0.38 J**	**2.7**	**0.032 J**	**0.043 J**	<0.39
Benzo(b)fluoranthene	1	11	**6.4**	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	0.14 J	0.33 J	**2.2**	0.037 J	0.040 J	<0.39
Benzo(g,h,i)perylene	100	1,000	2.6	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	0.053 J	0.31 J	1.1	<0.38	0.027 J	<0.39
Benzo(k)fluoranthene	0.8	110	**5.2**	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	0.13 J	0.30 J	**2.6**	0.023 J	0.045 J	<0.39
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**7.5**	<0.71 J	<0.49	0.028 J	<1.0	0.023 J	<0.39	<0.36	0.24 J	0.42 J	**3.3**	0.026 J	0.046 J	<0.39
Dibenzo(a,h)anthracene	0.33	1.1	**0.93 J**	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	<0.70	0.10 J	**0.49**	<0.38	<0.40	<0.39
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	14	0.048 J	0.51	0.048 J	<1.0	0.045 J	<0.39	<0.36	0.72	0.76	9.9 E	0.051 J	0.14 J	<0.39
Fluorene	30	1,000	0.22 J	<0.71 J	0.043 J	0.031 J	<1.0	<0.38	<0.39	<0.36	0.38 J	0.24 J	8.7 E	0.042 J	0.12 J	<0.39
Indeno(1,2,3-cd)pyrene	0.5	11	**2.8**	<0.71 J	<0.49	<0.48	<1.0	<0.38	<0.39	<0.36	0.051 J	0.25 J	**1.3**	<0.38	0.030 J	<0.39
Naphthalene	12	1,000	0.60 J	<0.71 J	0.040 J	0.21 J	6.5	1.8	0.098 J	0.053 J	4.9	2.3	4.5 E	8.2 E	2.8	0.037 J
Phenanthrene	100	1,000	7.2	<0.71 J	0.16 J	0.074 J	<1.0	0.030 J	<0.39	<0.36	1.5	1.0	18 E	0.092 J	0.23 J	<0.39
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	13	0.038 J	0.39 J	0.048 J	<1.0	0.040 J	<0.39	<0.36	0.47 J	0.70 J	6.8 E	0.029 J	0.091 J	<0.39
Total PAHs	- -	- -	76 J	0.086 J	1.2 J	0.59 J	6.5	2.0 J	0.098 J	0.14 J	12 J	8.8 J	100	9.3 J	4.3 J	0.037 J
Total SVOCs	0	- -	**76 J**	**0.086 J**	**1.2 J**	**0.59 J**	**6.5**	**2.0 J**	**0.098 J**	**0.14 J**	**12 J**	**8.8 J**	**100**	**9.3 J**	**4.3 J**	**0.037 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-41							SB-42							
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/22/00	6 - 8 03/22/00	10 - 12 03/22/00	14 - 16 03/22/00	28 - 30 03/22/00	38 - 40 03/22/00	48 - 50 03/22/00	2 - 4 03/21/00	6 - 8 03/21/00	10 - 12 03/21/00	14 - 16 03/21/00	28 - 30 03/21/00	38 - 40 03/21/00	48 - 50 03/21/00
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	12.9	**101**	3.00	6.30	<0.530	<0.520	<0.490	<0.520	9.30	**120**	2.20	<0.580	<0.600	<0.520
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-43							SB-44						
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/24/00	6 - 8 03/24/00	10 - 12 03/24/00	14 - 16 03/24/00	28 - 30 03/24/00	38 - 40 03/24/00	48 - 50 03/24/00	2 - 4 03/28/00	10 - 12 03/28/00	14 - 16 03/28/00	20 - 22 03/28/00	28 - 30 03/28/00	38 - 40 03/28/00	48 - 50 03/28/00
Volatile Organics																
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0054	<0.013	0.0094	<0.014 J	<0.028 [0.013 J]	<0.0062	<0.0061	<0.0060	0.0019 J	0.0045 J	**0.24 J**	0.035	<0.0058	<0.0061
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0054	0.0029 J	0.20	<0.014 J	0.021 J [0.026]	<0.0062	<0.0061	<0.0060	0.041	0.081	0.53 J	0.13	<0.0058	<0.0061
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0034 J	0.0078 J	0.022	<0.014 J	0.045 [0.080]	0.0017 J	<0.0061	0.0023 J	<0.0086	0.033	**2.4**	0.082	<0.0058	0.0044 J
Xylenes (total)	0.26	1,000	<0.0054	0.061	0.16	0.064 J	**0.28 [0.33]**	<0.0062	<0.0061	<0.0060	0.020	0.22	**5.0**	**0.50**	<0.0058	0.0081
Total BTEX	- -	- -	0.0034 J	0.072 J	0.39	0.064 J	0.35 J [0.45 J]	0.0017 J	<0.0061	0.0023 J	0.063 J	0.34 J	8.2 J	0.75	<0.0058	0.013 J
Total VOCs	- -	- -	0.0034 J	0.072 J	0.39	0.064 J	0.35 J [0.45 J]	0.0017 J	<0.0061	0.0023 J	0.063 J	0.34 J	8.2 J	0.75	<0.0058	0.013 J
Semivolatile Organics																
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.19 J	0.20 J	0.84	2.5	0.73 J [0.51 J]	0.063 J	0.10 J	0.42 J	0.15 J	0.95	5.7	2.9	0.074 J	0.14 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.49 J	4.0	0.32 J	0.12 J	<2.0 [<1.3]	<0.41	<0.39	1.6 J	0.053 J	0.14 J	0.52 J	0.26 J	<0.38	<0.59
Acenaphthylene	100	1,000	<1.2	<0.82	0.31 J	1.0 J	0.26 J [0.18 J]	0.022 J	0.061 J	0.40 J	0.066 J	0.43 J	2.7 J	1.4 J	0.028 J	0.057 J
Anthracene	100	1,000	1.5	2.9	1.5	0.16 J	<2.0 [0.089 J]	0.054 J	0.040 J	3.0	0.14 J	0.071 J	0.67 J	0.63 J	0.032 J	0.074 J
Benzo(a)anthracene	1	11	**2.4**	**2.6**	0.79	0.34 J	<2.0 [<1.3]	<0.41	0.043 J	**9.9**	0.35 J	0.21 J	<2.8	0.23 J	0.019 J	0.054 J
Benzo(a)pyrene	0	1.1	**2.1**	**2.2**	**0.59 J**	**0.33 J**	<2.0 [<1.3]	<0.41	**0.034 J**	**9.9**	**0.39 J**	**0.18 J**	<2.8	**0.17 J**	<0.38	**0.041 J**
Benzo(b)fluoranthene	1	11	**1.6**	**1.7**	0.43 J	0.24 J	<2.0 [<1.3]	<0.41	0.032 J	**7.6**	0.32 J	0.16 J	<2.8	0.13 J	<0.38	0.034 J
Benzo(g,h,i)perylene	100	1,000	1.3	1.0	0.24 J	0.16 J	<2.0 [<1.3]	<0.41	0.019 J	5.7	0.29 J	0.11 J	<2.8	<1.8	<0.38	<0.59
Benzo(k)fluoranthene	0.8	110	**2.0**	**2.4**	0.63 J	0.34 J	<2.0 [<1.3]	<0.41	0.033 J	**11**	0.42 J	0.17 J	<2.8	0.18 J	<0.38	0.049 J
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**2.3**	**2.3**	0.73	0.29 J	<2.0 [<1.3]	<0.41	0.040 J	**9.7**	0.41 J	0.22 J	<2.8	0.20 J	<0.38	0.050 J
Dibenzo(a,h)anthracene	0.33	1.1	**0.39 J**	**0.36 J**	0.11 J	<1.8	<2.0 [<1.3]	<0.41	<0.39	**2.2**	0.11 J	<0.94	<2.8	<1.8	<0.38	<0.59
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	4.6	6.3	2.6	0.31 J	<2.0 [<1.3]	0.031 J	0.094 J	14	0.60	0.32 J	0.55 J	0.70 J	0.047 J	0.13 J
Fluorene	30	1,000	0.64 J	3.3	0.88	0.50 J	0.16 J [<1.3]	<0.41	0.052 J	1.2 J	0.066 J	0.32 J	1.8 J	1.3 J	0.048 J	0.10 J
Indeno(1,2,3-cd)pyrene	0.5	11	**1.2**	**1.2**	0.26 J	0.18 J	<2.0 [<1.3]	<0.41	0.020 J	**5.7**	0.27 J	0.11 J	<2.8	0.085 J	<0.38	<0.59
Naphthalene	12	1,000	0.44 J	1.4	2.5	9.7	10 [7.8]	0.52	0.80	0.77 J	1.0	4.8	**17**	7.6	0.26 J	0.57 J
Phenanthrene	100	1,000	5.2	1.2	3.9	0.48 J	0.16 J [0.085 J]	0.051 J	0.14 J	10 J	0.53 J	0.25 J	2.2 J	2.0 J	0.11 J	0.26 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	3.9	4.6	2.2	0.18 J	<2.0 [<1.3]	0.025 J	0.074 J	14	0.62	0.27 J	0.36 J	0.41 J	0.038 J	0.095 J
Total PAHs	- -	- -	30 J	38 J	19 J	17 J	11 J [8.7 J]	0.77 J	1.6 J	110 J	5.8 J	8.7 J	32 J	18 J	0.66 J	1.7 J
Total SVOCs	0	- -	**30 J**	**38 J**	**19 J**	**17 J**	**11 J [8.7 J]**	**0.77 J**	**1.6 J**	**110 J**	**5.8 J**	**8.7 J**	**32 J**	**18 J**	**0.66 J**	**1.7 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-43							SB-44							
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	28 - 30	38 - 40	48 - 50	2 - 4	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			03/24/00	03/24/00	03/24/00	03/24/00	03/24/00	03/24/00	03/24/00	03/28/00	03/28/00	03/28/00	03/28/00	03/28/00	03/28/00	03/28/00
X = Soil Removed During IRM:																
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<0.490 N	<0.580 N	<0.710 N	1.60 N	<0.560 N [<0.540]	<0.560 N	<57.0 NR	9.50	22.2	12.8	<0.610	<0.560	<0.570	<0.810
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-45							SB-46								
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4	6 - 8	10 - 12	14 - 16	28 - 30	38 - 40	48 - 50	2 - 4	6 - 8	10 - 12	14 - 16	20 - 22	28 - 30	38 - 40	48 - 50
Date Collected:			03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00	03/27/00
X = Soil Removed During IRM:																	
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0017 J	<0.010 J	<0.040	0.0031 J	0.016	0.011 [<0.0058]	0.0014 J	<0.0098	<0.014 J	<0.0067	<0.024	**0.75**	<0.60	0.0014 J	0.0014 J
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0060	<0.010 J	0.25	0.070	0.036	0.0022 J [<0.0058]	<0.0059	<0.0098	0.0031 J	0.0019 J	0.10	0.29 J	0.25 J	<0.0058	<0.0058
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0027 J	<0.010 J	0.073	0.028	0.020	0.0034 J [<0.0058]	0.0020 J	<0.0098	0.0046 J	<0.0067	0.030	**3.8**	0.15 J	0.0020 J	0.0015 J
Xylenes (total)	0.26	1,000	<0.0060	<0.010 J	**0.96**	**0.37**	0.13	0.014 [<0.0058]	<0.0059	<0.0098	0.062	0.011	**0.32**	**4.2**	**1.2**	<0.0058	<0.0058
Total BTEX	- -	- -	0.0044 J	<0.010	1.3	0.47 J	0.20	0.031 J [<0.0058]	0.0034 J	<0.0098	0.070 J	0.013 J	0.45	9.0 J	1.6 J	0.0034 J	0.0029 J
Total VOCs	- -	- -	0.0044 J	<0.010	1.3	0.47 J	0.20	0.031 J [<0.0058]	0.0034 J	<0.0098	0.070 J	0.013 J	0.45	9.0 J	1.6 J	0.0034 J	0.0029 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.11 J	2.2	0.96	<0.47	<0.77	0.046 J [<0.38]	<0.38	NA	NA	0.052 J	0.16 J	0.028 J	0.042 J	<0.38	<0.38
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.088 J	0.11 J	0.057 J	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.032 J	<0.51	<0.76	<0.38	<0.38
Acenaphthylene	100	1,000	0.061 J	0.77 J	0.16 J	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.079 J	<0.51	<0.76	<0.38	<0.38
Anthracene	100	1,000	0.44	0.075 J	0.39 J	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.051 J	<0.51	<0.76	<0.38	<0.38
Benzo(a)anthracene	1	11	**1.8**	0.14 J	**2.4**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.12 J	<0.51	<0.76	<0.38	<0.38
Benzo(a)pyrene	0	1.1	**0.94**	**0.058 J**	**2.3**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	**0.10 J**	<0.51	<0.76	<0.38	<0.38
Benzo(b)fluoranthene	1	11	**1.5**	0.099 J	**1.7**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.092 J	<0.51	<0.76	<0.38	<0.38
Benzo(g,h,i)perylene	100	1,000	NA	NA	0.94	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.046 J	<0.51	<0.76	<0.38	<0.38
Benzo(k)fluoranthene	0.8	110	**1.8**	0.12 J	**2.2**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.080 J	<0.51	<0.76	<0.38	<0.38
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**1.7**	0.12 J	**2.2**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.12 J	<0.51	<0.76	<0.38	<0.38
Dibenzo(a,h)anthracene	0.33	1.1	**0.93**	0.058 J	**0.36 J**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	<0.44	<0.51	<0.76	<0.38	<0.38
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	2.9	0.21 J	2.5	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	0.050 J	0.21 J	<0.51	<0.76	<0.38	<0.38
Fluorene	30	1,000	0.15 J	0.34 J	0.075 J	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	0.034 J	0.094 J	<0.51	<0.76	<0.38	<0.38
Indeno(1,2,3-cd)pyrene	0.5	11	0.36 J	<0.89	**1.1**	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	<0.46	0.046 J	<0.51	<0.76	<0.38	<0.38
Naphthalene	12	1,000	0.28 J	6.0	2.3	<0.47	5.5	2.4 [0.23 J]	0.054 J	NA	NA	0.17 J	0.73	3.7	4.8	0.026 J	0.066 J
Phenanthrene	100	1,000	1.5	0.23 J	1.3	<0.47	<0.77	0.031 J [<0.38]	<0.38	NA	NA	0.093 J	0.26 J	<0.51	<0.76	<0.38	<0.38
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	2.7	0.21 J	2.4	<0.47	<0.77	<0.38 [<0.38]	<0.38	NA	NA	0.047 J	0.18 J	<0.51	<0.76	<0.38	<0.38
Total PAHs	- -	- -	17 J	11 J	23 J	<0.47	5.5	2.5 J [0.23 J]	0.054 J	NA	NA	0.45 J	2.4 J	3.7 J	4.8 J	0.026 J	0.066 J
Total SVOCs	0	- -	**17 J**	**11 J**	**23 J**	<0.47	**5.5**	**2.5 J [0.23 J]**	**0.054 J**	NA	NA	**0.45 J**	**2.4 J**	**3.7 J**	**4.8 J**	**0.026 J**	**0.066 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-45							SB-46							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/27/00	6 - 8 03/27/00	10 - 12 03/27/00	14 - 16 03/27/00	28 - 30 03/27/00	38 - 40 03/27/00	48 - 50 03/27/00	2 - 4 03/27/00	6 - 8 03/27/00	10 - 12 03/27/00	14 - 16 03/27/00	20 - 22 03/27/00	28 - 30 03/27/00	38 - 40 03/27/00	48 - 50 03/27/00
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<0.570	3.80	<0.740	4.30	<0.560	<0.560 [<0.540]	<0.570	2.20 JN	**82.7 N**	1.50 N	1.10	<0.740	<0.570	<0.540	<0.550
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-47							SB-48							
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/22/00	6 - 8 03/22/00	10 - 12 03/22/00	14 - 16 03/22/00	28 - 30 03/22/00	38 - 40 03/22/00	48 - 50 03/22/00	2 - 4 03/23/00	10 - 12 03/23/00	14 - 16 03/23/00	20 - 22 03/23/00	28 - 30 03/23/00	38 - 40 03/23/00	48 - 50 03/23/00
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0053	<0.0056	<0.0068	<0.76	<0.63 [<0.60]	0.012	<0.0062	0.0013 J	0.0016 J	<0.034	0.022 J	0.0098 J	0.011	<0.0060
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0053	<0.0056	<0.0068	<0.76	0.15 [0.12]	<0.0058	<0.0062	<0.0065	0.011	<0.034	**1.2**	0.039	0.013	<0.0060
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0012 J	<0.0056	0.0022 J	<0.76	0.16 [0.19]	0.0011 J	<0.0062	0.028	0.0017 J	0.044	**1.4**	0.089	0.0055 J	0.017
Xylenes (total)	0.26	1,000	<0.0053	<0.0056	<0.0068	**0.48 J**	**2.5 [1.8]**	<0.0058	<0.0062	0.0035 J	0.044	0.049	**19 E**	**0.55**	0.092	0.0027 J
Total BTEX	- -	- -	0.0012 J	<0.0056	0.0022 J	0.48 J	2.8 [2.1]	0.013 J	<0.0062	0.033 J	0.058 J	0.093	22 J	0.69 J	0.12 J	0.020 J
Total VOCs	- -	- -	0.0012 J	<0.0056	0.0022 J	0.48 J	2.8 [2.1]	0.013 J	<0.0062	0.033 J	0.058 J	0.093	22 J	0.69 J	0.12 J	0.020 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.020 J	<0.37	0.028 J	0.90	0.076 J [<1.4]	0.097 J	<0.39	0.16 J	31 J	8.2	2.0 J	NA	NA	NA
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.044 J	<0.37	0.030 J	0.076 J	<1.1 [<1.4]	0.018 J	<0.39	0.024 J	11 J	0.53 J	<6.8	NA	NA	NA
Acenaphthylene	100	1,000	<0.35	<0.37	<0.38	0.38 J	<1.1 [<1.4]	0.027 J	<0.39	0.026 J	23 J	4.7	0.67 J	NA	NA	NA
Anthracene	100	1,000	0.087 J	<0.37	0.11 J	0.13 J	<1.1 [<1.4]	<0.39	<0.39	0.13 J	**110**	1.5 J	<6.8	NA	NA	NA
Benzo(a)anthracene	1	11	0.13 J	0.046 J	0.21 J	0.11 J	<1.1 [<1.4]	<0.39	<0.39	0.68	**100**	0.55 J	<6.8	NA	NA	NA
Benzo(a)pyrene	0	1.1	**0.10 J**	**0.040 J**	**0.16 J**	**0.075 J**	<1.1 [<1.4]	<0.39	<0.39	**0.65**	**84**	**0.44 J**	<6.8	NA	NA	NA
Benzo(b)fluoranthene	1	11	0.082 J	0.046 J	0.13 J	0.072 J	<1.1 [<1.4]	<0.39	<0.39	0.55	**79**	0.37 J	<6.8	NA	NA	NA
Benzo(g,h,i)perylene	100	1,000	0.055 J	<0.37	0.084 J	0.038 J	<1.1 [<1.4]	<0.39	<0.39	0.36 J	40 J	<4.4	<6.8	NA	NA	NA
Benzo(k)fluoranthene	0.8	110	0.11 J	0.041 J	0.17 J	0.069 J	<1.1 [<1.4]	<0.39	<0.39	0.70	**66**	0.40 J	<6.8	NA	NA	NA
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.12 J	0.049 J	0.21 J	0.098 J	<1.1 [<1.4]	<0.39	<0.39	0.61	**80**	0.41 J	<6.8	NA	NA	NA
Dibenzo(a,h)anthracene	0.33	1.1	<0.35	<0.37	0.034 J	<0.45	<1.1 [<1.4]	<0.39	<0.39	0.16 J	**17 J**	<4.4	<6.8	NA	NA	NA
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	0.23 J	0.089 J	0.51	0.23 J	<1.1 [<1.4]	0.027 J	<0.39	0.87	**230**	1.6 J	<6.8	NA	NA	NA
Fluorene	30	1,000	0.048 J	<0.37	0.041 J	0.32 J	<1.1 [<1.4]	0.023 J	<0.39	0.044 J	**96**	3.0 J	<6.8	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	11	0.057 J	<0.37	0.091 J	0.041 J	<1.1 [<1.4]	<0.39	<0.39	0.38	**40 J**	<4.4	<6.8	NA	NA	NA
Naphthalene	12	1,000	0.10 J	<0.37	0.15 J	3.4	6.3 [8.5]	2.0	0.077 J	0.14 J	**17 J**	**29**	**36**	NA	NA	NA
Phenanthrene	100	1,000	0.30 J	0.038 J	0.17 J	0.54	<1.1 [<1.4]	0.051 J	<0.39	0.60	**320**	4.9	<6.8	NA	NA	NA
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	0.25 J	0.072 J	0.46	0.19 J	<1.1 [<1.4]	0.031 J	<0.39	0.88	**170**	0.98 J	<6.8	NA	NA	NA
Total PAHs	- -	- -	1.7 J	0.42 J	2.6 J	6.7 J	6.4 J [8.5]	2.3 J	0.077 J	7.0 J	1,500 J	57 J	39 J	NA	NA	NA
Total SVOCs	0	- -	**1.7 J**	**0.42 J**	**2.6 J**	**6.7 J**	**6.4 J [8.5]**	**2.3 J**	**0.077 J**	**7.0 J**	**1,500 J**	**57 J**	**39 J**	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-47							SB-48						
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/22/00	6 - 8 03/22/00	10 - 12 03/22/00	14 - 16 03/22/00	28 - 30 03/22/00	38 - 40 03/22/00	48 - 50 03/22/00	2 - 4 03/23/00	10 - 12 03/23/00	14 - 16 03/23/00	20 - 22 03/23/00	28 - 30 03/23/00	38 - 40 03/23/00	48 - 50 03/23/00
Inorganics																
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<0.510	<0.510	12.2	2.70	<0.580 [<0.550]	<0.470	<0.580	3.00	1.80	<0.650	<0.710	<0.570 N	<0.570 N	<0.610 N
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-49							SB-50							
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/20/00	6 - 8 03/20/00	14 - 16 03/20/00	20 - 22 03/20/00	28 - 30 03/20/00	38 - 40 03/21/00	48 - 50 03/21/00	2 - 4 03/28/00	6 - 8 03/28/00	10 - 12 03/28/00	14 - 16 03/28/00	20 - 22 03/28/00	28 - 30 03/28/00	38 - 40 03/28/00	48 - 50 03/28/00
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.0062	<0.012	<0.017	<0.013	**0.26**	0.024	<0.0065 [<0.0066]	**1.1**	<0.0088	<0.69	<0.033	**0.48 J**	0.045	<0.0058	<0.0058
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0062	<0.012	0.0046 J	0.16	0.28	0.022	<0.0065 [<0.0066]	<0.62	<0.0088	0.14 J	0.0087 J	0.64 J	0.019	<0.0058	<0.0058
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	0.0016 J	<0.012	<0.017	0.0072 J	0.24	0.0071	<0.0065 [<0.0066]	**0.92**	<0.0088	<0.69	<0.033	**1.8**	0.086	<0.0058	0.0011 J
Xylenes (total)	0.26	1,000	<0.0062	<0.012	0.013 J	**0.68**	**1.9**	0.11	<0.0065 [<0.0066]	**1.1**	<0.0088	**1.4**	0.047	**10**	**0.28**	<0.0058	<0.0058
Total BTEX	- -	- -	0.0016 J	<0.012	0.018 J	0.85 J	2.7	0.16	<0.0065 [<0.0066]	3.1	<0.0088	1.5 J	0.056 J	13 J	0.43	<0.0058	0.0011 J
Total VOCs	- -	- -	0.0016 J	<0.012	0.018 J	0.85 J	2.7	0.16	<0.0065 [<0.0066]	3.1	<0.0088	1.5 J	0.056 J	13 J	0.43	<0.0058	0.0011 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.074 J	0.093 J	0.83	160	0.066 J	0.51	<0.39 [<0.41]	110	0.15 J	2.0	4.8 E	0.051 J	<0.38	<0.38	0.021 J
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.090 J	<0.71	0.090 J	7.3 J	<0.40	0.034 J	<0.39 [<0.41]	**25 J**	0.049 J	0.39 J	2.1	<0.52	<0.38	<0.38	<0.39
Acenaphthylene	100	1,000	0.020 J	<0.71	0.25 J	76	0.042 J	0.25 J	<0.39 [<0.41]	**140 J**	0.19 J	0.76 J	2.9 J	<0.52	<0.38	<0.38	<0.39
Anthracene	100	1,000	0.22 J	<0.71	0.55	25	0.018 J	0.13 J	<0.39 [<0.41]	**450 E**	0.56	0.90	10 E	<0.52	<0.38	<0.38	0.041 J
Benzo(a)anthracene	1	11	0.56	<0.71	<0.50	**15 J**	<0.40	0.089 J	<0.39 [<0.41]	**480 E**	**1.4**	**1.1**	**7.0 E**	<0.52	<0.38	<0.38	0.047 J
Benzo(a)pyrene	0	1.1	**0.52**	<0.71	<0.50	**11 J**	**0.065 J**	**0.067 J**	<0.39 [<0.41]	**340**	**1.3**	**0.51**	**5.5 E**	<0.52	<0.38	<0.38	**0.039 J**
Benzo(b)fluoranthene	1	11	0.53	<0.71	<0.50	**7.5 J**	0.028 J	0.076 J	<0.39 [<0.41]	**330**	0.96	0.41 J	**5.3 E**	<0.52	<0.38	<0.38	0.028 J
Benzo(g,h,i)perylene	100	1,000	0.34 J	<0.71	<0.50	5.5 J	<0.40	0.033 J	<0.39 [<0.41]	**130**	0.70	0.17 J	2.1	<0.52	<0.38	<0.38	<0.39
Benzo(k)fluoranthene	0.8	110	0.49	<0.71	<0.50	**12 J**	0.061 J	0.060 J	<0.39 [<0.41]	**320**	**1.6**	0.69	**5.5 E**	<0.52	<0.38	<0.38	0.042 J
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	0.59	<0.71	<0.50	**13 J**	<0.40	0.076 J	<0.39 [<0.41]	**400 E**	**1.3**	0.88	**5.9 E**	<0.52	<0.38	<0.38	0.042 J
Dibenzo(a,h)anthracene	0.33	1.1	0.12 J	<0.71	<0.50	**2.1**	<0.40	<0.38	<0.39 [<0.41]	**67**	0.26 J	0.070 J	**0.82**	<0.52	<0.38	<0.38	<0.39
Dibenzofuran	7	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	1.1	<0.71	0.33 J	35	<0.40	0.22 J	<0.39 [<0.41]	**1,100 E**	2.0	1.0	27 E	<0.52	<0.38	<0.38	0.11 J
Fluorene	30	1,000	0.099 J	<0.71	0.92	**43**	0.016 J	0.18 J	<0.39 [<0.41]	**210**	0.24 J	1.3	5.9 E	<0.52	<0.38	<0.38	0.029 J
Indeno(1,2,3-cd)pyrene	0.5	11	0.32 J	<0.71	<0.50	**6.0 J**	0.030 J	0.031 J	<0.39 [<0.41]	**150**	**0.70**	0.18 J	**2.5**	<0.52	<0.38	<0.38	0.018 J
Naphthalene	12	1,000	0.091 J	0.090 J	0.69	**150**	6.1 E	2.5	<0.39 [<0.41]	**260**	0.29 J	3.1	11 E	12 E	0.25 J	0.029 J	0.11 J
Phenanthrene	100	1,000	0.84	<0.71	2.1	84	0.049 J	0.40	<0.39 [<0.41]	**13,000 EJ**	1.6	3.2 J	7.5 EJ	<0.52	0.017 J	0.021 J	0.12 J
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	1.2	<0.71	0.17 J	33	<0.40	0.14 J	<0.39 [<0.41]	**740 E**	1.7	0.62	12 E	<0.52	<0.38	<0.38	0.067 J
Total PAHs	- -	- -	7.2 J	0.18 J	5.9 J	690 J	6.5 J	4.8 J	<0.39 [<0.41]	18,000 J	15 J	17 J	120 J	12 J	0.27 J	0.050 J	0.71 J
Total SVOCs	0	- -	**7.2 J**	**0.18 J**	**5.9 J**	**690 J**	**6.5 J**	**4.8 J**	<0.39 [<0.41]	**18,000 J**	**15 J**	**17 J**	**120 J**	**12 J**	**0.27 J**	**0.050 J**	**0.71 J**

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SB-49							SB-50							
Sample Depth(Feet): Date Collected: X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	2 - 4 03/20/00	6 - 8 03/20/00	14 - 16 03/20/00	20 - 22 03/20/00	28 - 30 03/20/00	38 - 40 03/21/00	48 - 50 03/21/00	2 - 4 03/28/00	6 - 8 03/28/00	10 - 12 03/28/00	14 - 16 03/28/00	20 - 22 03/28/00	28 - 30 03/28/00	38 - 40 03/28/00	48 - 50 03/28/00
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	0.980	**27.6**	1.30	<0.660	<0.510	1.30	<0.530 [<0.620]	6.70	16.6	1.10	1.50	<0.690	<0.580	<0.540	<0.540
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SS-1	SS-3	SS-4	SS-5	SS-6	T1	T2	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)						10 - 15	5 - 10	15	15	15	15	15	15	15	15	15	15	15	20
Date Collected:			07/18/95	07/18/95	07/18/95	03/31/98	03/31/98	07/01/01	07/01/01	02/06/02	01/16/02	01/16/02	01/31/02	02/06/02	12/03/01	12/03/01	01/28/02	11/16/01	11/16/01	11/16/01	01/04/02
X = Soil Removed During IRM:																					
Volatile Organics																					
2-Butanone	0.12	1,000	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	0.041 B	**0.091 B**	**0.063 B**	0.020 B	0.025 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	<0.0070	<0.0060	<0.0070	<0.0070	0.027 J	**0.90 [0.47 J]**	0.0090	<0.0070	<0.0060	<0.0080	<0.0070	**0.17**
Carbon Disulfide	- -	- -	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	<0.0070	<0.0060	<0.0070	<0.0070	0.076 J	0.75 [0.29 J]	<0.0070	<0.0070	<0.0060	<0.0080	<0.0070	0.13
Methylene Chloride	0.05	1,000	0.0050 J	0.0080 J	0.0060 J	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	<0.010	<0.010	<0.010	<0.010	0.00090 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	0.0040 J	<0.0060	<0.0070	<0.0070	0.053 J	**3.7 [12 J]**	0.0050 J	<0.0070	<0.0060	<0.0080	<0.0070	0.53
Xylenes (total)	0.26	1,000	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	0.018 J	<0.0060	<0.0070	<0.0070	0.25 J	**7.6 [3.8 J]**	0.011	<0.0070	<0.0060	<0.0080	0.0060 J	**2.3**
Total BTEX	- -	- -	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	0.022 J	<0.0060	<0.0070	<0.0070	0.40 J	13 [16 J]	0.025 J	<0.0070	<0.0060	<0.0080	0.0060 J	3.1
Total VOCs	- -	- -	0.046 J	0.099 J	0.069 J	0.020	0.026 J	NA	NA	0.022 J	<0.0060	<0.0070	<0.0070	0.40 J	13 [16 J]	0.025 J	<0.0070	<0.0060	<0.0080	0.0060 J	3.1
Semivolatile Organics																					
2,4-Dimethylphenol	- -	- -	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	0.021 J	0.071 J	0.030 J	0.080 J	0.052 J	NA	NA	0.23 J	<0.43 J	<0.44	<0.46	2.4	8.0 J [17 J]	<0.50	0.074 J	0.19 J	0.53	1.8	11
2-Methylphenol	0.33	1,000	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	<0.80	<0.80	<0.80	<0.80	<0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.046 J	0.15 J	0.068 J	0.14 J	0.063 J	NA	NA	0.077 J	0.23 J	<0.44	<0.46	0.18 J	1.5 J [3.3 J]	<0.50	<0.45	0.034 J	0.077 J	0.21 J	1.8 J
Acenaphthylene	100	1,000	0.55 J	0.27 J	0.20 J	0.48 J	0.41 J	NA	NA	0.13 J	1.1	<0.44	<0.46	0.86	6.8 J [13 J]	NA	0.050 J	0.063 J	0.20 J	1.8	13
Anthracene	100	1,000	0.54 J	0.38 J	0.30 J	0.78 J	0.36 J	NA	NA	0.085 J	1.9	<0.44	<0.46	<0.54	9.5 J [20 J]	<0.50	0.083 J	0.28 J	0.74	1.2	9.5
Benzo(a)anthracene	1	11	**2.1**	**1.1**	**1.7**	**3.1**	0.68	NA	NA	0.052 J	**1.2**	<0.44	<0.46	<0.54	**6.3 J [14 J]**	<0.50	0.13 J	0.078 J	0.41 J	<0.47	**3.4 J**
Benzo(a)pyrene	0	1.1	**2.2**	**1.1**	**1.7**	**3.2**	**0.78**	NA	NA	<0.48	**0.97 J**	<0.44	<0.46	<0.54	**4.8 J [9.8 J]**	<0.50	**0.12 J**	**0.077 J**	**0.35 J**	<0.47	**2.4 J**
Benzo(b)fluoranthene	1	11	**3.2**	**1.4**	**2.8**	**4.1**	0.86	NA	NA	<0.48	0.74	<0.44	<0.46	<0.54	**4.4 J [13 J]**	<0.50	0.11 J	0.056 J	0.30 J	<0.47	**1.7 J**
Benzo(g,h,i)perylene	100	1,000	0.18 J	0.10 J	0.18 J	0.064 J	0.024 J	NA	NA	0.023 J	0.39 J	<0.44	<0.46	0.54 J	1.5 J [3.7 J]	<0.50	0.077 J	<0.41	0.18 J	<0.47	0.91 J
Benzo(k)fluoranthene	0.8	110	**1.6**	**1.0**	**1.2**	**2.5**	0.53	NA	NA	<0.48	**0.82**	<0.44	0.46 J	<0.54	**3.8 J [7.0 J]**	<0.50	0.15 J	0.076 J	0.34 J	<0.47	**2.5 J**
bis(2-Ethylhexyl)phthalate	- -	- -	0.070 JB	0.22 JB	0.14 JB	0.24 J	0.25 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	<0.33	0.034 J	<0.33	0.12 J	0.036 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	0.15 J	0.27 J	0.16 J	0.24 J	0.079 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**2.5**	**1.2**	**2.1**	**3.6**	0.94	NA	NA	0.046 J	**1.1**	<0.44	<0.46	<0.54	**5.1 J [10 J]**	<0.50	0.16 J	0.087 J	0.44 J	<0.47	**3.0 J**
Dibenzo(a,h)anthracene	0.33	1.1	0.22 J	0.16 J	0.26 J	0.14 J	0.049 J	NA	NA	<0.48	0.12 J	<0.44	<0.46	<0.54	**<1.8 [1.5 J]**	<0.50	<0.45	<0.41	<0.51	<0.47	<4.6
Dibenzofuran	7	1,000	0.037 J	0.11 J	0.035 J	0.092 J	0.041 J	NA	NA	0.16 J	0.66	<0.44	<0.46	0.45 J	**5.4 J [12 J]**	<0.50	<0.45	0.23 J	0.36	1.3	5.8
Diethylphthalate	- -	- -	<0.33	0.13 JB	0.016 JB	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	0.051 JB	0.055 JB	0.039 JB	0.070 JB	0.036 JB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	4.6	2.5	3.3	5.5	1.3	NA	NA	0.092 J	2.6	<0.44	<0.46	<0.54	13 J [27 J]	<0.50	0.18 J	0.14 J	1.4	0.10 J	10
Fluorene	30	1,000	0.091 J	0.16 J	0.069 J	0.12 J	0.048 J	NA	NA	0.18 J	1.2	<0.44	<0.46	0.62	7.8 J [17 J]	<0.50	<0.45	0.16 J	0.44 J	1.4	9.5
Indeno(1,2,3-cd)pyrene	0.5	11	0.48 J	0.38 J	**0.60 J**	0.35 J	0.12 J	NA	NA	<0.48	0.45	<0.44	0.46 J	<0.54	**2.1 J [4.8 J]**	<0.50	0.071 J	0.057 J	0.23 J	<0.47	**1.2 J**
Naphthalene	12	1,000	0.028 J	0.17 J	0.043 J	0.12 J	0.059 J	NA	NA	0.52	2.5	<0.44	0.14 J	8.3	**21 J [40 JE]**	0.12 J	0.16 J	0.093 J	0.63	2.1	**31**
Phenanthrene	100	1,000	2.0	1.6	1.1	2.6	0.75	NA	NA	0.16 J	3.4	<0.44	<0.46	<0.54	**150 J [34 J]**	<0.50	0.17 J	0.67 J	1.4	2.4	19
Phenol	0.33	1,000	<0.33	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	4.1	1.9	3.1	2.9	0.82	NA	NA	0.073 J	2.1	<0.44	0.46 J	<0.54	8.8 J [19 J]	<0.50	0.17 J	0.099 J	0.78	<0.47	6.5
Total PAHs	- -	- -	25 J	14 J	19 J	30 J	7.9 J	NA	NA	1.7 J	21 J	<0.44	1.5 J	13 J	250 J [250 J]	0.12 J	1.7 J	2.2 J	8.5 J	11 J	130 J
Total SVOCs	0	- -	**25 J**	**15 J**	**19 J**	**31 J**	**8.3 J**	NA	NA	1.8 J	22 J	<0.44	1.5 J	13 J	260 J [270 J]	0.12 J	1.7 J	2.4 J	8.8 J	12 J	130 J

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SS-1	SS-3	SS-4	SS-5	SS-6	T1	T2	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)						10 - 15	5 - 10	15	15	15	15	15	15	15	15	15	15	15	20
Date Collected:			07/18/95	07/18/95	07/18/95	03/31/98	03/31/98	07/01/01	07/01/01	02/06/02	01/16/02	01/16/02	01/31/02	02/06/02	12/03/01	12/03/01	01/28/02	11/16/01	11/16/01	11/16/01	01/04/02
X = Soil Removed During IRM:																					
Inorganics																					
Aluminum	- -	- -	6,660	9,330	2,330	9,780	2,170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	9.80 BN	<8.00	<6.60	<0.980	<1.10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	4.40	**51.0**	7.50	7.10	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	79.7	64.0	32.6 B	81.1	35.6 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	<0.200	<0.240	<0.200	0.540 B	<0.260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	<0.600	<0.720	0.830 B	0.540 B	0.300 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	71,100 E	12,200 E	244,000 E	23,200 E	50,800 E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	11.2	11.9	6.40	23.5	9.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	5.30 B	4.20 B	7.10 B	8.90 B	2.60 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	19.3	15.2	17.1	34.8	27.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	<0.550	2.70	<1.00	5.01	<0.660	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	13,000 E	12,900 E	10,300 E	21,100	6,640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	23.7 E	44.7 E	51.6 E	**82.0**	**69.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	16,100 E	3,540 E	11,400 E	10,800	7,630	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	360 EN	385 EN	346 EN	368	135	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	**0.190 N**	**2.00 N**	**1.40 N**	**0.220**	**0.190**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	18.0	12.5	19.4	27.0	8.70 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	1,130 E	490 E	702 E	1,720 E	522 BE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	<0.400	0.410 BN	0.220 BN	2.40	0.940 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	<0.400	<0.480	<0.400	0.300 B	<0.260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	146 B	102 B	272	227 B	391 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	<0.800	<0.960	<0.810	<0.730	<0.800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	12.6 E	17.3 E	7.20 BE	18.9	6.70 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	72.9	60.9	55.8	**114 E**	76.7 E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																					
Aroclor-1242	- -	- -	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	<0.033	<0.033	0.33	<0.033	<0.033	<0.033	<0.033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	<0.067	<0.067	0.33	<0.067	<0.067	<0.067	<0.067	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																					
4,4'-DDD	0.0033	180	<0.0033	<0.0033	<0.0033	<0.0033	**0.0062 P**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	<0.0033	<0.0033	<0.0033	<0.0033	**0.013 P**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	<0.0033	**0.023 P**	<0.0033	**0.064 B**	**0.028 B**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	0.0011 JP	<0.0017	<0.0017	<0.0017	<0.0017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	<0.0017	<0.0017	0.012 P	0.00053 JP	<0.0017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	<0.0033	<0.0033	0.0039 J	<0.0033	<0.0033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	<0.0033	<0.0033	<0.0033	<0.0033	0.0023 JP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	<0.0033	<0.0033	<0.0033	<0.0033	0.0067 P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	<0.0033	<0.0033	<0.0033	<0.0033	0.0079 P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	0.0026 J	0.046 P	0.0020 JP	0.0013 JP	0.00051 JP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	<0.017	<0.017	<0.017	<0.017	<0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SE-B-1	SE-B-2	SE-EW-1	SE-SW-1	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8	V-9	V-10	V-11	V-12	V-13	V-14	V-14-2	V-15
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)					7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	17.5	17.5	17.5
Date Collected:			10/02/01	10/02/01	10/02/01	10/02/01	11/23/01	12/27/01	11/13/01	11/13/01	10/30/01	10/30/01	10/25/01	10/20/01	10/22/01	10/23/01	10/23/01	10/24/01	11/26/01	01/04/02	01/04/02	01/04/02
X = Soil Removed During IRM:																						
Volatile Organics																						
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	89	0.0010 J	0.0088	0.0041	0.0010 J	<0.010	<0.010	<0.0090	<0.0090	<0.010	<0.010	<0.012	<0.011	<0.014	0.0060 J	<0.010	<0.012	<0.012	**1.1**	**1.8**	**0.076**
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	780	<0.0058	0.027	<0.0042	<0.0044	<0.010	<0.010	<0.0090	<0.0090	<0.010	<0.010	<0.012	<0.011	<0.014	<0.012	<0.010	<0.012	<0.012	**9.3**	**2.5**	0.16
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	1,000	<0.0073	0.051	0.0062	0.0020 J	<0.010	<0.010	<0.0090	<0.0090	0.0020 J	<0.010	0.0030 J	<0.011	<0.014	0.0090 J	0.0030 J	<0.012	<0.012	**12**	**7.7**	0.44
Xylenes (total)	0.26	1,000	<0.0073	**0.29**	0.00090 J	0.00070 J	<0.010	<0.010	<0.0090	<0.0090	<0.010	<0.010	<0.012	<0.011	<0.014	0.011 J	<0.010	<0.012	<0.012	**50**	**33**	**2.6**
Total BTEX	- -	- -	0.0010 J	0.38	0.011 J	0.0037 J	<0.010	<0.010	<0.0090	<0.0090	0.0020 J	<0.010	0.0030 J	<0.011	<0.014	0.026 J	0.0030 J	<0.012	<0.012	72	45	3.3
Total VOCs	- -	- -	0.0010 J	0.38	0.011 J	0.0037 J	<0.010	<0.010	<0.0090	<0.0090	0.0020 J	<0.010	0.0030 J	<0.011	<0.014	0.026 J	0.0030 J	<0.012	<0.012	72	45	3.3
Semivolatile Organics																						
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	- -	NA	NA	NA	NA	<0.64	<0.67 J	<0.61	<0.62	<0.68	<0.65	<0.78	<0.76	<0.95	0.82	<0.65	<0.78	<0.81	150	66	150
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1,000	0.029 J	12 J	0.14 J	0.023 J	0.30 J	<0.67	0.080 J	<0.62	<0.68	<0.65	<0.78	0.12 J	<0.95	<0.81	<0.65	<0.78	<0.81	**28 J**	11 J	20 J
Acenaphthylene	100	1,000	0.37 J	70	1.1	0.21 J	<0.64	<0.67	<0.61	0.10 J	<0.68	<0.65	<0.78	<0.76	<0.95	0.16 J	<0.65	<0.78	<0.81	100	75	**170**
Anthracene	100	1,000	0.46 J	90	1.5	0.21 J	0.44 J	<0.67	1.3	0.17 J	0.18 J	<0.65	0.11 J	0.45 J	<0.95	0.17 J	<0.65	<0.78	<0.81	68	57	**110**
Benzo(a)anthracene	1	11	**1.8**	**150**	**8.1**	0.52	**1.1**	<0.67	0.62	0.69	0.39 J	<0.65	0.12 J	**2.3 J**	<0.95	0.11 J	0.25 J	<0.78	<0.81	**40 J**	**30**	**42 J**
Benzo(a)pyrene	0	1.1	**1.5**	**120**	**7.4**	**0.46**	**0.82**	<0.67	**0.40 J**	**0.61**	**0.29 J**	<0.65	<0.78	**2.1 J**	<0.95	<0.81	**0.40 J**	<0.78	<0.81	**31 J**	**19**	**31 J**
Benzo(b)fluoranthene	1	11	**1.8**	**150**	**10**	0.63	**1.1**	<0.67	0.28 J	0.50 J	0.27 J	<0.65	<0.78	**2.0 J**	<0.95	<0.81	0.35 J	<0.78	<0.81	**17 J**	**15**	**21 J**
Benzo(g,h,i)perylene	100	1,000	0.90	41	2.6	0.24 J	0.45 J	<0.67	0.18 J	0.22 J	0.14 J	<0.65	<0.78	0.76 J	<0.95	<0.81	0.33 J	<0.18 J	<0.81	<40	5.0 J	9.9 J
Benzo(k)fluoranthene	0.8	110	**0.86**	**66**	**4.5**	0.27	**0.89**	<0.67	0.38 J	0.69	0.25 J	<0.65	0.10 J	**1.8 J**	<0.95	<0.81	0.41 J	<0.78	<0.81	**28 J**	**21**	**34 J**
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	110	**1.7**	**120**	**7.5**	0.46	**1.2**	0.069 J	0.60 J	0.65	0.37 J	0.075 J	0.12 J	**2.1 J**	<0.95	0.11 J	0.27 J	<0.78	<0.81	**35 J**	**23**	**38 J**
Dibenzo(a,h)anthracene	0.33	1.1	0.24	**14**	**0.91**	0.067	0.11 J	<0.67	<0.61	<0.62	<0.68	<0.65	<0.78	0.15 J	<0.95	<0.81	0.078 J	<0.78	<0.81	<40	<13	<42
Dibenzofuran	7	1,000	NA	NA	NA	NA	0.086 J	<0.67	<0.61	<0.62	<0.68	<0.65	<0.78	<0.76	<0.95	0.33 J	<0.65	<0.78	<0.81	**38 J**	**33**	**71**
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	3.3	**370**	13	0.84	0.44 J	0.10 J	1.9	1.2	0.76	0.088 J	0.26 J	4.0 J	<0.95	0.21 J	0.34 J	<0.78	<0.81	100	67	**130**
Fluorene	30	1,000	0.13 J	**54**	0.30 J	0.10 J	0.21 J	<0.67	0.40 J	0.067 J	<0.68	<0.65	<0.78	0.11 J	<0.95	<0.81	<0.65	<0.78	<0.81	**83**	**57**	**110**
Indeno(1,2,3-cd)pyrene	0.5	11	**0.92**	**50**	**3.2**	0.26	**0.52 J**	<0.67	0.15 J	0.31 J	0.18 J	<0.65	<0.78	**1.1 J**	<0.95	<0.81	0.24 J	<0.78	<0.81	**11 J**	**6.4 J**	**14 J**
Naphthalene	12	1,000	0.086 J	**74**	0.27 J	0.11 J	0.16 J	<0.67	<0.61	0.096 J	<0.68	<0.65	<0.78	0.083 J	<0.94	1.4	0.070 J	<0.76	0.81	**470**	**260 E**	**600**
Phenanthrene	100	1,000	1.3	**250**	4.8	0.56	0.43 J	<0.67	2.7	0.56 J	0.33 J	<0.65	0.24 J	1.3	<0.95	0.45 J	<0.65	<0.78	<0.81	**200**	100	**210**
Phenol	0.33	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1,000	3.0	**250**	9.9	0.79	1.8	0.14 J	2.2	1.4	0.52 J	0.068 J	0.22 J	3.3 J	0.22 J	0.14 J	0.36 J	0.15 J	0.11 J	87	46	74
Total PAHs	- -	- -	18 J	1,900 J	75 J	5.8 J	10 J	0.31 J	11 J	7.3 J	3.7 J	0.23 J	1.2 J	22 J	0.22 J	3.6 J	3.1 J	0.15 J	0.92 J	1,500 J	860 J	1,800 J
Total SVOCs	0	- -	18 J	1,900 J	75 J	5.8 J	10 J	0.31 J	11 J	7.3 J	3.7 J	0.23 J	1.2 J	22 J	0.22 J	3.9 J	3.1 J	0.15 J	0.92 J	1,500 J	890 J	1,800 J

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		SE-B-1	SE-B-2	SE-EW-1	SE-SW-1	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8	V-9	V-10	V-11	V-12	V-13	V-14	V-14-2	V-15
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)					7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	17.5	17.5	17.5
Date Collected:			10/02/01	10/02/01	10/02/01	10/02/01	11/23/01	12/27/01	11/13/01	11/13/01	10/30/01	10/30/01	10/25/01	10/20/01	10/22/01	10/23/01	10/23/01	10/24/01	11/26/01	01/04/02	01/04/02	01/04/02
X = Soil Removed During IRM:																						
Inorganics																						
Aluminum	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	6,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs																						
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides																						
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		V-16	V-17	MW-1D	MW-2D	MW-3D		MW-4D		MW-5D			MW-6S	MW-7D		
Sample Depth(Feet):	Unrestricted	Industrial	17.5	17.5	18 - 20	22 - 24	12 - 14	18 - 20	21 - 23	27 - 29	14 - 16	18 - 20	26 - 28	10 - 12	8 - 10	20 - 22	26 - 28
Date Collected:	(Exceedences	(Exceedences	01/04/02	01/04/02	02/25/98	02/24/98	02/20/98	02/20/98	02/23/98	02/23/98	02/18/98	02/18/98	02/18/98	07/20/95	07/18/95	07/18/95	07/18/95
X = Soil Removed During IRM:	in bold)	shaded)															
Volatile Organics																	
2-Butanone	0.12	1,000	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	<0.010 [<0.010]	NA	<1.2	NA
Acetone	0.05	1,000	NA	NA	NA	NA	NA	**0.14 B**	0.016 J	NA	NA	0.032 B	NA	0.012 JB [0.028 B]	NA	<1.2	NA
Benzene	0.06	89	0.0040 J	<0.0050	<0.010	<0.010 [<0.010]	<0.010	0.015 J	**0.18**	0.0090 J	<0.010	0.020	<0.010	<0.010 [<0.010]	<1.2	<1.2	<1.2
Carbon Disulfide	- -	- -	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	0.0040 J	NA	<0.010 [<0.010]	NA	<1.2	NA
Chlorobenzene	1.1	1,000	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	<0.010 [<0.010]	NA	<1.2	NA
Chloroform	0.37	700	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	0.0030 J [0.0020 J]	NA	<1.2	NA
Ethylbenzene	1	780	0.0040 J	<0.0050	<0.010	<0.010 [<0.010]	0.058	0.0090 J	0.010 J	<0.010	0.011 J	0.069	<0.010	<0.010 [<0.010]	<1.2	**1.4 J**	<1.2
Methylene Chloride	0.05	1,000	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	<0.010 [0.0020 JB]	NA	<1.2	NA
Styrene	- -	- -	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	<0.010 [<0.010]	NA	<1.2	NA
Tetrachloroethene	1.3	300	NA	NA	NA	NA	NA	<0.010	<0.010	NA	NA	<0.010	NA	<0.010 [<0.010]	NA	<1.2	NA
Toluene	0.7	1,000	0.012	<0.0050	<0.010	<0.010 [<0.010]	0.012 J	0.026	0.023	<0.010	0.0020 J	0.051	<0.010	0.00060 J [0.0040 J]	<1.2	**1.1 J**	0.52 J
Xylenes (total)	0.26	1,000	0.058	<0.0050	<0.010	<0.010 [<0.010]	**0.64**	0.13	0.092	<0.010	0.012 J	**0.48**	<0.010	<0.010 [<0.010]	**4.4**	**32**	**2.6**
Total BTEX	- -	- -	0.078 J	<0.0050	<0.010	<0.010 [<0.010]	0.71 J	0.18 J	0.31 J	0.0090 J	0.025 J	0.62	<0.010	0.00060 J [0.0040 J]	4.4	35 J	3.1 J
Total VOCs	- -	- -	0.078 J	<0.0050	<0.010	<0.010 [<0.010]	0.71 J	0.32 J	0.32 J	0.0090 J	0.025 J	0.66 J	<0.010	0.016 J [0.036 J]	4.4	35 J	3.1 J
Semivolatile Organics																	
2,4-Dimethylphenol	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
2-Chloronaphthalene	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
2-Methylnaphthalene	- -	- -	5.7	0.19 J	0.058 J	<0.33 [<0.33]	0.11 J	<0.33	0.047 J	<0.33	0.11 J	<0.33	<0.33	0.033 J [0.026 J]	<0.33	18 J	<0.33
2-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
3,3'-Dichlorobenzidine	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
4-Methylphenol	0.33	1,000	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
4-Nitroaniline	- -	- -	NA	NA	NA	NA	NA	<0.80	<0.80	NA	NA	<0.80	NA	<0.80 [<0.80]	NA	<0.80	NA
Acenaphthene	20	1,000	1.2	0.096 J	0.22 J	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.019 J [0.029 J]	<0.33	1.0 J	<0.33
Acenaphthylene	100	1,000	7.5	0.54 J	0.046 J	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.046 J	<0.33	<0.33	0.061 J [0.089 J]	<0.33	8.9 J	<0.33
Anthracene	100	1,000	7.1	0.75 J	1.8	<0.33 [0.015 J]	0.017 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.10 J [0.31 J]	<0.33	4.0 J	<0.33
Benzo(a)anthracene	1	11	**3.5**	**1.3 J**	**2.0**	<0.33 [0.020 J]	0.067 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.41 J [1.0]	<0.33	**1.8 J**	<0.33
Benzo(a)pyrene	0	1.1	**2.7**	**1.1 J**	**1.4**	<0.33 [<0.33]	**0.064 J**	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	**0.42 J [0.73]**	<0.33	**1.3 J**	<0.33
Benzo(b)fluoranthene	1	11	**2.0**	0.10 J	1.0 J	<0.33 [<0.33]	0.052 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.35 J [0.63]	<0.33	1.0 J	<0.33
Benzo(g,h,i)perylene	100	1,000	0.87 J	0.43 J	0.70 J	<0.33 [<0.33]	0.029 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.087 J [0.079 J]	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	0.8	110	**2.6**	**0.98 J**	**1.2**	<0.33 [<0.33]	0.071 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.34 J [0.64]	<0.33	**1.2 J**	<0.33
bis(2-Ethylhexyl)phthalate	- -	- -	NA	NA	NA	NA	NA	0.21 JB	0.074 J	NA	NA	0.076 JB	NA	0.081 JB [0.12 JB]	NA	<0.33	NA
Butylbenzylphthalate	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
Carbazole	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	0.025 J [0.033 J]	NA	4.5 J	NA
Chrysene	1	110	**3.0**	**1.2 J**	**1.9**	<0.33 [0.021 J]	0.074 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.43 J [0.97]	<0.33	**1.6 J**	<0.33
Dibenzo(a,h)anthracene	0.33	1.1	0.27 J	0.11 J	U	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.098 J [0.13 J]	<0.33	<0.33	<0.33
Dibenzofuran	7	1,000	4.0	0.19 J	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	0.013 J [0.019 J]	NA	5.8 J	NA
Diethylphthalate	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	0.014 J [0.010 J]	NA	8.0 JB	NA
Di-n-Butylphthalate	- -	- -	NA	NA	NA	NA	NA	<0.33	<0.33	NA	NA	<0.33	NA	0.043 JB [0.037 JB]	NA	<0.33	NA
Fluoranthene	100	1,000	8.7	2.7 J	3.5	<0.33 [0.042 J]	0.11 J	0.020 J	0.020 J	<0.33	0.030 J	<0.33	<0.33	0.71 [1.8]	<0.33	5.9 J	<0.33
Fluorene	30	1,000	6.8	0.46 J	0.37 J	<0.33 [<0.33]	<0.33	<0.33	<0.33	<0.33	0.023 J	<0.33	<0.33	0.022 J [0.049 J]	<0.33	5.8 J	<0.33
Indeno(1,2,3-cd)pyrene	0.5	11	**1.1 J**	**0.53 J**	**0.84 J**	<0.33 [<0.33]	0.036 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.25 J [0.30 J]	<0.33	**0.78 J**	<0.33
Naphthalene	12	1,000	**15**	0.65 J	0.10 J	<0.33 [<0.33]	2.6	0.085 J	1.7	<0.33	0.22 JB	0.58 B	0.019 JB	0.087 J [0.069 J]	<0.33	**120**	<0.33
Phenanthrene	100	1,000	13	1.4 J	3.4	<0.33 [0.041 J]	0.067 J	<0.33	0.020 J	<0.33	0.027 J	<0.33	<0.33	0.27 J [0.85]	<0.33	12 J	<0.33
Phenol	0.33	1,000	NA	NA	NA	NA	NA	0.13 J	<0.33	NA	NA	<0.33	NA	<0.33 [<0.33]	NA	<0.33	NA
Pyrene	100	1,000	5.5	2.1 J	3.4	<0.33 [0.033 J]	0.094 J	0.020 J	0.019 J	<0.33	0.027 J	<0.33	<0.33	0.67 [1.5]	<0.33	3.8 J	<0.33
Total PAHs	- -	- -	87 J	15 J	22 J	<0.33 [0.17 J]	3.4 J	0.13 J	1.8 J	<0.33	0.48 J	0.58	0.019 J	4.4 J [9.2 J]	<0.33	190 J	<0.33
Total SVOCs	0	- -	91 J	15 J	**22 J**	**<0.33 [0.17 J]**	**3.4 J**	**0.47 J**	**1.9 J**	<0.33	**0.48 J**	**0.66 J**	**0.019 J**	**4.5 J [9.4 J]**	<0.33	**210 J**	<0.33

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		V-16	V-17	MW-1D	MW-2D	MW-3D		MW-4D		MW-5D			MW-6S	MW-7D		
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	17.5	17.5	18 - 20	22 - 24	12 - 14	18 - 20	21 - 23	27 - 29	14 - 16	18 - 20	26 - 28	10 - 12	8 - 10	20 - 22	26 - 28
Date Collected:			01/04/02	01/04/02	02/25/98	02/24/98	02/20/98	02/20/98	02/23/98	02/23/98	02/18/98	02/18/98	02/18/98	07/20/95	07/18/95	07/18/95	07/18/95
X = Soil Removed During IRM:																	
Inorganics																	
Aluminum	- -	- -	NA	NA	NA	NA	NA	1,290	3,200	NA	NA	1,550	NA	4,310 [3,740]	NA	2,180	NA
Antimony	- -	- -	NA	NA	NA	NA	NA	1.10 B	1.50 B	NA	NA	1.60 B	NA	<9.20 [<8.40]	NA	<10.0	NA
Arsenic	13	16	NA	NA	NA	NA	NA	<0.640	<0.740	NA	NA	0.810 B	NA	5.60 [5.60]	NA	1.50 B	NA
Barium	350	10,000	NA	NA	NA	NA	NA	76.7	67.1 B	NA	NA	67.2	NA	61.8 [49.6 B]	NA	75.3	NA
Beryllium	7.2	2,700	NA	NA	NA	NA	NA	<0.320	<0.370	NA	NA	<0.300	NA	<0.280 [<0.260]	NA	<0.300	NA
Cadmium	2.5	60	NA	NA	NA	NA	NA	<0.320	<0.370	NA	NA	<0.300	NA	<0.830 [<0.770]	NA	<0.910	NA
Calcium	- -	- -	NA	NA	NA	NA	NA	177,000 E	140,000 E	NA	NA	152,000 E	NA	142,000 E [140,000 E]	NA	205,000 E	NA
Chromium	- -	- -	NA	NA	NA	NA	NA	2.40 B	5.70	NA	NA	3.10	NA	7.40 [6.40]	NA	3.80	NA
Cobalt	- -	- -	NA	NA	NA	NA	NA	1.50 B	3.50 B	NA	NA	1.70 B	NA	2.60 B [2.10 B]	NA	2.00 B	NA
Copper	50	10,000	NA	NA	NA	NA	NA	5.00 B	13.1	NA	NA	4.20 B	NA	18.6 [23.8]	NA	2.60 B	NA
Cyanide	27	10,000	NA	NA	<0.780	<0.880 [<0.860]	4.08	<0.800	<0.930	<0.780	<0.680	<0.740	<0.790	<1.40 [<1.40]	22.1	<1.50	1.40
Iron	- -	- -	NA	NA	NA	NA	NA	4,730 E	9,330 E	NA	NA	4,950 E	NA	8,240 E [7,540 E]	NA	6,180 E	NA
Lead	63	3,900	NA	NA	NA	NA	NA	3.10	6.60	NA	NA	3.90	NA	**32.2 E [90.0 N]**	NA	3.70 E	NA
Magnesium	- -	- -	NA	NA	NA	NA	NA	4,780 E	7,460 E	NA	NA	5,350 E	NA	7,520 E [7,540 E]	NA	5,930 E	NA
Manganese	1,600	10,000	NA	NA	NA	NA	NA	207	247	NA	NA	217	NA	403 EN [335 EN]	NA	328 EN	NA
Mercury	0.18	5.7	NA	NA	NA	NA	NA	<0.150	<0.180	NA	NA	<0.150	NA	**0.250 N [0.240 N]**	NA	<0.140	NA
Nickel	30	10,000	NA	NA	NA	NA	NA	5.00 B	11.2 B	NA	NA	5.70 B	NA	8.70 B [9.20 B]	NA	6.00 B	NA
Potassium	- -	- -	NA	NA	NA	NA	NA	446 BE	684 BE	NA	NA	430 BE	NA	624 E [435 N]	NA	345 E	NA
Selenium	3.9	6,800	NA	NA	NA	NA	NA	0.740 BN	1.30 BN	NA	NA	<0.590	NA	<0.550 [0.410 BNW]	NA	0.480 BN	NA
Silver	2	6,800	NA	NA	NA	NA	NA	<0.320	<0.370	NA	NA	<0.300	NA	<0.550 [<0.510]	NA	<0.610	NA
Sodium	- -	- -	NA	NA	NA	NA	NA	2,170 E	10,100 E	NA	NA	1,710 E	NA	908 [932]	NA	683	NA
Thallium	- -	- -	NA	NA	NA	NA	NA	<0.640	<0.740	NA	NA	<0.590	NA	<1.10 [<1.00]	NA	<1.20	NA
Vanadium	- -	- -	NA	NA	NA	NA	NA	2.10 B	6.00 B	NA	NA	3.60 B	NA	8.90 BE [9.00 BE]	NA	5.70 BE	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	30.7	35.1	NA	NA	25.6	NA	44.4 [42.4]	NA	16.0	NA
PCBs																	
Aroclor-1242	- -	- -	NA	NA	NA	NA	NA	<0.033	<0.033	NA	NA	<0.033	NA	<0.033	NA	<0.033	NA
Aroclor-1248	- -	- -	NA	NA	NA	NA	NA	<0.033	<0.033	NA	NA	<0.033	NA	<0.033	NA	<0.033	NA
Aroclor-1254	- -	- -	NA	NA	NA	NA	NA	<0.033	<0.033	NA	NA	<0.033	NA	<0.033	NA	<0.033	NA
Aroclor-1260	- -	- -	NA	NA	NA	NA	NA	<0.033	<0.033	NA	NA	<0.033	NA	<0.033	NA	<0.033	NA
Total PCBs	- -	- -	NA	NA	NA	NA	NA	<0.067	<0.067	NA	NA	<0.067	NA	<0.067	NA	<0.067	NA
Pesticides																	
4,4'-DDD	0.0033	180	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
4,4'-DDE	0.0033	120	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
4,4'-DDT	0.0033	94	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
Aldrin	0.005	1.4	NA	NA	NA	NA	NA	<0.0017	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA
Alpha-Chlordane	0.094	47	NA	NA	NA	NA	NA	<0.0017	<0.0017	NA	NA	<0.0017	NA	0.011	NA	<0.0017	NA
Delta-BHC	0.04	1,000	NA	NA	NA	NA	NA	<0.0017	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA
Dieldrin	0.005	2.8	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
Endosulfan II	2.4	920	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	0.0050 JP	NA
Endosulfan Sulfate	2.4	920	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
Endrin	0.014	410	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
Endrin Ketone	- -	- -	NA	NA	NA	NA	NA	<0.0033	<0.0033	NA	NA	<0.0033	NA	<0.0033	NA	<0.0033	NA
Gamma-Chlordane	- -	- -	NA	NA	NA	NA	NA	<0.0017	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA
Heptachlor	0.042	29	NA	NA	NA	NA	NA	<0.0017	<0.0017	NA	NA	<0.0017	NA	<0.0017	NA	<0.0017	NA
Methoxychlor	- -	- -	NA	NA	NA	NA	NA	0.0062 JP	<0.017	NA	NA	<0.017	NA	<0.017	NA	<0.017	NA

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		MW-8D		MW-18D	MW-19S	MW-19D	MW-20D	MW-21S	MW-21D	MW-22S	MW-22D
Sample Depth(Feet): / Date Collected: / X = Soil Removed During IRM:	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	20 - 22 02/17/98	22 - 24 02/17/98	10 - 14 12/20/02	5 - 6 01/07/03	16 - 17 01/07/03	26 - 30 12/27/02	0 - 8 12/30/02	22 - 26 12/30/02	6 - 7 01/06/03	22 - 23 01/06/03
Volatile Organics												
2-Butanone	0.12	1,000	<1.2 [<1.2]	NA	0.015 J	<0.018 J	<0.016	<0.015 [0.027]	<0.0080	<0.0070	<0.022 J	0.036 J
Acetone	0.05	1,000	<1.2 [<1.2]	NA	**0.061**	0.046 J	0.013 J	**0.047 [0.057]**	0.034	<0.0070	0.022 J	**0.13 J**
Benzene	0.06	89	<1.2 [<1.2]	<1.2 [<1.2]	0.0040 J	<0.0090	**1.3 J**	**0.17 J [0.28 J]**	<0.0080	<0.0070	<0.011 J	0.0010 J
Carbon Disulfide	- -	- -	<1.2 [<1.2]	NA	0.0030 J	0.0060 J	0.014	0.0060 J [0.0060 J]	0.0050 J	<0.0070	<0.011 J	0.014
Chlorobenzene	1.1	1,000	<1.2 [<1.2]	NA	0.0030 J	<0.0090	0.013	0.012 [0.014]	<0.0080	0.0010	<0.011 J	<0.0080
Chloroform	0.37	700	<1.2 [<1.2]	NA	<0.0080	<0.0090	<0.0080	<0.0080 [<0.0090]	<0.0080	<0.0070	<0.011 J	<0.0080
Ethylbenzene	1	780	**0.84 J [1.1 J]**	0.76 J [0.69 J]	0.0040 J	0.0080 J	0.10	0.0010 J [0.0030 J]	0.0040	<0.0070	<0.011 J	<0.0080
Methylene Chloride	0.05	1,000	<1.2 [<1.2]	NA	0.010	<0.0090	<0.0080	0.0050 J [0.0050 J]	<0.0080	0.0050	<0.011 J	<0.0080
Styrene	- -	- -	2.9 [4.0]	NA	0.0010 J	0.0050 J	<0.0080	<0.0080 [<0.0090]	<0.0080	<0.0070	<0.011 J	<0.0080
Tetrachloroethene	1.3	300	<1.2 [<1.2]	NA	<0.0080	<0.0090	<0.0080	<0.0080 [<0.0090]	<0.0080	<0.0070	<0.011 J	<0.0080
Toluene	0.7	1,000	**1.7 J [1.5 J]**	**4.3 [4.5]**	0.0090	0.0090 J	0.19	0.0030 J [0.0030 J]	0.012	0.0090	0.0020 J	<0.0080
Xylenes (total)	0.26	1,000	**15 [21]**	**13 [12]**	0.026	0.032	0.26	0.0030 J [0.0050 J]	0.035	0.0050 J	0.0040 J	<0.0080
Total BTEX	- -	- -	18 J [24 J]	18 J [17 J]	0.043 J	0.049 J	1.9 J	0.18 J [0.29 J]	0.051	0.014 J	0.0060 J	0.0010 J
Total VOCs	- -	- -	20 J [28 J]	18 J [17 J]	0.14 J	0.11 J	1.9 J	0.25 J [0.40 J]	0.090 J	0.020 J	0.028 J	0.18 J
Semivolatile Organics												
2,4-Dimethylphenol	- -	- -	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	<0.96	<0.59	<0.71 J	<0.53
2-Chloronaphthalene	- -	- -	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	<0.96	<0.59	<0.71 J	<0.53
2-Methylnaphthalene	- -	- -	24 J [180 J]	1.0 J [1.0 J]	0.083 J	0.12 J	<0.51	<0.49 [<0.56]	0.46 J	<0.59	<0.71 J	<0.53
2-Methylphenol	0.33	1,000	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	<0.96	<0.59	<0.71 J	<0.53
3,3'-Dichlorobenzidine	- -	- -	<0.33 [<0.33]	NA	<1.1 J	1.2	<1.0	<0.99 [<1.1]	<1.9	<1.2	<1.4 J	<1.1
4-Methylphenol	0.33	1,000	<0.33 [<0.33]	NA	0.038 J	<0.59	<0.51	**0.65 J [0.80 J]**	<0.96	<0.59	<0.71 J	<0.53
4-Nitroaniline	- -	- -	<0.80 [<0.80]	NA	<1.1 J	1.2	1.0	<0.99 [<1.1]	<1.9	<1.2	<1.4 J	<1.1
Acenaphthene	20	1,000	<0.33 [<0.33]	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	0.24 J	<0.59	<0.71 J	<0.53
Acenaphthylene	100	1,000	15 J [90 J]	0.56 J [0.48 J]	<0.54 J	0.023 J	<0.51	<0.49 [<0.56]	1.0	<0.59	<0.71 J	<0.53
Anthracene	100	1,000	5.0 J [27 J]	0.22 J [0.22 J]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	1.2	<0.59	<0.71 J	<0.53
Benzo(a)anthracene	1	11	**3.6 J [25 J]**	0.21 J [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**2.4**	<0.59	<0.71 J	<0.53
Benzo(a)pyrene	0	1.1	**2.9 J [<0.33]**	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	**0.078 J [0.11 J]**	**2.5**	<0.59	<0.71 J	<0.53
Benzo(b)fluoranthene	1	11	**2.6 J [<0.33]**	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**2.1**	<0.59	<0.71 J	<0.53
Benzo(g,h,i)perylene	100	1,000	<0.33 [<0.33]	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	1.8	<0.59	<0.71 J	<0.53
Benzo(k)fluoranthene	0.8	110	**2.8 J [<0.33]**	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**2.1**	<0.59	<0.71 J	<0.53
bis(2-Ethylhexyl)phthalate	- -	- -	<0.33 [<0.33]	NA	<0.54 J	0.14 J	<0.51	<0.49 [<0.56]	0.92 J	<0.59	0.10 J	<0.53
Butylbenzylphthalate	- -	- -	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	<0.96	<0.59	<0.71 J	<0.53
Carbazole	- -	- -	2.8 J [<0.33]	NA	0.038 J	0.051 J	<0.51	<0.49 [<0.56]	0.34 J	<0.59	<0.71 J	<0.53
Chrysene	1	110	**3.0 J [20 J]**	0.18 J [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**2.9**	<0.59	<0.71 J	<0.53
Dibenzo(a,h)anthracene	0.33	1.1	<0.33 [<0.33]	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**0.72 J**	<0.59	<0.71 J	<0.53
Dibenzofuran	7	1,000	**8.4 J [45 J]**	NA	0.043 J	0.089 J	<0.51	<0.49 [<0.56]	0.19 J	<0.59	<0.71 J	<0.53
Diethylphthalate	- -	- -	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	<0.96	<0.59	<0.71 J	<0.53
Di-n-Butylphthalate	- -	- -	<0.33 [<0.33]	NA	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	0.052 J	<0.59	<0.71 J	<0.53
Fluoranthene	100	1,000	11 J [67 J]	0.57 J [0.52 J]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	4.8	<0.59	<0.71 J	<0.53
Fluorene	30	1,000	**8.9 J [62 J]**	0.40 J [0.35 J]	0.038 J	0.10 J	<0.51	<0.49 [<0.56]	0.32 J	<0.59	<0.71 J	<0.53
Indeno(1,2,3-cd)pyrene	0.5	11	<0.33 [<0.33]	<0.33 [<0.33]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	**1.6**	<0.59	<0.71 J	<0.53
Naphthalene	12	1,000	**260 B [1,600 B]**	**14 B [27 B]**	0.64 J	0.46 J	<0.51	<0.49 [<0.56]	0.58 J	0.13 J	<0.71 J	<0.53
Phenanthrene	100	1,000	20 J [100 J]	0.88 J [0.85 J]	<0.54 J	0.043 J	<0.51	<0.49 [<0.56]	3.1	<0.59	<0.71 J	<0.53
Phenol	0.33	1,000	<0.33 [<0.33]	NA	**0.36 J**	<0.59	<0.51	<0.49 [<0.56]	<0.96	0.096 J	<0.71 J	<0.53
Pyrene	100	1,000	7.2 J [43 J]	0.44 J [0.39 J]	<0.54 J	<0.59	<0.51	<0.49 [<0.56]	5.4	<0.59	<0.71 J	<0.53
Total PAHs	- -	- -	370 J [2,200 J]	19 J [31 J]	0.76 J	0.75 J	<0.51	0.078 J [0.11 J]	33 J	0.13 J	<0.71	<0.53
Total SVOCs	0	- -	**380 J [2,300 J]**	**19 J [31 J]**	**1.2 J**	**3.4 J**	**1.0**	**0.73 J [0.91 J]**	**35 J**	**0.23 J**	**0.10 J**	<2.6

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	6 NYCRR PART 375 SCOs		MW-8D		MW-18D	MW-19S	MW-19D	MW-20D	MW-21S	MW-21D	MW-22S	MW-22D
Sample Depth(Feet):	Unrestricted (Exceedences in bold)	Industrial (Exceedences shaded)	20 - 22	22 - 24	10 - 14	5 - 6	16 - 17	26 - 30	0 - 8	22 - 26	6 - 7	22 - 23
Date Collected:			02/17/98	02/17/98	12/20/02	01/07/03	01/07/03	12/27/02	12/30/02	12/30/02	01/06/03	01/06/03
X = Soil Removed During IRM:												
Inorganics												
Aluminum	- -	- -	2,980 [1,350]	NA	8.83	3.10 J	3.74	2.37 [2.34]	9.65	2.49	2.69 J	3.27
Antimony	- -	- -	1.80 B [1.40 B]	NA	<0.0171 J	0.0198	0.0119	<0.0151 J [<0.0153 J]	<0.0142 J	<0.0153 J	0.0221 J	0.0169
Arsenic	13	16	1.40 B [1.50 B]	NA	0.00380 B	0.0135	0.00120 B	<0.0103 [<0.0105]	0.00910 B	<0.0105	0.0151 J	0.0116
Barium	350	10,000	102 [80.3]	NA	0.0529	0.0745	0.0892	0.0801 [0.0816]	0.168	0.0720	0.00770 J	0.0860
Beryllium	7.2	2,700	<0.420 [<0.300]	NA	<0.00290	0.00340	0.00200	<0.00260 [<0.00260]	<0.00240	<0.00260	0.00380 J	0.00290
Cadmium	2.5	60	<0.420 [<0.300]	NA	<0.00440 J	0.00510	0.00310	<0.00390 J [<0.00390 J]	0.00710 J	<0.00390 J	0.00570 J	0.00430
Calcium	- -	- -	253,000 E [192,000 E]	NA	<34.4	179	178	178 [177]	76.2	171	296 J	184
Chromium	- -	- -	5.10 [3.50]	NA	0.0148	0.00500 B	0.00580	0.00320 B [0.00330 B]	0.0622	0.00350 B	0.00260 JB	0.00510
Cobalt	- -	- -	2.90 B [1.60 B]	NA	0.0103	0.00210 B	0.00340	0.00200 B [0.00200 B]	0.00900	0.00230 B	0.00120 JB	0.00300
Copper	50	10,000	7.40 B [4.70 B]	NA	0.0209	0.00680 B	0.00690	0.00420 B [0.00490 B]	0.0889	0.00540 B	0.0174 J	0.00620 B
Cyanide	27	10,000	<0.790 [<0.760]	<0.790 [<0.760]	<0.000801	0.000157 J	<0.00156 J	<0.00188 [<0.00208]	<0.000718	<0.000880	<1.04 J	<0.794 J
Iron	- -	- -	8,880 E [4,960 E]	NA	19.5 J	5.60 J	8.91	4.90 J [5.20 J]	20.2 J	5.58 J	1.70 J	7.95
Lead	63	3,900	5.90 [4.40]	NA	0.00910 B	0.00330 B	0.00340 B	0.00190 B [0.00220 B]	0.163	0.00280 B	0.00610 JB	0.00330 B
Magnesium	- -	- -	8,180 E [5,800 E]	NA	<4.10	5.02 J	7.10	<6.11 [<5.30]	13.2	<5.16	0.00339 J	0.00668
Manganese	1,600	10,000	420 [330]	NA	0.160	0.220	0.234	0.167 [0.170]	0.355	0.218	0.339 J	0.232
Mercury	0.18	5.7	<0.200 [<0.150]	NA	<0.00290	<0.00340	<0.00250	<0.00210 [<0.00250]	0.000860 B	0.0000980 B	<0.00300 J	<0.00260
Nickel	30	10,000	9.70 B [5.40 B]	NA	0.0221	0.00660 B	0.00880	0.00520 B [0.00550 B]	0.0373	0.00530 B	0.00310 JB	0.00750
Potassium	- -	- -	909 BE [416 BE]	NA	<1.97	1.03 J	1.15	<1.01 [<0.921]	<2.65	<0.893	0.101 JB	1.11
Selenium	3.9	6,800	0.940 BN [<0.600]	NA	<0.0234	0.0270	0.0163	<0.0206 [<0.0210]	<0.0194	<0.0210	0.0302 J	0.0232
Silver	2	6,800	<0.420 [<0.300]	NA	<0.00440	0.00510	0.00310	<0.00390 [<0.00390]	0.00370	<0.00390	0.00570 J	0.00430
Sodium	- -	- -	1,560 BE [1,170 BE]	NA	<0.664	1.86	6.38	<17.8 [<19.1]	<0.566	<1.75	4.19 J	21.4
Thallium	- -	- -	<0.400 [<0.600]	NA	<0.0321	0.0372	0.0225	<0.0283 [<0.0288]	<0.0266	<0.0288	0.0416 J	0.0318
Vanadium	- -	- -	4.60 B [2.80 B]	NA	0.0145	0.00430 B	0.00560	0.00340 B [0.00320 B]	0.0205	0.00380 B	0.00460 JB	0.00490 B
Zinc	109	10,000	37.4 [21.9]	NA	0.0583	0.0184 B	0.0216	0.0135 B [0.0150 B]	0.223	0.0167 B	0.0378 J	0.0197 B
PCBs												
Aroclor-1242	- -	- -	<0.033 [<0.033]	NA	<0.028	<0.031	<0.027	<0.025 [<0.029]	0.039	<0.030	<0.031 J	<0.027
Aroclor-1248	- -	- -	<0.033 [<0.033]	NA	<0.028	<0.031	<0.027	<0.025 [<0.029]	<0.025	<0.030	<0.031 J	<0.027
Aroclor-1254	- -	- -	<0.033 [<0.033]	NA	<0.028	<0.031	<0.027	<0.025 [<0.029]	0.17	<0.030	<0.031 J	<0.027
Aroclor-1260	- -	- -	<0.033 [<0.033]	NA	<0.028	<0.031	<0.027	<0.025 [<0.029]	0.20	<0.030	<0.031 J	<0.027
Total PCBs	- -	- -	<0.067 [<0.067]	NA	<0.054	<0.059	<0.053	<0.049 [<0.056]	0.41	<0.058	<0.071	<0.053
Pesticides												
4,4'-DDD	0.0033	180	<0.0033 [<0.0033]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	**0.023 J**	<0.0058 J	<0.0071 J	<0.0053
4,4'-DDE	0.0033	120	<0.0033 [<0.0033]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	**0.019 J**	<0.0058 J	<0.0071 J	<0.0053
4,4'-DDT	0.0033	94	<0.0033 [0.00032 JPB]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	**0.051 J**	<0.0058 J	<0.0071 J	<0.0053
Aldrin	0.005	1.4	<0.0017 [<0.0017]	NA	<0.0033 J	<0.0036 J	<0.0032	<0.0030 J [<0.0034 J]	<0.0029 J	<0.0035 J	<0.0043 J	<0.0032
Alpha-Chlordane	0.094	47	<0.0017 [<0.0017]	NA	<0.0028 J	<0.0031 J	<0.0027	<0.0025 J [<0.0029 J]	0.0048 J	<0.0030 J	<0.0036 J	<0.0027
Delta-BHC	0.04	1,000	0.00053 JP [<0.0017]	NA	0.00080 J	<0.0031 J	<0.0027	<0.0025 J [<0.0029 J]	<0.0025 J	<0.0030 J	<0.0036 J	<0.0027
Dieldrin	0.005	2.8	<0.0033 [<0.0033]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	**0.012 J**	<0.0058 J	<0.0071 J	<0.0053
Endosulfan II	2.4	920	0.00098 JP [0.0018 JP]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	<0.0048 J	<0.0058 J	<0.0071 J	<0.0053
Endosulfan Sulfate	2.4	920	<0.0033 [<0.0033]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	<0.0048 J	<0.0058 J	<0.0071 J	<0.0053
Endrin	0.014	410	<0.0033 [<0.0033]	NA	<0.0081 J	<0.0090 J	<0.0080	<0.0074 J [<0.0085 J]	<0.0073 J	<0.0089 J	<0.011 J	<0.0080
Endrin Ketone	- -	- -	<0.0033 [<0.0033]	NA	<0.0054 J	<0.0059 J	<0.0053	<0.0049 J [<0.0056 J]	0.019 J	<0.0058 J	<0.0071 J	<0.0053
Gamma-Chlordane	- -	- -	0.00049 JPB [0.0020 JP]	NA	<0.0028 J	<0.0031 J	<0.0027	<0.0025 J [<0.0029 J]	0.0067 J	<0.0030 J	<0.0036 J	<0.0027
Heptachlor	0.042	29	<0.0017 [0.00094 JP]	NA	<0.0028 J	<0.0031 J	<0.00056 J	<0.0025 J [<0.0029 J]	<0.0025 J	<0.0030 J	<0.0036 J	<0.0027
Methoxychlor	- -	- -	<0.017 [<0.017]	NA	<0.028 J	<0.031 J	<0.027	<0.025 J [<0.029 J]	<0.025 J	<0.030 J	<0.036 J	<0.027

TABLE 7
SOIL ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, AND PESTICIDES (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. VOCs = Target Compound List (TCL) Volatile Organic Compounds.
3. BTEX = Benzene, toluene, ethylbenzene and xylenes.
4. SVOCs = TCL Semi-Volatile Organic Compounds.
5. PAHs = Polynuclear aromatic hydrocarbons.
6. Inorganics = Resource Conservation Recovery Act (RCRA) Metals and Cyanide.
7. PCBs = Polychlorinated Biphenyls.
8. Samples were analyzed by TestAmerica Laboratories, Inc. (TestAmerica) located in Shelton, Connecticut for:
   - VOCs/BTEX using United States Environmental Protection Agency (USEPA) SW-846 Method 8260.
   - SVOCs/PAHs using USEPA SW-846 Method 8270.
   - Inorganics using USEPA SW-846 Methods 6010, 7471 and 335.4.
   - PCBs using USEPA SW-846 Method 8082.
9. Only those constituents detected in one or more samples are summarized.
10. All concentrations reported in dry weight parts per million (ppm), which is equivalent to milligrams per kilogram (mg/kg).
11. Field duplicate sample results are presented in brackets.
12. Data qualifiers are defined as follows:
    - < - Constituent not detected at a concentration above the reported detection limit.
    - B (Inorganic) - Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
    - B (Organic) - Compound was found in blank.
    - E (Inorganic) - Serial dilution results not within 10%. Applicable only if analyte concentration is at least 50X the IDL in original sample.
    - E (Organic) - Indicates the linear range of exceedence of instrument.
    - J - Indicates that the associated numerical value is an estimated concentration.
    - N - The spike recovery exceeded the upper or lower control limits.
    - R - Data was rejected due to a deficiency in the data generation process.
13. 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs) are from Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375-6.8(a) and (b), effective December 14, 2006.
14. Bold font indicates that the result exceeds the 6 NYCRR Part 375 Unrestricted Use SCO.
15. Shading indicates that the result exceeds the 6 NYCRR Part 375 Industrial Use SCO.
16. - - = No 6 NYCRR Part 375 SCO listed.
17. NA = Not Analyzed.
18. Results have been validated in accordance with USEPA National Functional Guidelines of October 1999.

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-1S				MW-1D			
Date Collected:		03/31/98	05/20/98	10/24/00	04/21/03	03/31/98	05/20/98	10/25/00	04/21/03
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0	<10	<10	<10	<25
1,1,2,2-Tetrachloroethane	5	<10	<10	<10	<5.0	<10	<10	<10	<25
1,1,2-Trichloroethane	1	<10	<10	<10	<5.0	<10	<10	<10	<25
1,1-Dichloroethane	5	<10	<10	<10	<5.0	<10	<10	<10	<25
2-Butanone	- -	<10	<10	3.0 J	<10	23	41	39	140
2-Hexanone	50	<10	<10	<10	<10	<10	<10	<10	<50
4-Methyl-2-pentanone	- -	<10	<10	<10	<10	4.0 JB	<10	4.0 J	19 J
Acetone	50	12	<10	7.0 J	<10	250	270 B	160	760
Benzene	1	<10	<10	<10	<5.0	3.0 J	2.0 J	3.0 J	8.0 J
Bromodichloromethane	50	<10	<10	<10	<5.0	<10	<10	<10	<25
Bromoform	50	<10	<10	<10	<5.0	<10	<10	<10	<25
Bromomethane	5	<10	<10	<10	<5.0	<10	<10	<10	<25
Carbon Disulfide	- -	<10	<10	<10	<5.0	<10	<10	2.0 J	<25
Chlorobenzene	5	<10	<10	<10	<5.0	<10	<10	<10	<25
Chloroform	7	<10	<10	<10	<5.0	<10	<10	<10	<25
Chloromethane	- -	<10	<10	<10	<5.0	<10	<10	<10	<25
Dibromochloromethane	50	<10	<10	<10	<5.0	<10	<10	<10	<25
Ethylbenzene	5	<10	<10	<10	<5.0	<10	<10	0.50 J	<25
Methylene Chloride	5	<10	<10	0.50 J	<5.0	0.90 J	<10	0.80 J	<25
Styrene	5	<10	<10	<10	<5.0	<10	<10	<10	<25
Tetrachloroethene	5	<10	<10	<10	<5.0	<10	<10	<10	<25
Toluene	5	0.30 J	0.50 J	<10	<5.0	4.0 J	2.0 J	1.0 J	3.0 J
Trichloroethene	5	<10	<10	<10	<5.0	<10	<10	<10	<25
Vinyl Chloride	2	<10	<10	<10	<5.0	<10	<10	<10	<25
Xylenes (total)	5	<10	<10	<10	<5.0	<10	<10	1.0 J	6.0 J
Total BTEX	- -	0.30 J	0.50 J	<10	<5.0	7.0 J	4.0 J	5.5 J	17 J
Total VOCs	- -	12 J	0.50 J	11 J	<10	290 J	320 J	210 J	940 J
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	<10	<10	<11	<10	4.0 J	5.0 J	3.0 J	3.0 J
2,4-Dinitrophenol	10	<25	<25	<27	<50	<25	<25	<100	<200
2-Chloronaphthalene	10	<10	<10	<11	<10	<10	<10	<42	<40
2-Methylnaphthalene	- -	<10	<10	<11	<10	<10	0.70 J	<42	<40
2-Methylphenol	- -	<10	<10	<11	<10	5.0 J	8.0 J	7.0 J	3.0 J
2-Nitrophenol	- -	<10	<10	<11	<10	<10	<10	<42	<40
3,3'-Dichlorobenzidine	5	<10	<10	<11	<20	<10	<10	<42	<80
4-Methylphenol	- -	<10	<10	<11	<10	180	260	250	210
4-Nitroaniline	5	<25	<25	<27	<20	<25	<25	<100	<80
Acenaphthene	20	1.0 J	0.50 J	0.30 J	<10	<10	0.70 J	4.0 J	1.0 J
Acenaphthylene	- -	0.50 J	0.20 J	0.20 J	<10	<10	<10	<42	<40
Anthracene	50	<10	0.10 J	<11	<10	<10	0.20 J	0.50 J	<2.0
Benzo(a)anthracene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
Benzo(a)pyrene	0	<10	<10	<11	<10	<10	<10	<42	<40
Benzo(b)fluoranthene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
Benzo(b)fluoranthene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
Benzo(g,h,i)perylene	- -	<10	<10	<11	<10	<10	<10	<42	<40
Benzo(k)fluoranthene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
bis(2-Ethylhexyl)phthalate	5	0.80 J	0.80 JB	<11	<10	<10	<10	<42	<40
Butylbenzylphthalate	50	<10	<10	<11	<10	<10	<10	<42	<40
Carbazole	- -	<10	<10	0.20 J	<10	<10	<10	1.0 J	<40
Chrysene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
Dibenzo(a,h)anthracene	- -	<10	<10	<11	<10	<10	<10	<42	<40
Dibenzofuran	- -	0.50 J	0.20 J	0.20 J	<10	<10	<10	1.0 J	<40
Diethylphthalate	50	<10	0.30 J	<11	<10	<10	<10	<42	<40
Dimethylphthalate	50	<10	<10	<11	<10	<10	<10	<42	<40
Di-n-Butylphthalate	50	<10	0.30 JB	0.080 J	<10	<10	<10	<42	<40
Di-n-Octylphthalate	50	<10	<10	<11	<10	<10	<10	<42	<40
Fluoranthene	50	<10	0.20 J	<11	<10	<10	<10	<42	<40
Fluorene	50	0.50 J	<10	0.20 J	<10	<10	<10	1.0 J	<2.0
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<11	<10	<10	<10	<42	<40
Isophorone	50	<10	<10	<11	<10	<10	<10	<42	<40
Naphthalene	10	0.30 J	0.20 J	0.40 J	<10	1.0 J	3.0 J	4.0 J	<40
Phenanthrene	50	<10	0.20 J	<11	<10	<10	0.70 J	2.0 J	<40
Phenol	1	<10	<10	<11	<10	40	48	20 J	21 J
Pyrene	50	<10	0.20 J	<11	<10	<10	<10	<42	<40
Total PAHs	- -	2.3 J	1.6 J	1.1 J	<10	1.0 J	5.3 J	12 J	1.0 J
Total SVOCs	- -	3.6 J	3.2 J	1.6 J	<50	230 J	330 J	290 J	240 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-1S				MW-1D			
Date Collected:		03/31/98	05/20/98	10/24/00	04/21/03	03/31/98	05/20/98	10/25/00	04/21/03
Detected Inorganics (ppb)									
Aluminum	- -	50,000	24,300	52.9	<2,500	7,400	9,930	646	<12,500
Antimony	3	<4.00	<4.00	<5.00	<100	<8.00	<4.00	<50.0	<500
Arsenic	25	38.3	19.6	<2.50	<200	10.1 B	13.2	<25.0	<1,000
Barium	1,000	316 EN	184 B	45.6	105 EJ	535 EN	874	593	1,110 EJ
Beryllium	- -	4.40 BN	1.60 B	<5.00	<25.0	4.00 BN	2.40 B	<5.00	<125
Cadmium	5	2.10 BN	<1.00	<5.00	<50.0	<2.00	1.00 B	<5.00	<250
Calcium	- -	1,270,000 E	668,000	83,400	195,000 EJ	352,000 E	340,000	208,000	336,000 EJ
Chromium	50	80.0 N	29.3	<1.00	<50.0	10.5 BN	15.0	<10.0	<250
Cobalt	- -	31.0 BN	12.9 B	<1.00	<50.0	4.20 BN	5.50 B	<10.0	<250
Copper	200	281	122	2.10	<50.0	12.8 B	40.0	15.2	<250
Cyanide	200	352	163	88.9	266	18.5	11.0	<10.0	4.40 B
Cyanide, Available	- -	NA	NA	<2.00	12.0	NA	NA	26.0	<2.00
Iron	300	66,500 EN	26,900	178	<1,000	7,910 EN	13,200	1,100	<5,000
Lead	25	133	48.4	<2.00	<50.0	15.4	26.2	<20.0	<250
Magnesium	- -	91,600 E	43,400	7,400	35,000 EJ	67,800 E	66,400	40,100	78,900 EJ
Manganese	300	4,530 EN	2,060	175	59.6 B	263 EN	447	64.4	87.8 B
Mercury	0.7	3.30	2.40 N	<0.100	<0.200 J	0.380	0.200 N	<0.100	<0.200 J
Nickel	100	73.7 N	32.6 B	2.00	<50.0	12.2 BN	16.8 B	<15.0	<250
Potassium	- -	22,900	23,600	18,900	10,200	69,200	71,900	44,000	60,100
Selenium	10	6.60 N	4.40 B	<5.00	<150	<4.00	<2.00	<50.0	<750
Silver	50	<1.00	<1.00	<1.00	<30.0	<2.00	<1.00	<10.0	<150
Sodium	- -	68,900	91,400	82,600	69,700	187,000	<43.0	2,440,000	4,270,000
Thallium	- -	<3.00	<3.00	<6.00	<200	<6.00	<3.00	<60.0	<1,000
Vanadium	- -	106 N	48.8 B	1.60	<30.0	12.5 BN	16.7 B	<10.0	<150
Zinc	2,000	600	225	<5.00	<250	92.7	103	<50.0	<1,250
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	83.5	<2,000	NA	NA	<100	<2,000
Manganese	300	NA	NA	181	47.9 B	NA	NA	51.7	92.4 B
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	- -	- -	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.10	<0.15	NA	NA	<0.10	<0.15
4,4'-DDE	0.2	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.10
4,4'-DDT	0.2	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.10
Aldrin	0	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Alpha-BHC	0.01	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Alpha-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Beta-BHC	- -	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Delta-BHC	- -	NA	NA	<0.050	<0.050	NA	NA	0.0052 J	<0.050
Dieldrin	0.004	NA	NA	<0.10	<0.10	NA	NA	0.0046 J	<0.10
Endosulfan I	- -	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Endosulfan II	- -	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.10
Endosulfan Sulfate	- -	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.10
Endrin	0	NA	NA	<0.10	<0.10	NA	NA	0.0061 J	<0.10
Endrin Aldehyde	5	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.10
Gamma-BHC (Lindane)	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Gamma-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Heptachlor	0.04	NA	NA	<0.050	<0.050	NA	NA	<0.050	0.0085 J
Heptachlor Epoxide	0.03	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.050
Methoxychlor	35	NA	NA	<0.50	<0.50	NA	NA	<0.50	<0.50
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	2,620,000	86,900	NA	NA	806,000	643,000	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	3,000	8,700	<2,000	2,300	114,000	117,000	NA	120,000
CO2 by Headspace	- -	NA	NA	7,370	17,000	NA	NA	66,170	66,000
Carbon monoxide	- -	NA	NA	<400	<400	NA	NA	<400	<400
Carbonate, CaCO3	- -	72,300	<2,000	NA	NA	14,200	6,410	NA	NA
COD	- -	19,000	<10,000	<10,000	16,900	82,000	144,000	NA	409,000
Chloride	250,000	57,600	216,000	171,000	120,000	12,800,000	<10,000,000	NA	12,000,000
DOC Average Quads	- -	NA	NA	4,720	3,400	NA	NA	92,800	68,000
Hardness, Ca/CO3	- -	3,560,000	1,850,000	NA	NA	1,160,000	1,120,000	NA	NA
Methane	- -	NA	NA	140	1,900	NA	NA	17,860	22,000,000
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	10,000	260	267	106	4,300	<100	<100	<100	<100
Nitrite Nitrogen	1,000	86	107	<100	<100	<5	20	<100	26,000
Oil and Grease	- -	<1,000	4,800	NA	NA	<1,000	2,000	NA	NA
Oxygen	- -	NA	NA	1,050	1,200	NA	NA	680	340
Sulfate	250,000	246,000	256,000	130,000	400,000	49,100	<10,000	27,700	2,300
Sulfide	50	<2,000	<1,000	<1,000	<1,000	49,900	45,400	46,400	66,000
TOC Average Quads	- -	NA	NA	6,600	3,800	NA	NA	102,000	81,000
Total Dissolved Solids	1,000,000	660,000	721,000	NA	NA	23,100,000	25,100,000	NA	NA
pH (SU)									
pH	- -	8.64	9.1	NA	NA	8.37	8.3	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-2S				MW-2D			
Date Collected:		03/30/98	05/20/98	10/24/00	04/10/03	03/31/98	05/20/98	10/24/00	04/10/03
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0	<10	<10	<20	<5.0
1,1,2,2-Tetrachloroethane	5	<10	<10	<10	<5.0	<10	<10	<20	<5.0
1,1,2-Trichloroethane	1	<10	<10	<10	<5.0	<10	<10	<20	<5.0
1,1-Dichloroethane	5	<10	<10	<10	<5.0	<10	<10	<20	<5.0
2-Butanone	- -	7.0 JB	<10	5.0 J	<10	19	150	64	13
2-Hexanone	50	<10	<10	<10	<10 J	<10	<10	3.0 J	<10
4-Methyl-2-pentanone	- -	1.0 J	<10	0.60 J	<10 J	2.0 JB	<10	5.0 J	<10
Acetone	50	26 B	26	12	<10	160	940	200	77 J
Benzene	1	<10	<10	0.20 J	<5.0	2.0 J	<10	2.0 J	3.0 J
Bromodichloromethane	50	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Bromoform	50	<10	<10	<10	<5.0 J	<10	<10	<20	<5.0
Bromomethane	5	1.0 JB	<10	<10	<5.0	<10	<10	<20	<5.0 J
Carbon Disulfide	- -	<10	<10	0.50 J	<5.0	<10	<10	2.0 J	16
Chlorobenzene	5	<10	0.60 J	<10	<5.0	<10	<10	<20	<5.0
Chloroform	7	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Chloromethane	- -	<10	<10	<10	<5.0 J	<10	<10	<20	3.0 J
Dibromochloromethane	50	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Ethylbenzene	5	2.0 J	3.0 J	3.0 J	<5.0	0.60 J	<10	0.60 J	0.60 J
Methylene Chloride	5	<10	<10	0.50 J	<0.40	<10	<10	2.0 J	0.50 J
Styrene	5	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Tetrachloroethene	5	<10	2.0 J	<10	<5.0	<10	<10	<20	<5.0
Toluene	5	<10	12	0.60 J	<5.0	3.0 J	<10	2.0 J	3.0 J
Trichloroethene	5	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Vinyl Chloride	2	<10	<10	<10	<5.0	<10	<10	<20	<5.0
Xylenes (total)	5	8.0 J	11	12	<5.0	2.0 J	<10	2.0 J	3.0 J
Total BTEX	- -	10 J	26 J	16 J	<5.0	7.6 J	<10	6.6 J	9.6 J
Total VOCs	- -	45 J	55 J	34 J	<10	190 J	1,100	280 J	120 J
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	<10	<10	<22	<10	<10	<10	<100	<10
2,4-Dinitrophenol	10	<25	<25	<55	<50	<25	<25	<250	<50
2-Chloronaphthalene	10	<10	<10	<22	<10	<10	<10	<100	<10
2-Methylnaphthalene	- -	8.0 J	69	96	<10	<10	<10	<100	<10
2-Methylphenol	- -	<10	<10	<22	<10	<10	<10	<100	<10
2-Nitrophenol	- -	<10	<10	<22	<10	<10	<10	<100	<10
3,3'-Dichlorobenzidine	5	<10	<10	<22	<20	<10	<10	<100	<20
4-Methylphenol	- -	<10	0.50 J	<22	<10	220	640	540	<10
4-Nitroaniline	5	<25	<25	<55	<20	<25	<25	<250	<20
Acenaphthene	20	<10	2.0 J	3.0	<10	<10	<10	<100	<10
Acenaphthylene	- -	<10	<10	2.0 J	<10	<10	<10	<100	<10
Anthracene	50	0.20 J	0.20 J	0.40 J	<10	<10	<10	<100	<10
Benzo(a)anthracene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
Benzo(a)pyrene	0	<10	<10	<22	<10	<10	<10	<100	<10
Benzo(b)fluoranthene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
Benzo(b)fluoranthene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
Benzo(g,h,i)perylene	- -	<10	<10	<22	<10	<10	<10	<100	<10
Benzo(k)fluoranthene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
bis(2-Ethylhexyl)phthalate	5	4.0 J	2.0 JB	<22	<10	<10	<10	<100	<10
Butylbenzylphthalate	50	<10	<10	<22	<10	<10	<10	<100	<10
Carbazole	- -	<10	0.90 J	1.0 J	<10	<10	<10	<100	<10
Chrysene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
Dibenzo(a,h)anthracene	- -	<10	<10	<22	<10	<10	<10	<100	<10
Dibenzofuran	- -	0.40 J	3.0 J	4.0 J	<10	<10	<10	<100	<10
Diethylphthalate	50	<10	0.40 J	<22	<10	<10	<10	<100	<10
Dimethylphthalate	50	<10	1.0 J	<22	<10	<10	<10	<100	<10
Di-n-Butylphthalate	50	0.20 J	0.60 JB	<22	<10	<10	<10	<100	<10
Di-n-Octylphthalate	50	<10	<10	<22	<10	<10	<10	<100	<10
Fluoranthene	50	<10	0.20 J	<22	<10	<10	<10	<100	<10
Fluorene	50	<10	2.0 J	2.0 J	<10	<10	<10	<100	<10
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<22	<10	<10	<10	<100	<10
Isophorone	50	<10	<10	<22	<10	<10	<10	<100	<10
Naphthalene	10	5.0 J	41	47	<10	2.0 J	2.0 J	2.0 J	<10
Phenanthrene	50	0.40 J	2.0 J	5.0 J	<10	<10	<10	<100	<10
Phenol	1	0.40 J	3.0 J	4.0 J	<10	180	170	150	<10
Pyrene	50	<10	0.20 J	<22	<10	<10	<10	<100	<10
Total PAHs	- -	14 J	120 J	160 J	<10	2.0 J	2.0 J	2.0 J	<10
Total SVOCs	- -	19 J	130 J	160 J	<50	400 J	810 J	690 J	<50

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-2S				MW-2D			
Date Collected:	Guidance Values	03/30/98	05/20/98	10/24/00	04/10/03	03/31/98	05/20/98	10/24/00	04/10/03
Detected Inorganics (ppb)									
Aluminum	- -	533	4,240	<20.0	<2,500	50,000	23,300	216	<12,500
Antimony	3	<4.00	<4.00	<10.0	<100	<8.00	<4.00	<50.0	<500
Arsenic	25	<2.00	4.20 B	<5.00	<200	42.8	42.8	<25.0	<1,000
Barium	1,000	33.2 BEN	91.6 B	86.8	<11.3	780 EN	784	1,050	288
Beryllium	- -	<1.00	<1.00	<5.00	<25.0	6.00 BN	4.60 B	<5.00	<125
Cadmium	5	1.10 BN	<1.00	<5.00	<50.0	8.70 BN	6.30	<5.00	<250
Calcium	- -	358,000 E	620,000	730,000	140,000	1,470,000 E	747,000	316,000	199,000
Chromium	50	1.20 BN	8.60 B	<2.00	<50.0	72.0 N	30.6	<10.0	<250
Cobalt	- -	<1.00	1.70 B	<2.00	<50.0	28.2 BN	12.1 B	<10.0	<250
Copper	200	2.40 B	25.8	<2.00	<50.0	178	85.2	13.4	<250
Cyanide	200	110	147	30.5	79.5	25.3	<10.0	<10.0	6.00 B
Cyanide, Available	- -	NA	NA	5.00	3.00	NA	NA	68.0	14.0
Iron	300	739 EN	4,880	107	<1,000	68,300 EN	26,200	236	<5,000
Lead	25	2.30 B	14.1	<4.00	<50.0	112 N	43.6	<20.0	<250
Magnesium	- -	9,450 E	6,990	71.5	<500	92,100 E	116,000	71,700	<2,500
Manganese	300	74.2 EN	350	<2.00	18.2 B	2,510 EN	1,270	62.0	<375
Mercury	0.7	0.260	0.410 N	<0.100	<0.200	0.840	0.720 N	<0.100	<0.200
Nickel	100	5.30 BN	8.60 B	<3.00	<50.0	84.2 N	38.8 B	<15.0	<250
Potassium	- -	6,620	13,200	16,900	<2,000	97,500	100,000	92,500	64,200
Selenium	10	<2.00	<2.00	<10.0	<150	7.20 BN	2.50 B	<50.0	<750
Silver	50	<1.00	<1.00	<2.00	<30.0	<2.00	<1.00	<10.0	<150
Sodium	- -	43,600 E	63,700	103,000	<2,000	151,000 E	<43.0	3,170,000	2,190,000
Thallium	- -	<3.00	<3.00	<12.0	<200	<6.00 N	<3.00	<60.0	<1,000
Vanadium	- -	2.60 BN	9.80 B	<2.00	<30.0	79.7 BN	35.9 B	<10.0	<150
Zinc	2,000	3.90 B	39.7	<10.0	<250	380	217	<50.0	<1,250
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	100	<1,000	NA	NA	<100	<1,000
Manganese	300	NA	NA	<1.00	17.8 B	NA	NA	56.8	58.3 B
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	- -	- -	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.10	<0.15	NA	NA	<0.10	<0.17
4,4'-DDE	0.2	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
4,4'-DDT	0.2	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Aldrin	0	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Alpha-BHC	0.01	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Alpha-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Beta-BHC	- -	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Delta-BHC	- -	NA	NA	0.0038 J	<0.050	NA	NA	0.011 J	<0.056
Dieldrin	0.004	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Endosulfan I	- -	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Endosulfan II	- -	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Endosulfan Sulfate	- -	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Endrin	0	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Endrin Aldehyde	5	NA	NA	<0.10	<0.10	NA	NA	<0.10	<0.11
Gamma-BHC (Lindane)	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Gamma-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Heptachlor	0.04	NA	NA	<0.050	<0.050	NA	NA	<0.050	0.022 J
Heptachlor Epoxide	0.03	NA	NA	<0.050	<0.050	NA	NA	<0.050	<0.056
Methoxychlor	35	NA	NA	<0.50	<0.50	NA	NA	<0.50	<0.56
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	1,390,000	1,660,000	NA	NA	1,010,000	309,000	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	2,100	4,500	<2,000	510 JB	111,000	117,000	69,000	69,000 J
CO2 by Headspace	- -	NA	NA	<600	2,100	NA	NA	102,100	<600
Carbon monoxide	- -	NA	NA	<400	<400	NA	NA	<400	<400
Carbonate, CaCO3	- -	<2,000	221,000	NA	NA	381,000	3,870	NA	NA
COD	- -	23,300	22,400	29,300	13,200	60,500	144,000	613,000	190,000
Chloride	250,000	23,900	182,000	177,000	160,000	16,500,000	<10,000,000	14,500,000	4,900,000
DOC Average Quads	- -	NA	NA	8,840	4,800	NA	NA	112,000	48,000
Hardness, Ca/CO3	- -	<1,000	1,580,000	NA	NA	4,050,000	6,640,000	NA	NA
Methane	- -	NA	NA	1,810	4.3	NA	NA	13,060	14,000
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	10,000	<100	274	<100	8,300	100	<100	<100	<5,000
Nitrite Nitrogen	1,000	22	183	<100	<100	<5	12	<100	<5,000
Oil and Grease	- -	<1,000	2,600	NA	NA	<1,000	<1,000	NA	NA
Oxygen	- -	NA	NA	710	4,800	NA	NA	700	500
Sulfate	250,000	77,100	120,000	150,000	120,000	275,000	<10,000	<1,000	2,300
Sulfide	50	<1,000	<1,000	<1,000	57,000	51,700	47,800	24,200	58,000
TOC Average Quads	- -	NA	NA	9,010	6,000	NA	NA	118,000	51,000
Total Dissolved Solids	1,000,000	170,000	1,700,000	NA	NA	34,000,000	42,800,000	NA	NA
pH (SU)									
pH	- -	10.3	12.54	NA	NA	9.71	8.32	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-3S					MW-3D					
Date Collected:	Guidance Values	03/30/98	05/20/98	10/24/00	04/09/03	02/07/06	03/30/98	05/20/98	10/24/00	04/09/03	02/06/06	03/24/08
Detected Volatile Organics (ppb)												
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
1,1,2-Trichloroethane	1	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
1,1-Dichloroethane	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
2-Butanone	- -	<10	<10	<10	<10	NA	<10 [<10]	<10 [<10]	<20	<10	NA	NA
2-Hexanone	50	<10	<10	<10	<10	NA	<10 [<10]	<10 [<10]	<20	<10	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	<10	<10	NA	<10 [<10]	<10 [<10]	<20	<10	NA	NA
Acetone	50	<10	14 B	1.0 J	<10	NA	<10 [<10]	<10 [<10]	7.0 J	27 J	NA	NA
Benzene	1	<10	<10	0.50 J	<5.0	<0.40 H	20 J [16 J]	13 J [15 J]	13 J	22	19	16
Bromodichloromethane	50	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Bromoform	50	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Bromomethane	5	<10	<10	<10	<5.0 J	NA	<10 [<10]	<10 [<10]	<20	<5.0 J	NA	NA
Carbon Disulfide	- -	<10	<10	2.0 J	<5.0	NA	<10 [<10]	<10 [<10]	0.80 J	<5.0	NA	NA
Chlorobenzene	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Chloroform	7	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Chloromethane	- -	<10	<10	<10	<5.0 J	NA	<10 [<10]	<10 [<10]	<20	2.0 J	NA	NA
Dibromochloromethane	50	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Ethylbenzene	5	14	0.70 J	2.0 J	<5.0 J	1.4 J	110 [100]	94 [100]	88	51	52	52
Methylene Chloride	5	<10	<10	0.60 J	<0.40	NA	<10 [<10]	<10 [<10]	2.0 J	<5.0	NA	NA
Styrene	5	<10	<10	<10	<5.0	NA	<10 [40 J]	<10 [<10]	<20	<5.0	NA	NA
Tetrachloroethene	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Toluene	5	<10	3.0 J	0.80 J	2.0 J	1.5 J	84 [64]	64 [71]	49	46	42	48
Trichloroethene	5	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Vinyl Chloride	2	<10	<10	<10	<5.0	NA	<10 [<10]	<10 [<10]	<20	<5.0	NA	NA
Xylenes (total)	5	18	6.0 J	7.0 J	37	16	1,100 [960]	1,000 [1,200]	870	560	590	690 D
Total BTEX	- -	32	9.7 J	10 J	39 J	19 J	1,300 J [1,100 J]	1,200 J [1,400 J]	1,000 J	680	700	810
Total VOCs	- -	32	24 J	14 J	39 J	19 J	1,300 J [1,200 J]	1,200 J [1,400 J]	1,000 J	710 J	700	810
Detected Semivolatile Organics (ppb)												
2,4-Dimethylphenol	50	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
2,4-Dinitrophenol	10	<25	<25	<26	<100	NA	<25 [<25]	<25 [<25]	<1,400	<2,500	NA	NA
2-Chloronaphthalene	10	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
2-Methylnaphthalene	- -	2.0 J	2.0 J	0.80 J	5.0 J	1.0 J	41 J [45 J]	56 J [54 J]	54	81 J	74 J	38
2-Methylphenol	- -	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
2-Nitrophenol	- -	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<10	<40	NA	<10 [<10]	<10 [<10]	<560	<1,000	NA	NA
4-Methylphenol	- -	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
4-Nitroaniline	5	<25	<25	<26	<40	NA	<25 [<25]	<25 [<25]	<1,400	<1,000	NA	NA
Acenaphthene	20	<10	<10	<10	<20	<0.90	<10 [<10]	<10 [<10]	<560	<500	<40	<10
Acenaphthylene	- -	<10	<10	<10	<20	<0.90	<10 [<10]	<10 [<10]	<560	<500	<38	<10
Anthracene	50	<10	0.080 J	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<50	<10
Benzo(a)anthracene	0.002	<10	0.20 J	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<60	<10
Benzo(a)pyrene	0	<10	<10	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<54	<10
Benzo(b)fluoranthene	0.002	<10	<10	<10	<20	<2.0	<10 [<10]	<10 [<10]	<560	<500	<77	<10
Benzo(b)fluoranthene	0.002	<10	<10	<10	<20	<2.0	<10 [<10]	<10 [<10]	<560	<500	<77	<10
Benzo(g,h,i)perylene	- -	<10	<10	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<52	<10
Benzo(k)fluoranthene	0.002	<10	<10	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<46	<10
bis(2-Ethylhexyl)phthalate	5	<10	1.0 JB	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Butylbenzylphthalate	50	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Carbazole	- -	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Chrysene	0.002	<10	0.10 J	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<48	<10
Dibenzo(a,h)anthracene	- -	<10	<10	<10	<20	<2.0	<10 [<10]	<10 [<10]	<560	<500	<67	<10
Dibenzofuran	- -	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Diethylphthalate	50	<10	0.40 J	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Dimethylphthalate	50	<10	<10	<10	<20	NA	<10 [<10]	<10 [8.0 J]	<560	<500	NA	NA
Di-n-Butylphthalate	50	<10	0.30 JB	0.20 J	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Di-n-Octylphthalate	50	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Fluoranthene	50	<10	0.20 J	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<54	<10
Fluorene	50	<10	<10	<10	<20	<0.90	<10 [<10]	<10 [<10]	<560	<500	<38	<10
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<58	<10
Isophorone	50	<10	<10	<10	<20	NA	<10 [<10]	<10 [<10]	<560	<500	NA	NA
Naphthalene	10	95	50	26	100	54	2,300 [2,800]	2,300 [2,000]	2,200	2,300	2,600	1,400 D
Phenanthrene	50	<10	0.20 J	<10	<20	<0.80	<10 [<10]	<10 [<10]	<560	<500	<33	0.30 J
Phenol	1	<10	0.30 J	<10	<20	NA	49 J [50 J]	40 J [17 J]	13 J	<500	NA	NA
Pyrene	50	<10	0.20 J	<10	<20	<1.0	<10 [<10]	<10 [<10]	<560	<500	<50	<10
Total PAHs	- -	97 J	53 J	27 J	110 J	55 J	2,300 J [2,900 J]	2,400 J [2,100 J]	2,300	2,400 J	2,700 J	1,400 J
Total SVOCs	- -	97 J	55 J	27 J	110 J	55 J	2,400 J [2,900 J]	2,400 J [2,100 J]	2,300 J	2,400 J	2,700 J	1,400 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-3S					MW-3D					
Date Collected:	Guidance Values	03/30/98	05/20/98	10/24/00	04/09/03	02/07/06	03/30/98	05/20/98	10/24/00	04/09/03	02/06/06	03/24/08
Detected Inorganics (ppb)												
Aluminum	- -	4,530	752	NA	<2,500	NA	3,740 [3,500]	675 [733]	<20.0	<2,500	NA	NA
Antimony	3	6.30 B	<4.00	<5.00	<100	NA	<4.00 [<4.00]	5.50 B [<4.00]	<10.0	<100	NA	NA
Arsenic	25	25.1	2.80 B	9.30	<200	NA	6.20 B [5.60 B]	<2.00 [2.00 B]	<5.00	<200	NA	NA
Barium	1,000	174 BEN	104 B	19.8	<15.8	NA	109 BEN [107 BEN]	96.0 B [97.6 B]	113	97.7	NA	NA
Beryllium	- -	1.10 BN	<1.00	<5.00	<25.0	NA	<1.00 [<1.00]	<1.00 [<1.00]	<5.00	<25.0	NA	NA
Cadmium	5	1.30 BN	<1.00	<5.00	<50.0	NA	<1.00 [<1.00]	<1.00 [<1.00]	<5.00	<50.0	NA	NA
Calcium	- -	635,000 E	762,000	126,000	106,000	NA	666,000 E [669,000 E]	594,000 [611,000]	783,000	821,000	NA	NA
Chromium	50	9.50 BN	1.80 B	2.80	<50.0	NA	6.30 BN [5.90 BN]	1.10 B [1.00 B]	<2.00	<50.0	NA	NA
Cobalt	- -	2.70 BN	<1.00	1.10	<50.0	NA	1.40 BN [1.60 BN]	<1.00 [<1.00]	<2.00	<50.0	NA	NA
Copper	200	52.9	3.30 B	7.10	<50.0	NA	9.90 B [10.2 B]	3.10 B [2.70 B]	<2.00	<50.0	NA	NA
Cyanide	200	193	294	210	172	110	<10.0 [<10.0]	<10.0 [<10.0]	<10.0	<10.0	29.2	NA
Cyanide, Available	- -	NA	NA	<2.00	3.00	<2.00	NA	NA	4.00	<2.00	<2.00	NA
Iron	300	5,210 EN	1,080	717	<1,000	NA	4,690 EN [4,680 EN]	854 [888]	40.0	<1,000	NA	NA
Lead	25	22.4 N	1.30 B	2.20	<50.0	NA	7.50 [8.00]	<1.00 [<1.00]	<4.00	<50.0	NA	NA
Magnesium	- -	24,200	1,330 B	22,000	42,100	NA	4,660 BE [4,610 BE]	1,060 B [1,220 B]	34.4	<156	NA	NA
Manganese	300	498 EN	53.7	102	<75.0	NA	184 EN [182 EN]	41.8 [47.9]	<2.00	<75.0	NA	NA
Mercury	0.7	0.260	2.30 N	<0.100	<0.200	NA	0.260 [0.380]	0.310 N [0.310 N]	<0.100	0.540	NA	NA
Nickel	100	14.3 BN	4.50 B	2.60	<50.0	NA	9.00 BN [8.30 BN]	2.80 N [3.30 B]	<3.00	<50.0	NA	NA
Potassium	- -	33,800	45,200	43,400	27,500 J	NA	40,100 [40,300]	43,100 [43,800]	53,000	44,700 J	NA	NA
Selenium	10	4.40 BN	2.70 B	<5.00	<150	NA	2.70 BN [2.50 BN]	3.30 B [<2.00]	<10.0	<150	NA	NA
Silver	50	<1.00	<1.00	<1.00	<30.0	NA	<1.00 [<1.00]	<1.00 [<1.00]	<2.00	<30.0	NA	NA
Sodium	- -	53,800 E	95,400	103,000	96,300	NA	107,000 E [108,000 E]	79,300 [96,200]	150,000	192,000	NA	NA
Thallium	- -	<3.00	<3.00	<6.00	<200	NA	<3.00 [<3.00]	<3.00 [<3.00]	<12.0	<200	NA	NA
Vanadium	- -	11.0 BN	2.20 B	3.40	<30.0	NA	8.40 BN [8.00 BN]	1.70 B [1.80 B]	<2.00	<30.0	NA	NA
Zinc	2,000	73.7	17.9 B	28.4	<250	NA	19.0 B [18.7 B]	13.6 B [17.0 B]	10.7	<250	NA	NA
Detected Inorganics-Filtered (ppb)												
Iron	300	NA	NA	47.2	<1,000	NA	NA	NA	28.2	<1,000	NA	NA
Manganese	300	NA	NA	24.4	5.80 B	NA	NA	NA	<1.00	<75.0	NA	NA
PCBs (ppb)												
None Detected	0.09	- -	- -	NA	NA	NA	- - [- -]	- - [- -]	NA	NA	NA	NA
Detected Pesticides (ppb)												
4,4'-DDD	0.3	NA	NA	<0.10	<0.15	NA	NA	NA	<0.10	<0.15	NA	NA
4,4'-DDE	0.2	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
4,4'-DDT	0.2	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Aldrin	0	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Alpha-BHC	0.01	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Alpha-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Beta-BHC	- -	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Delta-BHC	- -	NA	NA	<0.050	<0.050	NA	NA	NA	0.0095 J	0.020 J	NA	NA
Dieldrin	0.004	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Endosulfan I	- -	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Endosulfan II	- -	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Endosulfan Sulfate	- -	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Endrin	0	NA	NA	<0.10	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Endrin Aldehyde	5	NA	NA	0.0076 J	<0.10	NA	NA	NA	<0.10	<0.10	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	0.30 J	NA	NA
Gamma-Chlordane	0.05	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Heptachlor	0.04	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Heptachlor Epoxide	0.03	NA	NA	<0.050	<0.050	NA	NA	NA	<0.050	<0.050	NA	NA
Methoxychlor	35	NA	NA	<0.50	<0.50	NA	NA	NA	<0.50	<0.50	NA	NA
Miscellaneous (ppb)												
Alkalinity, CaCO3	- -	4,200,000	385,000	NA	NA	NA	1,660,000 [1,640,000]	1,800,000 [1,820,000]	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	3,000	<2,000	<2,000	2,600 J	NA	14,400 [17,000]	22,200 [12,300]	<2,000	12,000 J	NA	NA
CO2 by Headspace	- -	NA	NA	1,570	3,100	NA	NA	NA	<600	<600	NA	NA
Carbon monoxide	- -	NA	NA	<400	<400	NA	NA	NA	<400	<400	NA	NA
Carbonate, CaCO3	- -	3,150,000	61,200	NA	NA	NA	4,300 [<2,000]	648,000 [313,000]	NA	NA	NA	NA
COD	- -	32,000	14,100	<10,000	10,400	NA	49,200 [49,200]	23,800 [89,000]	317,000	36,200	NA	NA
Chloride	250,000	88,400	156,000	220,000	210,000	NA	241,000 [246,000]	252,000 [253,000]	215,000	270,000	NA	NA
DOC Average Quads	- -	NA	NA	1,870	3,700	NA	NA	NA	8,180	12,000	NA	NA
Hardness, Ca/CO3	- -	1,680,000	1,910,000	NA	NA	NA	1,680,000 [1,690,000]	1,490,000 [1,530,000]	NA	NA	NA	NA
Methane	- -	NA	NA	<70	55	NA	NA	NA	2,330	1,600	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	<8	NA	NA	NA	NA	<8	NA
Nitrate Nitrogen	10,000	2,190	608	<100	6,100	NA	<100 [<100]	364 [366]	<100	30 B	NA	NA
Nitrite Nitrogen	1,000	204	321	<100	<100	NA	187 [186]	247 [249]	<100	<100	NA	NA
Oil and Grease	- -	<1,000	<1,000	NA	NA	NA	NA	1,700 [1,400]	NA	NA	NA	NA
Oxygen	- -	NA	NA	1,730	3,400	NA	NA	NA	690	2,200	NA	NA
Sulfate	250,000	217,000	292,000	246,000	150,000	143,000	83,700 [80,000]	87,800 [91,400]	92,700	100,000	64,700	NA
Sulfide	50	<1,000	<1,000	<1,000	<1,000	NA	9,500 [9,100]	2,290 [2,700]	<1,000	2,700	NA	NA
TOC Average Quads	- -	NA	NA	2,790	4,700	NA	NA	NA	9,440	15,000	NA	NA
Total Dissolved Solids	1,000,000	960,000	1,050,000	NA	NA	NA	1,840,000 [1,830,000]	2,000,000 [2,020,000]	NA	NA	NA	NA
pH (SU)												
pH	- -	12.3	11.93	NA	NA	NA	12.6 [12.6]	12.44 [12.52]	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-3D2	MW-4S							
Date Collected:		04/10/03	03/31/98	05/21/98	10/26/00	04/22/03	02/01/06	05/10/06	08/17/06	11/13/06
Detected Volatile Organics (ppb)										
1,1,1-Trichloroethane	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
1,1-Dichloroethane	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
2-Butanone	- -	230	<10	<10	<10	6.0 J [7.0 J]	NA	NA	NA	NA
2-Hexanone	50	39 J	<10	<10	<10	<10 [<10]	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<100	<10	<10	<10	<10 [<10]	NA	NA	NA	NA
Acetone	50	1,300 J	12	23	<10	22 [22]	NA	NA	NA	NA
Benzene	1	<50	2.0 J	5.0 J	<10	0.70 J [0.90 J]	<0.40	<0.40	<0.40	<0.40
Bromodichloromethane	50	<50	<10	<10	4.0 J	<5.0 [<5.0]	NA	NA	NA	NA
Bromoform	50	<50	<10	<10	0.40 J	<5.0 [<5.0]	NA	NA	NA	NA
Bromomethane	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Carbon Disulfide	- -	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Chlorobenzene	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Chloroform	7	<50	<10	<10	17	2.0 J [2.0 J]	NA	NA	NA	NA
Chloromethane	- -	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Dibromochloromethane	50	<50	<10	<10	1.0 J	<5.0 [<5.0]	NA	NA	NA	NA
Ethylbenzene	5	<50	0.80 J	2.0 J	<10	0.60 J [0.60 J]	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<9.0	<10	<10	0.80 J	<5.0 [<5.0]	NA	NA	NA	NA
Styrene	5	<50	0.30 J	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Tetrachloroethene	5	<50	<10	<10	0.40 J	<5.0 [<5.0]	NA	NA	NA	NA
Toluene	5	<50	8.0 J	15	<10	3.0 J [4.0 J]	<0.30	<0.30	<0.30	0.38 J
Trichloroethene	5	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Vinyl Chloride	2	<50	<10	<10	<10	<5.0 [<5.0]	NA	NA	NA	NA
Xylenes (total)	5	<50	5.0 J	15	<10	4.0 J [3.0 J]	<1.0	<1.0	<1.0	<1.0
Total BTEX	- -	<50	16 J	37 J	<10	8.3 J [8.5 J]	<1.0	<1.0	<1.0	0.38 J
Total VOCs	- -	1,600 J	28 J	60 J	24 J	38 J [40 J]	<1.0	<1.0	<1.0	0.38 J
Detected Semivolatile Organics (ppb)										
2,4-Dimethylphenol	50	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
2,4-Dinitrophenol	10	<10,000	<25	<25	<27	<55 [<50]	NA	NA	NA	NA
2-Chloronaphthalene	10	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
2-Methylnaphthalene	- -	<2,000	2.0 J	4.0 J	<11	0.70 J [<10]	<0.60	<0.60	<0.60	<0.60
2-Methylphenol	- -	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
2-Nitrophenol	- -	<2,000	<10	3.0 J	<11	<11 [<10]	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<4,000	<10	<10	<11	<22 [<20]	NA	NA	NA	NA
4-Methylphenol	- -	14,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
4-Nitroaniline	5	<4,000	<25	<25	<27	<22 [<20]	NA	NA	NA	NA
Acenaphthene	20	<2,000	<10	<10	<11	<11 [<10]	<0.80	<0.80	<0.80	<0.80
Acenaphthylene	- -	<2,000	<10	<10	<11	<11 [<10]	<0.80	<0.80	<0.80	<0.80
Anthracene	50	<2,000	<10	<10	<11	0.60 J [<10]	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	0.002	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.80
Benzo(a)pyrene	0	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.50
Benzo(b)fluoranthene	0.002	<2,000	<10	<10	<11	<11 [<10]	<2.0	<2.0	<2.0	<1.0
Benzo(b)fluoranthene	0.002	<2,000	<10	<10	<11	<11 [<10]	<2.0	<2.0	<2.0	<1.0
Benzo(g,h,i)perylene	- -	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.30
Benzo(k)fluoranthene	0.002	<2,000	<10	<10	<11	<11 [<10]	<0.90	<0.90	<0.90	<0.90
bis(2-Ethylhexyl)phthalate	5	<2,000	<10	1.0 JB	<11	0.60 J [0.90 J]	NA	NA	NA	NA
Butylbenzylphthalate	50	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Carbazole	- -	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Chrysene	0.002	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene	- -	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.20 J
Dibenzofuran	- -	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Diethylphthalate	50	<2,000	<10	<10	0.40 J	<11 [0.40 J]	NA	NA	NA	NA
Dimethylphthalate	50	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Di-n-Butylphthalate	50	<2,000	<10	<10	0.10 J	<11 [<10]	NA	NA	NA	NA
Di-n-Octylphthalate	50	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Fluoranthene	50	<2,000	<10	0.50 J	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.90
Fluorene	50	<2,000	<10	<10	<11	<11 [<10]	<0.80	<0.80	<0.80	<0.70
Indeno(1,2,3-cd)pyrene	0.002	<2,000	<10	<10	<11	<11 [<10]	<1.0	<1.0	<1.0	<0.30
Isophorone	50	<2,000	<10	<10	<11	<11 [<10]	NA	NA	NA	NA
Naphthalene	10	<2,000	3.0 J	9.0 J	0.20 J	1.0 J [<10]	<0.70	<0.70	<0.70	<0.40
Phenanthrene	50	<2,000	1.0 J	1.0 J	<11	<11 [<10]	<0.70	<0.70	<0.70	<0.70
Phenol	1	200 J	3.0 J	10	<11	0.60 J [<10]	NA	NA	NA	NA
Pyrene	50	<2,000	<10	0.50 J	0.10 J	<11 [<10]	<1.0	<1.0	<1.0	<1.0
Total PAHs	- -	<2,000	6.0 J	15 J	0.30 J	2.3 J [<10]	<2.0	<2.0	<2.0	<1.0
Total SVOCs	- -	14,000 J	9.0 J	29 J	0.80 J	3.5 J [1.3 J]	<2.0	<2.0	<2.0	<1.0

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-3D2	MW-4S							
Date Collected:		04/10/03	03/31/98	05/21/98	10/26/00	04/22/03	02/01/06	05/10/06	08/17/06	11/13/06
Detected Inorganics (ppb)										
Aluminum	- -	<12,500	27,500	11,000	409	<5,000 [581 B]	NA	NA	NA	NA
Antimony	3	<500	5.70 B	<4.00	<5.00	<200 [<100]	NA	NA	NA	NA
Arsenic	25	<1,000	18.0	7.60 B	<2.50	<400 [<200]	NA	NA	NA	NA
Barium	1,000	4,230	419 EN	329	38.9	51.9 EJ [48.5 EJ]	NA	NA	NA	NA
Beryllium	- -	<125	3.10 BN	1.20 B	<5.00	<50.0 [<25.0]	NA	NA	NA	NA
Cadmium	5	<250	3.60 BN	4.80 B	<5.00	<100 [<50.0]	NA	NA	NA	NA
Calcium	- -	2,430,000	950,000 E	440,000	57,400	96,600 EJ [106,000 EJ]	NA	NA	NA	NA
Chromium	50	<250	32.5 N	10.6	<1.00	<100 [<50.0]	NA	NA	NA	NA
Cobalt	- -	<250	11.3 BN	3.40 B	<1.00	<100 [<50.0]	NA	NA	NA	NA
Copper	200	<250	129	59.4	1.10	<100 [17.3 B]	NA	NA	NA	NA
Cyanide	200	<10.0	55.1	49.0	<10.0	28.7 [29.0]	<1.00	<1.00	<1.30	30.2 J
Cyanide, Available	- -	28.0	NA	NA	<2.00	<2.00 [<2.00]	<2.00	NA	NA	NA
Iron	300	1,400 B	25,900 EN	9,340	13.0	<2,000 [<1,000]	NA	NA	NA	NA
Lead	25	<250	58.6	28.4	<2.00	<100 [<50.0]	NA	NA	NA	NA
Magnesium	- -	32,500	52,400 E	17,500	2,190	3,040 EJ [3,040 EJ]	NA	NA	NA	NA
Manganese	300	<375	2,300 EN	706	<1.00	<150 [15.4 B]	NA	NA	NA	NA
Mercury	0.7	<0.200	0.840	0.620 N	<0.100	<0.200 J [<0.200 J]	NA	NA	NA	NA
Nickel	100	85.9 B	78.7 N	11.6 B	<1.50	<100 [<50.0]	NA	NA	NA	NA
Potassium	- -	773,000 J	24,400	16,400	2,630	4,080 [4,250]	NA	NA	NA	NA
Selenium	10	<750	8.10 N	3.40 B	<5.00	<300 [<150]	NA	NA	NA	NA
Silver	50	<150	<1.00	<1.00	<1.00	<60.0 [<30.0]	NA	NA	NA	NA
Sodium	- -	5,300,000	64,600 E	41,300	11,400	72,100 [70,900]	NA	NA	NA	NA
Thallium	- -	<1,000	<3.00	<3.00	<6.00	<400 [<200]	NA	NA	NA	NA
Vanadium	- -	<150	38.9 BN	13.6 B	2.30	<60.0 [<30.0]	NA	NA	NA	NA
Zinc	2,000	<1,250	158	62.4	<5.00	<500 [<250]	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)										
Iron	300	<1,000	NA	NA	<10.0	<2,000 [<2,000]	NA	NA	NA	NA
Manganese	300	<75.0	NA	NA	<1.00	<150 [<150]	NA	NA	NA	NA
PCBs (ppb)										
None Detected	0.09	NA	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)										
4,4'-DDD	0.3	<0.15	NA	NA	<0.11	<0.16 [<0.18]	NA	NA	NA	NA
4,4'-DDE	0.2	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
4,4'-DDT	0.2	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
Aldrin	0	<0.050	NA	NA	<0.057	<0.055 [0.0074 J]	NA	NA	NA	NA
Alpha-BHC	0.01	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Alpha-Chlordane	0.05	0.015 J	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Beta-BHC	- -	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Delta-BHC	- -	0.080 J	NA	NA	0.0051 J	<0.055 [<0.059]	NA	NA	NA	NA
Dieldrin	0.004	<0.10	NA	NA	<0.11	0.015 J [0.015 J]	NA	NA	NA	NA
Endosulfan I	- -	<0.050	NA	NA	<0.057	0.041 J [0.061]	NA	NA	NA	NA
Endosulfan II	- -	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
Endosulfan Sulfate	- -	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
Endrin	0	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
Endrin Aldehyde	5	<0.10	NA	NA	<0.11	<0.11 [<0.12]	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Gamma-Chlordane	0.05	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Heptachlor	0.04	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Heptachlor Epoxide	0.03	<0.050	NA	NA	<0.057	<0.055 [<0.059]	NA	NA	NA	NA
Methoxychlor	35	<0.50	NA	NA	<0.57	<0.55 [<0.59]	NA	NA	NA	NA
Miscellaneous (ppb)										
Alkalinity, CaCO3	- -	NA	2,620,000	800,000	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	>233,100 J	<2,000	<2,000	<2,000	3,200 [6,300]	NA	NA	NA	NA
CO2 by Headspace	- -	<600	NA	NA	<600	<600 [<600]	NA	NA	NA	NA
Carbon monoxide	- -	<400	NA	NA	<400	<400 [<400]	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	1,390,000	88,100	NA	NA	NA	NA	NA	NA
COD	- -	1,080,000	21,200	<10,000	<10,000	25,200 [31,300]	NA	NA	NA	NA
Chloride	250,000	77,000,000	61,300	69,700	16,600	220,000 [220,000]	NA	NA	NA	NA
DOC Average Quads	- -	40,000	NA	NA	1,430	5,000 [5,100]	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	2,590,000	1,170,000	NA	NA	NA	NA	NA	NA
Methane	- -	5,600	NA	NA	<70	8.9 [9.1]	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	649	NA	NA	NA
Nitrate Nitrogen	10,000	<5,000	540	1,820	376	810 [810]	NA	NA	NA	NA
Nitrite Nitrogen	1,000	<25,000	786	1,160	215	400 [440]	NA	NA	NA	NA
Oil and Grease	- -	NA	<1,000	6,400	NA	NA	NA	NA	NA	NA
Oxygen	- -	460	NA	NA	5,500	3,500 [9,300]	NA	NA	NA	NA
Sulfate	250,000	190,000	29,700	17,700	36,000	96,000 [96,000]	18,100	NA	NA	NA
Sulfide	50	4,800	<2,000	<1,000	<1,000	<4,000 [<4,000]	NA	NA	NA	NA
TOC Average Quads	- -	43,000	NA	NA	1,910	5,300 [5,300]	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	860,000	926,000	NA	NA	NA	NA	NA	NA
pH (SU)										
pH	- -	NA	12.5	12.33	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-4D							
Date Collected:	Guidance Values	03/31/98	05/21/98	10/26/00	04/22/03	02/06/06	05/12/06	08/15/06	11/16/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
2-Butanone	- -	15 J	<10	22 J [22 J]	29 J	NA	NA	NA	NA
2-Hexanone	50	<10	<10	<50 [<50]	<50	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	3.0 JB	<10	<50 [<50]	<50	NA	NA	NA	NA
Acetone	50	180	200	170 [100]	180	NA	NA	NA	NA
Benzene	1	340	390	510 [570]	160	270	270	150	440
Bromodichloromethane	50	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Bromoform	50	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Bromomethane	5	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<10	18 J [4.0 J]	<25	NA	NA	NA	NA
Chlorobenzene	5	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Chloroform	7	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Chloromethane	- -	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Dibromochloromethane	50	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Ethylbenzene	5	5.0 J	6.0 J	10 J [11 J]	27	12	13 J	38	17 J
Methylene Chloride	5	<10	<10	18 J [10 J]	<25	NA	NA	NA	NA
Styrene	5	<10	<10	<50 [<50]	56	NA	NA	NA	NA
Tetrachloroethene	5	<10	<10	7.0 J [2.0 J]	<25	NA	NA	NA	NA
Toluene	5	42	50	110 [120]	130	95	110	320	110
Trichloroethene	5	<10	<10	8.0 J [1.0 J]	<25	NA	NA	NA	NA
Vinyl Chloride	2	<10	<10	<50 [<50]	<25	NA	NA	NA	NA
Xylenes (total)	5	45	56	81 [94]	300	120	150	490	180
Total BTEX	- -	430 J	500 J	710 J [800 J]	620	500	540 J	1,000	750 J
Total VOCs	- -	630 J	700 J	950 J [930 J]	880 J	500	540 J	1,000	750 J
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	4.0 J	5.0 J	6.0 J [5.0 J]	<590	NA	NA	NA	NA
2,4-Dinitrophenol	10	<25	<25	<54 [<50]	<2,900	NA	NA	NA	NA
2-Chloronaphthalene	10	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
2-Methylnaphthalene	- -	4.0 J	4.0 J	2.0 J [2.0 J]	130 J	32 J	23 J	21 J	37 J
2-Methylphenol	- -	1.0 J	2.0 J	4.0 J [4.0 J]	<590	NA	NA	NA	NA
2-Nitrophenol	- -	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<22 [<20]	<1,200	NA	NA	NA	NA
4-Methylphenol	- -	6.0 J	8.0 J	16 J [15 J]	<590	NA	NA	NA	NA
4-Nitroaniline	5	<25	<25	<54 [<50]	<1,200	NA	NA	NA	NA
Acenaphthene	20	<10	<10	<22 [<20]	<590	<20	<16	<8.0	<9.0
Acenaphthylene	- -	0.50 J	0.50 J	0.20 J [0.20 J]	42 J	<19	<15	<8.0	10 J
Anthracene	50	<10	<10	<22 [<20]	<590	<25	<20	<10	<11
Benzo(a)anthracene	0.002	<10	<10	<22 [<20]	<590	<30	<24	<12	<8.0
Benzo(a)pyrene	0	<10	<10	<22 [<20]	<590	<27	<22	<11	<5.0
Benzo(b)fluoranthene	0.002	<10	<10	<22 [<20]	<590	<38	<31	<15	<10
Benzo(b)fluoranthene	0.002	<10	<10	<22 [<20]	<590	<38	<31	<15	<10
Benzo(g,h,i)perylene	- -	<10	<10	<22 [<20]	<590	<26	<21	<10	<3.0
Benzo(k)fluoranthene	0.002	<10	<10	<22 [<20]	<590	<23	<18	<9.0	<10
bis(2-Ethylhexyl)phthalate	5	0.80 J	1.0 JB	<22 [0.50 J]	<590	NA	NA	NA	NA
Butylbenzylphthalate	50	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
Carbazole	- -	<10	<10	<22 [<20]	30 J	NA	NA	NA	NA
Chrysene	0.002	<10	<10	<22 [<20]	<590	<24	<19	<10	<13
Dibenzo(a,h)anthracene	- -	<10	<10	<22 [<20]	<590	<34	<27	<13	<3.0
Dibenzofuran	- -	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
Diethylphthalate	50	<10	0.20 J	0.80 [0.80 J]	<590	NA	NA	NA	NA
Dimethylphthalate	50	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
Di-n-Butylphthalate	50	<10	0.20 JB	<22 [<20]	<590	NA	NA	NA	NA
Di-n-Octylphthalate	50	<10	<10	<22 [<20]	<590	NA	NA	NA	NA
Fluoranthene	50	<10	<10	<22 [<20]	<590	<27	<22	<11	<10
Fluorene	50	<10	<10	<22 [<20]	<590	<19	<15	<8.0	<8.0
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<22 [<20]	<590	<29	<23	<12	<3.0
Isophorone	50	<10	0.20 J	<22 [<20]	<590	NA	NA	NA	NA
Naphthalene	10	55	60	91 [88]	2,900	710	810	570	760
Phenanthrene	50	<10	<10	<22 [<20]	<590	<16	<13	<7.0	<8.0
Phenol	1	27	39	100 [97]	55 J	NA	NA	NA	NA
Pyrene	50	<10	<10	<22 [<20]	<590	<25	<20	<10	<11
Total PAHs	- -	60 J	65 J	93 J [90 J]	3,100 J	740 J	830 J	590 J	810 J
Total SVOCs	- -	98 J	120 J	220 J [210 J]	3,200 J	740 J	830 J	590 J	810 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-4D							
Date Collected:	Guidance Values	03/31/98	05/21/98	10/26/00	04/22/03	02/06/06	05/12/06	08/15/06	11/16/06
Detected Inorganics (ppb)									
Aluminum	- -	1,520	11,900	<100 [<100]	<2,500	NA	NA	NA	NA
Antimony	3	<4.00	<80.0	<50.0 [<50.0]	<100	NA	NA	NA	NA
Arsenic	25	6.50 B	<40.0	<25.0 [<25.0]	<200	NA	NA	NA	NA
Barium	1,000	118 BEN	484 B	418 [388]	216 EJ	NA	NA	NA	NA
Beryllium	- -	3.80 BN	<20.0	<5.00 [<5.00]	<25.0	NA	NA	NA	NA
Cadmium	5	<1.00	<20.0	<5.00 [<5.00]	<50.0	NA	NA	NA	NA
Calcium	- -	238,000 E	1,070,000	1,130,000 [1,080,000]	695,000 EJ	NA	NA	NA	NA
Chromium	50	1.60 BN	<20.0	<10.0 [<10.0]	<50.0	NA	NA	NA	NA
Cobalt	- -	1.40 BN	<20.0	<10.0 [<10.0]	<50.0	NA	NA	NA	NA
Copper	200	3.60 B	<20.0	22.1 [0]	<50.0	NA	NA	NA	NA
Cyanide	200	14.4	<10.0	<10.0 [<10.0]	21.3	17.5	13.3	<1.30	R
Cyanide, Available	- -	NA	NA	<2.00	4.00	<2.00	NA	NA	NA
Iron	300	1,200 EN	5,800	103 [<100]	<1,000	NA	NA	NA	NA
Lead	25	1.80 B	<20.0	<20.0 [<20.0]	<50.0	NA	NA	NA	NA
Magnesium	- -	15,800 E	91,300 B	65,000 [61,000]	101,000 EJ	NA	NA	NA	NA
Manganese	300	64.8 EN	252 B	113 [106]	46.3 B	NA	NA	NA	NA
Mercury	0.7	<0.200	0.310 N	<0.100 [<0.100]	<0.200 J	NA	NA	NA	NA
Nickel	100	2.80 BN	292 B	<15.0 [<15.0]	<50.0	NA	NA	NA	NA
Potassium	- -	166,000	505,000	606,000 [551,000]	205,000	NA	NA	NA	NA
Selenium	10	<2.00	<40.0	<50.0 [<50.0]	<150	NA	NA	NA	NA
Silver	50	<1.00	<20.0	<10.0 [<10.0]	<30.0	NA	NA	NA	NA
Sodium	- -	1,160,000 E	2,900,000	3,690,000 [3,650,000]	4,850,000	NA	NA	NA	NA
Thallium	- -	<3.00	<60.0	<60.0 [<60.0]	<200	NA	NA	NA	NA
Vanadium	- -	2.10 BN	22.1 B	<10.0 [<10.0]	<30.0	NA	NA	NA	NA
Zinc	2,000	17.8 B	92.9 B	<50.0 [<50.0]	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	<100 [<100]	<2,000	NA	NA	NA	NA
Manganese	300	NA	NA	82.1 [83.2]	54.4 B	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.11 [<0.11]	<0.17	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Aldrin	0	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	<0.054 [<0.054]	0.036 J	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Endrin	0	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	<0.11 [<0.11]	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	<0.054 [<0.054]	0.0094 J	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	<0.054 [<0.054]	<0.056	NA	NA	NA	NA
Methoxychlor	35	NA	NA	<0.54 [<0.54]	<0.56	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	384,000	88,900	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	57,600	81,000	81,000 [87,000]	62,000	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	15,620	120,000	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	<400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	6,500	<2,000	NA	NA	NA	NA	NA	NA
COD	- -	518,000	352,000	2,020,000 [1,830,000]	489,000	NA	NA	NA	NA
Chloride	250,000	41,900,000	<10,000,000	47,000,000 [45,600,000]	33,000,000	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	33,200 [34,000]	40,000	NA	NA	NA	NA
Hardness, Ca/CO3	- -	659,000	3,040,000	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	6,860	6,700	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	<4,000	NA	NA	NA
Nitrate Nitrogen	10,000	110	<100	<100 [<100]	<5,000	NA	NA	NA	NA
Nitrite Nitrogen	1,000	<5	<5	<100 [<100]	<25,000	NA	NA	NA	NA
Oil and Grease	- -	<1,000	<1,000	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	1,070	520	NA	NA	NA	NA
Sulfate	250,000	599,000	209,000	405,000 [403,000]	560,000	617,000	NA	NA	NA
Sulfide	50	68,800	62,400	70,500 [68,100]	78,000	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	34,800 [34,300]	40,000	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	59,200,000	71,300,000	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	8.42	8.12	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID: / Date Collected:	NYSDEC Groundwater Standards and Guidance Values	MW-5S 03/30/98	MW-5S 05/20/98	MW-5S 10/26/00	MW-5S 04/09/03	MW-5S 02/02/06	MW-5D 03/30/98	MW-5D 05/20/98	MW-5D 10/26/00	MW-5D 04/10/03	MW-5D 01/25/06
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
1,1,2-Trichloroethane	1	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
1,1-Dichloroethane	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
2-Butanone	- -	<10	<10	<10	<10 [<10]	NA	<10	<10	8.0 J	<10	NA
2-Hexanone	50	<10	<10	<10	<10 [<10]	NA	<10	<10	<10	<10	NA
4-Methyl-2-pentanone	- -	<10	<10	<10	<10 [<10]	NA	<10	<10	<10	<10	NA
Acetone	50	<10	<10	10	<10 [<10]	NA	48	28 B	24	19 J	NA
Benzene	1	3.0 J	5.0 J	3.0 J	<5.0 [<5.0]	<0.40	16	14	12	12	2.0 J [1.9 J]
Bromodichloromethane	50	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Bromoform	50	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Bromomethane	5	<10	<10	<10	<5.0 J [<5.0]	NA	<10	<10	<10	<5.0 J	NA
Carbon Disulfide	- -	<10	<10	0.10 J	<5.0 [<5.0]	NA	17	<10	1.0	<5.0	NA
Chlorobenzene	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Chloroform	7	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Chloromethane	- -	<10	<10	<10	<5.0 J [<5.0 J]	NA	<10	<10	<10	<5.0 J	NA
Dibromochloromethane	50	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Ethylbenzene	5	<10	<10	0.30 J	<5.0 [<5.0]	<1.0	10	8.0 J	6.0	13	2.5 J [2.5 J]
Methylene Chloride	5	<10	<10	2.0	<0.40 [<0.40]	NA	<10	<10	0.60 J	0.50 J	NA
Styrene	5	<10	0.90 J	<10	<5.0 [<5.0]	NA	<10	<10	<10	<10	NA
Tetrachloroethene	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Toluene	5	4.0 J	8.0 J	2.0 J	<5.0 [<5.0]	<0.30	26	30	20	26	3.7 J [4.0 J]
Trichloroethene	5	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Vinyl Chloride	2	<10	<10	<10	<5.0 [<5.0]	NA	<10	<10	<10	<5.0	NA
Xylenes (total)	5	<10	8.0 J	1.0 J	<5.0 [<5.0]	<1.0	62	61	35	110	16 [16]
Total BTEX	- -	7.0 J	21 J	6.3 J	<5.0 [<5.0]	<1.0	110	110 J	73	160	24 J [24 J]
Total VOCs	- -	7.0 J	22 J	18 J	<10 [<10]	<1.0	180	140 J	110 J	180 J	24 J [24 J]
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	<10	1.0 J	<10	<12 [<11]	NA	1.0 J	1.0 J	2.0 J	<40	NA
2,4-Dinitrophenol	10	<25	<25	<25	<62 [<55]	NA	<25	<25	<26	<200	NA
2-Chloronaphthalene	10	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
2-Methylnaphthalene	- -	3.0 J	3.0 J	0.20 J	<12 [<11]	<0.60	12 J	14 J	13	22 J	8.0 J [8.0 J]
2-Methylphenol	- -	1.0 J	3.0 J	1.0 J	<12 [<11]	NA	2.0 J	2.0 J	3.0 J	<40	NA
2-Nitrophenol	- -	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
3,3'-Dichlorobenzidine	5	<10	<10	<10	<25 [<22]	NA	<10	<10	<11	<80	NA
4-Methylphenol	- -	0.80 J	2.0 J	1.0 J	<12 [<11]	NA	5.0 J	5.0 J	4.0 J	<40	NA
4-Nitroaniline	5	<25	<25	<25	<25 [<22]	NA	<25	<25	<26	<80	NA
Acenaphthene	20	<10	0.20 J	<10	<12 [<11]	<0.80	0.70 J	0.90 J	1.0 J	2.0 J	1.0 J [<0.80]
Acenaphthylene	- -	0.30 J	0.30 J	<10	<12 [<11]	<0.80	3.0 J	3.0 J	3.0 J	3.0 J	2.0 J [2.0 J]
Anthracene	50	0.090 J	0.10 J	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Benzo(a)anthracene	0.002	<10	0.30 J	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Benzo(a)pyrene	0	<10	0.30 J	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Benzo(b)fluoranthene	0.002	<10	0.20 J	<10	<12 [<11]	<2.0	<10	<10	<11	<40	<2.0 [<2.0]
Benzo(b)fluoranthene	0.002	<10	0.20 J	<10	<12 [<11]	<2.0	<10	<10	<11	<40	<2.0 [<2.0]
Benzo(g,h,i)perylene	- -	<10	<10	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Benzo(k)fluoranthene	0.002	<10	0.30 J	<10	<12 [<11]	<0.90	<10	<10	<11	<40	<0.90 [<0.90]
bis(2-Ethylhexyl)phthalate	5	2.0 J	0.90 JB	0.40 J	<12 [<11]	NA	2.0 J	0.90 JB	0.40 J	<40	NA
Butylbenzylphthalate	50	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
Carbazole	- -	<10	0.20 J	<10	<12 [<11]	NA	<10	<10	0.80 J	<40	NA
Chrysene	0.002	<10	0.30 J	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Dibenzo(a,h)anthracene	- -	<10	<10	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Dibenzofuran	- -	<10	0.20 J	<10	<12 [<11]	NA	<10	<10	0.30 J	<40	NA
Diethylphthalate	50	<10	0.20 J	0.80 J	<12 [<11]	NA	<10	<10	<11	<40	NA
Dimethylphthalate	50	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
Di-n-Butylphthalate	50	0.40 J	0.30 JB	<10	<12 [<11]	NA	0.50 J	<10	<11	<40	NA
Di-n-Octylphthalate	50	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
Fluoranthene	50	<10	0.30 J	0.10 J	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Fluorene	50	<10	<10	<10	<12 [<11]	<0.80	<10	0.50 J	1.0 J	<40	0.90 J [0.90 J]
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Isophorone	50	<10	<10	<10	<12 [<11]	NA	<10	<10	<11	<40	NA
Naphthalene	10	7.0 J	9.0 J	1.0 J	<12 [<11]	<0.70	110	99	72	180	45 [43]
Phenanthrene	50	0.40 J	0.60 J	0.10 J	<12 [<11]	<0.70	<10	<10	<11	<40	<0.70 [<0.70]
Phenol	1	0.50 J	1.0 J	0.40 J	<12 [<11]	NA	2.0 J	2.0 J	<11	4.0 J	NA
Pyrene	50	<10	0.30 J	0.10 J	<12 [<11]	<1.0	<10	<10	<11	<40	<1.0 [<1.0]
Total PAHs	- -	11 J	15 J	1.5 J	<12 [<11]	<2.0	130 J	120 J	90 J	210 J	57 J [54 J]
Total SVOCs	- -	16 J	24 J	5.1 J	<62 [<55]	<2.0	140 J	130 J	100 J	210 J	57 J [54 J]

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-5S					MW-5D				
Date Collected:	Guidance Values	03/30/98	05/20/98	10/26/00	04/09/03	02/02/06	03/30/98	05/20/98	10/26/00	04/10/03	01/25/06
Detected Inorganics (ppb)											
Aluminum	- -	8,390	26,200	175	527 JB [472 JB]	NA	1,600	2,590	<100	<12,500	NA
Antimony	3	<4.00	6.30 B	<5.00	<100 [<100]	NA	<4.00	<4.00	<50.0	<500	NA
Arsenic	25	13.6	67.4	27.9	<200 [<200]	NA	10.3	15.0	<25.0	<1,000	NA
Barium	1,000	66.7 BEN	139 B	18.9	<25.0 [<25.0]	NA	68.8 BEN	79.2 B	43.7	71.3 B	NA
Beryllium	- -	<1.00	2.10 B	<5.00	<25.0 [<25.0]	NA	1.60 BN	2.10 B	<5.00	<125	NA
Cadmium	5	2.10 BN	4.60 B	<5.00	<50.0 [<50.0]	NA	1.40 BN	<1.00	<5.00	<250	NA
Calcium	- -	570,000 E	1,160,000	114,000	44,800 [44,900]	NA	193,000 E	300,000	176,000	216,000	NA
Chromium	50	21.7 N	68.7	1.20	19.6 B [19.8 B]	NA	3.60 BN	4.60 B	<10.0	<250	NA
Cobalt	- -	4.60 BN	17.9 B	<1.00	<50.0 [<50.0 J]	NA	1.00 BN	2.00 B	<10.0	<250	NA
Copper	200	68.8	224	2.20	<50.0 J [13.5 B]	NA	9.50 B	10.7 B	<10.0	<250	NA
Cyanide	200	<10.0	69.0	<10.0	16.1 [20.4]	9.70 B	<10.0	<10.0	<10.0	5.40 B	8.60 B [13.7]
Cyanide, Available	- -	NA	NA	<2.00	3.00	<2.00	NA	NA	<2.00	8.00	<2.00
Iron	300	9,540 EN	29,300	110	721 B [730 B]	NA	2,500 EN	4,190	<100	<5,000	NA
Lead	25	31.7	97.2	<2.00	<50.0 [<50.0]	NA	3.90	9.50	<20.0	<250	NA
Magnesium	- -	20,300 E	87,300	2,150	4,450 [4,470]	NA	23,800 E	38,900	25,900	4,550	NA
Manganese	300	1,090 EN	3,850	10.4	<75.0 [52.0 B]	NA	124 EN	238	11.1	<375	NA
Mercury	0.7	0.380	0.720 N	<0.100	<0.200 [<0.200]	NA	<0.200	<0.200	<0.100	<0.200	NA
Nickel	100	18.5 BN	53.8	2.20	<50.0 [<50.0]	NA	6.80 BN	6.00 B	<15.0	<250	NA
Potassium	- -	44,900	57,500	55,100	8,210 J [8,340 J]	NA	81,000	104,000	74,500	61,400 J	NA
Selenium	10	2.20 BN	7.00	<5.00	<150 [<150]	NA	<2.00	<2.00	<50.0	<750	NA
Silver	50	<1.00	<1.00	<1.00	<30.0 [<30.0]	NA	<1.00	<1.00	<10.0	<150	NA
Sodium	- -	97,400	97,100	99,200	45,100 [45,300]	NA	83,500 E	44,300	2,230,000	1,160,000	NA
Thallium	- -	<3.00	<3.00	<6.00	<200 [<200]	NA	<3.00	<3.00	<60.0	<1,000	NA
Vanadium	- -	21.6 BN	65.0	4.60	8.40 B [9.20 B]	NA	3.20 BN	5.60 B	<10.0	<150	NA
Zinc	2,000	98.6	329	42.7	<250 [<250]	NA	19.3 B	47.1	<50.0	<1,250	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	27.4	<1,000 [<1,000]	NA	NA	NA	<100	<1,000	NA
Manganese	300	NA	NA	<1.00	<75.0 [<75.0]	NA	NA	NA	15.6	<75.0	NA
PCBs (ppb)											
None Detected	0.09	- -	- -	NA	NA	NA	- -	- -	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	<0.12	<0.16 [<0.17]	NA	NA	NA	<0.10	<0.15	NA
4,4'-DDE	0.2	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
4,4'-DDT	0.2	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Aldrin	0	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Alpha-BHC	0.01	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Alpha-Chlordane	0.05	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Beta-BHC	- -	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Delta-BHC	- -	NA	NA	0.0096 J	<0.055 [0.0070 J]	NA	NA	NA	<0.050	0.023 J	NA
Dieldrin	0.004	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Endosulfan I	- -	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Endosulfan II	- -	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Endosulfan Sulfate	- -	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Endrin	0	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Endrin Aldehyde	5	NA	NA	<0.12	<0.11 [<0.11]	NA	NA	NA	<0.10	<0.10	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Gamma-Chlordane	0.05	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Heptachlor	0.04	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Heptachlor Epoxide	0.03	NA	NA	<0.059	<0.055 [<0.056]	NA	NA	NA	<0.050	<0.050	NA
Methoxychlor	35	NA	NA	<0.59	<0.55 [<0.56]	NA	NA	NA	<0.50	<0.50	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	1,200,000	363,000	NA	NA	NA	224,000	98,300	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	4,800	4,800	3,300	5,900 J [5,900 J]	NA	28,800	36,000	48,000	13,000 J	NA
CO2 by Headspace	- -	NA	NA	<600	<600 [<600]	NA	NA	NA	<600	<600	NA
Carbon monoxide	- -	NA	NA	<400	<400 [<400]	NA	NA	NA	<400	<400	NA
Carbonate, CaCO3	- -	224,000	53,800	NA	NA	NA	57,600	2,960	NA	NA	NA
COD	- -	34,100	28,000	12,200	16,700 [12,900]	NA	52,000	110,000	294,000	73,400	NA
Chloride	250,000	146,000	278,000	206,000	69,000 [69,000]	NA	5,330,000	9,830,000	10,400,000	2,500,000	NA
DOC Average Quads	- -	NA	NA	3,670	4,100 [4,200]	NA	NA	NA	15,400	)0.00000000	NA
Hardness, Ca/CO3	- -	1,510,000	3,260,000	NA	NA	NA	580,000	910,000	NA	NA	NA
Methane	- -	NA	NA	830	1.5 [0.9]	NA	NA	NA	4,760	1,600	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	576	NA	NA	NA	NA	<400 [<400]
Nitrate Nitrogen	10,000	<100	202	<100	2,300 [2,200]	NA	<100	<100	<100	<100	NA
Nitrite Nitrogen	1,000	56	92	<100	510 [510]	NA	<5	<5	<100	<500	NA
Oil and Grease	- -	<1,000	<1,000	NA	NA	NA	<1,000	3,900	NA	NA	NA
Oxygen	- -	NA	NA	1,190	7,500 [8,000]	NA	NA	NA	850	820	NA
Sulfate	250,000	170,000	211,000	147,000	74,000 [74,000]	83,200	226,000	97,100	250,000	140,000	210,000 [224,000]
Sulfide	50	3,000	<1,000	2,000	<1,000 [<1,000]	NA	28,700	29,100	12,800	23,000	NA
TOC Average Quads	- -	NA	NA	5,960	4,300 [5,400]	NA	NA	NA	15,800	10,000	NA
Total Dissolved Solids	1,000,000	960,000	1,050,000	NA	NA	NA	10,100,000	15,600,000	NA	NA	NA
pH (SU)											
pH	- -	12.2	11.86	NA	NA	NA	9.82	8.79	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-6S						
Date Collected:	Guidance Values	05/21/98	10/30/00	04/08/03	02/07/06	05/11/06	08/17/06	11/16/06
Detected Volatile Organics (ppb)								
1,1,1-Trichloroethane	5	<10	<10	<5.0	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<5.0	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<10	<5.0	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<10	<5.0	NA	NA	NA	NA
2-Butanone	- -	<10	<10	<10	NA	NA	NA	NA
2-Hexanone	50	<10	<10	<10	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	<10	NA	NA	NA	NA
Acetone	50	<10	<10	<10	NA	NA	NA	NA
Benzene	1	<10	<10	<5.0	<0.40	<0.40	<0.40	<0.40
Bromodichloromethane	50	<10	<10	<5.0	NA	NA	NA	NA
Bromoform	50	<10	<10	<5.0	NA	NA	NA	NA
Bromomethane	5	<10	<10	<5.0 J	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<10	<5.0	NA	NA	NA	NA
Chlorobenzene	5	<10	<10	<5.0	NA	NA	NA	NA
Chloroform	7	<10	<10	4.0 J	NA	NA	NA	NA
Chloromethane	- -	<10	<10	<5.0 J	NA	NA	NA	NA
Dibromochloromethane	50	<10	<10	<5.0	NA	NA	NA	NA
Ethylbenzene	5	<10	<10	<5.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	<10	4.0 J	<0.40	NA	NA	NA	NA
Styrene	5	<10	<10	<5.0	NA	NA	NA	NA
Tetrachloroethene	5	<10	<10	<5.0	NA	NA	NA	NA
Toluene	5	<10	1.0 J	<5.0	<0.30	<0.30	<0.30	<0.30
Trichloroethene	5	<10	<10	<5.0	NA	NA	NA	NA
Vinyl Chloride	2	<10	<10	<5.0	NA	NA	NA	NA
Xylenes (total)	5	<10	<10	<5.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	- -	<10	1.0 J	<5.0	<1.0	<1.0	<1.0	<1.0
Total VOCs	- -	<10	5.0 J	4.0 J	<1.0	<1.0	<1.0	<1.0
Detected Semivolatile Organics (ppb)								
2,4-Dimethylphenol	50	<10	<10	<12	NA	NA	NA	NA
2,4-Dinitrophenol	10	<25	<26	<62	NA	NA	NA	NA
2-Chloronaphthalene	10	<10	<10	<12	NA	NA	NA	NA
2-Methylnaphthalene	- -	<10	<10	<12	<0.60	<0.60	<0.60	<0.70
2-Methylphenol	- -	<10	<10	<12	NA	NA	NA	NA
2-Nitrophenol	- -	<10	<10	<12	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<25	NA	NA	NA	NA
4-Methylphenol	- -	<10	<10	<12	NA	NA	NA	NA
4-Nitroaniline	5	<25	<26	<25	NA	NA	NA	NA
Acenaphthene	20	<10	<10	<12	<0.80	<0.80	<0.80	<0.90
Acenaphthylene	- -	<10	<10	<12	<0.80	<0.80	<0.80	<0.80
Anthracene	50	<10	<10	<12	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	0.002	<10	<10	<12	<1.0	<1.0	<1.0	<0.80
Benzo(a)pyrene	0	<10	<10	<12	<1.0	<1.0	<1.0	<0.50
Benzo(b)fluoranthene	0.002	<10	<10	<12	<2.0	<2.0	<2.0	<1.0
Benzo(b)fluoranthene	0.002	<10	<10	<12	<2.0	<2.0	<2.0	<1.0
Benzo(g,h,i)perylene	- -	<10	<10	<12	<1.0	<1.0	<1.0	<0.30
Benzo(k)fluoranthene	0.002	<10	<10	<12	<0.90	<0.90	<0.90	<1.0
bis(2-Ethylhexyl)phthalate	5	<10	0.20 J	0.70 J	NA	NA	NA	NA
Butylbenzylphthalate	50	<10	<10	<12	NA	NA	NA	NA
Carbazole	- -	<10	<10	<12	NA	NA	NA	NA
Chrysene	0.002	<10	<10	<12	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene	- -	<10	<10	<12	<1.0	<1.0	<1.0	<0.30
Dibenzofuran	- -	<10	<10	<12	NA	NA	NA	NA
Diethylphthalate	50	0.40 J	<10	<12	NA	NA	NA	NA
Dimethylphthalate	50	<10	<10	<12	NA	NA	NA	NA
Di-n-Butylphthalate	50	0.40 JB	<10	<12	NA	NA	NA	NA
Di-n-Octylphthalate	50	<10	<10	<12	NA	NA	NA	NA
Fluoranthene	50	<10	<10	<12	<1.0	<1.0	<1.0	<1.0
Fluorene	50	<10	<10	<12	<0.80	<0.80	<0.80	<0.80
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<12	<1.0	<1.0	<1.0	<0.30
Isophorone	50	<10	<10	<12	NA	NA	NA	NA
Naphthalene	10	<10	0.50 J	<12	<0.70	<0.70	<0.70	<0.50
Phenanthrene	50	<10	<10	<12	<0.70	<0.70	<0.70	<0.80
Phenol	1	<10	<10	<12	NA	NA	NA	NA
Pyrene	50	<10	<10	<12	<1.0	<1.0	<1.0	<1.0
Total PAHs	- -	<10	0.50 J	<12	<2.0	<2.0	<2.0	<1.0
Total SVOCs	- -	0.80 J	0.70 J	0.70 J	<2.0	<2.0	<2.0	<1.0

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-6S						
Date Collected:	Guidance Values	05/21/98	10/30/00	04/08/03	02/07/06	05/11/06	08/17/06	11/16/06
Detected Inorganics (ppb)								
Aluminum	- -	5,020	5,670	1,250 B	NA	NA	NA	NA
Antimony	3	4.50 B	<10.0	<100	NA	NA	NA	NA
Arsenic	25	5.70 B	<5.00	<200	NA	NA	NA	NA
Barium	1,000	71.8 B	133	82.5	NA	NA	NA	NA
Beryllium	- -	<1.00	<5.00	<25.0	NA	NA	NA	NA
Cadmium	5	<1.00	<5.00	<50.0	NA	NA	NA	NA
Calcium	- -	87,100	213,000	148,000	NA	NA	NA	NA
Chromium	50	7.50 B	11.2	119	NA	NA	NA	NA
Cobalt	- -	3.00 B	4.90	<50.0	NA	NA	NA	NA
Copper	200	29.9	29.7	14.2 B	NA	NA	NA	NA
Cyanide	200	<10.0	<10.0	5.00 B	11.4	10.7	2.60 B	10.0 BJ
Cyanide, Available	- -	NA	<2.00	<2.00	<2.00	NA	NA	NA
Iron	300	10,300	14,600	5,050	NA	NA	NA	NA
Lead	25	33.9	49.1	<50.0	NA	NA	NA	NA
Magnesium	- -	7,810	17,300	10,900	NA	NA	NA	NA
Manganese	300	169	334	129	NA	NA	NA	NA
Mercury	0.7	2.30 N	1.30	<0.200	NA	NA	NA	NA
Nickel	100	10.9 B	15.9	78.2	NA	NA	NA	NA
Potassium	- -	6,720	13,100	8,340 J	NA	NA	NA	NA
Selenium	10	<2.00	<10.0	<150	NA	NA	NA	NA
Silver	50	<1.00	<2.00	<30.0	NA	NA	NA	NA
Sodium	- -	68,600	214,000	346,000	NA	NA	NA	NA
Thallium	- -	<3.00	<12.0	<200	NA	NA	NA	NA
Vanadium	- -	8.40 B	12.3	5.30 B	NA	NA	NA	NA
Zinc	2,000	50.8	75.0	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)								
Iron	300	NA	48.4	<1,000	NA	NA	NA	NA
Manganese	300	NA	115	<75.0	NA	NA	NA	NA
PCBs (ppb)								
None Detected	0.09	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)								
4,4'-DDD	0.3	NA	<0.10	<0.16	NA	NA	NA	NA
4,4'-DDE	0.2	NA	<0.10	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	NA	<0.10	<0.11	NA	NA	NA	NA
Aldrin	0	NA	<0.050	<0.054	NA	NA	NA	NA
Alpha-BHC	0.01	NA	<0.050	<0.054	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	<0.050	<0.054	NA	NA	NA	NA
Beta-BHC	- -	NA	<0.050	<0.054	NA	NA	NA	NA
Delta-BHC	- -	NA	<0.050	<0.054	NA	NA	NA	NA
Dieldrin	0.004	NA	<0.10	<0.11	NA	NA	NA	NA
Endosulfan I	- -	NA	<0.050	<0.054	NA	NA	NA	NA
Endosulfan II	- -	NA	<0.10	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	<0.10	<0.11	NA	NA	NA	NA
Endrin	0	NA	<0.10	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	NA	<0.10	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	<0.050	<0.054	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	<0.050	<0.054	NA	NA	NA	NA
Heptachlor	0.04	NA	<0.050	<0.054	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	<0.050	<0.054	NA	NA	NA	NA
Methoxychlor	35	NA	<0.50	<0.54	NA	NA	NA	NA
Miscellaneous (ppb)								
Alkalinity, CaCO3	- -	256,000	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA
BOD	- -	3,000	2,800	420 JB	NA	NA	NA	NA
CO2 by Headspace	- -	NA	45,510	7,700	NA	NA	NA	NA
Carbon monoxide	- -	NA	<400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	<2,000	NA	NA	NA	NA	NA	NA
COD	- -	<10,000	43,900	24,700	NA	NA	NA	NA
Chloride	250,000	80,400	404,000	700,000	NA	NA	NA	NA
DOC Average Quads	- -	NA	10,400	1,200	NA	NA	NA	NA
Hardness, Ca/CO3	- -	250,000	NA	NA	NA	NA	NA	NA
Methane	- -	NA	<70	11	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	16,000	NA	NA	NA
Nitrate Nitrogen	10,000	505	1,920	3,200	NA	NA	NA	NA
Nitrite Nitrogen	1,000	115	<100	<100	NA	NA	NA	NA
Oil and Grease	- -	<1,000	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	6,050	7,300	NA	NA	NA	NA
Sulfate	250,000	33,500	137,000	49,000	112,000	NA	NA	NA
Sulfide	50	>1,000	<1,000	<1,000	NA	NA	NA	NA
TOC Average Quads	- -	NA	10,700	1,300	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	461,000	NA	NA	NA	NA	NA	NA
pH (SU)								
pH	- -	8.39	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-6D							
Date Collected:		03/31/98	05/21/98	10/30/00	04/08/03	02/08/06	05/15/06	08/16/06	11/17/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<10	<10	<5.0 J	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
2-Butanone	- -	<10	<10	5.0 J	<10 J	NA	NA	NA	NA
2-Hexanone	50	<10	<10	<10	<10 J	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	<10	<10 J	NA	NA	NA	NA
Acetone	50	21	33	26	21	NA	NA	NA	NA
Benzene	1	12	12	11	5.0	1.3 J	5.1 [5.1]	5.3	4.9 J [4.6 J]
Bromodichloromethane	50	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Bromoform	50	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Bromomethane	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Chlorobenzene	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Chloroform	7	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Chloromethane	- -	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Dibromochloromethane	50	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Ethylbenzene	5	26	28	38	8.0 J	4.6 J	20 [19]	17	17 [17]
Methylene Chloride	5	<10	<10	3.0 J	<0.50 J	NA	NA	NA	NA
Styrene	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Tetrachloroethene	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Toluene	5	15	16	23	6.0	1.1 J	12 [12]	11	11 [11]
Trichloroethene	5	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Vinyl Chloride	2	<10	<10	<10	<5.0 J	NA	NA	NA	NA
Xylenes (total)	5	59	66	180	34 J	60	90 [91]	75	81 [78]
Total BTEX	- -	110	120	250	53 J	67 J	130 [130]	110	110 J [110 J]
Total VOCs	- -	130	160	290 J	74 J	67 J	130 [130]	110	110 J [110 J]
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	<10	1.0 J	<50	<20	NA	NA	NA	NA
2,4-Dinitrophenol	10	<25	<25	<120	<100	NA	NA	NA	NA
2-Chloronaphthalene	10	<10	<10	<50	<20	NA	NA	NA	NA
2-Methylnaphthalene	- -	41 J	53	68	44	110 J	57 [65 J]	67	76 J [83 J]
2-Methylphenol	- -	<10	<10	<50	<20	NA	NA	NA	NA
2-Nitrophenol	- -	<10	<10	<50	<20	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<50	<40	NA	NA	NA	NA
4-Methylphenol	- -	<10	4.0 J	4.0 J	2.0 J	NA	NA	NA	NA
4-Nitroaniline	5	<25	<25	<120	<40	NA	NA	NA	NA
Acenaphthene	20	3.0 J	4.0 J	5.0 J	3.0 J	<43	4.0 J [<8.0]	5.0 J	<8.0 [<8.0]
Acenaphthylene	- -	19 J	21 J	29 J	17 J	56 J	23 J [22 J]	27 J	27 J [31 J]
Anthracene	50	<10	<10	<50	<20	<53	<5.0 [<10]	<5.0	<10 [<10]
Benzo(a)anthracene	0.002	<10	<10	<50	<20	<64	<6.0 [<12]	<6.0	<8.0 [<8.0]
Benzo(a)pyrene	0	<10	<10	<50	<20	<58	<5.0 [<11]	<5.0	<5.0 [<5.0]
Benzo(b)fluoranthene	0.002	<10	<10	<50	<20	<83	<8.0 [<15]	<8.0	<10 [<10]
Benzo(b)fluoranthene	0.002	<10	<10	<50	<20	<83	<8.0 [<15]	<8.0	<10 [<10]
Benzo(g,h,i)perylene	- -	<10	<10	<50	<20	<56	<5.0 [<10]	<5.0	<3.0 J [<3.0 J]
Benzo(k)fluoranthene	0.002	<10	<10	<50	<20	<49	<5.0 [<9.0]	<5.0	<9.0 [<9.0]
bis(2-Ethylhexyl)phthalate	5	24 J	2.0 JB	<50	<20	NA	NA	NA	NA
Butylbenzylphthalate	50	<10	<10	<50	<20	NA	NA	NA	NA
Carbazole	- -	9.0 J	9.0 J	13 J	10 J	NA	NA	NA	NA
Chrysene	0.002	<10	<10	<50	<20	<52	<5.0 [<10]	<5.0	<12 [<12]
Dibenzo(a,h)anthracene	- -	<10	<10	<50	<20	<72	<7.0 [<13]	<7.0	<2.0 J [<2.0 J]
Dibenzofuran	- -	8.0 J	10 J	13 J	8.0 J	NA	NA	NA	NA
Diethylphthalate	50	<10	<10	<50	<20	NA	NA	NA	NA
Dimethylphthalate	50	<10	<10	<50	<20	NA	NA	NA	NA
Di-n-Butylphthalate	50	<10	<10	<50	<20	NA	NA	NA	NA
Di-n-Octylphthalate	50	<10	<10	<50	<20	NA	NA	NA	NA
Fluoranthene	50	<10	<10	<50	<20	<58	<5.0 [<11]	<5.0	<9.0 [<9.0]
Fluorene	50	7.0 J	10 J	12 J	7.0 J	<41	9.0 J [8.0 J]	10 JM	11 J [12 J]
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<50	<20	<63	<6.0 [<12]	<6.0	<3.0 J [<3.0 J]
Isophorone	50	<10	<10	<50	<20	NA	NA	NA	NA
Naphthalene	10	190	200	350	150	1,200	310 [370]	390	360 [410]
Phenanthrene	50	<10	0.70 J	0.90 J	<20	<35	<3.0 [<7.0]	<3.0	<7.0 [<7.0]
Phenol	1	50	52	70	12 J	NA	NA	NA	NA
Pyrene	50	<10	<10	<50	<20	<54	<5.0 [<10]	<5.0	<10 [<10]
Total PAHs	- -	260 J	290 J	470 J	220 J	1,400 J	400 J [470 J]	500 J	470 J [540 J]
Total SVOCs	- -	350 J	370 J	570 J	250 J	1,400 J	400 J [470 J]	500 J	470 J [540 J]

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-6D							
Date Collected:	Guidance Values	03/31/98	05/21/98	10/30/00	04/08/03	02/08/06	05/15/06	08/16/06	11/17/06
Detected Inorganics (ppb)									
Aluminum	- -	1,140	852	180	<2,500	NA	NA	NA	NA
Antimony	3	<4.00	<4.00	<5.00	<100	NA	NA	NA	NA
Arsenic	25	<2.00	<2.00	<2.50	<200	NA	NA	NA	NA
Barium	1,000	44.7 BEN	43.9 B	42.0	54.4	NA	NA	NA	NA
Beryllium	- -	<1.00	<1.00	<5.00	<25.0	NA	NA	NA	NA
Cadmium	5	<1.00	<1.00	<5.00	<50.0	NA	NA	NA	NA
Calcium	- -	369,000 E	248,000	279,000	312,000	NA	NA	NA	NA
Chromium	50	2.30 BN	<1.00	<1.00	<50.0	NA	NA	NA	NA
Cobalt	- -	<1.00	<1.00	<1.00	<50.0	NA	NA	NA	NA
Copper	200	<1.00	2.20 B	1.60	<50.0	NA	NA	NA	NA
Cyanide	200	<10.0	49.0	<10.0	18.1	203	9.90 B [3.00 B]	<1.30	25.1 J [55.2 J]
Cyanide, Available	- -	NA	NA	<2.00	11.0	<2.00	NA	NA	NA
Iron	300	1,950 EN	1,660	222	<1,000	NA	NA	NA	NA
Lead	25	3.50 N	<1.00	<2.00	<50.0	NA	NA	NA	NA
Magnesium	- -	941 BE	1,010 B	102	<500	NA	NA	NA	NA
Manganese	300	35.1 EN	35.3	3.50	<75.0	NA	NA	NA	NA
Mercury	0.7	0.490	0.410 N	<0.100	<0.200	NA	NA	NA	NA
Nickel	100	5.40 BN	3.80 B	2.50	<50.0	NA	NA	NA	NA
Potassium	- -	11,800	12,600	15,200	19,600 J	NA	NA	NA	NA
Selenium	10	2.80 BN	3.70 B	<5.00	<150	NA	NA	NA	NA
Silver	50	<1.00	<1.00	<1.00	<30.0	NA	NA	NA	NA
Sodium	- -	106,000 E	83,200	93,400	428,000	NA	NA	NA	NA
Thallium	- -	<3.00	<3.00	<6.00	<200	NA	NA	NA	NA
Vanadium	- -	3.30 BN	2.20 B	1.90	<30.0	NA	NA	NA	NA
Zinc	2,000	97.1	11.9 B	<5.00	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	93.7	<1,000	NA	NA	NA	NA
Manganese	300	NA	NA	<1.00	<75.0	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.11	<0.16	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	<0.11	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Aldrin	0	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	<0.050	<0.054	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	0.020 J	<0.054	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endrin	0	NA	NA	0.12	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	<0.053	0.015 J	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	<0.053	<0.054	NA	NA	NA	NA
Methoxychlor	35	NA	NA	<0.53	<0.54	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	37,000	680,000	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	26,100	2,100	27,600	18,000 J	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	<600	<600	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	<2,000	91,200	NA	NA	NA	NA	NA	NA
COD	- -	<10,000	43,200	78,100	68,300	NA	NA	NA	NA
Chloride	250,000	241,000	353,000	121,000	910,000	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	23,800	19,000	NA	NA	NA	NA
Hardness, Ca/CO3	- -	925,000	623,000	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	530	1,600	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	373	NA	NA	NA
Nitrate Nitrogen	10,000	<100	306	<100	<100	NA	NA	NA	NA
Nitrite Nitrogen	1,000	222	231	319	<100	NA	NA	NA	NA
Oil and Grease	- -	<1,000	3,500	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	870	740	NA	NA	NA	NA
Sulfate	250,000	128,000	130,000	106,000	160,000	109,000	NA	NA	NA
Sulfide	50	9,100	5,140	<1,000	8,400	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	24,400	20,000	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	1,280,000	1,220,000	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	12.2	12.17	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-7S							
Date Collected:	Guidance Values	03/31/98	05/21/98	10/31/00	04/23/03	02/06/06	05/12/06	08/15/06	11/13/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<10	<5.0	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	1.0 J	<10	<10	<5.0	NA	NA	NA	NA
1,1,2-Trichloroethane	1	1.0 J	<10	<10	<5.0	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<10	<10	<5.0	NA	NA	NA	NA
2-Butanone	- -	<10	<10	<10	<10	NA	NA	NA	NA
2-Hexanone	50	<10	<10	<10	<10	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	<10	<10	NA	NA	NA	NA
Acetone	50	<10	<10	<10	<10	NA	NA	NA	NA
Benzene	1	<10	<10	<10	<5.0	0.50 J	<0.40	<0.40	<0.40
Bromodichloromethane	50	1.0 J	<10	<10	<5.0	NA	NA	NA	NA
Bromoform	50	<10	<10	<10	<5.0	NA	NA	NA	NA
Bromomethane	5	<10	<10	<10	<5.0	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<10	<10	<5.0	NA	NA	NA	NA
Chlorobenzene	5	<10	<10	<10	<5.0	NA	NA	NA	NA
Chloroform	7	<10	<10	<10	0.70 J	NA	NA	NA	NA
Chloromethane	- -	<10	<10	<10	<5.0	NA	NA	NA	NA
Dibromochloromethane	50	<10	<10	<10	<5.0	NA	NA	NA	NA
Ethylbenzene	5	<10	<10	<10	<5.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	0.40 J	1.0 J	0.20 J	0.40 J	NA	NA	NA	NA
Styrene	5	2.0 J	<10	<10	<5.0	NA	NA	NA	NA
Tetrachloroethene	5	0.20 J	<10	<10	<5.0	NA	NA	NA	NA
Toluene	5	<10	<10	2.0 J	<5.0	<0.30	<0.30	<0.30	<0.30
Trichloroethene	5	1.0 J	<10	<10	<5.0	NA	NA	NA	NA
Vinyl Chloride	2	<10	<10	<10	<5.0	NA	NA	NA	NA
Xylenes (total)	5	0.30 J	2.0 J	<10	<5.0	1.2 J	<1.0	<1.0	<1.0
Total BTEX	- -	0.30 J	2.0 J	2.0 J	<5.0	1.7 J	<1.0	<1.0	<1.0
Total VOCs	- -	6.9 J	3.0 J	2.2 J	1.1 J	1.7 J	<1.0	<1.0	<1.0
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	1.0 J	2.0 J	<10	<10	NA	NA	NA	NA
2,4-Dinitrophenol	10	<25	<25	<25	<50	NA	NA	NA	NA
2-Chloronaphthalene	10	<10	<10	<10	<10	NA	NA	NA	NA
2-Methylnaphthalene	- -	<10	0.30 J	<10	<10	<0.60	<0.60	<0.60	<0.70
2-Methylphenol	- -	<10	0.70 J	<10	<10	NA	NA	NA	NA
2-Nitrophenol	- -	<10	<10	<10	<10	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<10	<20	NA	NA	NA	NA
4-Methylphenol	- -	0.70 J	0.60 J	<10	<10	NA	NA	NA	NA
4-Nitroaniline	5	<25	<25	<25	<20	NA	NA	NA	NA
Acenaphthene	20	<10	<10	0.20 J	<10	<0.80	<0.80	<0.80	<0.90
Acenaphthylene	- -	0.50 J	0.30 J	0.60 J	0.70 J	<0.80	<0.80	<0.80	1.0 J
Anthracene	50	<10	<10	0.10 J	<10	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	0.002	<10	<10	<10	<10	<1.0	<1.0	<1.0	<0.80
Benzo(a)pyrene	0	<10	<10	<10	<10	<1.0	<1.0	<1.0	<0.50
Benzo(b)fluoranthene	0.002	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0
Benzo(b)fluoranthene	0.002	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0
Benzo(g,h,i)perylene	- -	<10	<10	<10	<10	<1.0	<1.0	<1.0	<0.30
Benzo(k)fluoranthene	0.002	<10	<10	<10	<10	<0.90	<0.90	<0.90	<1.0
bis(2-Ethylhexyl)phthalate	5	0.70 J	1.0 JB	2.0 J	1.0 J	NA	NA	NA	NA
Butylbenzylphthalate	50	<10	<10	<10	<10	NA	NA	NA	NA
Carbazole	- -	<10	<10	<10	<10	NA	NA	NA	NA
Chrysene	0.002	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene	- -	<10	<10	<10	<10	<1.0	<1.0	<1.0	<0.30 J
Dibenzofuran	- -	<10	<10	0.20 J	<10	NA	NA	NA	NA
Diethylphthalate	50	<10	1.0 J	0.30 J	<10	NA	NA	NA	NA
Dimethylphthalate	50	<10	<10	<10	<10	NA	NA	NA	NA
Di-n-Butylphthalate	50	<10	0.70 JB	0.10 J	<10	NA	NA	NA	NA
Di-n-Octylphthalate	50	<10	<10	<10	<10	NA	NA	NA	NA
Fluoranthene	50	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0
Fluorene	50	<10	<10	<10	<10	<0.80	<0.80	<0.80	<0.80
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<10	<1.0	<1.0	<1.0	<0.30
Isophorone	50	<10	<10	<10	<10	NA	NA	NA	NA
Naphthalene	10	0.30 J	3.0 J	2.0 J	2.0 J	<0.70	<0.70	0.70 J	3.0 J
Phenanthrene	50	<10	<10	<10	<10	<0.70	<0.70	<0.70	<0.80
Phenol	1	<10	<10	0.40 J	<10	NA	NA	NA	NA
Pyrene	50	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0
Total PAHs	- -	0.80 J	3.6 J	2.9 J	2.7 J	<2.0	<2.0	0.70 J	4.0 J
Total SVOCs	- -	3.2 J	9.6 J	5.9 J	3.7 J	<2.0	<2.0	0.70 J	4.0 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID: / Date Collected:	NYSDEC Groundwater Standards and Guidance Values	MW-7S 03/31/98	MW-7S 05/21/98	MW-7S 10/31/00	MW-7S 04/23/03	MW-7S 02/06/06	MW-7S 05/12/06	MW-7S 08/15/06	MW-7S 11/13/06
Detected Inorganics (ppb)									
Aluminum	- -	1,670	1,900 B	636	588 B	NA	NA	NA	NA
Antimony	3	4.30 B	<80.0	<5.00	<100	NA	NA	NA	NA
Arsenic	25	<2.00	<40.0	<2.50	<200	NA	NA	NA	NA
Barium	1,000	15.9 BEN	<20.0	15.1	16.0 BEJ	NA	NA	NA	NA
Beryllium	- -	<1.00	<20.0	<0.500	<25.0	NA	NA	NA	NA
Cadmium	5	1.10 BN	<20.0	<0.500	<50.0	NA	NA	NA	NA
Calcium	- -	111,000 E	177,000	237,000	82,200 EJ	NA	NA	NA	NA
Chromium	50	3.40 BN	<20.0	1.10	<50.0	NA	NA	NA	NA
Cobalt	- -	1.00 BN	<20.0	1.40	<50.0	NA	NA	NA	NA
Copper	200	4.80 B	<20.0	7.90	14.9 B	NA	NA	NA	NA
Cyanide	200	380	292	440	317	291	235	98.3	349 J
Cyanide, Available	- -	NA	NA	<2.00	16.0	<2.00	NA	NA	NA
Iron	300	1,710 EN	3,100	1,120	348 B	NA	NA	NA	NA
Lead	25	3.40	39.7 B	<2.00	<50.0	NA	NA	NA	NA
Magnesium	- -	125,000 E	132,000	80,500	147,000 EJ	NA	NA	NA	NA
Manganese	300	102 EN	229 B	190	61.4 B	NA	NA	NA	NA
Mercury	0.7	<0.200	0.200 N	<0.100	<0.200 J	NA	NA	NA	NA
Nickel	100	7.70 BN	<40.0	7.60	<50.0	NA	NA	NA	NA
Potassium	- -	2,110 B	2,420 B	4,190	2,010	NA	NA	NA	NA
Selenium	10	2.70 BN	<40.0	<5.00	<150	NA	NA	NA	NA
Silver	50	<1.00	<20.0	<1.00	<30.0	NA	NA	NA	NA
Sodium	- -	92,600 E	155,000	141,000	78,800	NA	NA	NA	NA
Thallium	- -	<3.00	<60.0	<6.00	<200	NA	NA	NA	NA
Vanadium	- -	11.6 BN	<20.0	6.10	<30.0	NA	NA	NA	NA
Zinc	2,000	12.9 B	59.8 B	50.5	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	228	<2,000	NA	NA	NA	NA
Manganese	300	NA	NA	77.8	<150	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.11	<0.17	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	<0.11	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	0.22	<0.11	NA	NA	NA	NA
Aldrin	0	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	0.014 J	<0.056	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	0.023 J	<0.056	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Endrin	0	NA	NA	0.026 J	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	<0.11	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.057	0.029 J	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	<0.057	<0.056	NA	NA	NA	NA
Methoxychlor	35	NA	NA	<0.57	<0.56	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	357,000	267,000	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	2,100	4,800	3,100	1,800 B	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	29,250	28,000	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	<400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	4,200	<2,000	NA	NA	NA	NA	NA	NA
COD	- -	90,200	18,200	41,500	49,200	NA	NA	NA	NA
Chloride	250,000	147,000	136,000	113,000	100,000	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	12,900	7,400	NA	NA	NA	NA
Hardness, Ca/CO3	- -	792,000	988,000	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	<70	11	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	1,140	NA	NA	NA
Nitrate Nitrogen	10,000	460	<100	439	280	NA	NA	NA	NA
Nitrite Nitrogen	1,000	14	16	<100	<500	NA	NA	NA	NA
Oil and Grease	- -	1,100	<1,000	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	4,800	2,300	NA	NA	NA	NA
Sulfate	250,000	474,000	584,000	1,070,000	380,000	546,000	NA	NA	NA
Sulfide	50	<1,000	<1,000	<1,000	<1,000	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	14,900	7,500	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	1,140,000	1,340,000	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	7.78	7.81	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-7D							
Date Collected:		03/31/98	05/21/98	10/27/00	04/23/03	02/07/06	05/15/06	08/17/06	11/16/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	<10	<10	<200	<100	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<10	<200	<100	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<10	<200	<100	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<10	<200	<100	NA	NA	NA	NA
2-Butanone	- -	<10	<10	<200	<200	NA	NA	NA	NA
2-Hexanone	50	<10	<10	<200	<200	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	<200	<200	NA	NA	NA	NA
Acetone	50	110 J	<10	610	<200	NA	NA	NA	NA
Benzene	1	44 J	40 J	55	22 J	3.3 J	2.5 J	2.6 J [2.4 J]	2.6 J
Bromodichloromethane	50	<10	<10	<200	<100	NA	NA	NA	NA
Bromoform	50	<10	<10	<200	<100	NA	NA	NA	NA
Bromomethane	5	<10	<10	<200	<100	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<10	<200	<100	NA	NA	NA	NA
Chlorobenzene	5	290	<10	<200	<100	NA	NA	NA	NA
Chloroform	7	<10	<10	<200	<100	NA	NA	NA	NA
Chloromethane	- -	<10	<10	<200	<100	NA	NA	NA	NA
Dibromochloromethane	50	<10	<10	<200	<100	NA	NA	NA	NA
Ethylbenzene	5	320	270	360	210	33	27	28 [27]	24
Methylene Chloride	5	14 J	<10	600	23 J	NA	NA	NA	NA
Styrene	5	<10	<10	<200	140	NA	NA	NA	NA
Tetrachloroethene	5	<10	<10	<200	<100	NA	NA	NA	NA
Toluene	5	870	720	860	220	7.1	5.2 J	4.7 J [4.8 J]	4.1 J
Trichloroethene	5	<10	<10	5.0	<100	NA	NA	NA	NA
Vinyl Chloride	2	<10	<10	<200	<100	NA	NA	NA	NA
Xylenes (total)	5	5,400	4,400	6,000	2,900	320	300	280 [300]	270
Total BTEX	- -	6,600 J	5,400 J	7,300	3,400 J	360 J	340 J	320 J [330 J]	300 J
Total VOCs	- -	7,100 J	5,400 J	8,500	3,500 J	360 J	340 J	320 J [330 J]	300 J
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
2,4-Dinitrophenol	10	<25	<25	<5,000	<5,000	NA	NA	NA	NA
2-Chloronaphthalene	10	<10	<10	<2,000	<1,000	NA	NA	NA	NA
2-Methylnaphthalene	- -	1,500 J	1,100 J	980 J	1,100	370 J	380 J	220 J [270 J]	430 J
2-Methylphenol	- -	<10	<10	<2,000	<1,000	NA	NA	NA	NA
2-Nitrophenol	- -	<10	<10	<2,000	<1,000	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<10	<10	<2,000	<2,000	NA	NA	NA	NA
4-Methylphenol	- -	<10	<10	<2,000	<1,000	NA	NA	NA	NA
4-Nitroaniline	5	<25	<25	<5,000	<2,000	NA	NA	NA	NA
Acenaphthene	20	<10	31 J	<2,000	39 J	<40	<80	<40 [<42]	<87 J
Acenaphthylene	- -	540 J	410 J	360 J	390 J	92 J	<75	44 J [52 J]	99 J
Anthracene	50	82 J	37 J	27 J	83 J	<50	<99	<50 [<52]	<110 J
Benzo(a)anthracene	0.002	<10	<10	<2,000	<1,000	<60	<120	<60 [<63]	<84 J
Benzo(a)pyrene	0	<10	<10	<2,000	<1,000	<54	<110	<54 [<57]	<54 J
Benzo(b)fluoranthene	0.002	<10	<10	<2,000	<1,000	<77	<150	<77 [<81]	<100 J
Benzo(b)fluoranthene	0.002	<10	<10	<2,000	<1,000	<77	<150	<77 [<81]	<100 J
Benzo(g,h,i)perylene	- -	<10	<10	<2,000	<1,000	<52	<100	<52 [<55]	<35 J
Benzo(k)fluoranthene	0.002	<10	<10	<2,000	31 J	<46	<91	<46 [<48]	<100 J
bis(2-Ethylhexyl)phthalate	5	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Butylbenzylphthalate	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Carbazole	- -	270 J	220 J	190 J	150 J	NA	NA	NA	NA
Chrysene	0.002	<10	<10	<2,000	<1,000	<48	<97	<48 [<51]	<130 J
Dibenzo(a,h)anthracene	- -	<10	<10	<2,000	<1,000	<67	<130	<67 [<71]	<26 J
Dibenzofuran	- -	230 J	140 J	130 J	180 J	NA	NA	NA	NA
Diethylphthalate	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Dimethylphthalate	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Di-n-Butylphthalate	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Di-n-Octylphthalate	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Fluoranthene	50	140 J	34 J	25 J	120 J	<54	<110	<54 [<57]	<99 J
Fluorene	50	220 J	130 J	110 J	160 J	56 J	<77	<38 [<41]	<77 J
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<2,000	<1,000	<58	<120	<58 [<62]	<35 J
Isophorone	50	<10	<10	<2,000	<1,000	NA	NA	NA	NA
Naphthalene	10	17,000	11,000	12,000	6,000	2,700	2,500	1,600 [2,000]	2,700 J
Phenanthrene	50	280 J	120 J	100 J	270 J	42 J	<66	<33 [<35]	<78 J
Phenol	1	<10	58 J	<2,000	<1,000	NA	NA	NA	NA
Pyrene	50	<10	20 J	<2,000	88 J	<50	<100	<50 [<53]	<110 J
Total PAHs	- -	20,000 J	13,000 J	14,000 J	8,300 J	3,300 J	2,900 J	1,900 J [2,300 J]	3,200 J
Total SVOCs	- -	20,000 J	13,000 J	14,000 J	8,600 J	3,300 J	2,900 J	1,900 J [2,300 J]	3,200 J

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GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID: / Date Collected:	NYSDEC Groundwater Standards and Guidance Values	MW-7D 03/31/98	05/21/98	10/27/00	04/23/03	02/07/06	05/15/06	08/17/06	11/16/06
Detected Inorganics (ppb)									
Aluminum	- -	213	9,300	1,840	1,130 B	NA	NA	NA	NA
Antimony	3	<4.00	<80.0	<5.00	<100	NA	NA	NA	NA
Arsenic	25	<2.00	<40.0	<2.50	<200	NA	NA	NA	NA
Barium	1,000	8.90 BEN	59.1 B	21.6	22.7 BEJ	NA	NA	NA	NA
Beryllium	- -	<1.00	<20.0	<5.00	<25.0	NA	NA	NA	NA
Cadmium	5	1.10 BN	<20.0	<5.00	<50.0	NA	NA	NA	NA
Calcium	- -	161,000 E	241,000	156,000	204,000 EJ	NA	NA	NA	NA
Chromium	50	<1.00	<20.0	3.10	<50.0	NA	NA	NA	NA
Cobalt	- -	<1.00	<20.0	1.60	<50.0	NA	NA	NA	NA
Copper	200	<1.00	<20.0	5.50	<50.0	NA	NA	NA	NA
Cyanide	200	386	459	280	608	330	135	297 [244]	390 J
Cyanide, Available	- -	NA	NA	<2.00	10.0	<2.00	NA	NA	NA
Iron	300	435 EN	3,290	3,880	1,280	NA	NA	NA	NA
Lead	25	<1.00	36.9 B	<2.00	<50.0	NA	NA	NA	NA
Magnesium	- -	476 BE	56,200 B	2,690	1,840 EJ	NA	NA	NA	NA
Manganese	300	4.00 BEN	115 B	81.8	30.7 B	NA	NA	NA	NA
Mercury	0.7	<0.200	<0.200	<0.100	<0.200 J	NA	NA	NA	NA
Nickel	100	4.40 BN	<40.0	6.00	<50.0	NA	NA	NA	NA
Potassium	- -	5,190	6,390 B	7,780	8,250	NA	NA	NA	NA
Selenium	10	<2.00	<40.0	<5.00	<150	NA	NA	NA	NA
Silver	50	<1.00	<20.0	<1.00	<30.0	NA	NA	NA	NA
Sodium	- -	45,300 E	116,000	48,800	128,000	NA	NA	NA	NA
Thallium	- -	<3.00	<60.0	<6.00	<200	NA	NA	NA	NA
Vanadium	- -	1.30 BN	<20.0	4.30	<30.0	NA	NA	NA	NA
Zinc	2,000	3.10 B	37.0 B	37.4	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	337	<2,000	NA	NA	NA	NA
Manganese	300	NA	NA	4.20	<150	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	<0.50	<0.17	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	<0.50	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	<0.50	<0.11	NA	NA	NA	NA
Aldrin	0	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	0.036 J	0.055 J	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	<0.25	0.080	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	0.068 J	<0.056	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	0.16 J	<0.11	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	0.081 J	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	<0.50	<0.11	NA	NA	NA	NA
Endrin	0	NA	NA	0.28 J	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	<0.50	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	0.12 J	0.13	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	<0.25	<0.056	NA	NA	NA	NA
Methoxychlor	35	NA	NA	<2.5	<0.56	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	89,000	83,500	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	16,400	5,700	20,600	15,000	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	<600	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	38,900	47,600	NA	NA	NA	NA	NA	NA
COD	- -	64,300	39,100	73,200	101,000	NA	NA	NA	NA
Chloride	250,000	83,600	83,000	93,300	240,000	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	31,700	29,000	NA	NA	NA	NA
Hardness, Ca/CO3	- -	404,000	833,000	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	350	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	<8	NA	NA	NA
Nitrate Nitrogen	10,000	<100	<100	<100	<100	NA	NA	NA	NA
Nitrite Nitrogen	1,000	19	16	<100	470 B	NA	NA	NA	NA
Oil and Grease	- -	1,700	3,300	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	960	NA	NA	NA	NA
Sulfate	250,000	2,630,000	246,000	264,000	290,000	319,000	NA	NA	NA
Sulfide	50	3,800	2,290	2,300	3,900	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	42,000	30,000	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	880,000	631,000	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	10.7	10.77	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-8S								MW-8D			
Date Collected:	Guidance Values	03/30/98	05/20/98	05/21/98	04/21/03	02/07/06	05/15/06	08/17/06	11/17/06	03/30/98	05/20/98	10/31/00	04/21/03
Detected Volatile Organics (ppb)													
1,1,1-Trichloroethane	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
1,1,2,2-Tetrachloroethane	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
1,1,2-Trichloroethane	1	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
1,1-Dichloroethane	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
2-Butanone	- -	<10	<10	NA	<10	NA	NA	NA	NA	<10	<10	<500 [<500]	16 J
2-Hexanone	50	<10	<10	NA	<10	NA	NA	NA	NA	<10	<10	<500 [<500]	<50
4-Methyl-2-pentanone	- -	<10	<10	NA	<10	NA	NA	NA	NA	<10	<10	<500 [<500]	<50
Acetone	50	<10	37	NA	<10	NA	NA	NA	NA	<10	320	1,300 [1,100]	50
Benzene	1	<10	<10	NA	<5.0	<0.40	<0.40	<0.40	<0.40	14 J	390	430 J [430 J]	21 J
Bromodichloromethane	50	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Bromoform	50	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Bromomethane	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Carbon Disulfide	- -	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Chlorobenzene	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Chloroform	7	<10	<10	NA	3.0 J	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Chloromethane	- -	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Dibromochloromethane	50	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Ethylbenzene	5	6.0 J	5.0 J	NA	<5.0	<1.0	<1.0	<1.0	<1.0	130	310	410 J [410 J]	100
Methylene Chloride	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	31 J	330 J [380 J]	<25
Styrene	5	2.0 J	<10	NA	<5.0	NA	NA	NA	NA	330	960	1,100 [1,100]	270
Tetrachloroethene	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Toluene	5	8.0 J	8.0 J	NA	<5.0	<0.30	<0.30	<0.30	<0.30	230	3,700	4,400 [4,500]	120
Trichloroethene	5	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Vinyl Chloride	2	<10	<10	NA	<5.0	NA	NA	NA	NA	<10	<10	<500 [<500]	<25
Xylenes (total)	5	36	31	NA	<5.0	<1.0	<1.0	<1.0	<1.0	1,500	4,900	5,800 [5,900]	1,300
Total BTEX	- -	50 J	44 J	NA	<5.0	<1.0	<1.0	<1.0	<1.0	1,900 J	9,300	11,000 J [11,000 J]	1,500 J
Total VOCs	- -	52 J	81 J	NA	3.0 J	<1.0	<1.0	<1.0	<1.0	2,200 J	11,000 J	14,000 J [14,000 J]	1,900 J
Detected Semivolatile Organics (ppb)													
2,4-Dimethylphenol	50	<10	NA	<10	<10	NA	NA	NA	NA	<10	130 J	150 J [140 J]	<1,000
2,4-Dinitrophenol	10	<25	NA	<25	<50	NA	NA	NA	NA	<25	<25	<2,700 [<2,500]	<5,000
2-Chloronaphthalene	10	<10	NA	1.0 J	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
2-Methylnaphthalene	- -	7.0 J	NA	6.0 J	<10	<0.80	<0.60	<0.90	NA	720 J	89 J	180 J [170 J]	750 J
2-Methylphenol	- -	<10	NA	<10	<10	NA	NA	NA	NA	<10	82 J	<1,100 [<1,000]	<1,000
2-Nitrophenol	- -	<10	NA	0.50 J	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
3,3'-Dichlorobenzidine	5	<10	NA	<10	<20	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<2,000
4-Methylphenol	- -	<10	NA	<10	<10	NA	NA	NA	NA	<10	100 J	<1,100 [<1,000]	<1,000
4-Nitroaniline	5	<25	NA	<25	<20	NA	NA	NA	NA	<25	<25	<2,700 [<2,500]	<2,000
Acenaphthene	20	1.0 J	NA	2.0 J	<10	<1.0	<0.80	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Acenaphthylene	- -	1.0 J	NA	1.0 J	<10	<0.90	<0.80	<1.0	NA	320 J	32 J	63 J [57 J]	320 J
Anthracene	50	0.50 J	NA	1.0 J	<10	<1.0	<1.0	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(a)anthracene	0.002	<10	NA	2.0 J	<10	<1.0	<1.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(a)pyrene	0	<10	NA	0.80 J	<10	<1.0	<1.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(b)fluoranthene	0.002	<10	NA	0.90 J	<10	<2.0	<2.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(b)fluoranthene	0.002	<10	NA	0.90 J	<10	<2.0	<2.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(g,h,i)perylene	- -	<10	NA	0.80 J	<10	<1.0	<1.0	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Benzo(k)fluoranthene	0.002	<10	NA	1.0 J	<10	<1.0	<0.90	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
bis(2-Ethylhexyl)phthalate	5	2.0 J	NA	55 B	0.90 J	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Butylbenzylphthalate	50	<10	NA	<10	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Carbazole	- -	2.0 J	NA	2.0 J	<10	NA	NA	NA	NA	84 J	<10	<1,100 [<1,000]	91 J
Chrysene	0.002	<10	NA	2.0 J	<10	<1.0	<1.0	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Dibenzo(a,h)anthracene	- -	<10	NA	0.20 J	<10	<2.0	<1.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Dibenzofuran	- -	2.0 J	NA	3.0 J	<10	NA	NA	NA	NA	74 J	<10	<1,100 [28 J]	110 J
Diethylphthalate	50	<10	NA	0.90 JB	0.40 J	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Dimethylphthalate	50	<10	NA	<10	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Di-n-Butylphthalate	50	<10	NA	0.70 JB	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Di-n-Octylphthalate	50	<10	NA	0.50 J	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Fluoranthene	50	0.90 J	NA	5.0 J	<10	<1.0	<1.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Fluorene	50	1.0 J	NA	2.0 J	<10	<0.90	<0.80	<1.0	NA	52 J	<10	<1,100 [<1,000]	89 J
Indeno(1,2,3-cd)pyrene	0.002	<10	NA	0.70 J	<10	<1.0	<1.0	<2.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Isophorone	50	<10	NA	<10	<10	NA	NA	NA	NA	<10	<10	<1,100 [<1,000]	<1,000
Naphthalene	10	38	NA	27	<10	<0.80	<0.70	<0.90	NA	7,800	5,600	5,300 [5,300]	4,600
Phenanthrene	50	4.0 J	NA	10	<10	<0.80	<0.70	<0.90	NA	<10	<10	<1,100 [<1,000]	59 J
Phenol	1	2.0 J	NA	<10	<10	NA	NA	NA	NA	100 J	<10	<1,100 [<1,000]	<1,000
Pyrene	50	0.70 J	NA	4.0 J	<10	<1.0	<1.0	<1.0	NA	<10	<10	<1,100 [<1,000]	<1,000
Total PAHs	- -	54 J	NA	66 J	<10	<2.0	<2.0	<2.0	NA	8,900 J	5,700 J	5,500 J [5,500 J]	5,800 J
Total SVOCs	- -	62 J	NA	130 J	1.3 J	<2.0	<2.0	<2.0	NA	9,200 J	6,000 J	5,700 J [5,700 J]	6,000 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-8S								MW-8D			
Date Collected:		03/30/98	05/20/98	05/21/98	04/21/03	02/07/06	05/15/06	08/17/06	11/17/06	03/30/98	05/20/98	10/31/00	04/21/03
Detected Inorganics (ppb)													
Aluminum	- -	1,070	NA	14,100	<2,500	NA	NA	NA	NA	7,540	44,700	124 [128]	<2,500
Antimony	3	<4.00	NA	<4.00	<100	NA	NA	NA	NA	<4.00	4.00 B	<5.00 [<5.00]	<100
Arsenic	25	<2.00	NA	11.8	<200	NA	NA	NA	NA	5.30 B	40.5	<2.50 [<2.50]	<200
Barium	1,000	48.4 BEN	NA	128 BE	10.3 BEJ	NA	NA	NA	NA	62.4 BEN	408	34.2 [34.8]	11.9 BEJ
Beryllium	- -	<1.00	NA	1.40 B	<25.0	NA	NA	NA	NA	<1.00	2.90 B	<0.500 [<0.500]	<25.0
Cadmium	5	1.50 BN	NA	3.20 B	<50.0	NA	NA	NA	NA	<1.00	1.60 B	<0.500 [<0.500]	<50.0
Calcium	- -	1,090,000 E	NA	975,000 E	45,000 EJ	NA	NA	NA	NA	258,000 E	724,000	34,000 [34,200]	208,000 EJ
Chromium	50	27.5 N	NA	50.4	9.70 B	NA	NA	NA	NA	16.6 N	111	1.10 [<1.00]	<50.0
Cobalt	- -	3.30 BN	NA	9.20 B	<50.0	NA	NA	NA	NA	5.90 BN	45.5 B	<1.00 [<1.00]	<50.0
Copper	200	11.4 B	NA	133	<50.0	NA	NA	NA	NA	32.8	216	1.90 [2.40]	<50.0
Cyanide	200	112	NA	<10.0	27.5	14.7	8.10 B	NA	NA	1,590	352	358 [299]	717
Cyanide, Available	- -	NA	NA	NA	<2.00	<2.00	NA	NA	NA	NA	NA	11.0 [21.0]	10.0
Iron	300	1,030 EN	NA	16,800 E	277 B	NA	NA	NA	NA	14,600 EN	103,000	414 [407]	664 B
Lead	25	1.20 B	NA	41.5	<500	NA	NA	NA	NA	18.7	133	<2.00 [<2.00]	<50.0
Magnesium	- -	88,600 E	NA	36,500 E	36,900 EJ	NA	NA	NA	NA	8,800 E	72,000	453 [458]	263 BJ
Manganese	300	701 EN	NA	1,840	16.5 B	NA	NA	NA	NA	358 EN	2,960	7.30 [7.50]	<75.0
Mercury	0.7	0.720	NA	0.200 N	<0.200 J	NA	NA	NA	NA	0.380	0.310 N	<0.100 [<0.100]	<0.200 J
Nickel	100	21.3 BN	NA	27.6 B	<150	NA	NA	NA	NA	19.7 BN	120	2.70 [2.50]	<50.0
Potassium	- -	1,860 B	NA	3,250 BE	<30.0	NA	NA	NA	NA	16,100	14,500	10,300 [10,500]	13,500
Selenium	10	18.4 N	NA	20.5	<2,000	NA	NA	NA	NA	6.00 N	11.8	6.40 [6.70]	<150
Silver	50	<1.00	NA	<1.00	<200	NA	NA	NA	NA	<1.00	<1.00	<1.00 [<1.00]	<30.0
Sodium	- -	36,400 E	NA	31,800	29,700	NA	NA	NA	NA	79,300 E	131,000	140,000 [142,000]	66,600
Thallium	- -	<3.00	NA	<3.00	<250	NA	NA	NA	NA	<3.00	<3.00	<6.00 [<6.00]	<200
Vanadium	- -	3.60 BN	NA	29.9 B	<2,000	NA	NA	NA	NA	16.5 BN	88.6	4.00 [4.00]	<30.0
Zinc	2,000	40.5	NA	171	<150	NA	NA	NA	NA	61.5	440	6.70 [8.00]	<250
Detected Inorganics-Filtered (ppb)													
Iron	300	NA	NA	NA	<50.0	NA	NA	NA	NA	NA	NA	199 [243]	<2,000
Manganese	300	NA	NA	NA	<2,000	NA	NA	NA	NA	NA	NA	<10.0 [<10.0]	<150
PCBs (ppb)													
None Detected	0.09	- -	NA	- -	NA	NA	NA	NA	NA	- -	- -	NA	NA
Detected Pesticides (ppb)													
4,4'-DDD	0.3	NA	NA	NA	<0.15	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	<0.15
4,4'-DDE	0.2	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	0.053 J
4,4'-DDT	0.2	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	<0.10
Aldrin	0	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Alpha-BHC	0.01	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [0.018 J]	0.022 J
Alpha-Chlordane	0.05	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	0.028 J
Beta-BHC	- -	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [0.073]	0.027 J
Delta-BHC	- -	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [0.046 J]	0.12
Dieldrin	0.004	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	<0.10
Endosulfan I	- -	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Endosulfan II	- -	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	0.13
Endosulfan Sulfate	- -	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	<0.10
Endrin	0	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [0.029 J]	0.10
Endrin Aldehyde	5	NA	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	<0.11 [<0.11]	<0.10
Gamma-BHC (Lindane)	0.05	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Gamma-Chlordane	0.05	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Heptachlor	0.04	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Heptachlor Epoxide	0.03	NA	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	<0.054 [<0.055]	<0.050
Methoxychlor	35	NA	NA	NA	<0.50	NA	NA	NA	NA	NA	NA	<0.54 [<0.55]	<0.50
Miscellaneous (ppb)													
Alkalinity, CaCO3	- -	30,000,000	NA	1,350,000	NA	NA	NA	NA	NA	394,000	142,000	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	4,200	NA	3,900	<2,000	NA	NA	NA	NA	22,200	20,100	10,600 [15,400]	<2,000
CO2 by Headspace	- -	NA	NA	NA	2,000	NA	NA	NA	NA	NA	NA	<600 [<600]	<600
Carbon monoxide	- -	NA	NA	NA	<400	NA	NA	NA	NA	NA	NA	<400 [<400]	<400
Carbonate, CaCO3	- -	<2,000	NA	533,000	NA	NA	NA	NA	NA	198,000	12,700	NA	NA
COD	- -	27,600	NA	19,600	14,700	NA	NA	NA	NA	36,300	51,500	129,000 [127,000]	98,100
Chloride	250,000	16,700	NA	23,000	25,000	NA	NA	NA	NA	148,000	264,000	333,000 [346,000]	100,000
DOC Average Quads	- -	NA	NA	NA	420 B	NA	NA	NA	NA	NA	NA	43,000 [45,700]	25,000
Hardness, Ca/CO3	- -	3,100,000	NA	2,580,000	NA	NA	NA	NA	NA	680,000	2,100,000	NA	NA
Methane	- -	NA	NA	NA	18	NA	NA	NA	NA	NA	NA	11,240 [11,220]	920
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	1,330	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	10,000	7,890	NA	5,310	3,700	NA	NA	NA	NA	<100	252	<100 [<100]	<100
Nitrite Nitrogen	1,000	96	NA	141	49 B	NA	NA	NA	NA	14	217	<100 [<100]	230
Oil and Grease	- -	<1,000	NA	17,700	NA	NA	NA	NA	NA	1,100	1,700	NA	NA
Oxygen	- -	NA	NA	NA	3,300	NA	NA	NA	NA	NA	NA	880 [750]	610
Sulfate	250,000	230,000	NA	223,000	210,000	180,000	NA	NA	NA	243,000	69,600	84,200 [77,000]	170,000
Sulfide	50	<5,000	NA	<1,000	<1,000	NA	NA	NA	NA	7,900	4,730	6,000 [6,300]	8,200
TOC Average Quads	- -	NA	NA	NA	3,700	NA	NA	NA	NA	NA	NA	44,900 [47,400]	29,000
Total Dissolved Solids	1,000,000	1,360,000	NA	1,680,000	NA	NA	NA	NA	NA	761,000	618,000	NA	NA
pH (SU)													
pH	- -	12.4	NA	12.32	NA	NA	NA	NA	NA	11.5	8.9	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-9S	MW-9D	MW-10S	MW-10D	MW-11S					
Date Collected:	Guidance Values	10/30/00	10/27/00	10/31/00	10/31/00	11/01/00	03/25/03	01/30/06	05/09/06	08/16/06	11/14/06
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	<10	<200	2.0 J	<100	<20	<5.0	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	24 J	0.80 J	11 J	<20	<5.0	NA	NA	NA	NA
2-Butanone	- -	<10	<200	<10	<100	8.0 J	<10	NA	NA	NA	NA
2-Hexanone	50	<10	<200	<10	<100	<20	<10	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<200	<10	<100	<20	<10	NA	NA	NA	NA
Acetone	50	7.0	410	3.0 J	59 J	53	23	NA	NA	NA	NA
Benzene	1	<10	240	<10	1,000	28	6.0	6.1	3.5 J	5.7	4.1 J
Bromodichloromethane	50	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Bromoform	50	<10	<200	<10	<100	<20	0.40	NA	NA	NA	NA
Bromomethane	5	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Carbon Disulfide	- -	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Chlorobenzene	5	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Chloroform	7	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Chloromethane	- -	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Dibromochloromethane	50	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Ethylbenzene	5	0.40 J	370	<10	170	47	11	38	18	31	26
Methylene Chloride	5	0.50 J	370	0.70 J	14 J	7.0 J	<5.0	NA	NA	NA	NA
Styrene	5	<10	<200	<10	540	89	12	NA	NA	NA	NA
Tetrachloroethene	5	0.50 J	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Toluene	5	2.0 J	780	<10	1,900	280	40	54	26	33	23
Trichloroethene	5	2.0 J	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Vinyl Chloride	2	<10	<200	<10	<100	<20	<5.0	NA	NA	NA	NA
Xylenes (total)	5	4.0 J	3,900	<10	2,700	500	<5.0	210	94	140	110
Total BTEX	- -	6.4 J	5,300	<10	5,800	860	57	310	140 J	210	160 J
Total VOCs	- -	16 J	6,100 J	6.5 J	6,400 J	1,000 J	92	310	140 J	210	160 J
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	<22	<2,000	<54	200 J	<260	<54	NA	NA	NA	NA
2,4-Dinitrophenol	10	<55	<5,000	<140	<2,000	<660	<270	NA	NA	NA	NA
2-Chloronaphthalene	10	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
2-Methylnaphthalene	- -	9.0 J	340 J	10 J	880 J	180 J	47 J	78 J	84 J	95 J	45 J
2-Methylphenol	- -	<22	<2,000	<54	54 J	<260	<54	NA	NA	NA	NA
2-Nitrophenol	- -	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<22	<2,000	<54	<2,000	<260	<110	NA	NA	NA	NA
4-Methylphenol	- -	<22	<2,000	<54	58 J	<260	<54	NA	NA	NA	NA
4-Nitroaniline	5	<55	<5,000	<140	<2,000	<660	<110	NA	NA	NA	NA
Acenaphthene	20	0.80 J	45 J	8.0 J	41 J	<260	<54	<16	<9.0	<16	<8.0
Acenaphthylene	- -	11 J	<2,000	29 J	460 J	52 J	12 J	25 J	24 J	31 J	15 J
Anthracene	50	<22	<2,000	<54	<2,000	4.0 J	<54	<20	<11	<20	<10
Benzo(a)anthracene	0.002	<22	<2,000	<54	<2,000	<260	<54	<24	<13	<24	<8.0
Benzo(a)pyrene	0	<22	<2,000	<54	<2,000	<260	<54	<22	<12	<22	<5.0
Benzo(b)fluoranthene	0.002	<22	<2,000	<54	<2,000	<260	<54	<31	<17	<31	<10
Benzo(b)fluoranthene	0.002	<22	<2,000	<54	<2,000	<260	<54	<31	<17	<31	<10
Benzo(g,h,i)perylene	- -	<22	<2,000	<54	<2,000	<260	<54	<21	<11	<21	<3.0
Benzo(k)fluoranthene	0.002	<22	<2,000	<54	<2,000	<260	<54	<18	<10	<18	<9.0
bis(2-Ethylhexyl)phthalate	5	0.50 J	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Butylbenzylphthalate	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Carbazole	- -	20 J	120	23 J	350 J	21 J	<54	NA	NA	NA	NA
Chrysene	0.002	<22	<2,000	<54	<2,000	<260	<54	<19	<11	<19	<12
Dibenzo(a,h)anthracene	- -	<22	<2,000	<54	<2,000	<260	<54	<27	<15	<27	<2.0
Dibenzofuran	- -	2.0 J	<2,000	18 J	160 J	13 J	4.0 J	NA	NA	NA	NA
Diethylphthalate	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Dimethylphthalate	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Di-n-Butylphthalate	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Di-n-Octylphthalate	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Fluoranthene	50	0.30 J	<2,000	<54	<2,000	<260	<54	<22	<12	<22	<9.0
Fluorene	50	3.0 J	<2,000	15 J	120 J	9.0 J	<54	<15	<8.0	<15	<7.0
Indeno(1,2,3-cd)pyrene	0.002	<22	<2,000	<54	<2,000	<260	<54	<23	<13	<23	<3.0
Isophorone	50	<22	<2,000	<54	<2,000	<260	<54	NA	NA	NA	NA
Naphthalene	10	120	11,000	260 J	12,000	1,900	380	920	580	840	460
Phenanthrene	50	0.40 J	<2,000	3.0 J	65 J	4.0 J	<54	<13	<7.0	<13	<7.0
Phenol	1	3.0 J	80 J	<54	<2,000	31 J	5.0 J	NA	NA	NA	NA
Pyrene	50	<22	<2,000	<54	<2,000	<260	<54	<20	<11	<20	<10
Total PAHs	- -	150 J	11,000 J	330 J	14,000 J	2,200 J	440 J	1,000 J	690 J	970 J	520 J
Total SVOCs	- -	170 J	12,000 J	370 J	14,000 J	2,200 J	450 J	1,000 J	690 J	970 J	520 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-9S	MW-9D	MW-10S	MW-10D	MW-11S					
Date Collected:	Guidance Values	10/30/00	10/27/00	10/31/00	10/31/00	11/01/00	03/25/03	01/30/06	05/09/06	08/16/06	11/14/06
Detected Inorganics (ppb)											
Aluminum	- -	719	504	36.4	44.7	2,160	<2,500	NA	NA	NA	NA
Antimony	3	<5.00	<5.00	<5.00	<5.00	<5.00	<100	NA	NA	NA	NA
Arsenic	25	4.30	2.60	11.1	<2.50	2.60	<200	NA	NA	NA	NA
Barium	1,000	13.0	14.9	10.5	30.7	80.8	34.3	NA	NA	NA	NA
Beryllium	- -	<5.00	<5.00	<5.00	<5.00	<5.00	<25.0	NA	NA	NA	NA
Cadmium	5	<5.00	<5.00	<5.00	<5.00	<5.00	<50.0	NA	NA	NA	NA
Calcium	- -	82,500	51,600	132,000	166,000	356,000	393,000	NA	NA	NA	NA
Chromium	50	1.30	4.40	1.80	1.90	4.20	<50.0	NA	NA	NA	NA
Cobalt	- -	<1.00	<1.00	1.20	<1.00	1.30	<50.0	NA	NA	NA	NA
Copper	200	3.10	3.80	5.00	1.60	7.10	<50.0	NA	NA	NA	NA
Cyanide	200	<10.0	1,650	143	73.0	683	242 J	291	353	216	418 J
Cyanide, Available	- -	<2.00	5.00	17.0	23.0	3.00	8.00	<2.00	NA	NA	NA
Iron	300	110	2,220	271	141	4,830	<1,000	NA	NA	NA	NA
Lead	25	<2.00	<2.00	<2.00	<2.00	2.90	<50.0	NA	NA	NA	NA
Magnesium	- -	3,370	35,700	41,000	3,640	2,170	81,400	NA	NA	NA	NA
Manganese	300	2.20	29.6	105	3.40	210	<75.0	NA	NA	NA	NA
Mercury	0.7	<0.100	<0.100	<0.100	<0.100	<0.100	<0.200	NA	NA	NA	NA
Nickel	100	1.80	6.60	26.0	7.10	6.60	<50.0	NA	NA	NA	NA
Potassium	- -	3,370	3,610	16,100	16,700	18,600	8,630 EJ	NA	NA	NA	NA
Selenium	10	<5.00	<5.00	23.0	8.30	6.40	<150 J	NA	NA	NA	NA
Silver	50	<1.00	<1.00	<1.00	<1.00	<1.00	<30.0	NA	NA	NA	NA
Sodium	- -	108,000	100,000	51,900	90,200	97,200	147,000	NA	NA	NA	NA
Thallium	- -	<6.00	<6.00	<6.00	<6.00	<6.00	<200	NA	NA	NA	NA
Vanadium	- -	6.80	2.60	4.80	4.00	6.70	<30.0	NA	NA	NA	NA
Zinc	2,000	<5.00	7.30	21.2	<5.00	37.0	<250	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	68.1	780	205	<100	451	<200	NA	NA	NA	NA
Manganese	300	1.40	4.50	120	<10.0	<10.0	<15.0	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	<0.11	<0.10	0.020 J	<0.10	0.014 J	<0.017	NA	NA	NA	NA
4,4'-DDE	0.2	<0.11	<0.10	<0.11	<0.10	<0.10	<0.11	NA	NA	NA	NA
4,4'-DDT	0.2	<0.11	<0.10	0.097 J	<0.10	0.090 J	<0.11 J	NA	NA	NA	NA
Aldrin	0	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Alpha-BHC	0.01	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Alpha-Chlordane	0.05	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Beta-BHC	- -	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Delta-BHC	- -	0.037 J	<0.050	0.057	<0.050	0.017 J	<0.056	NA	NA	NA	NA
Dieldrin	0.004	<0.11	0.038 J	<0.11	<0.10	<0.10	<0.11	NA	NA	NA	NA
Endosulfan I	- -	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Endosulfan II	- -	<0.11	0.024 J	<0.11	<0.10	<0.10	<0.11	NA	NA	NA	NA
Endosulfan Sulfate	- -	<0.11	<0.10	<0.11	<0.10	0.016 J	<0.11	NA	NA	NA	NA
Endrin	0	<0.11	<0.10	0.069 J	<0.10	<0.10	<0.11	NA	NA	NA	NA
Endrin Aldehyde	5	<0.11	<0.10	<0.11	<0.10	<0.10	<0.11	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	<0.056	<0.050	<0.054	<0.050	<0.050	0.0084 J	NA	NA	NA	NA
Gamma-Chlordane	0.05	<0.056	<0.050	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Heptachlor	0.04	<0.056	<0.050	<0.054	<0.050	<0.050	<0.034 J	NA	NA	NA	NA
Heptachlor Epoxide	0.03	<0.056	0.013 J	<0.054	<0.050	<0.050	<0.056	NA	NA	NA	NA
Methoxychlor	35	<0.56	<0.50	<0.54	<0.50	<0.50	<0.56	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	4,600	42,900	3,100	42,600	NA	7,000	NA	NA	NA	NA
CO2 by Headspace	- -	<600	NA	76,010	<600	<600	<600	NA	NA	NA	NA
Carbon monoxide	- -	<400	NA	<400	<400	<400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	22,000	142,000	24,400	147,000	81,900	46,700	NA	NA	NA	NA
Chloride	250,000	91,600	236,000	24,000	157,000	157,000	200,000	NA	NA	NA	NA
DOC Average Quads	- -	9,300	36,100	16,300	66,200	21,600	12,000	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	<70	NA	<70	360	330	34	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	NA	2,410	NA	NA	NA
Nitrate Nitrogen	10,000	<100	<100	<100	413	<100	370	NA	NA	NA	NA
Nitrite Nitrogen	1,000	131	<100	<100	413	<100	240	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	4,410	NA	1,010	3,590	2,930	10,000	NA	NA	NA	NA
Sulfate	250,000	69,000	124,000	157,000	187,000	245,000	930,000	359,000	NA	NA	NA
Sulfide	50	<1,000	15,600	<1,000	<1,000	<1,000	<1,000	NA	NA	NA	NA
TOC Average Quads	- -	8,690	46,000	16,600	65,600	21,900	13,000	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-11D						MW-11D2
Date Collected:	Guidance Values	11/01/00	03/25/03	01/26/06	05/10/06	08/17/06	11/15/06	03/26/03
Detected Volatile Organics (ppb)								
1,1,1-Trichloroethane	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
1,1,2,2-Tetrachloroethane	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
1,1,2-Trichloroethane	1	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
1,1-Dichloroethane	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
2-Butanone	- -	<100	<10 [<10]	NA	NA	NA	NA	<10
2-Hexanone	50	<100	<10 [<10]	NA	NA	NA	NA	<10
4-Methyl-2-pentanone	- -	<100	<10 [<10]	NA	NA	NA	NA	<10
Acetone	50	<100	<10 [<10]	NA	NA	NA	NA	<10
Benzene	1	1,200	84 [84]	460	200	190	340	<5.0
Bromodichloromethane	50	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Bromoform	50	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Bromomethane	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Carbon Disulfide	- -	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Chlorobenzene	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Chloroform	7	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Chloromethane	- -	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Dibromochloromethane	50	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Ethylbenzene	5	570	62 [62]	250	150	140	150	<5.0
Methylene Chloride	5	16 J	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Styrene	5	<100	46 [46]	NA	NA	NA	NA	<5.0
Tetrachloroethene	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Toluene	5	2,000	51 [51]	580	98	130	380	<5.0
Trichloroethene	5	<100	<5.0 [<5.0]	NA	NA	NA	NA	<5.0
Vinyl Chloride	2	<100	3.0 J [3.0 J]	NA	NA	NA	NA	<5.0
Xylenes (total)	5	2,800	230 [230]	530	170	180	320	<5.0
Total BTEX	- -	6,600	430 [430]	1,800	620	640	1,200	<5.0
Total VOCs	- -	6,600 J	480 J [480 J]	1,800	620	640	1,200	<10
Detected Semivolatile Organics (ppb)								
2,4-Dimethylphenol	50	240 J	<210 [<200]	NA	NA	NA	NA	<11
2,4-Dinitrophenol	10	<2,500	<1,100 [<1,000]	NA	NA	NA	NA	<54
2-Chloronaphthalene	10	<1,000	<210 [<200]	NA	NA	NA	NA	<11
2-Methylnaphthalene	- -	<1,000	96 J [98 J]	33 J	<32	15 J	23 J	<11
2-Methylphenol	- -	210 J	<210 [<200]	NA	NA	NA	NA	<11
2-Nitrophenol	- -	<1,000	<210 [<200]	NA	NA	NA	NA	<11
3,3'-Dichlorobenzidine	5	<1,000	<420 [400]	NA	NA	NA	NA	<22
4-Methylphenol	- -	300 J	20 J [<200 J]	NA	NA	NA	NA	<11
4-Nitroaniline	5	<2,500	<420 [400]	NA	NA	NA	NA	<22
Acenaphthene	20	<1,000	<210 [<200]	<20	<40	<17	<17	<11
Acenaphthylene	- -	<1,000	37 J [37 J]	<19	<38	<16	<17	<11
Anthracene	50	<1,000	<210 [<200]	<25	<50	<22	<21	<11
Benzo(a)anthracene	0.002	<1,000	<210 [<200]	<30	<60	<26	<16	<11
Benzo(a)pyrene	0	<1,000	<210 [<200]	<27	<54	<23	<11	<11
Benzo(b)fluoranthene	0.002	<1,000	<210 [<200]	<38	<77	<33	<20	<11
Benzo(b)fluoranthene	0.002	<1,000	<210 [<200]	<38	<77	<33	<20	<11
Benzo(g,h,i)perylene	- -	<1,000	<210 [<200]	<26	<52	<23	<7.0	<11
Benzo(k)fluoranthene	0.002	<1,000	<210 [<200]	<23	<46	<20	<20	<11
bis(2-Ethylhexyl)phthalate	5	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Butylbenzylphthalate	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Carbazole	- -	<1,000	<210 J [13 J]	NA	NA	NA	NA	<11
Chrysene	0.002	<1,000	<210 [<200]	<24	<48	<21	<24	<11
Dibenzo(a,h)anthracene	- -	<1,000	<210 [<200]	<34	<67	<29	<5.0	<11
Dibenzofuran	- -	<1,000	12 J [12 J]	NA	NA	NA	NA	<11
Diethylphthalate	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Dimethylphthalate	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Di-n-Butylphthalate	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Di-n-Octylphthalate	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Fluoranthene	50	<1,000	<210 [<200]	<27	<54	<23	<19	<11
Fluorene	50	<1,000	<210 [<200]	<19	<38	<17	<15	<11
Indeno(1,2,3-cd)pyrene	0.002	<1,000	<210 [<200]	<29	<58	<25	<7.0	<11
Isophorone	50	<1,000	<210 [<200]	NA	NA	NA	NA	<11
Naphthalene	10	3,700	1,100 [1,100]	1,200	1,300	950	1,300	4.0 J
Phenanthrene	50	<1,000	<210 [<200]	<16	<33	<14	<15	<11
Phenol	1	120 J	<210 [<200]	NA	NA	NA	NA	<11
Pyrene	50	<1,000	<210 [<200]	<25	<50	<22	<21	<11
Total PAHs	- -	3,700	1,200 J [1,200 J]	1,200 J	1,300	970 J	1,300 J	4.0 J
Total SVOCs	- -	4,600 J	1,300 J [2,100 J]	1,200 J	1,300	970 J	1,300 J	4.0 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-11D						MW-11D2
Date Collected:		11/01/00	03/25/03	01/26/06	05/10/06	08/17/06	11/15/06	03/26/03
Detected Inorganics (ppb)								
Aluminum	- -	1,580	189 B [298 B]	NA	NA	NA	NA	1,390 B
Antimony	3	<5.00	<20.0 [<20.0]	NA	NA	NA	NA	<100
Arsenic	25	7.00	<40.0 [<40.0]	NA	NA	NA	NA	<200
Barium	1,000	67.8	591 [595]	NA	NA	NA	NA	74.2
Beryllium	- -	<5.00	<5.00 [<5.00]	NA	NA	NA	NA	<25.0
Cadmium	5	<5.00	<10.0 [<10.0]	NA	NA	NA	NA	<50.0
Calcium	- -	34,900	109,000 [111,000]	NA	NA	NA	NA	1,200,000
Chromium	50	4.60	<10.0 [<10.0]	NA	NA	NA	NA	<50.0
Cobalt	- -	1.90	<10.0 [<10.0]	NA	NA	NA	NA	<50.0
Copper	200	9.20	<10.0 [<10.0]	NA	NA	NA	NA	8.60 B
Cyanide	200	158	65.0 J [40.1 J]	8.70 B	25.9	48.6	36.0 J	<10.0 J
Cyanide, Available	- -	10.0	<2.00 [<2.00]	<2.00	NA	NA	NA	300
Iron	300	4,200	758 [677]	NA	NA	NA	NA	19,600
Lead	25	<2.00	<10.0 [<10.0]	NA	NA	NA	NA	<50.0
Magnesium	- -	2,920	31,200 [31,600]	NA	NA	NA	NA	244,000
Manganese	300	91.2	238 [240]	NA	NA	NA	NA	238
Mercury	0.7	<0.100	<0.200 [<0.200]	NA	NA	NA	NA	<0.200
Nickel	100	7.70	<10.0 [<10.0]	NA	NA	NA	NA	<50.0
Potassium	- -	7,580	24,200 EJ [24,400 EJ]	NA	NA	NA	NA	571,000 EJ
Selenium	10	<5.00	<30.0 J [<30.0 J]	NA	NA	NA	NA	<150 J
Silver	50	<1.00	<6.00 [<6.00]	NA	NA	NA	NA	<30.0
Sodium	- -	212,000	156,000 [15,800]	NA	NA	NA	NA	593,000
Thallium	- -	8.00	<40.0 [<40.0]	NA	NA	NA	NA	<20.0
Vanadium	- -	10.0	<6.00 [<6.00]	NA	NA	NA	NA	<30.0
Zinc	2,000	30.2	<50.0 [<50.0]	NA	NA	NA	NA	<250
Detected Inorganics-Filtered (ppb)								
Iron	300	164	350 [288]	NA	NA	NA	NA	10,400
Manganese	300	19.0	237 [216]	NA	NA	NA	NA	118
PCBs (ppb)								
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)								
4,4'-DDD	0.3	<0.11	<0.16 J [<0.16 J]	NA	NA	NA	NA	<0.18
4,4'-DDE	0.2	0.031 J	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
4,4'-DDT	0.2	0.29	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12 J
Aldrin	0	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Alpha-BHC	0.01	<0.054	0.060 [0.053]	NA	NA	NA	NA	<0.060
Alpha-Chlordane	0.05	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Beta-BHC	- -	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Delta-BHC	- -	0.019 J	<0.055 J [<0.053 J]	NA	NA	NA	NA	0.012 J
Dieldrin	0.004	<0.11	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
Endosulfan I	- -	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Endosulfan II	- -	<0.11	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
Endosulfan Sulfate	- -	<0.11	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
Endrin	0	<0.11	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
Endrin Aldehyde	5	<0.11	<0.11 J [<0.11 J]	NA	NA	NA	NA	<0.12
Gamma-BHC (Lindane)	0.05	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Gamma-Chlordane	0.05	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Heptachlor	0.04	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Heptachlor Epoxide	0.03	<0.054	<0.055 J [<0.053 J]	NA	NA	NA	NA	<0.060
Methoxychlor	35	<0.54	<0.55 J [<0.53 J]	NA	NA	NA	NA	<0.60
Miscellaneous (ppb)								
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	5,000 [5,300]	NA	NA	NA	NA	390 B
CO2 by Headspace	- -	<600	19,000 [20,000]	NA	NA	NA	NA	150,000
Carbon monoxide	- -	<400	<400 [<400]	NA	NA	NA	NA	<400
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA
COD	- -	124,000	40,500 [38,300]	NA	NA	NA	NA	991,000
Chloride	250,000	465,000	1,300,000 [1,300,000]	NA	NA	NA	NA	95,000,000
DOC Average Quads	- -	35,100	9,600 [10,000]	NA	NA	NA	NA	19,000
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA
Methane	- -	9,490	1,700 [1,700]	NA	NA	NA	NA	280
Nitrate + Nitrite (as N)	- -	NA	NA	<40	NA	NA	NA	NA
Nitrate Nitrogen	10,000	<100	<100 [<100]	NA	NA	NA	NA	<25,000
Nitrite Nitrogen	1,000	<100	<5,000 [<5,000]	NA	NA	NA	NA	<50,000
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	1,010	5,600 [5,200]	NA	NA	NA	NA	3,300
Sulfate	250,000	26,300	160,000 [170,000]	15,700	NA	NA	NA	2,500,000
Sulfide	50	3,000	600 B [400 B]	NA	NA	NA	NA	500 B
TOC Average Quads	- -	40,900	11,000 [10,000]	NA	NA	NA	NA	20,000
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA
pH (SU)								
pH	- -	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-12S						
Date Collected:		11/01/00	03/26/03	01/31/06	05/09/06	08/15/06	11/15/06	03/27/08
Detected Volatile Organics (ppb)								
1,1,1-Trichloroethane	5	<10	<5.0	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<5.0	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<5.0	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<5.0	NA	NA	NA	NA	NA
2-Butanone	- -	<10	13	NA	NA	NA	NA	NA
2-Hexanone	50	<10	<10	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	<10	<10	NA	NA	NA	NA	NA
Acetone	50	49	84	NA	NA	NA	NA	NA
Benzene	1	4.0 J	7.0	7.9	9.4	11	3.9 J	NA
Bromodichloromethane	50	<10	<5.0	NA	NA	NA	NA	NA
Bromoform	50	<10	<5.0	NA	NA	NA	NA	NA
Bromomethane	5	<10	<5.0	NA	NA	NA	NA	NA
Carbon Disulfide	- -	0.70 J	<5.0	NA	NA	NA	NA	NA
Chlorobenzene	5	<10	<5.0	NA	NA	NA	NA	NA
Chloroform	7	<10	<5.0	NA	NA	NA	NA	NA
Chloromethane	- -	<10	<5.0	NA	NA	NA	NA	NA
Dibromochloromethane	50	<10	<5.0	NA	NA	NA	NA	NA
Ethylbenzene	5	11	16	30	33	23	6.7	NA
Methylene Chloride	5	2.0 J	<5.0	NA	NA	NA	NA	NA
Styrene	5	<10	9.0	NA	NA	NA	NA	NA
Tetrachloroethene	5	<10	<5.0	NA	NA	NA	NA	NA
Toluene	5	15	20	28	27	24	8.1	NA
Trichloroethene	5	<10	<5.0	NA	NA	NA	NA	NA
Vinyl Chloride	2	<10	<5.0	NA	NA	NA	NA	NA
Xylenes (total)	5	76	<5.0	190	180	110	33	NA
Total BTEX	- -	110 J	43	260	250	170	52 J	NA
Total VOCs	- -	160 J	150	260	250	170	52 J	NA
Detected Semivolatile Organics (ppb)								
2,4-Dimethylphenol	50	6.0 J	2.0 J	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	<50	<55	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	<20	<11	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	3.0 J	0.80 J	3.0 J	7.0 J	4.0 J	1.0 J	NA
2-Methylphenol	- -	6.0 J	2.0 J	NA	NA	NA	NA	NA
2-Nitrophenol	- -	<20	<11	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<20	<22	NA	NA	NA	NA	NA
4-Methylphenol	- -	14 J	4.0 J	NA	NA	NA	NA	NA
4-Nitroaniline	5	<50	<22	NA	NA	NA	NA	NA
Acenaphthene	20	<20	<11	<3.0	<3.0	<2.0	<0.90	NA
Acenaphthylene	- -	<20	6.0 J	<3.0	<3.0	<2.0	<0.90	NA
Anthracene	50	<20	<11	<4.0	<4.0	<2.0	<1.0	NA
Benzo(a)anthracene	0.002	<20	<11	<5.0	<5.0	<3.0	<0.80	NA
Benzo(a)pyrene	0	<20	<11	<4.0	<4.0	<2.0	<0.50	NA
Benzo(b)fluoranthene	0.002	<20	<11	<6.0	<6.0	<3.0	<1.0	NA
Benzo(b)fluoranthene	0.002	<20	<11	<6.0	<6.0	<3.0	<1.0	NA
Benzo(g,h,i)perylene	- -	<20	<11	<4.0	<4.0	<2.0	<0.40	NA
Benzo(k)fluoranthene	0.002	<20	<11	<4.0	<4.0	<2.0	<1.0	NA
bis(2-Ethylhexyl)phthalate	5	0.50 J	<11	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	<20	<11	NA	NA	NA	NA	NA
Carbazole	- -	0.60 J	<11	NA	NA	NA	NA	NA
Chrysene	0.002	<20	<11	<4.0	<4.0	<2.0	<1.0	NA
Dibenzo(a,h)anthracene	- -	<20	<11	<5.0	<5.0	<3.0	<0.30	NA
Dibenzofuran	- -	<20	<11	NA	NA	NA	NA	NA
Diethylphthalate	50	<20	<11	NA	NA	NA	NA	NA
Dimethylphthalate	50	<20	<11	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	<20	<11	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	<20	<11	NA	NA	NA	NA	NA
Fluoranthene	50	<20	<11	<4.0	<4.0	<2.0	<1.0	NA
Fluorene	50	<20	<11	<3.0	<3.0	<2.0	<0.80	NA
Indeno(1,2,3-cd)pyrene	0.002	<20	<11	<5.0	<5.0	<3.0	<0.40 J	NA
Isophorone	50	<20	<11	NA	NA	NA	NA	NA
Naphthalene	10	83	69	190	240	130	34	NA
Phenanthrene	50	<20	<11	<3.0	<3.0	<1.0	<0.80	NA
Phenol	1	140	<11	NA	NA	NA	NA	NA
Pyrene	50	<20	<11	<4.0	<4.0	<2.0	<1.0	NA
Total PAHs	- -	86 J	76 J	190 J	250 J	130 J	35 J	NA
Total SVOCs	- -	250 J	84 J	190 J	250 J	130 J	35 J	NA

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NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-12S						
Date Collected:	Guidance Values	11/01/00	03/26/03	01/31/06	05/09/06	08/15/06	11/15/06	03/27/08
Detected Inorganics (ppb)								
Aluminum	- -	10,900	<2,500	NA	NA	NA	NA	NA
Antimony	3	<5.00	<100	NA	NA	NA	NA	NA
Arsenic	25	13.1	<200	NA	NA	NA	NA	NA
Barium	1,000	171	25.1	NA	NA	NA	NA	NA
Beryllium	- -	0.720	<25.0	NA	NA	NA	NA	NA
Cadmium	5	0.540	<50.0	NA	NA	NA	NA	NA
Calcium	- -	845,000	595,000	NA	NA	NA	NA	NA
Chromium	50	17.0	<50.0	NA	NA	NA	NA	NA
Cobalt	- -	8.00	<50.0	NA	NA	NA	NA	NA
Copper	200	65.8	25.6 B	NA	NA	NA	NA	NA
Cyanide	200	817	865 J	3,710	871	1,340	811 J	940 [920]
Cyanide, Available	- -	13.0	569	<2.00	NA	NA	NA	NA
Iron	300	18,800	<1,000	NA	NA	NA	NA	NA
Lead	25	53.6	<50.0	NA	NA	NA	NA	NA
Magnesium	- -	19,400	155,000	NA	NA	NA	NA	NA
Manganese	300	1,380	<75.0	NA	NA	NA	NA	NA
Mercury	0.7	0.650	<0.200	NA	NA	NA	NA	NA
Nickel	100	26.8	<50.0	NA	NA	NA	NA	NA
Potassium	- -	20,000	11,400 EJ	NA	NA	NA	NA	NA
Selenium	10	8.40	<150 J	NA	NA	NA	NA	NA
Silver	50	<1.00	<30.0	NA	NA	NA	NA	NA
Sodium	- -	315,000	305,000	NA	NA	NA	NA	NA
Thallium	- -	9.00	<200	NA	NA	NA	NA	NA
Vanadium	- -	25.4	<30.0	NA	NA	NA	NA	NA
Zinc	2,000	114	<250	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)								
Iron	300	606	193 B	NA	NA	NA	NA	NA
Manganese	300	<10.0	8.40 B	NA	NA	NA	NA	NA
PCBs (ppb)								
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)								
4,4'-DDD	0.3	<0.10	<0.10	NA	NA	NA	NA	NA
4,4'-DDE	0.2	<0.10	<0.10	NA	NA	NA	NA	NA
4,4'-DDT	0.2	0.021 J	<0.10 J	NA	NA	NA	NA	NA
Aldrin	0	<0.050	<0.050	NA	NA	NA	NA	NA
Alpha-BHC	0.01	<0.050	<0.050	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	<0.050	<0.050	NA	NA	NA	NA	NA
Beta-BHC	- -	<0.050	<0.050	NA	NA	NA	NA	NA
Delta-BHC	- -	0.027 J	<0.050	NA	NA	NA	NA	NA
Dieldrin	0.004	<0.10	<0.10	NA	NA	NA	NA	NA
Endosulfan I	- -	<0.050	<0.050	NA	NA	NA	NA	NA
Endosulfan II	- -	<0.10	<0.10	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	<0.10	<0.10	NA	NA	NA	NA	NA
Endrin	0	<0.10	<0.10	NA	NA	NA	NA	NA
Endrin Aldehyde	5	<0.10	<0.10	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	<0.050	0.0044 J	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	<0.050	<0.050	NA	NA	NA	NA	NA
Heptachlor	0.04	<0.050	0.035 J	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	0.0083 J	<0.050	NA	NA	NA	NA	NA
Methoxychlor	35	<0.50	<0.50	NA	NA	NA	NA	NA
Miscellaneous (ppb)								
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	8,400	NA	NA	NA	NA	NA
CO2 by Headspace	- -	<600	<600	NA	NA	NA	NA	NA
Carbon monoxide	- -	<400	<400	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA
COD	- -	322,000	78,000	NA	NA	NA	NA	NA
Chloride	250,000	617,000	570,000	NA	NA	NA	NA	NA
DOC Average Quads	- -	32,600	15,000	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA
Methane	- -	280	26	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	<160	NA	NA	NA	NA
Nitrate Nitrogen	10,000	<100	840	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	<100	<100	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	940	8,200	NA	NA	NA	NA	NA
Sulfate	250,000	657,000	1,600,000	1,120,000	NA	NA	NA	NA
Sulfide	50	10,000	4,900	NA	NA	NA	NA	NA
TOC Average Quads	- -	34,500	16,000	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA
pH (SU)								
pH	- -	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-12D						MW-12D2	MW-13S	MW-13D	MW-14S
Date Collected:	Guidance Values	11/02/00	03/26/03	01/27/06	05/10/06	08/16/06	11/14/06	03/26/03	02/06/02	02/06/02	02/07/02
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
1,1,2,2-Tetrachloroethane	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
1,1,2-Trichloroethane	1	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
1,1-Dichloroethane	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
2-Butanone	- -	18 J	<50	NA	NA	NA	NA	<10	<50	75 J [54]	<50 J
2-Hexanone	50	<50	<50	NA	NA	NA	NA	<10	<50	<10 J [<10]	<50 J
4-Methyl-2-pentanone	- -	<50	<50	NA	NA	NA	NA	<10	<50	<10 [2.0 J]	<50 J
Acetone	50	78	28 J	NA	NA	NA	NA	<10	<50	290 D [140 D]	<50
Benzene	1	490	530	530	610	660	630	<5.0	<50	<10 [<10]	<50
Bromodichloromethane	50	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Bromoform	50	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Bromomethane	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Carbon Disulfide	- -	<50	<25	NA	NA	NA	NA	<5.0	<50	3.0 J [2.0 J]	<50
Chlorobenzene	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<2.0 [<10]	<50
Chloroform	7	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Chloromethane	- -	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 J [<10]	<50 J
Dibromochloromethane	50	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Ethylbenzene	5	<50	7.0 J	<8.0	<5.0	<5.0	<5.0	<5.0	<50	<10 [<10]	<50
Methylene Chloride	5	17 J	<5.0	NA	NA	NA	NA	<5.0	<50 J	<10 J [<10 J]	<50 J
Styrene	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Tetrachloroethene	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Toluene	5	<50	13 J	<2.4	<1.5	<1.5	<1.5	<5.0	<50	<1.0 [<10]	<50
Trichloroethene	5	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Vinyl Chloride	2	<50	<25	NA	NA	NA	NA	<5.0	<50	<10 [<10]	<50
Xylenes (total)	5	<50	49	<8.0	<5.0	<5.0	<5.0	<5.0	<50	<10 [<10]	<50
Total BTEX	- -	490	600 J	530	610	660	630	<5.0	<50	<10 [<10]	<50
Total VOCs	- -	600 J	630 J	530	610	660	630	<10	<50	370 J [200 J]	<50
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	17	81	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
2,4-Dinitrophenol	10	<25	<54	NA	NA	NA	NA	<53	<23	<23 [23 J]	<28
2-Chloronaphthalene	10	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
2-Methylnaphthalene	- -	<10	<11	<0.60	<0.60	<0.60	<0.60	<11	2.0 J	0.70 J [1.0 J]	0.30 J
2-Methylphenol	- -	<10	25	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
2-Nitrophenol	- -	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
3,3'-Dichlorobenzidine	5	<10	<22	NA	NA	NA	NA	<21	<9.0	<10 [<9.0]	<11
4-Methylphenol	- -	<10	54	NA	NA	NA	NA	<11	<9.0	7.0 J [5.0 J]	<11
4-Nitroaniline	5	<25	<22	NA	NA	NA	NA	<21	<23	<24 [<23]	<28
Acenaphthene	20	<10	<11	<0.80	<0.80	<0.80	<0.80	<11	4.0 J	0.50 J [<9.0]	2.0 J
Acenaphthylene	- -	<10	<11	<0.80	<0.80	<0.80	<0.80	<11	<9.0	<10 [<9.0]	<11
Anthracene	50	<10	<11	<1.0	<1.0	<1.0	<1.0	<11	1.0 J	<10 [<9.0]	1.0 J
Benzo(a)anthracene	0.002	<10	<11	<1.0	<1.0	<1.0	<0.80	<11	<9.0	<10 [<9.0]	<11
Benzo(a)pyrene	0	<10	<11	<1.0	<1.0	<1.0	<0.50	<11	<9.0	<10 [<9.0]	<11
Benzo(b)fluoranthene	0.002	<10	<11	<2.0	<2.0	<2.0	<1.0	<11	<9.0	<10 [<9.0]	<11
Benzo(b)fluoranthene	0.002	<10	<11	<2.0	<2.0	<2.0	<1.0	<11	<9.0	<10 [<9.0]	<11
Benzo(g,h,i)perylene	- -	<10	<11	<1.0	<1.0	<1.0	<0.30	<11	<9.0	<10 [<9.0]	<11
Benzo(k)fluoranthene	0.002	<10	<11	<0.90	<0.90	<0.90	<0.90	<11	<9.0	<10 [<9.0]	<11
bis(2-Ethylhexyl)phthalate	5	0.20 J	<11	NA	NA	NA	NA	<11	<9.0	<10 [<3.0]	<11
Butylbenzylphthalate	50	<10	<11	NA	NA	NA	NA	<11	0.30 J	<10 [<9.0]	<11
Carbazole	- -	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	0.50 J
Chrysene	0.002	<10	<11	<1.0	<1.0	<1.0	<1.0	<11	<9.0	<10 [<9.0]	<11
Dibenzo(a,h)anthracene	- -	<10	<11	<1.0	<1.0	<1.0	<0.20 J	<11	<9.0	<10 [<9.0]	<11
Dibenzofuran	- -	<10	<11	NA	NA	NA	NA	<11	0.30 J	<10 [<9.0]	0.80 J
Diethylphthalate	50	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
Dimethylphthalate	50	<10	<11	NA	NA	NA	NA	<11	0.70 J	0.30 J [<9.0]	<11
Di-n-Butylphthalate	50	0.10 J	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
Di-n-Octylphthalate	50	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<0.50]	<11
Fluoranthene	50	<10	<11	<1.0	<1.0	<1.0	<0.90	<11	0.70 J	<10 [<9.0]	0.90 J
Fluorene	50	<10	<11	<0.80	<0.80	<0.80	<0.70	<11	2.0 J	<10 [0.30 J]	1.0 J
Indeno(1,2,3-cd)pyrene	0.002	<10	<11	<1.0	<1.0	<1.0	<0.30	<11	<9.0	<10 [<9.0]	<11
Isophorone	50	<10	<11	NA	NA	NA	NA	<11	<9.0	<10 [<9.0]	<11
Naphthalene	10	0.60 J	4.0 J	0.90 J	<0.70	<0.70	<0.40	<11	<9.0	<10 [<9.0]	4.0 J
Phenanthrene	50	<10	<11	<0.70	<0.70	<0.70	<0.70	<11	<9.0	0.40 J [0.50 J]	<11
Phenol	1	0.60 J	<11	NA	NA	NA	NA	<11	<9.0	0.60 J [<9.0]	<11
Pyrene	50	<10	<11	<1.0	<1.0	<1.0	<1.0	<11	0.70 J	<10 [<9.0]	0.70 J
Total PAHs	- -	0.60 J	4.0 J	0.90 J	<2.0	<2.0	<1.0	<11	10 J	1.6 J [1.8 J]	9.9 J
Total SVOCs	- -	19 J	160 J	0.90 J	<2.0	<2.0	<1.0	<53	12 J	9.5 J [30 J]	11 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-12D						MW-12D2	MW-13S	MW-13D	MW-14S
Date Collected:	**Guidance Values**	**11/02/00**	**03/26/03**	**01/27/06**	**05/10/06**	**08/16/06**	**11/14/06**	**03/26/03**	**02/06/02**	**02/06/02**	**02/07/02**
Detected Inorganics (ppb)											
Aluminum	- -	1,050	<500	NA	NA	NA	NA	<2,500	128 B	750 [750]	290
Antimony	3	<25.0	<20.0	NA	NA	NA	NA	<100	<4.20	<4.20 [<4.20]	<4.20
Arsenic	25	<12.5	<40.0	NA	NA	NA	NA	<200	<3.40	13.4 [13.4]	<3.40
Barium	1,000	1,630	158	NA	NA	NA	NA	118	295 EJ	1,670 EJ [1,670 EJ]	326 EJ
Beryllium	- -	<2.50	<5.00	NA	NA	NA	NA	<25.0	3.90 JB	9.40 J [9.40 J]	<0.300 J
Cadmium	5	<2.50	<10.0	NA	NA	NA	NA	<50.0	3.60 JB	<0.400 J [<0.400 J]	<0.400 J
Calcium	- -	95,400	70,600	NA	NA	NA	NA	1,220,000	286,000 EJ	1,630,000 EJ [1,630,000 EJ]	197,000 EJ
Chromium	50	<5.00	<10.0	NA	NA	NA	NA	<50.0	2.00 B	3.50 B [3.50 B]	28.6
Cobalt	- -	<5.00	<10.0	NA	NA	NA	NA	<50.0	0.800 B	<0.700 [<0.700]	1.30 B
Copper	200	8.10	<10.0	NA	NA	NA	NA	12.6 B	2.00 B	1.60 B [1.60 B]	4.10 B
Cyanide	200	187	72.6 J	91.6	53.2	62.4	<1.30 J	<10.0 J	<0.0100	<0.0100 J [<0.0100]	<0.0100
Cyanide, Available	- -	22.0	508	<2.00	NA	NA	NA	79.0	<2.00	<2.00 [<2.00]	15.0
Iron	300	3,160	272	NA	NA	NA	NA	17,400	57.5 B	1,230 [1,230]	743
Lead	25	<10.0	<10.0	NA	NA	NA	NA	<50.0	<1.80	<1.80 [<1.80]	11.8
Magnesium	- -	8,170	4,160	NA	NA	NA	NA	325,000	19,500 EJ	148,000 EJ [148,000 EJ]	15,000 EJ
Manganese	300	103	35.0	NA	NA	NA	NA	250	134 EJ	391 EJ [391 EJ]	182 EJ
Mercury	0.7	<0.100	<0.200	NA	NA	NA	NA	<0.200	<0.100	<0.100 [<0.100]	<0.100
Nickel	100	<7.50	<10.0	NA	NA	NA	NA	<50.0	1.60 B	2.10 B [2.10 B]	15.2 B
Potassium	- -	47,500	46,900 EJ	NA	NA	NA	NA	497,000 EJ	30,900 EJ	126,000 EJ [126,000 EJ]	31,000 EJ
Selenium	10	<25.0	<30.0 J	NA	NA	NA	NA	<150 J	<5.50	<5.50 [<5.50]	<5.50
Silver	50	<5.00	<6.00	NA	NA	NA	NA	<30.0	<0.800	<0.800 [<0.800]	<0.800
Sodium	- -	153,000	652,000	NA	NA	NA	NA	608,000	4,530,000 EJ	40,200,000 EJ [40,200,000 EJ]	3,950,000 EJ
Thallium	- -	<30.0	<40.0	NA	NA	NA	NA	<200	<4.50	<4.50 [<4.50]	14.0
Vanadium	- -	6.70	4.70 B	NA	NA	NA	NA	<30.0	<0.600 J	22.3 JB [22.3 JB]	3.90 JB
Zinc	2,000	<25.0	<50.0	NA	NA	NA	NA	<250	12.0 JB	29.7 J [29.7 J]	16.5 JB
Detected Inorganics-Filtered (ppb)											
Iron	300	1,320	97.4 B	NA	NA	NA	NA	9,830	<16.3	<16.3 [<16.3]	34.6 B
Manganese	300	72.6	26.3	NA	NA	NA	NA	144	97.3	415 [415]	128
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	- -	- - [- -]	- -
Detected Pesticides (ppb)											
4,4'-DDD	0.3	<0.10	<0.11	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
4,4'-DDE	0.2	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
4,4'-DDT	0.2	0.0081 J	<0.10 J	NA	NA	NA	NA	<0.10 J	<0.10 J	<0.10 J [<0.11 J]	<0.11 J
Aldrin	0	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50	<0.052 [<0.054]	<0.054
Alpha-BHC	0.01	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50 J	<0.052 J [<0.054 J]	<0.054 J
Alpha-Chlordane	0.05	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.050	<0.052 [<0.054]	<0.054
Beta-BHC	- -	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50	<0.052 [<0.054]	<0.054
Delta-BHC	- -	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50 J	<0.052 J [<0.054 J]	<0.054 J
Dieldrin	0.004	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
Endosulfan I	- -	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50	<0.052 [<0.054]	<0.054
Endosulfan II	- -	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
Endosulfan Sulfate	- -	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
Endrin	0	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10 J	<0.10 J [<0.11 J]	<0.11 J
Endrin Aldehyde	5	<0.10	<0.10	NA	NA	NA	NA	<0.10	<0.10	<0.10 [<0.11]	<0.11
Gamma-BHC (Lindane)	0.05	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50	<0.052 [<0.054]	<0.054
Gamma-Chlordane	0.05	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.050	<0.052 [<0.054]	<0.054
Heptachlor	0.04	<0.050	0.014 J	NA	NA	NA	NA	<0.050	<0.50 J	<0.052 J [<0.054 J]	<0.054 J
Heptachlor Epoxide	0.03	<0.050	<0.050	NA	NA	NA	NA	<0.050	<0.50	<0.052 [<0.054]	<0.054
Methoxychlor	35	<0.50	<0.50	NA	NA	NA	NA	<0.50	<0.50 J	<0.52 J [<0.54 J]	<0.54 J
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	18,600	200.000000000	NA	NA	NA	NA	990 B	60,000	81,000 [105,000]	38,800
CO2 by Headspace	- -	24,400	9,000	NA	NA	NA	NA	130,000	26,000	210,000 [200,000]	15,000
Carbon monoxide	- -	<400	<400	NA	NA	NA	NA	<400	<400	<400 [<400]	<400
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	307,000	115,000	NA	NA	NA	NA	122,000	NA	NA	NA
Chloride	250,000	4,880,000	2,800,000	NA	NA	NA	NA	95,000,000	7,040,000	65,800,000 [67,000,000]	5,770,000
DOC Average Quads	- -	41,800	23,000	NA	NA	NA	NA	28,000	2,900	7,200 [7,000]	10,400
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	26,760	20,000	NA	NA	NA	NA	220	4,000	10,000 [9,300]	10,000
Nitrate + Nitrite (as N)	- -	NA	NA	<160	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	10,000	<100	<1,000	NA	NA	NA	NA	<25,000	NA	NA	NA
Nitrite Nitrogen	1,000	<100	<1,000	NA	NA	NA	NA	<25,000	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	630	4,800	NA	NA	NA	NA	3,800	1,100	910 [540]	1,100
Sulfate	250,000	1,430	20,000	32,100	NA	NA	NA	1,300,000	162,000	506,000 [508,000]	130,000
Sulfide	50	<1,000	6,200	NA	NA	NA	NA	600 B	39,900	48,900 [56,900]	29,500
TOC Average Quads	- -	43,800	28,000	NA	NA	NA	NA	31,000	4,000	7,500 J [6,800]	10,600
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-14D	MW-15S	MW-15D	MW-16S	MW-16D	MW-18S				
Date Collected:		02/07/02	02/07/02	02/07/02	10/31/00	10/31/00	03/27/03	01/27/06	05/10/06	08/15/06	11/15/06
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
1,1,2-Trichloroethane	1	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
1,1-Dichloroethane	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
2-Butanone	- -	180 J	140 J	160 J	NA	NA	14	NA	NA	NA	NA
2-Hexanone	50	<10 J	<50 J	<50 J	NA	NA	<10	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	8.0 J	<50 J	<50 J	NA	NA	<10	NA	NA	NA	NA
Acetone	50	590 D	730	770	NA	NA	<5.0	NA	NA	NA	NA
Benzene	1	1.0 J	<50	<50	NA	NA	3.0 J	1.0 J	5.6	5.1	5.4
Bromodichloromethane	50	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Bromoform	50	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Bromomethane	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Carbon Disulfide	- -	3.0 J	5.0 J	5.0 J	NA	NA	<5.0	NA	NA	NA	NA
Chlorobenzene	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Chloroform	7	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Chloromethane	- -	<10 J	<50 J	<50 J	NA	NA	<5.0	NA	NA	NA	NA
Dibromochloromethane	50	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Ethylbenzene	5	<10	<50	<50	NA	NA	0.80 J	<1.0	2.8 J	2.3 J	3.2 J
Methylene Chloride	5	<10	<50 J	<50 J	NA	NA	<5.0	NA	NA	NA	NA
Styrene	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Tetrachloroethene	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Toluene	5	<10	<50	<50	NA	NA	4.0 J	0.71 J	8.2	7.3	9.0
Trichloroethene	5	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Vinyl Chloride	2	<10	<50	<50	NA	NA	<5.0	NA	NA	NA	NA
Xylenes (total)	5	<10	<50	<50	NA	NA	7.0	<1.0	21	17	22
Total BTEX	- -	1.0 J	<50	<50	NA	NA	15 J	1.7 J	38 J	32 J	40 J
Total VOCs	- -	780 J	880 J	940 J	NA	NA	29 J	1.7 J	38 J	32 J	40 J
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	<11	<11	<11	NA	NA	7.0 J	NA	NA	NA	NA
2,4-Dinitrophenol	10	<27 J	<27	<27	NA	NA	<220	NA	NA	NA	NA
2-Chloronaphthalene	10	<11	<11	<11	NA	NA	<43	NA	NA	NA	NA
2-Methylnaphthalene	- -	<11	0.30 J	<11	NA	NA	<43	5.0 J	3.0 J	4.0 J	5.0 J
2-Methylphenol	- -	<11	0.60 J	<11	NA	NA	8.0 J	NA	NA	NA	NA
2-Nitrophenol	- -	<11	<11	<11	NA	NA	<43	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	<11	<11	<11	NA	NA	<87	NA	NA	NA	NA
4-Methylphenol	- -	160 D	7.0 J	350 EJ	NA	NA	18 J	NA	NA	NA	NA
4-Nitroaniline	5	<27	<27	<27	NA	NA	<87	NA	NA	NA	NA
Acenaphthene	20	0.40 J	2.0 J	<11	NA	NA	<43	0.80 J	1.0 J	<4.0	0.90 J
Acenaphthylene	- -	<11	0.30 J	<11	NA	NA	3.0 J	<0.80	<0.80	<4.0	<0.80
Anthracene	50	<11	1.0 J	<11	NA	NA	<43	<1.0	<1.0	<5.0	<1.0
Benzo(a)anthracene	0.002	<11	<11	<11	NA	NA	<43	<1.0	<1.0	<6.0	<0.80
Benzo(a)pyrene	0	<11	0.40 J	<11	NA	NA	<43	<1.0	<1.0	<5.0	<0.50
Benzo(b)fluoranthene	0.002	<11	0.60 J	<11	NA	NA	<43	<2.0	<2.0	<8.0	<1.0
Benzo(b)fluoranthene	0.002	<11	0.60 J	<11	NA	NA	<43	<2.0	<2.0	<8.0	<1.0
Benzo(g,h,i)perylene	- -	<11 J	<11	<11	NA	NA	<43	<1.0	<1.0	<5.0	<0.30
Benzo(k)fluoranthene	0.002	<11 J	<11	<11	NA	NA	<43	<0.90	<0.90	<5.0	<0.90
bis(2-Ethylhexyl)phthalate	5	<1.0	<11	<11	NA	NA	<43	NA	NA	NA	NA
Butylbenzylphthalate	50	<11	<11	<11	NA	NA	<43	NA	NA	NA	NA
Carbazole	- -	<11	0.80 J	<11	NA	NA	3.0 J	NA	NA	NA	NA
Chrysene	0.002	<11	0.60 J	<11	NA	NA	<43	<1.0	<1.0	<5.0	<1.0
Dibenzo(a,h)anthracene	- -	<11	<11	<11	NA	NA	<43	<1.0	<1.0	<7.0	<0.20
Dibenzofuran	- -	<11	1.0 J	<11	NA	NA	3.0 J	NA	NA	NA	NA
Diethylphthalate	50	<0.50	<11	<11	NA	NA	<43	NA	NA	NA	NA
Dimethylphthalate	50	<11	<11	<11	NA	NA	<43	NA	NA	NA	NA
Di-n-Butylphthalate	50	<0.40	<11	<11	NA	NA	<43	NA	NA	NA	NA
Di-n-Octylphthalate	50	<11	0.40 J	<11	NA	NA	<43	NA	NA	NA	NA
Fluoranthene	50	<11	2.0 J	<11	NA	NA	<43	<1.0	<1.0	<5.0	<0.90
Fluorene	50	<11	2.0 J	<11	NA	NA	2.0 J	2.0 J	2.0 J	<4.0	2.0 J
Indeno(1,2,3-cd)pyrene	0.002	<11	<11	<11	NA	NA	<43	<1.0	<1.0	<6.0	<0.30
Isophorone	50	<11	<11	<11	NA	NA	<43	NA	NA	NA	NA
Naphthalene	10	<11	0.70 J	0.40 J	NA	NA	36	40	45	45 J	45
Phenanthrene	50	<0.60	<11	<11	NA	NA	7.0 J	<0.70	<0.70	<3.0	<0.70
Phenol	1	19	120 EJ	25	NA	NA	290	NA	NA	NA	NA
Pyrene	50	<11	3.0 J	<11	NA	NA	<43	<1.0	<1.0	<5.0	<1.0
Total PAHs	- -	0.40 J	13 J	0.40 J	NA	NA	48 J	48 J	51 J	49 J	53 J
Total SVOCs	- -	180 J	140 J	380 J	NA	NA	380 J	48 J	51 J	49 J	53 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-14D	MW-15S	MW-15D	MW-16S	MW-16D	MW-18S				
Date Collected:	Guidance Values	02/07/02	02/07/02	02/07/02	10/31/00	10/31/00	03/27/03	01/27/06	05/10/06	08/15/06	11/15/06
Detected Inorganics (ppb)											
Aluminum	- -	295	484	1,250	NA	NA	86.9 B	NA	NA	NA	NA
Antimony	3	4.90 B	<4.20	<4.20	NA	NA	<20.0	NA	NA	NA	NA
Arsenic	25	<3.40	<3.40	37.3	NA	NA	<40.0	NA	NA	NA	NA
Barium	1,000	4,440 EJ	1.20 BEJ	13,100 EJ	NA	NA	51.3	NA	NA	NA	NA
Beryllium	- -	4.20 JB	<0.300 J	<0.300 J	NA	NA	<5.00	NA	NA	NA	NA
Cadmium	5	<0.400 J	<0.400 J	8.70 J	NA	NA	<10.0	NA	NA	NA	NA
Calcium	- -	1,090,000 EJ	340,000 EJ	2,180,000 EJ	NA	NA	594,000	NA	NA	NA	NA
Chromium	50	2.00 B	<0.800	48.2	NA	NA	3.10 B	NA	NA	NA	NA
Cobalt	- -	<0.700	<0.700	<0.700	NA	NA	<10.0	NA	NA	NA	NA
Copper	200	1.00 B	4.50 B	3.10 B	NA	NA	8.20 B	NA	NA	NA	NA
Cyanide	200	<0.0100	<0.0100	<0.0100	NA	NA	1.70 JB	91.6	4.90 B	2.50 B	3.40 BJ
Cyanide, Available	- -	6.00	35.0	15.0	NA	NA	54.0	<2.00	NA	NA	NA
Iron	300	637	550	3,160	NA	NA	<200	NA	NA	NA	NA
Lead	25	<1.80	7.20	38.6	NA	NA	<10.0	NA	NA	NA	NA
Magnesium	- -	321,000 EJ	893 BEJ	685,000 EJ	NA	NA	20.1 B	NA	NA	NA	NA
Manganese	300	228 EJ	9.70 BEJ	258 EJ	NA	NA	<15.0	NA	NA	NA	NA
Mercury	0.7	<0.100	<0.100	<0.100	NA	NA	<0.200	NA	NA	NA	NA
Nickel	100	5.40 B	2.30 B	<1.00	NA	NA	7.50 B	NA	NA	NA	NA
Potassium	- -	28,500 EJ	18,200 EJ	34,900 EJ	NA	NA	33,800 EJ	NA	NA	NA	NA
Selenium	10	<5.50	<5.50	<5.50	NA	NA	<30.0 J	NA	NA	NA	NA
Silver	50	1.40 B	<0.800	<0.800	NA	NA	<6.00	NA	NA	NA	NA
Sodium	- -	22,700,000 EJ	652,000 EJ	27,800,000 EJ	NA	NA	130,000	NA	NA	NA	NA
Thallium	- -	61.1	<4.50	40.0	NA	NA	<40.0	NA	NA	NA	NA
Vanadium	- -	8.50 JB	0.700 JB	12.2 JB	NA	NA	2.30 B	NA	NA	NA	NA
Zinc	2,000	3.10 JB	9.20 JB	52.8 J	NA	NA	<50.0	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	<16.3	50.3 B	185	NA	NA	<200	NA	NA	NA	NA
Manganese	300	194	0.200 B	237	NA	NA	<15.0	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
4,4'-DDE	0.2	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
4,4'-DDT	0.2	<0.10 J	<0.10 J	<0.11 J	NA	NA	<0.10 J	NA	NA	NA	NA
Aldrin	0	<0.052	<0.052	<0.053	NA	NA	<0.050	NA	NA	NA	NA
Alpha-BHC	0.01	<0.052 J	<0.052 J	<0.053 J	NA	NA	<0.050	NA	NA	NA	NA
Alpha-Chlordane	0.05	<0.052	<0.10	<0.11	NA	NA	<0.050	NA	NA	NA	NA
Beta-BHC	- -	<0.052	<0.052	<0.053	NA	NA	<0.050	NA	NA	NA	NA
Delta-BHC	- -	<0.052 J	<0.052 J	<0.053 J	NA	NA	0.065	NA	NA	NA	NA
Dieldrin	0.004	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
Endosulfan I	- -	<0.052	<0.052	<0.053	NA	NA	<0.050	NA	NA	NA	NA
Endosulfan II	- -	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
Endosulfan Sulfate	- -	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
Endrin	0	<0.10 J	<0.10 J	<0.11 J	NA	NA	<0.10	NA	NA	NA	NA
Endrin Aldehyde	5	<0.10	<0.10	<0.11	NA	NA	<0.10	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	<0.052	<0.052	<0.053	NA	NA	<0.050	NA	NA	NA	NA
Gamma-Chlordane	0.05	<0.052	<0.10	<0.11	NA	NA	<0.050	NA	NA	NA	NA
Heptachlor	0.04	<0.052 J	<0.052 J	<0.053 J	NA	NA	<0.050	NA	NA	NA	NA
Heptachlor Epoxide	0.03	<0.052	<0.052	<0.053	NA	NA	<0.050	NA	NA	NA	NA
Methoxychlor	35	<0.52 J	<0.52 J	<0.53 J	NA	NA	<0.50	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	169,000	12,700	456,000	<2,000	33,600	110,000	NA	NA	NA	NA
CO2 by Headspace	- -	350,000	<600	440,000	<600	<600	<600	NA	NA	NA	NA
Carbon monoxide	- -	<400	<400	<400	<400	<400	<400	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	<10,000	97,600	199,000	NA	NA	NA	NA
Chloride	250,000	39,700,000	886,000	47,200,000	9,800	119,000	240,000	NA	NA	NA	NA
DOC Average Quads	- -	11,100	14,900	34,500	3,180	25,300	81,000	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	10,000	2,200	700.000000000	<70	1,050	2,200	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	NA	<8	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	5,550	<100	34 B	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	10,700	<100	120	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	550	1,500	440	5,890	<600	1,400	NA	NA	NA	NA
Sulfate	250,000	5,900	132,000	321,000	316,000	131,000	140,000	240,000	NA	NA	NA
Sulfide	50	39,300	12,900	40,900	<1,000	12,000	6,600	NA	NA	NA	NA
TOC Average Quads	- -	18,400	18,000	47,100	<1,000	25,600	81,000	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-18D					MW-19S		MW-19D			MW-19D2
Date Collected:		03/27/03	02/07/06	05/15/06	08/22/06	11/16/06	03/27/03	02/03/06	03/27/03	01/31/06	03/24/08	04/08/03
Detected Volatile Organics (ppb)												
1,1,1-Trichloroethane	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
1,1,2,2-Tetrachloroethane	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
1,1,2-Trichloroethane	1	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
1,1-Dichloroethane	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
2-Butanone	- -	<10	NA	NA	NA	NA	<10	NA	26 J	NA	NA	390
2-Hexanone	50	<10	NA	NA	NA	NA	<10	NA	<50	NA	NA	20
4-Methyl-2-pentanone	- -	3.0 J	NA	NA	NA	NA	<10	NA	<50	NA	NA	17
Acetone	50	13	NA	NA	NA	NA	18	NA	140	NA	NA	2,000
Benzene	1	<50	67	74	69 [47]	74	14	20	480	2,400 [1,700]	660 D	<5.0 J
Bromodichloromethane	50	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Bromoform	50	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Bromomethane	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Carbon Disulfide	- -	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Chlorobenzene	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Chloroform	7	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Chloromethane	- -	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Dibromochloromethane	50	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Ethylbenzene	5	1.0 J	<1.0	<1.0	<1.0 [<1.0]	<1.0	4.0 J	4.2 J	3.0 J	<40 [<40]	37	0.70 J
Methylene Chloride	5	<5.0	NA	NA	NA	NA	<5.0	NA	<6.0	NA	NA	<5.0 J
Styrene	5	<5.0	NA	NA	NA	NA	2.0 J	NA	<25	NA	NA	<5.0 J
Tetrachloroethene	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Toluene	5	3.0 J	1.7 J	0.86 J	0.85 J [0.50 J]	1.0 J	20	20	10 J	14 J [<12]	3.7 J	1.0 J
Trichloroethene	5	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Vinyl Chloride	2	<5.0	NA	NA	NA	NA	<5.0	NA	<25	NA	NA	<5.0 J
Xylenes (total)	5	<5.0	5.1	2.3 J	1.4 J [<1.0]	4.0 J	14	13	6.0 J	46 J [<40]	65	3.0 J
Total BTEX	- -	4.0 J	74 J	77 J	71 J [48 J]	79 J	52 J	57 J	500 J	2,500 J [1,700]	770 J	4.7 J
Total VOCs	- -	20 J	74 J	77 J	71 J [48 J]	79 J	72 J	57 J	670 J	2,500 J [1,700]	770 J	2,400 J
Detected Semivolatile Organics (ppb)												
2,4-Dimethylphenol	50	130	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
2,4-Dinitrophenol	10	<100	NA	NA	NA	NA	<50	NA	<53	NA	NA	<5,000
2-Chloronaphthalene	10	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
2-Methylnaphthalene	- -	<20	<0.60	<0.60	<0.60 [<0.70]	<0.70	1.0 J	1.0 J	<11	<0.60 [<0.60]	<11	<1,000
2-Methylphenol	- -	4.0 J	NA	NA	NA	NA	<10	NA	1.0 J	NA	NA	<1,000
2-Nitrophenol	- -	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
3,3'-Dichlorobenzidine	5	<40	NA	NA	NA	NA	<20	NA	<21	NA	NA	<2,000
4-Methylphenol	- -	4.0 J	NA	NA	NA	NA	1.0 J	NA	14	NA	NA	6,800
4-Nitroaniline	5	<40	NA	NA	NA	NA	<20	NA	<21	NA	NA	<2,000
Acenaphthene	20	<20	<0.80	<0.80	<0.80 [<0.90]	<0.90	<10	<0.80	<11	<0.80 [<0.80]	<11	<1,000
Acenaphthylene	- -	<20	<0.80	<0.80	<0.80 [<0.80]	<0.80	<10	<0.80	<11	<0.80 [<0.80]	<11	<1,000
Anthracene	50	<20	<1.0	<1.0	<1.0 [<1.0]	<1.0	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Benzo(a)anthracene	0.002	<20	<1.0	<1.0	<1.0 [<1.0]	<0.80	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Benzo(a)pyrene	0	<20	<1.0	<1.0	<1.0 [<1.0]	<0.50	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Benzo(b)fluoranthene	0.002	<20	<2.0	<2.0	<2.0 [<2.0]	<1.0	<10	<2.0	<11	<2.0 [<2.0]	<11	<1,000
Benzo(b)fluoranthene	0.002	<20	<2.0	<2.0	<2.0 [<2.0]	<1.0	<10	<2.0	<11	<2.0 [<2.0]	<11	<1,000
Benzo(g,h,i)perylene	- -	<20	<1.0	<1.0	<1.0 [<1.0]	<0.30	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Benzo(k)fluoranthene	0.002	<20	<0.90	<0.90	<0.90 [<1.0]	<1.0	<10	<0.90	<11	<0.90 [<0.90]	<11	<1,000
bis(2-Ethylhexyl)phthalate	5	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Butylbenzylphthalate	50	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Carbazole	- -	<20	NA	NA	NA	NA	0.50 J	NA	<11	NA	NA	<1,000
Chrysene	0.002	<20	<1.0	<1.0	<1.0 [<1.0]	<1.0	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Dibenzo(a,h)anthracene	- -	<20	<1.0	<1.0	<1.0 [<1.0]	<0.30	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Dibenzofuran	- -	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Diethylphthalate	50	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Dimethylphthalate	50	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Di-n-Butylphthalate	50	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Di-n-Octylphthalate	50	<20	NA	NA	NA	NA	<10	NA	<11	NA	NA	<1,000
Fluoranthene	50	<20	<1.0	<1.0	<1.0 [<1.0]	<1.0	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Fluorene	50	<20	<0.80	<0.80	<0.80 [<0.80]	<0.80	<10	<0.80	<11	<0.80 [<0.80]	<11	<1,000
Indeno(1,2,3-cd)pyrene	0.002	<20	<1.0	<1.0	<1.0 [<1.0]	<0.30	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Isophorone	50	<20	NA	NA	NA	NA	<10	NA	1.0 J	NA	NA	<1,000
Naphthalene	10	7.0 J	<0.70	<0.70	<0.70 [<0.70]	<0.50	13	12	5.0 J	3.0 J [3.0 J]	6.1 J	<1,000
Phenanthrene	50	<20	<0.70	<0.70	<0.70 [<0.70]	<0.80	<10	<0.70	<11	<0.70 [<0.70]	<11	<1,000
Phenol	1	3.0 J	NA	NA	NA	NA	4.0 J	NA	10 J	NA	NA	180 J
Pyrene	50	<20	<1.0	<1.0	<1.0 [<1.0]	<1.0	<10	<1.0	<11	<1.0 [<1.0]	<11	<1,000
Total PAHs	- -	7.0 J	<2.0	<2.0	<2.0 [<2.0]	<1.0	14 J	13 J	5.0 J	3.0 J [3.0 J]	6.1 J	<1,000
Total SVOCs	- -	150 J	<2.0	<2.0	<2.0 [<2.0]	<1.0	20 J	13 J	31 J	3.0 J [3.0 J]	6.1 J	7,000 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-18D					MW-19S		MW-19D			MW-19D2
Date Collected:	Guidance Values	03/27/03	02/07/06	05/15/06	08/22/06	11/16/06	03/27/03	02/03/06	03/27/03	01/31/06	03/24/08	04/08/03
Detected Inorganics (ppb)												
Aluminum	- -	847	NA	NA	NA	NA	135 B	NA	138 B	NA	NA	1,840 B
Antimony	3	<20.0	NA	NA	NA	NA	<20.0	NA	<20.0	NA	NA	<500
Arsenic	25	16.1 B	NA	NA	NA	NA	<40.0	NA	18.6 B	NA	NA	<1,000
Barium	1,000	81.5	NA	NA	NA	NA	53.3	NA	415	NA	NA	1,720
Beryllium	- -	<5.00	NA	NA	NA	NA	<5.00	NA	<5.00	NA	NA	<125
Cadmium	5	<10.0	NA	NA	NA	NA	<10.0	NA	<10.0	NA	NA	<250
Calcium	- -	342,000	NA	NA	NA	NA	370,000	NA	516,000	NA	NA	511,000
Chromium	50	19.8	NA	NA	NA	NA	2.40 B	NA	13.4	NA	NA	55.4 B
Cobalt	- -	<10.0	NA	NA	NA	NA	<10.0	NA	2.90 B	NA	NA	<250
Copper	200	5.50 B	NA	NA	NA	NA	3.00 B	NA	1.50 B	NA	NA	<250
Cyanide	200	3.40 JB	160	46.5	12.0 [4.60 B]	2.80 BJ	<10.0 J	75.7	7.10 JB	8.50 B [8.60 B]	NA	<10.0
Cyanide, Available	- -	11.0	<2.00	NA	NA	NA	3.00	<2.00	86.0	3.00	NA	172
Iron	300	1,550	NA	NA	NA	NA	205	NA	266	NA	NA	2,690 B
Lead	25	<10.0	NA	NA	NA	NA	<10.0	NA	<10.0	NA	NA	<250
Magnesium	- -	33,000	NA	NA	NA	NA	212	NA	500	NA	NA	13,700
Manganese	300	107	NA	NA	NA	NA	11.7 B	NA	7.50 B	NA	NA	<375
Mercury	0.7	<0.200	NA	NA	NA	NA	<0.200	NA	1.20	NA	NA	<0.200
Nickel	100	15.0	NA	NA	NA	NA	4.60 B	NA	16.2	NA	NA	180 B
Potassium	- -	87,100 EJ	NA	NA	NA	NA	36,500 EJ	NA	134,000 EJ	NA	NA	2,060,000 J
Selenium	10	<30.0 J	NA	NA	NA	NA	<30.0 J	NA	<30.0 J	NA	NA	<750
Silver	50	<6.00	NA	NA	NA	NA	<6.00	NA	<6.00	NA	NA	<150
Sodium	- -	153,000	NA	NA	NA	NA	95,700	NA	119,000	NA	NA	5,300,000
Thallium	- -	<40.0	NA	NA	NA	NA	<40.0	NA	<40.0	NA	NA	<1,000
Vanadium	- -	2.40 B	NA	NA	NA	NA	2.10 B	NA	4.60 B	NA	NA	26.0 B
Zinc	2,000	<50.0	NA	NA	NA	NA	<50.0	NA	<50.0	NA	NA	<1,250
Detected Inorganics-Filtered (ppb)												
Iron	300	<200	NA	NA	NA	NA	<200	NA	110 B	NA	NA	<1,000
Manganese	300	53.9	NA	NA	NA	NA	10.0 B	NA	44.3	NA	NA	<75.0
PCBs (ppb)												
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)												
4,4'-DDD	0.3	<0.16	NA	NA	NA	NA	<0.17	NA	<0.19	NA	NA	<0.15
4,4'-DDE	0.2	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	<0.10
4,4'-DDT	0.2	<0.11 J	NA	NA	NA	NA	<0.11 J	NA	<0.13 J	NA	NA	<0.10
Aldrin	0	<0.053	NA	NA	NA	NA	<0.056	NA	0.035 J	NA	NA	<0.050
Alpha-BHC	0.01	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	0.027 J
Alpha-Chlordane	0.05	<0.053	NA	NA	NA	NA	<0.056	NA	0.040 J	NA	NA	<0.050
Beta-BHC	- -	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Delta-BHC	- -	<0.053	NA	NA	NA	NA	0.019 J	NA	0.029 J	NA	NA	0.065 J
Dieldrin	0.004	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	<0.10
Endosulfan I	- -	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Endosulfan II	- -	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	<0.10
Endosulfan Sulfate	- -	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	0.058 J
Endrin	0	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	<0.10
Endrin Aldehyde	5	<0.11	NA	NA	NA	NA	<0.11	NA	<0.13	NA	NA	<0.10
Gamma-BHC (Lindane)	0.05	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Gamma-Chlordane	0.05	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Heptachlor	0.04	0.026 J	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Heptachlor Epoxide	0.03	<0.053	NA	NA	NA	NA	<0.056	NA	<0.064	NA	NA	<0.050
Methoxychlor	35	<0.53	NA	NA	NA	NA	<0.56	NA	<0.64	NA	NA	<0.50
Miscellaneous (ppb)												
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	67,000	NA	NA	NA	NA	12,000	NA	97,000	NA	NA	>482,000 J
CO2 by Headspace	- -	3,300	NA	NA	NA	NA	<600	NA	<600	NA	NA	<600
Carbon monoxide	- -	<400	NA	NA	NA	NA	<400	NA	<400	NA	NA	<400
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	127,000	NA	NA	NA	NA	36,700	NA	374,000	NA	NA	1,360,000
Chloride	250,000	7,500,000	NA	NA	NA	NA	260,000	NA	22,000,000	NA	NA	66,000,000
DOC Average Quads	- -	19,000	NA	NA	NA	NA	10,000	NA	80,000	NA	NA	430,000
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	8,200	NA	NA	NA	NA	720	NA	8,800	NA	NA	1,300
Nitrate + Nitrite (as N)	- -	NA	<2,000	NA	NA	NA	NA	<8	NA	<1,800 [<1,800]	NA	NA
Nitrate Nitrogen	10,000	<500	NA	NA	NA	NA	120	NA	<500	NA	NA	<5,000
Nitrite Nitrogen	1,000	<500	NA	NA	NA	NA	<100	NA	<500	NA	NA	<25,000
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	700	NA	NA	NA	NA	5,900	NA	740	NA	NA	770
Sulfate	250,000	210,000	198,000	NA	NA	NA	150,000	156,000	200,000	180,000 [179,000]	NA	240,000
Sulfide	50	46,000	NA	NA	NA	NA	6,600	NA	62,000	NA	NA	7,600
TOC Average Quads	- -	20,000	NA	NA	NA	NA	10,000	NA	83,000	NA	NA	440,000
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)												
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-20S		MW-20D		MW-21S	MW-21D	MW-22S			MW-22D		
Date Collected:	Guidance Values	04/23/03	02/02/06	04/23/03	01/25/06	04/10/03	04/10/03	03/28/03	02/02/06	03/24/08	04/08/03	01/24/06	03/24/08
Detected Volatile Organics (ppb)													
1,1,1-Trichloroethane	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
1,1,2,2-Tetrachloroethane	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
1,1,2-Trichloroethane	1	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
1,1-Dichloroethane	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
2-Butanone	- -	<10	NA	40	NA	<10	7.0 J	<10	NA	NA	15	NA	NA
2-Hexanone	50	<10	NA	<20	NA	<10	<10	<10	NA	NA	<10	NA	NA
4-Methyl-2-pentanone	- -	<10	NA	2.0 J	NA	<10 J	<10	<10	NA	NA	<10	NA	NA
Acetone	50	10 J	NA	110	NA	<10	45 J	<10	NA	NA	86	NA	NA
Benzene	1	2.0 J	2.6 J	230	210	<5.0	20	<5.0	1.4 J	<1.0	42	30	13
Bromodichloromethane	50	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Bromoform	50	<5.0	NA	<10	NA	<5.0 J	<5.0	<5.0	NA	NA	<5.0	NA	NA
Bromomethane	5	<5.0	NA	<10	NA	<5.0	<5.0 J	<5.0	NA	NA	<5.0	NA	NA
Carbon Disulfide	- -	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Chlorobenzene	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Chloroform	7	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Chloromethane	- -	<5.0	NA	<10	NA	<5.0 J	2.0 J	<5.0	NA	NA	<5.0	NA	NA
Dibromochloromethane	50	<5.0	NA	<10	NA	<5.0 J	<5.0	<5.0	NA	NA	<5.0	NA	NA
Ethylbenzene	5	0.70 J	<1.0	11	35	<5.0	1.0 J	<5.0	<1.0	<5.0	<10	13	4.1 J
Methylene Chloride	5	<5.0	NA	1.0 J	NA	<0.40	0.40 J	<5.0	NA	NA	<0.40	NA	NA
Styrene	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Tetrachloroethene	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Toluene	5	1.0 J	1.6 J	15	34	<5.0	8.0	<5.0	0.66 J	<5.0	60	74	26
Trichloroethene	5	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Vinyl Chloride	2	<5.0	NA	<10	NA	<5.0	<5.0	<5.0	NA	NA	<5.0	NA	NA
Xylenes (total)	5	2.0 J	1.2 J	28	99	<5.0	12	<5.0	<1.0	<5.0 J	190	330	93
Total BTEX	- -	5.7 J	5.4 J	280	380	<5.0	41 J	<5.0	2.1 J	<5.0	290	450	140 J
Total VOCs	- -	16 J	5.4 J	440 J	380	<10	95 J	<10	2.1 J	<5.0	390	450	140 J
Detected Semivolatile Organics (ppb)													
2,4-Dimethylphenol	50	<10	NA	0.80 J	NA	<10	0.90 J	<10	NA	NA	<40	NA	NA
2,4-Dinitrophenol	10	<50	NA	<50	NA	<50	<50	<50	NA	NA	<200	NA	NA
2-Chloronaphthalene	10	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
2-Methylnaphthalene	- -	1.0 J	<0.70	<10	<0.60	<10	1.0 J	<10	<0.60	<11	2.0 J	<6.0	<110
2-Methylphenol	- -	<10	NA	<10	NA	<10	2.0 J	<10	NA	NA	2.0 J	NA	NA
2-Nitrophenol	- -	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
3,3'-Dichlorobenzidine	5	<20	NA	<20	NA	<20	<20	<20	NA	NA	<80	NA	NA
4-Methylphenol	- -	<10	NA	58	NA	<10	10	<10	NA	NA	9.0 J	NA	NA
4-Nitroaniline	5	<20	NA	<20	NA	<20	<20	<20	NA	NA	<80	NA	NA
Acenaphthene	20	0.90 J	<0.90	<10	<0.80	<10	<10	<10	<0.80	<11	<40	<8.0	<110
Acenaphthylene	- -	0.60 J	<0.90	<10	<0.80	<10	<10	<10	<0.80	<11	<40	<8.0	<110
Anthracene	50	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<10	<110
Benzo(a)anthracene	0.002	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<12	<110
Benzo(a)pyrene	0	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<11	<110
Benzo(b)fluoranthene	0.002	<10	<2.0	<10	<2.0	<10	<10	<10	<2.0	<11	<40	<15	<110
Benzo(b)fluoranthene	0.002	<10	<2.0	<10	<2.0	<10	<10	<10	<2.0	<11	<40	<15	<110
Benzo(g,h,i)perylene	- -	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<10	<110
Benzo(k)fluoranthene	0.002	<10	<1.0	<10	<0.90	<10	<10	<10	<0.90	<11	<40	<9.0	<110
bis(2-Ethylhexyl)phthalate	5	<10	NA	2.0 J	NA	<10	<10	<10	NA	NA	<40	NA	NA
Butylbenzylphthalate	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Carbazole	- -	5.0 J	NA	<10	NA	<10	0.40 J	<10	NA	NA	<40	NA	NA
Chrysene	0.002	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<10	<110
Dibenzo(a,h)anthracene	- -	<10	<2.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<13	<110
Dibenzofuran	- -	0.70 J	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Diethylphthalate	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Dimethylphthalate	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Di-n-Butylphthalate	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Di-n-Octylphthalate	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Fluoranthene	50	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<11	<110
Fluorene	50	1.0 J	<0.90	<10	<0.80	<10	<10	<10	<0.80	<11	<40	<8.0	<110
Indeno(1,2,3-cd)pyrene	0.002	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<12	<110
Isophorone	50	<10	NA	<10	NA	<10	<10	<10	NA	NA	<40	NA	NA
Naphthalene	10	7.0 J	3.0 J	4.0 J	5.0 J	<10	14	1.0 J	0.70 J	<11	230	290	380
Phenanthrene	50	1.0 J	2.0 J	<10	<0.70	<10	0.50 J	<10	<0.70	<11	<40	<7.0	<110
Phenol	1	<10	NA	22	NA	0.90 J	22	<10	NA	NA	83	NA	NA
Pyrene	50	<10	<1.0	<10	<1.0	<10	<10	<10	<1.0	<11	<40	<10	<110
Total PAHs	- -	12 J	5.0 J	4.0 J	5.0 J	<10	16 J	1.0 J	0.70 J	<11	230 J	290	380
Total SVOCs	- -	17 J	5.0 J	87 J	5.0 J	0.90 J	51 J	1.0 J	0.70 J	<11	330 J	290	380

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-20S		MW-20D		MW-21S	MW-21D	MW-22S			MW-22D		
Date Collected:	Guidance Values	04/23/03	02/02/06	04/23/03	01/25/06	04/10/03	04/10/03	03/28/03	02/02/06	03/24/08	04/08/03	01/24/06	03/24/08
Detected Inorganics (ppb)													
Aluminum	- -	<2,500	NA	<12,500	NA	<2,500	538 B	8,530	NA	NA	<12,500	NA	NA
Antimony	3	<100	NA	<500	NA	<100	<100	<20.0	NA	NA	<500	NA	NA
Arsenic	25	<200	NA	<1,000	NA	<200	<200	8.40 B	NA	NA	<1,000	NA	NA
Barium	1,000	47.6 EJ	NA	310 EJ	NA	52.4	383	72.0	NA	NA	232	NA	NA
Beryllium	- -	<25.0	NA	<125	NA	<25.0	<25.0	<5.00	NA	NA	<125	NA	NA
Cadmium	5	<50.0	NA	<250	NA	<50.0	<50.0	<10.0	NA	NA	<250	NA	NA
Calcium	- -	542,000 EJ	NA	232,000 EJ	NA	123,000	698,000	880,000	NA	NA	562,000	NA	NA
Chromium	50	<50.0	NA	<250	NA	<50.0	<50.0	111	NA	NA	<250	NA	NA
Cobalt	- -	<50.0	NA	<250	NA	<50.0	<50.0	7.40 B	NA	NA	<250	NA	NA
Copper	200	31.0 B	NA	<250	NA	<50.0	<50.0	140	NA	NA	<250	NA	NA
Cyanide	200	106	84.9	15.2	58.3	17.3	14.6	<10.0 J	<1.00	NA	2.50 B	9.70 B	NA
Cyanide, Available	- -	6.00	<2.00	<2.00	3.00	2.00	9.00	248	<2.00	NA	17.0	<2.00	NA
Iron	300	<1,000	NA	<5,000	NA	<1,000	757 B	7,630	NA	NA	<5,000	NA	NA
Lead	25	<50.0	NA	<250	NA	<50.0	<50.0	112	NA	NA	<250	NA	NA
Magnesium	- -	304 BJ	NA	18,000 EJ	NA	18,200	521	29,500	NA	NA	13,200	NA	NA
Manganese	300	<75.0	NA	<375	NA	35.3 B	24.3 B	918	NA	NA	<375	NA	NA
Mercury	0.7	<0.200 J	NA	<0.200 J	NA	<0.200	0.800	0.310	NA	NA	<0.200	NA	NA
Nickel	100	<50.0	NA	<250	NA	<50.0	9.00 B	72.8	NA	NA	<250	NA	NA
Potassium	- -	26,600	NA	62,000	NA	38,500 J	54,100 J	6,620 EJ	NA	NA	102,000 J	NA	NA
Selenium	10	<150	NA	<750	NA	<150	<150	<30.0 J	NA	NA	<750	NA	NA
Silver	50	<30.0	NA	<150	NA	<30.0	<30.0	1.60 B	NA	NA	<150	NA	NA
Sodium	- -	99,600	NA	3,620,000	NA	173,000	707,000	52,900	NA	NA	4,110,000	NA	NA
Thallium	- -	<200	NA	<1,000	NA	<200	<200	<40.0	NA	NA	<1,000	NA	NA
Vanadium	- -	<30.0	NA	<150	NA	5.80 B	<30.0	20.1	NA	NA	<150	NA	NA
Zinc	2,000	<250	NA	<1,250	NA	<250	<250	152	NA	NA	<1,250	NA	NA
Detected Inorganics-Filtered (ppb)													
Iron	300	<2,000	NA	<2,000	NA	<1,000	<1,000	6,040	NA	NA	<1,000	NA	NA
Manganese	300	<150	NA	<150	NA	46.9 B	<75.0	912	NA	NA	<75.0	NA	NA
PCBs (ppb)													
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)													
4,4'-DDD	0.3	<0.20	NA	<0.16	NA	<0.15	<0.16	<0.16	NA	NA	<0.15	NA	NA
4,4'-DDE	0.2	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
4,4'-DDT	0.2	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11 J	NA	NA	<0.10	NA	NA
Aldrin	0	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Alpha-BHC	0.01	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Alpha-Chlordane	0.05	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Beta-BHC	- -	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Delta-BHC	- -	0.069	NA	0.024 J	NA	<0.050	0.022 J	<0.053	NA	NA	0.0096 J	NA	NA
Dieldrin	0.004	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
Endosulfan I	- -	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Endosulfan II	- -	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
Endosulfan Sulfate	- -	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
Endrin	0	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
Endrin Aldehyde	5	<0.14	NA	<0.11	NA	<0.10	<0.11	<0.11	NA	NA	<0.10	NA	NA
Gamma-BHC (Lindane)	0.05	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Gamma-Chlordane	0.05	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Heptachlor	0.04	0.0095 J	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Heptachlor Epoxide	0.03	<0.068	NA	<0.053	NA	<0.050	<0.054	<0.053	NA	NA	<0.050	NA	NA
Methoxychlor	35	<0.68	NA	<0.53	NA	<0.50	<0.54	<0.53	NA	NA	<0.50	NA	NA
Miscellaneous (ppb)													
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	930 B	NA	42,000	NA	3,200 J	15,000 J	2,600	NA	NA	71,000 J	NA	NA
CO2 by Headspace	- -	<600	NA	<600	NA	3,800	<600	<600	NA	NA	<600	NA	NA
Carbon monoxide	- -	<400	NA	<400	NA	<400	<400	<400	NA	NA	<400	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	19,500	NA	233,000	NA	5,920 B	64,200	<10,000	NA	NA	232,000	NA	NA
Chloride	250,000	100,000	NA	1,500 B	NA	380,000	1,500,000	53,000	NA	NA	11,000,000	NA	NA
DOC Average Quads	- -	5,100	NA	51,000	NA	2,900	12,000	2,100	NA	NA	37,000	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	670	NA	18,000	NA	12	1,300	31	NA	NA	11,000	NA	NA
Nitrate + Nitrite (as N)	- -	NA	<8	NA	<2,000	NA	NA	NA	271	NA	NA	<4,000	NA
Nitrate Nitrogen	10,000	950	NA	<10,000	NA	1,400	240	360	NA	NA	<5,000	NA	NA
Nitrite Nitrogen	1,000	680	NA	6,600 B	NA	<100	<500	<100	NA	NA	<5,000	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	4,000	NA	400	NA	2,100	770	12,000	NA	NA	790	NA	NA
Sulfate	250,000	380,000	421,000	130,000	13,500	60,000	37,000	200,000	140,000	NA	220,000	175,000	NA
Sulfide	50	<1,000	NA	38,000	NA	43,000	9,000	<1,000	NA	NA	42,000	NA	NA
TOC Average Quads	- -	5,700	NA	60,000	NA	4,200	14,000	2,200	NA	NA	40,000	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)													
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-23S					MW-23D				
Date Collected:	Guidance Values	01/30/06	05/10/06	08/17/06	11/15/06	03/27/08	01/26/06	05/09/06	08/16/06	11/14/06	03/26/08
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	6.0 J	8.1	6.6	5.9	6.9	100	140	140	120	130 J
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	26	42	39	32	22	<2.0	110	110	100	160
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	46	53	42	36	22	11	21	37	36	34 J
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	220	260	230	190	120	49	99	110	110	160 J
Total BTEX	- -	300 J	360	320	260	170	160	370	400	370	480 J
Total VOCs	- -	300 J	360	320	260	170	160	370	400	370	480 J
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	130 J	130 J	170 J	160 J	65	<6.0	<6.0	<6.0	<2.0	<110
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<17	<20	<16	<16	2.0 J	<8.0	<8.0	<8.0	<3.0	<110
Acenaphthylene	- -	40 J	48 J	43 J	46 J	21	<8.0	<8.0	<8.0	<3.0	<110
Anthracene	50	<21	<25	<20	<20	<10	<10	<10	<10	<4.0	<110
Benzo(a)anthracene	0.002	<25	<30	<24	<15	<10	<12	<12	<12	<3.0	<110
Benzo(a)pyrene	0	<23	<27	<22	<10	<10	<11	<11	<11	<2.0	<110
Benzo(b)fluoranthene	0.002	<32	<38	<31	<19	<10	<15	<15	<15	<4.0	<110
Benzo(b)fluoranthene	0.002	<32	<38	<31	<19	<10	<15	<15	<15	<4.0	<110
Benzo(g,h,i)perylene	- -	<22	<26	<21	<6.0	<10	<10	<10	<10	<1.0	<110
Benzo(k)fluoranthene	0.002	<19	<23	<18	<19	<10	<9.0	<9.0	<9.0	<4.0	<110
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<20	<24	<19	<23	<10	<10	<10	<10	<5.0	<110
Dibenzo(a,h)anthracene	- -	<28	<34	<27	<5.0	<10	<13	<13	<13	<1.0	<110
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<23	<27	<22	<18	<10	<11	<11	<11	<4.0	<110
Fluorene	50	<16	<19	<15	<14	3.6 J	<8.0	<8.0	<8.0	<3.0	<110
Indeno(1,2,3-cd)pyrene	0.002	<24	<29	<23	<6.0	<10	<12	<12	<12	<1.0	<110
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	1,300	1,600	1,600	1,300	730 D	540	460	400	230	400
Phenanthrene	50	<14	<16	<13	<14	1.6 J	<7.0	<7.0	<7.0	<3.0	<110
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<21	<25	<20	<19	<10	<10	<10	<10	<4.0	<110
Total PAHs	- -	1,500 J	1,800 J	1,800 J	1,500 J	820 J	540	460	400	230	400
Total SVOCs	- -	1,500 J	1,800 J	1,800 J	1,500 J	820 J	540	460	400	230	400

Location ID:	NYSDEC Groundwater Standards and	MW-23S					MW-23D				
Date Collected:	Guidance Values	01/30/06	05/10/06	08/17/06	11/15/06	03/27/08	01/26/06	05/09/06	08/16/06	11/14/06	03/26/08
Detected Inorganics (ppb)											
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	674	654	658	232 J	260	29.4	16.8	42.3	37.4 J	68.0
Cyanide, Available	- -	<2.00	NA	NA	NA	NA	4.00	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	67 J
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<8	NA	NA	NA	NA	<40	NA	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	322,000	NA	NA	NA	NA	2,560	NA	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-24S					MW-24D				
Date Collected:	Guidance Values	01/30/06	05/10/06	08/16/06	11/14/06	03/26/08	01/26/06	05/09/06	08/15/06	11/15/06	03/26/08
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	8.6	6.9	7.4	5.3	3.0	240	250	230	250	220
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	26	15	11	3.6 J	5.7	<4.0 H	<2.0	<2.0	<2.0	<10
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	28	15	12	6.8	8.1	2.9 J	1.3 J	0.95 J	0.95 J	0.51 J
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	180	89	56	22	43	<4.0	<2.0	<2.0	<2.0	<10
Total BTEX	- -	240	130	86	38 J	60	240 J	250 J	230 J	250 J	220 J
Total VOCs	- -	240	130	86	38 J	60	240 J	250 J	230 J	250 J	220 J
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	3.0 J	2.0 J	2.0 J	3.0 J	4.5 J	<0.60	<0.60	<0.60	<0.70	<10
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<2.0	<0.80	<0.80	<2.0	<40	<0.80	<0.80	<0.80	<0.90	<10
Acenaphthylene	- -	<2.0	<0.80	<0.80	<2.0	<40	<0.80	<0.80	<0.80	<0.90	<10
Anthracene	50	<2.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<10
Benzo(a)anthracene	0.002	<2.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<0.90	<10
Benzo(a)pyrene	0	<2.0	<1.0	<1.0	<1.0	<40	<1.0	<1.0	<1.0	<0.60	<10
Benzo(b)fluoranthene	0.002	<3.0	<2.0	<2.0	<2.0	<40	<2.0	<2.0	<2.0	<1.0	<10
Benzo(b)fluoranthene	0.002	<3.0	<2.0	<2.0	<2.0	<40	<2.0	<2.0	<2.0	<1.0	<10
Benzo(g,h,i)perylene	- -	<2.0	<1.0	<1.0	<0.60	<40	<1.0	<1.0	<1.0	<0.40	<10
Benzo(k)fluoranthene	0.002	<2.0	<0.90	<1.0	<2.0	<40	<0.90	<0.90	<0.90	<1.0	<10
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<2.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<10
Dibenzo(a,h)anthracene	- -	<3.0	<1.0	<1.0	<0.50	<40	<1.0	<1.0	<1.0	<0.30	<10
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<2.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<10
Fluorene	50	<2.0	<0.80	<0.80	<1.0	<40	<0.80	<0.80	<0.80	<0.80	<10
Indeno(1,2,3-cd)pyrene	0.002	<2.0	<1.0	<1.0	<0.60	<40	<1.0	<1.0	<1.0	<0.40 J	<10
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	120	75	72	110	160	<0.70	<0.70	<0.70	<0.50	<10
Phenanthrene	50	3.0 J	2.0 J	3.0 J	3.0 J	2.6 J	<0.70	<0.70	<0.70	<0.80	<10
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<2.0	<1.0	<1.0	<2.0	<40	<1.0	<1.0	<1.0	<1.0	<10
Total PAHs	- -	130 J	79 J	77 J	120 J	170 J	<2.0	<2.0	<2.0	<1.0	<10
Total SVOCs	- -	130 J	79 J	77 J	120 J	170 J	<2.0	<2.0	<2.0	<1.0	<10

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-24S					MW-24D				
Date Collected:	Guidance Values	01/30/06	05/10/06	08/16/06	11/14/06	03/26/08	01/26/06	05/09/06	08/15/06	11/15/06	03/26/08
Detected Inorganics (ppb)											
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	178	587	630	409 J	1,000	32.3	23.7	38.1	13.0 J	27.0
Cyanide, Available	- -	2.00	NA	NA	NA	NA	<2.00	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	15	NA	NA	NA	NA	11
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	83 B	NA	NA	NA	NA	<160	NA	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	544,000	NA	NA	NA	NA	27,800	NA	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-25S					MW-25D				
Date Collected:	Guidance Values	01/31/06	05/11/06	08/18/06	11/15/06	03/26/08	01/27/06	05/10/06	08/15/06	11/14/06	03/26/08
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	<0.40	3.5 J	4.9 J	2.8 J	2.5	74	75	62	66	51
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	<1.0	<1.0	<1.0	1.4 J	1.0 J	<1.0	<1.0	<1.0	<1.0	1.1 J
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	4.3 J	3.5 J	4.2 J	3.0 J	2.9 J	2.5 J	1.7 J	2.0 J	1.4 J	1.1 J
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	6.9	6.8	4.8 J	6.8	6.3	4.7 J	3.6 J	5.2	3.4 J	9.2
Total BTEX	- -	11 J	14 J	14 J	14 J	13 J	81 J	80 J	69 J	71 J	62 J
Total VOCs	- -	11 J	14 J	14 J	14 J	13 J	81 J	80 J	69 J	71 J	62 J
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	4.0 J	4.0 J	2.0 J	3.0 J	1.9 J	<0.60	<0.60	<1.0	<0.60	<10
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<0.80	0.80 J	<0.90	<0.80	0.46 J	<0.80	<0.80	<2.0	<0.80	<10
Acenaphthylene	- -	<0.80	<0.80	<0.80	<0.80	0.39 J	<0.80	<0.80	<2.0	<0.80	<10
Anthracene	50	1.0 J	1.0 J	<1.0	1.0 J	1.2 J	<1.0	<1.0	<2.0	<1.0	<10
Benzo(a)anthracene	0.002	<1.0	<1.0	<1.0	<0.80	<10	<1.0	<1.0	<3.0	<0.80	<10
Benzo(a)pyrene	0	<1.0	<1.0	<1.0	<0.50	<10	<1.0	<1.0	<2.0	<0.50	<10
Benzo(b)fluoranthene	0.002	<2.0	<2.0	<2.0	<1.0	<10	<2.0	<2.0	<3.0	<1.0	<10
Benzo(b)fluoranthene	0.002	<2.0	<2.0	<2.0	<1.0	<10	<2.0	<2.0	<3.0	<1.0	<10
Benzo(g,h,i)perylene	- -	<1.0	<1.0	<1.0	<0.30	<10	<1.0	<1.0	<2.0	<0.30	<10
Benzo(k)fluoranthene	0.002	<0.90	<0.90	<1.0	<0.90	<10	<0.90	<0.90	<2.0	<0.90	<10
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<2.0	<1.0	<10
Dibenzo(a,h)anthracene	- -	<1.0	<1.0	<1.0	<0.20	<10	<1.0	<1.0	<3.0	<0.20 J	<10
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	1.0 J	<1.0	<1.0	<0.90	1.1 J	<1.0	<1.0	<2.0	<0.90	<10
Fluorene	50	2.0 J	2.0 J	<0.80	1.0 J	0.68 J	<0.80	<0.80	<2.0	<0.70	<10
Indeno(1,2,3-cd)pyrene	0.002	<1.0	<1.0	<1.0	<0.30 J	<10	<1.0	<1.0	<3.0	<0.30	<10
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	21	20	10 J	14	9.9 J	<0.70	<0.70	<1.0	<0.40	<10
Phenanthrene	50	10 J	9.0 J	5.0 J	8.0 J	8.1 J	<0.70	<0.70	<1.0	<0.70	<10
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<1.0	<1.0	<1.0	<1.0	0.54 J	<1.0	<1.0	<2.0	<1.0	<10
Total PAHs	- -	39 J	37 J	17 J	27 J	24 J	<2.0	<2.0	<3.0	<1.0	<10
Total SVOCs	- -	39 J	37 J	17 J	27 J	24 J	<2.0	<2.0	<3.0	<1.0	<10

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-25S					MW-25D				
Date Collected:	Guidance Values	01/31/06	05/11/06	08/18/06	11/15/06	03/26/08	01/27/06	05/10/06	08/15/06	11/14/06	03/26/08
Detected Inorganics (ppb)											
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	<1.00	2.20 B	<1.30	<1.30 J	3.60 J	111	30.1	47.5	13.5 J	42.0
Cyanide, Available	- -	<2.00	NA	NA	NA	NA	<2.00	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	3.8	NA	NA	NA	NA	180
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<8	NA	NA	NA	NA	<400	NA	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	66,100	NA	NA	NA	NA	261,000	NA	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-26S		MW-26D		MW-27S		MW-27D	
Date Collected:	Guidance Values	01/31/06	03/27/08	01/27/06	03/25/08	01/31/06	03/25/08	02/02/06	03/25/08
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	4.0 J	2.7	43	48	72	62	1,500	1,200 [750]
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	4.9 J	2.0 J	<1.0	0.73 J	810	680	120	180 [130]
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	13	6.4	0.87 J	0.74 J	62	56	7.1 J	4.8 J [3.3 J]
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	44	21	3.3 J	4.2 J	1,100	1,000 J	<20	<120 J [6.5 J]
Total BTEX	- -	66 J	32 J	47 J	54 J	2,000	1,800 J	1,600 J	1,400 J [890 J]
Total VOCs	- -	66 J	32 J	47 J	54 J	2,000	1,800 J	1,600 J	1,400 J [890 J]
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	6.0 J	5.1 J	0.80 J	<11	39 J	41 J	1.0 J	<10 [<10]
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<2.0	<11	<0.80	<11	<20	<220	<0.80	<10 [<10]
Acenaphthylene	- -	<2.0	0.78 J	<0.80	<11	<19	<220	<0.80	<10 [<10]
Anthracene	50	<2.0	<11	<1.0	<11	<25	<220	<1.0	<10 [<10]
Benzo(a)anthracene	0.002	<2.0	<11	<1.0	<11	<30	<220	<1.0	<10 [<10]
Benzo(a)pyrene	0	<2.0	<11	<1.0	<11	<27	<220	<1.0	<10 [<10]
Benzo(b)fluoranthene	0.002	<3.0	<11	<2.0	<11	<38	<220	<2.0	<10 [<10]
Benzo(b)fluoranthene	0.002	<3.0	<11	<2.0	<11	<38	<220	<2.0	<10 [<10]
Benzo(g,h,i)perylene	- -	<2.0	<11	<1.0	<11	<26	<220	<1.0	<10 [<10]
Benzo(k)fluoranthene	0.002	<2.0	<11	<0.90	<11	<23	<220	<0.90	<10 [<10]
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<2.0	<11	<1.0	<11	<24	<220	<1.0	<10 [<10]
Dibenzo(a,h)anthracene	- -	<3.0	<11	<1.0	<11	<34	<220	<1.0	<10 [<10]
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<2.0	<11	<1.0	<11	<27	<220	<1.0	<10 [<10]
Fluorene	50	<2.0	<11	<0.80	<11	<19	<220	<0.80	<10 [<10]
Indeno(1,2,3-cd)pyrene	0.002	<2.0	<11	<1.0	<11	<29	<220	<1.0	<10 [<10]
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	83	50	2.0 J	0.87 J	920	1,000	28	4.8 J [5.4 J]
Phenanthrene	50	4.0 J	4.3 J	<0.70	<11	<16	<220	<0.70	<10 [<10]
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<2.0	<11	<1.0	<11	<25	<220	<1.0	<10 [<10]
Total PAHs	- -	93 J	60 J	2.8 J	0.87 J	960 J	1,000 J	29 J	4.8 J [5.4 J]
Total SVOCs	- -	93 J	60 J	2.8 J	0.87 J	960 J	1,000 J	29 J	4.8 J [5.4 J]

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-26S		MW-26D		MW-27S		MW-27D	
Date Collected:	Guidance Values	01/31/06	03/27/08	01/27/06	03/25/08	01/31/06	03/25/08	02/02/06	03/25/08
Detected Inorganics (ppb)									
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	5.00 B	NA	13.5	NA	18.6	NA	19.0	NA
Cyanide, Available	- -	<2.00	NA	<2.00	NA	<2.00	NA	<2.00	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<8	NA	<1,800	NA	<8	NA	<4,000	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	91,600	NA	1,020,000	NA	124,000	NA	758,000	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-28S		MW-28D		MW-30S			
Date Collected:	Guidance Values	01/31/06	03/25/08	02/03/06	03/25/08	02/06/06	05/11/06	08/16/06	11/16/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	23	26	610	97 J	<0.40	<0.40	<0.40	<0.40
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	6.2	6.9	<5.0	<10	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	24	21	2.1 J	0.67 J	<0.30	<0.30	<0.30	<0.30
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	23	18 J	5.8 J	<10 J	2.2 J	<1.0	<1.0	<1.0
Total BTEX	- -	76	72 J	620 J	98 J	2.2 J	<1.0	<1.0	<1.0
Total VOCs	- -	76	72 J	620 J	98 J	2.2 J	<1.0	<1.0	<1.0
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	3.0 J	1.9 J	<0.60	1.4 J	<0.60	<0.60	<0.70	<0.80
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<0.80	0.38 J	<0.80	<10	<0.80	<0.80	<0.80	<1.0
Acenaphthylene	- -	<0.80	0.36 J	<0.80	<10	<0.80	<0.80	<0.80	<1.0
Anthracene	50	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	0.002	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	0	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<0.60
Benzo(b)fluoranthene	0.002	<2.0	<10	<2.0	<10	<2.0	<2.0	<2.0	<1.0
Benzo(b)fluoranthene	0.002	<2.0	<10	<2.0	<10	<2.0	<2.0	<2.0	<1.0
Benzo(g,h,i)perylene	- -	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<0.40
Benzo(k)fluoranthene	0.002	<0.90	<10	<0.90	<10	<0.90	<0.90	<0.90	<1.0
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene	- -	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<0.30
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Fluorene	50	1.0 J	0.70 J	<0.80	<10	<0.80	<0.80	<0.80	<0.90
Indeno(1,2,3-cd)pyrene	0.002	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<0.40
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	26	15	0.70 J	<10	<0.70	<0.70	<0.70	<0.60
Phenanthrene	50	<0.70	0.35 J	<0.70	<10	<0.70	<0.70	<0.70	<0.90
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0
Total PAHs	- -	30 J	19 J	0.70 J	1.4 J	<2.0	<2.0	<2.0	<1.0
Total SVOCs	- -	30 J	19 J	0.70 J	1.4 J	<2.0	<2.0	<2.0	<1.0

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-28S		MW-28D		MW-30S			
Date Collected:	Guidance Values	01/31/06	03/25/08	02/03/06	03/25/08	02/06/06	05/11/06	08/16/06	11/16/06
Detected Inorganics (ppb)									
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	81.7	NA	8.50 B	NA	225	174	196	131 J
Cyanide, Available	- -	<2.00	NA	4.00	NA	5.00	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<8	NA	<4,000	NA	<40	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	277,000	NA	219,000	NA	344,000	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-30D				MW-31S			
Date Collected:		02/08/06	05/12/06	08/17/06	11/17/06	02/07/06	05/11/06	08/15/06	11/17/06
Detected Volatile Organics (ppb)									
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	5.3	1.3 J [1.3 J]	1.4 J	1.6 J	<0.40	<0.40	<0.40	<0.40
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	15	4.1 J [4.2 J]	3.6 J	3.4 J	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	10	0.69 J [0.66 J]	0.61 J	0.57 J	<0.30	<0.30	<0.30	<0.30
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	74	48 [47]	29	26	<1.0	1.3 J	<1.0	1.2 J
Total BTEX	- -	100	54 J [53 J]	35 J	32 J	<1.0	1.3 J	<1.0	1.2 J
Total VOCs	- -	100	54 J [53 J]	35 J	32 J	<1.0	1.3 J	<1.0	1.2 J
Detected Semivolatile Organics (ppb)									
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	41 J	64 J [66 J]	58 J	82 J	<0.60	0.80 J	<0.60	<0.70
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<8.0	<8.0 [<8.0]	<8.0	<9.0	<0.80	3.0 J	<0.80	2.0 J
Acenaphthylene	- -	15 J	26 J [27 J]	13 J	31 J	<0.80	3.0 J	<0.80	2.0 J
Anthracene	50	<10	<10 [<10]	<10	<11	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	0.002	<12	<12 [<12]	<12	<8.0	<1.0	<1.0	<1.0	<0.80
Benzo(a)pyrene	0	<11	<11 [<11]	<11	<5.0	<1.0	<1.0	<1.0	<0.50
Benzo(b)fluoranthene	0.002	<15	<15 [<15]	<15	<10	<2.0	<2.0	<2.0	<1.0
Benzo(b)fluoranthene	0.002	<15	<15 [<15]	<15	<10	<2.0	<2.0	<2.0	<1.0
Benzo(g,h,i)perylene	- -	<10	<10 [<10]	<10	<3.0 J	<1.0	<1.0	<1.0	<0.30
Benzo(k)fluoranthene	0.002	<9.0	<9.0 [<9.0]	<9.0	<10	<0.90	<0.90	<0.90	<1.0
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<10	<10 [<10]	<10	<13	<1.0	<1.0	<1.0	<1.0
Dibenzo(a,h)anthracene	- -	<13	<13 [<13]	<13	<3.0 J	<1.0	<1.0	<1.0	<0.30
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<11	<11 [<11]	<11	<10	<1.0	<1.0	<1.0	<1.0
Fluorene	50	<8.0	27 J [25 J]	13 J	26 J	<0.80	3.0 J	<0.80	2.0 J
Indeno(1,2,3-cd)pyrene	0.002	<12	<12 [<12]	<12	<3.0 J	<1.0	<1.0	<1.0	<0.30
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	370	670 [690]	440	500	2.0 J	6.0 J	<0.70	4.0 J
Phenanthrene	50	<7.0	31 J [37 J]	18 J	37 J	<0.70	0.80 J	<0.70	<0.80
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<10	<10 [<10]	<10	<11	<1.0	<1.0	<1.0	<1.0
Total PAHs	- -	430 J	820 J [850 J]	540 J	680 J	2.0 J	17 J	<2.0	10 J
Total SVOCs	- -	430 J	820 J [850 J]	540 J	680 J	2.0 J	17 J	<2.0	10 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-30D				MW-31S			
Date Collected:	Guidance Values	02/08/06	05/12/06	08/17/06	11/17/06	02/07/06	05/11/06	08/15/06	11/17/06
Detected Inorganics (ppb)									
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	59.8	87.4 [74.7]	5.60 B	135 J	552	1,040	483	1,030 J
Cyanide, Available	- -	<2.00	NA	NA	NA	<2.00	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)									
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)									
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)									
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)									
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<40	NA	NA	NA	3,320	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	179,000	NA	NA	NA	713,000	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)									
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-31D					MW-32S				
Date Collected:	Guidance Values	02/08/06	05/12/06	08/16/06	11/16/06	03/26/08	01/30/06	05/10/06	08/16/06	11/15/06	03/27/08
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	6.2 J [<4.0]	4.2 J	4.2 J [<0.40]	4.0 J	NA	<0.40	<0.40	<0.40	<0.40 [<0.40]	<1.0
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	61 [47 J]	43	37 [<1.0]	35	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<5.0
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	85 [90]	44	16 [<0.30]	16	NA	<0.30	<0.30	<0.30	<0.30 [<0.30]	<5.0
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	5	840 [920]	600	440 [<1.0]	410	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<5.0
Total BTEX	- -	990 J [1,100 J]	690 J	500 J [<1.0]	470 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<5.0
Total VOCs	- -	990 J [1,100 J]	690 J	500 J [<1.0]	470 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<5.0
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	860 J [550 J]	760 J	990 J [<0.70]	1,100 J	NA	<0.60	<0.60	<0.70	<0.70 [<0.70]	0.71 J
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	<200 [<200]	<160	<160 [<0.80]	<160 J	NA	<0.80	<0.80	<0.80	<0.90 [<0.90]	<11
Acenaphthylene	- -	400 J [360 J]	440 J	570 J [<0.80]	540 J	NA	<0.80	<0.80	<0.80	<0.80 [<0.80]	<11
Anthracene	50	<250 [<250]	<200	<200 [<1.0]	<200 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<11
Benzo(a)anthracene	0.002	<300 [<300]	<240	<240 [<1.0]	<150 J	NA	<1.0	<1.0	<1.0	<0.80 [<0.80]	<11
Benzo(a)pyrene	0	<270 [<270]	<220	<220 [<1.0]	<100 J	NA	<1.0	<1.0	<1.0	<0.50 [<0.50]	<11
Benzo(b)fluoranthene	0.002	<380 [<380]	<310	<310 [<2.0]	<190 J	NA	<2.0	<2.0	<2.0	<1.0 [<1.0]	<11
Benzo(b)fluoranthene	0.002	<380 [<380]	<310	<310 [<2.0]	<190 J	NA	<2.0	<2.0	<2.0	<1.0 [<1.0]	<11
Benzo(g,h,i)perylene	- -	<260 [<260]	<210	<210 [<1.0]	<64 J	NA	<1.0	<1.0	<1.0	<0.30 [<0.30]	<11
Benzo(k)fluoranthene	0.002	<230 [<230]	<180	<180 [<1.0]	<190 J	NA	<0.90	<0.90	<0.90	<1.0 [<1.0]	<11
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	<240 [<240]	<190	<190 [<1.0]	<230 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<11
Dibenzo(a,h)anthracene	- -	<340 [<340]	<270	<270 [<1.0]	<48 J	NA	<1.0	<1.0	<1.0	<0.30 [<0.30]	<11
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	<270 [<270]	<220	<220 [<1.0]	<180 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<11
Fluorene	50	<190 [<190]	<150	<150 [<0.80]	<140 J	NA	<0.80	<0.80	<0.80	<0.80 [<0.80]	<11
Indeno(1,2,3-cd)pyrene	0.002	<290 [<290]	<230	<230 [<1.0]	<64 J	NA	<1.0	<1.0	<1.0	<0.30 J [<0.30 J]	<11
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10	9,400 [9,700]	9,500	15,000 [<0.70]	13,000 J	NA	<0.70	<0.70	<0.70	<0.50 [<0.50]	0.77 J
Phenanthrene	50	<160 [<160]	<130	<130 [<0.70]	<140 J	NA	1.0 J	<0.70	<0.70	<0.80 [<0.80]	0.89 J
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	<250 [<250]	<200	<200 [<1.0]	<190 J	NA	<1.0	<1.0	<1.0	<1.0 [<1.0]	<11
Total PAHs	- -	11,000 J [11,000 J]	11,000 J	17,000 J [<2.0]	15,000 J	NA	1.0 J	<2.0	<2.0	<1.0 [<1.0]	2.4 J
Total SVOCs	- -	11,000 J [11,000 J]	11,000 J	17,000 J [<2.0]	15,000 J	NA	1.0 J	<2.0	<2.0	<1.0 [<1.0]	2.4 J

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES,
AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and Guidance Values	MW-31D					MW-32S				
Date Collected:		02/08/06	05/12/06	08/16/06	11/16/06	03/26/08	01/30/06	05/10/06	08/16/06	11/15/06	03/27/08
Detected Inorganics (ppb)											
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	1,470 [1,200]	1,200	411 [187]	496 J	550	245	114	194	239 J [253 J]	NA
Cyanide, Available	- -	2.00	NA	NA	NA	5.30	<2.00	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<8 [<8]	NA	NA	NA	NA	<8	NA	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	340,000 [344,000]	NA	NA	NA	NA	366,000	NA	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-32D						MW-33S	MW-33D	TMW-10DR	TMW-10D2
Date Collected:	Guidance Values	01/26/06	05/11/06	08/15/06	08/22/06	11/14/06	03/27/08	02/01/06	01/25/06	05/31/01	05/31/01
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
1,1,2,2-Tetrachloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
1,1,2-Trichloroethane	1	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
1,1-Dichloroethane	5	NA	NA	NA	NA	NA	NA	NA	NA	15	4.0
2-Butanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
2-Hexanone	50	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
4-Methyl-2-pentanone	- -	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Acetone	50	NA	NA	NA	NA	NA	NA	NA	NA	61	140
Benzene	1	1,100	1,200	910	1,300	540	970 [960]	<0.40	0.64 J	950	1,300
Bromodichloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Bromoform	50	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Bromomethane	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Carbon Disulfide	- -	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Chlorobenzene	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	2.0
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Chloromethane	- -	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Dibromochloromethane	50	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Ethylbenzene	5	<20	<10	<5.0	<10	<5.0	6.1 J [4.0 J]	<1.0	<1.0 H	190	120
Methylene Chloride	5	NA	NA	NA	NA	NA	NA	NA	NA	53	16
Styrene	5	NA	NA	NA	NA	NA	NA	NA	NA	690	440
Tetrachloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Toluene	5	310	68	68	140	7.9 J	66 [65]	<0.30	0.52 J	1,900	1,800
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Vinyl Chloride	2	NA	NA	NA	NA	NA	NA	NA	NA	<100	<100
Xylenes (total)	5	50 J	67	60	140	16 J	74 [69]	<1.0	1.2 J	2,600	1,800
Total BTEX	- -	1,500 J	1,300	1,000	1,600	560 J	1,100 J [1,100 J]	<1.0	2.4 J	5,600	5,000
Total VOCs	- -	1,500 J	1,300	1,000	1,600	560 J	1,100 J [1,100 J]	<1.0	2.4 J	6,500	5,600
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	NA	NA	NA	NA	NA	NA	NA	NA	550	1,200
2,4-Dinitrophenol	10	NA	NA	NA	NA	NA	NA	NA	NA	<5,300	<2,700
2-Chloronaphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
2-Methylnaphthalene	- -	<0.60	<0.60	<6.0	<0.70	<0.60	<10 [<10]	<0.60	<0.60	900	140
2-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
2-Nitrophenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
3,3'-Dichlorobenzidine	5	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
4-Methylphenol	- -	NA	NA	NA	NA	NA	NA	NA	NA	560	830
4-Nitroaniline	5	NA	NA	NA	NA	NA	NA	NA	NA	<5,300	<2,700
Acenaphthene	20	<0.80	<0.80	<8.0	<0.80	<0.80	<10 [<10]	<0.80	<0.80	<2,100	<1,100
Acenaphthylene	- -	<0.80	<0.80	<8.0	<0.80	<0.80	<10 [<10]	<0.80	<0.80	450	78
Anthracene	50	<1.0	<1.0	<10	<1.0	<1.0	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Benzo(a)anthracene	0.002	<1.0	<1.0	<12	<1.0	<0.80	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Benzo(a)pyrene	0	<1.0	<1.0	<11	<1.0	<0.50	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Benzo(b)fluoranthene	0.002	<2.0	<2.0	<15	<2.0	<1.0	<10 [<10]	<2.0	<2.0	<2,100	<1,100
Benzo(b)fluoranthene	0.002	<2.0	<2.0	<15	<2.0	<1.0	<10 [<10]	<2.0	<2.0	<2,100	<1,100
Benzo(g,h,i)perylene	- -	<1.0	<1.0	<10	<1.0	<0.30	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Benzo(k)fluoranthene	0.002	<0.90	<0.90	<9.0	<0.90	<0.90	<10 [<10]	<0.90	<0.90	<2,100	<1,100
bis(2-Ethylhexyl)phthalate	5	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Butylbenzylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Carbazole	- -	NA	NA	NA	NA	NA	NA	NA	NA	380	47
Chrysene	0.002	<1.0	<1.0	<10	<1.0	<1.0	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Dibenzo(a,h)anthracene	- -	<1.0	<1.0	<13	<1.0	<0.20 J	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Dibenzofuran	- -	NA	NA	NA	NA	NA	NA	NA	NA	110	<1,100
Diethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Dimethylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Di-n-Butylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Di-n-Octylphthalate	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Fluoranthene	50	<1.0	<1.0	<11	<1.0	<0.90	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Fluorene	50	<0.80	<0.80	<8.0	<0.80	<0.70	<10 [<10]	<0.80	<0.80	92	<1,100
Indeno(1,2,3-cd)pyrene	0.002	<1.0	<1.0	<12	<1.0	<0.30	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Isophorone	50	NA	NA	NA	NA	NA	NA	NA	NA	<2,100	<1,100
Naphthalene	10	<0.70	4.0 J	<7.0	7.0 J	2.0 J	2.5 J [2.8 J]	<0.70	<0.70	11,000	6,300
Phenanthrene	50	<0.70	<0.70	<7.0	<0.70	<0.70	<10 [<10]	<0.70	<0.70	64	<1,100
Phenol	1	NA	NA	NA	NA	NA	NA	NA	NA	350	370
Pyrene	50	<1.0	<1.0	<10	<1.0	<1.0	<10 [<10]	<1.0	<1.0	<2,100	<1,100
Total PAHs	- -	<2.0	4.0 J	<15	7.0 J	2.0 J	2.5 J [2.8 J]	<2.0	<2.0	13,000	6,500
Total SVOCs	- -	<2.0	4.0 J	<15	7.0 J	2.0 J	2.5 J [2.8 J]	<2.0	<2.0	15,000	9,000

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:	NYSDEC Groundwater Standards and	MW-32D						MW-33S	MW-33D	TMW-10DR	TMW-10D2
Date Collected:	Guidance Values	01/26/06	05/11/06	08/15/06	08/22/06	11/14/06	03/27/08	02/01/06	01/25/06	05/31/01	05/31/01
Detected Inorganics (ppb)											
Aluminum	- -	NA	NA	NA	NA	NA	NA	NA	NA	296	221
Antimony	3	NA	NA	NA	NA	NA	NA	NA	NA	<4.40	<4.40
Arsenic	25	NA	NA	NA	NA	NA	NA	NA	NA	<4.20	5.60
Barium	1,000	NA	NA	NA	NA	NA	NA	NA	NA	9.80	847
Beryllium	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.500	<0.500
Cadmium	5	NA	NA	NA	NA	NA	NA	NA	NA	<0.900	<0.900
Calcium	- -	NA	NA	NA	NA	NA	NA	NA	NA	107,000	85,100
Chromium	50	NA	NA	NA	NA	NA	NA	NA	NA	<0.800	1.00
Cobalt	- -	NA	NA	NA	NA	NA	NA	NA	NA	<1.60	<1.60
Copper	200	NA	NA	NA	NA	NA	NA	NA	NA	<1.60	4.20
Cyanide	200	87.9	59.7	63.0	5.80 B	2.00 BJ	NA	225	152	<10.0	<10.0
Cyanide, Available	- -	7.00	NA	NA	NA	NA	NA	8.00	3.00	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	152	960
Lead	25	NA	NA	NA	NA	NA	NA	NA	NA	<2.00	<2.00
Magnesium	- -	NA	NA	NA	NA	NA	NA	NA	NA	85.2	8,010
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	2.00	23.2
Mercury	0.7	NA	NA	NA	NA	NA	NA	NA	NA	<0.100	<0.100
Nickel	100	NA	NA	NA	NA	NA	NA	NA	NA	2.70	4.60
Potassium	- -	NA	NA	NA	NA	NA	NA	NA	NA	17,700	40,300
Selenium	10	NA	NA	NA	NA	NA	NA	NA	NA	<4.90	<4.90
Silver	50	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	<1.00
Sodium	- -	NA	NA	NA	NA	NA	NA	NA	NA	59,400	444,000
Thallium	- -	NA	NA	NA	NA	NA	NA	NA	NA	<9.10	<9.10
Vanadium	- -	NA	NA	NA	NA	NA	NA	NA	NA	4.80	13.2
Zinc	2,000	NA	NA	NA	NA	NA	NA	NA	NA	<5.00	6.20
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	NA	NA	NA	NA	NA	NA	NA	NA	- -	- -
Detected Pesticides (ppb)											
4,4'-DDD	0.3	NA	NA	NA	NA	NA	NA	NA	NA	0.020	<0.10
4,4'-DDE	0.2	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	<0.10
4,4'-DDT	0.2	NA	NA	NA	NA	NA	NA	NA	NA	0.016	<0.10
Aldrin	0	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Alpha-BHC	0.01	NA	NA	NA	NA	NA	NA	NA	NA	0.092	<0.050
Alpha-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Beta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Delta-BHC	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	0.012
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	<0.10
Endosulfan I	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Endosulfan II	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	<0.10
Endosulfan Sulfate	- -	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	<0.10
Endrin	0	NA	NA	NA	NA	NA	NA	NA	NA	0.064	<0.10
Endrin Aldehyde	5	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	<0.10
Gamma-BHC (Lindane)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Gamma-Chlordane	0.05	NA	NA	NA	NA	NA	NA	NA	NA	0.085	<0.050
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	<0.050
Heptachlor Epoxide	0.03	NA	NA	NA	NA	NA	NA	NA	NA	0.053	0.016
Methoxychlor	35	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	0.062
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	<80	NA	NA	NA	NA	NA	1,950	<2,000	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	53,500	NA	NA	NA	NA	NA	76,500	207,000	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID: / Date Collected:	NYSDEC Groundwater Standards and Guidance Values	TMW-10D3 05/31/01	TMW-16S 10/31/00	TMW-16D 10/31/00	TMW-17S 06/04/01	TMW-17D1 06/04/01	TMW-17D2 06/04/01	TMW-18D1 06/01/01	TMW-18D2 06/01/01	TMW-19D1 06/01/01	TMW-19D2 05/30/01
Detected Volatile Organics (ppb)											
1,1,1-Trichloroethane	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
1,1,2,2-Tetrachloroethane	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
1,1,2-Trichloroethane	1	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
1,1-Dichloroethane	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
2-Butanone	- -	<10	<10	9.0 J	<10	<10	<50	<10	<200	<40	<10
2-Hexanone	50	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
4-Methyl-2-pentanone	- -	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Acetone	50	7.0	<10	79	11	10	100	14	150	19	4.0
Benzene	1	9.0	<10	200	0.80	11	680	8.0	1,900	71	6.0
Bromodichloromethane	50	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Bromoform	50	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Bromomethane	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Carbon Disulfide	- -	<10	<10	<20	<10	0.50	<50	0.30	<200	<40	<10
Chlorobenzene	5	0.20	<10	<20	<10	<10	<50	<10	<200	<40	<10
Chloroform	7	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Chloromethane	- -	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Dibromochloromethane	50	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Ethylbenzene	5	2.0	<10	4.0 J	0.30	2.0	19	3.0	9.0	210	1.0
Methylene Chloride	5	3.0	0.50 J	17 J	0.70	0.40	23	3.0	81	61	3.0
Styrene	5	6.0	<10	<20	<10	3.0	<50	2.0	<200	14	<10
Tetrachloroethene	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Toluene	5	15	<10	110	0.70	19	750	13	57	370	2.0
Trichloroethene	5	<10	<10	<20	<10	<10	<50	<10	<200	<40	0.30
Vinyl Chloride	2	<10	<10	<20	<10	<10	<50	<10	<200	<40	<10
Xylenes (total)	5	33	<10	55	1.0	23	290	25	170	1,300	5.0
Total BTEX	- -	59	<10	370 J	2.8	55	1,700	49	2,100	2,000	14
Total VOCs	- -	75	0.50 J	470 J	15	69	1,900	68	2,400	2,100	21
Detected Semivolatile Organics (ppb)											
2,4-Dimethylphenol	50	4.0	<11	720	6.0	7.0	360	32	1,000	<110	<11
2,4-Dinitrophenol	10	<110	<26	<500	<25	<250	<500	<40	<500	<260	<26
2-Chloronaphthalene	10	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
2-Methylnaphthalene	- -	20	<11	6.0 J	4.0	25	<200	30	<200	140	<11
2-Methylphenol	- -	<43	<11	510	5.0	9.0	580	11	100	<110	<11
2-Nitrophenol	- -	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
3,3'-Dichlorobenzidine	5	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
4-Methylphenol	- -	3.0	<11	770	15	15	800	19	46	8.0	<11
4-Nitroaniline	5	<110	<26	<500	<25	<250	<500	<40	<500	<260	<26
Acenaphthene	20	1.0	<11	<200	5.0	<100	<200	2.0	<200	4.0	<11
Acenaphthylene	- -	9.0	<11	2.0 J	8.0	8.0	<200	10	<200	27	<11
Anthracene	50	0.70	<11	<200	7.0	<100	<200	<100	<200	<110	<11
Benzo(a)anthracene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Benzo(a)pyrene	0	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Benzo(b)fluoranthene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Benzo(b)fluoranthene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Benzo(g,h,i)perylene	- -	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Benzo(k)fluoranthene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
bis(2-Ethylhexyl)phthalate	5	2.0	2.0 J	<200	1.0	<100	<200	1.0	<200	<110	0.70
Butylbenzylphthalate	50	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Carbazole	- -	7.0	<11	9.0 J	16	25	<200	27	<200	75	<11
Chrysene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Dibenzo(a,h)anthracene	- -	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Dibenzofuran	- -	4.0	<11	<200	6.0	4.0	<200	2.0	<200	12	<11
Diethylphthalate	50	4.0	<11	<200	0.20	<100	<200	<100	<200	<110	0.30
Dimethylphthalate	50	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Di-n-Butylphthalate	50	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Di-n-Octylphthalate	50	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Fluoranthene	50	<43	<11	<200	1.0	<100	<200	<100	<200	<110	<11
Fluorene	50	4.0	<11	<200	6.0	4.0	<200	2.0	<200	6.0	<11
Indeno(1,2,3-cd)pyrene	0.002	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Isophorone	50	<43	<11	<200	<10	<100	<200	<100	<200	<110	<11
Naphthalene	10	190	0.20 J	160 J	16	700	8.0	310	7.0	750	<11
Phenanthrene	50	4.0	<11	<200	7.0	4.0	<200	1.0	<200	<110	<11
Phenol	1	<43	0.30 J	540	18	80	1,100	19	<200	73	<11
Pyrene	50	<43	0.30 J	<200	1.0	<100	<200	<100	<200	<110	<11
Total PAHs	- -	230	0.50 J	170 J	55	740	8.0	360	7.0	930	<11
Total SVOCs	- -	250	2.8 J	2,700 J	120	880	2,900	470	1,200	1,100	1.0

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID: Date Collected:	NYSDEC Groundwater Standards and Guidance Values	TMW-10D3 05/31/01	TMW-16S 10/31/00	TMW-16D 10/31/00	TMW-17S 06/04/01	TMW-17D1 06/04/01	TMW-17D2 06/04/01	TMW-18D1 06/01/01	TMW-18D2 06/01/01	TMW-19D1 06/01/01	TMW-19D2 05/30/01
Detected Inorganics (ppb)											
Aluminum	- -	<410	104	363	<20.5	295	<370	654	137	200	<20.5
Antimony	3	<88.0	<5.00	<5.00	<4.40	<4.40	<90.0	<4.40	<4.40	<4.40	<4.40
Arsenic	25	<84.0	<2.50	<2.50	<4.20	<4.20	<82.0	<4.20	4.70	<4.20	<4.20
Barium	1,000	339	41.2	20.9	25.9	14.1	369	19.6	2,540	35.0	187
Beryllium	- -	<10.0	<0.500	<0.500	<0.500	<0.500	<10.0	<0.500	<0.500	<0.500	<0.500
Cadmium	5	<18.0	<0.500	<0.500	<0.900	<0.900	<16.0	<0.900	<0.900	<0.900	<0.900
Calcium	- -	1,450,000	219,000	113,000	209,000	113,000	776,000	187,000	108,000	267,000	81,900
Chromium	50	18.0	19.9	<1.00	<0.800	1.60	<20.0	1.00	<0.800	<0.800	<0.800
Cobalt	- -	<32.0	<1.00	<1.00	<1.60	<1.60	<28.0	<1.60	<1.60	<1.60	<1.60
Copper	200	46.3	2.90	5.60	<1.60	<1.60	<36.0	4.30	1.70	<1.60	<1.60
Cyanide	200	<10.0	99.4	<10.0	107	<10.0	61.8	561	91.0	173	112
Cyanide, Available	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	300	11,200	23.2	138	66.6	284	9,400	660	1,350	164	133
Lead	25	<40.0	<2.00	<2.00	<2.00	<2.00	<52.0	<2.00	<2.00	<2.00	<2.00
Magnesium	- -	361,000	23.0	133	2,610	192	112,000	817	15,100	47.0	18,300
Manganese	300	422	<1.00	6.80	1.40	8.40	302	12.5	69.7	<1.00	69.8
Mercury	0.7	<0.100	<0.100	<0.100	<0.100	1.20	<0.100	<0.100	<0.100	<0.100	<0.100
Nickel	100	<26.0	1.60	2.90	2.60	3.00	<30.0	2.90	1.90	3.60	2.00
Potassium	- -	542,000	8,760	19,900	14,100	12,600	148,000	6,640	63,700	20,600	34,700
Selenium	10	<98.0	5.90	8.40	<4.90	<4.90	<92.0	<10.0	<4.90	<4.90	<4.90
Silver	50	<20.0	<1.00	<1.00	<1.00	<1.00	<20.0	<1.00	<1.00	<1.00	<1.00
Sodium	- -	10,800,000	19,600	84,600	56,400	47,600	14,100,000	42,600	2,670,000	123,000	452,000
Thallium	- -	<182	<6.00	<6.00	<9.10	<9.10	<184	<9.10	<455	<15.0	<9.10
Vanadium	- -	<20.0	4.00	2.20	2.40	2.40	<18.0	6.40	3.80	2.40	<1.00
Zinc	2,000	<100	6.80	10.9	<5.00	<5.00	106	<5.00	6.80	<5.00	<5.00
Detected Inorganics-Filtered (ppb)											
Iron	300	NA	<100	<100	NA	NA	NA	NA	NA	NA	NA
Manganese	300	NA	<10.0	<10.0	NA	NA	NA	NA	NA	NA	NA
PCBs (ppb)											
None Detected	0.09	- -	NA	NA	- -	- -	- -	- -	- -	- -	- -
Detected Pesticides (ppb)											
4,4'-DDD	0.3	<0.10	0.020 J	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	0.2	<0.10	0.056 J	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.0046	<0.10
4,4'-DDT	0.2	<0.10	0.46	0.054 J	<0.10	0.0080	<0.10	<0.10	<0.10	<0.10	<0.10
Aldrin	0	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Alpha-BHC	0.01	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Alpha-Chlordane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Beta-BHC	- -	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.014	<0.050	<0.050
Delta-BHC	- -	<0.050	0.012 J	0.021 J	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dieldrin	0.004	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan I	- -	<0.050	<0.050	<0.050	<0.050	<0.050	0.0040	<0.050	<0.050	<0.050	<0.050
Endosulfan II	- -	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan Sulfate	- -	<0.10	<0.10	<0.10	0.0030	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	0	<0.10	<0.10	0.037 J	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin Aldehyde	5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Gamma-BHC (Lindane)	0.05	<0.050	<0.050	<0.050	<0.050	0.0050	<0.050	<0.050	0.010	<0.050	<0.050
Gamma-Chlordane	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Heptachlor	0.04	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Heptachlor Epoxide	0.03	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Methoxychlor	35	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Miscellaneous (ppb)											
Alkalinity, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Available Cyanide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CO2 by Headspace	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon monoxide	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate, CaCO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Ca/CO3	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (as N)	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate Nitrogen	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite Nitrogen	1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oil and Grease	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oxygen	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfide	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC Average Quads	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids	1,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)											
pH	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCs, SVOCs, INORGANIC CONSTITUENTS, PCBs, PESTICIDES, AND GEOCHEMICAL PARAMETERS (ppb)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Notes:
1. Samples were collected by ARCADIS on the dates indicated.
2. VOCs = Target Compound List (TCL) Volatile Organic Compounds.
3. BTEX = Benzene, toluene, ethylbenzene and xylenes.
4. SVOCs = TCL Semi-Volatile Organic Compounds.
5. PAHs = Polynuclear aromatic hydrocarbons.
6. Inorganics = Resource Conservation Recovery Act (RCRA) Metals and Cyanide.
7. PCBs = Polychlorinated Biphenyls.
8. Samples were analyzed by TestAmerica Laboratories, Inc. (TestAmerica) located in Shelton, Connecticut for:
   - VOCs/BTEX using United States Environmental Protection Agency (USEPA) SW-846 Method 8260.
   - SVOCs/PAHs using USEPA SW-846 Method 8270.
   - Inorganics using USEPA SW-846 Methods 6010, 7471, 9012 and 335.4.
   - PCBs using USEPA SW-846 Method 8082.
   - Pesticides by USEPA Method 8080.
   - Sulfate (SO_4) using Method 9036.
   - Sulfide using USEPA Method 9031.
   - Nitrite (NO_2) and nitrate (NO_3) using USEPA Method 9200.
   - Biochemical oxygen demand (BOD) using USEPA Method 405.1.
   - Chemical oxygen demand (COD) using USEPA Method 410.1.
   - Carbon dioxide , carbon monoxide, methane and oxygen using AM-15.01.
   - Chloride using USEPA Method 9250.
   - Dissolved organic carbon (DOC) average quads using USEPA Method 9060.
   - Total organic carbon (TOC) using USEPA Method 9060.
9. Samples were analyzed by Exygen Research (Exygen) located in State College, Pennsylvania for:
   - Cyanide (available) using USEPA OIA 1677.
10. With the exception of waste characterization parameters, only those constituents detected in one or more samples are summarized.
11. Concentrations reported in parts per billion (ppb), which is equivalent to micrograms per liter (ug/L).
12. Field duplicate sample results are presented in brackets.
13. Data qualifiers are defined as follows:
    < - Constituent not detected at a concentration above the reported detection limit.
    > - Indicates the result was greater than the reported result.
    B (Inorganic) - Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
    B (Organic) - Compound was found in blank.
    D - Compound quantitated using a secondary dilution. Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis.
    E (Inorganic) - Serial dilution exceeds the control limits.
    E (Organic) - Result exceeded calibration range; a secondary dilution required.
    H - Alternate peak selection upon analytical review.
    J - Indicates that the associated numerical value is an estimated concentration.
    M - Manually integrated compound.
14. NYSDEC groundwater standards/guidance values are from the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998, revised April 2000 and June 2004.
15. Shading Designates values that exceed the NYSDEC groundwater quality standards/guidance values.
16. - - = No TOGS 1.1.1 Water Quality Standard/Guidance Value listed.
17. NA = Not Analyzed.
18. Results have been validated in accordance with USEPA National Functional Guidelines of October 1999.

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-9	SB-10	SB-11	SB-12	SB-13		SB-14	SB-15	SB-16		SB-17	
Sample Depth(Feet):	NYSDEC Part	6 - 8	10 - 12	12 - 14	6 - 8	14 - 16	38 - 40	8 - 10	8 - 10	2 - 4	28 - 30	2 - 4	14 - 16
Date Collected:	371 Criteria	02/24/00	02/24/00	02/28/00	02/28/00	03/15/00	03/15/00	02/24/00	03/02/00	03/03/00	03/03/00	02/29/00	02/29/00
TCLP-VOCs													
1,1-Dichloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1,2-Dichloroethane	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
2-Butanone	200	0.0040 J	<0.010	<0.010	<0.010	<0.0050	<0.0050	0.0030 JB	0.0090 JB	0.0030 J	0.0050 J	<0.010	0.0030 JB
Benzene	0.5	<0.0050	0.0020 JT	0.0060 T	0.00050 JT	<0.0050	<0.0050	0.033 T	0.00070 JT	0.00090 JT	0.014 T	<0.0050	0.00040 JT
Carbon Tetrachloride	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chlorobenzene	100	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloroform	6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tetrachloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Trichloroethene	0.5	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Chloride	0.2	<0.010	<0.0050	<0.010	<0.010	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.010	<0.010
TCLP-SVOCs													
1,4-Dichlorobenzene	7.5	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
2,4,5-Trichlorophenol	400	<0.10	<0.10	<0.10	<0.10	<0.12	<0.12	<0.20	<0.010	<0.010	<0.010	<0.10	<0.10
2,4,6-Trichlorophenol	2	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
2,4-Dinitrotoluene	30.13	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
2-Methylphenol	4,200	<0.020	<0.020	0.022	<0.020	<0.050	<0.050	0.063	<0.010	0.0020 J	0.22	<0.020	<0.020
4-Methylphenol	4,200	0.00080 J	<0.020	0.029	<0.020	<0.050	<0.050	0.15	<0.010	0.0040 J	0.45	<0.020	0.00060 J
Hexachlorobenzene	30.13	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
Hexachlorobutadiene	0.5	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
Hexachloroethane	3	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
Nitrobenzene	2	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	<0.040	<0.010	<0.010	<0.010	<0.020	<0.020
Pentachlorophenol	100	<0.10	<0.10	<0.10	<0.10	<0.12	<0.12	<0.20	<0.050	<0.050	<0.050	<0.10	<0.10
Pyridine	35	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050	0.0010 J	<0.010	<0.010	0.018 J	<0.020	<0.020
TCLP-Metals													
Arsenic	5	0.0205	0.00320 B	0.00360 B	<0.00300	0.00270 B	0.00570 B	0.00500 B	0.00460 B	0.0138	<0.00300	<0.00300	0.00430 B
Barium	100	0.218	0.219	0.311	0.224	0.153 B	0.189 B	0.328	0.188 B	0.172 B	0.199 B	0.328	0.836
Cadmium	1	0.00400 B	0.00100 B	<0.00100	<0.00100	<0.000300	<0.000300	0.00130 B	<0.00100	0.00190 B	<0.00100	<0.00100	<0.00100
Chromium	5	<0.00100	0.00540 B	<0.00100	0.0196	0.00370 B	<0.00220	0.00120 B	0.00590 B	0.0390	0.00380 B	0.00360 B	0.00230 B
Lead	5	0.00670	<0.00200	0.00300 B	<0.00200	<0.00230	<0.00230	0.00430	0.00350	3.32	0.0146	0.00270 B	0.00300 B
Mercury	0.2	<0.00100	0.0116	<0.00100	<0.00100	<0.0100	<0.0100	<0.00100	0.00110 BN	0.00150 BN	0.00160 BN	0.0156	0.0172
Selenium	1	0.00660	0.0170	0.00640	0.00900	0.00650	<0.00400	0.0116	0.00950 N	0.0110 N	0.00800 N	0.00780	0.00540
Silver	5	<0.00100	<0.00100	<0.00100	<0.00100	<0.00190	<0.00190	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-18	SB-19		SB-20	SB-21		SB-22		SB-24		SB-25
Sample Depth(Feet):	NYSDEC Part	2 - 4	10 - 12	26 - 28	18 - 20	16 - 18	34 - 36	14 - 16	42 - 44	12 - 14	34 - 36	12 - 14
Date Collected:	371 Criteria	03/16/00	03/16/00	03/16/00	02/22/00	02/22/00	02/22/00	03/06/00	03/06/00	03/20/00	03/20/00	03/17/00
TCLP-VOCs												
1,1-Dichloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1,2-Dichloroethane	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
2-Butanone	200	<0.0050	<0.0050	<0.0050	0.0040 JB	<0.010	<0.010	0.0030 J	0.0040 J	<0.0050	<0.0050	<0.0050
Benzene	0.5	0.0024 J	<0.0050	0.0071	0.00040 JT	<0.0050	0.0030 JT	0.0090 T	0.0030 JT	<0.0050	0.0085	<0.0050
Carbon Tetrachloride	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chlorobenzene	100	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloroform	6	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tetrachloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Trichloroethene	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Chloride	0.2	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
TCLP-SVOCs												
1,4-Dichlorobenzene	7.5	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	400	<0.12	<0.12	<0.12	<0.10	<0.10	<0.10	<0.010	<0.010	<0.12	<0.12	<0.12
2,4,6-Trichlorophenol	2	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
2,4-Dinitrotoluene	30.13	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
2-Methylphenol	4,200	<0.050	<0.050	0.12	<0.020	<0.020	<0.020	0.0010 J	0.00030 J	0.12	0.048 J	0.12
4-Methylphenol	4,200	<0.050	<0.050	<0.050	0.0010 J	<0.020	<0.020	0.0010 J	<0.010	<0.050	<0.050	<0.050
Hexachlorobenzene	30.13	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
Hexachlorobutadiene	0.5	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
Hexachloroethane	3	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
Nitrobenzene	2	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
Pentachlorophenol	100	<0.12	<0.12	<0.12	<0.10	<0.10	<0.10	<0.050	<0.050	<0.12	<0.12	<0.12
Pyridine	35	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020	<0.010	<0.010	<0.050	<0.050	<0.050
TCLP-Metals												
Arsenic	5	0.00340 B	<0.00250	<0.00250	0.00650 B	0.00330 B	0.00570 B	0.00730 B	0.00810 B	0.00680 J	0.00310 B	<0.00250
Barium	100	0.259	0.0522	0.368	0.415	0.484	0.432	0.246	0.851	0.521	0.804	0.247
Cadmium	1	<0.000300	<0.000300	<0.000300	<0.00100	<0.00100	<0.00100	<0.00100	0.00130 B	<0.000300	0.000340 B	<0.000300
Chromium	5	<0.00220	0.00470 B	<0.00220	<0.00100	0.00200 B	<0.00100	0.00760 B	0.0104	0.00240 B	<0.00220	<0.00220
Lead	5	<0.00230	<0.00230	<0.00230	0.00470	0.00560	0.00620	0.00770	0.0132	<0.00230	<0.00230	<0.00230
Mercury	0.2	<0.0100	<0.0100	<0.0100	<0.00100	<0.00100	<0.00100	0.00150 BN	0.00150 BN	<0.0100	<0.0100	<0.0100
Selenium	1	<0.00400	<0.00400	<0.00400	0.00510	0.00790	0.00820	0.0116 N	<0.00300 N	0.00450 B	<0.00400	<0.00400
Silver	5	<0.00190	<0.00190	<0.00190	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00190	<0.00190	<0.00190

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-26		SB-27		SB-28	SB-29		SB-30	SB-31	
Sample Depth(Feet):	NYSDEC Part	14 - 16	26 - 28	12 - 14	18 - 20	14 - 16	2 - 4	28 - 30	14 - 16	10 - 12	12 - 14
Date Collected:	371 Criteria	02/24/00	02/24/00	03/02/00	03/02/00	03/01/00	03/01/00	03/01/00	03/13/00	03/07/00	03/07/00
TCLP-VOCs											
1,1-Dichloroethene	0.7	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
1,2-Dichloroethane	0.5	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
2-Butanone	200	0.0030 JB [0.0030 JB]	<0.010	0.0040 JB	0.0040 JB	0.0030 JB	0.0040 JB	0.0020 JB	<0.0050	0.0040 JB	0.0050 JB
Benzene	0.5	0.00020 JT [0.00040 JT]	0.0020 JT	0.00090 JT	0.0020 JT	<0.0050	0.00080 JT	0.0020 JT	<0.0050	0.0010 JT	0.0010 JT
Carbon Tetrachloride	0.5	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chlorobenzene	100	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloroform	6	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.00040 J	<0.0050	<0.0050	<0.0050
Tetrachloroethene	0.7	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.00060 J	<0.0050	<0.0050	<0.0050
Trichloroethene	0.5	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Chloride	0.2	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TCLP-SVOCs											
1,4-Dichlorobenzene	7.5	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
2,4,5-Trichlorophenol	400	<0.10 [<0.10]	<0.10	<0.050	<0.050	<0.10	<0.10	<0.10	<0.12	<0.010	<0.010
2,4,6-Trichlorophenol	2	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
2,4-Dinitrotoluene	30.13	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
2-Methylphenol	4,200	<0.020 [<0.020]	<0.020	0.00050 J	0.0030 J	<0.020	<0.020	0.00040 J	0.12	0.00030 J	0.00070 J
4-Methylphenol	4,200	<0.020 [<0.020]	0.00050 J	0.0010 J	0.0060 J	<0.020	<0.020	0.00090 J	<0.050	0.00070 J	0.0020 J
Hexachlorobenzene	30.13	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
Hexachlorobutadiene	0.5	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
Hexachloroethane	3	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
Nitrobenzene	2	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
Pentachlorophenol	100	<0.10 [<0.10]	<0.10	<0.010	<0.010	<0.10	<0.10	<0.10	<0.12	<0.050	<0.050
Pyridine	35	<0.020 [<0.020]	<0.020	<0.010	<0.010	<0.020	<0.020	<0.020	<0.050	<0.010	<0.010
TCLP-Metals											
Arsenic	5	0.00520 B [0.00700 B]	0.00450 B	<0.00300	0.00360 B	0.00360 B	0.00550 B	<0.00300	0.00290 B	0.00840 B	0.00490 B
Barium	100	0.371 [0.842]	0.416	0.433	0.466	0.687	0.759	0.214	0.567	0.177 B	0.256
Cadmium	1	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	0.00220 B	<0.00100	<0.000300	<0.00100	<0.00100
Chromium	5	0.00130 B [0.00550 B]	<0.00100	<0.00100	<0.00100	0.00140 B	<0.00100	<0.00100	<0.00220	0.00180 B	<0.00100
Lead	5	0.00490 [0.00500]	0.00340	0.00560	0.00370	0.00320	0.0279	0.00500	<0.00230	0.00780	0.00900
Mercury	0.2	<0.00100 [0.0225]	<0.00100	<0.00100 N	<0.00100 N	0.00860	<0.00100	0.00140 B	<0.0100	0.00130 BN	0.00110 BN
Selenium	1	0.00850 [0.00760]	<0.00300	0.00770 N	0.00650 N	0.00500 B	0.00760	0.00300 B	<0.00400	0.00610 N	0.00520 N
Silver	5	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00190	<0.00100	<0.00100

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-32		SB-33	SB-34		SB-35	SB-36	SB-37	SB-38
Sample Depth(Feet):	NYSDEC Part	12 - 14	24 - 26	10 - 12	12 - 14	18 - 20	16 - 18	18 - 20	20 - 22	16 - 18
Date Collected:	371 Criteria	03/08/00	03/08/00	03/14/00	03/06/00	03/07/00	03/08/00	03/15/00	03/09/00	03/13/00
TCLP-VOCs										
1,1-Dichloroethene	0.7	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 [<0.0050]
1,2-Dichloroethane	0.5	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 [<0.0050]
2-Butanone	200	0.0030 JB	0.0090 JB	<0.021	0.0040 J [0.0050 JB]	0.0030 JB	0.0030 JB	0.0070 JB	0.011 JB	<0.0050 [<0.0050]
Benzene	0.5	0.00020 JT	0.0090 JT	<0.021	0.013 T [<0.0050]	0.0010 JT	0.00080 JT	0.0060 JT	0.0020 JT	<0.0050 [<0.0050]
Carbon Tetrachloride	0.5	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 [<0.0050]
Chlorobenzene	100	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 [<0.0050]
Chloroform	6	0.00040 J	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	0.00040 J	0.00050 J	0.0020 J	<0.0050 [<0.0050]
Tetrachloroethene	0.7	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050 [<0.0050]
Trichloroethene	0.5	<0.0050	<0.0050	<0.021	<0.0050 [<0.0050]	<0.0050	<0.0050	0.00080 J	<0.0050	<0.0050 [<0.0050]
Vinyl Chloride	0.2	<0.010	<0.010	<0.021	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.0050 [<0.0050]
TCLP-SVOCs										
1,4-Dichlorobenzene	7.5	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
2,4,5-Trichlorophenol	400	<0.010	<0.010	<0.12	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.12 [<0.12]
2,4,6-Trichlorophenol	2	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
2,4-Dinitrotoluene	30.13	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
2-Methylphenol	4,200	0.00060 J	0.0020 J	0.12	<0.010 [<0.010]	<0.010	0.0030 J	0.0010 J	<0.010	0.12 [<0.050]
4-Methylphenol	4,200	0.0020 J	0.0030 J	<0.050	0.00040 J [<0.010]	0.00040 J	0.0090 J	0.0040 J	0.00050 J	<0.050 [<0.050]
Hexachlorobenzene	30.13	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
Hexachlorobutadiene	0.5	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
Hexachloroethane	3	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
Nitrobenzene	2	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
Pentachlorophenol	100	<0.050	<0.050	<0.12	<0.050 [<0.050]	<0.050	<0.050	<0.050	<0.050	<0.12 [<0.12]
Pyridine	35	<0.010	<0.010	<0.050	<0.010 [<0.010]	<0.010	<0.010	<0.010	<0.010	<0.050 [<0.050]
TCLP-Metals										
Arsenic	5	<0.00300	0.00640 B	0.00530 B	<0.00300 [0.00520 B]	0.00460 B	0.00800 B	0.0109	<0.00300	0.00560 B [0.00520 B]
Barium	100	0.725	0.666	0.244	0.202 [0.162 B]	0.225	0.892	0.741	0.780	0.473 [0.504]
Cadmium	1	<0.00100	<0.00100	<0.000300	<0.00100 [<0.00100]	<0.00100	<0.00100	0.00160 B	<0.00100	<0.000300 [<0.000300]
Chromium	5	0.00120 B	<0.00100	<0.00220	0.00150 B [0.00150 B]	0.00250 B	<0.00100	0.0103	<0.00100	0.00220 B [<0.00220]
Lead	5	0.00560	0.00480	<0.00230	0.00560 [0.00590]	0.00730	0.00830	0.0105	0.00490	<0.00230 [<0.00230]
Mercury	0.2	0.00120 BN	0.00120 BN	<0.0100	0.00100 BN [0.00110 BN]	0.00120 BN	0.00240 N	<0.00100 N	0.00110 BN	<0.0100 [<0.0100]
Selenium	1	0.00820 N	0.0102 N	0.00410 B	0.00610 N [0.00940 N]	0.0104 N	0.0109 N	0.0133 N	0.00850 N	0.00490 B [0.00730]
Silver	5	<0.00100	<0.00100	<0.00190	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00190 [<0.00190]

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-39		SB-40		SB-41	SB-42	SB-43	SB-44	SB-45	SB-46	SB-47
Sample Depth(Feet):	NYSDEC Part	6 - 8	20 - 22	6 - 8	20 - 22	20 - 22	20 - 22	20 - 22	24 - 26	20 - 22	22 - 24	20 - 22
Date Collected:	371 Criteria	03/09/00	03/10/00	03/23/00	03/23/00	03/22/00	03/21/00	03/24/00	03/28/00	03/27/00	03/27/00	03/22/00
TCLP-VOCs												
1,1-Dichloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
1,2-Dichloroethane	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
2-Butanone	200	0.0060 JB	0.0020 JB	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Benzene	0.5	0.00070 JT	0.00040 JT	<0.0050	0.12	0.0012 J	0.0016 J	<0.78	0.010 J	<0.15	0.0098 J	0.0012 J
Carbon Tetrachloride	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Chlorobenzene	100	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Chloroform	6	<0.0050	0.00030 J	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Tetrachloroethene	0.7	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Trichloroethene	0.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
Vinyl Chloride	0.2	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.78	<0.044	<0.15	<0.014	<0.0050
TCLP-SVOCs												
1,4-Dichlorobenzene	7.5	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	400	<0.010	<0.010	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
2,4,6-Trichlorophenol	2	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2,4-Dinitrotoluene	30.13	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
2-Methylphenol	4,200	<0.010	<0.010	<0.050	<0.050	0.12	0.12	<0.050	0.0038 J	<0.050	0.011 J	0.12
4-Methylphenol	4,200	0.00070 J	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	0.0024 J	<0.050	0.0074 J	<0.050
Hexachlorobenzene	30.13	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Hexachlorobutadiene	0.5	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Hexachloroethane	3	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrobenzene	2	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Pentachlorophenol	100	<0.050	<0.050	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Pyridine	35	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
TCLP-Metals												
Arsenic	5	0.00380 B	<0.00300	0.00250 B	<0.00250	0.00440 B	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	0.00410 B
Barium	100	0.189 B	0.767	0.156 B	0.621	0.465	0.439	0.229	0.593	0.602	0.628	0.549
Cadmium	1	<0.00100	<0.00100	0.000880 B	<0.000300	<0.000300	<0.000300	<0.000300	<0.000300	<0.000300	<0.000300	<0.000300
Chromium	5	0.00410 B	<0.00100	0.00390 B	0.00270 B	<0.00220	<0.00220	<0.00220	0.00360 B	0.00220 B	0.00310 B	<0.00220
Lead	5	0.00200 B	0.00320	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230	<0.00230
Mercury	0.2	0.00240 N	0.00260 N	0.0169 B	<0.0100	<0.0100	<0.0100	<0.0100	0.0103 B	0.0138 B	<0.0100	<0.0100
Selenium	1	0.00810 N	0.00740 N	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400	<0.00400
Silver	5	<0.00100	<0.00100	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190	<0.00190

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Location ID:		SB-48	SB-49		SB-50	MW-3D	MW-4D	MW-5D	MW-8D
Sample Depth(Feet):	NYSDEC Part	16 - 18	10 - 12	18 - 20	16 - 18	18 - 20	21 - 23	18 - 20	20 - 22
Date Collected:	371 Criteria	03/23/00	03/21/00	03/20/00	03/28/00	02/20/98	02/23/98	02/18/98	02/17/98
TCLP-VOCs									
1,1-Dichloroethene	0.7	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
1,2-Dichloroethane	0.5	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
2-Butanone	200	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.010	<0.010	<0.010	<0.010
Benzene	0.5	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	0.0030 J
Carbon Tetrachloride	0.5	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
Chlorobenzene	100	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
Chloroform	6	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
Tetrachloroethene	0.7	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
Trichloroethene	0.5	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.0050	<0.0050	<0.0050	<0.0050
Vinyl Chloride	0.2	<0.0050	<0.0050 [<0.0050]	<0.050	<0.0050 [<0.014]	<0.010	<0.010	<0.010	<0.010
TCLP-SVOCs									
1,4-Dichlorobenzene	7.5	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
2,4,5-Trichlorophenol	400	<0.12	<0.12 [<0.12]	<0.12	<0.12 [<0.12]	<0.050	<0.050	<0.050	<0.050
2,4,6-Trichlorophenol	2	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
2,4-Dinitrotoluene	30.13	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
2-Methylphenol	4,200	<0.050	0.12 [<0.050]	0.12	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
4-Methylphenol	4,200	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene	30.13	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
Hexachlorobutadiene	0.5	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
Hexachloroethane	3	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
Nitrobenzene	2	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
Pentachlorophenol	100	<0.12	<0.12 [<0.12]	<0.12	<0.12 [<0.12]	<0.050	<0.050	<0.050	<0.050
Pyridine	35	<0.050	<0.050 [<0.050]	<0.050	<0.050 [<0.050]	<0.010	<0.010	<0.010	<0.010
TCLP-Metals									
Arsenic	5	<0.00250	0.00790 B [0.00380 B]	0.00410 B	<0.00250 [<0.00250]	<0.0400	<0.0400	<0.0400	<0.0400
Barium	100	0.277	0.464 [0.506]	0.567	0.765 [0.302]	0.421	0.360	0.402	0.0554 B
Cadmium	1	<0.000300	<0.000300 [<0.000300]	<0.000300	<0.000300 [<0.000300]	<0.00200	<0.00200	<0.00200	<0.00200
Chromium	5	<0.00220	<0.00220 [<0.00220]	<0.00220	<0.00220 [<0.00220]	<0.00600	0.00650 B	<0.00600	2.31
Lead	5	<0.00230	<0.00230 [<0.00230]	<0.00230	<0.00230 [<0.00230]	<0.0220	<0.0220	<0.0220	0.0506 B
Mercury	0.2	0.0152 B	<0.0100 [<0.0100]	<0.0100	<0.0100 [<0.0100]	<0.00200	<0.00200	<0.000200	<0.00200
Selenium	1	<0.00400	<0.00400 [<0.00400]	<0.00400	0.00430 B [0.00520]	<0.0480	0.0496 B	<0.0480	<0.0480
Silver	5	<0.00190	<0.00190 [<0.00190]	<0.00190	<0.00190 [<0.00190]	<0.00200	<0.00200	<0.00200	0.00200 B

TABLE 9
SOIL ANALYTICAL RESULTS FOR VOCs, SVOCs, AND METALS IN TCLP EXTRACT (ppm)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. TCLP = Toxicity Characteristic Leaching Procedure.
3. VOCs = Target Compound List (TCL) Volatile Organic Compounds.
4. SVOCs = TCL Semi-Volatile Organic Compounds.
5. Inorganics = Resource Conservation Recovery Act (RCRA) Metals and Cyanide.
6. Samples were analyzed by TestAmerica Laboratories, Inc. (TestAmerica) located in Shelton, Connecticut using extraction by United States Environmental Protection Agency (USEPA) SW-846 Method 1311 and by:
   - VOCs/BTEX using UESPA SW-846 Method 8260.
   - SVOCs/PAHs using USEPA SW-846 Method 8270.
   - Inorganics using USEPA SW-846 Methods 6010, 7471, and 335.4.
7. Only those constituents detected in one or more samples are summarized.
8. Concentrations reported in parts per million (ppm), which is equivalent to miilligrams per liter (mg/L).
9. Field duplicate sample results are presented in brackets.
10. Data qualifiers are defined as follows:
    - < - Constituent not detected at a concentration above the reported detection limit.
    - B (Inorganic) - Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
    - B (Organic) - Compound was found in blank.
    - J - Indicates that the associated numerical value is an estimated concentration.
    - N - The spike recovery exceeded the upper or lower control limits.
    - T - Compound was found in blank.
11. NA = Not Analyzed.
12. Results have not been validated in accordance with USEPA National Functional Guidelines of October 1999.

TABLE 10
POTENTIAL CHEMICAL, ACTION, AND LOCATION-SPECIFIC STANDARDS, CRITERIA, AND GUIDELINES

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Chemical-Specific SCGs				
Federal				
Clean Water Act (CWA) - Ambient Water Quality Criteria	40 CFR Part 131; EPA 440/5-86/001 "Quality Criteria for Water - 1986", superceded by EPA-822-R-02-047 "National Recommended Water Quality Criteria: 2002"	S	Criteria for protection of aquatic life and/or human health depending on designated water use.	Not applicable. Previous site investigations support that site MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake surface water and sediments.
CWA Section 136	40 CFR 136	G	Identifies guidelines for test procedures for the analysis of pollutants.	
CWA Section 404	33 USC 1344	S	Regulates discharges to surface water or ocean, indirect discharges to POTWs, and discharge of dredged or fill material into waters of the U.S. (including wetlands).	
RCRA-Regulated Levels for Toxic Characteristics Leaching Procedure (TCLP) Constituents	40 CFR Part 261	S	These regulations specify the TCLP constituent levels for identification of hazardous wastes that exhibit the characteristic of toxicity.	Excavated materials may be sampled and analyzed for TCLP constituents prior to disposal to determine if the materials are hazardous based on the characteristic of toxicity.
Universal Treatment Standards/Land Disposal Restrictions (UTS/LDRs)	40 CFR Part 268	S	Identifies hazardous wastes for which land disposal is restricted and provides a set of numerical constituent concentration criteria at which hazardous waste is restricted from land disposal (without treatment).	Applicable if waste is determined to be hazardous and for remedial alternatives involving off-site land disposal.
New York State				
Environmental Remediation Programs	6 NYCRR Part 375	S	Provides an outline for the development and execution of the soil remedial programs. Includes cleanup objective tables.	Applicable for site remediation.
NYSDEC Guidance on the Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants ("MGPs")	TAGM 4061(2002)	G	Outlines the criteria for conditionally excluding coal tar waste and impacted soil from former MGPs which exhibit the hazardous characteristic of toxicity for benzene (D018) from the hazardous waste requirements of 6 NYCRR Parts 370 - 374 and 376 when destined for thermal treatment.	This guidance will be used as appropriate in the management of MGP-impacted soil and coal tar waste generated during the remedial activities.
NYSDEC Ambient Water Quality Standards and Guidance Values	Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 (6/98)	S	Provides a compilation of ambient water quality standards and guidance values for toxic and non-conventional pollutants for use in the NYSDEC programs.	These standards and guidance values are to be considered in evaluating groundwater and surface water quality.
Technical Guidance for Screening Contaminated Sediments	Division of Fish, Wildlife and Marine Resources (January 1999)	G	Describes methodology for establishing sediment criteria for the purpose of identifying sediment that potentially may impact marine and aquatic ecosystems	Not applicable. Previous site investigations support that site MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake sediments.
Identification and Listing of Hazardous Wastes	6 NYCRR Part 371	S	Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 6 NYCRR Parts 371-376.	Applicable for determining if soil generated during implementation of remedial activities are hazardous wastes. These regulations do not set cleanup standards, but are considered when developing remedial alternatives.
New York State Surface Water and Groundwater Quality Standards	6 NYCRR Part 703	S	Establishes quality standards for surface water and groundwater.	Applicable for assessing groundwater quality at the site. The surface water quality standards are not applicable since previous site investigations concluded that site MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake surface water.
Action-Specific SCGs				
Federal				
Occupational Safety and Health Act (OSHA) - General Industry Standards	29 CFR Part 1910	S	These regulations specify the 8-hour time-weighted average concentration for worker exposure to various compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1910.120.	Proper respiratory equipment will be worn if it is not possible to maintain airborne concentrations of MGP-related constituents in the breathing zone below required concentrations. Appropriate training requirements will be met for remedial workers.
OSHA - Safety and Health Standards	29 CFR Part 1926	S	These regulations specify the type of safety equipment and procedures to be followed during site remediation.	Appropriate safety equipment will be utilized on-site and appropriate procedures will be followed during remedial activities.
OSHA - Record-keeping, Reporting and Related Regulations	29 CFR Part 1904	S	These regulations outline record-keeping and reporting requirements for an employer under OSHA.	These regulations apply to the company(s) contracted to install, operate, and maintain remedial actions at hazardous waste sites.
RCRA - Preparedness and Prevention	40 CFR Part 264.30 - 264.31	S	These regulations outline requirements for safety equipment and spill control when treating, handling and/or storing hazardous wastes.	Safety and communication equipment will be utilized at the site as necessary. Local authorities will be familiarized with the site.
RCRA - Contingency Plan and Emergency Procedures	40 CFR Part 264.50 - 264.56	S	Provides requirements for outlining emergency procedures to be used following explosions, fires, etc. when storing hazardous wastes.	Emergency and contingency plans will be developed and implemented during remedial design. Copies of the plan will be kept onsite.
CWA - Discharge to Waters of the U.S., and Section 404	40 CFR Parts 403, and 230 Section 404 (b) (1); 33 USC 1344	S	Establishes site-specific pollutant limitations and performance standards which are designed to protect surface water quality. Types of discharges regulated under CWA include: indirect discharge to a POTW, and discharge of dredged or fill material into U.S. waters.	Would apply for potential discharge of water generated by excavation dewatering and treated in a temporary onsite water treatment system.

TABLE 10
POTENTIAL CHEMICAL, ACTION, AND LOCATION-SPECIFIC STANDARDS, CRITERIA, AND GUIDELINES

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
CWA Section 401	33 U.S.C. 1341	S	Requires that 401 Water Quality Certification permit be provided to federal permitting agency (USACE) for any activity including, but not limited to, the construction or operation of facilities which may result in any discharge into jurisdictional waters of the U.S. and/or state.	Would apply for potential discharge of water generated by excavation dewatering and treated in a temporary onsite water treatment system.
90 Day Accumulation Rule for Hazardous Waste	40 CFR Part 262.34	S	Allows generators of hazardous waste to store and treat hazardous waste at the generation site for up to 90 days in tanks, containers and containment buildings without having to obtain a RCRA hazardous waste permit.	Potentially applicable to remedial alternatives that involve the storing or treating of hazardous materials onsite.
Rivers and Harbors Act, Sections 9 & 10	33 USC 401 and 403; 33 CFR Parts 320-330	S	Prohibits unauthorized obstruction or alteration of navigable waters of the U.S. (dredging, fill, cofferdams, piers, etc.). Requirements for permits affecting navigable waters of the U.S.	Not applicable. No structures anticipated in navigable waterways under the remedial alternatives.
RCRA - General Standards	40 CFR Part 264.111	S	General performance standards requiring minimization of need for further maintenance and control; minimization or elimination of post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products. Also requires decontamination or disposal of contaminated equipment, structures and soils.	Decontamination actions and facilities will be constructed for remedial activities and disassembled after completion.
Standards Applicable to Transporters of Applicable Hazardous Waste - RCRA Section 3003	40 CFR Parts 170-179, 262, and 263	S	Establishes the responsibility of off-site transporters of hazardous waste in the handling, transportation and management of the waste. Requires manifesting, recordkeeping and immediate action in the event of a discharge.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.
United States Department of Transportation (USDOT) Rules for Transportation of Hazardous Materials	49 CFR Parts 107 and 171.1 - 172.558	S	Outlines procedures for the packaging, labeling, manifesting and transporting of hazardous materials.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.
Clean Air Act-National Ambient Air Quality Standards	40 CFR Part 50	S	Establishes ambient air quality standards for protection of public health.	Remedial operations will be performed in a manner that minimizes the production of benzene and particulate matter.
USEPA-Administered Permit Program: The Hazardous Waste Permit Program	RCRA Section 3005; 40 CFR Part 270.124	S	Covers the basic permitting, application, monitoring and reporting requirements for off-site hazardous waste management facilities.	Any offsite facility accepting hazardous waste from the site must be properly permitted. Implementation of the site remedy will include consideration of these requirements.
Land Disposal Restrictions	40 CFR Part 368	S	Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes Universal Treatment Standards (UTSs) to which hazardous waste must be treated prior to land disposal.	Excavated soils that display the characteristic of hazardous waste or that are decharacterized after generation must be treated to 90% constituent concentration reduction capped at 10 times the UTS.
RCRA Subtitle C	40 U.S.C. Section 6901 et seq.; 40 CFR Part 268	S	Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes UTSs to which hazardous wastes must be treated prior to land disposal.	Potentially applicable to remedial activities that include disposal of generated waste material from the site.
New York State				
Discharges to Public Waters	New York State Environmental Conservation Law, Section 71-3503	S	Provides that a person who deposits gas tar, or the refuse of a gas house or gas factory, or offal, refuse, or any other noxious, offensive, or poisonous substances into any public waters, or into any sewer or stream running or entering into such public waters, is guilty of a misdemeanor.	During the remedial activities, MGP-impacted materials will not be deposited into public waters or sewers.
NYSDEC's Monitoring Well Decommissioning Guidelines	NPL Site Monitoring Well Decommissioning dated May 1995	G	This guidance presents procedure for abandonment of monitoring wells at remediation sites.	This guidance is applicable for soil or groundwater alternatives that require the decommissioning of monitoring wells onsite.
Guidelines for the Control of Toxic Ambient Air Contaminants	DAR-1 (Air Guide 1)	G	Provides guidance for the control of toxic ambient air contaminants in New York State and outlines the procedures for evaluating sources of air pollution	This guidance may be applicable for soil or groundwater alternatives that result in certain air emissions.
Technical Guidance for Screening Contaminated Sediments	Division of Fish, Wildlife and Marine Resources (January 1999)	G	Describes methodology for establishing sediment criteria for the purpose of identifying sediment that potentially may impact marine and aquatic ecosystems	Not applicable. Previous site investigations support that MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake sediments.
Protection of Waters Program	New York State Environmental Conservation Law, Part 608.5	S	Requires that a permit be obtained for any excavation or placement of fill within navigable waters of the state, below the mean high water level.	Not applicable. Previous site investigations support that MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake sediments.
New York Hazardous Waste Management System - General	6 NYCRR Part 370	S	Provides definitions of terms and general instructions for the Part 370 series of hazardous waste management.	Hazardous waste is to be managed according to this regulation.
Identification and Listing of Hazardous Wastes	6 NYCRR Part 371	S	Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 6 NYCRR Parts 371-376.	Applicable for determining if solid waste generated during implementation of remedial activities are hazardous wastes. These regulations do not set cleanup standards, but are considered when developing remedial alternatives.
Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities	6 NYCRR Part 372	S	Provides guidelines relating to the use of the manifest system and its recordkeeping requirements. It applies to generators, transporters and facilities in New York State.	This regulation will be applicable to any company(s) contracted to do treatment work at the site or to transport or manage hazardous material generated at the site.
New York Regulations for Transportation of Hazardous Waste	6 NYCRR Part 372.3 a-d	S	Outlines procedures for the packaging, labeling, manifesting and transporting of hazardous waste.	These requirements will be applicable to any company(s) contracted to transport hazardous material from the site.

TABLE 10
POTENTIAL CHEMICAL, ACTION, AND LOCATION-SPECIFIC STANDARDS, CRITERIA, AND GUIDELINES

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP
FEASIBILITY STUDY REPORT

Regulation	Citation	Potential Standard (S) or Guidance (G)	Summary of Requirements	Applicability to the Remedial Design/Remedial Action
Waste Transporter Permits	6 NYCRR Part 364	S	Governs the collection, transport and delivery of regulated waste within New York State.	Properly permitted haulers will be used if any waste materials are transported offsite.
NYSDEC Technical and Administrative Guidance Memorandums (TAGMs)	NYSDEC TAGMs	G	TAGMs are NYSDEC guidance that are to be considered during the remedial process.	Appropriate TAGMs will be considered during the remedial process.
New York Regulations for Hazardous Waste Management Facilities	6 NYCRR Part 373.1.1 - 373.1.8	S	Provides requirements and procedures for obtaining a permit to operate a hazardous waste treatment, storage and disposal facility. Also lists contents and conditions of permits.	Any off-site facility accepting waste from the site must be properly permitted.
Land Disposal of a Hazardous Waste	6 NYCRR Part 376	S	Restricts land disposal of hazardous wastes that exceed specific criteria.	New York defers to USEPA for UTS/LDR regulations.
NYSDEC Guidance on the Management of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment from Former Manufactured Gas Plants	TAGM 4061(2002)	G	Outlines the criteria for conditionally excluding coal tar waste and impacted soils from former MGPs which exhibit the hazardous characteristic of toxicity for benzene (D018) from the hazardous waste requirements of 6 NYCRR Parts 370 - 374 and 376 when destined for thermal treatment.	This guidance will be used as appropriate in the management of MGP-impacted soil and coal tar waste generated during the remedial activities.
National Pollutant Discharge Elimination System (NPDES) Program Requirements, Administered Under New York State Pollution Discharge Elimination System (SPDES)	40 CFR Parts 122 Subpart B, 125, 301, 303, and 307 (Administered under 6 NYCRR 750-758)	S	Establishes permitting requirements for point source discharges; regulates discharge of water into navigable waters including the quantity and quality of discharge.	Remedial activities may involve treatment/disposal of water. If so, water generated at the site will be managed in accordance with NYSDEC SPDES permit requirements.
Location-Specific SCGs				
Federal				
National Environmental Policy Act Executive Orders 11988 and 11990	40 CFR 6.302; 40 CFR Part 6, Appendix A	S	Requires federal agencies, where possible, to avoid or minimize adverse impact of federal actions upon wetlands/floodplains and enhance natural values of such. Establishes the "no-net-loss" of waters/wetland area and/or function policy.	To be considered if remedial activities are conducted within the floodplain or wetlands.
CWA Section 404	33 USC 1344, Section 404; 33 CFR Parts 320-330; 40 CFR Part 230	S	Discharge of dredge or fill materials into waters of the U.S., including wetlands, are regulated by the USACE.	Not applicable. No dredging or filling proposed under the remedial alternatives.
Fish and Wildlife Coordination Act	16 USC 661; 40 CFR 6.302	S	Actions must be taken to protect fish or wildlife when diverting, channeling or otherwise modifying a stream or river.	Not applicable. No diversions or channeling proposed under the remedial alternatives.
Historical and Archaeological Data Preservation Act	16 USC 469a-1	S	Provides for the preservation of historical and archaeological data that might otherwise be lost as the result of alteration of the terrain.	Not applicable. The National Register of Historic Places website indicated no records present for historical sites within approximately 1.0 miles of the Hiawatha Boulevard site.
National Historic and Historical Preservation Act	16 USC 470; 36 CFR Part 65; 36 CFR Part 800	S	Requirements for the preservation of historic properties.	Not applicable. The National Register of Historic Places website indicated no records present for historical sites within approximately 1.0 miles of the Hiawatha Boulevard site.
Rivers and Harbors Act	33 USC 401/403	S	Prohibits unauthorized obstruction or alteration of navigable waters of the U.S. (dredging, fill, cofferdams, piers, etc.). Requirement for permits affecting navigable waters of the U.S.	Not applicable. No dredging or filling proposed under the remedial alternatives.
Hazardous Waste Facility Located on a Floodplain	40 CFR Part 264.18(b)	S	Requirements for a treatment, storage and disposal (TSD) facility built within a 100-year floodplain.	Hazardous waste TSD activities (if any) will be designed to comply with applicable requirements cited in this regulation.
Endangered Species Act	16 USC 1531 et seq.; 50 CFR Part 200; 50 CFR Part 402	S	Requires federal agencies to confirm that the continued existence of any endangered or threatened species and their habitat will not be jeopardized by a site action.	Not applicable as no endangered species were identified during the previous site investigations.
Floodplains Management and Wetlands Protection	40 CFR 6 Appendix A	S	Activities taking place within floodplains and/or wetlands must be conducted to avoid adverse impacts and preserve beneficial value. Procedures for floodplain management and wetlands protection provided.	Regulations pertaining to wetlands not applicable. No remedial activities would be performed in wetlands. Remedial activities within the floodplain will be performed in accordance with this regulation.
New York State				
New York State Floodplain Management Development Permits	6 NYCRR Part 500	S	Provides conditions necessitating NYSDEC permits and provides definitions and procedures for activities conducted within floodplains.	Not applicable. Previous site investigations support that site MGP-related constituents are not adversely affecting the Barge Canal and Onondaga Lake sediments.
New York State Freshwater Wetlands Act	ECL Article 24 and 71; 6 NYCRR Parts 662-665	S	Activities in wetlands areas must be conducted to preserve and protect wetlands.	Not applicable. There are no wetlands identified within the site during previous investigations.
New York State Parks, Recreation, and Historic Preservation Law	New York Executive Law Article 14;	S	Requirements for the preservation of historic properties.	Not applicable. The National Register of Historic Places website indicated no records present for historical sites in the immediate vicinity of the Hiawatha Boulevard site.
Endangered & Threatened Species of Fish and Wildlife	6 NYCRR Part 182	S	Identifies endangered and threatened species of fish and wildlife in New York.	Not applicable as no endangered species were identified during the site investigations.
New York State Coastal Management Program	Significant Fish and Wildlife Habitat Policies 7 and 8	S	Requires that a Consistency Determination be obtained for activities proposed within Significant Fish and Wildlife Habitats	Not applicable as significant habitats for fish and wildlife were not identified during the site investigations.
Floodplain Management Criteria for State Projects	6 NYCRR Part 502	S	Establishes floodplain management practices for projects involving state-owned and state-financed facilities.	Activities located in the floodplain areas will be performed in accordance with this regulation.
Local				
Local Building Permits	N/A	S	Local authorities may require a building permit for any permanent or semi-permanent structure, such as an on-site water treatment system building or a retaining wall.	Substantive provisions are potentially applicable to remedial activities that require construction of permanent or semi-permanent structures.

TABLE 11
COST ESTIMATE FOR ALTERNATIVE SM2:
INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
				Subtotal Capital Cost:	$75,000
				Administration & Engineering (10%):	$7,500
				Contingency (20%):	$15,000
				Total Capital Cost:	$97,500
Annual Operation and Maintenance (O&M) Costs for 30 Years					
3	Quarterly Inspection and Maintenance of Existing Fencing and Cover Materials	1	LS	$5,000	$5,000
4	Annual Inspection Report	1	LS	$3,000	$3,000
5	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
				Subtotal O&M Cost:	$13,000
				Contingency (20%):	$2,600
				Total O&M Cost:	$16,000
				Total Present Worth Cost of O&M (30-Years @ 7%):	$199,000
				Total Estimated Cost:	**$296,500**
				Rounded To:	**$297,000**

General Notes:

1. Cost estimate is based on ARCADIS of New York's (ARCADIS) past experience and vendor estimates using 2008 dollars.
2. This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of the site to industrial activities; (2) notify future property owners of the presence of MGP-related constituents in soil at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor and materials necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted soil at the site; (2) address possible future disturbances of site soil (to minimize the performance of intrusive subsurface activities without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.
3. Quarterly inspection and maintenance of existing fencing and cover materials cost estimate include costs for visually inspecting the perimeter fence and ground cover materials quarterly and performing minor repairs that may be needed.
4. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly inspections and maintenance activities performed.
5. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

TABLE 12
COST ESTIMATE FOR ALTERNATIVE SM3:
IN-SITU SOIL STABILIZATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
Permitting/Surveying/Utility Clearance/Engineering Design					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
3	Construction Permits/Erosion and Sedimentation Plans	1	LS	$20,000	$20,000
4	Health and Safety Program	1	LS	$5,000	$5,000
5	Utility Locating and Markout	1	LS	$5,000	$5,000
6	Surveying	1	LS	$5,000	$5,000
7	Full-Scale Design	1	LS	$50,000	$50,000
Site Preparation/Construction					
8	Treatability Testing	1	LS	$20,000	$20,000
9	Mobilization/Demobilization - In-Situ Soil Mixing	1	LS	$150,000	$150,000
10	Mobilization/Demobilization - Pre-ISS Excavation (to 5 feet bgs)	1	LS	$35,000	$35,000
11	Construction and Maintenance of Decontamination Pad	1	LS	$15,000	$15,000
12	Erosion and Sedimentation Controls	1	LS	$5,000	$5,000
13	Silt Fence	800	LF	$5	$4,000
14	Install Temporary Fencing	850	LF	$40	$34,000
15	Relocate Existing Chain Link Fence	75	LF	$40	$3,000
16	Asphalt/Concrete Removal	10,779	SF	$1	$10,779
17	Soil Excavation, Handling, and Screening of Excavated Materials	3,815	CY	$40	$152,593
18	Dust/Vapor/Odor Control	16	week	$3,000	$48,000
19	Utility Protection and Support	1	LS	$25,000	$25,000
20	Jet Grouting (Utilities)	9,537	V-LF	$75	$715,275
21	In Situ Auger Mixing	10,300	CY	$100	$1,030,000
22	Mixing Water/Additives	367,000	gal.	$0.005	$1,835
23	Quality Control Testing	1	LS	$36,000	$36,000
Spoils Handling and Disposal					
24	Construction and Maintenance of Soil Staging Areas	1	LS	$20,000	$20,000
25	Solid Waste Transportation and Disposal	20,743	ton	$85	$1,763,155
26	Miscellaneous Waste Disposal	1	LS	$10,000	$10,000
27	Waste Characterization Sampling	42	each	$400	$16,800
Site Restoration					
28	Fill Importation, Placement, Compaction, and Grading	875	CY	$35	$30,625
29	Surface Restoration - Installation of 4" Bituminous Asphalt Base Course	400	ton	$50	$20,000
30	Surface Restoration - Installation of 2" Bituminous Asphalt Top Course	200	ton	$50	$10,000
31	Surface Restoration - Grassed Areas	9,815	SF	$1	$9,815
				Subtotal Capital Cost:	$4,325,876
				Administration & Engineering (10%):	$432,588
				Project Management (10%):	$432,588
				Construction Management (10%):	$432,588
				Contingency (20%):	$865,175
				Total Capital Cost:	$6,488,814
Annual Operation and Maintenance (O&M) Costs for 30 Years					
32	Quarterly Inspection and Maintenance of Fencing and Cover Materials	1	LS	$5,000	$5,000
33	Annual Inspection Report	1	LS	$3,000	$3,000
34	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
				Subtotal O&M Cost:	$13,000
				Contingency (20%):	$2,600
				Total O&M Cost:	$16,000
				Total Present Worth Cost of O&M (30-Years @ 7%):	$199,000
				Total Estimated Cost:	**$6,687,814**
				Rounded To:	**$6,690,000**

TABLE 12
COST ESTIMATE FOR ALTERNATIVE SM3:
IN-SITU SOIL STABILIZATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

General Assumptions:

1. Cost estimate is based on ARCADIS of New York's (ARCADIS) past experience and vendor estimates using 2008 dollars.
2. This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of the site to industrial activities; (2) notify future property owners of the presence of MGP-related constituents in soil at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor and materials necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted soil at the site; (2) address possible future disturbances of site soil (to minimize the performance of intrusive subsurface activities without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.
3. Construction permits/erosion and sedimentation plans cost estimate includes costs to obtain appropriate permits necessary for the soil mixing construction activities.
4. Health and safety program cost estimate includes labor for the development of a site-specific health and safety plan.
5. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company over a period of 5 days at a daily rate of $1,000 per day.
6. Surveying cost estimate includes establishing control points, base mapping, as-builts, etc.
7. Full-scale design cost estimate includes final remedial action work plan and engineering design for the full-scale soil mixing.
8. The treatability testing cost estimate includes treatability testing to determine the proper reagent addition to produce a homogeneous mix and workable grout mix ratio (water to solids ratio) that would satisfy the project requirements.
9. Mobilization/demobilization of in-situ soil mixing cost estimates includes mobilization and demobilization of labor, equipment, and material necessary to perform in situ soil mixing.
10. Mobilization/demobilization of pre-ISS excavation (to 5 feet bgs) cost estimate includes mobilization and demobilization of labor, equipment, and material necessary to perform excavation of soils to 5 feet below ground surface to allow for bulking during ISS activities.
11. Construction and maintenance of decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a one-foot high berm and sloped to a collection sump for the collection of decontamination water.
12. Erosion and sedimentation controls cost estimate includes miscellaneous costs (strawbales, filter bags, etc.)
13. Silt fence cost estimate includes installation of silt fence for erosion control along the perimeter of soil mixing area.
14. Install temporary fencing cost estimate includes labor, equipment, and materials necessary to install and remove temporary fencing around the working area.
15. Relocate existing chain link fencing cost estimate includes labor, equipment, and materials necessary to remove and reinstall chain link fencing around the working area.
16. Asphalt/concrete removal cost estimate includes labor, equipment, and materials necessary to sawcut and remove the existing asphalt pavement (assumed to be 6 inches thick) overlying the area within the limits of excavation.
17. Soil excavation, handling, and screening of excavated materials cost estimate includes labor, equipment, and materials necessary to excavate the top 5 feet of soil from the proposed 20,600 sf treatment area and transfer the excavated material to the material staging area. Cost estimate is based on in-place soil volumes.
18. Dust/vapor/odor control cost estimate includes equipment, labor, and materials necessary to monitor dust/vapor/odor emission during intrusive site activities. Cost estimate includes application of vapor/odor suppressing foam to excavated materials staged
19. Utility protection and support cost estimate includes equipment, labor, and materials necessary to support and protect utilities within the treatment area.
20. Jet grouting (utilities) cost estimate includes labor, equipment, and materials necessary to stabilize/immobilize MGP-impacted soils using ISS technology from 5 feet below ground surface (bgs) to the proposed depth of completion, as follows: (1) on both sides of utilities (in interior portions of the treatment area) within 5 feet (horizontally) of utilities for a total of 8,534 vertical-linear feet (V-LF); and (2) on one side of utilities (along the perimeter of treatment areas) within 5 feet (horizontally) of utilities for a total of 1,003 V-LF. Assumes mixing cores will be spaced approximately 2.5 feet apart.

TABLE 12
COST ESTIMATE FOR ALTERNATIVE SM3:
IN-SITU SOIL STABILIZATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

21. In-situ auger mixing cost estimate includes labor, equipment, and materials necessary to stabilize/immobilize MGP-impacted soils using ISS technology from 5 feet below ground surface (bgs) to an average depth of 22 feet (bgs) over 6,746 sf treatment area and 5 feet (bgs) to 24 feet (bgs) over 8,488 sf treatment area. In-situ auger mixing is expected to take 13 weeks (5 days/week), based on a production rate of 6-7 shafts per day.
22. Mixing water/additives cost estimate includes costs to mix with additives (e.g. fly ash, hydrated lime, bentonite) to produce slurried reagent. Costs assume that water would be obtained from onsite municipal water supply. The mixing water/additives volume is based on a 15% slurried reagent with a 1 to 1 ratio of cement to water.
23. Quality control testing cost estimate includes labor, equipment, and materials necessary to perform quality control testing of the stabilized soil to verify the achievement of the performance criteria relative to unconfined compressive strength (UCS), permeability, and synthetic precipitate leaching procedure (SPLP) polycyclic aromatic hydrocarbons (PAHs). Cost assumes that approximately 76 cores (1 core every 5 vertical mixing shafts) would be analyzed for UCS ($60 per core) and 10% of the cores (8) would be analyzed for permeability ($200 per core) and SPLP PAHs ($250/core). Cost assumes 8 cores can be collected per day, drill/core rig and crew onsite at a rate of $1,600 per day, and an onsite observer onsite at a rate of $800 per day. Cost assumes a total of 379 mixing shafts and a 20% overlap of mixing shafts with an 8 foot auger. Jet grout quality control testing will include collecting grab samples from spoil material and analyzing for UCS ($60) and permeability ($200) every 1,000 vertical linear feet of jet grouting.
24. Construction and maintenance of soil staging areas cost estimate includes labor, equipment, and materials to construct an approximate 75-foot by 75-foot material staging area consisting of a 40-mil HDPE liner below a 12-inch sacrificial gravel fill layer with bermed sidewalls and sloped to a lined collection sump. Maintenance costs include inspecting and repairing staging area as necessary and covering staged soil with polyethylene sheeting or odor suppressing foam, as necessary.
25. Solid waste transportation and disposal cost estimate includes labor, equipment, and materials necessary to transport and dispose of excavated soils and spoils from jet grouting as non-hazardous waste at a permitted disposal facility. Assumes a unit weight of 1.5 tons per cubic yard of excavated soil.
26. Miscellaneous waste disposal cost estimate includes disposal of personal protective equipment (PPE), staging area and decontamination pad materials, and disposable equipment and materials at a facility permitted to accept the waste.
27. Waste characterization sampling cost estimate includes costs for the analysis of soil samples for Toxicity Charactistic Leaching Procedure (TCLP) benzene, TCLP lead, TCLP total cyanide, PCBs, ignitability, corrosivity, and reactivity. Costs assumes that waste characterization samples would be collected at a frequency of one sample per 500 tons material destined for offsite treatment/disposal.
28. Fill importation, placement, compaction, and grading cost estimate includes labor, equipment, and materials necessary to import, place, compact, and grade general fill to replace excavated material. The volume of fill needed is assumed to be 0.8 feet over the 22-foot stabilization area and 0.6 feet over the 24 foot stabilization area. The fill volume was calculated by the depth to the bottom of the stabilized soil mass minus the height of the stabilized soil column, including a 15% bulking factor. Cost estimate is based on in-place soil volume.
29. Surface restoration - installation of 4" bituminous asphalt base course cost estimate includes labor, equipment, and materials necessary to install a 4-inch layer (approximately 6 inches prior to compaction) of bituminous asphalt base course over 10,800 sf. The weight of the material was calculated assuming 2.0 tons per cubic yard.
30. Surface restoration - installation of 2" bituminous asphalt top course cost estimate includes labor, equipment, and materials necessary to install a 2-inch layer (approximately 3 inches prior to compaction) of bituminous asphalt top course over 10,800 sf. The weight of the material was calculated assuming 2.0 tons per cubic yard.
31. Surface restoration of grassed areas includes labor, equipment, and materials necessary to return surface to original condition (i.e, seed vegetated areas).
32. Quarterly inspection and maintenance of fencing and cover materials cost estimate include costs for visually inspecting the perimeter fence and ground cover materials quarterly and performing minor repairs that may be needed.
33. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly inspections and maintenance activities performed.
34. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

TABLE 13
COST ESTIMATE FOR ALTERNATIVE SM4:
FOCUSED SOIL EXCAVATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
3	Mobilization/Demobilization	1	LS	$35,000	$35,000
4	Health and Safety Program	1	LS	$5,000	$5,000
5	Utility Locating and Markout	1	LS	$5,000	$5,000
6	Surveying	1	LS	$5,000	$5,000
7	Pre-Design Investigation and Post Excavation Verification Sampling	1	LS	$150,000	$150,000
8	Utility Relocation	1	LS	$1,275,000	$1,275,000
9	Construction and Maintenance of Decontamination Pad	1	LS	$15,000	$15,000
10	Silt Fence	800	LF	$5	$4,000
11	Install Temporary Fencing	850	LF	$40	$34,000
12	Relocate Existing Chain Link Fence	75	LF	$40	$3,000
13	Construction and Maintenance of Soil Staging Areas	1	LS	$20,000	$20,000
14	Asphalt/Concrete Removal	10,779	SF	$1	$10,779
15	Install and Remove Temporary Steel Sheetpiling (>50 ft bgs)	55,200	SF	$100	$5,520,000
16	Internal Sheet Pile Bracing	1	LS	$50,000	$50,000
17	Soil Excavation, Handling, and Screening of Excavated Materials	17,410	CY	$40	$696,400
18	Fill Importation, Placement, Compaction, and Grading	17,410	CY	$35	$609,350
19	Demarcation Layer	2,289	SY	$3	$6,867
20	Solid Waste Transportation and Disposal	26,200	ton	$85	$2,227,000
21	Waste Characterization	53	each	$315	$16,695
22	Miscellaneous Waste Disposal	1	LS	$25,000	$25,000
23	Dust/Vapor/Odor Control	25	week	$3,000	$75,000
24	Groundwater Extraction Well Installation	400	LF	$200	$80,000
25	Temporary Onsite Groundwater Treatment System	6	month	$50,000	$300,000
26	Operation and Maintenance of Temporary Onsite Groundwater Treatment System	25	week	$40,800	$1,020,000
27	Decant and Excavation Dewatering	175	days	$300	$52,500
28	Surface Restoration - Installation of 4" Bituminous Asphalt Base Course	400	ton	$50	$20,000
29	Surface Restoration - Installation of 2" Bituminous Asphalt Top Course	200	ton	$50	$10,000
30	Surface Restoration - Grassed Areas	9,815	SF	$1	$9,815
				Subtotal Capital Cost:	$12,355,406
				Administration and Engineering (10%):	$1,235,541
				Project Management (10%):	$1,235,541
				Construction Management (10%):	$1,235,541
				Contingency (20%):	$2,471,081
				Total Capital Cost:	$18,534,000
Annual Operation and Maintenance (O&M) Costs for 30 Years					
31	Quarterly Inspection and Maintenance of Fencing and Cover Materials	1	LS	$5,000	$5,000
32	Annual Inspection Report	1	LS	$3,000	$3,000
33	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
				Subtotal O&M Cost:	$13,000
				Contingency (20%):	$2,600
				Total O&M Cost:	$16,000
				Total Present Worth Cost of O&M (30-Years @ 7%):	$199,000
				Total Estimated Cost:	**$18,733,000**
				Rounded To:	**$18,700,000**

TABLE 13
COST ESTIMATE FOR ALTERNATIVE SM4:
FOCUSED SOIL EXCAVATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

General Notes:

1. Cost estimate is based on ARCADIS of New York's (ARCADIS) past experience and vendor estimates using 2008 dollars.
2. This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of the site to industrial activities; (2) notify future property owners of the presence of MGP-related constituents in soil at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor and materials necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted soil at the site; (2) address possible future disturbances of site soil (to minimize the performance of intrusive subsurface activities without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.
3. Mobilization/demobilization cost estimate includes mobilization and demobilization of labor, equipment, and material necessary to perform focused soil excavation.
4. Health and safety program cost estimate includes labor for the development of a site-specific health and safety plan.
5. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company over a period of 5 days at a daily rate of $1,000 per day.
6. Surveying cost estimate includes establishing control points, base mapping, as-builts, etc.
7. Pre-design investigation and post excavation verification sampling cost estimate includes all labor, equipment, and materials necessary to collect additional information to facilitate completion of the remedial design for this alternative, including a test boring/geotechnical program. Cost estimate also includes collection of verification soil samples and laboratory analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX); and polycyclic aromatic hydrocarbons (PAHs) from excavation sidewall and bottom locations. The sampling frequency for bottom samples is approximately one per every 100 feet by 100 feet area (3 samples). The sampling frequency of sidewall samples is approximately every 100 feet along the perimeter of each side of the excavation where soils are left in place (8 samples).
8. Utility relocation cost estimate includes the deactivation and removal of existing utilities and installation of utilities outside the ISS treatment footprint. The cost estimate includes only the known existing utilities identified on figures provided by the Onondaga County Department of Water Environment Protection (OCDWEP) in letters to ARCADIS dated March 20, 2008 and March 31, 2008. The utility relocation cost estimate includes mobilization/demobilization of labor, equipment and materials necessary to disconnect, remove, and install utilities. The cost estimate includes disconnection and removal of 8-inch and 12-inch diameter water/storm sewer piping (213 feet) and 18-inch and 20-inch diameter gas piping (389 feet). Pipe bedding (320 CY) and backfill spreading and compaction (4,020 CY) to grade were also included in the cost estimate. The cost estimate includes soil excavation for utilties at their relocated destination for piping to be placed in a single trench (13-feet by 9-feet) (4,340 CY). The excavated soil was assumed to be impacted and would be disposed of at an appropriate offsite facility. The cost estimate also includes furnishing and installing 8-inch and 12-inch diameter water/storm sewer piping (1,464 feet) and 18-inch and 20-inch diameter gas piping (2,027 feet). The cost estimate assumes a 25% contingency fee.
9. Construction and maintenance of decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a one-foot high berm and sloped to a collection sump for the collection of decontamination water.
10. Silt fence cost estimate includes installation of silt fence for erosion control along the perimeter of excavation area.
11. Install temporary fencing cost estimate includes labor, equipment, and materials necessary to install and remove temporary fencing around the working area.
12. Relocate existing chain link fencing cost estimate includes labor, equipment, and materials necessary to remove and reinstall chain link fencing around the working area.
13. Construction and maintenance of soil staging areas cost estimate includes labor, equipment, and materials to construct an approximate 75-foot by 75-foot material staging area consisting of a 40-mil HDPE liner below a 12-inch sacrificial gravel fill layer with bermed sidewalls and sloped to a lined collection sump. Maintenance costs include inspecting and repairing staging area as necessary and covering staged soil with polyethylene sheeting or odor suppressing foam, as necessary.
14. Asphalt/concrete removal cost estimate includes labor, equipment, and materials necessary to sawcut and remove the existing asphalt pavement (assumed to be 6 inches thick) overlying the area within the limits of excavation.

TABLE 13
COST ESTIMATE FOR ALTERNATIVE SM4:
FOCUSED SOIL EXCAVATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
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FEASIBILITY STUDY REPORT

15. Install and remove temporary sheet piling (>50 ft bgs) cost estimate includes labor, equipment, and materials necessary to install and remove temporary steel sheet pile. Cost estimate assumes cantilever sheet piling (with an embedment depth of 2.5 times the excavation depth) would be utilized and reinforced with tie backs and interior bracing. It was assumed that sheetpiling between excavation cells of differing depths is not required. Cost includes an additional 15% of sheet pile for interior sheeting. Cost estimate also assumes that sheetpiling required to a depth of greater than 50 feet below ground surface costs 2 times installing sheetpiling of 50 feet bgs or less. Sheeting was included for the excavation depths of 22 and 24 feet (55,200 sf).

16. Internal sheet pile bracing cost estimate includes labor, equipment, and materials necessary to install internal sheet pile bracing to support sheet pile during excavation activities.
17. Soil excavation, handling, and screening of excavated materials cost estimate includes labor, equipment, and materials necessary to excavate and transfer excavated material from locations where saturated invertvals of non-aqueous phase liquid (NAPL) were observed in previous soil borings and total polycyclic aromatic hydrocarbons (PAHs) in soil samples were identified at concentrations greater than 500 parts per million (ppm) to the material staging area. Cost estimate is based on in-place soil volumes. It is assumed that an average of 300 CY of material will be excavated per day.
18. Fill importation, placement, compaction, and grading cost estimate includes labor, equipment, and materials necessary to import, place, compact, and grade general fill to replace excavated material. Cost estimate is based on in-place soil volume. It is assumed that fill can be imported, placed, compacted and graded at approximately the same rate as soil excavation activities (300 CY per day), and that approximately 50% of fill importation, placement, compaction and grading activities will be performed simultaneously with excavation.
19. Demarcation layer cost estimate includes labor, equipement, and materials necessary to place a woven, light-weight, non-biodegradable, high-visibility demarcation layer within the footprint of the focused soil excavation.
20. Solid waste transportation and disposal cost estimate includes labor, equipment, and materials necessary to transport and dispose of excavated soils as non-hazardous waste at a permitted disposal facility.
21. Waste characterization cost estimate includes costs for the analysis of soil samples for Toxicity Charactistic Leaching Procedure (TCLP) benzene, TCLP lead, TCLP total cyanide, PCBs, ignitability, corrosivity, and reactivity. Costs assumes that waste characterization samples would be collected at a frequency of one sample per 500 tons of material destined for offsite disposal.
22. Miscellaneous waste disposal cost estimate includes disposal of personal protective equipment (PPE), staging area and decontamination pad materials, and disposable equipment and materials at a facility permitted to accept the waste.
23. Dust/vapor/odor control cost estimate includes equipment, labor, and materials necessary to monitor dust/vapor/odor emission during intrusive site activities. Cost estimate includes application of vapor/odor suppressing foam to excavated materials staged onsite.
24. Groundwater extraction well installation cost estimate includes labor, equipment, and material necessary to install temporary groundwater wells every 50 feet along the perimeter of the excavation, to a maximum depth of 25 feet below the surface to establish hydraulic control. Assumes a total of 16 groundwater extraction wells.
25. Temporary onsite groundwater treatment system cost estimate includes all labor, equipment, and materials necessary to construct the temporary onsite groundwater treatment system. The cost estimate includes: mobilization/demobilization, pumps, influent piping and hoses, frac tanks, oil/water separators, carbon filters, bag filters, discharge piping and hoses, and flow meter. Frac tanks to be used to store untreated groundwater removed from soil excavation areas and material staging areas prior to on-site treatment and discharge to the Metro STP via sanitary sewer lines.
26. O&M of temporary onsite groundwater treatment system cost estimate includes all labor, equipment, and materials necessary to operate and maintain the temporary onsite groundwater treatment. The cost estimate includes: onsite labor, office administration, vapor-phase carbon changeout (once annually), liquid-phase carbon changeout (once annually), spare parts & miscellaneous expenses, treatment system monitoring, electrical usage, waste disposal of NAPL, and a discharge fee to the Metro STP (assuming disposal of approximately 5.04 million gallons of treated water per week at $0.005 per gallon). The average groundwater dewatering/treatment rate is assumed to be 500 gallons per minute.
27. Decant and excavation dewatering cost estimate assumes that such activities will be conducted continuously during excavation activities (assumed to be 25 weeks).
28. Surface restoration - installation of 4" bituminous asphalt base course cost estimate includes labor, equipment, and materials necessary to install a 4-inch layer (approximately 6 inches prior to compaction) of bituminous asphalt base course over 10,800 sf. The weight of the material was calculated assuming 2.0 tons per cubic yard.
29. Surface restoration - installation of 2" bituminous asphalt top course cost estimate includes labor, equipment, and materials necessary to install a 2-inch layer (approximately 3 inches prior to compaction) of bituminous asphalt top course over 10,800 sf. The weight of the material was calculated assuming 2.0 tons per cubic yard.
30. Surface restoration of grassed areas cost estimate includes labor, equipment, and materials necessary to return surface to original condition (i.e, seed vegetated areas).
31. Quarterly inspection and maintenance of fencing and cover cost estimate include costs for visually inspecting the barrier layer quarterly and performing minor repairs that may be needed.

TABLE 13
COST ESTIMATE FOR ALTERNATIVE SM4:
FOCUSED SOIL EXCAVATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
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32. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly barrier layer inspections and maintenance activities performed.
33. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

TABLE 14
COST ESTIMATE FOR ALTERNATIVE SM5:
SOIL EXCAVATION TO INDUSTRIAL USE SOIL CLEANUP OBJECTIVES AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
3	Mobilization/Demobilization	1	LS	$200,000	$200,000
4	Health and Safety Program	1	LS	$5,000	$5,000
5	Utility Locating and Markout	1	LS	$10,000	$10,000
6	Surveying	1	LS	$5,000	$5,000
7	Pre-Design Investigation and Post Excavation Verification Sampling	1	LS	$300,000	$300,000
8	Utility Relocation	1	LS	$2,173,000	$2,173,000
9	Construction and Maintenance of Decontamination Pad	1	LS	$15,000	$15,000
10	Silt Fence	2,700	LF	$5	$13,500
11	Install Temporary Fencing	2,700	LF	$40	$108,000
12	Relocate Existing Chain Link Fence	750	LF	$40	$30,000
13	Construction and Maintenance of Soil Staging Areas	1	LS	$20,000	$20,000
14	Asphalt/Concrete Removal	48,000	SF	$1	$48,000
15	Install and Remove Temporary Steel Sheetpiling (50 ft bgs or less)	64,515	SF	$50	$3,225,750
16	Install and Remove Temporary Steel Sheetpiling (>50 ft bgs)	133,400	SF	$100	$13,340,000
17	Internal Sheet Pile Bracing	1	LS	$250,000	$250,000
18	Soil Excavation, Handling, and Screening of Excavated Materials	60,900	CY	$40	$2,436,000
19	Fill Importation, Placement, Compaction, and Grading	60,900	CY	$35	$2,131,500
20	Demarcation Layer	9,443	SY	$3	$28,329
21	Solid Waste Transportation and Disposal	91,350	ton	$85	$7,764,750
22	Waste Characterization	183	each	$315	$57,645
23	Miscellaneous Waste Disposal	1	LS	$100,000	$100,000
24	Dust/Vapor/Odor Control	61	week	$3,000	$183,000
25	Groundwater Extraction Well Installation	1,550	LF	$200	$310,000
26	Temporary Onsite Groundwater Treatment System	14	month	$50,000	$700,000
27	Operation and Maintenance of Temporary Onsite Groundwater Treatment System	61	week	$40,800	$2,488,800
28	Decant and Excavation Dewatering	427	days	$300	$128,100
29	Surface Restoration - Installation of 4" Bituminous Asphalt Base Course	1,778	ton	$50	$88,889
30	Surface Restoration - Installation of 2" Bituminous Asphalt Top Course	889	ton	$50	$44,444
31	Surface Restoration - Grassed Areas	37,000	SF	$1	$37,000
				Subtotal Capital Cost:	$36,316,707
				Administration and Engineering (10%):	$3,631,671
				Project Management (10%):	$3,631,671
				Construction Management (10%):	$3,631,671
				Contingency (20%):	$7,263,341
				Total Capital Cost:	$54,476,000
Annual Operation and Maintenance (O&M) Costs for 30 Years					
32	Quarterly Inspection and Maintenance of Fencing and Cover Materials	1	LS	$5,000	$5,000
33	Annual Inspection Report	1	LS	$3,000	$3,000
34	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
				Subtotal O&M Cost:	$13,000
				Contingency (20%):	$2,600
				Total O&M Cost:	$16,000
				Total Present Worth Cost of O&M (30-Years @ 7%):	$199,000
				Total Estimated Cost:	**$54,675,000**
				Rounded To:	**$54,700,000**

TABLE 14
COST ESTIMATE FOR ALTERNATIVE SM5:
SOIL EXCAVATION TO INDUSTRIAL USE SOIL CLEANUP OBJECTIVES AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

General Notes:

1. Cost estimate is based on ARCADIS of New York's (ARCADIS) past experience and vendor estimates using 2008 dollars.
2. This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of the site to industrial activities; (2) notify future property owners of the presence of MGP-related constituents in soil at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor and materials necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted soil at the site; (2) address possible future disturbances of site soil (to minimize the performance of intrusive subsurface activities without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.
3. Mobilization/demobilization cost includes mobilization and demobilization of labor, equipment, and material necessary to perform soil excavation to industrial use soil cleanup objectives.
4. Health and safety program cost estimate includes labor for the development of a site-specific health and safety plan.
5. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company over a period of 10 days at a daily rate of $1,000 per day.
6. Surveying cost estimate includes establishing control points, base mapping, as-builts, etc.
7. Pre-design investigation and post excavation verification sampling cost estimate includes all labor, equipment, and materials necessary to collect additional information to facilitate completion of the remedial design for this alternative, including a test boring/geotechnical program. Cost estimate also includes collection of verification soil samples and laboratory analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX); and polycyclic aromatic hydrocarbons (PAHs) from excavation sidewall and bottom locations. The sampling frequency for bottom samples is approximately one per every 100 feet by 100 feet area (19 samples). The sampling frequency for sidewal samples is approximately every 100 feet along the perimeter of each side of the excavation where soils are left in place (52 samples).
8. Utility relocation cost estimate includes the deactivation and removal of existing utilities and installation of utilities outside the ISS treatment footprint. The cost estimate includes only the known existing utilities identified on figures provided by the Onondaga County Department of Water Environment Protection (OCDWEP) in letters to ARCADIS dated March 20, 2008 and March 31, 2008. The utility relocation cost estimate includes mobilization/demobilization of labor, equipment and materials necessary to disconnect, remove, and install utilities. The cost estimate includes disconnection and removal of 8-inch and 12-inch diameter water/storm sewer piping (2,310 feet), 18-inch and 20-inch diameter gas piping (1,125 feet), 8-inch diameter electric piping (880 feet), and 12-inch diameter sanitary sewer piping (330 feet). Pipe bedding (500 CY) and backfill spreading and compaction (8,550 CY) to grade were also included in the cost estimate. The cost estimate includes soil excavation for utilties at their relocated destination for piping less than or equal to 12-inches in diameter (2,400 CY) and piping greater than 12-inches (6,150 CY). The excavated soil was assumed to be impacted and would be disposed of at an appropriate offsite facility. The cost estimate also includes furnishing and installing 8-inch and 12-inch diameter water/storm sewer piping (2,030 feet), 18-inch and 20-inch diameter gas piping (2,660 feet), 8-inch diameter electric piping (1,510 feet), 12-inch diameter sanitary sewer piping (330 feet), and two manholes. The cost estimate assumes a 25% contingency fee.
9. Construct and remove equipment decontamination pad cost estimate includes labor, equipment, and materials necessary to construct and remove a 60-foot by 30-foot decontamination pad and appurtenances. The decontamination pad would consist of 40-mil high-density polyethylene (HDPE) with a 6-inch gravel drainage layer placed over the HDPE liner, surrounded by a one-foot high berm and sloped to a collection sump for the collection of decontamination water.
10. Silt fence cost estimate includes installation of silt fence for erosion control along the perimeter of excavation area.
11. Install temporary fencing cost estimate includes labor, equipment, and materials necessary to install and remove temporary fencing around the working area.
12. Relocate existing chain link fencing cost estimate includes labor, equipment, and materials necessary to remove and reinstall chain link fencing around the working area.
13. Construction and maintenance of soil staging areas cost estimate includes labor, equipment, and materials to construct an approximate 75-foot by 75-foot material staging area consisting of a 40-mil HDPE liner below a 12-inch sacrificial gravel fill layer with bermed side walls and sloped to a lined collection sump. Maintenance costs include inspecting and repairing staging areas as necessary and covering staged soil with polyethylene sheeting or odor suppressing foam, as necessary.

14. Asphalt/concrete removal cost estimate includes labor, equipment, and materials necessary to sawcut and remove the existing asphalt pavement (assumed to be 6 inches thick) overlying the area within the limits of excavation.
15. Install and remove temporary sheet piling (50 ft bgs or less) cost estimate includes labor, equipment, and materials necessary to install and remove temporary steel sheet pile. Cost estimate assumes cantilever sheet piling (with an embedment depth of 2.5 times the excavation depth) would be utilized and reinforced with tie backs and interior bracing. It was assumed that sheetpiling from adjacent deeper excavations would be used for the border between excavation cells of differing depths. Cost includes an additional 15% of sheet pile for interior sheeting. Sheeting was included for excavation depths of 5 feet (6,831 sf), 6 feet (3,708 sf), 7 feet (3,726 sf), 13 feet (5,985 sf), and 18 feet (44,244 sf).
16. Install and remove temporary sheet piling (>50 ft bgs) cost estimate includes labor, equipment, and materials necessary to install and remove temporary steel sheet pile. Cost estimate assumes cantilever sheet piling (with an embedment depth of 2.5 times the excavation depth) would be utilized and reinforced with tie backs and interior bracing. It was assumed that sheetpiling from adjacent deeper excavations would be used for the border between excavation cells of differing depths. Cost includes an additional 15% of sheet pile for interior sheeting. Cost estimate also assumes that sheetpiling required to a depth of greater than 50 feet below ground surface costs 2 times installing sheetpiling of 50 feet bgs or less. Sheeting was included for excavation depths of 22 feet (12,015 sf), 26 feet (97,182 sf), and 30 feet (24,147 sf).
17. Internal sheet pile bracing cost estimate includes labor, equipment, and materials necessary to install internal sheet pile bracing to support sheet pile during excavation activities.
18. Soil excavation, handling, and screening of excavated materials cost estimate includes labor, equipment, and materials necessary to excavate and transfer excavated material from locations where soil samples exhibited constituents at concentrations exceeding the industrial soil cleanup objectives as presented in 6 NYCRR Part 375-6.8(b) to the material staging area. Cost estimate is based on in-place soil volumes. It is assumed that an average of 300 CY of material will be excavated per day.
19. Fill importation, placement, compaction, and grading cost estimate includes labor, equipment, and materials necessary to import, place, compact, and grade general fill to replace excavated material. Cost estimate is based on in-place soil volume. It is assumed that fill can be imported, placed, compacted and graded at approximately the same rate as soil excavation activities (300 CY per day), and that approximately 50% of fill importation, placement, compaction and grading activities will be performed simultaneously with excavation.
20. Demarcation layer cost estimate includes labor, equipement, and materials necessary to place a woven, light-weight, non-biodegradable, high-visibility demarcation layer within the focused soil excavation.
21. Solid waste transportation and disposal cost estimate includes labor, equipment, and materials necessary to transport and dispose of excavated soils as non-hazardous waste at a permitted disposal facility.
22. Waste characterization cost estimate includes costs for the analysis of soil samples for Toxicity Charactistic Leaching Procedure (TCLP) benzene, TCLP lead, TCLP total cyanide, PCBs, ignitability, corrosivity, and reactivity. Costs assumes that waste characterization samples would be collected at a frequency of one sample per 500 tons of material destined for offsite disposal.
23. Miscellaneous waste disposal cost estimate includes disposal of personal protective equipment (PPE), staging area and decontamination pad materials, and disposable equipment and materials at a facility permitted to accept the waste.
24. Dust/vapor/odor control cost estimate includes equipment, labor, and materials necessary to monitor dust/vapor/odor emission during intrusive site activities. Cost estimate includes application of vapor/odor suppressing foam to excavated materials staged on-
25. Groundwater extraction well installation cost estimate includes labor, equipment, and material necessary to install temporary groundwater wells every 50 feet around the perimeter of the excavation, to a maximum depth of 31 feet below the surface to establish hydraulic control. Assumes a total of 50 extraction wells.
26. Temporary onsite groundwater treatment system cost estimate includes all labor, equipment, and materials necessary to construct the temporary onsite groundwater treatment system. The cost estimate includes: mobilization/demobilization, pumps, influent piping and hoses, frac tanks, oil/water separators, carbon filters, bag filters, discharge piping and hoses, and flow meter. Frac tanks to be used to store untreated groundwater removed from soil excavation areas and material staging areas prior to on-site treatment and discharge to the Metro STP via sanitary sewer lines.
27. O&M of temporary onsite groundwater treatment system cost estimate includes all labor, equipment, and materials necessary to operate and maintain the temporary onsite groundwater treatment. The cost estimate includes: onsite labor, office administration, vapor-phase carbon changeout (once annually), liquid-phase carbon changeout (once annually), spare parts & miscellaneous expenses, treatment system monitoring, electrical usage, waste disposal of NAPL, and a discharge fee to the Metro STP (assuming disposal of approximately 7.56 million gallons of treated water per week at $0.005 per gallon). The average groundwater dewatering/treatment rate is assumed to be 750 gallons per minute.
28. Decant and excavation dewatering cost estimate assumes that such activities will be conducted continuously during excavation activities (assumed to be 61 weeks).
29. Surface restoration - installation of 4" bituminous asphalt course cost estimate includes labor, equipment, and materials necessary to install a 4-inch layer (approximately 6 inches prior to compaction) of bituminous asphalt. The weight of the material was calculated assuming 2.0 tons per cubic yard.
30. Surface restoration - installation of 2" bituminous asphalt course cost estimate includes labor, equipment, and materials necessary to install a 2-inch layer (approximately 3 inches prior to compaction) of bituminous asphalt base course. The weight of the material was calculated assuming 2.0 tons per cubic yard.

TABLE 14
COST ESTIMATE FOR ALTERNATIVE SM5:
SOIL EXCAVATION TO INDUSTRIAL USE SOIL CLEANUP OBJECTIVES AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

31. Surface restoration of grassed areas includes labor, equipment, and materials necessary to return surface to original condition (i.e, seed vegetated areas).
32. Quarterly inspection and maintenance of fencing and cover materials cost estimate include costs for visually inspecting the barrier layer quarterly and performing minor repairs that may be needed.
33. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly barrier layer inspections and maintenance activities performed.
34. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

TABLE 15
COST ESTIMATE FOR ALTERNATIVE GW2:
MONITORED NATURAL ATTENUATION AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY STUDY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
				Subtotal Capital Cost:	$75,000
				Administration & Engineering (10%):	$7,500
				Contingency (20%):	$15,000
				Total Capital Cost:	$97,500
Annual Operation and Maintenance (O&M) Costs for Years 1 - 5					
3	Groundwater Sampling Labor and Expenses (Semi-Annual)	2	event	$25,500	$51,000
4	Lab Analytical	2	event	$6,000	$12,000
5	Reporting	1	LS	$11,000	$11,000
6	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$1,000	$1,000
				Subtotal O&M Cost for Years 1-5:	$75,000
				Contingency (20%):	$15,000
				Total O&M Cost for Years 1-5:	$90,000
				Total Present Worth Cost of O&M (Years 1-5 @ 7%):	$370,000
Annual Operation and Maintenance (O&M) Costs for Years 6 - 30					
7	Groundwater Sampling Labor and Expenses (Annual)	1	event	$25,500	$25,500
8	Lab Analytical	1	event	$6,000	$6,000
9	Reporting	1	LS	$11,000	$11,000
10	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$1,000	$1,000
				Subtotal O&M Cost for Years 6-30:	$43,500
				Contingency (20%):	$8,700
				Total O&M Cost for Years 6-305:	$52,200
				Total Present Worth Cost of O&M (Years 6-30 @ 7%):	$434,000
				Total Estimated Cost:	**$901,500**
				Rounded To:	**$902,000**

General Notes:

1. Cost estimate is based on ARCADIS of New York's (ARCADIS) past experience and vendor estimates using 2008 dollars.
2. This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site investigation and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual projected cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. ARCADIS is not licensed to provide financial or legal consulting services; as such; this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.

Assumptions:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of site groundwater. The use restriction would apply to groundwater beneath the site and, if acceptable to the Canal Corporation, to groundwater beneath the strip of land owned by the Canal Corporation and located between the site and the Barge Canal; (2) notify future property owners of the presence of MGP-related constituents in soil and groundwater at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor and materials necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted groundwater at the site; (2) address possible future intrusive activities that would result in the potential for contact with impacted groundwater (to minimize the performance of work below the water table and/or dewatering without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.

3-5. Groundwater sampling labor and expenses (semi-annual) cost estimate includes labor, equipment, and materials necessary to conduct semi-annual sampling events, analyze groundwater samples, and prepare an annual groundwater monitoring report to summarize the results of the groundwater monitoring activities. This cost estimate also includes containerizing groundwater and NAPL (if present) waste materials generated during the sampling activities. This cost estimate also includes transportation of the containerized liquid waste for disposal as a non-hazardous waste at an appropriate treatment/disposal facility.

6. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

7-9. Groundwater sampling labor and expenses (annual) cost estimate includes labor, equipment, and materials necessary to conduct annual sampling events, analyze groundwater samples, and prepare an annual groundwater monitoring report to summarize the results of the groundwater monitoring activities. This cost estimate also includes containerizing groundwater and NAPL (if present) waste materials generated during the sampling activities. This cost estimate also includes transportation of the containerized liquid waste for disposal as a non-hazardous waste at an appropriate treatment/disposal facility.

10. Annual costs associated with institutional controls include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain effective.

TABLE 16
COST ESTIMATE FOR ALTERNATIVE GW3
ENHANCED BIOREMEDIATION TREATMENT AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Capital Costs					
Permitting/Surveying/Utility Clearance/Engineering Design					
1	Legal/Administrative/Institutional Controls	1	LS	$50,000	$50,000
2	Site Management Plan	1	LS	$25,000	$25,000
3	Health and Safety Program	1	LS	$5,000	$5,000
4	Utility Locating and Markout	1	LS	$5,000	$5,000
5	Surveying	1	LS	$5,000	$5,000
6	Treatability Study	1	LS	$50,000	$50,000
7	Pilot Study	1	LS	$75,000	$75,000
8	Full-Scale Design	1	LS	$50,000	$50,000
9	Construction Permits/Erosion and Sedimentation Plans	1	LS	$10,000	$10,000
10	Injection Permit	1	LS	$15,000	$15,000
Oxygen Infusion Treatment System (Eastern Portion of Site)					
11	Application Well Installation	45	each	$1,750	$78,750
12	Oxygen Infuser	45	each	$5,200	$234,000
13	Application Well Installation Oversight	15	day	$1,000	$15,000
14	Waste Characterization	1	each	$315	$315
15	Soil Cutting Disposal	68	each	$300	$20,400
16	Oxygen Tank	30	each	$20	$600
17	Storage Shed	3	each	$1,500	$4,500
18	5-Arm Distribution Header	9	each	$2,000	$18,000
19	Dual Stage Low Flow Regulator	9	each	$200	$1,800
20	Trenching	450	LF	$50	$22,500
21	Line Piping	450	LF	$3	$1,350
22	1/4-Inch (OD) Polyethylene Tubing	10,350	LF	$0.40	$4,140
23	Installation of Oxygen Distribution System	1	LS	$20,000	$20,000
24	Oversight of Oxygen Distribution System Installation	15	day	$1,000	$15,000
25	Surface Restoration - Grassed Areas	675	SF	$1	$675
Slow Release Oxygen Compound Treatment (Western Portion of Site)					
26	Application Boring Completion	300	each	$500	$150,000
27	Slow Release Oxygen Compound	8,000	pound	$8	$64,000
28	Construction Oversight	50	day	$1,000	$50,000
				Subtotal Capital Cost:	$991,030
				Administration & Engineering (10%):	$99,103
				Project Management (10%):	$99,103
				Construction Management (10%):	$99,103
				Contingency (20%):	$198,206
				Total Capital Cost:	$1,338,339
Annual Operation and Maintenance (O&M) Costs for Years 1-5					
29	Groundwater Sampling Labor and Expenses (Semi-Annual)	2	event	$28,000	$56,000
30	Lab Analytical	2	event	$12,400	$24,800
31	Reporting	1	LS	$11,000	$11,000
32	Quarterly Inspection and Maintenance of Fencing and Cover Materials	1	LS	$5,000	$5,000
33	Annual Inspection Report	1	LS	$3,000	$3,000
34	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
35	Oxygen Infusion Treatment System Inspection	52	day	$1,000	$52,000
36	Oxygen Tank Refill	120	each	$20	$2,400
				Subtotal O&M Cost:	$159,200
				Contingency (20%):	$31,840
				Total O&M Cost:	$191,040
				Total Present Worth Cost of O&M (Years 1-5 @ 7%):	$784,000

TABLE 16
COST ESTIMATE FOR ALTERNATIVE GW3
ENHANCED BIOREMEDIATION TREATMENT AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY REPORT

Item #	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
Annual Operation and Maintenance (O&M) Costs for Years 6-30					
37	Groundwater Sampling Labor and Expenses (Annual)	1	event	$28,000	$28,000
38	Lab Analytical	1	event	$6,000	$6,000
39	Reporting	1	LS	$11,000	$11,000
40	Quarterly Inspection and Maintenance of Fencing and Cover Materials	1	LS	$5,000	$5,000
41	Annual Inspection Report	1	LS	$3,000	$3,000
42	Verification of Institutional Controls and Notifications to NYSDEC	1	LS	$5,000	$5,000
43	Oxygen Infusion Treatment System Inspection	52	day	$1,000	$52,000
44	Oxygen Tank Refill	120	each	$20	$2,400
				Subtotal O&M Cost:	$112,400
				Contingency (20%):	$22,480
				Total O&M Cost:	$134,880
				Total Present Worth Cost of O&M (Years 6-30 @ 7%):	$1,121,000
				Total Estimated Cost:	**$3,243,339**
				Rounded To:	**$3,250,000**

<u>**Notes**</u>:

1. Legal/administrative/institutional controls cost estimate includes all labor and materials necessary to institute deed restrictions to: (1) restrict future use of site groundwater. The use restriction would apply to groundwater beneath the site and, if acceptable to the Canal Corporation, to groundwater beneath the strip of land owned by the Canal Corporation and located between the site and the Barge Canal; (2) notify future property owners of the presence of MGP-related constituents in soil and groundwater at the site; and (3) notify future property owners of the applicability of the Site Management Plan.
2. Site management plan cost estimate includes all labor necessary to prepare a site management plan for the site that will: (1) identify known locations of MGP-impacted groundwater at the site; (2) address possible future intrusive activities that would result in the potential for contact with impacted groundwater (to minimize the performance of work below the water table and/or dewatering without appropriate controls and measures); and (3) set forth the inspection and maintenance activities for the fencing and vegetation/cover materials.
3. Health and safety program cost estimate includes labor for the development of a site-specific health and safety plan.
4. Utility location and markout cost estimate includes labor, equipment, and materials necessary to locate, identify, and markout underground utilities at the site. Cost assumes that utility location and markout would be conducted by a private utility locating company over a period of 5 days at a daily rate of $1,000 per day.
5. Surveying cost estimate includes establishing control points, base mapping, as-builts, etc.
6. Treatability study cost estimate includes labor, equipment, and materials necessary to complete bench-scale studies to evaluate aerobic treatment, anaerobic treatment, affect of pH, and affect of salinity. Includes preparing a letter report summarizing the results of the bench-scale studies and providing recommendations for the pilot study.
7. Pilot study cost estimate includes labor, equipment, and materials necessary to evaluate the treatments identified in the treatability study that have the potential to be most effective. The pilot study would evaluate the potential for implementing the treatments full-scale at the site. Includes preparing a letter report summarizing the results of the pilot study and providing recommendations for the
8. Full-scale design cost estimate includes labor for final remedial action work plan and engineering design to be conducted following the completion of the treatability and pilot study.
9. Construction permits/erosion and sedimentation plans cost estimate includes costs to obtain appropriate permits necessary for the full-scale construction activities.
10. Injection permitting cost estimate includes costs to obtain appropriate permits necessary for the infusion of oxygen and use of slow release oxygen compound into the aquifer.
11. Application well installation includes labor, equipment, and materials necessary to install application wells. The treatment wells will be completed with a 2-inch diameter 20-foot PVC screen. Assumes the application well spacing is approximately 10 feet.
12. Oxygen infuser cost estimate includes the cost of the iSOC® oxygen diffuser units. Assumes that one unit will be required per application well.
13. Application well installation oversight cost estimate includes all labor necessary for well drilling oversight activities. Assumes 3 wells can be completed per day.
14. Waste characterization cost estimate includes laboratory analysis of a composite sample collected from soil cuttings from application well construction activities for disposal purposes.
15. Soil cutting disposal cost estimate includes labor, equipment, and materials to transport and dispose of soil cuttings as a non-hazardous waste at a permitted disposal facility. Assumes soil cuttings from each well requires 1.5 55-gallon drums.
16. Oxygen tank cost estimate includes the cost to furnish 30 oxygen tanks. Assumes the 30 oxygen tanks would be depleted in 90
17. Storage shed cost estimate includes labor, equipment, and materials necessary to furnish 6-foot by 8-foot sheds for equipment, oxygen tanks, and associated delivery equipment. Assumes that the treatment area would be divided into 5 zones, with 3 storage sheds required to securely store the oxygen tanks.
18. 5-arm distribution header cost estimate includes the cost to furnish 9 distribution headers to service 45 infusers located in the application wells.

TABLE 16
COST ESTIMATE FOR ALTERNATIVE GW3
ENHANCED BIOREMEDIATION TREATMENT AND INSTITUTIONAL CONTROLS

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
FEASIBILITY REPORT

19. Dual stage low flow regulator cost estimate includes the cost to furnish 9 regulators for the 9 5-arm distribution headers.
20. Trenching cost estimate includes labor, equipment, and materials necessary to excavate 450 linear feet of trench to a depth of approximately 18-inches and a width of approximately 12-inches. Assumes soil removed during trenching will also be used to backfill the trench.
21. Line piping cost estimate includes labor, equipment, and materials necessary to install 2-inch diameter HDPE lines from individual treatment wells to/from treatment building.
22. 1/4-inch (OD) polyethylene tubing cost estimate includes the cost to furnish 1/4-inch (outside diameter) polyethylene tubing from the treatment shed to each of the oxygen infusers located in the application wells.
23. Installation of oxygen distribution system cost estimate includes labor and equipment necessary to install the in-well oxygen infusion systems, which includes, but is not limited to, installation of a 6-inch deep, 8-foot by 10-foot pads, back filled with crushed stone for the treatment sheds; installation of polyethylene tubing within 2-inch diameter HDPE conduit within the trench to each proposed infusion well location; backfilling the trench; installation of oxygen delivery system components; and system start-up.
24. Oversight of oxygen distribution system installation cost estimate includes labor for engineering oversight during system installation.
25. Surface restoration of grassed areas includes labor, equipment, and materials necessary to return surface to original condition (i.e, seed vegetated areas).
26. Application boring completion cost estimate includes labor, equipment, and materials necessary to complete soil borings to an approximate depth of 25 feet below ground surface (bgs) and backfilled with a mixture of slurry-grout and slow release oxygen compound to approximately 5 feet bgs, which is the approximate depth of the water table. Assumes: (1) 6 application borings can be completed per day; (2) 2 applications of slow release oxygen compound treatment; (3) that the slow release oxygen treatment would be implemented along a distance of 750 feet; and (4) application boring spacing would be approximately every 5 feet.
27. Slow release oxygen compound cost estimate includes cost to furnish a compound that slowly releases oxygen to the aquifer as groundwater passes through the mixture of slurry-grout and slow release oxygen compound. Assumes PermeOx® Plus is the slow release oxygen compound and that 4,000 pounds would be used for each treatment application.
28. Construction oversight cost estimate includes labor for engineering oversight during application boring completion. Assumes 6 application borings can be completed per day.

29-31. Groundwater sampling labor and expenses (semi-annual) cost estimate includes labor, equipment, and materials necessary to conduct semi-annual sampling events, analyze groundwater samples, and prepare an annual groundwater monitoring report to summarize the results of the groundwater monitoring activities. Analyses would include chemical analysis for benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs), field paramenters (dissolved oxygen [DO], pH, conductivity, temperature, and oxidation/reduction potential), and biological parameters (for example iron, manganese, nitrate, nitrite, sulfate, ammonia, methane, carbon dioxide). This cost estimate also includes containerizing groundwater and non-aqueous phase liquid (NAPL) (if present) waste materials generated during the sampling activities. This cost estimate also includes transportation of the containerized liquid waste for disposal as a non-hazardous waste at an appropriate treatment/disposal facility.

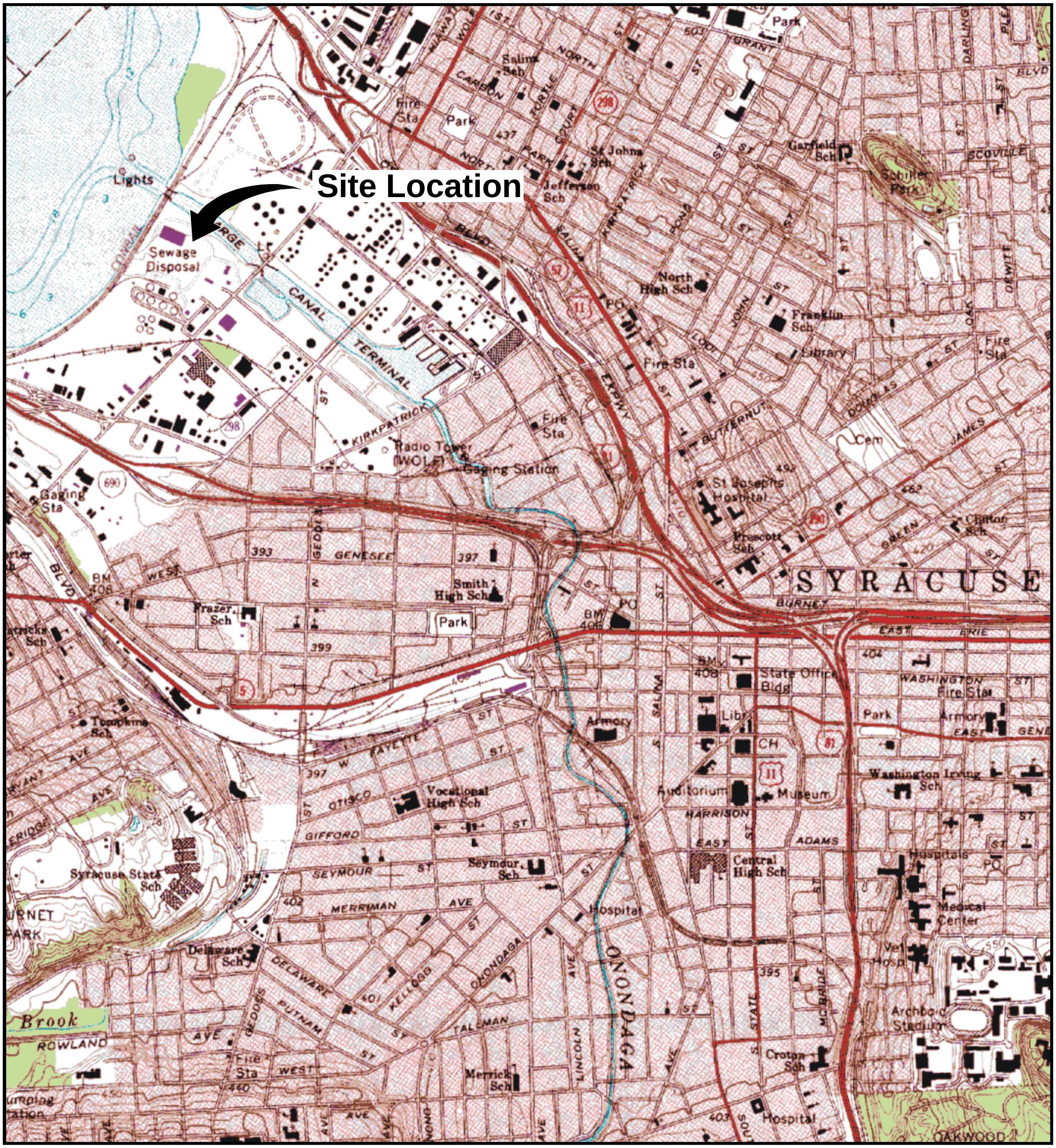
32. Quarterly inspection and maintenance of fencing and cover materials cost estimate include costs for visually inspecting the perimeter fence and ground cover materials quarterly and performing minor repairs that may be needed.
33. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly inspections and maintenance activities performed.
34. Verification of institutional controls and notifications to the NYSDEC include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain
35. Oxygen infusion treatment system inpection includes weekly inpection of the oxygen infusion treatment system.
36. Oxygen tank refill cost estimate includes costs to refill a total of 120 oxygen tanks required to operate for one year. Assumes that 30 oxygen tanks will be depleted every 90 days of continuous treatment.

37-39. Groundwater sampling labor and expenses (semi-annual) cost estimate includes labor, equipment, and materials necessary to conduct semi-annual sampling events, analyze groundwater samples, and prepare an annual groundwater monitoring report to summarize the results of the groundwater monitoring activities. Analyses would include chemical analysis for BTEX and PAHs, and field paramenters (DO, pH, conductivity, temperature, and oxidation/reduction potential). This cost estimate also includes containerizing groundwater and NAPL (if present) waste materials generated during the sampling activities. This cost estimate also includes transportation of the containerized liquid waste for disposal as a non-hazardous waste at an appropriate treatment/disposal facility

40. Quarterly inspection and maintenance of fencing and cover materials cost estimate include costs for visually inspecting the perimeter fence and ground cover materials quarterly and performing minor repairs that may be needed.
41. Annual inspection report includes costs to prepare a letter report summarizing the results of the quarterly inspections and maintenance activities performed.
42. Verification of institutional controls and notifications to the NYSDEC include verifying the status of institutional controls and preparing/submitting notification to the NYSDEC to demonstrate that the institutional controls are being maintained and remain
43. Oxygen infusion treatment system inpection includes weekly inpection of the oxygen infusion treatment system.
44. Oxygen tank refill cost estimate includes costs to refill a total of 120 oxygen tanks required to operate for one year. Assumes that 30 oxygen tanks will be depleted every 90 days of continuous treatment.

ARCADIS

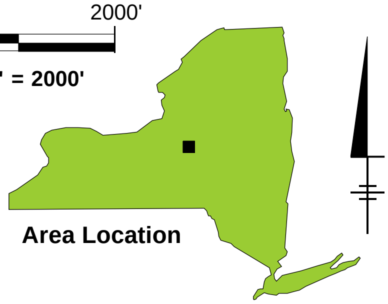
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., SYRACUSE WEST, NEW YORK, 1973, PHOTOREVISED 1978.

2000' 0 2000'

Approximate Scale: 1" = 2000'



Area Location

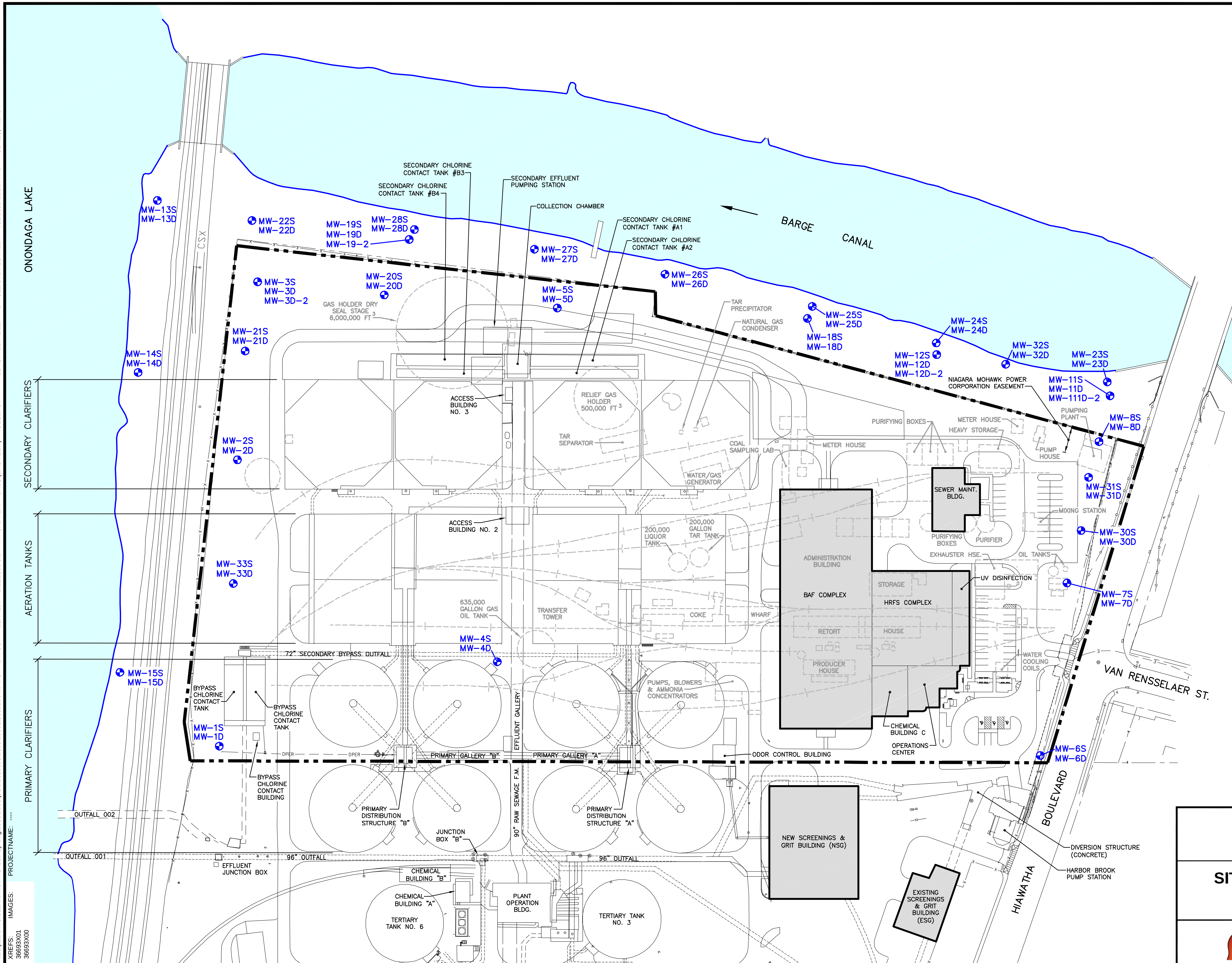
NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

03/06/08 SYR-D85-DJH
B0036694/0000/00001/CDR/36694N03.CDR



LEGEND:

- MW-1D — EXISTING MONITORING WELL LOCATION
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- FORMER MGP STRUCTURES

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY AND ADJOINING LANDS" AT A SCALE OF 1" = 50', UNDATED.
3. FORMER MANUFACTURED GAS PLANT (MGP) STRUCTURES ARE BASED ON SANBORN MAPPING DATED 1950.
4. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.

0 150' 300'

GRAPHIC SCALE

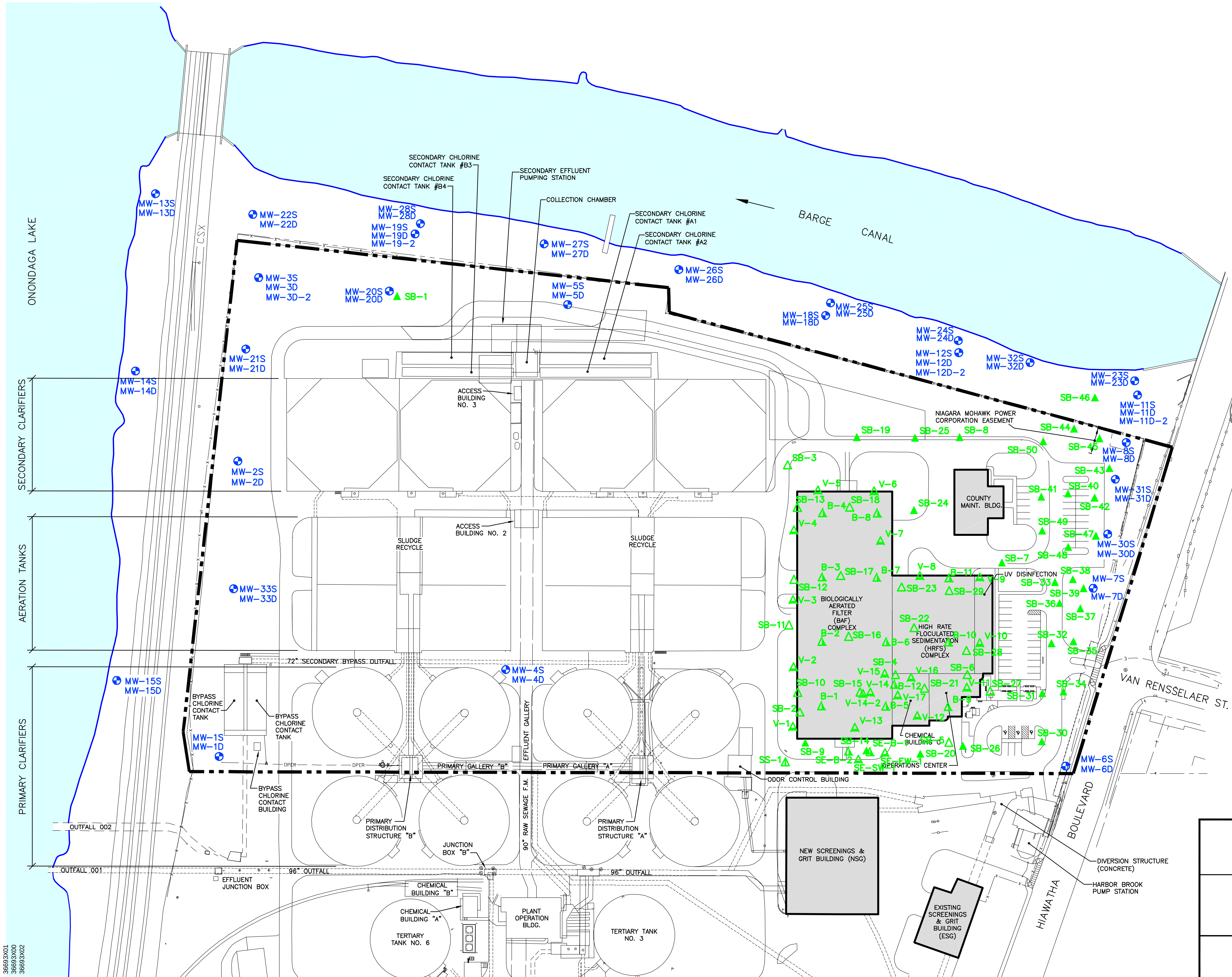
NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK

FEASIBILITY STUDY REPORT

SITE LAYOUT AND FORMER MGP STRUCTURES

ARCADIS

FIGURE **2**



LEGEND:

- MW-1D — EXISTING MONITORING WELL LOCATION
- SB-24 — SOIL BORING LOCATION
- SB-16 — SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
- SS-1 — SURFACE SOIL SAMPLING LOCATION
- V-7 — SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
- B-10 — SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- EXISTING BUILDINGS

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING, SURFACE SOIL, SOIL REMOVAL IRM POST-EXCAVATION BOTTOM AND SIDE WALL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
5. IRM = INTERIM REMEDIAL MEASURE.

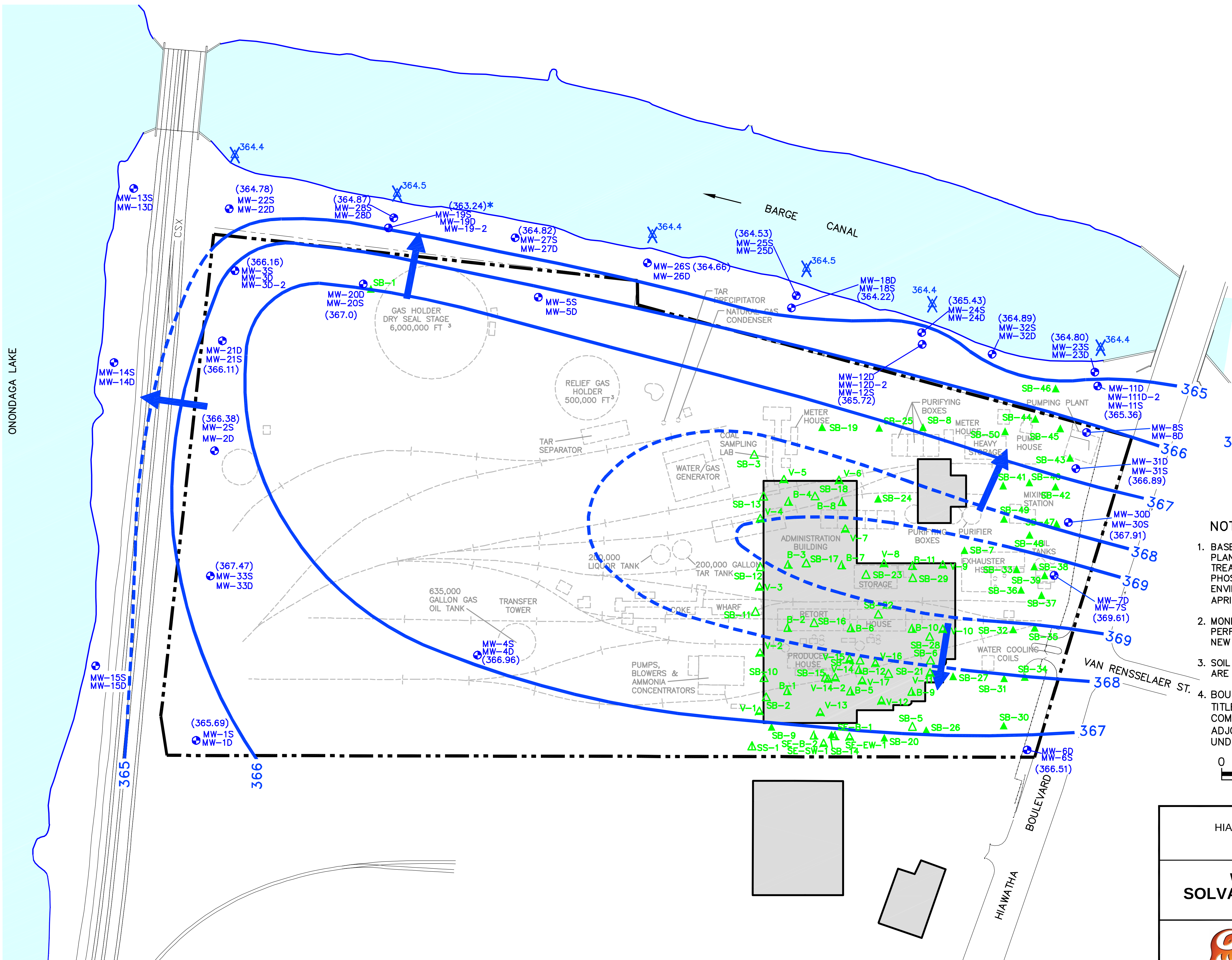
0 150' 300'
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

SITE LAYOUT AND SAMPLING LOCATIONS

ARCADIS

FIGURE
3



LEGEND:

- MW-1D — EXISTING MONITORING WELL LOCATION
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- FORMER MGP STRUCTURES
- EXISTING BUILDINGS
- SB-24 — SOIL BORING LOCATION
- SB-16 — SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
- SS-1 — SURFACE SOIL SAMPLING LOCATION
- V-7 — SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
- B-7 — SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
- CANAL SURFACE WATER ELEVATION
- 367 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- (365.43) — GROUNDWATER ELEVATION
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- * — ELEVATION NOT USED IN GROUNDWATER ELEVATION CONTOUR

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING AND SURFACE SOIL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.

0 150' 300'

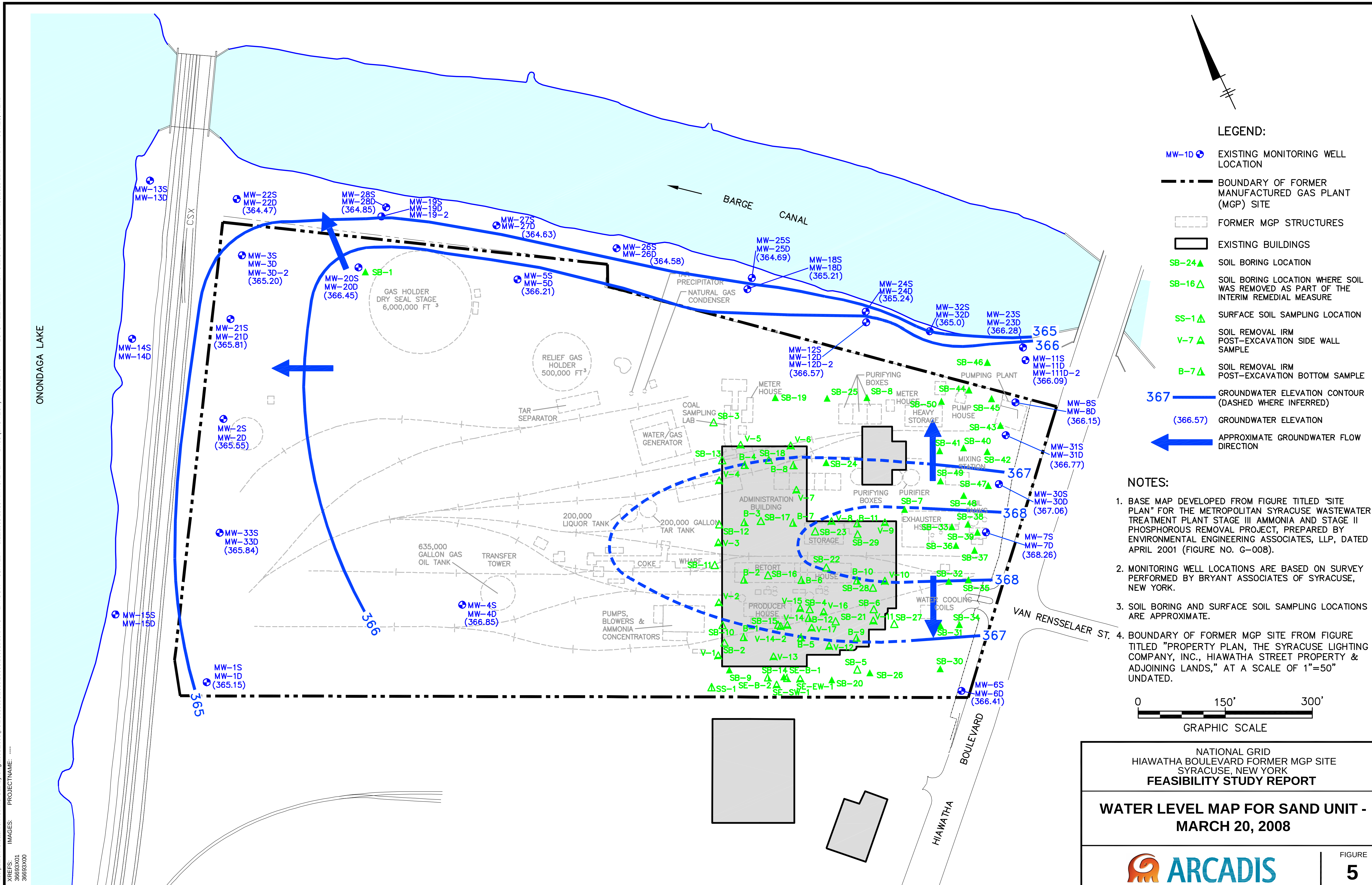
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

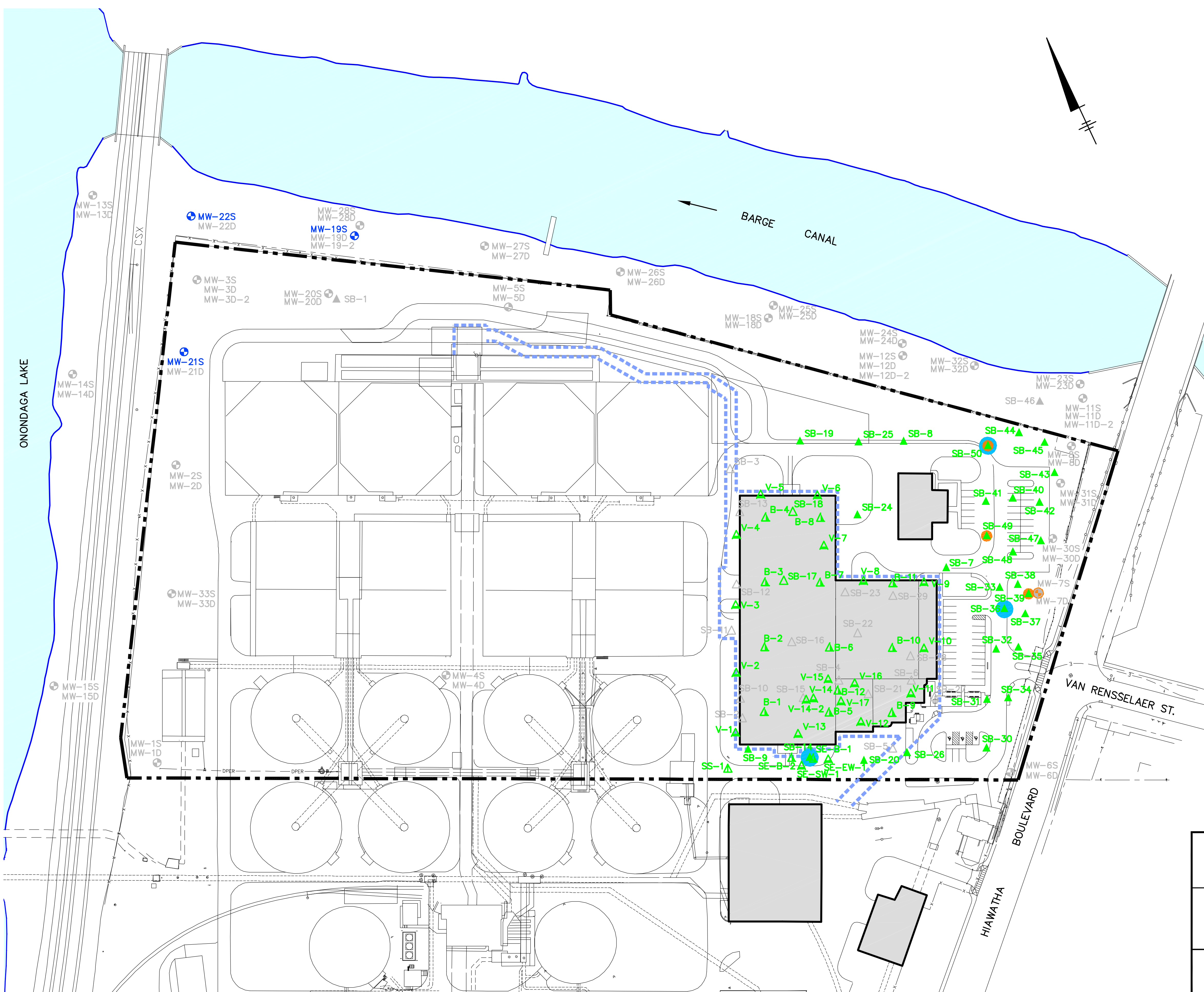
WATER LEVEL MAP FOR SOLVAY/FILL UNIT - MARCH 20, 2008

ARCADIS

FIGURE
4



LEGEND:
MW-1D EXISTING MONITORING WELL LOCATION
BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
FORMER MGP STRUCTURES
EXISTING BUILDINGS
SB-24 SOIL BORING LOCATION
SB-16 SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
SS-1 SURFACE SOIL SAMPLING LOCATION
V-7 SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
B-7 SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
367 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
(366.57) GROUNDWATER ELEVATION
APPROXIMATE GROUNDWATER FLOW DIRECTION
NOTES:
1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING AND SURFACE SOIL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
0 150' 300'
GRAPHIC SCALE
ONONDAGA LAKE
BARGE CANAL
CSX
VAN RENSSELAER ST.
HIAWATHA BOULEVARD
GAS HOLDER DRY SEAL STAGE 6,000,000 FT³
RELIEF GAS HOLDER 500,000 FT³
TAR SEPARATOR
635,000 GALLON GAS OIL TANK
TRANSFER TOWER
200,000 LIQUOR TANK
200,000 GALLON TAR TANK
ADMINISTRATION BUILDING
PRODUCER HOUSE
RETORT HOUSE
PURIFYING BOXES
PURIFIER
EXHAUSTER HOUSE
METER HOUSE
HEAVY STORAGE
PUMP HOUSE
PUMPING PLANT
MIXING STATION
WATER COOLING COILS
WATER/GAS GENERATOR
COAL SAMPLING LAB
TAR PRECIPITATOR
NATURAL GAS CONDENSER
PUMPS, BLOWERS & AMMONIA CONCENTRATORS
COKE
WHARF
MW-13S MW-13D
MW-14S MW-14D
MW-15S MW-15D
MW-22S MW-22D (364.47)
MW-28S MW-28D (364.85)
MW-19S MW-19D MW-19-2
MW-27S MW-27D (364.63)
MW-26S MW-26D (364.58)
MW-25S MW-25D (364.69)
MW-18S MW-18D (365.21)
MW-24S MW-24D (365.24)
MW-32S MW-32D (365.0)
MW-23S MW-23D (366.28)
MW-12S MW-12D MW-12D-2 (366.57)
MW-11S MW-11D MW-111D-2 (366.09)
MW-8S MW-8D (366.15)
MW-31S MW-31D (366.77)
MW-30S MW-30D (367.06)
MW-7S MW-7D (368.26)
MW-6S MW-6D (366.41)
MW-3S MW-3D MW-3D-2 (365.20)
MW-20S MW-20D (366.45)
MW-5S MW-5D (366.21)
MW-21S MW-21D (365.81)
MW-2S MW-2D (365.55)
MW-33S MW-33D (365.84)
MW-4S MW-4D (366.85)
MW-1S MW-1D (365.15)
365
366
367
368
NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT
WATER LEVEL MAP FOR SAND UNIT - MARCH 20, 2008
ARCADIS
FIGURE 5



LEGEND:

MW-1D — EXISTING MONITORING WELL LOCATION

MW-11S — EXISTING MONITORING WELL LOCATION WHERE UNSATURATED SOIL SAMPLES WERE NOT ANALYZED FOR PAHs

SB-24 — SOIL BORING LOCATION

SB-46 — SOIL BORING LOCATION WHERE UNSATURATED SOIL SAMPLES WERE NOT ANALYZED FOR PAHs

SB-16 — SOIL BORING LOCATION WHERE UNSATURATED SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE

SS-1 — SURFACE SOIL SAMPLING LOCATION

V-7 — SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE

B-10 — SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE

BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE

LIMITS OF SOIL REMOVAL IRM

PAH ANALYTICAL RESULT > 500 ppm

NAPL OBSERVED IN SOIL

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING AND SURFACE SOIL SAMPLING LOCATIONS ARE APPROXIMATE
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
5. THE WATER TABLE IS APPROXIMATELY 6 TO 8 FEET BELOW GROUND SURFACE (BGS).
6. SOIL REMOVED DURING THE IRM WAS EXCAVATED TO AN APPROXIMATE DEPTH OF 15 FEET BGS, EXCEPT IN THE VICINITY OF SB-4, WHERE SOIL WAS EXCAVATED TO AN APPROXIMATE DEPTH OF 20 FEET BGS.

0 150' 300'

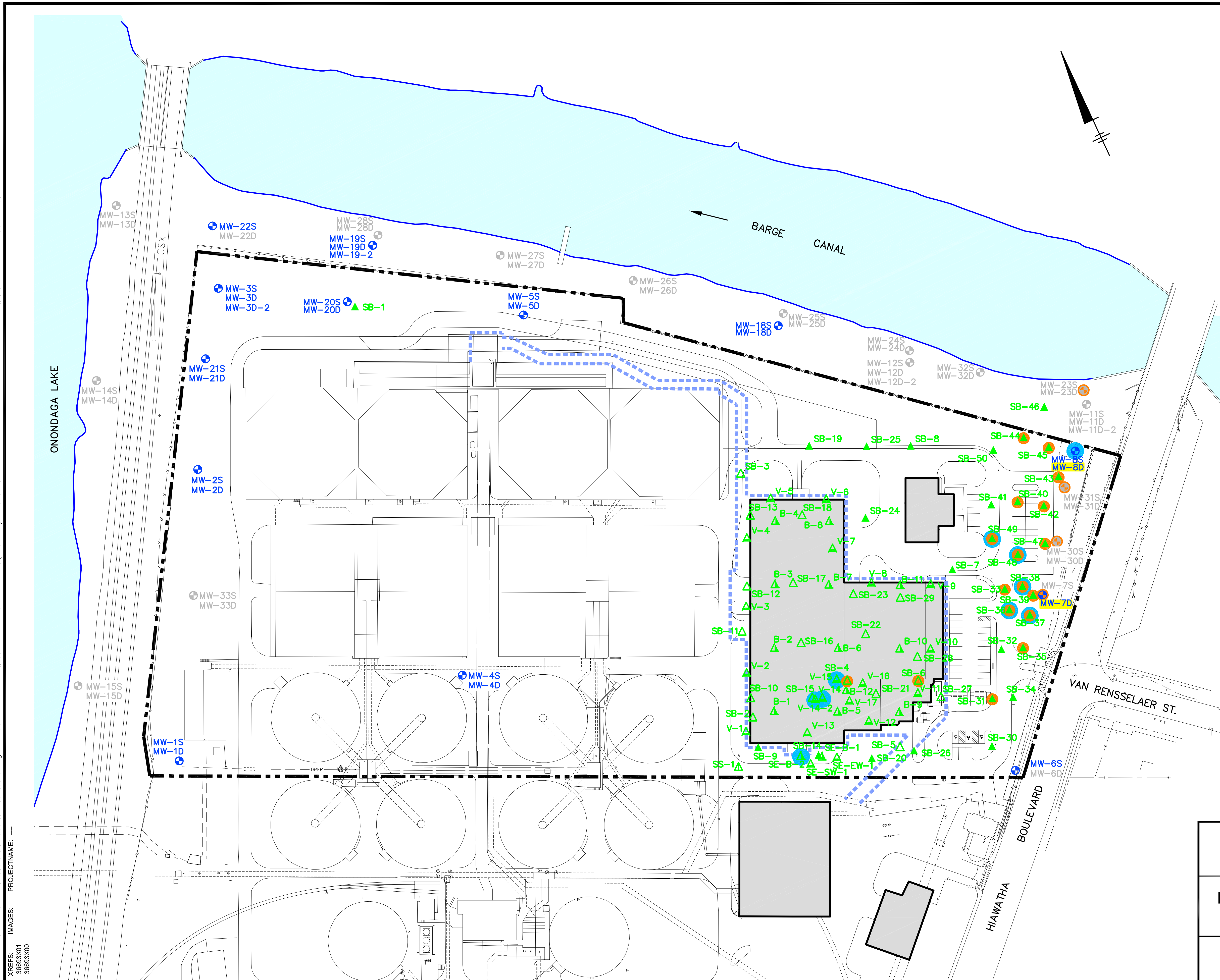
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

DISTRIBUTION OF PAHs AND NAPL IN UNSATURATED SOIL

ARCADIS

FIGURE
6



LEGEND:

MW-1D	EXISTING MONITORING WELL LOCATION
MW-6D	EXISTING MONITORING WELL LOCATION WHERE SATURATED SOIL SAMPLES WERE NOT ANALYZED FOR PAHs
SB-24	SOIL BORING LOCATION
SB-16	SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
SS-1	SURFACE SOIL SAMPLING LOCATION
V-7	SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
B-10	SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
	BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
	LIMITS OF SOIL REMOVAL IRM
	PAH SOIL ANALYTICAL RESULT> 500 ppm
	NAPL OBSERVED IN SOIL
	NAPL OBSERVED IN WELL

- NAPL NOT OBSERVED IN MW-7D AFTER IRM WAS COMPLETED IN 2002
- NAPL NOT OBSERVED IN MW-8D AFTER 5/8/06 QUARTERLY MONITORING EVENT

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING AND SURFACE SOIL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
5. THE WATER TABLE IS APPROXIMATELY 6 TO 8 FEET BELOW GROUND SURFACE (BGS).
6. SOIL REMOVED DURING THE IRM WAS EXCAVATED TO AN APPROXIMATE DEPTH OF 15 FEET BGS, EXCEPT IN THE VICINITY OF SB-4, WHERE SOIL WAS EXCAVATED TO AN APPROXIMATE DEPTH OF 20 FEET BGS.

0 150' 300'

GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

DISTRIBUTION OF PAHs AND NAPL IN SATURATED SOIL

ARCADIS

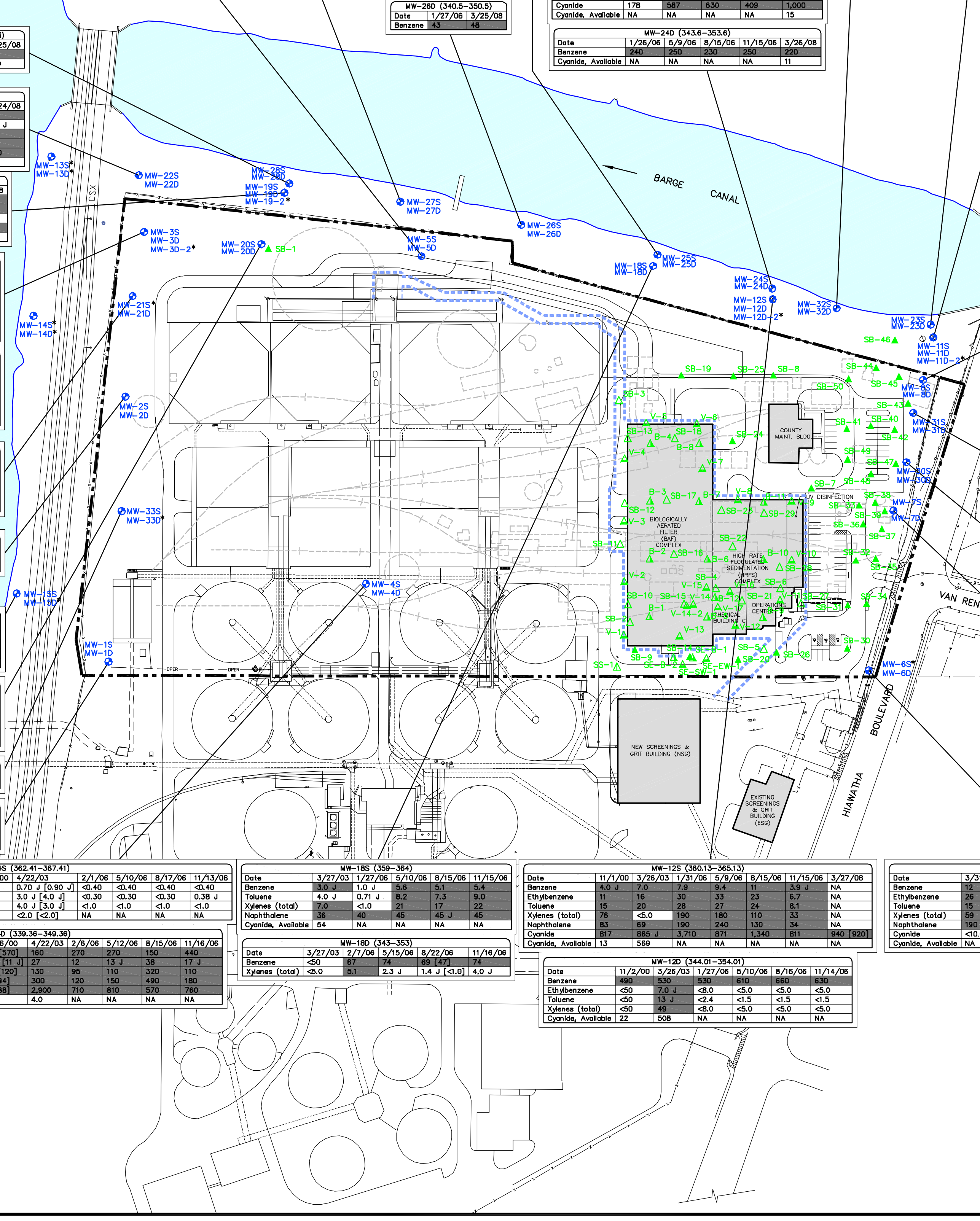
FIGURE
7

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

GROUNDWATER ANALYTICAL RESULTS FOR BTEX, PAHs AND CYANIDE EXCEEDING STANDARDS / GUIDANCE VALUES (ppb)

ARCADIS

FIGURE 8



LEGEND:

- MW-1D — EXISTING MONITORING WELL LOCATION
- SB-24 — SOIL BORING LOCATION
- SB-16 — SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
- SS-1 — SURFACE SOIL SAMPLING LOCATION
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- LIMITS OF SOIL REMOVAL IRM

NYSDEC TOGS 1.1.1

Constituent	Standard/Guidance Value
Benzene	1 (Standard)
Ethylbenzene	5 (Standard)
Toluene	5 (Standard)
Xylenes (total)	5 (Standard)
Acenaphthene	20 (Guidance Value)
Anthracene	50 (Guidance Value)
Benzo(a)anthracene	0.002 (Guidance Value)
Benzo(a)pyrene	0 (Standard)
Benzo(b)fluoranthene	0.002 (Guidance Value)
Benzo(k)fluoranthene	0.002 (Guidance Value)
Chrysene	0.002 (Guidance Value)
Fluoranthene	50 (Guidance Value)
Fluorene	50 (Guidance Value)
Indeno(1,2,3-cd)pyrene	0.002 (Guidance Value)
Naphthalene	10 (Guidance Value)
Phenanthrene	50 (Guidance Value)
Pyrene	50 (Guidance Value)
Cyanide	200 (Standard)
Cyanide, Available	– –

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING AND SURFACE SOIL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
5. STANDARDS/GUIDANCE VALUES = GROUNDWATER STANDARDS/GUIDANCE VALUES FOR CLASS GA WATER AS PRESENTED IN THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1, DATED JUNE 1998, UPDATED APRIL 2000 AND JUNE 2004.
6. FIGURE SHOWS GROUNDWATER ANALYTICAL RESULTS FOR SAMPLING LOCATIONS WHERE ONE OR MORE BTEX CONSTITUENTS, PAHs, OR CYANIDE WERE IDENTIFIED AT CONCENTRATIONS EXCEEDING THE STANDARDS/GUIDANCE VALUES. FIGURE ALSO SHOWS RESULTS FOR AVAILABLE CYANIDE, WHERE DETECTED.
7. SHADING INDICATES THE VALUE EXCEEDS THE NYSDEC TOGS 1.1.1 STANDARD GUIDANCE VALUE.
8. * = ALL BTEX, PAH, AND CYANIDE ANALYTICAL RESULTS FOR THE SAMPLING LOCATIONS MARKED BY AN ASTERISK WERE LESS THAN THE NYSDEC GROUNDWATER QUALITY STANDARDS AND GUIDANCE VALUES.
9. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER BILLION (ppb), WHICH IS EQUIVALENT TO MICROGRAMS PER LITER (ug/L).
10. FIELD DUPLICATE VALUES ARE PRESENTED IN BRACKETS [ ].
11. J = INDICATES THAT THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.
12. < = CONSTITUENT NOT DETECTED AT A CONCENTRATION ABOVE THE REPORTED DETECTION LIMIT.
13. BTEX = BENZENE, TOLUENE, ETHYLBENZENE AND XYLENES.
14. PAHs = POLYCYCLIC AROMATIC HYDROCARBONS.
15. THE 2008 GROUNDWATER ANALYTICAL DATA HAS NOT BEEN VALIDATED.
16. DATA IN PARENTHESIS AFTER WELL ID INDICATES SCREEN INTERVAL ELEVATION IN FEET RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.

MW-5S (360.36–365.36)

Date	3/30/98	5/20/98	10/26/00	4/9/03	2/2/06
Benzene	3.0 J	5.0 J	3.0 J	<5.0 [<5.0]	<0.40
Toluene	4.0 J	8.0 J	2.0 J	<5.0 [<5.0]	<0.30
Xylenes (total)	<10	8.0 J	1.0 J	<5.0 [<5.0]	<1.0
Benzo(a)anthracene	<10	0.30 J	<10	<12 [<11]	<1.0
Benzo(a)pyrene	<10	0.30 J	<10	<12 [<11]	<1.0
Benzo(b)fluoranthene	<10	0.20 J	<10	<12 [<11]	<2.0
Benzo(k)fluoranthene	<10	0.30 J	<10	<12 [<11]	<0.90
Chrysene	<10	0.30 J	<10	<12 [<11]	<1.0
Cyanide, Available	NA	NA	<2.0	3.0	NA

MW-5D (341.32–351.32)

Date	3/30/98	5/20/98	10/26/00	4/10/03	1/25/06
Benzene	16	14	12	12	2.0 J [1.9 J]
Ethylbenzene	10	8.0 J	6.0	13	2.5 J [2.5 J]
Toluene	26	30	20	26	3.7 J [4.0 J]
Xylenes (total)	62	61	35	110	16 [16]
Naphthalene	110	99	72	180	45 [43]
Cyanide, Available	NA	NA	<2.0	8.0	NA

MW-27S (357.08–362.08)

Date	1/31/06	3/25/08
Benzene	72	62
Ethylbenzene	810	680
Toluene	62	56
Xylenes (total)	1,100	1,000
Naphthalene	920	1,000

MW-27D (340.8–350.8)

Date	2/2/06	3/25/08
Benzene	1,500	1,200 [750]
Ethylbenzene	120	180 [130]
Toluene	7.1 J	4.8 J [3.3 J]
Xylenes (total)	<20	<120 [6.5 J]
Naphthalene	28	4.8 J [5.4 J]

MW-25S (359.35–364.35)

Date	1/31/06	5/11/06	8/18/06	11/15/06	3/26/08
Benzene	<0.40	3.5 J	4.9 J	2.8 J	2.5
Xylenes (total)	6.9	6.8	4.8 J	6.8	6.3
Naphthalene	21	20	10 J	14	9.9 J
Cyanide, Available	NA	NA	NA	NA	3.8

MW-25D (343.25–353.25)

Date	1/27/06	5/10/06	8/15/06	11/14/06	3/26/08
Benzene	74	75	62	66	51
Xylenes (total)	4.7 J	3.6 J	5.2	3.4 J	9.2
Cyanide, Available	NA	NA	NA	NA	180

MW-26S (358.45–363.45)

Date	1/31/06	3/27/08
Benzene	4.0 J	2.7
Toluene	13	6.4
Xylenes (total)	44	21
Naphthalene	83	50

MW-26D (340.5–350.5)

Date	1/27/06	3/25/08
Benzene	43	48

MW-32S (361.01–366.01)

Date	1/30/06	5/10/06	8/16/06	11/15/06	3/27/08
Cyanide	245	114	194	239 J [253 J]	NA

MW-32D (344.50–354.50)

Date	1/26/06	5/11/06	8/15/06	8/22/06	11/14/06	3/27/08
Benzene	1,100	1,200	910	1,300	540	970 [960]
Ethylbenzene	<20	<10	<5.0	<10	<5.0	6.1 J [4.0 J]
Toluene	310	68	68	140	7.9 J	66 [65]
Xylenes (total)	50 J	67	60	140	16 J	74[69]

MW-24S (359.48–364.48)

Date	1/30/06	5/10/06	8/16/06	11/14/06	3/26/08
Benzene	8.6	6.9	7.4	5.3	3.0
Ethylbenzene	26	15	11	3.6 J	5.7
Toluene	28	15	12	6.8	8.1
Xylenes (total)	180	89	56	22	42
Naphthalene	120	75	72	110	160
Cyanide	178	587	630	409	1,000
Cyanide, Available	NA	NA	NA	NA	15

MW-24D (343.6–353.6)

Date	1/26/06	5/9/06	8/15/06	11/15/06	3/26/08
Benzene	240	250	230	250	220
Cyanide, Available	NA	NA	NA	NA	11

MW-23S (362.06–367.06)

Date	1/30/06	5/10/06	8/17/06	11/15/06	3/27/08
Benzene	6.0 J	8.1	6.6	5.9	6.9
Ethylbenzene	26	42	39	32	22
Toluene	46	53	42	36	22
Xylenes (total)	220	260	230	190	120
Naphthalene	1,300	1,500	1,600	1,300	730
Cyanide	674	854	658	232	260

MW-23D (345.06–355.06)

Date	1/26/06	5/9/06	8/16/06	11/14/06	3/26/08
Benzene	100	140	140	120	130
Ethylbenzene	<2.0	110	110	100	160
Toluene	11	21	37	36	34
Xylenes (total)	49	99	110	110	160
Naphthalene	540	460	400	230	400
Cyanide	NA	NA	NA	NA	67

MW-11S (361.67–366.67)

Date	11/1/00	3/25/03	1/30/06	5/9/06	8/16/06	11/14/06
Benzene	28	6.0	6.1	3.5 J	5.7	4.1 J
Ethylbenzene	47	11	38	18	31	26
Toluene	280	40	54	26	33	23
Xylenes (total)	500	<5.0	210	94	140	110
Naphthalene	1,900	380	920	580	840	460
Cyanide	683	242 J	291	353	216	418
Cyanide, Available	3.0	8.0	NA	NA	NA	NA

MW-11D (345.64–355.64)

Date	11/1/00	3/25/03	1/26/06	5/10/06	8/17/06	11/15/06
Benzene	1,200	84 [84]	460	200	190	340
Ethylbenzene	570	62 [62]	250	150	140	150
Toluene	2,000	51 [51]	580	98	130	380
Xylenes (total)	2,800	230 [230]	530	170	180	320
Naphthalene	3,700	1,100 [1,100]	1,200	1,300	950	1,300
Cyanide, Available	10	<2.0 [<2.0]	NA	NA	NA	NA

MW-8S (364.65–369.65)

Date	3/30/98	5/20/98	5/21/98	4/21/03	2/7/06	5/15/06	8/17/06	11/17/06
Ethylbenzene	6.0 J	5.0 J	NA	<5.0	<1.0	<1.0	<1.0	<1.0
Toluene	8.0 J	8.0 J	NA	<5.0	<0.30	<0.30	<0.30	<0.30
Xylenes (total)	36	31	NA	<5.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	<10	NA	2.0 J	<10	<1.0	<1.0	<2.0	NA
Benzo(a)pyrene	<10	NA	0.80 J	<10	<1.0	<1.0	<2.0	NA
Benzo(b)fluoranthene	<10	NA	0.90 J	<10	<2.0	<2.0	<2.0	NA
Benzo(k)fluoranthene	<10	NA	1.0 J	<10	<1.0	<0.90	<1.0	NA
Chrysene	<10	NA	2.0 J	<10	<1.0	<1.0	<1.0	NA
Indeno(1,2,3-cd)pyrene	<10	NA	0.70 J	<10	NA	NA	NA	NA
Naphthalene	38	NA	27	<10	<0.80	<0.70	<0.90	NA

MW-8D (347.62–357.62)

Date	3/30/98	5/20/98	10/31/00	4/21/03
Benzene	14 J	390	430 J [430 J]	21 J
Ethylbenzene	130	310	410 J [410 J]	100
Toluene	230	3,700	4,400 [4,500]	120
Xylenes (total)	1,500	4,900	5,800 [5,900]	1,300
Fluorene	52 J	<10	<1,100 [<1,000]	89 J
Naphthalene	7,800	5,600	5,300 [5,300]	4,600
Phenanthrene	<10	<10	<1,100 [<1,000]	59 J
Cyanide	1,590	352	NA	NA
Cyanide, Available	NA	NA	11 [21]	10

MW-31S (363.61–370.61)

Date	2/7/06	5/11/06	8/15/06	11/17/06
Cyanide	552	1,040	483	1,030

MW-31D (347.84–357.84)

Date	2/8/06	5/12/06	8/16/06	11/16/06	3/26/08
Benzene	6.2 J [<4.0]	4.2 J	4.2 J [<0.40]	4.0 J	NA
Ethylbenzene	61 [47 J]	43	37 [<1.0]	35	NA
Toluene	85 [90]	44	16 [<0.30]	16	NA
Xylenes (total)	840 [920]	600	440 [<1.0]	410	NA
Naphthalene	9,400 [9,700]	9,500	15,000 [<0.70]	13,000 J	NA
Cyanide	1,470 [1,200]	1,200	411 [187]	496	550

MW-30S (363.65–368.65)

Date	2/6/06	5/11/06	8/16/06	11/16/06
Cyanide	225	174	196	131 J

MW-30D (351.64–361.64)

Date	2/8/06	5/12/06	8/17/06	11/17/06
Benzene	5.3	1.3 J [1.3 J]	1.4 J	1.6 J
Ethylbenzene	15	4.1 J [4.2 J]	3.6 J	3.4 J
Toluene	10	0.69 J [0.66 J]	0.61 J	0.57 J
Xylenes (total)	74	48 [47]	29	26
Naphthalene	370	670 [690]	440	500

MW-7S (363.4–368.4)

Date	3/31/98	5/21/98	10/31/00	4/23/03	2/6/06	5/12/06	8/15/06	11/13/06
Cyanide	380	292	NA	NA	NA	NA	NA	NA
Cyanide, Available	NA	NA	<2.0	16	NA	NA	NA	

MW-7D (350.4–360.4)

Date	3/31/98	5/21/98	10/27/00	4/23/03	2/7/06	5/15/06	8/17/06	11/16/06
Benzene	44 J	40 J	55	22 J	3.3 J	2.5 J	2.6 J [2.4 J]	2.6 J
Ethylbenzene	320	270	360	210	33	27	28 [27]	24
Toluene	870	720	860	220	7.1	5.2 J	4.7 J [4.8 J]	4.1 J
Xylenes (total)	5,400	4,400	6,000	2,900	320	300	280 [300]	270
Acenaphthene	<10	31 J	<2,000	39 J	<40	<80	<40 [<42]	<87 J
Anthracene	82 J	37 J	27 J	83 J	<50	<99	<50 [<52]	<110 J
Benzo(k)fluoranthene	<10	<10	<2,000	31 J	<46	<91	<46 [<48]	<100 J
Fluoranthene	140 J	34 J	25 J	120 J	<54	<110	<54 [<57]	<99 J
Fluorene	220 J	130 J	110 J	160 J	56 J	<77	<38 [<41]	<77 J
Naphthalene	17,000	11,000	12,000	6,000	2,700	2,500	1,600 [2,000]	2,700 J
Phenanthrene	280 J	120 J	100 J	270 J	42 J	<66	<33 [<35]	<78 J
Pyrene	<10	20 J	<2,000	88 J	<50	<100	<50 [<53]	<110 J
Cyanide	386	459	NA	NA	NA	NA	NA	NA
Cyanide, Available	NA	NA	<2.0	10	NA	NA	NA	NA

MW-28S (356.90–361.90)

Date	1/31/06	3/25/08
Benzene	23	26
Ethylbenzene	6.2	6.9
Toluene	24	21
Xylenes (total)	23	18
Naphthalene	26	15

MW-28D (337.03–347.03)

Date	2/3/06	3/25/08
Benzene	610	97
Xylenes (total)	5.8 J	<10

MW-22S (357.43–362.43)

Date	3/28/03	2/2/06	3/24/08
Benzene	<5.0	1.4 J	<1.0

MW-22D (341.43–351.43)

Date	4/8/03	1/24/06	3/24/08
Benzene	42	30	13
Ethylbenzene	<10	13	4.1 J
Toluene	60	74	26
Xylenes (total)	190	330	93
Naphthalene	230	290	380
Cyanide, Available	17	NA	NA

MW-19S (356.61–361.61)

Date	3/27/03	2/3/06
Benzene	14	20
Toluene	20	20
Xylenes (total)	14	13
Naphthalene	13	12
Cyanide, Available	3.0	NA

MW-19D (340.61–350.61)

Date	3/27/03	1/31/06	3/24/08
Benzene	480	2,400 [1,700]	660
Ethylbenzene	3.0 J	<40 [<40]	37
Toluene	10 J	14 J [<12]	3.7 J
Xylenes (total)	6.0 J	46 J [<40]	65
Cyanide, Available	86	NA	NA

MW-3S (358.91–363.91)

Date	3/30/98	5/20/98	10/24/00	4/9/03	2/7/06
Ethylbenzene	14	0.70 J	2.0 J	<5.0 J	1.4 J
Xylenes (total)	18	6.0 J	7.0 J	37	16
Benzo(a)anthracene	<10	0.20 J	<10	<20	<1.0
Chrysene	<10	0.10 J	<10	<20	<1.0
Naphthalene	95	50	26	100	54
Cyanide	193	294	210	172	110
Cyanide, Available	NA	NA	<2.0	3.0	NA

MW-3D (345.93–355.93)

Date	3/30/98	5/20/98	10/24/00	4/9/03	2/6/06	3/24/08
Benzene	20 J [16 J]	13 J [15 J]	13 J	22	19	16
Ethylbenzene	110 [100]	94 [100]	88	51	52	52
Toluene	84 [64]	64 [71]	49	46	42	48
Xylenes (total)	1,100 [930]	1,000 [1,200]	870	560	590	590
Naphthalene	2,300 [2,800]	2,300 [2,000]	2,200	2,300	2,600	1,400
Cyanide, Available	NA	NA	4.0	<2.0	NA	NA

MW-21D (342.6–352.6)

Date	4/10/03
Benzene	20
Toluene	8.0
Xylenes (total)	12
Naphthalene	14
Cyanide, Available	9.0

MW-2S (359.77–364.77)

Date	3/30/98	5/20/98	10/24/00	4/10/03
Toluene	<10	12	0.60 J	<5.0
Xylenes (total)	NA	NA	12	<5.0
Naphthalene	5.0 J	41	47	<10
Cyanide, Available	NA	NA	5.0	3.0

MW-2D (337.18–347.18)

Date	3/31/98	5/20/98	10/24/00	4/10/03
Benzene	2.0 J	<10	2.0 J	3.0 J
Cyanide, Available	NA	NA	68	14

MW-15S (350.32–360.32)

Date	2/7/02
Benzo(a)pyrene	0.40 J
Benzo(b)fluoranthene	0.60 J
Chrysene	0.60 J
Cyanide, Available	35

MW-20S (358.32–363.32)

Date	4/23/03	2/2/06
Benzene	2.0 J	2.6 J
Cyanide, Available	6.0	NA

MW-20D (338.25–348.25)

Date	4/23/03	1/25/06
Benzene	230	210
Ethylbenzene	11	35
Toluene	15	34
Xylenes (total)	28	99
Cyanide, Available	<2.0	NA

MW-33S (356.93–361.93)

Date	2/1/06
Cyanide	225

MW-1S (361.14–366.14)

Date	3/31/98	5/20/98	10/24/00	4/21/03
Cyanide	352	163	88.9	266
Cyanide, Available	NA	NA	<2.00	12

MW-1D (338.41–348.41)

Date	3/31/98	5/20/98	10/25/00	4/21/03
Benzene	3.0 J	2.0 J	3.0 J	8.0 J
Xylenes (total)	NA	NA	1.0 J	6.0 J
Cyanide, Available	NA	NA	26	<2.0

MW-4S (362.41–367.41)

Date	3/31/98	5/21/98	10/26/00	4/22/03	2/1/06	5/10/06	8/17/06	11/13/06
Benzene	2.0 J	5.0 J	<10	0.70 J [0.90 J]	<0.40	<0.40	<0.40	<0.40
Toluene	8.0 J	15	<10	3.0 J [4.0 J]	<0.30	<0.30	<0.30	0.38 J
Xylenes (total)	5.0 J	15	<10	4.0 J [3.0 J]	<1.0	<1.0	<1.0	<1.0
Cyanide, Available	NA	NA	<2.0	<2.0 [<2.0]	NA	NA	NA	NA

MW-4D (339.36–349.36)

Date	3/31/98	5/21/98	10/26/00	4/22/03	2/6/06	5/12/06	8/15/06	11/16/06
Benzene	340	390	510 [570]	160	270	270	150	440
Ethylbenzene	5.0 J	6.0 J	10 J [11 J]	27	12	13 J	38	17 J
Toluene	42	50	110 [120]	130	95	110	320	110
Xylenes (total)	45	56	81 [94]	300	120	150	490	180
Naphthalene	55	60	91 [88]	2,900	710	810	570	760
Cyanide, Available	NA	NA	<2.0	4.0	NA	NA	NA	NA

MW-18S (359–364)

Date	3/27/03	1/27/06	5/10/06	8/15/06	11/15/06
Benzene	3.0 J	1.0 J	5.6	5.1	5.4
Toluene	4.0 J	0.71 J	8.2	7.3	9.0
Xylenes (total)	7.0	<1.0	21	17	22
Naphthalene	36	40	45	45 J	45
Cyanide, Available	54	NA	NA	NA	NA

MW-18D (343–353)

Date	3/27/03	2/7/06	5/15/06	8/22/06	11/16/06
Benzene	<50	67	74	69 [47]	74
Xylenes (total)	<5.0	5.1	2.3 J	1.4 J [<1.0]	4.0 J

MW-12S (360.13–365.13)

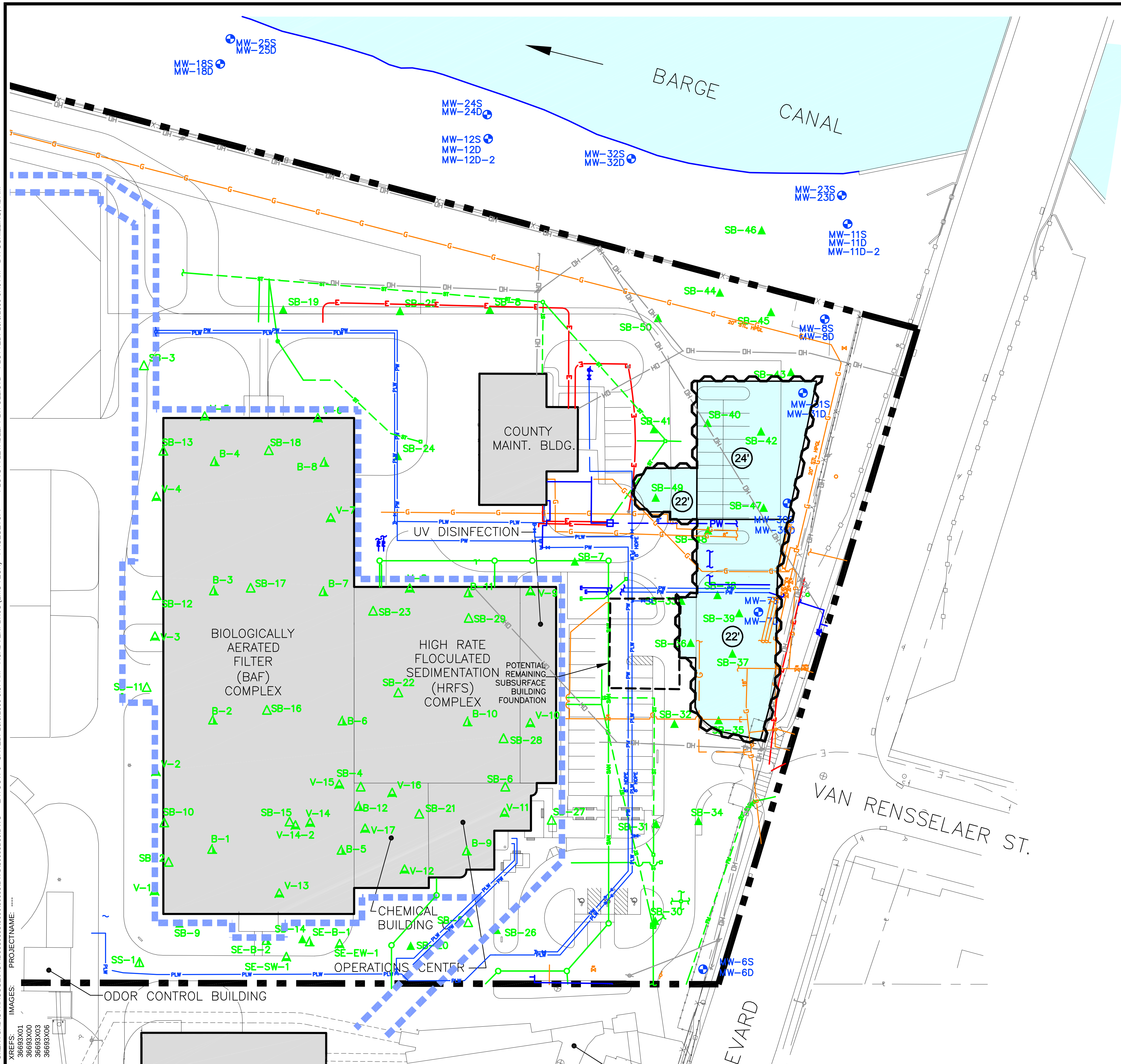
Date	11/1/00	3/26/03	1/31/06	5/9/06	8/15/06	11/15/06	3/27/08
Benzene	4.0 J	7.0	7.9	9.4	11	3.9 J	NA
Ethylbenzene	11	16	30	33	23	6.7	NA
Toluene	15	20	28	27	24	8.1	NA
Xylenes (total)	76	<5.0	190	180	110	33	NA
Naphthalene	83	69	190	240	130	34	NA
Cyanide	817	865 J	3,710	871	1,340	811	940 [920]
Cyanide, Available	13	569	NA	NA	NA	NA	NA

MW-12D (344.01–354.01)

Date	11/2/00	3/26/03	1/27/06	5/10/06	8/16/06	11/14/06
Benzene	490	530	530	610	660	630
Ethylbenzene	<50	7.0 J	<8.0	<5.0	<5.0	<5.0
Toluene	<50	13 J	<2.4	<1.5	<1.5	<1.5
Xylenes (total)	<50	49	<8.0	<5.0	<5.0	<5.0
Cyanide, Available	22	508	NA	NA	NA	NA

MW-6D (346.55–356.55)

Date	3/31/98	5/21/98	10/30/00	4/8/03	2/8/06	5/15/06	8/16/06	11/17/06
Benzene	12	12	11	5.0	1.3 J	5.1 [5.1]	5.3	4.9 J [4.6 J]
Ethylbenzene	26	28	38	8.0 J	4.6 J	20 [19]	17	17 [17]
Toluene	15	16	23	6.0	1.1 J	12 [12]	11	11 [11]
Xylenes (total)	59	66	180	34 J	60	90 [91]	75	81 [78]
Naphthalene	190	200	350	150	1,200	310 [370]	390	360 [410]
Cyanide	<10.0	49.0	<10.0	18.1	203	9.90 B [3.00 B]	<1.30	25.1 [55.2]
Cyanide, Available	NA	NA	<2.0	11	NA	NA	NA	NA



LEGEND:

MW-1D	EXISTING MONITORING WELL LOCATION
SB-24	SOIL BORING LOCATION
SB-16	SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
SS-1	SURFACE SOIL SAMPLING LOCATION
V-7	SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
B-10	SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
	LIMITS OF SOIL REMOVAL IRM
	BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
	EXISTING BUILDINGS
	PROPOSED EXCAVATION OR STABILIZATION LIMITS
22'	APPROXIMATE DEPTH OF EXCAVATION OR STABILIZATION (FEET BGS)
	APPROXIMATE LOCATION OF EXCAVATION BRACING
PW	POTABLE WATER
PLW	PLANT WATER
E	ELECATRIC
SAN	SANITARY SEWER
FM	SANITARY SEWER FORCE MAIN
ST	STORM SEWER
G	NATURAL GAS
OH	OVERHEAD UTILITIES
	CATCH BASINCS
	MANHOLES

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
2. MONITORING WELL LOCATIONS ARE BASED ON SURVEY PERFORMED BY BRYANT ASSOCIATES OF SYRACUSE, NEW YORK.
3. SOIL BORING, SURFACE SOIL, SOIL REMOVAL IRM POST-EXCAVATION BOTTOM AND SIDE WALL SAMPLING LOCATIONS ARE APPROXIMATE.
4. BOUNDARY OF FORMER MGP SITE FROM FIGURE TITLED "PROPERTY PLAN, THE SYRACUSE LIGHTING COMPANY, INC., HIAWATHA STREET PROPERTY & ADJOINING LANDS," AT A SCALE OF 1"=50" UNDATED.
5. IRM = INTERIM REMEDIAL MEASURE.
6. BGS = BELOW GROUND SURFACE.

0 80' 160'

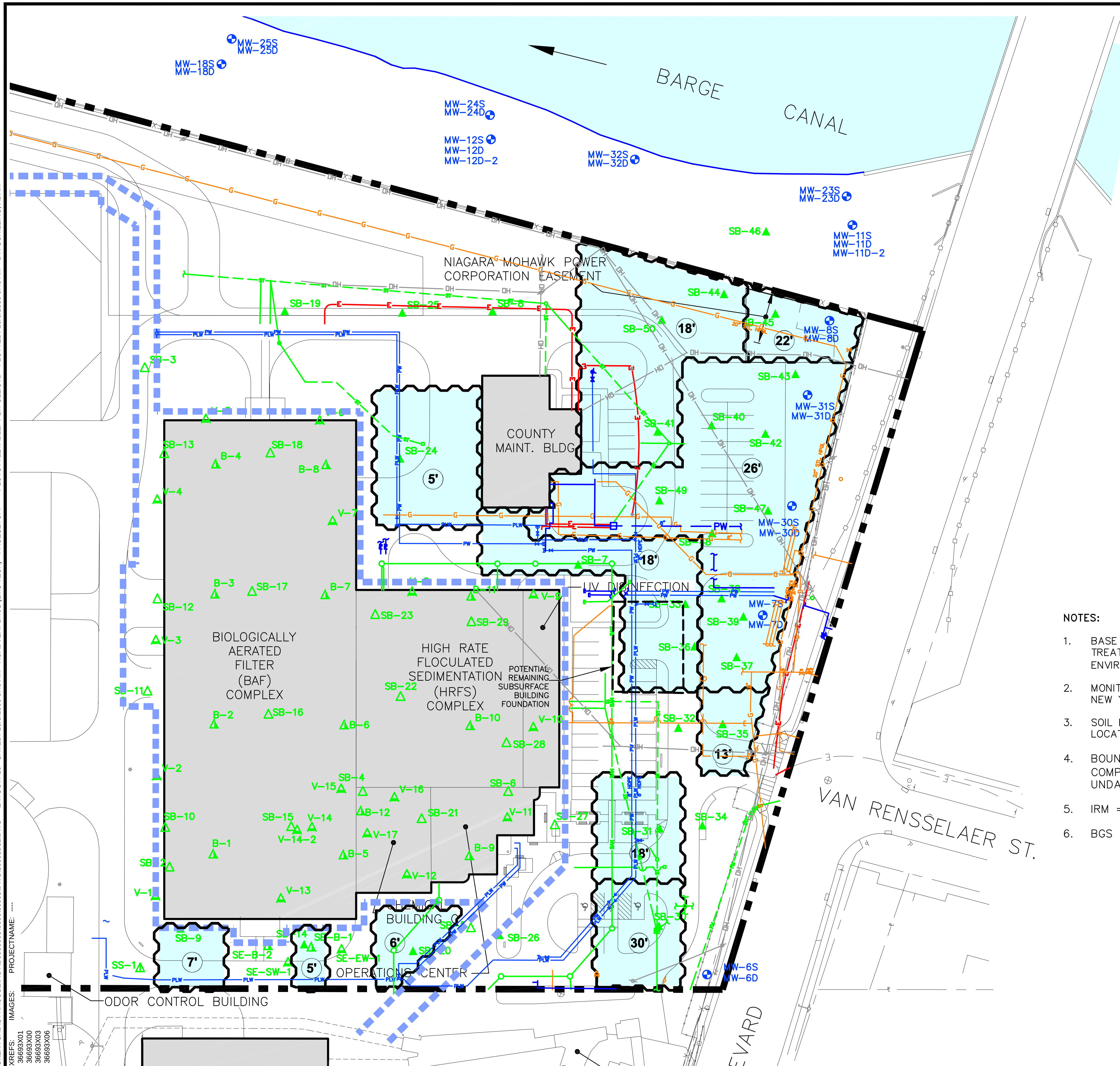
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

LIMITS OF FOCUSED SOIL REMOVAL OR STABILIZATION

ARCADIS

FIGURE
9



LEGEND:

MW-1D	EXISTING MONITORING WELL LOCATION
SB-24	SOIL BORING LOCATION
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V-7	SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE
B-10	SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
	LIMITS OF SOIL REMOVAL IRM
	BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
	EXISTING BUILDINGS
	PROPOSED EXCAVATION LIMITS
	APPROXIMATE LOCATION OF EXCAVATION BRACING
5'	APPROXIMATE DEPTH OF EXCAVATION (FEET BGS)
PW	POTABLE WATER
PLW	PLANT WATER
E	ELECATRIC
SAN	SANITARY SEWER
FM	SANITARY SEWER FORCE MAIN
ST	STORM SEWER
G	NATURAL GAS
OH	OVERHEAD UTILITIES
	CATCH BASINCS
	MANHOLES

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0 80' 160'

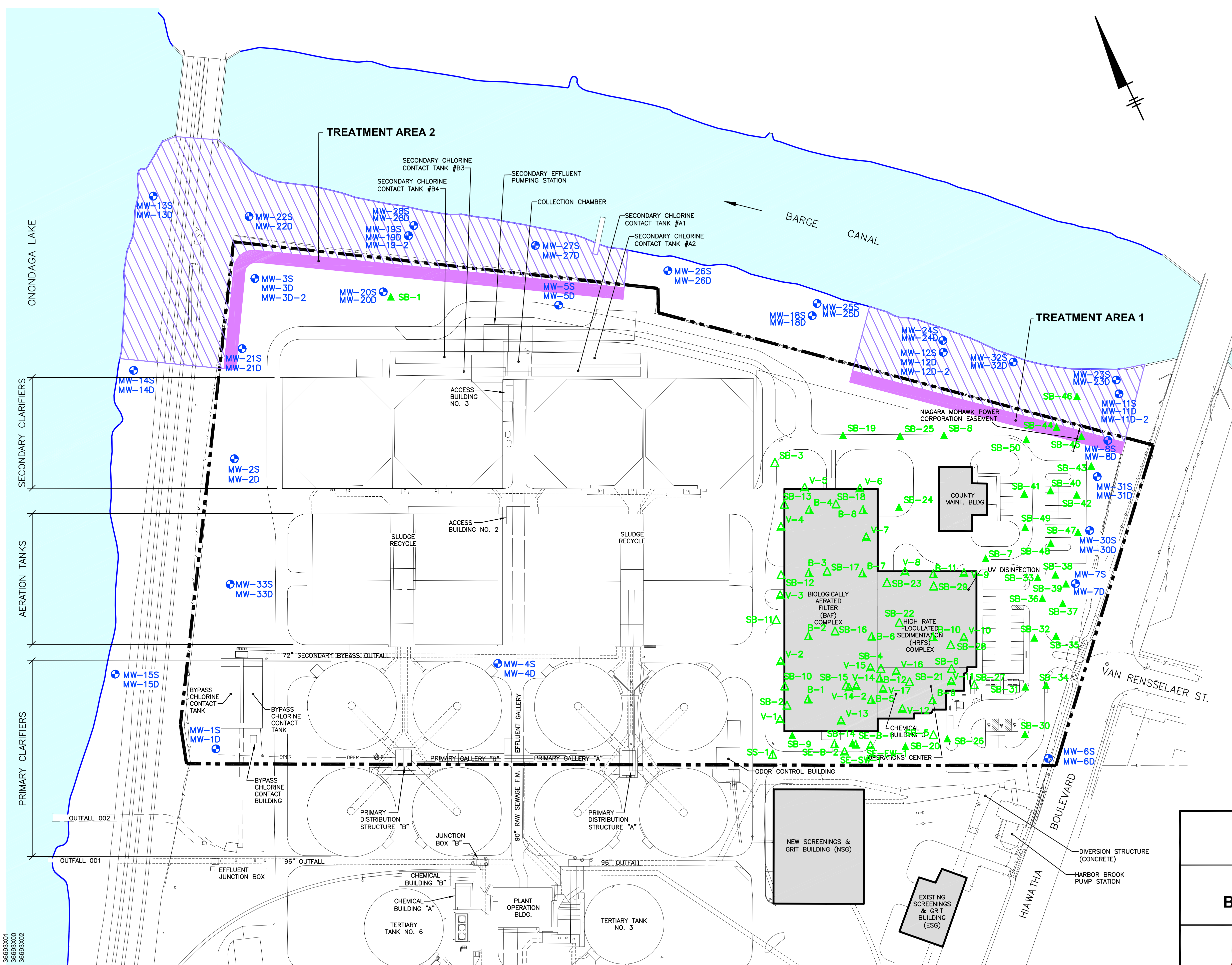
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

LIMITS OF REMOVAL FOR SOIL EXCEEDING INDUSTRIAL SCOs

ARCADIS

FIGURE
10



LEGEND:

APPROXIMATE EXTENT OF TREATED GROUNDWATER

APPROXIMATE EXTENT OF ENHANCED BIOREMEDIATION TREATMENT

MW-1D — EXISTING MONITORING WELL LOCATION

SB-24 — SOIL BORING LOCATION

SB-16 — SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE

SS-1 — SURFACE SOIL SAMPLING LOCATION

V-7 — SOIL REMOVAL IRM POST-EXCAVATION SIDE WALL SAMPLE

B-10 — SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE

BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE

EXISTING BUILDINGS

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
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5. IRM = INTERIM REMEDIAL MEASURE.
6. LOCATION OF TREATMENT MAY BE MODIFIED BASED ON THE RESULTS OF BENCH-SCALE AND PILOT STUDIES.

0 150' 300'
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

LIMITS OF ENHANCED BIOREMEDIATION TREATMENT

ARCADIS

FIGURE
11

CITY: SYR DIV/GROUP: 141/ENV DB: RCB RCB WLJ LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF*
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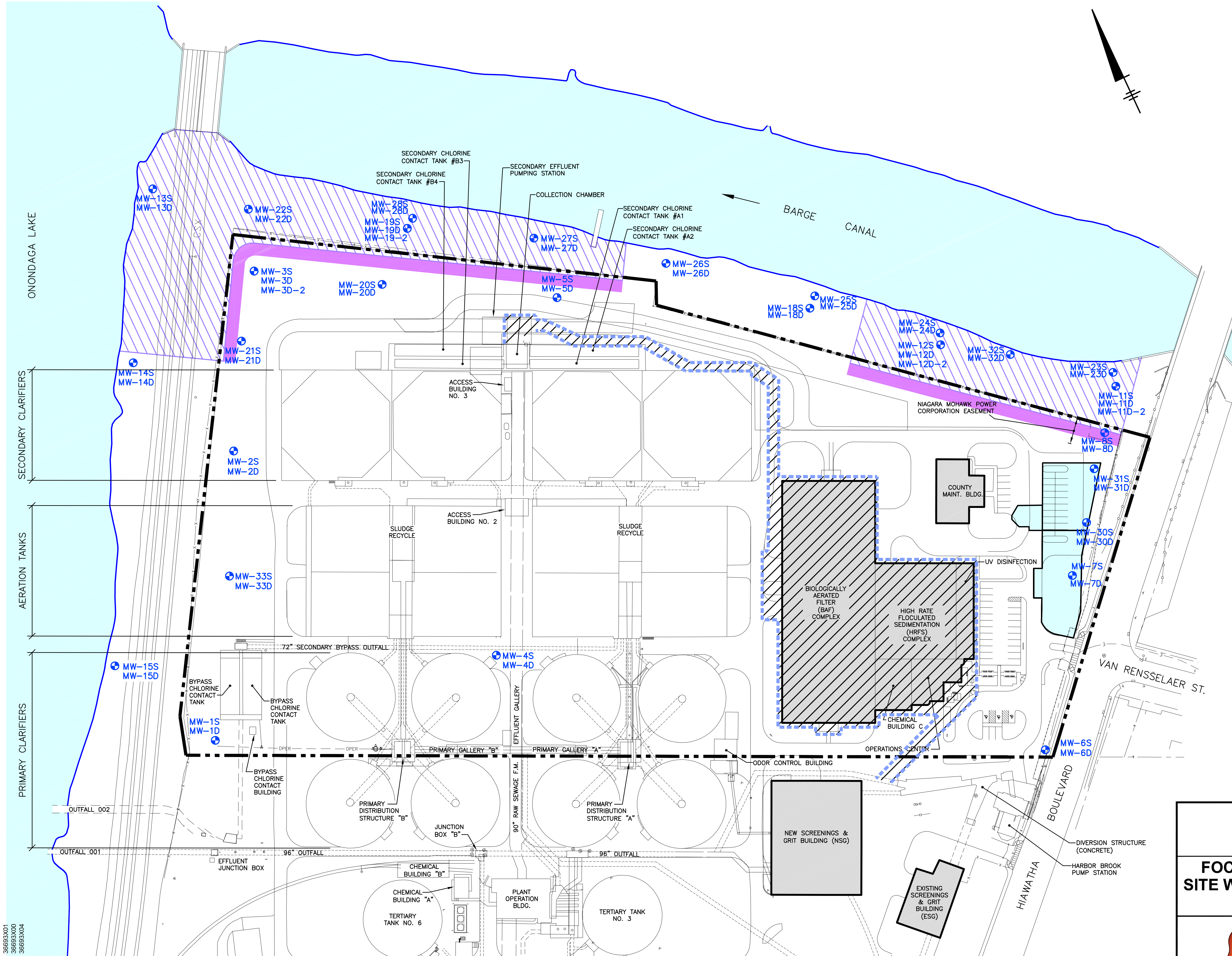
XREFS: 36693X01 36693X00 36693X02 IMAGES: PROJECTNAME: ---



LEGEND:

- APPROXIMATE EXTENT OF TREATED GROUNDWATER
- APPROXIMATE EXTENT OF ENHANCED BIOREMEDIATION TREATMENT
- PROPOSED ISS LIMITS
- MW-1D EXISTING MONITORING WELL LOCATION
- LIMITS OF SOIL REMOVAL IRM
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- EXISTING BUILDINGS
- APPROXIMATE EXTENT OF SOIL REMOVED DURING SOIL REMOVAL IRM

NOTES:

1. BASE MAP DEVELOPED FROM FIGURE TITLED "SITE PLAN" FOR THE METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT STAGE III AMMONIA AND STAGE II PHOSPHOROUS REMOVAL PROJECT, PREPARED BY ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP, DATED APRIL 2001 (FIGURE NO. G-008).
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6. LOCATION OF TREATMENT MAY BE MODIFIED BASED ON THE RESULTS OF BENCH-SCALE AND PILOT STUDIES.

0 150' 300'

GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

FOCUSED SOIL STABILIZATION AND SITE WIDE ENHANCED BIOREMEDIATION TREATMENT

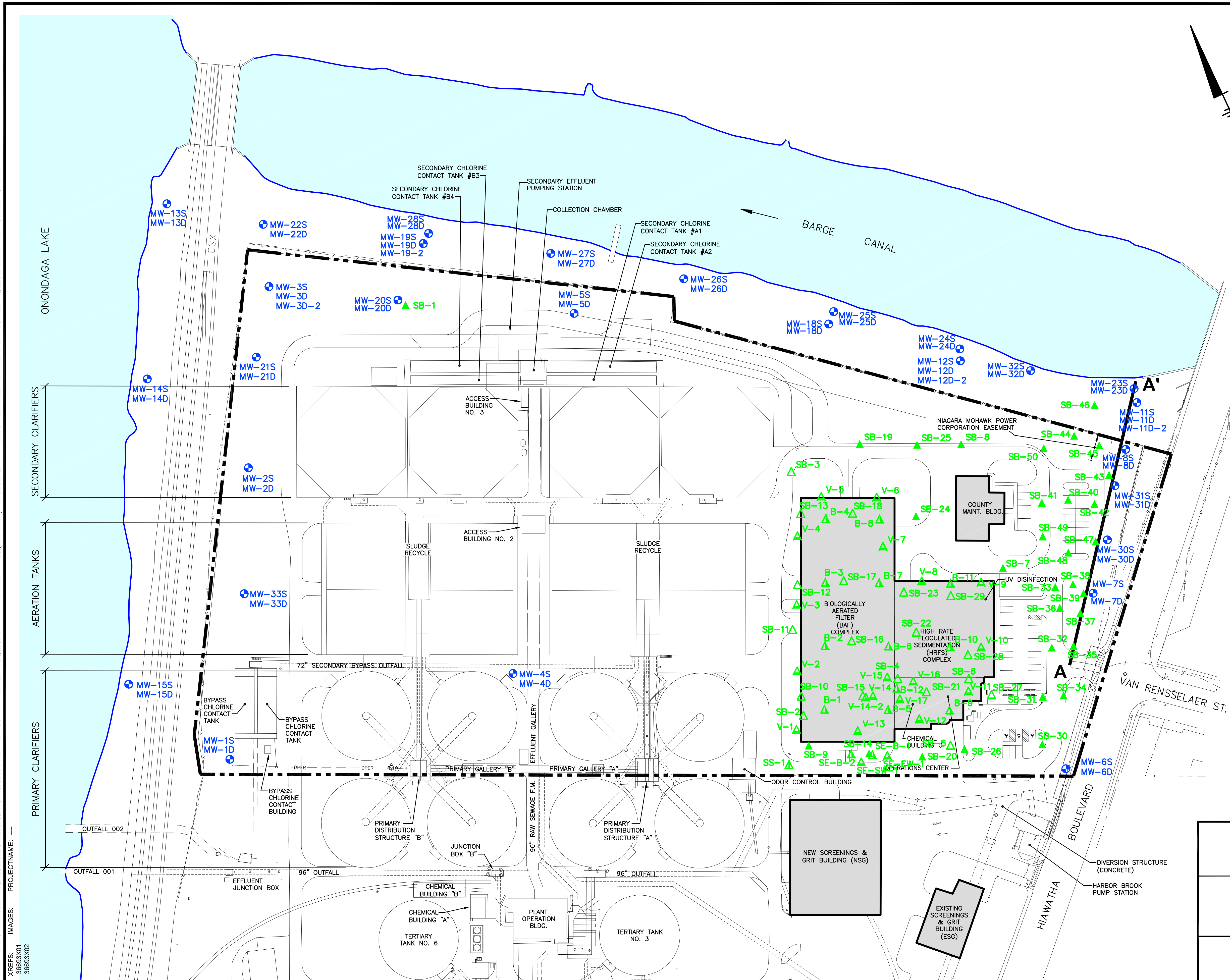
ARCADIS

FIGURE
12

ARCADIS

Attachment A

Cross-Section Location Map and Charts Showing Vertical Limits of Soil Removal/Stabilization



LEGEND:

- MW-1D — EXISTING MONITORING WELL LOCATION
- SB-24 — SOIL BORING LOCATION
- SB-16 — SOIL BORING LOCATION WHERE SOIL WAS REMOVED AS PART OF THE INTERIM REMEDIAL MEASURE
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- B-10 — SOIL REMOVAL IRM POST-EXCAVATION BOTTOM SAMPLE
- BOUNDARY OF FORMER MANUFACTURED GAS PLANT (MGP) SITE
- EXISTING BUILDINGS
- LINE OF CROSS SECTION

NOTES:

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0 150' 300'
GRAPHIC SCALE

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK
FEASIBILITY STUDY REPORT

CROSS-SECTION LOCATION MAP

ARCADIS

FIGURE
A-1

CITY: SYR DIV/GROUP: 141/ENV DB: RCB RCB AMS LD: AM: PD: TM: TR: LYR:ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0036693\0000\00003\DWG\36693B35.DWG LAYOUT: A-1 SAVED: 10/6/2009 2:17 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/6/2009 2:29 PM BY: SCHILLING, ADAM
XREFS: 36693X01 36693X02 IMAGES: PROJECTNAME: ----

CHART 1
ALTERNATIVE SM-3: VERTICAL LIMITS OF SOIL REMOVAL/STABILIZATION,
TOTAL PAH ANALYTICAL RESULTS >500 PPM, AND OBSERVATIONS OF NAPL (WITHOUT LIMITING QUALIFIERS)

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK

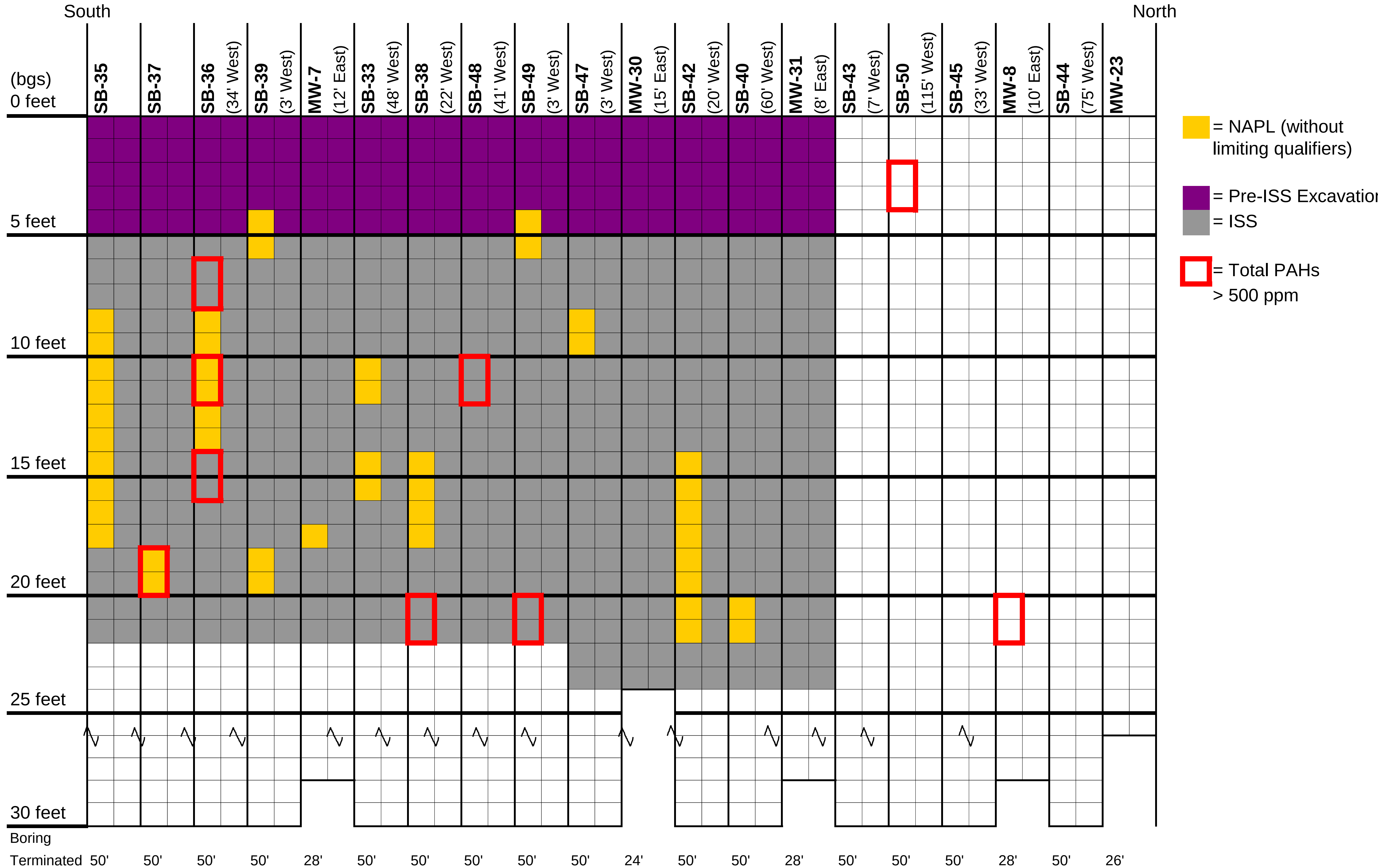

CHART 2
ALTERNATIVE SM-3: VERTICAL LIMITS OF SOIL REMOVAL/STABILIZATION, TOTAL PAH ANALYTICAL RESULTS, AND OBSERVATIONS OF NAPL OR LIMITED NAPL

NATIONAL GRID
HIAWATHA BOULEVARD FORMER MGP SITE
SYRACUSE, NEW YORK