CITY OF RYE

NOTICE

There will be a regular meeting of the City Council of the City of Rye on Wednesday, October 22, 2014, at 7:30 p.m. in Council Chambers at City Hall.

AGENDA

1. Pledge of Allegiance.

2. Roll Call.

3. General Announcements.

4. Draft unapproved minutes of the regular meetings of the City Council held September 10, 2014 and October 8, 2014 and the informal minutes of the Joint Meeting of the City Council and Board of Education held October 8, 2014.

5. Issues Update/Old Business.

6. Continuation of the Public Hearing to change the zoning designation of County-owned property located on Theodore Fremd Avenue and North Street to the RA-5 District to provide for the construction of affordable senior housing.

7. Continuation of Public Hearing to amend local law Chapter 197, "Zoning", of the Rye City Code by adding Section 197-15, "Special Permit for Historic Preservation in the B-2 Central Business District" to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council.

8. Continuation of Public Hearing to amend local law Chapter 76, "Dogs", Section §76-5, "Running at large prohibited" and Section §76-6, "When leash required" to establish regulations for the leashing of dogs at Rye Town Park.

9. Public Hearing to amend local law Chapter 165 , "Signs", of the Rye City Code by adding Section §165-10, "Regulation of banners", to establish regulations for banners on City owned ball field fences and utility poles on City property.

10. Residents may be heard on matters for Council consideration that do not appear on the agenda.

11. Consideration for the City of Rye to join Sustainable Westchester.

12. Authorization for Silverberg Zalantis LLP to represent the City of Rye in the Article 78 proceeding commenced by Douglas Liman.
    Roll Call.

13. Authorization for City Manager to execute an Inter-municipal Agreement with the County of Westchester authorizing the operation of a transfer station at Public Works for organic waste.
    Roll Call.

14. Consideration of the Rye Merchants Association request for amendment of the Farmers Market Agreement to extend the operating season by two additional weeks.

15. Three appointments to the Rye Golf Club Commission for a three-year term expiring January 1, 2018, and the designation of one member to the Rye Golf Club Nominating Committee.

16. Resolution to grant permission to the Rye Free Reading Room to hold a free community event on the Village Green on Sunday, May 3, 2015 from 10 a.m. to at 1 p.m.

17. Miscellaneous communications and reports.

18. New Business.

19. Adjournment.

* *

The next regular meeting of the City Council will be held on Wednesday, November 5, 2014 at 7:30 p.m. including the presentation of the 2015 Budget. The City Council will hold Budget Workshops on Wednesday, November 12, 2014, Monday, November 17, 2014 and Wednesday, November 19, 2014 beginning at 7:30 p.m.

** City Council meetings are available live on Cablevision Channel 75, Verizon Channel 39, and on the City Website, indexed by Agenda item, at www.ryeny.gov under “RyeTV Live”.

* Office Hours of the Mayor by appointment by emailing jsack@ryeny.gov or contacting the City Manager’s Office at (914) 967-7404.

CITY COUNCIL AGENDA

NO. 4 DEPT.: City Clerk DATE: October 22, 2014
CONTACT: Dawn Nodarse

AGENDA ITEM Draft unapproved minutes of the regular meetings of the City Council held September 10, 2014 and October 8, 2014, and the informal minutes of the Joint Meeting of the City Council and Board of Education held October 8, 2014, as attached.

FOR THE MEETING OF:
October 22, 2014
RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council approve the draft minutes.

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☒ Other:

BACKGROUND: Approve the minutes of the regular meeting of the City Council held September 10, 2014 and October 8, 2014, and the informal minutes of the Joint Meeting of the City Council and Board of Education held October 8, 2014, as attached.

DRAFT UNAPPROVED MINUTES of the Regular Meeting of the City Council of the City of Rye held in City Hall on September 10, 2014 at 7:30 P.M.

PRESENT:

JOSEPH A. SACK Mayor
LAURA BRETT
KIRSTIN BUCCI
JULIE KILLIAN
TERRENCE McCARTNEY
RICHARD MECCA
RICHARD SLACK
Councilmembers

ABSENT: None

The Council convened at 7:00 p.m. Mayor Sack made a motion, seconded by Councilman Mecca and unanimously carried to immediately adjourn into executive session to discuss personnel and litigation. Councilwoman Brett made a motion, seconded by Councilman Mecca and unanimously carried, to adjourn the executive session at 7:25 p.m. The regular meeting convened at 7:30 p.m.

1. Pledge of Allegiance

Mayor Sack called the meeting to order and invited the Council to join in the Pledge of Allegiance.

2. Moment of Silence in remembrance of 9/11

Mayor Sack called for a moment of silence in memory of the victims of 9/11.

3. Roll Call

Mayor Sack asked the City Clerk to call the roll; a quorum was present to conduct official city business.

4. Presentation by Mayor and City Manager of Certificates of Public Service to members of the City staff who have reached milestones in their service to the City of Rye

Mayor Sack acknowledged the service of several staff members who were not in attendance:

Employee	Department	Years of Service
Todd Barnum (retired)	Fire	25.5

Lt. Jeffrey Reichert (retired)	Police	36
Sgt. Charles Hunter	Police	25
Edward Iannarelli	Public Works	26
Robert Slater	Public Works	26
Lt. Joseph Verille	Police	36

Presentations of Certificates of Appreciation were made to three employees in attendance by the Mayor, City Manager and their respective Department Heads:

Employee	Department	Years of Service
Sgt. Robert Vogel	Police	31
Craig Casterella	Public Works	31
Michael Pearce	Public Works	41

4A. Recognition of the Rye Little League 10 and 11 year old Baseball Team as winners of the 2014 New York District 20 Little League Baseball Championship

Mayor Sack and Councilman McCartney presented Proclamations to the Rye Little League 10 and 1l-year old Baseball Team in recognitions of their winning the 2014 New York District 20 Little League Baseball Championship. Team members included: Aidan Ahearn, Jack Bartlett, Justin Cheigh, Tommy Junior, Liam Lavelle, Blake Norton, Dominic Sculti, Aidan Sullivan, Mark Surhoff, Matthew Tepedino, Sean Thompson and Kotaro Tsunematsu. The team was coached by Leon Sculti and Mark Surhoff and managed by Myles Lavelle.

4B. Approval of the election of one new member to the Rye Fire Department

Councilman Mecca made a motion, seconded by Councilman McCartney and unanimously carried, to adopt the following Resolution:

RESOLVED, that the City Council of the City of Rye hereby approves the election of Daniel Ponignamo to the Poningoe Engine and Hose Company of the Rye Fire Department, as approved by the Fire Wardens at their August 4, 2014 meeting.

5. General Announcements by the Council

Announcements were made regarding various achievements, activities and events that may be of interest to members of the community.

6. Draft unapproved minutes of the regular meeting of the City Council held August 4, 2014

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to approve the regular minutes of the City Council meeting held on August 4, 2014, as submitted.

7. Issues Update/Old Business

County Legislator and former City Council Member Catherine Parker updated the Council on the following issues:

- Affordable Housing Settlement – The Huntington Analysis has been completed that looks for clusters of minority populations. The City of Rye is not on the list of communities where, under the Federal Standard, there is exclusionary housing. Ms. Parker read a section of the report that concludes that the City's Zoning Code does not perpetuate racial and ethnic cluster by restricting multi-family or affordable housing to districts with a large minority population and does not restrict the development of housing that minority groups might use. She added that the Settlement is not about high-rise housing projects, but is subsidized rent or ownership for housing for people who earn up to 60% of the median income. Ms. Parker also reported on aspects of the Housing Settlement that are not specific to Rye.
- Playland – Ms. Parker said there may be an opportunity to get an experienced operator for Playland for 2015. There were two other proposals during the RFP process from experienced amusement park operators – one from a group called Standard Amusements, which would like to do a restoration of the park, and the other from a group called Central Amusements, which includes a former Director of Playland. She said that both groups are well funded and seem eager to work with the Rye community. There was a discussion between Legislator Parker and Mayor Sack regarding the differing positions of the County and City regarding the City's right of approval of any project that is proposed for Playland. Ms. Parker was urged to support the City's position that any project would need to come before the City's land use boards for approval. The beach at Playland will be open for dogs from September 22nd until April 26th.

Councilwoman Brett reported that the Landmarks Advisory Committee is working on designating historic districts for the community as a way to provide tax incentives. The first neighborhood being considered is the downtown area. She said there is a question about the process that would be followed. Corporation Counsel Wilson said that the City Council would have to hold a public hearing on the proposed historic district because it would require a change to the City Code.

8. Continuation of the Public Hearing to change the zoning designation of County-owned property located on Theodore Fremd Avenue and North Street to the RA-5 District to provide for the construction of affordable senior housing

Matthew Carroll of Tenen Environmental (Tenen) provided an update on the additional work requested by the Council at the previous meeting to prepare an "apples to apples" comparison of historic groundwater results to provide a better summary of where the samples were collected and what the concentration changes were over time; to complete a site inspection; and to review the future response from the applicant with regard to the Environmental Assessment Form (EAF). They collected all the data that has been sampled over the years for the DEC, the Westchester County Department of Health, and the applicant, primarily from two wells, that shows a strong decrease until 2009 when the DEC closed out the spill and since then there have been low levels of concentrations from 2009 through March 2014 when the last groundwater samples were collected. Tenan was asked to collect a confirmatory round of groundwater samples to continue the historic record. The groundwater at the site is currently lower than what would be necessary to take similar representative samples. They will monitor the groundwater and if the situation arises where samples can be taken, they will notify the Council. The characteristics of the site layout are consistent with their initial recommendations to prevent any future groundwater or vapor from entering the site and to cap the soil outside of the building. They also reviewed the EAF provided by the applicant and ask that the applicant provide the City with a formal determination on endangered species on the site from the State. They also suggest that the applicant provide a wetland survey completed by a certified soil scientist to determine if there are federal or local wetlands. Documents received from the State regarding the adjoining Manufactured Gas Plant (MGP) are being reviewed. There does not appear to be any impacts from this site. They also believe that the applicant should provide the Council with any available archeological studies for the site.

Public Comment: *Carolyn Cunningham* said she believed that the contamination issue could be put at rest in connection with the issue of a Senior Affordable Housing site. *John Shoemaker* said he did not believe that the "apples to apples" comparison was done and that questions from the last meeting had not been answered. *Steven Rattner* spoke in favor of the project which he said would be good for Rye.

Mr. Cooper was asked to provide a graph memorializing data that the Council has been seeking and it was noted that the developer still has some items to provide to the City as per Council request.

Councilwoman Brett made a motion, seconded by Councilman Mecca and unanimously carried, to adjourn the public hearing to the October 8th meeting.

9. Continuation of Public Hearing to amend local law Chapter 197, "Zoning", of the Rye City Code by adding Section 197-15, "Special Permit for Historic Preservation in the B-2 Central Business District" to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council

The Public Hearing remained open from the August meeting.

Public Comment: *Bob Zahm* said there was nothing in the documents that speaks to the "Smoke Shop" problem. He asked the Council if it was their intention to provide a way for the Smoke Shop to stay in place, how they would codify it. *John Zegras*, urged the Council to save the Smoke Shop calling it "a part of the life that has passed us by." *Tony D'Onofrio* (owner of the Smoke Shop) said he wants to stay and the only option appears to be the bank.

Mayor Sack said there was a two part process: (1) pass the legislation to allow for the special use permit, and, (2) negotiation of the terms of the permit. There was a discussion among the members of the Council on the mechanics of how the special use permit would work; the discretion the Council would have in negotiating the terms of the permit; and public policy reasons for the change. Corporation Counsel Wilson said that the proposed law could not preserve an actual business but could require a particular type of use. Mayor Sack suggested that the public hearing should be kept open and preliminary discussions held to come up with a draft special use permit.

Councilman McCartney made a motion, seconded by Councilwoman Killian and unanimously carried to continue the public hearing to the October 8th meeting.

10. Continuation of Public Hearing to amend local law Chapter 191, "Vehicles and Traffic", of the Rye City Code by amending Section §191-7, "Speed limits", to lower the speed limit to 25 miles per hour on select roads, including Stuyvesant Avenue, Van Wagenen Avenue, Forest Avenue, Oakland Beach Avenue, and Milton Road, during the Pilot Study recommended by the Traffic and Pedestrian Safety Committee

Mayor Sack said he believed the Council was probably prepared to adopt the proposed local law but they are also concerned about addressing safety issues that include the removal of rocks in the right-of-ways. There was a discussion among the members of the Council on the best way to approach the removal of the illegal rocks in the right-of-ways, including: sending notices of violation to residents asking them to remove the rocks on their own before the City removes them and bills them; including removal of rocks as a requirement for passing the speed reduction pilot; creating a plan for the City-wide removal of rocks over time; giving the City Manager the discretion to implement a plan for rock removal, or, not voting on the local law until a plan for rock removal is in place.

Councilwoman Killian made a motion, seconded by Councilwoman Brett, to adopt the following local law:

CITY OF RYE
LOCAL LAW NO. 3 2014

A local law to amend the City Code of the City of Rye Chapter 191 "Vehicles and Traffic" Part 1, Article II "Traffic Regulations" Section 191-7 "Speed limits" to reduce the speed limit down to twenty-five miles per hour on roads, or portions thereof, for a pilot study as follows:

Section 1:
Article IV, *Traffic Regulations*, of the Code of the City of Rye is hereby amended:

§ 191-7. Speed Limits.

It shall be unlawful for any person to operate any motor vehicle or motorcycle in any street in the City at a speed in excess of 30 miles per hour, except as indicated in subsection A and where otherwise indicated by signs erected by the Police Department of the City.

A. The speed limit shall be 25 miles per hour for the block bordered by Stuyvesant Avenue, Van Wagenen Avenue, Forest Avenue, Oakland Beach Avenue and Milton Road. The 25 miles per hour limit shall be posted along each of the streets indicating what sections are governed by the 25 miles per hour speed limit.

Section 2.
If any clause, sentence, paragraph, section or part of any section of this title shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, section or part thereof directly involved in the controversy and in which such judgment shall have been rendered.

Section 3: This local law will take effect on November 1, 2014 and shall be effective for twelve (12) months.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS:	None
ABSENT:	None

The Local Law was adopted by a 7-0 vote.

11. <u>Continuation of Public Hearing to amend local law Chapter 76, "Dogs", Section §76-5, "Running at large prohibited" and Section §76-6, "When leash required" to establish regulations for the leashing of dogs at Rye Town Park</u>

Corporation Counsel Wilson noted that the correct version of the draft law had not been included in the agenda packets. She said that a more recent version has been used in discussions with the Rye Town Park Commission. Councilwoman Brett said that the City has been trying to coordinate with the Rye Town Park Commission on the law in order to get the Commission to accept the "off leash" policy.

Suki van Dijk spoke in favor of the Council passing the law.

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to continue the public hearing to the October 8, 2014 City Council meeting.

12. <u>Public Hearing to amend local law Article 6, "Council", Section § C6-2, "Powers and duties", Article 8 "City Manager", Section § C8-2, "Powers and duties of City Manager"</u>

and Article 12 "Department of Police", Section § C12-1, "Head of Department; subordinates" of the Charter of the City of Rye to provide the City Council with the authority to approve the appointment, suspension or removal of the Police Commissioner

Mayor Sack said that the City Council is not seeking the authority to appoint the Police Commissioner under the proposed local law or to take away the authority of the City Manager to select the Police Commissioner. It seeks to give the Council a check and balance of approval authority over the City Manager's decision.

Councilwoman Brett made a motion, seconded by Councilman Mecca and unanimously carried, to open the public hearing.

There was a discussion among the members of the Council regarding the reasoning behind the proposed local law. The process that would be involved in the event of the suspension or removal of a Police Commissioner was also discussed.

Public Comment:

Meg Cameron read a statement from former Councilwoman *Carolyn Cunningham* in opposition to the proposed law saying she believed the proposal would weaken the City Manager form of government. *Ms. Cameron* added her opposition to the proposed local law. Former Councilman *Arthur Stampleman* also spoke against the proposed local law and said he believed any change to the Charter should be made by public referendum. Corporation Counsel Wilson indicated that the proposed change could be made by local law.

Councilman McCartney made a motion, seconded by Councilman Mecca and unanimously carried, to continue the public hearing until the October 8th meeting.

13. Public Hearing to amend local law Chapter 191, "Vehicles and Traffic", of the Rye City Code by amending Section §191-20, "Parking time limited", Subsection (B) "Two-hour limit" to prohibit parking for a period longer than two hours between the hours of 7:00 a.m. and 6:00 p.m., except on Sundays on the north side of Central Avenue from the west side of the bridge over the Blind Brook to Walnut Street, and Section §191-21, "Parking, standing or stopping" to prohibit parking on the north side of Central Avenue from the Boston Post Road to the west side of the Blind Brook

Councilman Mecca made a motion, seconded by Councilwoman Brett and unanimously carried, to open the public hearing.

Brian Dempsey, Chair of the Traffic and Pedestrian Safety Committee, said that the intent of the law was to extend the parking limitations that are currently in effect to the area beyond the bridge.

No one from the public spoke on the proposed local law.

Councilman Mecca made a motion, seconded by Councilwoman Brett and unanimously carried, to close the public hearing.

Councilman Mecca made a motion, seconded by Councilwoman Killian, to adopt the following local law:

CITY OF RYE
LOCAL LAW NO. 4 2014

Local law to amend Chapter 191, "Vehicles and Traffic", of the Rye City Code By amending §191-20, "Parking time limited", Subsection (b) "Two-hour Limit" to prohibit parking on the north side of Central Avenue from the West side of the bridge over the Blind Brook to Walnut Street and §191-21, "Parking, standing or stopping" to prohibit parking on the north side of Central Avenue from the Boston Post Road to the west side of the Blind Brook

Be it enacted by the City Council of the City of Rye as follows:

Section 1: 191-20. Parking time limited.

B. Two-hour limit. The parking of vehicles is hereby prohibited in the following street locations for a period longer than two hours between the hours of 7:00 a.m. and 6:00 p.m., except on Sundays:

Name of Street	Side	Location
Blind Brook Lane	Both	
Central Avenue	North	From the west side of the bridge over the Blind Brook to Walnut Street
First Street	East	Parking area between Commuter Parking Area and Purdy Avenue
Highland Road	North	From Purchase Street to Club Road
Milton Road	West	From Cross Street to Rectory Street
Natoma Street	North	
New Street		(Except also on Saturday)
Orchard Avenue	North	From 300 feet from the intersection of Boston Post Road west to Theodore Fremd Avenue
Purchase Street	Both	From Natoma Street to Ridge Street
Rectory Street	South	From Milton Road to Boston Post Road
Theodore Fremd Avenue	North	First 4 parking spaces of the parking area commencing at intersection with Blind Brook
Theodore Fremd Avenue	Southeast	From its intersection with Central Avenue northeasterly for 155 feet

Name of Street	**Side**	**Location**
Wappanocca Avenue	Both	

Section 2: §191-21. Parking, standing or stopping.

Name of Street	**Side**	**Location**
Billington Court	North	
Central Avenue	North	From the Boston Post Road to the west side of the Blind Brook
Central Avenue	South	From Loewen Court to the Boston Post Road
Cornell Place	Both	
Dearborn Avenue	Both	East of Forest Avenue, including the turnaround at the easterly end thereof*
Forest Avenue	East	From Redfield Street to Playland Parkway
Franklin Avenue	North-east	From a point approximately 30 feet north of Sonn Drive
Hewlett Avenue	East	Between the crosswalks extending from Robert Crisfield Place to the fire lane driveway exit, when school is in session, from 8:00 a.m. to 9:00 a.m. and 2:30 p.m. to 3:30 p.m.
Kirby Lane	Both	From its westernmost inter-section with Mill Pond to Van Rensselaer Road, from 8:00 p.m. to 6:00 a.m.
Locust Avenue	Both	From Purchase Street to the east end of Mead Place
Locust Avenue Locust Avenue	South	From main firehouse to Purchase Street
Midland Avenue	Front of No. 382	
Midland Avenue [Added 8-16-1995; repealed 9-20-1995]		
Midland Avenue [Added 9-20-1995; repealed 3-19-1997]		
Midland Avenue Midland Avenue	West	From Apawamis Avenue to Goldwin Street from 8:00 a.m. to 9:00 a.m. and 2:30 p.m. to 3:30 p.m., Monday through Friday

Milton Road Milton Road	West	From Fairlawn Street to driveway of marina
Platt Lane	South	Entire length, from 8:00 a.m. to 9:00 a.m. and 2:30 p.m. to 4:00 p.m. on school days
Purchase Street	West	From Elizabeth Street to driveway of 231 Purchase Street
Purdy Avenue	Both	Purchase Street to First Street
Purdy Avenue	South	From School Street to Post Road

NOTE:
*Except that the parking, standing or stopping of vehicles on the northerly side of the turnaround for discharging or loading of passengers only is permitted.

Section 3. This local law will take effect immediately upon filing in the Office of the Secretary of State.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS:	None
ABSENT:	None

The Local Law was adopted by a 7-0 vote.

14. <u>Public Hearing to amend local law Chapter 191, "Vehicles and Traffic", of the Rye City Code by amending Section §191-20, "Parking time limited", Subsection (E) "Fifteen-minute limit" to designate two parking spaces on the south side of Sylvan Road closest to Midland Avenue as fifteen minute parking spaces</u>

Councilman Mecca made a motion, seconded by Councilwoman Killian and unanimously carried, to open the public hearing.

Brian Dempsey, Chair of the Traffic and Pedestrian Safety Committee, said that the proposed local law was a recommendation of the Committee.

There was no one from the public who wished to speak on the proposed local law.

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to close the public hearing.

Councilwoman Killian made a motion, seconded by Councilwoman Brett, to adopt the following local law:

CITY OF RYE
LOCAL LAW NO. 5 2014

A Local Law to amend Chapter 191, "Vehicles and Traffic", of the Rye City Code by amending §191-20, "Parking time limited", Subsection (E) "Fifteen-minute limit" to designate two parking spaces on the south side of Sylvan Road closest to Midland Avenue as fifteen minute parking spaces.

Be it enacted by the City Council of the City of Rye as follows:

Section 1: 191-20. Parking time limited.

E. Fifteen-minute limit. The parking of vehicles is hereby prohibited in the following locations for a period longer than 15 minutes between the hours of 7:00 a.m. and 7:00 p.m., except on Sundays:

Name of Street	Side	Location
Boston Post Road	East	From Central Avenue to Rectory Street
Elm Place	North	3 spaces on the north side closest to Theodore Fremd Avenue
Forest Avenue	West	From the southwest driveway of the service station to Elmwood Avenue
Purchase Street	East	From Elizabeth Street southerly for 140 feet
Purdy Avenue	North	From the east side of the post office property to Third Street
Sylvan Road	South	2 spaces on the south side closest to Midland Avenue
Third Street	East	From Purdy Avenue to the post office driveway
Third Street	West	From Purdy Avenue to a point 100 feet north thereof

Section 2. This local law will take effect immediately upon filing in the Office of the Secretary of State.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS:	None
ABSENT:	None

The Local Law was adopted by a 7-0 vote.

15. Residents may be heard on matters for Council consideration that do not appear on the agenda

Sis D'Angelo, 125 Wappanocca Avenue spoke about the Morehead Bridge located in the cemetery off Milton Road. She urged the City to have it repaired.

Charles Millard, 6 Eldridge Court, spoke about the drug problem in the City, which he called an emergency, and said that the Police Department should make it a priority and do more to enforce drug laws and arrest those who sell drugs. Councilwoman Killian spoke about creating a Drug & Alcohol Coalition in the City.

16. Consideration to set a Public Hearing to amend local law Chapter 165 , "Signs", of the Rye City Code by adding Section §165-10, "Regulation of banners", to establish regulations for banners on City owned ball field fences and utility poles on City property

There was a discussion among the Council about the language in the draft local law; questions about how "banners" are regulated in other communities; who would be the applicant; and, whether it makes more sense for the Recreation Commission or the Board of Architectural Review to have approval authority over the banners. Corporation Counsel Wilson said she will circulate laws from other communities to the Council.

Councilwoman Brett made a motion seconded by Councilman Mecca and unanimously carried, to adopt the following Resolution:

> **WHEREAS**, the Council wishes to consider amending Chapter 165 "Signs" of the Code of the City of Rye by adding a new §165-10 to establish regulations for banners on City owned field fences and utility poles located on City property to renumber the remaining section of the Chapter; and
>
> **WHEREAS**, it is now desired to call a public hearing on such proposed amendments to the law, now, therefore, be it
>
> **RESOLVED**, by the Council of the City of Rye as follows:
>
> Section 1. Pursuant to Section 20 of the Municipal Home Rule Law and the Charter of the City of Rye, New York, a public hearing will be held by the Council of said City on October 22, 2014 at 7:30 P.M. at City Hall, Boston Post Road, in said City, for the purpose of affording interested persons an opportunity to be heard concerning such proposed local law.

Section 2. Such notice of public hearing shall be in substantially the following form:

PUBLIC NOTICE
CITY OF RYE

A Local Law to amend Chapter 165 “Signs” of the Code of the City Rye by adding a new §165-10 to establish regulations for banners on City owned field fences and utility poles located on City property and to renumber the remaining section of the Chapter.

Notice is hereby given that a public hearing will be held by the City Council of the City of Rye on the 22nd day of October 2014 at 7:30 P.M. at City Hall, Boston Post Road, in said City, at which time interested persons will be afforded an opportunity to be heard concerning a proposed local law to amend Chapter 165 “Signs” of the Code of the City of Rye by adding a new §165-10 to establish regulations for banners on City owned field fences and utility poles located on City property and to renumber the remaining section of the Chapter.

Copies of said proposed local law may be obtained from the office of the City Clerk.

Dawn F. Nodarse
City Clerk
Dated: October 10, 2014

****

Mayor Sack made a motion, seconded by Councilwoman Killian and unanimously carried, to adjourn into executive session at 11:57 p.m. for an attorney/client meeting. Councilwoman Brett made a motion, seconded by Councilman Mecca and unanimously carried, to adjourn the executive session at 12:35 a.m. The regular meeting resumed at 12:37 a.m.

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17. <u>Two appointments to the Boat Basin Commission, by the Council, for two-year terms expiring January 1, 2017 and the designation of one member to the Boat Basin Nominating Committee</u>

Councilman Mecca made a motion, seconded by Mayor Sack and unanimously carried, to appoint Greg Gavlik and Benjamin Poole to the Boat Basin Commission for two year terms expiring on January 1, 2017 and to appoint Alan Caminiti to the 2015 Boat Basin Nominating Committee.

18. Consideration of a request by the Sole Ryeders & Friends and the Rye High School Breast Cancer Awareness Club to have a TieTheTownPink breast cancer awareness campaign in the City of Rye during the month of October, 2014

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to adopt the following Resolution:

RESOLVED, that the City Council of the City of Rye hereby approves the request of the Sole Ryders & Friends and the Rye High School Breast Cancer Awareness Club to put ribbons on trees on Purchase Street as part of a TieTheTownPink breast cancer awareness campaign in the City of Rye during the month of October 2014.

19. Acceptance of asset forfeiture funds in the amount of Three Thousand Four Hundred ($3,400.00) Dollars to be deposited into the Police Department asset forfeiture account

Councilwoman Brett made a motion, seconded by Mayor Sack, to adopt the following Resolution:

WHEREAS, the City Police Department is in receipt of crime forfeiture proceeds in the amount of $3,400; and,

WHEREAS, New York State law requires that such funds be used solely for police purposes; and

WHEREAS, it is the recommendation of the Police Commissioner to accept the forfeiture funds; and

WHEREAS, the 2014 General Fund Budget did not anticipate the receipt or use of these funds; now, therefore, be it

RESOLVED, that the City Comptroller is authorized to amend the fiscal 2014 General Fund Budget as follows:

Increase Revenues – Police Investigations Forfeiture Crime Proceeds in the amount of $3,400

Increase Appropriations – Police Investigations Public Safety Supplies in the amount of $3,400.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS:	None

ABSENT: None

The Resolution was adopted by a 7-0 vote.

20. Appeal of denial of FOIL requests by Timothy Chittenden

The Council considered four Appeals of responses to FOIL requests submitted by Timothy Chittenden:

Appeal #1:

Mayor Sack made a motion, seconded by Councilman Mecca, to adopt the following Resolution:

RESOLVED, that the appeal of the response to a FOIL request made by Timothy Chittenden for “All records since January 1, 2011, of all e-mails, cell phone calls and text messages to and from Robert Falk and: Jill Donovan, Franco Compagnone, Christine Incalcatera, Richard Runes and Louis Olivier” is hereby denied.

ROLL CALL:	
AYES:	Mayor Sack, Councilmembers Bucci, Killian, McCartney and Mecca
NAYS:	Councilman Slack (in part)
ABSENT:	None
ABSTAIN:	Councilwoman Brett

The Resolution was adopted by 5 votes.

Appeal #2:

Mayor Sack made a motion, seconded by Councilwoman Brett, to adopt the following Resolution:

RESOLVED, that the appeal of the response to a FOIL request made by Timothy Chittenden for “All records of all complaints filed by Rye Police Officer Compagnone with regard to James Amico for harassment, extortion or any other complaint including but not limited to all cad dispatch reports, all incident reports, all sworn statements and all other documents filed associated with any complaints filed since January 1, 2009” is hereby denied.

ROLL CALL:
AYES: Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS: None
ABSENT: None

The Resolution was adopted by a 7-0 vote.

Appeal #3:

Councilwoman Brett made a motion, seconded by Mayor Sack, to adopt the following Resolution:

RESOLVED, that the appeal of the response to a FOIL request made by Timothy Chittenden for "All emails to and from William Connors, Falk, Richard Runes and any City of Rye official including but not limited to the Rye City Council, City Manager, Corporation Counsel and the City Clerk concerning the arrest of Compagnone, the suspension of Compagnone and the reinstatement of Compagnone since 1/1/2013, is hereby denied.

ROLL CALL:
AYES: Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS: None
ABSENT: None

The Resolution was adopted by a 7-0 vote.

Appeal #4:

Mayor Sack made a motion, seconded by Councilman McCartney, to adopt the following Resolution:

RESOLVED, that the appeal of the response to a FOIL request made by Timothy Chittenden for "All records from 1/1/2008 thru 12/31/2010 of all emails, cell phone calls and text messages to and from Robert Falk and: Jill Donovan, Franco Compagnone, Christine Incalcatera, Richard Runes and Louis Olivier, is hereby denied.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Bucci, Killian, McCartney and Mecca
NAYS:	Councilman Slack (in part)
ABSENT:	None
ABSTAIN:	Councilwoman Brett

The Resolution was adopted by 5 votes.

21. Miscellaneous Communications and Reports

Mayor Sack reported that six members of the Council in two separate trips of three members visited Hen Island over the weekend in an attempt at constructive engagement. He said he believed it was beneficial for the Council to be there and they will consider what they observed and learned in order to frame the issues to make a decision.

22. New Business

Councilman McCartney reported on a program called "Solarized Westchester" that he believes the City should look into. He requested that it be put on an agenda. Councilman Mecca reported that he had been a panelist for the program and would to the Council on the program and Councilwoman Killian will refer it to the Sustainability Committee and City Engineer Coyne.

23. Adjournment

There being no further business to discuss Councilwoman Brett made a motion, seconded by Councilman Mecca and unanimously carried, to adjourn the meeting at 12:50 a.m.

Respectfully submitted,

Dawn F. Nodarse
City Clerk

DRAFT UNAPPROVED MINUTES of the Joint Meeting of the City Council of the City of Rye and the Rye City School District held in City Hall on October 8, 2014 at 7:00 P.M.

PRESENT:

JOSEPH A. SACK Mayor
LAURA BRETT
KIRSTIN BUCCI
JULIE KILLIAN
TERRENCE McCARTNEY
RICHARD MECCA
RICHARD SLACK
Councilmembers

LAURA SLACK, President
KAREN BELANGER
KATY KEOHANE GLASSBERG
NANCY PASQUALE
CHRIS REPETTO
NICOLE WEBER
School Board Members

Dr. FRANK ALVAREZ, Superintendent of School District
FRANK CULROSS, City Manager
GABRIELLA O'CONNOR, Assistant Superintendent for Business

ABSENT: BLAKE JINES-STOREY, Board Member

1. Pledge of Allegiance

Mayor Sack called the meeting to order and invited the Council and School Board to join in the Pledge of Allegiance.

2. Roll Call

Mayor Sack asked the City Clerk to call the roll; a quorum of both boards was present to conduct official business.

3. Update on Rye City School District construction project and schedule

Board President Slack thanked the City for allowing the School District to do construction work outside of regularly allowed construction hours and for the use of the "snow fields" for staff parking. Superintendent Alvarez said that the District considered the new addition "opened on time" but there are a number of items on a "punch list" that are being worked on. The District hopes to have an official opening in a couple of weeks. Assistant Superintendent O'Connor said that students are in the building but can only use it at certain times of the day because work continues.

4. <u>Discussion of School Safety: Drills and Coordination with the City</u>

Assistant Superintendent O'Connor reported that a security consultant came in and reviewed all schools and made recommendations. Some of the recommendations were implemented during the school year and others over the summer months. Some changes implemented include the installation of an emergency alert system for loud areas; new access cards for employees in order to monitor who is in the building and control access to the buildings; and, installation of security films on lower windows in the buildings. City Manager Culross said that meetings have been held with the City and School District and the City will assist in any way requested. Superintendent Alvarez said that the District has tried to shore up the facilities, hired a new security personnel firm; created a new Emergency Management Plan; implemented staff training; and is coordinating with police and first responders and allowing police to have access to the schools on days when school is off in order to conduct practice drills. Board President Slack suggested that the police should conduct an annual drill in all five school buildings.

4A. <u>Update on Safe Routes Grants</u>

City Manager Culross reported that all the projects that were on the Safe Routes list have either been designed or are in design with a goal of completing the projects during the off school months. Two projects on the list have not received State approval and, therefore the grant funds allocated for those projects will be repurposed. The State took issue with the project at the five corners intersection at Midland Avenue and Grace Church Street because one of the roads is a County road. However, the project is in design and City staff believes they have come up with a better solution. The project for "Rapid Beacons" at Forest Avenue and Eve Lane was not approved because there is no formalized and maintained Easement. Beacons for other areas of the City have been approved as well as pedestrian improvements around Theall Road and Grace Church Street and sidewalk improvements around Milton School

4B. <u>Drugs in Schools and the Community</u>

Mayor Sack said there was a desire in the community that the City and School District have plans in place for enforcement and education regarding drugs and asked the City Manager and School Superintendent to makes sure that plans are in place.

Superintendent Alvarez provided a brief overview of school activities that address the issue of drug and alcohol abuse including the health curriculum; counselors in schools; security people in place; cosponsoring an event with the Rye Youth Counsel; and, participating in a statewide survey for children in grades 7 through 12. Councilwoman Killian and Board Member Pasquale spoke about forming coalitions to deal with the issue. City Manager Culross read a statement regarding three drug related arrests that have been made in the City since September 14th, increased police presence in the schools and patrol division enforcement.

5. State of the School's Report on Enrollment

Board President Slack read a statement regarding issues the District is dealing with due to increased enrollment in the schools. She quoted figures about how much it costs the District to educate each child in relation to the average school tax payment from each home. She said all the classrooms are full and there is no land to expand the facilities. Ms. Slack suggested that the City Council should look into amending zoning laws to help reduce the amount of homes that can be built as of right. Mayor Sack said the City needs to better understand the issue and determine if the increase in students is coming from developments and subdivisions or just normal home sales. He asked if the City could be provided with the addresses for new enrollment in the School District in order to determine if the increased enrollment is coming from new development.

6. Adjournment

There being no further business to discuss Councilman Mecca made a motion, seconded by Board Member Pasquale and unanimously carried, to adjourn into executive session to discuss litigation and not return to the joint meeting at 7:45 p.m.

Respectfully submitted,

Dawn F. Nodarse
City Clerk

DRAFT UNAPPROVED MINUTES of the Regular Meeting of the City Council of the City of Rye held in City Hall on October 8, 2014 at 8:00 P.M.

PRESENT:
JOSEPH A. SACK Mayor
LAURA BRETT
KIRSTIN BUCCI
JULIE KILLIAN
TERRENCE McCARTNEY
RICHARD MECCA
RICHARD SLACK
Councilmembers

ABSENT: None

The meeting was called to order at 8:20 p.m. Mayor Sack announced that the start of the meeting had been delayed because the City Council and School Board had been in executive session at the end of the Joint Meeting of the two boards that was held immediately preceding this meeting.

1. Pledge of Allegiance

Mayor Sack called the meeting to order and invited the Council to join in the Pledge of Allegiance.

2. Roll Call

Mayor Sack asked the City Clerk to call the roll; a quorum was present to conduct official city business.

3. General Announcements by the Council

Announcements were made regarding the Sustainability Committee, Rye Golf Club Elections, Breast Cancer Awareness month and other events and activities that may be of interest to the community.

4. Draft unapproved minutes of the regular meeting of the City Council held September 10, 2014

This agenda item was deferred to the October 22nd meeting.

5. Issues Update/Old Business

There was nothing discussed under this agenda item

6. <u>Continuation of the Public Hearing to change the zoning designation of County-owned property located on Theodore Fremd Avenue and North Street to the RA-5 District to provide for the construction of affordable senior housing</u>

Councilman Slack summarized activity that has occurred since the public hearing was opened in February. He said the Council has most of the information needed, but there are a couple of outstanding issues. A wetlands report has been received, which needs to be reviewed by a wetlands expert, and issues related to density on the site must be explored in order to determine the correct number of units that should be constructed on the site if the zoning change is approved. City Planner Miller reviewed the number of units that have been proposed for the site since it was first considered and said that the City can evaluate impacts from a review of the Environmental Assessment Form (EAF) submitted by the applicant plus the additional information provided as a result of Council questions and a review of the wetlands issues. He suggested the Council consider issuing a Negative Declaration in tandem with the zoning decision. Since the site plan would need to be reviewed by other boards, the Council could consider defining parameters in the SEQRA decision for future Boards to use when considering the application. Mayor Sack said that the County has indicated that they may make infrastructure improvements to the area including relocating a sewer line and traffic and safety improvements. He asked the Council subcommittee consisting of Councilmen Slack and McCartney and Councilwoman Bucci, to work with Corporation Counsel Wilson and City Planner Miller to draft a Resolution for the next Council meeting. There was a discussion regarding whether the SEQRA and zoning decision should be included in the same or separate Resolutions.

Public Comment:

Clark Neuringer, the architect for the project, said that the density issue should be part of the Planning Commission review process and that the Council should focus on the zoning proposal. *Walter Suarak* asked if the location of the site for affordable housing would be subject to attack in the housing settlement. Councilwoman Brett said that the concerns that have been raised have to do with all affordable housing being located in a single area.

Councilman Slack made a motion, seconded by Councilman McCartney and unanimously carried, to keep the public hearing open to the October 22nd meeting.

7. <u>Continuation of Public Hearing to amend local law Article 6, “Council”, Section § C6-2, “Powers and duties”, Article 8 “City Manager”, Section § C8-2, “Powers and duties of City Manager” and Article 12 “Department of Police”, Section § C12-1, “Head of Department; subordinates” of the Charter of the City of Rye to provide the City Council with the authority to approve the appointment, suspension or removal of the Police Commissioner</u>

Mayor Sack introduced this agenda item by saying a letter had been submitted by several former Councilmembers and Mayors in opposition to the proposed Charter Change. He referred to a statement in the letter that said that City Councils already have approval authority over the selection of the Police Commissioner. He said this was not the case but if people already think the Council has this power, why not make the change. He said the Council is not looking to dismantle the City Manager form of government. The impetus is that the law, as written, is not working out. He did suggest that the portion of the draft law that deals with the suspension or removal of the Police Commissioner be removed.

Public Comment:

Former Councilman *John Alfano* spoke in favor of the proposed change saying that the City Manager has too many people reporting to him and the Council should have supervision over key department heads. *Joseph Murphy, Matt Fahey*, who read the entire letter that Mayor Sack had referred to earlier, *Shari Punyon, Thomas Lavan, Linda Lefkowitz, Harvey Geller, Leon Sculti, and Meg Cameron*, who also read a letter from former Mayor John Carey, spoke against the proposed local law. Their comments included the suggestion that any change to the Charter, especially one that would modify the City Manager form of government should be done by Charter Commission or public referendum; questioned why the Police Commissioner position was different from other positions; said making this change makes it look like there is something wrong in the Police Department; and said the Council has a specific function and should not take on too much. *Debbie Reisner*, who said she was representing the League of Women Voters, offered to hold an issue forum on the matter.

The members of the Council thanked the members of the public for their comment and provided their reasons for being in support of the proposed local law, which included: providing approval power for the hiring of the Police Commissioner will not damage the Council and Manager form of government; allowing the Council the power to consent to the City Manager's choice would improve that form of government; the job of Police Commissioner is different because the Police Department impacts residents on a daily basis; the public perception that the Council has the authority to approve the selection of a Police Commissioner needs to be formalized; the authority would be a check and balance, which would allow for minority voices to be heard; and, the Council relies on the advice of Corporation Counsel as to what decisions require a public referendum. Several members of the Council stated that they were now more comfortable with the proposed law with the deletion of the section that dealt with the disciplining or removal of the Police Commissioner.

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to close the public hearing.

Councilwoman Brett made a motion, seconded by Councilwoman Killian, to adopt the following local law:

CITY OF RYE
LOCAL LAW NO. 6 2014

A local law to amend the City Charter of the City of Rye Article 6 "Council", Article 8 "City Manager", and Article 12 "Department of Police" to provide

the City Council with the authority to approve the appointment of the Police Commissioner as follows:

Section 1: Chapter C. Charter.

Article 6. Council

§ C6-2. Powers and duties.

C. The Council shall appoint the City Manager as hereinafter provided and shall appoint a Corporation Counsel or hire an attorney as an independent contractor. Such Counsel or attorney shall be engaged in the practice of law in this state for at least five years immediately preceding his appointment or hiring. The Council shall also have approval authority over the appointment of the Police Commissioner.

Section 2.

Article 8. City Manager

§ C8-2. Powers and duties of City Manager.

B. **Subject to Article 12, Section C.12-1.A,** he shall appoint a City Comptroller, City Clerk, City Engineer, City Assessor, Building inspector, City Marshal, registrar of Vital Statistics and the heads of such other departments as may hereafter be created by the Council. All such officers shall in the performance of their duties be subject to the directions and supervision of the City Manager. Except for the Police Department, he may also appoint all subordinates in the departments headed by such officers, or he may authorize any administrative officer who is subject to his direction and supervision to exercise such power, subject to his approval, with respect to subordinates in that officer's department, office or agency.

C. **Subject to Article 12, Section C.12-1.A,** he shall, when he deems it necessary for the good of the service, suspend or remove any city officer or employee whom he may appoint or employ, except as otherwise provided by law.

I. He may, during the absence or disability of the City Comptroller, City Clerk, City Assessor or the head of any other office or department under his direction and supervision, all of all the powers of such office or department; and also, with the exception of the Police Commissioner, he may designate one of the employees in such office or department as a deputy who shall have the powers and duties of the City Comptroller, City Clerk, City Assessor or the head of such other office or department, as the case may be, during the absence or disability of such officer or during a vacancy in such office or department. With respect to the Police

Commissioner, the Manager shall obtain the consent of the Mayor and City Council.

Section 3.

Article 12. Department of Police

§ C12-1. Head of Department; subordinates.

A. There shall be a Department of Police, the head of which shall be the Commissioner of Police, who shall be appointed by the City Manager, and he shall serve at the pleasure of the City Manager except that the City Manager shall obtain the consent of the Mayor and City Council when appointing, the Police Commissioner. The Commissioner of Police shall have at least the qualifications and experience specified by the Council.

Section 4: Severability clause

Section 5: This local law will take effect immediately on filing in the office of the Secretary of State.

ROLL CALL:

AYES:	Mayor Sack, Councilmembers Brett, Bucci, Killian, McCartney, Mecca and Slack
NAYS:	None
ABSENT:	None

The Local Law was adopted by a 7-0 vote.

8. Continuation of Public Hearing to amend local law Chapter 197, “Zoning”, of the Rye City Code by adding Section 197-15, “Special Permit for Historic Preservation in the B-2 Central Business District” to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council

Councilwoman Brett made a motion, seconded by Councilman Sack and unanimously carried to adjourn the public hearing to the October 22nd meeting.

9. Continuation of Public Hearing to amend local law Chapter 76, “Dogs”, Section §76-5, “Running at large prohibited” and Section §76-6, “When leash required” to establish regulations for the leashing of dogs at Rye Town Park

Councilwoman Brett made a motion, seconded by Councilman Sack and unanimously carried to adjourn the public hearing to the October 22nd meeting.

10. <u>Petition of Old Post Road Associates, LLC to change the zoning designation and amend the Zoning Ordinance for the property located at 120 Old Post Road to a new zone RA-6: Active Senior Resident District to provide for the construction of apartments for active seniors in an age-restricted development</u>

Jonathan Kraut, attorney for Alfred Weisman Real Estate the applicant and owner of the property, made the presentation on behalf of his client. The property is a vacant three-story office building that has plummeted in value over the last five years, receiving tax reductions of approximately 54%. A previous proposal to put a hotel on the property was unsuccessful due to community opposition. Mr. Kraut said that none of the current allowed uses which include public recreation, education, extension of welfare uses and railroad passenger stations, provide a functional use for the property. The applicant is proposing what they consider to be a credible possible use of the property - a 135 unit luxury residential facility for people 55-years and older, with no children allowed - a use which can be created legally through zoning laws. Mr. Kraut requested that the Council declare itself lead agency under SEQRA and refer the petition to the Planning Commission for their review. There was a discussion about whether the Council should declare itself lead agency prior to referring it to the Planning Commission and whether or not the proposal was relevant to the City's Master Plan. City Planner Miller said that just because a Master Plan is old doesn't mean it is not relevant. He said the request is only to change the zoning for one specific area and the process will require an extensive environmental review.

Councilwoman Brett made a motion, seconded by Councilman McCartney and unanimously carried, to adopt the following Resolution:

> **RESOLVED** that the City Council of the City of Rye hereby declares its intention to declare themselves Lead Agency under SEQRA and refers the petition of Old Post Road Associates to change the zoning designation and amend the Zoning Ordinance for the property located at 120 Old Post Road to a new RA-6: Active Senior Resident District to provide for the construction of apartments for active seniors in an age restricted development to the Planning Commission for their review.

11. <u>Summary of the 2015 Budget Process and Consideration of setting the 2015 Budget Workshop schedule</u>

City Manager Culross said that the Budget schedule dates had previously been sent to the Council, but the order of presentations has been amended as follows:

Wednesday, November 5th:	Presentation of the Budget
Wednesday, November 12th:	Capital Projects Fund
	Building & Vehicle Fund
	Department of Public Works

Monday, November 17th:	Public Safety: Police and Fire Recreation Golf Enterprise Fund Boat Basin Enterprise Fund Rye TV Special Review Fund
Wednesday, November 19th:	Rye Free Reading Room Contract Service Agencies
Wednesday, December 3rd:	Public Hearing on the Budget
Wednesday, December 17th:	Adoption of the Budget

12. Residents may be heard on matters for Council consideration that do not appear on the agenda

Jim Amico spoke about issues related to the Police Department including the present and former Police Commissioners; the role of the department in enforcement of the speed reduction adopted for "the loop"; and the lack of police presence in the schools. He also spoke about Brian Dempsey, Chair of the Traffic and Pedestrian Safety Committee, and the fact that his firm has received contracts from the City for traffic engineering work. Corporation Counsel Wilson said that the question of Mr. Dempsey's job had been reviewed by the Ethics Committee prior to his being appointed to the Board. *Anne McCarthy* said there was an appearance of impropriety and maybe Mr. Dempsey should be dealt with as a consultant. Members of the Council suggested that it may be time to reconsider policies regarding volunteer positions.

Ray Tartaglione thanked the Council for visiting Hen Island and said he wanted the solution for Hen Island to be the best for the residents of Rye, which are not always aligned with the interests of the County. Mayor Sack said that no final determination has been made yet regarding Hen Island.

13. Consideration of a request by the Leukemia and Lymphoma Society for use of city streets on Saturday, November 1, 2014 from 5:00 p.m. to 9:00 p.m. for their annual *Light the Night Walk* event

Councilwoman Killian made a motion, seconded by Councilwoman Brett and unanimously carried, to adopt the following Resolution:

> **RESOLVED,** that the City Council of the City of Rye hereby approves the request of the Leukemia and Lymphoma Society for use of city streets on Saturday, November 1, 2014 from 5:00 p.m. to 9:00 p.m. for their annual *Light the Night Walk* event.

14. Consideration of a request by the Recreation Department to hold their 38th annual *Turkey Run* on Saturday, November 29, 2014 during Thanksgiving Weekend

Councilwoman Brett made a motion, seconded by Councilwoman Killian and unanimously carried, to adopt the following Resolution:

> **RESOLVED**, that the City Council of the City of Rye hereby approves the request of the Recreation Department for the use of city streets to hold their 38th annual *Turkey Run* on Saturday, November 29, 2014 during Thanksgiving Weekend.

15. Consideration of a request by the Rye Merchants Association to close a portion of Purchase Street on Sunday, November 30, 2014 from 10:00 a.m. to 3:00 p.m. for the *Mistletoe Magic* event.

Councilwoman Killian made a motion, seconded by Councilwoman Brett and unanimously carried, to adopt the following Resolution:

> **RESOLVED**, that the City Council of the City of Rye hereby approves the request of the Rye Chamber of Commerce to close a portion of Purchase Street on Sunday, November 30, 2014 from 10:00 a.m. to 3:00 p.m. for the *Mistletoe Magic* event.

16. Miscellaneous Communications and Reports

There was nothing reported under this agenda item.

17. New Business

There was nothing reported under this agenda item.

18. Adjournment

There being no further business to discuss Councilwoman Killian made a motion, seconded by Councilwoman Brett and unanimously carried, to adjourn into executive session to discuss personnel matters and not return to the regular meeting at 11:35 p.m.

Respectfully submitted,

Dawn F. Nodarse
City Clerk

CITY COUNCIL AGENDA

NO. 5 DEPT.: City Council DATE: October 22, 2014
CONTACT: Mayor Joseph Sack

AGENDA ITEM: Issues Update/Old Business

FOR THE MEETING OF:
October 22, 2014
RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That an update be provided on outstanding issues or Old Business.

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND:

CITY COUNCIL AGENDA

NO. 6 DEPT.: Planning DATE: October 22, 2014

CONTACT: Christian K. Miller, AICP, City Planner

AGENDA ITEM: Continuation of the Public Hearing to change the zoning designation of County-owned property located on Theodore Fremd Avenue and North street to the RA-5 District to provide for the construction of affordable senior housing.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER 197
SECTION 3

RECOMMENDATION: That the City Council should continue its environmental review under SEQR, conduct and consider closing the public hearing and consider conditions to include in a potential negative declaration. Closing the hearing and adoption of a determination of significance is required before a super majority vote on the proposed zoning petition.

IMPACT: ☒ Environmental ☐ Fiscal ☒ Neighborhood ☐ Other:

BACKGROUND: The petitioner, Lazz Development/Pawling Holdings, seeks an amendment to the City Zoning Map to change the zoning district designation of an approximately 2.0-acre property located on Theodore Fremd Avenue and North Street. The request would change the zoning of the Westchester County-owned property from the B-6, *General Business*, District and the B-1, *Neighborhood Business*, District to the RA-5, *Senior Citizen's Apartment*, District. The petitioner is seeking to construct fifty-four (54) units of age-restricted housing located in two buildings. The proposal would be limited to those over age 55 and consist of 44 one-bedroom units and 10 two-bedroom units. The proposed units would also be affordable and 27 of these units would count towards Rye's contribution to the 750 units of fair and affordable housing Westchester County is obligated to provide as part of a stipulation of settlement with the U.S. Department of Housing and Urban Development (HUD). It is noted that the proposed zoning change is the same district as adopted by the City Council in the mid-1980s to accommodate the nearly 100 units of affordable senior housing at 300 Theall Road. The matter was referred to the City Planning Commission and a recommendation memo was provided to the City Council. Westchester County has provided its advisory comments on the matter.

(continued)

Additional information has been provided by the petitioner; these documents are available on the City website* and include the following:

1 – Proposed Conceptual Site Plan

2 – Letter from Westchester County Department of Planning / Department of Health

3 – Aerial photos of site: 1925 through 2013

4 – Soil testing results: Ralph G. Mastromonaco, P.E., P.C.

5 – Soil test Technical Report: York Analytical Laboratories, Inc.

6 – Full Environmental Assessment Form

7 – Traffic Analysis and Commentary: Ralph G. Mastromonaco, P.E., P.C.

8 – City of Rye Police Department Incident Reports

9 – Team Environmental Consultants, Inc.: Phase 1 Environmental Site Assessment Report

Theodore Fremd Property Taxes

Documents obtained from Westchester County through a FOIL request

08/04/14 – memo from Matthew Carroll, P.E. / Tenen Environmental providing a Review of Environmental Conditions

08/04/14 – memo from Matthew Carroll, P.E. / Tenen Environmental providing a Review of the Environmental Assessment Form

08/28/14 – memo from Ralph G. Mastromonaco, P.E., P.C. providing a revised Environmental Assessment Form and responses to questions posed by City Planner Christian K. Miller, AICP and consultant Matthew Carroll, P.E.

Presentation at September 10, 2014 City Council meeting by Matthew Carroll, P.E.

DRAFT Remedial Investigation Report of Former Rye Gas Works Site by AECOM July 2013

DRAFT Remedial Investigation Report – Addendum by AECOM March 2014

Theodore Fremd Groundwater Sampling Results by Tenen Environmental

Theodore Fremd Monitoring Well Sampling Results by Tenen Environmental

Theodore Fremd Wetland Report by Tim Miller Associates, Inc.

** Documents are available at www.ryeny.gov under Digital Documents in folder “Theodore Fremd Senior Housing Zoning District Change”

Environmental Review

Proposed Theodore Fremd Senior Housing
Zoning District Change

August City Council Meeting

- Tenen Environmental presented two memorandums to the Rye City Council to support their determination of whether significant adverse impacts are present at the 150 North Street property
    1. status of the environmental remediation at the site and upgradient gasoline service stations
    2. review of the Environmental Assessment Form (EAF) presented by the Applicant

Initial Recommendations

- The recommendations of the two memorandums were as follows:
  1. incorporation of two conservative remedial design considerations into any future development
     - <u>soil vapor intrusion mitigation system</u> to vent air beneath the building slab and provide a vapor barrier or waterproofing beneath the building slab
     - <u>remedial cap</u> consisting of the building slab, paved areas and/or soil to prevent direct contact with existing soil
  2. Applicant to revise EAF and provide additional information

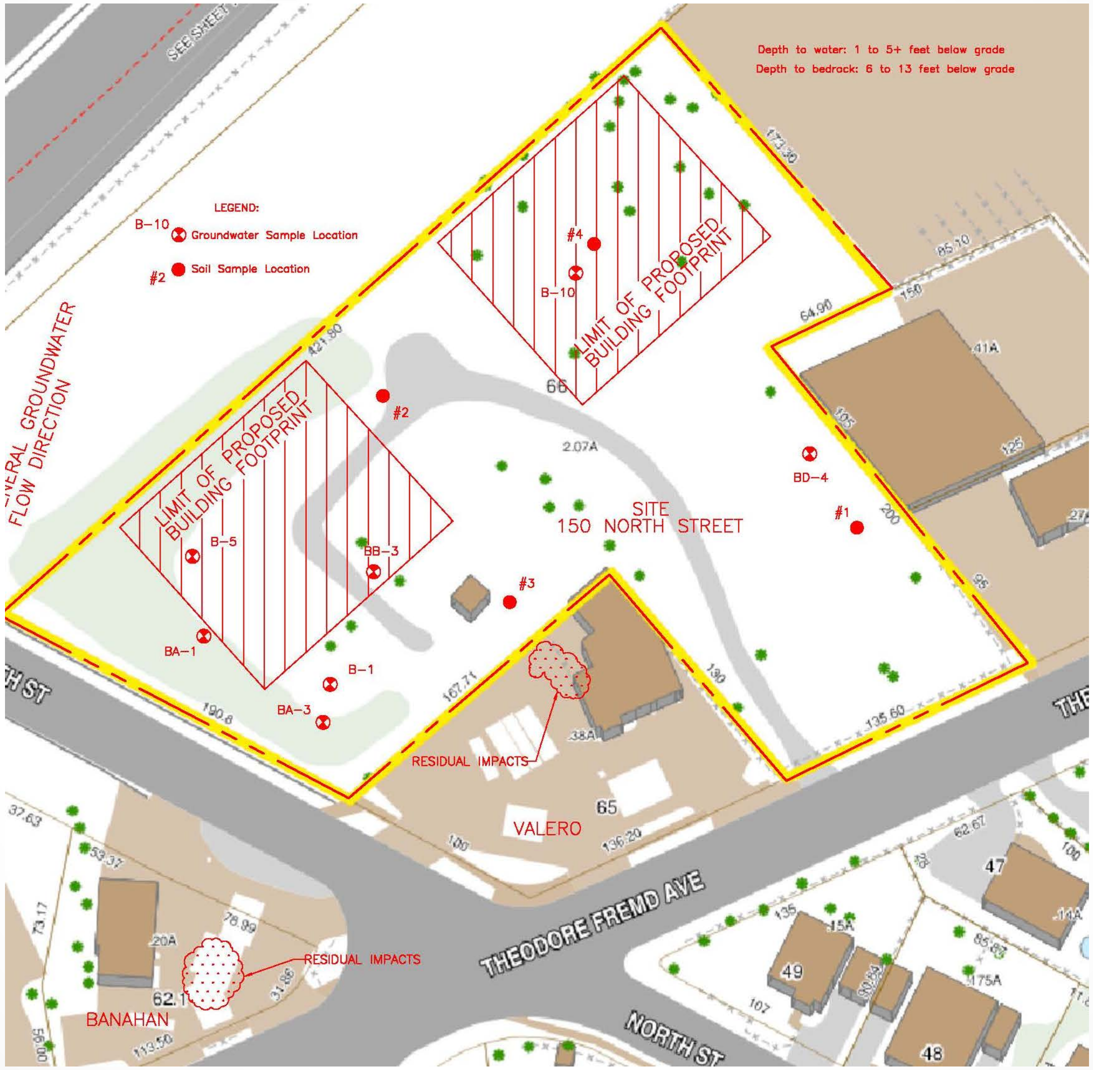
Feedback from Council and Public

- Based on the feedback from the August City Council meeting, Tenen was requested to complete the following:
  1. prepare an "apples-to-apples" comparison of historic groundwater results
  2. complete a site inspection
  3. review future response from Application with regard to the EAF

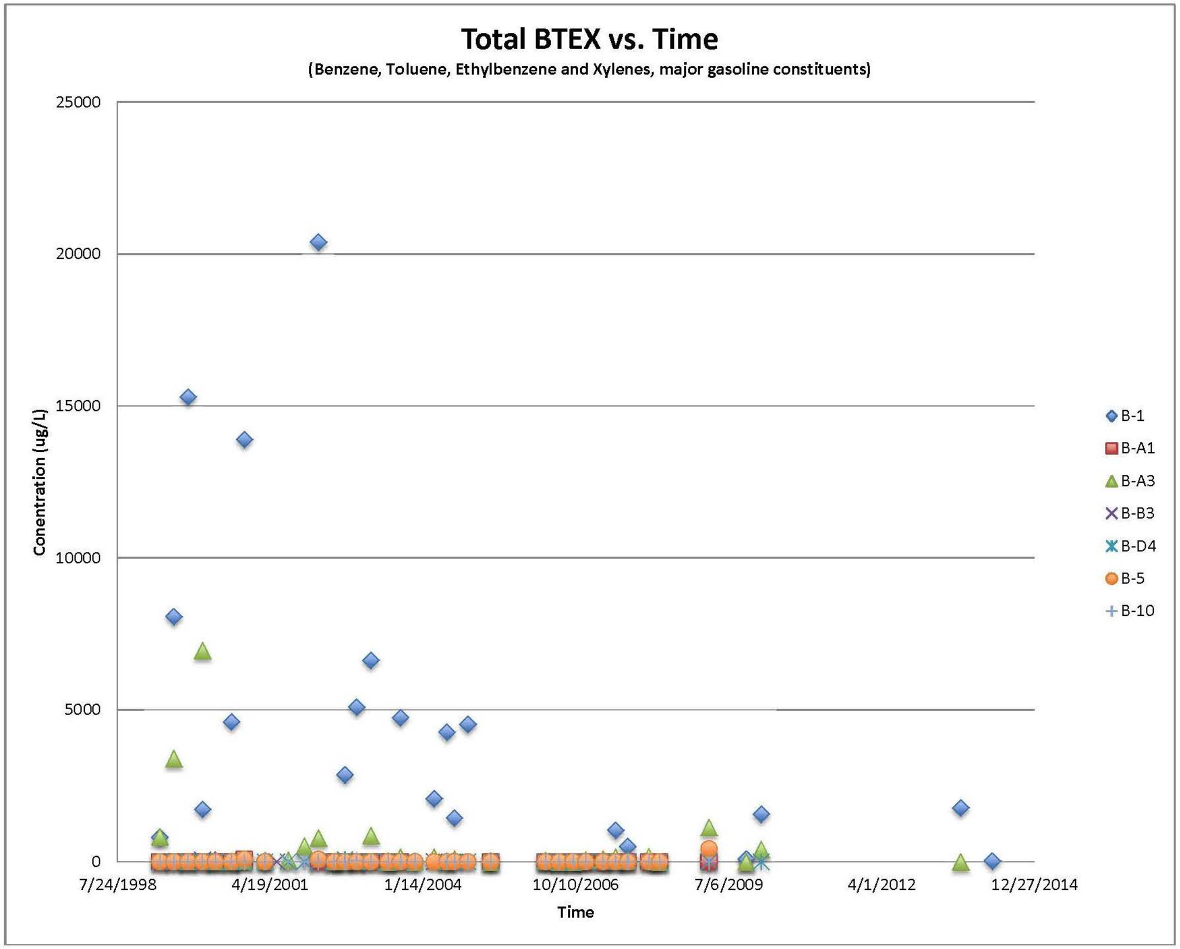
Historic Groundwater Concentrations

- Tenen reviewed all available historic groundwater data for the site (August 1999 through March 2014)
- Graphs for major gasoline constituents were prepared (see next two slides). Note that these are consistent with the narrative in our memorandum
- Major findings include:
  - Groundwater concentrations have decreased over time, with the largest decreases prior to 2005
  - The highest detected concentrations have been from samples in wells B-1, BA-3 and B-5
  - The concentrations detected in the most recent samples (March 2014), from wells B-1 and BA-3, were all below State Class GA drinking water standards, with the exception of one compound in well B-1
  - Contaminant trends and most recent data are consistent with memorandum recommendations

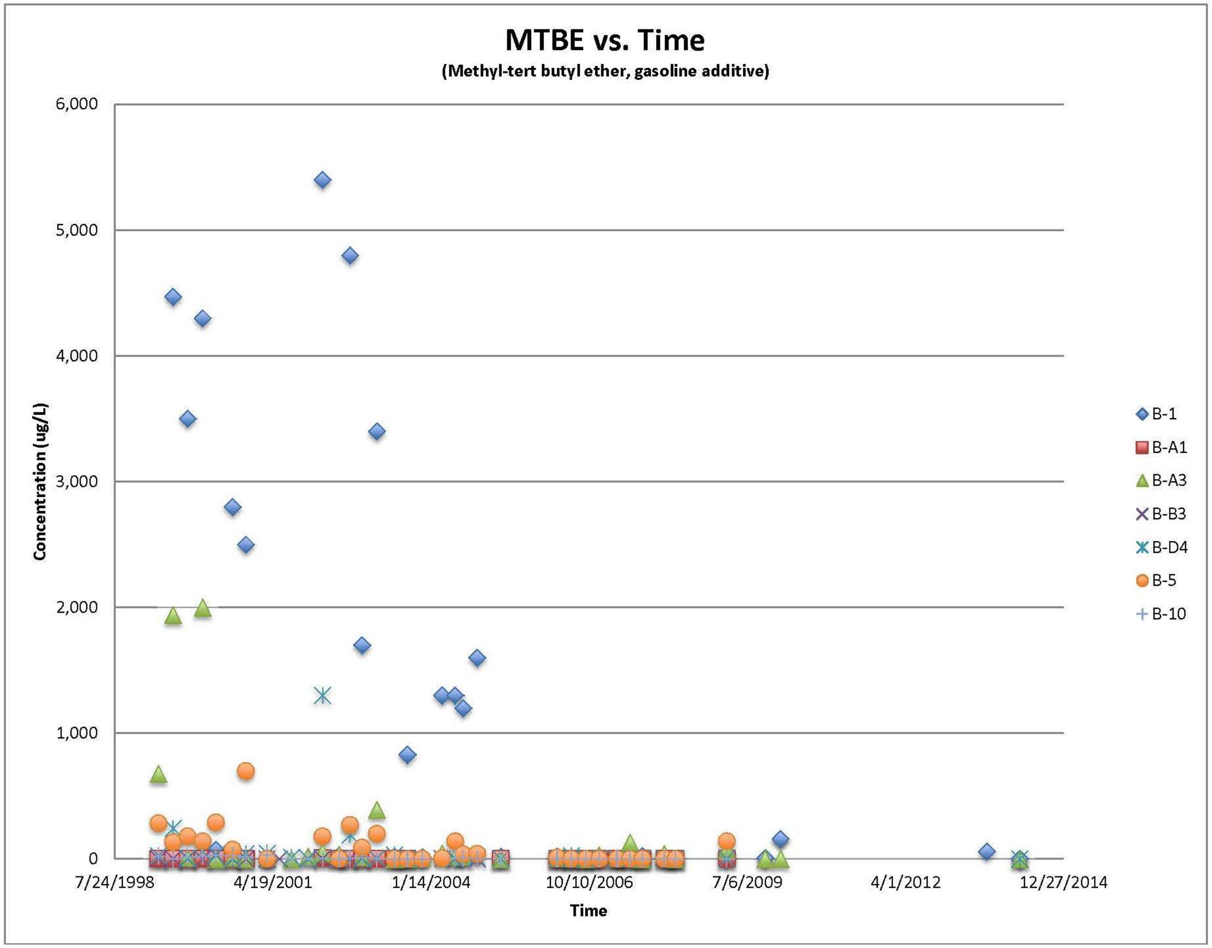
Sample Locations



Historic Groundwater Concentrations - BTEX

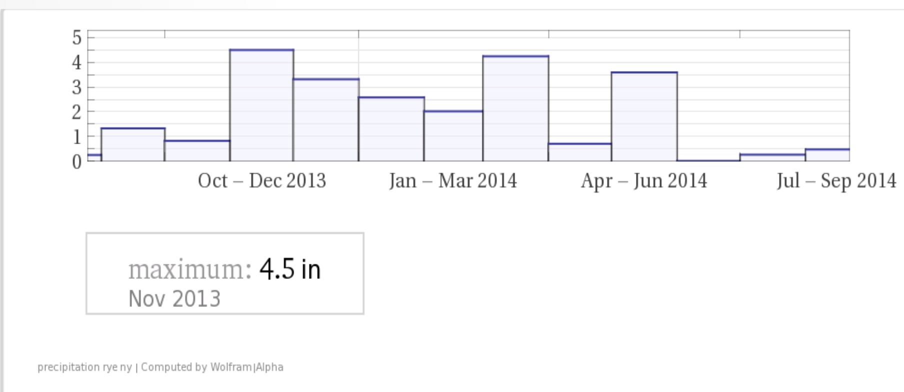


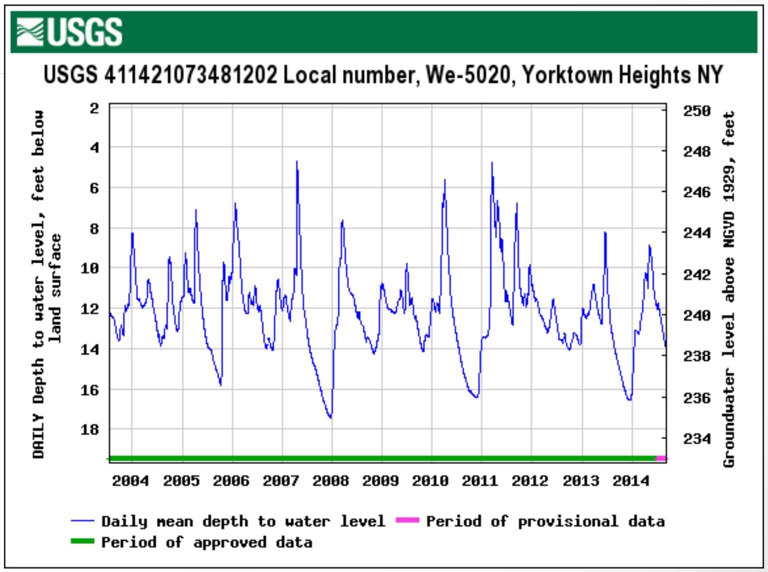
Historic Groundwater Concentrations - MTBE



Additional Groundwater Sampling and Site Visit

- In order to continue the historic record, Tenen Environmental attempted to collect an additional round of groundwater samples from wells B-1, BA-3 and B-5
  - the latitude/longitude of the wells was recorded and an updated figure is provided (see slide)
  - groundwater was not encountered in the monitoring wells. This is due to a lack of rain, which has lowered the water table





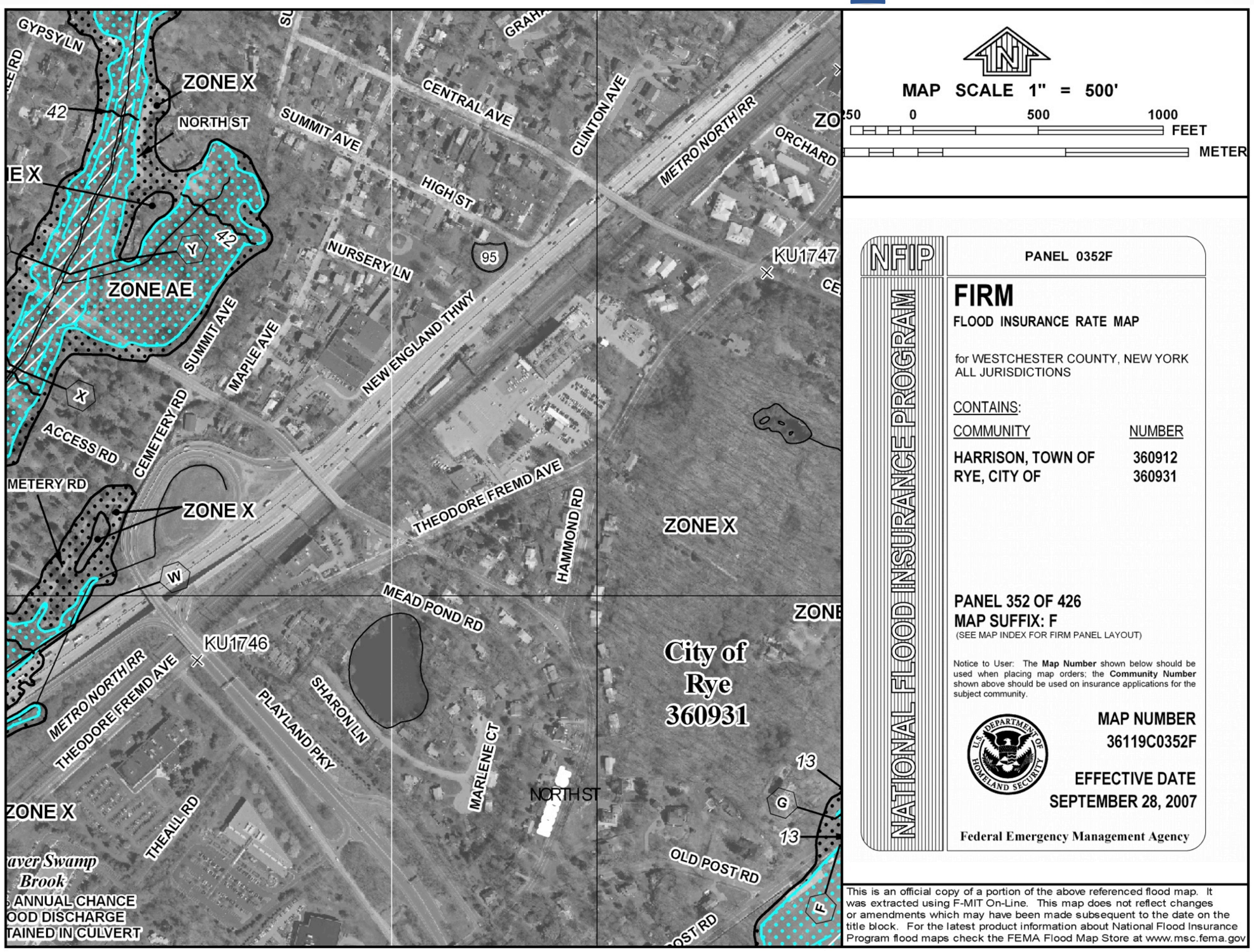
Summary of Groundwater Sampling and Site Visit

- The site layout and characteristics are consistent with initial recommendations
- Given the known soil and groundwater data, our conclusions remain the same
- Appropriate to collect additional samples if possible in order to continue historic record
  - Tenen will continue to monitor the regional precipitation and depth to groundwater, and will advise Council if conditions change to the degree that samples can be collected

Review of EAF

- Tenen reviewed the April 4, 2014, Full EAF provided by the Applicant.
  - comments were generally related to requests for documentation, clarifications and incompleteness. The City Planning Department also provided comments in a separate memorandum
  - Applicant provided a revised EAF dated August 27, 2014 which addressed the majority of Tenen Environmental's comments
  - significant items
    - FEMA flood plain
    - Soil survey
    - Sole source aquifers
    - Endangered species
    - Wetlands determination
    - Adjoining historic MGP site
    - Archaeological

FEMA Flood Insurance Rate Map

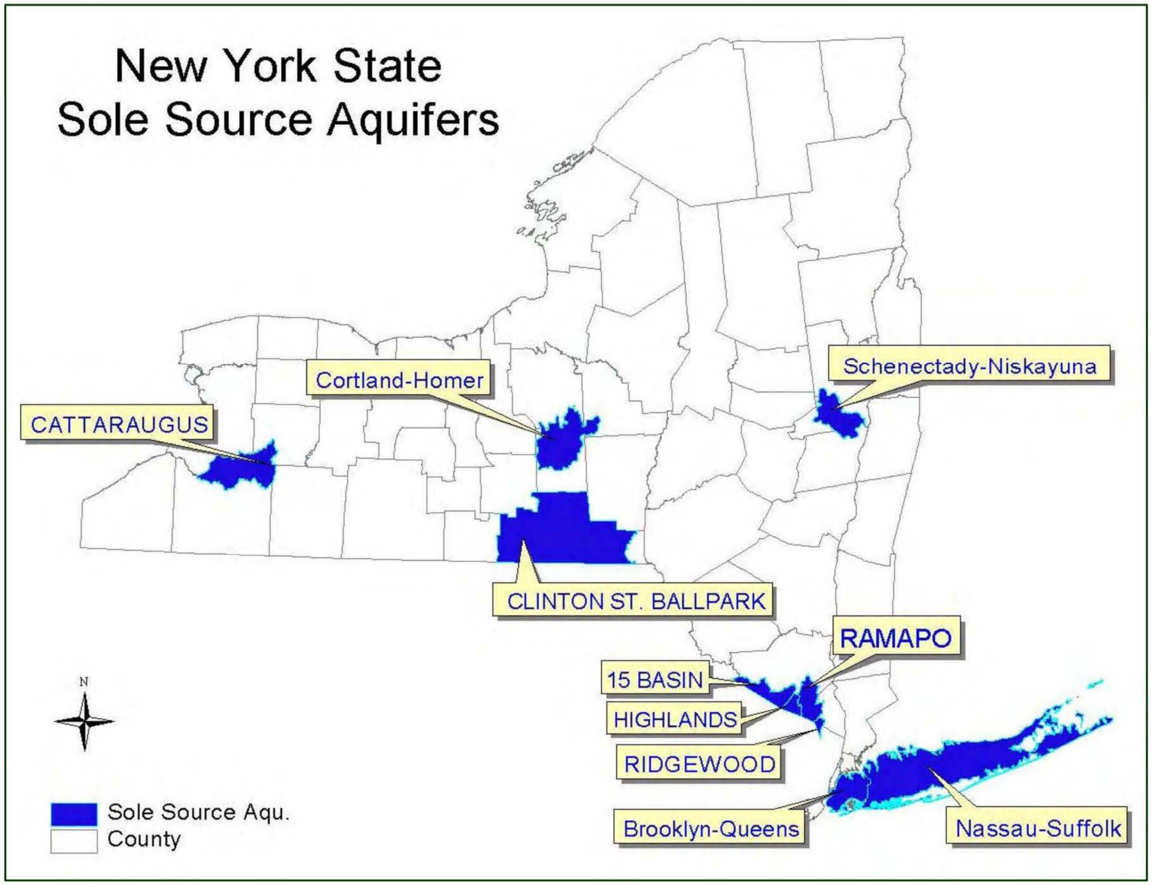


Soil Survey

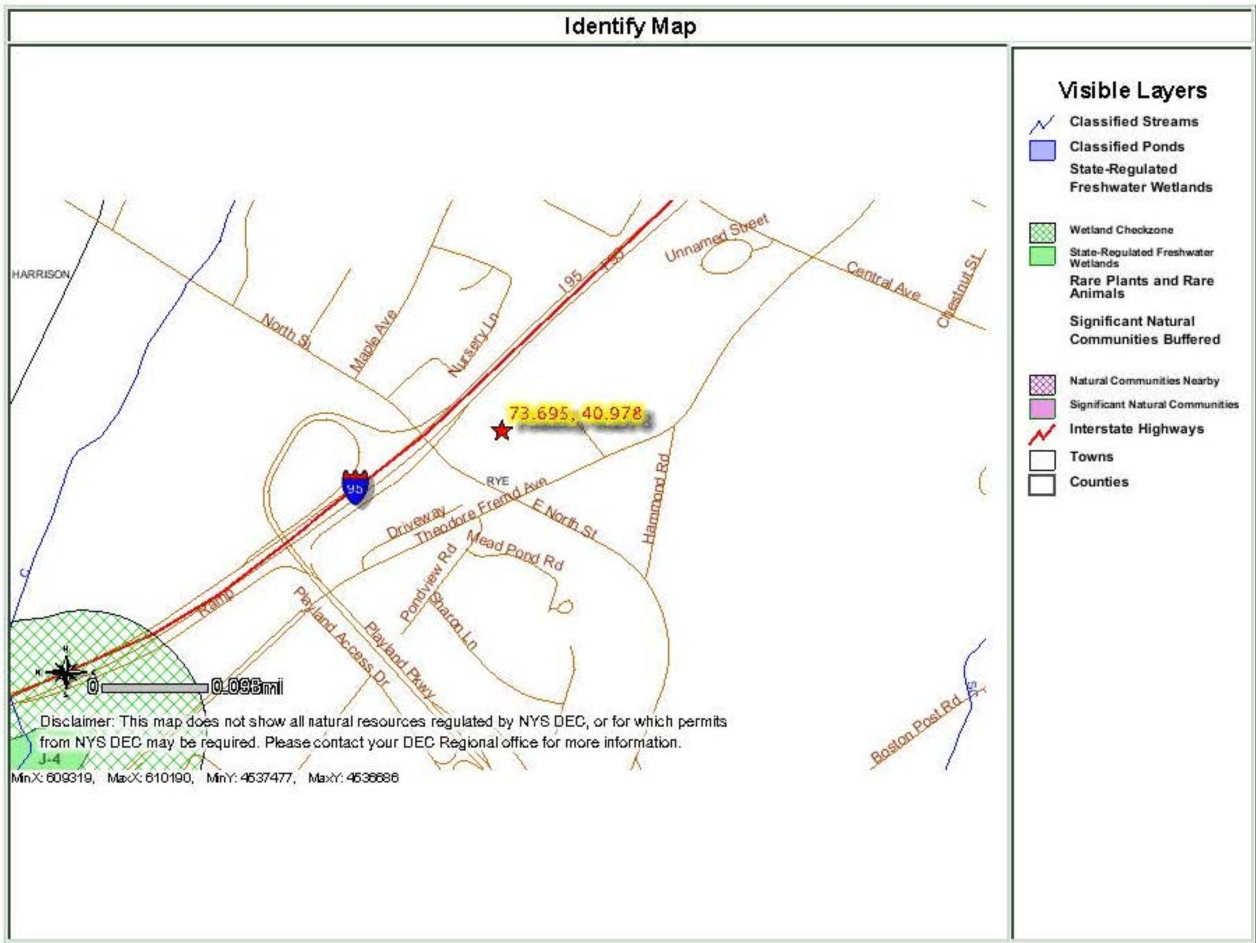
Udorthents, smoothed: soils altered by cutting and filling, mainly in and adjacent to urban areas, highways and borrow areas, sand to silt loam. Group B: <u>moderate infiltration rates </u>even when thoroughly wetted... <u>moderately well drained to well drained soils</u> with… a <u>moderate rate of water transmission</u>. To be addressed in required Stormwater Pollution Prevention Plan (SWPPP).

Sole Source Aquifers

Figure 7.1 Sole Source Aquifers in New York State



State Endangered Species, Surface Water, Wetlands



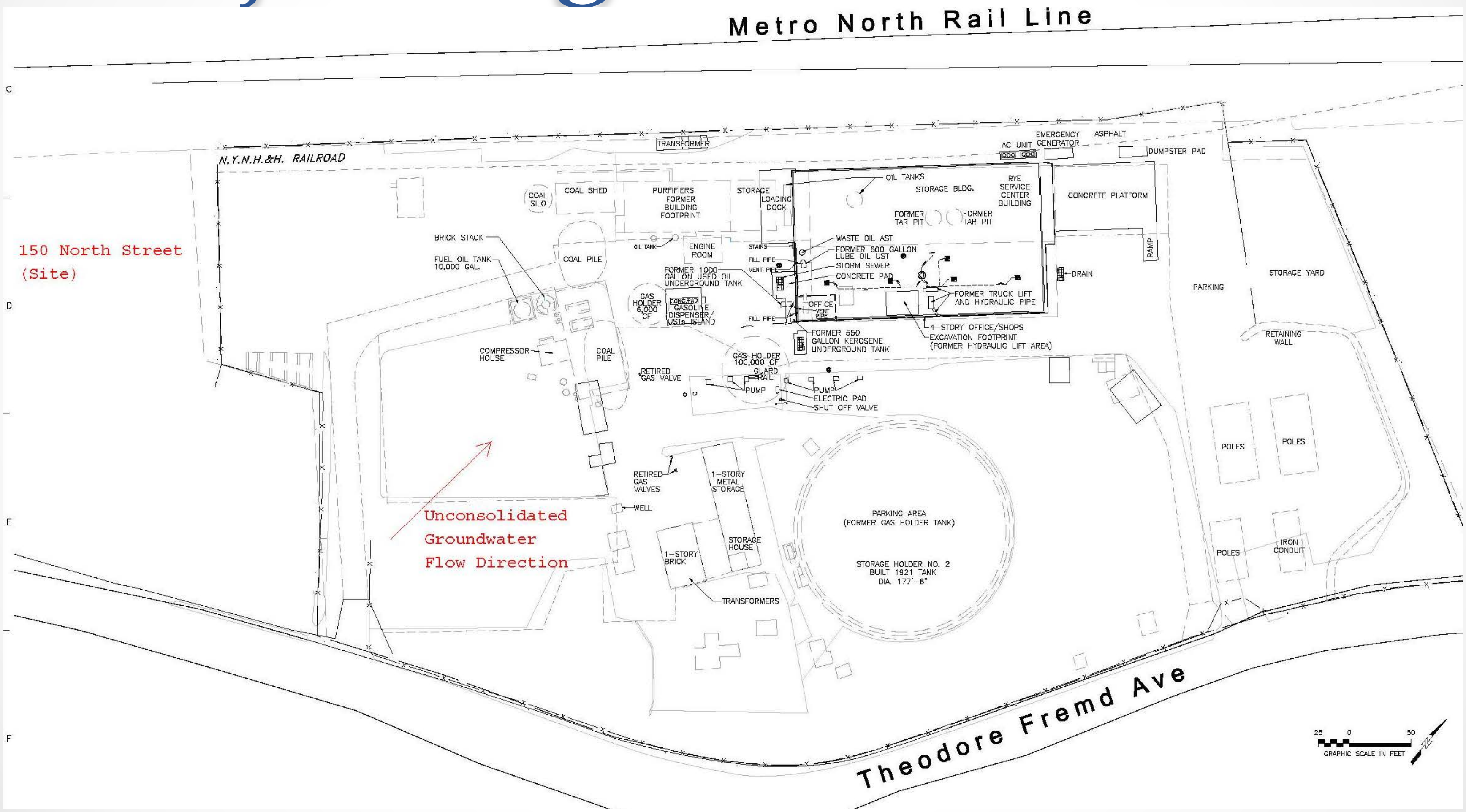
State Endangered Species, Surface Water, Wetlands

- The Environmental Resource Mapper (previous slide) did not show significant natural communities, surface waters (ponds or streams) or wetlands at the site
- Additional information is required:
  - Applicant to provide response from New York Natural Heritage Program (+/- 20 days from August 28, 2014 request)
  - Applicant to provide wetlands survey by certified soil scientist to determine if Federal or local wetlands are present

Adjoining Historic MGP

- Adjoining Consolidated Edison (Con Ed) site was formerly used as a Manufactured Gas Plant (MGP). The State (NYSDEC) has required all known MGP sites to be investigated and, if required, remediated
- Tenen has received a FOIL response from NYSDEC
  - the majority of the investigation has been completed. NYSDEC required an additional work plan to address minimal data gaps
  - based on a review of the documents, MGP impacts are present but are not a significant adverse impact to 150 North Street (current or future)
    - note that the Con Ed is hydraulically-downgradient of the 150 North Street site

Adjoining Historic MGP



Archaeological

- In their response, the Applicant indicated that the owner, Westchester County, has completed archaeological investigations for the site
- These should be provided for review by the Council

Summary of EAF

- Applicant should address administrative comments to be provided by Tenen Environmental
- In particular, the following three items should be provided:
  - wetlands survey by a certified soil scientist
  - endangered species response from New York Natural Heritage Program
  - referenced archaeological reports from Westchester County

150 North Street – Rye

AECOM Environment

Prepared for:
Consolidated Edison Company of New York, Inc.

Prepared by:
AECOM
Chestnut Ridge, NY
60281931.810
July, 2013

DRAFT Remedial Investigation Report
Former Rye Gas Works Site
Rye, New York

VCP Index No. D2-0003-02-08

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Prepared By Anna Sullivan

Reviewed By Eleanor Vivaudou, P.E.

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List of Acronyms

AGS	Advanced Geological Services
Air Toxics	Air Toxics Limited, Inc.
ASP	Analytical services protocol
ATV	Acoustic televiewer
AWQSGV	Ambient Water Quality Standards or Guidance Values
BTEX	Benzene, toluene, ethylbenzene, and xylene
C&D	Construction and debris
CAMP	Community Air Monitoring Plan
cf	cubic feet
CNG	Compressed natural gas
COC	Constituent of concern
ConEdison	Consolidated Edison Company of New York, Inc.
CRDL	Contract required detection limit
DNAPL	Dense nonaqueous phase liquid
DUSRs	Data Usability Summary Reports
ECI	Environmental Concepts, Inc.
EDR	Environmental Data Resource, Inc.
EM	Electro-magnetic
FEMA	Federal Emergency Management Agency
FOIA	Freedom of Information Act
GPR	Ground penetrating radar
HASP	Health and Safety Plan
HPFM	Heat pulse flow meter
HSA	Hollow stem auger

ICP	Inductively coupled plasma
IDW	Inves tigative Derived Waste
LCSs	Laboratory control standards
mg/m^3	Milligrams per cubic meter
MGP	Manufactured Gas Plant
MS/MSD	Matri x spike/matrix spike duplicate
MTBE	Methyl-ter t-butyl ether
NAD83	1983 North American Datum
NAPL	Nonaqueous phase liquid
NAVD88	1988 North American Vertical Datum
NCP	National Contingency Plan
NE	Northeast
NGVD29	1929 National Geodetic Vertical Datum
NNE	North – northeast
NTU	Nephelometric turbidity units
NW	Northwest
NYCRR	New York Code of Rules and Regulations
NYEG	NYEG Drilling
NYSDEC	New York State Department of Environmental Conservation
NYTA	New York Transit Authority
OLM	Oil-like material
OTV	Optical Televiewer
PAHs	Polycyclic (polynuclear) aromatic hydrocarbon
PCBs	Plo ychlorinated biphenyl
PEC	Paragon Environmental Construction

PID	Photoionization detector
PPE	Personal protective equipment
ppm	Parts per million
PSC	Public Storage Commission
QAPP	Quality Assurance Project Plan
RCP	Reinforced concrete pipe
RCUSCOs	Restricted Commercial Use Soil Cleanup Objectives
RETEC	The RETEC Group
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
RPDs	Relative percent differences
RQD	Rock quality design
SC	Site Characterization
SCWP	Site Characterization Work Plan
SE	Southeast
SIR	Supplemental Remedial Investigation
Site	Rye Service Center, 178 Theodore Fremd Avenue, Rye, New York
STARS TCLP	Spill technology and remediation series toxicity characteristic leachate procedure
SVOC	Semi-volatile organic carbons
TAL	Target analyte list
TICs	Tentatively identified compounds
TPH	Total petroleum hydrocarbons
URUSCOs	Unrestricted Use Soil Cleanup Objectives
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey

UST	Underground Storage Tank
VOCs	Volatile organic carbons
WNW	West – northwest

Executive Summary

As required under the terms of Voluntary Cleanup Agreement Index No. D2-0003-02-08 by and between the New York State Department of Environmental Conservation (NYSDEC) and Consolidated Edison Company of New York, Inc. (Con Edison), this report presents the results and findings of the site characterization (SC) and remedial investigation (RI) that were performed on Con Edison's behalf by AECOM for the Rye Gas Works former Manufactured Gas Plant (MGP) operations at the Rye Service Center (the site) located at 178 Theodore Fremd Avenue in Rye, New York. Except as otherwise indicated in this report, the SC and RI were conducted in accordance with the NYSDEC-approved SC Work Plan (SCWP) dated August 2008 (AECOM, 2008) and the NYSDEC-approved RI Work Plan (RIWP) dated October 2010 (AECOM, 2010).

The SC field program was initiated at the former Rye Gas Works site in June 2009 and was completed in March 2010. MGP impacts were noted in the overburden, bedrock, and overburden and bedrock groundwater during the SC activities. Therefore, the SC data were compiled and used to develop a scope of work to complete the RI of the site. The RI field program was initiated in December 2011 and completed in April, 2012 with the exception of the investigation locations situated north-northeast of the site where access was not granted by the property owner. This document presents the results of the combined SC and RI activities performed for the Rye Gas Works former MGP. Several investigations were conducted at the site relative to the existing and former underground storage tanks (USTs) and related structures, the former hydraulic lift system within the facility garage building and the current USTs containing gasoline. This RI Report also incorporates the data from these other environmental investigations.

The Con Edison Rye Service Center (former Rye Gas Works) is located in Rye, New York and is utilized by Con Edison for the maintenance and dispatching location for their fleet of service vehicles. The facility occupies approximately 9 acres and includes a mix of office, shop, and utility space surrounded by open parking lots and storage areas, diesel/gasoline refueling pumps, compressed natural gas (CNG) storage/refueling pumps, and grassy, vegetated areas. The site is surrounded by a fence with two locked gate entrances on Theodore Fremd Avenue, one of which is controlled by a security guard during hours of operation. The site is located in a mixed residential and commercial area of Rye.

Prior to the construction of the MGP, a portion of the site was used as a nursery. The MGP site operated from about 1887 until sometime around 1926, a period of approximately 39 years, and produced water gas using the Wilkinson-Kennedy process. Following cessation of MGP operations, the site was used for gas distribution operations and a service center. The site continues to be used as a service center by Con Edison.

Residuals associated with MGP processes include tar (containing volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and phenolics), purifier residuals, ammonia residuals, and clinker. In addition to residuals produced, feedstocks to the process, including gas oil used in the carbureted water gas process, have the potential to remain in the subsurface. Residuals associated with the use of the site as a service center may include petroleum products (oil & grease, gasoline, diesel fuel, fuel oil), automotive products (e.g., coolant, motor oil, batteries, etc.), and solvents used to clean equipment parts. Additionally, creosote may be associated with pole storage and dielectric fluid and polychlorinated biphenyls (PCBs) may be associated with transformer storage on the site.

Environmental investigations have also been performed at 180 Theodore Fremd Ave, south of the site. These investigations indicate that diesel and gasoline impacts were noted in soil and groundwater at the location between 1998 and 2008.

The highest surface elevation on site is at the top of the rock outcrop situated adjacent to the parking area in the eastern portion of the site where the former 3 million cubic feet (cf) gas holder was situated. The top of this outcrop is approximately 85 ft above the North American Vertical Datum of 1988 (NAVD88) and the adjacent parking area is at approximately 70 ft NAVD88. The land surface slopes to the east, north, and west from this area to an elevation of approximately 60 ft NAVD88 along the western site boundary adjacent to the railroad and along the northern site boundary. Individual rock outcrops across the site are occasionally present and at a higher elevation than the surrounding ground surface. A small intermittent drainage swale is situated adjacent to the northeast corner of the site.

The majority of the site is paved or covered with buildings and surface water from precipitation events is collected in onsite storm drains. There is a storm sewer running along the east side of the service center building that drains the parking lot into the sewer.

Three surface water bodies are at or within approximately 1,500 feet of the site. The nearest surface water body is Mead Pond 1,000 feet southwest of the site. The Beaver Swamp Brook is located approximately 1,500 feet west of the site and Blind Brook is located approximately 1,500 feet east of the site.

Public water supply is provided in the City of Rye by Westchester Joint Water Works. Westchester Joint Water Works purchases their water from the New York City water system which derives its supply from surface water reservoirs. The Westchester Joint Water Works does not utilize wells and groundwater for the public water supply. The presence and status of domestic wells in the vicinity of the site was researched as part of the SC. An inquiry to Westchester County regarding drinking water wells in Rye, New York resulted in a response from the county to NYSDEC that the county has no knowledge of any private drinking water wells in Rye. Therefore, additional private water well research was not performed. To further evaluate the potential presence and status of domestic wells in the vicinity of the Rye former Gas Works Site continuous water level monitoring was performed for one week using pressure transducers in two bedrock boreholes to evaluate whether other bedrock wells are active and pumping nearby. The data indicate some evidence of recharge from precipitation and possible tidal effects, but distinct changes caused by nearby pumping wells are not evident.

Three geologic units identified beneath the site include fill, glacial till and bedrock. The overburden beneath the site is comprised of fill and glacial till. The fill is discontinuous across the site and includes sand and silt, gravel, cobble, concrete, brick, glass, and some piping and wire. Fill was found between 0 and approximately 8 ft bgs and is generally thicker within and adjacent to former structures such as the below grade gas holders. The till is generally comprised of silty sand with varying amounts of cobble/gravel and is sometimes dense. The fill is frequently difficult to distinguish from the underlying till unless it contains anthropogenic material.

The overburden ranges in thickness from 0 to approximately 18 feet at the site. The overburden is thickest in the southern corner of the site where it was measured to be 16 feet thick and towards one portion of the northwestern-western edge of the site where it was measured to be 18 feet thick. Based on the site topography, bedrock outcrops, and the overburden thickness northwest of Interstate 95 (I95) it appears that the overburden is continuous from the northwestern edge of the site across I95 to the City of Rye Park. Bedrock outcrops are present north and south of the site on both sides of I95 indicating that the overburden thins and/or is absent in these directions.

Published geologic mapping (Geologic Map of New York, Lower Hudson Sheet; bedrock geology layer in New York State GIS) shows that the site is underlain by the Hartland formation, described as "basal amphibolites overlain by pelitic schist" (Geologic Map of New York). Several bedrock outrcops in the site vicinity were evaluated during site investigations. The bedrock lithology is generally consistent, with a range of variations, for all outcrops observed, and the lithology is consistent with the published description for the Hartland Formation schist (no amphibolite was observed). The bedrock consists of light gray to dark gray mica schist, with varying amounts of muscovite and biotite and occasional quartz veins. Metamorphic foliation generally strikes north-northeast (NNE) to northeast (NE) (10 to 40 degrees east of true north) and is vertical to steeply dipping (either to the northwest [NW] or the southeast [SE]). West-northwest (WNW) to NW-striking fractures that cross-cut foliation are fairly common and generally strike from 40 to 90 degrees west of true north.

Bedrock crops out at several locations across the site and in general the top surface of bedrock dips to the north-northwest across the majority of the site. The top of bedrock in the southern portion of the site dips to the south from the outcrops in the southern site area towards Theodore Fremd Ave. The top of bedrock in the northeastern portion of the site dips to the northeast from the large outcrop near the parking area and former large gas holder towards Theodore Fremd Ave.

Subsurface bedrock investigations were performed at seventeen locations, 11 of which were cored. Core observations are generally consistent with published bedrock descriptions and indicate that the predominant lithology is biotite schist with varying amounts of quartz, some pegmatite and quartz veins. Borehole geophysical surveys were performed in each bedrock borehole and indicate that most bedrock fractures are low angle, dip moderately (50 to 75 degrees) to the northwest, or dip moderately to the southeast. However, almost the full range of dips (0 to 85 degrees) is present. Foliations and veins always dip to the northwest or the southeast (strike NE/SW) and dip moderately to steeply. It should be noted that a vertical borehole provides a data set that is statistically biased in favor of low angle fractures and that steeply undercounts steeply dipping fractures. Because the outcrop observations noted that many NE or NNE striking fractures coincide with foliation, outcrop and bedrock fracture data are generally consistent.

In summary, bedrock beneath the site and northwest of the site consists of biotite schist with varying amounts of quartz and occasional pegmatite. The rock is variably fractured, with the most common fracture orientations NE to NNE (often coinciding with metamorphic foliation) and steeply dipping and NW-trending fractures of varying dip angle. Some of the NE-trending fractures likely intersect more than one NW-trending fracture, based on fracture length and spacing measurements.

Fourteen overburden monitoring wells were installed at the site during previous investigations, the SC and the RI. Groundwater is present in the overburden, where the overburden is present in sufficient thickness, at depths ranging between approximately 2.7 and 10 ft bgs. Groundwater flow in the overburden at the site is to the northwest. A more northerly component to the groundwater flow direction was evident when the groundwater elevation was slightly lower in April 2012 relative to the March 2010 elevation measurements.

An under drain system consisting of 6-inch perforated pipe in a gravel lined trench is located beneath the I95 median strip and below the outer edges of the northbound and southbound travel lanes. The bottom of the under drain is approximately 4 feet below surface grade. The under drains flow into the stormwater conveyance system northwest of the site. During periods of high water table, the under drains may intercept some groundwater flowing from the site. Since the under drains would only penetrate the very top of the groundwater within the overburden, the majority of the overburden groundwater flow would not be intercepted. The bottom of the 18 inch storm sewer running parallel to the site at the edge of the north bound travel lane is below the water table, therefore, pipe bedding or pipe leaks may also intercept groundwater flowing from the site.

The horizontal hydraulic gradient for the overburden based on the March 2010 groundwater elevation contours was 0.019 ft/ft and based on the April 2012 contours was 0.014 ft/ft to the northwest and 0.04 ft/ft to the north. The average geometric mean hydraulic conductivity value (K) based on slug test data was 2.4 ft/day. An estimated porosity value of 30% which is typical for sandy material was assumed for overburden porosity. Using the above values, the horizontal groundwater seepage velocity within the overburden is calculated to range between approximately 0.112 and 0.333 ft/day

Bedrock groundwater at the site was investigated through the installation of seven bedrock monitoring wells and 17 FLUTe lined boreholes. Groundwater elevations measured in the seven bedrock monitoring wells were not contoured since the connectivity of the fractures is unknown and the elevations do not indicate a consistent flow direction. The bedrock groundwater elevations ranged between 62.13 and 56.88 ft NAVD88 during the March 2010 event and between 58.39 and 53.74 ft NAVD88 during the April 2012 event. The March 2010 bedrock groundwater elevations ranged from 1.04 to 4.16 feet higher than the April 2013 elevations. Five of the bedrock monitoring wells are paired with overburden monitoring wells, including MW-4/4D, MW-5/5D, MW-6/6D, MW-9/9D, and MW-12/12D. The vertical hydraulic gradient between the overburden and bedrock was consistently downward in monitoring well pairs MW-4/4D, MW-5/5D, MW-6/6D, and MW-12/12D and was upward in monitoring well pair MW-9/9D.

Bedrock groundwater flow can be expected to occur from areas of high head to areas of low head within fractured rock, if and only if some of the fractures are permeable and intersect with other permeable fractures. Identification of specific flow paths within fractured rock depends on the morphology and connectivity of individual fractures. Individual fractures can have different heads than other nearby fractures so that boreholes that intersect multiple fractures can have upward flow or downward flow in certain zones in response to these head differences. Based on outcrop measurements and acoustic televiewer results, NNE to NE and WNW to NW appear to be the most likely orientations for potentially conductive bedrock fractures. Based on fracture length and fracture spacing measurements at two outcrops, NE-trending fractures that are open to semi-open and steeply dipping appear to have a sufficient average length to intersect several cross-cutting NW-striking fractures. On the other hand, only certain NW-trending fractures appear to be long enough to intersect more than one NE-trending fracture. These observations may indicate that groundwater flow is more likely toward the NNE-NE (or SSW-SW) than to the NW (SE). The fracture length data do not indicate whether it is reasonable to project key fractures that intersect the boreholes up to the top surface of the bedrock.

Anecdotal information obtained during drilling (observing water level rises or decreases in one bedrock borehole during coring activities in a different bedrock borehole) demonstrates that borehole-to-borehole hydraulic connections, presumably by bedrock fractures, can occur over distances as great as 220 feet and maybe as great as 360 feet at the site. On the other hand, wells that are much closer together may not be connected. Perhaps coincidentally, each of the well pairs known or suspected to be connected is aligned in a NNE or NE direction.

Eight geologic cross sections were developed to compile and illustrate the diverse data sets that contributed to characterizing the bedrock hydrogeology of the site. The diverse data sets include bedrock core, borehole geophysical logging, Flexible Underground Liner Technology [FLUTe] non-aqueous phase liquid (NAPL) liner observations, and groundwater analytical results from discrete fracture zones via inflatable packer isolation sampling methods. In addition to visualizing the variety of data types compiled together, the cross sections provided an opportunity to identify potential fracture connections between boreholes. The following criteria were considered when identifying potential fracture connections: geometric alignment of a key fracture in one borehole with a fracture in a neighboring borehole, especially if one is known to be an inflowing and one an outflowing fracture. The interpreted connections also are favored if one or both fractures is located at a point in the well that showed visible or FLUTe impacts or a significant concentration of dissolved contaminants, especially naphthalene. Where borehole-to-borehole connections are hypothesized, they are assumed to be straight paths (i.e. single fractures), whereas zig-zag or contorted pathways may be present. Several hypothetical fracture connections between boreholes at the site are speculated based on the compiled data illustrated on the cross sections.

Surface soil, soil vapor, indoor and outdoor ambient air, subsurface soil, overburden groundwater, and bedrock groundwater samples were collected and analyzed as part of the SC and RI activities at the site. To meet the data quality objectives for this project NYSDEC ASP were used and Category B deliverable packages were prepared and validated. The visible and analytical results for the media evaluated at the site are detailed in the body of this report and summarized below.

The concentrations of compounds detected in the surface soil samples are generally consistent with or lower than urban background and/or commercial uses. Compounds detected in surface soil samples at concentrations exceeding the NYSDEC Unrestricted Use Soil Cleanup Objectives (URUSCOs) included benzo(a)pyrene (detected at estimated concentrations of 0.29 to 1.6 mg/kg), arsenic, chromium, copper, lead, mercury, and zinc. Additional surface soil sampling and analysis was not required during the RI.

The overburden beneath the site has been impacted by former UST and MGP operations based on the subsurface soil visible and olfactory impacts and analytical results. The majority of the impacts are present in the central western portion of the site near the former 6,000 and 100,000 cf gas holders, the former UST areas, and near the former oil tank and tar pits beneath the service center building and extend west to the property boundary along the Metro North rail line and north-northeast towards the northern property boundary. The horizontal extent of the visible impacts has been delineated to the south and east and the horizontal extent of the analytical exceedance impacts has generally been delineated to the south and east. In the south-southwestern portion of the site, benzo(a)anthracene, benzo(b)fluouranthene, and chrysene were detected in the sample collected from MW-13D, chromium and nickel were detected in the sample collected from MGP-SB-7, and lead was detected in the sample collected from SB-SA11-NW1-A at concentrations exceeding the URUSCOs, however none of the detected concentrations exceed the Restricted Commercial Use SCOs (RCUSCOs). Along the eastern boundary of the site, lead was detected in the sample collected from MGP-MW-101D at a concentration exceeding the URUSCO but below the RCUSCO. Although visible and analytical impacts extend to the west – northwest site boundary adjacent to the Metro North rail line, they were not observed or detected in soil samples collected on the northwest side of I95. Impacts extend to the northern property boundary at MGP-MW-104S and MGP-MW-103S, however access to the north could not be acquired and delineation has not been accomplished in this direction.

Visible tar, sheen, and olfactory impacts were noted in bedrock core and on FLUTe NAPL liners in 8 out of 17 bedrock boreholes advanced during the SC and RI activities. In addition, NAPL was measured in the base of monitoring well MW-12D screened in shallow bedrock. The visible bedrock impacts are present in the central and western portions of the site near the former 6,000 cf gas holder and west and north of the former 6,000 and 100,000 cf holders and former oil tank and tar pits beneath the service center building. These visible bedrock impacts extend to the west to MGP-MW-0DD, MGP-MW-9DD, and MGP-MW-108D and to the north to MGP-MW-104D and MGP-MW-103D. Visible bedrock impacts are also present below approximately 70 ft bgs southwest of the former 6,000 cf holder in MGP-MW-105D. The horizontal delineation of the visible bedrock impacts has been delineated to the west-northwest as evidenced by the lack of visible bedrock impacts noted in the bedrock boreholes advanced to 200 ft bgs on the northwest side of I95. Horizontal delineation of visible bedrock impacts has not been delineated to the north-northeast of MGP-MW-104D and MGP-MW-103D or to the west-southwest of MGP-MW-105D. Vertical delineation of visible bedrock impacts has not been completely defined at locations MGP-MW-TP4 and MGP-MW-105D.

The recoverability of dense NAPL (DNAPL) at the site was evaluated as part of the RI by converting three FLUTe-lined bedrock boreholes that contained fractures with tar into recovery wells and gauging the wells to monitor DNAPL accumulation. The three locations that were converted to recovery wells are MGP-MW-TP4, MGP-MW-108D, and MGP-MW-104D. The wells were gauged periodically for the presence of DNAPL between April 2012 and June 2013. The gauging results show that up to 9.6 feet of DNAPL accumulated in MGP-MW-104D and 3.8 feet of DNAPL accumulated in MW-12D, but has not been present in measurable quantity in MGP-MW-TP4 or MGP-MW-108D as of June 2013. A DNAPL sample was collected from the sump of MGP-MW-104D on December 7, 2012 using a bailer and analyzed for interfacial and surface tension, viscosity, density, and specific gravity. A DNAPL sample was collected from the sump of MW-12D on June 13, 2013 and submitted to the laboratory for the same physical parameters.

Overburden groundwater contains benzene, toluene, ethylbenzene, and xylene (BTEX) and naphthalene in the vicinity of the former USTs and downgradient along the northwestern property line. Concentrations in the vicinity of the former USTs have generally decreased since 1996 and 2004. The concentrations in MGP-MW-108S suggest that the tar pits beneath the service center building might provide a separate source of BTEX and naphthalene to overburden groundwater in this area of the site. The overburden groundwater does not appear to be impacted by elevated site-related metal, total cyanide, or PCB concentrations. The overburden groundwater impacts have not been delineated to the north of the site due to access constraints. The degree to which impacted groundwater may be discharging to the I95 drainage system is uncertain but is believed to be minimal based on the relative elevations of the drainage system and water table. The degree to which impacted groundwater may be migrating along permeable bedding material associated with the storm sewer northwest of the site is unknown.

Bedrock groundwater quality at the site has been impacted by site operations and contains VOCs, predominantly BTEX, and naphthalene at concentrations exceeding Ambient Water Quality Standards and Guidance Values (AWQSGVs) in the vicinity of the former 6,000 and 100,000 cf holders and to the west and north of the former oil tank and tar pits beneath the service center building. Toluene was detected at concentrations exceeding the AWQSGV in bedrock groundwater samples collected from the same locations as BTEX and naphthalene as well as across the site and northwest of the site across I95. Although toluene is likely associated with former site operations in the impacted areas of the site, the more widespread distribution of toluene may be an artifact of the sampling methodology employed during the packer isolation and groundwater sampling efforts or associated with other potential sources. Frequently, the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones where tar or other visible impacts were noted in the core or on the NAPL liner at that location. Occasionally the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones that were not visibly impacted suggesting that the detected concentrations migrated through fractures. The compilation of the physical and chemical data gathered during the bedrock investigations indicate that some fractures are interconnected at the site. Fracture connectivity is further supported by the detection of similar compounds in bedrock groundwater samples collected from visibly impacted locations near former potential source structures on the site and from non-visibly impacted locations onsite and northwest of I95. The extent of dissolved phase impacts in bedrock has generally been delineated vertically other than limited toluene detections in groundwater in three groundwater samples collected below -85 ft NAVD88 and at locations MGP-MW-105D, MGP-MW-104D, MGP-MW-108D and MGP-MW-TP4 where either samples were not collected due to the presence of tar in the borehole or groundwater samples were not submitted for laboratory analysis due to the presence of oil-like material (OLM) in the purged water. The horizontal extent of dissolved impacts in fractured bedrock is difficult to determine, however the data suggest that delineation has been accomplished along the eastern property boundary, south along the western property boundary at MGP-MW-106D and west-northwest of the site across I95. Delineation of bedrock groundwater impacts has not been completed to the north-northeast of the site due to access constraints.

The soil gas and ambient air results demonstrate that MGP residuals have not significantly impacted soil gas at the site and that the vapor intrusion exposure pathway is not complete. An evaluation of the results from the program using NYSDOH guidance and decision matrices (NYSDOH, 2006) indicates that no further investigation of vapor intrusion, or remedial action is required at the site. However, based on detected concentrations of compounds in soil gas samples collected from MGP-SG-5 and MGP-SG-8 and the visible and/or analytical results for soil, bedrock, and groundwater in the northern portion of the site, as well as the residential property use to the north of the site, two additional soil gas sample locations were proposed in the RI. These samples could not be collected since access to the property north of the site was not granted.

A Qualitative Human Health and Environmental Assessment (QHHEA) of the site was performed using available results from the SC and RI and indicates that the MGP residuals identified do not pose a significant risk for current site use. The site is secured with fencing and guarded access and will be retained by Con Edison as a Service Center facility. The low levels of MGP constituents of interest in surface soil are consistent with urban background values and therefore do not pose a significant risk to site workers. The limited subsurface soil exceedances of applicable commercial criteria (RCUSCOs) are generally located in areas covered by pavement or present beneath the Service Center Building. Subsurface soil exceedances may pose a short-term direct contact risk to future utility construction workers. Area surveys and monitoring demonstrate that groundwater in the vicinity of the site is not used for potable purposes. The water table is relatively shallow in some areas of the site (2.7 ft bgs) and may pose a short-term direct contact risk to future utility/construction workers. Although elevated levels of MGP and non-MGP constituents were detected in soil gas samples, associated concentrations at locations within the principal site buildings, including a crawlspace within the Service Center, were consistent with indoor air background values. Additional investigation is proposed north of the facility to further delineate site impacts, once access can be acquired. This evaluation of potential human health and environmental risks associated with site impacts will be reviewed and updated once the additional investigative activities are completed.

The need to perform a Fish and Wildlife Resources Impact Analysis (FWRIA) was evaluated as part of the RI. The purpose of a FWRIA is to identify actual or potential impacts to fish and wildlife resources from site contaminants of ecological concern. There are no ecological resources on the site. The nearest ecological resource is the Rye Nature Center which is east of the site across Theodore Fremd Avenue. Based on the evaluation, a FWRIA is not necessary for this site since there are no complete exposure pathways for site-related constituents to impact fish and wildlife resources.

MGP residuals and service center residuals have impacted the subsurface soil, bedrock, overburden and bedrock groundwater quality at the site in the vicinity of the former MGP 6,000 and 100,000 cf gas holder, oil tank, and tar pit structures, and the former service center USTs, likely through spills and leaks. These impacts have migrated to the northwestern and northern property boundaries but have generally been delineated to the south and east, although additional investigation of the extent of tar in bedrock within the site boundary south of MGP-MW-105D is warranted. These impacts have not been observed on the northwest side of I95, indicating that delineation has been achieved in this direction. These impacts have not been delineated to the north due to access constraints. The impacts encountered at the site do not pose a significant risk to current site workers but subsurface soil and overburden groundwater impacts may pose a short-term direct contact risk to future utility/construction workers. The site impacts do not present a risk to fish or wildlife resources.

Based on the SC and RI findings the following activities are recommended to complete the RI of the site.

- Conduct the overburden, bedrock, and soil gas investigations proposed as part of the RI to the north of the site to further delineate the northern extent of site impacts.
- Drill an additional bedrock boring south-southwest of MGP105D to delineate the extent of visible impacts in bedrock to the south-southwest. Drill the additional boring to 200 ft for vertical delineation as well as horizontal delineation of impacts.

Perform DNAPL baildown tests in MGP-MW-104D and MW-12D to further evaluate DNAPL recoverability. Evaluate the results for the DNAPL sample collected from MW-12D and compare with DNAPL results from MGP-MW-104D.

1.0 Introduction

As required under the terms of Voluntary Cleanup Agreement Index No. D2-0003-02-08 by and between the New York State Department of Environmental Conservation (NYSDEC) and Consolidated Edison Company of New York, Inc. (Con Edison), this report presents the results and findings of the site characterization (SC) and remedial investigation (RI) that were performed on Con Edison's behalf by AECOM for the Rye Gas Works former Manufactured Gas Plant (MGP) operations at the Rye Service Center (the site) located at 178 Theodore Fremd Avenue in Rye, New York. Except as otherwise indicated in this report, the SC and RI were conducted in accordance with the NYSDEC-approved SC Work Plan (SCWP) dated August 2008 (AECOM, 2008) and the NYSDEC-approved RI Work Plan (RIWP) dated October 2010 (AECOM, 2010). The SC and RI were also carried out in general accordance with the most recent and applicable guidelines of the NYSDEC, the United States Environmental Protection Agency (USEPA), as well as the National Contingency Plan (NCP).

The SC field program was initiated at the former Rye Gas Works site in June 2009 and was completed in March 2010. MGP impacts were noted in the overburden, bedrock, and overburden and bedrock groundwater during the SC activities. Therefore, the SC data were compiled and used to develop a scope of work to complete the RI of the site. The RI field program was initiated in December 2011 and completed in April, 2012 with the exception of the investigation locations situated north-northeast of the site where access was not granted by the property owner.

This document presents the results of the combined SC and RI activities performed for the Rye Gas Works former MGP. Several investigations were conducted at the site relative to the existing and former underground storage tanks (USTs) and related structures, the former hydraulic lift system within the facility garage building and the current USTs containing gasoline. This RI Report also incorporates the data from these other environmental investigations.

1.1 Purpose of the Site Characterization and Remedial Investigation

The goals of the SC and RI were to:

- Determine if MGP impacts are present at the site and establish a scope of work to delineate these impacts.
- Further evaluate the horizontal extent of overburden MGP-related soil and groundwater impacts.
- Further evaluate the horizontal and vertical extent of MGP-related bedrock fracture and groundwater impacts.
- Evaluate the potential for offsite migration of soil vapor impacts to the north and in the northern portion of the site.
- Evaluate the recoverability of dense non-aqueous phase liquid DNAPL in bedrock fractures at the site.
- Further evaluate potential use of bedrock groundwater in the vicinity of the site.
- Qualitatively evaluate human health and ecological risks posed by the MGP impacts.

- Further develop the data set necessary to allow preparation of an Alternative Analysis Report to evaluate and select possible remedial alternatives for the site.

1.2 Scope of Work

The scope of work for the SC and RI was defined in the SCWP (AECOM, 2008) and the RIWP (AECOM 2010) and included the following tasks:

- Locating underground utilities in the new investigation areas
- Community air monitoring during invasive activities
- Surface soil sampling and analysis
- Excavation of test pits and subsurface soil sampling and analysis
- Collection and analysis of soil vapor samples and ambient indoor/outdoor air samples
- Advancement of soil borings and collection and analysis of subsurface soil samples
- Advancement of bedrock borings and inspection of bedrock cores
- FLUTe NAPL and blank liner eversion and evaluation
- Borehole geophysical logging
- Discrete bedrock fracture groundwater sampling via packer testing and analysis
- Monitoring well installation
- Monitoring well development
- DNAPL recoverability activities
- Groundwater sampling and analysis
- Surveying of new investigation locations
- Investigation residuals management
- Water Well Survey

All activities were performed in accordance with the methods specified in the SCWP and the RIWP, including the site-specific Quality Assurance Project Plan included in Appendix A of the SCWP and the site-specific Health and Safety Plan (HASP) included in Appendix B of the SCWP. The SC and RI activities and preparation of this report were also conducted in accordance with the NYSDEC's DER-10.

1.3 Report Organization

The remainder of this RI report is organized into the sections and appendices listed below.

- Section 2 provides a description of the Rye Gas Works former MGP site and surrounding properties, a summary of information regarding site ownership and operational history, and a summary of previous and adjacent site investigations.
- Section 3 provides a description of field investigation activities and sample analyses performed during the SC and RI.
- Section 4 provides a discussion of the site topography, drainage, geology, and hydrogeology.

- Section 5 provides a discussion of the observations regarding the extent of observed MGP residuals, and a summary of the analytical results for environmental media sampled during the investigation.
- Section 6 presents a qualitative human health evaluation of the risk associated with the MGP constituents of the site.
- Section 7 presents a fish and wildlife resource impact assessment of the site.
- Section 8 presents a conceptual site model and a summary of conclusions for the RI.
- Section 9 presents recommendation for future activities regarding the site.
- Section 10 provides references cited.

Tables and figures are included in the sections immediately following the text of this report. Appendices are provided electronically on CDs at the end of this report and include the following:

- Appendix A – Historical Site Maps and Aerial Photographs
- Appendix B – Boring, Coring, Test Pit, and Well Construction Logs for previous investigations and the SC and RI.
- Appendix C – Site Characterization Data Summary and Investigation Activity Recommendation Memoranda
- Appendix D – FLUTe NAPL Liner Photographs
- Appendix E – Borehole Geophysical Logging Results
- Appendix F – Monitoring Well Development Forms
- Appendix G – Groundwater Sampling Forms
- Appendix H - Hydraulic Conductivity Testing Data and Background Water Level Survey Data
- Appendix I – Indoor Air Survey Forms
- Appendix J – Investigation Derived Waste (IDW) Manifests
- Appendix K – Water Well Survey and Bedrock Groundwater Level Survey Data
- Appendix L – New York Transit Authority (NYTA) drainage diagrams
- Appendix M – Bedrock Outcrop Evaluation
- Appendix N – Bedrock Data Summary Spreadsheets
- Appendix O - Summary Analytical Result Tables
  - Table 1 – Surface Soil Analytical Results
  - Table 2 – Subsurface Soil Analytical Results
  - Table 3 – Groundwater Analytical Results
- Appendix P - Data Usability Summary Reports (DUSRs)
- Appendix Q - Fingerprint Analytical Results
- Appendix R – NAPL Analytical Results

2.0 Site Description and History

2.1 Site Location, Description, and Setting

The Con Edison Rye Service Center (former Rye Gas Works) is located in Rye, New York and is utilized by Con Edison for the maintenance and dispatching location for their fleet of service vehicles. A site location map is provided as Figure 2-1 on a portion of the United States Department of the Interior Geological Survey (USGS) topographic quadrangle map for Mamaroneck, New York. The facility occupies approximately 9 acres and includes a mix of office, shop, and utility space surrounded by open parking lots and storage areas, diesel/gasoline refueling pumps, compressed natural gas (CNG) storage/refueling pumps, and grassy, vegetated areas. The site is surrounded by a fence with two locked gate entrances on Theodore Fremd Avenue, one of which is controlled by a security guard during hours of operation. Figure 2-2 is an aerial view of the site that illustrates the current site configuration including buildings and other surface cover such as paved areas, grass/uncultivated areas, and storage areas.

The former MGP property encompasses the following lots, based on the current Tax Maps and the layout of the site on the 1934 Sanborn Map (RETEC 2001):

- Map 146.10, Block 1, Lots 69 and 70 - 178 Theodore Fremd Avenue.

Con Edison identified these lots and two additional lots in the summary of MGPs prepared for the application to the NYSDEC Voluntary Cleanup Program. Two additional lots (Map 146.10, Block 1, Lots 67 and 68) are contiguous with Lots 69 and 70; however, they were not part of the former MGP site at the time it was operational. Currently, they are part of the property owned and used by Con Edison.

The site is located in a mixed residential and commercial area of Rye and is bounded on the east and southeast by Theodore Fremd Avenue, on the northeast by residential properties, on the north and northwest by railroad tracks and Interstate 95 (I95), on the southwest by commercial properties and on the south by residential properties. A zoning map of the site and surrounding area is provided as Figure 2-3 and shows that the site is zoned as general business (B-6) and surrounding properties are residential (R-2, R-3, RA-1, and RA-2), and as neighborhood business (B-1). Commercial properties, a public park, and residential properties are present north and west of I95. A former gasoline station, replaced by a former landscaping business was situated adjacent to and south of the southern gated entrance to the site. Two gasoline stations are situated farther to the south-southwest of the site.

The Rye Nature Center is situated to the east and southeast across Theodore Fremd Avenue and is surrounded predominantly by residential properties, except along its south and east side where it borders Boston Post Road and residential, athletic, institutional (schools, churches), and commercial properties. The Rye Nature Center is located east of the site at 873 Boston Post Road (See Figure 2-1). The Rye Nature Center is a city-owned facility offering environmental programs through the cooperative efforts of the Friends of Rye Nature Center (a non-profit organization) and the City of Rye. The Center is located on 47 acres of wildlife preserve, and has over two miles of hiking trails, ponds, streams and granite outcroppings. The Nature Center has classroom and museum spaces for visiting classes and special events.

2.2 Site History

The RETEC Group (RETEC) prepared a historical investigation report for Con Edison in December of 2001 (RETEC, 2001). The report was part of a comprehensive program to research and assess the history of sites formerly used by Con Edison and its predecessor companies for the manufacture and/or distribution of gas. The following information was derived from the (RETEC 2001) report. Copies of the historic maps and photographs referenced in the subsections below are available in Appendix A of this RI report. Figure 2-4 illustrates a composite of the historic site features as well as the current site configuration.

2.2.1 Pre-Manufactured Gas Plant

Based on a review of deeds from the Chain-of-Title Search, a portion of the site (Block 1, Lot 69) was used as a nursery prior to its purchase by the Westchester Lighting Company.

2.2.2 Manufactured Gas Plant

2.2.2.1 Site Ownership

The MGP site operated from about 1887 until sometime around 1926, a period of approximately 39 years. The New York Public Service Commission (PSC) reports indicate that the Rye MGP was present in 1926 but gas was not produced that year. Con Edison records indicated that the Rye MGP site was constructed in the late 1880s by the Citizens' Gas Light Company of Westchester County. Brown's Directory indicated that the Citizens' Gas Light Company leased the Rye and Port Chester Gas Light Company. The company became the Standard Gas Company around 1890 [Brown's Directory, 1891], then Consolidated Gas and Electric Company of Westchester County around 1891 [Brown's Directory, 1892]. The Westchester Gas and Electric Company was incorporated in 1897 and this company operated the Rye plant by the late 1890s [Brown's Directory, 1899]. The Westchester Gas and Electric Company was consolidated into the New York Suburban Gas Company in 1899, which merged into the Westchester Lighting Company in 1900 [PSC Records]. In July1904, the Westchester Lighting Company sold the property to the New York and Westchester Lighting Company and that company was merged into the Westchester Lighting Company in October 1904. Beginning as early as 1905, the Consolidated Gas Company (predecessor to Con Edison) secured financial control of the Westchester Lighting Company; however, the company still continued to operate as an affiliate [Brown's Directory, 1905]. In 1936, Consolidated Gas Company became Consolidated Edison Company, and the affiliation with the Westchester Lighting Company continued. In 1951 the Westchester Lighting Company was fully merged into Consolidated Edison as the Westchester Division [Brown's Directory]. Con Edison still maintains ownership of the site and operates a service center at the location.

2.2.2.2 MGP Operations

The exact construction and starting date for gas production at the site could not be determined. The MGP was not present on the 1868 Beers Atlas map, and site use at that time was not indicated on the map. The earliest record of the gas plant is from 1887, for which Sanborn Map coverage is provided and the site is listed in Brown's Directory. According to these sources, the Rye MGP produced gas using the Wilkinson-Kennedy process (water gas) for the cities of Rye, Port Chester, Harrison, and Mamaroneck. Early gas production ranged between 20 and 26 million cubic feet.

The gas plant consisted of a MGP process building located adjacent to the railroad tracks, which included a coal house, gas generators and retorts, exhausters, a purifying room, and machine shop. Other features included a 6,000 cubic foot (cf) gas holder (later the relief holder), a 100,000 cf gas holder, an underground receiving oil tank (north end of building), an iron oil tank, an iron water tank, and a coal pile. Both of the gas holders were below-ground holders given the timeframe of construction and historical photos. The smaller 6,000 cf holder was shown as not in use [Sanborn, 1907 and 1912] and as the relief holder on later Sanborn Maps [Sanborn Map, 1919]. Prior to this time, tar structures were not indicated on the Sanborn Map. A Westchester Lighting Company 1920 drawing provided by Con Edison illustrates two tar wells at the locations illustrated beneath the service center building on Figure 2-4. There were no records of removal of the relief holder. The 100,000 cf holder was indicated on Sanborn Maps as having a roof that was 2-feet above-ground. The open holder pit for this holder was illustrated in a 1928 photograph taken during the dismantling process [Con Edison Records].

The 1912 Sanborn Map indicated that the plant was no longer producing gas on a regular basis and it was used only for storage and as a repair shop. Construction of the 3 million cf gas holder, an above-ground structure, began in 1920 [Con Edison Records]. The 3 million cf holder was an above-ground holder, although the bottom of the holder may have been located a few feet below ground based on historic photographs taken during the 1920 construction. Gas production at the Rye MGP continued at least intermittently into the mid-1920s [PSC Reports]. The 3 million cf holder continued to be used for distribution purposes after the MGP operations ceased.

2.2.3 Post MGP

Following cessation of MGP operations, the site was used for gas distribution operations and a service center operated by Con Edison until 1971 [Con Edison Records]. The current Con Edison service center building was constructed in 1929 [Con Edison Records]. The 3 million cf holder was demolished in 1974 [Con Edison Records]. The original MGP production building and exhauster house remained on the site at least into the late 1990s [Sanborn Map, 1996]. Additional structures were added to the site to support the service center including gasoline/diesel pumps and tanks and CNG tanks and pumps. In addition, the property was and is currently used for equipment/material storage including poles, transformers, and cable, and for vehicle storage and maintenance. The site continues to be used as a service center by Con Edison.

2.2.4 Potential Residuals Based on Site Use

Residuals associated with MGP processes include tar (containing volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and phenolics), purifier residuals, ammonia residuals, and clinker. In addition to residuals produced, feedstocks to the process, including gas oil used in the carbureted water gas process, have the potential to remain in the subsurface. Residuals associated with the use of the site as a service center may include petroleum products (oil & grease, gasoline, diesel fuel, fuel oil), automotive products (e.g., coolant, motor oil, batteries, etc.), and solvents used to clean equipment parts. Additionally, creosote may be associated with pole storage and dielectric fluid and polychlorinated biphenyls (PCBs) may be associated with transformer storage on the site.

2.3 Previous Environmental Investigations

Several investigations have been conducted at the site relative to the existing and former underground storage tanks (USTs) and related structures, the former hydraulic lift system within the facility garage building and the current USTs containing gasoline. These investigations are summarized below. Available boring logs from these investigations are provided in Appendix B of this report.

Currently, there are two 4,000-gallon gasoline USTs and one, 4,000-gallon diesel fuel UST present at the site (Below pump island on Figure 2-4).

2.3.1 Spill Number 0009384: Former USTs Pre-Closure Site Assessment of USTs

In July and August 1996, Environmental Concepts, Inc. (ECI) conducted a UST site assessment at the facility (*Site Assessment for Underground Storage Tank Closure Report, prepared by ECI dated March 1998)*. The subsurface assessment was performed prior to closure of three USTs at the facility, which are described as follows:

- One 550-gallon Kerosene UST;
- One 1,000-gallon Waste Oil UST, and;
- One 600-gallon Lubricating Oil UST.

The 550-gallon and 1,000-gallon USTs were located outside of the southeast corner of the facility maintenance building garage. The 600-gallon lube oil UST was located inside the southern end of the garage, beneath the concrete floor.

In summary, a total of eight soil borings were advanced in the area of the USTs (three borings inside and five outside the building). Two of the eight borings were finished as groundwater monitoring wells. Figure 2-5 illustrates the boring, monitoring well and UST locations. Soil sampling results indicated that volatile organic compound (VOC) and semivolatile organic compound (SVOC) concentrations exceeded the NYSDEC Spill technology and remediation series toxicity characteristic leachate procedure STARS TCLP Alternative Guidance Values for kerosene contaminated soils. Additionally, numerous metals, including arsenic, lead, beryllium, chromium, copper, nickel and zinc were detected at elevated levels, but were considered by ECI to be indicative of site background concentrations.

Groundwater results from the site investigation conducted in 1996 revealed that there were considerable concentrations of VOCs present in groundwater. Groundwater from monitoring well MW-1 located in Investigation Area 9 contained concentrations of ethylbenzene of 2,200 ug/L and xylenes of 7,900 ug/L. Groundwater collected from monitoring well MW-1 located in Investigation Area 10 contained concentrations of benzene of 5,300 ug/L, ethylbenzene of 450 ug/L, toluene of 2,800 ug/L, and xylenes of 3,900 ug/L.

During these investigations two separate monitoring wells were identified as MW-1. For the purposes of this report, MW-1 in area 9 will be referred to as MW-2 for the remainder of the report (as illustrated on Figure 2-5). The soil and groundwater analytical results from these investigations are incorporated with the SC and RI results in this RI report.

2.3.1.1 December 1997 UST Closure Report

In December 1997, Clean Harbors, Inc. was contracted by Con Edison to remove and permanently close the three USTs described above. The USTs were removed and evidence of petroleum impacts to soil was observed at each of the UST excavations. Post-excavation soil samples were collected at the direction of the NYSDEC and analyzed for VOCs, SVOCs, metals and PCBs. Approximately 30 cubic yards of soil was removed and disposed of off Site. According to Clean Harbors, the soil was classified as lead hazardous.

Post-excavation soil sampling was conducted at each of the tank excavation pits. The analytical results indicated that all samples contained TCLP VOC constituents at concentrations above NYSDEC STARS TCLP Guidance Values. An UST Closure Report was submitted to the NYSDEC on September 14, 2000. Based on the results of the UST closure activities, Clean Harbors concluded that there is evidence of possible residual petroleum contamination in the former UST areas.

2.3.1.2 Site Investigation 2004

Con Edison contracted ENSR in October 2004 to further delineate the impacts observed in the vicinity of the former USTs due to Spill Numbers 0009384 and 0405335. Ten soil borings and two monitoring wells were installed during the investigation. The findings of this investigation were presented in the ENSR Site Investigation Report dated February 2005 (ENSR 2005) and indicated that gasoline was the primary constituent of concern (COC) at the Site. The 2004 investigation locations are illustrated on Figure 2-5. The 2004 soil and groundwater analytical results are incorporated with the SC and RI results in this RI report.

2.3.2 UST Remedial Investigation

The most current information regarding environmental conditions at the site relative to the existing and former USTs is provided in the Remedial Investigation (RI) Report prepared by ENSR (ENSR, 2007) and the Supplemental Remedial Investigation Report (SIR) (AECOM 2009). The UST RI activities were conducted between August 2006 and April 2007 and the UST SIR activities were conducted between November and December 2008. This work was conducted in order to address the Spill Numbers 0009384 and 0405335 described above. The results of the investigation are summarized below and incorporated with the SC and RI results in this RI Report.

2.3.2.1 Soil

Seventeen soil borings were attempted at the site during the UST RI. The boring locations are illustrated on Figure 2-5. In general, compounds that were detected in soil at concentrations exceeding criteria included benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene and several SVOCs. These compounds were detected in soil ranging in depth from 2 ft bgs to 11.5 ft bgs.

2.3.2.2 Groundwater

Six overburden and seven bedrock monitoring wells were installed during the UST RI. The majority of the compounds that exceed NYSDEC Ambient Water Quality Standards or Guidance Values (AWQSGVs) in overburden groundwater included BTEX and naphthalene and some SVOCs clustered in the central area of the site, and include wells MW-1, MW-3, MW-4, and MW-9. Minor exceedances for VOCs were also detected in the groundwater sample collected from MW-10.

The primary compounds that were detected at concentrations exceeding AWQSGVs in bedrock were BTEX. The bedrock groundwater impacts are clustered in the central area of the site, and include wells MW-4D, MW-9D, and MW-11D.

2.3.3 Adjacent Site Environmental Investigations

Four NYSDEC spill records were identified from a Freedom of Information Act (FOIA) request for the property situated at 180 Theodore Fremd Avenue, south of the site. Copies of these records are provided in Appendix A and indicate that diesel and gasoline impacts were noted in soil and groundwater at the location between 1998 and 2008. The records indicate that a vacuum truck would be used to remove product from groundwater and that an assessment would be performed.

Environmental reports associated with the property were not provided in response to the FOIA request.

3.0 Remedial Investigation Field Activities

This section provides a description of the methodologies used during the field investigation of the former Rye Gas Works site. The SC field work was initiated in August 2009 and completed in March 2010 and the RI field work was initiated in December 2011 and completed in April 2012. These field activities were conducted in accordance with the methods and procedures specified in the NYSDEC approved SC Work Plan (ENSR, 2008) and the NYSDEC-approved RI Work Plan (AECOM, 2010) for the site.

The location and number of samples collected along with the corresponding analytical parameters are presented in the following subsections. Descriptions of all field activities are included by field task and/or environmental media. The locations of the previous investigations, SC, and RI samples are illustrated on Figure 3-1. Specific tasks during the RI included the following:

- Locating underground utilities in the new investigation areas
- Community air monitoring during invasive activities
- Surface soil sampling
- Advancement of soil borings and collection of subsurface soil samples
- Excavation of test pits and collection of subsurface soil samples
- Collection of soil gas samples and collection of ambient indoor/outdoor air samples
- Advancement of bedrock borings via coring and air rotary drilling
- FLUTe NAPL and blank liner eversion and evaluation
- Borehole geophysical logging
- Discrete bedrock fracture groundwater sampling via packer testing
- Overburden monitoring well installation
- Monitoring well development
- Groundwater gauging and sampling
- DNAPL recoverability activities
- Surveying of new sampling points, wells, and borings
- Investigation residuals management
- Water Well Survey

3.1 Underground Utility Clearance

Prior to the initiation of intrusive fieldwork, the drilling subcontractors, Paragon Environmental Construction, Inc. (PEC) during the SC and NYEG Drilling, Inc. (NYEG) during the RI, contacted Dig Safely New York to arrange for the location and marking of all underground utilities in the vicinity of the proposed test pits, soil gas, soil boring, coring, and monitoring well locations, as required by the New York Code of Rules and Regulations (NYCRR) Part 753. Where possible, AECOM worked directly with the representatives of each utility company to ensure that all underground lines were properly identified and marked-out.

Utility clearance for both the SC and RI was performed by Advanced Geological Services (AGS) under contract to AECOM. AGS used ground-penetrating radar (GPR) and electro-magnetic (EM) survey methods to scan each proposed investigation location. Copies of available historic city sewer and water maps for the site were provided by Con Edison and reviewed by AECOM prior to intrusive SC activities. AECOM acquired available city sewer and water maps from the Rye Building Department and reviewed prior to intrusive RI activities. Prior to excavating soil borings using a drill rig, each boring location was hand excavated to a minimum depth of 5 ft bgs with 2 ft by 2 ft dimensions. Excavations were performed to locate any utilities that may have been marked incorrectly, are privately owned, have been abandoned, were not known to exist, or were not detectable by surface investigation methods. Hand-clearing was performed by the drilling contractor utilizing shovels, posthole diggers, and other non-mechanical means in accordance with the Con Edison utility clearance policy (Appendix C of the SCWP).

3.2 Community Air Monitoring

Community air monitoring was performed and documented to provide real-time measurements of total VOCs and particulate (airborne dust) concentrations upwind and downwind of each designated work area during intrusive investigation activities performed during the SC and RI. Site personnel monitored any odors produced during these activities. The monitoring was designed to provide protection to the public downwind of the work area from any potential releases of airborne contaminants due to investigation activities and to document air quality during intrusive activities.

Instrumentation used during the Community Air Monitoring Program (CAMP) was located upwind and downwind of the work area on stands located in the breathing zone. The instruments were calibrated daily and recorded on separate field forms. The instrumentation used during the investigation activities included a MiniRae photo-ionization detector (PID) 10.6 eV to measure volatiles in parts per million (ppm) and a TSI DustTrak™ meter to detect the particulate concentrations in milligrams per cubic meter (mg/m^3).

The instruments were programmed to log air quality data once per minute during intrusive work activities. Personnel recorded readings and any observations from these instruments every 15 minutes on a separate CAMP field form. Data from the PID and Dustrak monitors were downloaded to a field laptop computer on a weekly basis. The recorded logs were reviewed for any exceedances.

There were no reportable exceedances of the established standards during the SC or the RI.

3.3 Surface Soil Sampling and Analysis

Five surface soil samples were collected during the 2010 SC to evaluate the surface soil quality unpaved areas of the site. Sample locations can been found on Figure 3-1. No surface soil samples were proposed as part of the RI Work Plan (AECOM, 2011). Table 3-1 summarizes the SC surface soil sample designation, depth, date, collection method, rationale, and laboratory analyses.

At each surface soil sample location, a 2 ft by 2 ft area was scraped with a stainless steel trowel and samples were collected from 0.0 to 1.0 feet depending on the surface cover. Soil samples for VOC analysis were placed directly into the appropriate container and compacted to minimize head space and pore space. The remaining sample volume was placed into a stainless steel bowl, homogenized, and placed in appropriate containers for the remaining analyses. The SC surface soil samples were analyzed by Chemtech of Mountainside, NJ. Sample jars were labeled, placed in a cooler with ice, and sent under chain-of-custody protocol by courier to the laboratory. Surface soil samples were analyzed for VOCs plus 10 tentatively identified compounds (TICs), semi-volatile organic compounds (SVOCs) plus 20 TICs, target analyte list (TAL) metals, and total cyanide using the methods specific in Subsection 3.12.

3.4 Test Pit Excavation, Soil Sampling, and Analysis

Test pit excavations were completed at eight locations (TP-1 through TP-8) during the SC and two locations (TP-9 and TP-10) during the RI as illustrated on Figure 3-1. A backhoe was used to excavate each location to examine conditions in and around former structures. Soil borings were drilled to augment the test pit information at test pits TP-3, TP-4, and TP-10. Soil from the test pits was screened for the presence of organic vapors with a PID. The SC test pit subsurface soil samples were analyzed for VOCs, SVOCs, TAL metals, and total cyanide. No test pit soil samples were collected for laboratory analysis during the RI. Table 3-2 summarizes the SC test pit sample designations, depth, date, collection method, rationale, and and list the laboratory analyses conducted.

Excavation spoils were temporarily staged on plastic sheeting. Upon completion of each test pit, the spoils were placed back into the excavation in the reverse order of which they were removed. Visibly impacted soils were containerized in drums or roll off containers and managed in accordance with Subsection 3.13. The test pits were backfilled in 12 inch lifts and compacted and filled with sand and/or Item IV stone to within 3 to 6 inches of ground surface in areas of high traffic and then restored to original conditions.

Test pit logs were completed for each excavation and describe the type of soil encountered, the presence of visible evidence of MGP structures and residuals, and the results of PID screening. Test pit logs are included in Appendix B of this report.

3.5 Soil Borings, Soil Sampling, and Analysis

During the SC, 11 soil borings (MGP-SB-1 through MGP-SB-9, MGP-MW-10D, and TP-3boring) and 11 bedrock borings (MGP-MW-TP4, MGP-MW-0DD, MGP-MW-4DD, MGP-MW-9DD, MGP-MW-101D through MGP-MW-106D, and MGP-MW-108D) were advanced through the overburden at the site using hollow stem augers and split spoons or Geoprobe macrocores. Seven soil gas sampling points (MGP-SG-1 through MGP-SG-7) were advanced in the overburden with hand tools during the SC. Thirty-one soil samples were collected at eighteen different boring or soil gas locations during the SC to evaluate the nature and extent of overburden impacts onsite (Table 3-3). Proposed monitoring wells MGP-MW-107S and MGP-MW-107D (see Figure 4-1 of the SCWP) could not be installed during the SC due to access and logistical constraints associated with the Metro North railroad and I95. Proposed monitoring well MGP-MW-105S was not installed during the SC since saturated overburden was not encountered at the proposed location. The proposed MGP-MW-105S location was converted to a FLUTe lined bedrock borehole identified as MGP-MW-0DD. The proposed MGP-MW-105D location in the SCWP was shifted south-southwest of MGP-MW-TP4 to further evaluate the extent of impacts associated with the former 6,000 cf holder. Three soil borings (MGP-SB-10 through MGP-SB12), six bedrock borings (MGP-MW-109D, MGP-MW-110D, MGP-MW-112D, MGP-MW-113D, MGP-MW-114D, and MGP-MW-116D) and one soil gas sampling point (MGP-SG-8) were advanced through the overburden during the RI. Twelve soil samples were collected at seven different boring locations during the RI to further evaluate and delineate the extent of soil impacts (Table 3-3). Two soil gas points (MGP-SG-9 and MGP-SG-10), two bedrock borings (MGP-MW-111D and MGP-MW-115D) and one shallow overburden monitoring well (MGP-MW-111S) were proposed for installation during the RI to the north of the site on private property. These points were not installed during the RI since access to the locations could not be acquired. The boring locations are illustrated on Figure 3-1.

The initial SC soil borings were drilled between August 2009 and May 2010. These soil borings were performed by PEC under the supervision of an AECOM geologist or engineer. The supplemental RI soil borings were drilled between December 2011 and April, 2012 by NYEG under the supervision of an AECOM geologist or engineer. Soil borings were advanced using hollow stem auger (HSA) drilling rigs or direct-push technology using a geoprobe rig. Continuous soil samples were generally collected from a depth of 5 feet to the base of each borehole. The upper 5 feet of each boring was logged continuously during utility clearance. The soils were logged for composition and presence of visible and olfactory impacts and were field screened with a PID for the presence of VOCs. Boring logs are provided in Appendix B of this RI report.

Soil samples were collected from borings using 2-inch, 2-foot long split-spoon samplers or geoprobe macrocores. Soil samples were collected in advance of the augers by driving the split-spoon sampler through the sample interval with a 140-pound hammer on an anvil attached to the drive head on the sampler (via automatic hammer). Blow counts were recorded for every 6-inch interval. Split-spoon sampler refusal was considered 100 blows per 6 inches. Split spoons were decontaminated with Alconox® and water between each sample. Soil borings advanced by direct-push geoprobe used a 5-foot long steel sampling tube (macro-core sampler) with an acetate liner. New liners were used for each 5-foot sample interval. The downhole drilling equipment was decontaminated by steam cleaning between each boring.

In general, one to three samples were collected from each boring location; one at the depth interval with the greatest observed impacts based on olfactory and visual observations and PID readings, one below the deepest impacts to delineate vertical extent and/or one at the base of the boring to provide vertical delineation information and/or quality at the top of bedrock. If olfactory and visual observations and PID readings did not indicate impacts at a location, a sample was collected at the water table interface (if encountered) and/or the bottom of boring.

Soil for VOC analysis was collected directly from the interval exhibiting the highest PID readings, when detected. Soil collected for the remaining analyses (SVOCs, TAL metals, total cyanide, and PCBs) was sampled across the sample interval. Soil samples were placed in jars, labeled, placed in coolers of ice, and sent under chain-of-custody protocol by courier to Chemtech or Hampton Clarke-Veritech. One fingerprint sample was taken during the SC (Table 3-4) to characterize the odor of petroleum in slag and cinders.

Upon completion, boreholes were completed as monitoring wells, cased for future coring activities, or tremie-grouted from the base of the boring. Boring logs are provided in Appendix B of this report. IDW was managed in accordance with Subsection 3.13 of this RI report.

3.6 Bedrock Investigations

Due to the shallow nature of bedrock at the site, the presence of impacts in the overburden soil, and the detection of groundwater impacts in three previously installed bedrock wells at the site, additional bedrock investigations were performed during the SC and the RI. Bedrock investigations during the SC and the RI included a review of published geologic information for the site vicinity, review of available boring/well/geophysical logs for the site vicinity, and bedrock drilling and coring to allow for visual inspection of the bedrock and fractures, determination of the rock quality, and to determine if impacts are present in any observed fractures. The SC phase of work included bedrock coring, FLUTe NAPL liner evaluation, borehole geophysical logging, and groundwater sampling of discrete fracture zones using inflatable isolation packers at 11 locations including MGP-MW-101D through 106D, MGP-MW-108D, MGP-MW-TP4, MGP-MW-0DD, MGP-MW-4DD, and MGP-MW-9DD), Proposed location MGP-MW-10D was not completed (although the overburden was drilled and outer casing was installed) because impacts were observed at further downgradient locations MGP-MW-108D and MGP-MW-104D, therefore, MGP-MW-10D drilling observations would not provide delineation data.

The RI work included a combination of bedrock drilling (air rotary, minimal coring at one location to control water, and roller bit techniques), FLUTe NAPL liner evaluation, borehole geophysical logging and groundwater sampling of discrete fracture zones using inflatable isolation packers at six locations including MGP-MW-109D, MGP-MW-110D, MGP-MW-112D, MGP-MW-113D, MGP-MW-114D, and MGP-MW-116D). Two bedrock borings (MGP-MW-111D and MGP-MW-115D) were proposed for installation during the RI to the north of the site on private property. These points were not installed during the RI since access to the locations could not be acquired. The bedrock boring locations are illustrated on Figure 3-1. The bedrock investigations were performed in a phased approach as detailed below.

3.6.1 Outcrop Fracture Analysis

Published information was researched to evaluate regional bedrock structure and geologic properties such as, fracture depth, density, and orientation, and hydrogeologic properties such as groundwater flow direction, velocities, fracture connectivity, and permeability. Bedrock outcrops are present at several locations across the site; these outcrops were examined for structural trend information. The bedrock outcrop evaluation methods and results are summarized in Section 4 of this report.

3.6.2 Bedrock Coring and Drilling

The first phase of the bedrock drilling activities included coring bedrock to a depth of 100 ft bgs, using packers to isolate and allow collection of groundwater samples at discrete depth intervals during drilling for VOC analysis, lining the borehole with FLUTe™ NAPL liners to evaluate the presence of tar-bearing fractures, borehole geophysical logging, and preventing potential vertical migration by everting blank FLUTe liners. These activities were performed at two locations, MGP-MW-4DD and MGP-MW-9DD, adjacent to locations where shallow bedrock groundwater impacts were previously identified in MW-4D and MW-9D, respectively. Based on the overburden SC field observations and the bedrock investigation results at MGP-MW-4DD and MGP-MW-9DD, additional coring, FLUTe NAPL liner, and geophysical activities were proposed to depths of 150 ft bgs in MGP-MW-4DD and MGP-MW-9DD and also at a third location (MGP-MW-0DD) as summarized in a memorandum to Con Edison dated September 11, 2009 (AECOM 2009a see Appendix C). The results of these activities were summarized in a memorandum to NYSDEC dated November 3, 2009 along with recommendations for subsequent bedrock investigations (AECOM 2009b see Appendix C). The subsequent investigations resulted in advancing the additional SC and RI bedrock borings noted in Section 3.6 above and illustrated on Figure 3-1. In addition, MGPMW-4DD was advanced to 200 ft bgs to provide additional vertical delineation.

The bedrock drilling and coring was completed using a standard drilling rig and rock coring equipment. Continuous rock coring was performed at each SC location. The bedrock borings were advanced through overburden soils and continuously sampled to the top of bedrock using HSA and split-spoon samplers as described above. The top of bedrock was determined by sampler refusal and contents of the sampler. Following sampler refusal, the augers were advanced at least 1 foot into the top of bedrock to act as a temporary isolation casing and the top 5 feet of bedrock was cored at each SC location using an HQ (3 $^7/_8$-inch diameter) wireline rock core barrel or drilled by air rotary or roller bit at each RI location. The borehole was over drilled into the top 5 feet of bedrock and a Schedule 40, 4-inch diameter steel casing was grouted into the top of bedrock. After the grout had cured for a minimum of 24 hours, the SC boreholes were advanced through bedrock using a HQ rock core barrel equipped with a diamond cutting bit and the RI boreholes were advanced by air rotary or roller bit techniques.

The core barrel was advanced by drill rod in intervals or 'runs' of up to 5 feet in length. After each 5-foot run was complete, the core was extracted from the borehole and placed into a wooden core storage box. The field geologist photographed the core and logged the core for:

- Length of rock recovered
- Percent of the run recovered
- Rock quality designation (RQD)
- Natural or mechanical fracture identification
- Rock type
- Evidence of weathering and the presence and orientation of fractures and voids
- Any visible or olfactory evidence of MGP residuals

All fractures in the core were examined to determine if they were mechanical fractures, caused by coring activities, or naturally occurring. Naturally occurring fractures were identified by the presence of weathering, iron and mineral staining, and gaps in the core.

During the RI an air rotary setup on a HSA rig was used to drill six locations to 200 ft bgs. When the air rotary setup produced excess water a roller bit was used to advance to depth. All drill water was stored in appropriately labeled closed top drums. During air rotary and roller bit drilling, rock fragments were collected with a fine mesh sieve and described. Fragments were logged for color, mineral content, fragment size, mineral staining (if present) and presence of visible or olfactory impacts. Drops in drilling rods were noted as they indicated the potential presence of natural fractures.

During the coring and drilling process it was necessary to continuously circulate water to cool the diamond bit and to clear the drill cuttings from the borehole. Potable water for this task was provided from a fire hydrant and transported to the drilling location by hose or support truck. Circulation water was either lost to the formation or brought back to the ground surface via pumping and contained in a tub.

At the conclusion of coring and drilling, water retained in the tub was containerized in drums for proper off-site disposal. All SC cores were kept in labeled pine core boxes and stored at an offsite location. Cores and cuttings from the RI were disposed of in drums. All bedrock core locations were developed until approximately three well volumes were removed with a submersible pump to remove drilling fluids and sediment from the fractures and borehole. The development water was containerized in 55-gallon closed top drums. All IDW was managed in accordance with subsection 3.13.

Boring logs for the bedrock borings were developed and are provided in Appendix B. Samples of rock core and cuttings were not collected for laboratory analysis.

3.6.3 FLUTe Activities

After completion of the drilling/coring to the total depth of the boring and developing the borehole, FLUTe™ blank and NAPL liners were everted in the borehole according to the manufacture's specifications. The FLUTe™ liners were left in the borehole for a minimum of 12 hours, after which the liners were removed. Upon removal, the inner NAPL and outer blank liners were separated and the inner NAPL liner was evaluated for the presence of tar. The inner liner was photographed and notes were made regarding NAPL presence. Appendix D provides a photographic log of the FLUTe NAPL liner for each borehole. The NAPL liners were wrapped in plastic and stored in an airtight plastic bin at an offsite storage location. Borehole geophysical logging was performed as described below and then the outer blank liner was everted in the borehole to prevent potential vertical migration.

3.6.4 Borehole Geophysical Logging

Borehole geophysical logging for both the SC and the RI was performed by Hager Richter, Inc. Following FLUTe lining activities, borehole geophysical surveys were performed by Hager Richter within each borehole and included, caliper, fluid temperature, fluid resistivity, acoustic televiewer, optical televiewer, and/or heat pulse flow meter. The full suite of geophysical tools could not be used in boreholes containing significant amounts of tar. Therefore, the geophysical records for some of the boreholes do not include heat pulse flow meter data or optical televiewer data, and the acoustic televiewer data were occasionally obtained through the FLUTe blank liner. The geophysical results are provided in Appendix E.

3.6.5 Discrete Fracture Groundwater Sampling Using Isolation Packers

During the advancement of MGP-MW-4DD, MGP-MW-9DD, and MGP-MW-0DD to 150 ft bgs, discrete fracture zones were isolated with a single packer set above each significant fracture zone as it was encountered during drilling and groundwater samples were collected for quick turnaround VOC analysis to help determine the total depth of the bedrock borings. Once it was decided that each of the subsequent SC locations would be cored to 150 ft bgs (see memoranda in Appendix C), coring and drilling data, NAPL liner observations, and geophysical results were used to select bedrock fracture zones to be sampled for groundwater quality. Groundwater was collected from specific fracture zones within each bedrock borehole that did not contain significant tar, using a dual inflatable packer and pump system. Groundwater samples were not collected from MGP-MW-TP4 and MGP-MW-108D due to the presence of tar in the water column. Three volumes of water were purged from each zone before a sample was collected. The duration of pumping and pump speed were noted in a field book along with any noticeable impacts. After purging each zone a groundwater sample was collected and submitted for VOC laboratory analysis (see Table 3-5 for sample rationale and analysis). This sampling process was repeated for each water bearing fracture zone. The zones sampled and purge/sample volume and rate are summarized on the well logs provided in Appendix B. The purge water was containerized in 55-gallon closed-top drums and managed in accordance with Subsection 3.13.

3.7 Overburden Monitoring Well Installation and Development

Three overburden monitoring wells (MGP-MW-103S, MGP-MW-104S, and MGP-MW-108S) were installed during the SC and one overburden monitoring well (MGP-MW-113S) was installed during the RI at the locations illustrated on Figure 3-1. Additional overburden monitoring wells were proposed for installation at locations coincident with bedrock borings however the overburden at these locations was either too thin or unsaturated to install overburden monitoring wells. These locations include

MGP-MW-101S, MGP-MW-102S, MGP-MW-105S, MGP-MW-106S, MGP-MW-109S, MGP-MW-110S, and MGP-MW-116S. Additionally, one shallow overburden monitoring well (MGP-MW-111S) was proposed for installation during the RI to the north of the site on private property. This well was not installed during the RI since access to the location could not be acquired.

Overburden monitoring wells were installed using HSA techniques in accordance with monitoring well installation and development procedures in the SCWP. The monitoring wells were constructed of 2" PVC with 5 to 10' well screens with a 2' sump at the base of the well to collect any Dense Non Aqueous Phase Liquid (DNAPL) that may be present, depending on the overburden thickness at each location. A sand pack extends from the base of each well screen to at least 1-foot above the top of the screened interval. The sand pack is overlain by a 2-foot bentonite seal and the remaining annular space is filled with grout to within approximately 1-foot of ground surface. Flush-mounted limited access road boxes were used to complete the wells and the surface surrounding the well was restored to pre-drilling conditions. Monitoring well construction diagrams are illustrated on the boring logs in Appendix B.

The overburden monitoring wells were developed a minimum of 24 hours after well installation (following NYSDEC protocol) to remove fine sediments from within the well, well screen, sand pack, and aquifer to promote good hydraulic connection between the well and the formation. Various techniques were used for well development, including surging using a plunger, a one stage downhole centrifugal pump, and a peristaltic pump. The plunger was a handmade design that consisted of PVC pipe with a gasket and valve on one end and tubing on the other end that directed development water into a drum.

All of the wells installed were developed until approximately 10 well volumes of water were removed or until turbidity was low (less than 50 Nephelometric Turbidity Units [NTU]) and groundwater pH, temperature, and conductivity parameters stabilized. Water quality data monitored during well development are summarized on the well development forms provided in Appendix F. All of the development water was containerized in 55-gallon closed-top drums and managed in accordance with Subsection 3.13.

3.8 Groundwater Elevation and NAPL Thickness Measurements

Depth to water and NAPL presence/thickness measurements were collected from the majority of the overburden and bedrock monitoring wells on March 8, 2010 during the SC and on April 13, 2012 during the RI. These depths were measured using an electronic water level meter and/or oil-water interface probes to the nearest 0.01 ft. The meters and probes were decontaminated between each well in accordance with procedures specified in the SCWP.

Groundwater sampling was performed in all twenty overburden and bedrock monitoring wells onsite between March 8 and 11, 2010 during SC activities A groundwater sample was collected from the only overburden monitoring well installed during the RI, MGP-MW-113S, on March 16, 2012. A summary of the groundwater sampling performed during the 2010 SC and 2012 RI is provided in Table 3-6.

Monitoring wells were purged and groundwater samples were collected using a peristaltic pump and low-flow sampling methodologies. Prior to purging and sampling the depth to water and presence/thickness of NAPL were measured to the nearest 0.01 of a foot in each monitoring well. Tubing was placed at the approximate midpoint of the screened interval. Groundwater purge rates were set below the maximum sustainable flow rate to ensure that the water table remained within 0.3

feet of the initial depth to water reading in the well. During purging activities, groundwater was passed through a Horiba U-52 flow-through cell which contained probes to measure the water temperature, pH, conductivity, and oxidation-reduction potential. Samples of water discharging from the cell were collected at 5-minute intervals and analyzed for turbidity using a LaMotte® 2020 turbidity meter. After passing through the cell, the water was discharged and temporarily contained in 5 gallon buckets. The purged water was later transferred to 55-gallon closed-top drums and managed in accordance with Subsection 3.13.

Groundwater samples were collected in appropriate glassware once the water quality parameters had stabilized. Sample jars were labeled, wrapped in plastic, placed in coolers with ice, and sent by courier to Chemtech or Hampton Clarke-Veritech under chain-of-custody protocol. Groundwater sampling forms for the March 2010 and March 2012 groundwater sampling events are compiled and presented in Appendix G.

3.9 Hydraulic Conductivity Testing

Hydraulic conductivity tests (slug tests) were performed in four overburden monitoring wells at the site to obtain information on the hydraulic properties of the overburden. The wells tested include MW-4, MW-5, MW-6, and MW-9. A background continuous water level survey (at least 24 hours) was performed at these wells to evaluate potential railroad or other influences on water levels.

The slug tests were performed by adding or removing a known volume to each overburden well and timing the equilibration to the static water level. During slug tests at each well pair location, water levels were also monitored in the adjacent bedrock well to evaluate any changes in groundwater elevations related to the test well slug test. The general steps that were performed during slug testing are as follows:

- Static water level was measured to the nearest 0.01 foot
- A pressure transducer, attached to a data logger, was placed into the well and the water level was allowed to equilibrate to static conditions
- A weighted slug was inserted into the well, below the water table while simultaneously measuring and recording water levels with the pressure transducer and data logger until the water level equilibrated (“slug-in test”)
- The slug was withdrawn from the well and the water level was measured and recorded (“slug out test”)

The data from these tests (slug in and slug out) were analyzed according to the Bouwer and Rice method (1989) to calculate average hydraulic conductivity values for the overburden. The background water level survey and slug test data are included in Appendix H.

3.10 NAPL Well Construction, Gauging, and Sampling

NYSDEC requested that the recoverability of DNAPL at the site be evaluated as part of the RI and requested in the September 1, 2010 comment letter that sumps be installed in selected existing and/or newly installed boreholes to allow DNAPL collection. Of the eleven deep bedrock borings installed at the site during the SC, three borings, MGP-MW-TP4, MGP-MW-104D, and MGP-MW-108D, encountered what appear to be relatively productive tar-bearing fractures based on the FLUTe NAPL liners, coring/drilling observations, and groundwater samples. While many other borings encountered tar-bearing fractures, these three locations encountered the greatest quantities of DNAPL. Therefore, well strings with sumps were constructed in these three boreholes to preliminarily evaluate the recoverability of DNAPL at the site. The well construction details are summarized in the table below and included on the boring logs in Appendix B.

	MGP-TP-4	**MGP-MW-104D**	**MGP-MW-108D**
Screened interval(s) (ft bgs)	12 - 17	12 - 28 48 - 51 69 – 73	22 – 44
Sump interval (ft bgs)	17 - 27	73 – 83	44 – 54

Following removal of the blank FLUTe liner, each borehole was backfilled with cement-bentonite grout to the depth coinciding with the base of the sump and allowed to cure overnight. The FLUTe blank liner was everted into the borehole to a depth just above the grout to prevent potential vertical migration. Prior to installing the well string the depth to the top of grout was measured and bentonite chips were used to fill the borehole to the desired depth of the bottom of the sump as needed. A well string consisting of 2-inch diameter stainless steel blank casing and slotted wire-wrapped stainless steel screen with a 10-foot sump at the base was inserted into each borehole. The screened interval consists of 0.100-slot (100-slot) stainless steel, wire-wrapped well screen with #4 well gravel to fill the annular space between the screen and borehole wall. The annular space between the sump and blank casing sections and bedrock (or the outer casing at the top of the well) was filled with bentonite chips. A one foot # 1 sand choke was placed between the gravel pack around the well screen and the bentonite chips around the casing or sump sections. The wells were completed with locking caps. The well string was designed to allow DNAPL to flow by gravity from the apparent highest-yielding tar fractures into the well and accumulate in the sump, but does not allow evaluation of DNAPL yield from individual fracture zones (unless only one zone is screened). Evaluation of DNAPL recoverability in this existing well also was performed as discussed below.

The DNAPL level within each newly constructed well was monitored using a weighted string and/or oil-water interface probe the day after installation. After the first DNAPL measurement in which no DNAPL was present, the wells were developed to remove fines from the sumps. DNAPL levels were gauged every few days for the first two weeks. The gauging period was extended to weekly and then biweekly for 2 months and then to every 6 months due to the limited volume of DNAPL recovered in each well. The only well in which a significant quantity of DNAPL was measured was MGP-MW-104D. A DNAPL sample was collected from the sump of MGP-MW-104D on December 7, 2012 using a bailer and analyzed for physical property evaluation as summarized on Table 3-4. This sample was analyzed by PTS Laboratories of Santa Fe, California for the following properties using the methods listed below.

- Interfacial and surface tension by the DuNuoy Method – American Society of Testing Method (ASTM) D971
- Viscosity by ASTM D445
- Density by ASTM D1481
- Specific Gravity by API RP40

Investigation derived waste generated during these activities was managed in accordance with subsection 3.13.

3.11 Soil Gas Sampling and Analysis

Six soil gas samples, one crawlspace sample (MGP-SG-3), and two indoor air samples were collected and analyzed during the SC and one soil gas sample and one ambient air sample were collected and analyzed during the RI as illustrated on Figure 3-1 and summarized in Table 3-7. Although an outside ambient air sample was proposed during the SC, rain prevented the collection of the outdoor ambient air during the indoor air/soil gas sampling efforts. Soil gas samples were collected following utility clearance processes. Two indoor air samples were collected within site buildings during soil gas sampling. Survey forms of conditions within the buildings during the time of sampling and a photographic log of sampling locations is provided in Appendix I. Following apparatus set-up and purging procedures using a helium shroud, soil gas samples were collected over an eight-hour period at each location using 6L Summa canisters. The soil gas and ambient air samples were shipped via 2 day express courier service under chain-of-custody protocol to Air Toxics Limited, Inc. (Air Toxics) of Folsom, California. The samples were analyzed for VOCs and other parameters by United States Environmental Protection Agency (USEPA) Method TO-15. Table 3-7 provides a summary of the SC and RI soil gas and ambient air sample designation, date, depth, collection method, rationale, and analyses.

3.12 Analytical Program

3.12.1 2010 Site Characterization Chemical Analyses

The majority of the soil and groundwater samples collected during the 2010 SC were analyzed for:

- VOCs + 10 TICs by USEPA SW-846 Method 8260B
- SVOCs + 20 TICs by USEPA SW-846 Method 8270C
- TAL Metals by USEPA SW-846 6000/7000 Series
- Total cyanide by USEPA SW-846 Method 9012A
- PCBs by USEPA Method 8080 for select locations

These analyses were performed by Chemtech in accordance with NYSDEC Analytical Services Protocol (ASP).

The soil gas and ambient air samples collected during the SCI were analyzed for VOCs plus naphthalene, 2-methylpentane, isopentane, 2,3-dimethylpentane, isooctane, indene, indan, thiophene, and helium using USEPA Method TO-15. These analyses were performed by Air Toxics.

3.12.2 2012 Remedial Investigation Chemical Analyses

Based on the results of the 2010 SC, the majority of the soil and groundwater samples collected during the 2012 RI were analyzed for:

- VOCs by USEPA SW-846 Method 8260B
- PAHs by USEPA SW-846 Method 8270C

These analyses were performed by Hampton Clarke-Veritech in Fairfield, NJ in accordance with NYSDEC ASP.

The soil gas and ambient air samples collected during the RI were analyzed for VOCs plus naphthalene, 2-methylpentane, isopentane, 2,3-dimethylpentane, isooctane, indene, indan, thiophene, and helium using USEPA Method TO-15. These analyses were performed by Air Toxics.

This NAPL sample collected from MGP-MW-108D was analyzed by PTS Laboratories of Santa Fe, California for the following properties using the methods listed below.

- Interfacial and surface tension by the DuNuoy Method – American Society of Testing Method (ASTM) D971
- Viscosity by ASTM D445
- Density by ASTM D1481
- Specific Gravity by API RP40

3.13 Management of Investigation-derived Waste

The management of IDW was performed by AECOM field personnel during the SC and RI activities at the site. Waste generated during the site activities included soil and bedrock cuttings, decontamination fluids, groundwater purge and development water, and construction and debris material (C&D), including personal protection equipment (PPE). All of the waste was containerized in either closed-top (liquid) or open-top (soil and C&D) 55-gallon drums or rolloffs. The drums were collected at the end of each day and transported to the equipment storage area onsite. Drums were labeled and composite samples were collected for waste characterization analysis by Chemtech. Samples submitted to the laboratory for analysis were requested for a 5-day turnaround time to expedite disposal. Clean Earth of North Jersey, Inc. provided transport and disposal of the drums.

A field log was developed and maintained to keep track of the number of drums, waste type, and designation. Table 3-8 provides a summary of the date, manifest number, and the total number and type of drums included on the manifest for the waste that was generated and disposed during the 2010 SC and 2012 RI field activities. The waste generated during the investigation was separated as per waste profiling with the transport/disposal facility (Clean Earth of North Jersey, Inc.). The manifests for the 2010 and 2012 IDW generated are located in Appendix J.

3.14 Survey of Investigation Sampling Locations and Base Map Development

The base map of the site was generated from Con Edison survey drawing No. A-39-1438 and Figures 3-1 and 5-1 from the Historical Investigation Report (RETEC, 2001). These drawings are included in Appendix A. Because many of the RI field activities were performed offsite for delineation purposes, the base map was extended west-northwest across I-95 by using information from the City of Rye website (www.ryeny.gov). The 2010 SC and 2012 RI sample locations were surveyed by CT Male, a surveyor licensed in the State of New York. These locations were surveyed in the 1983 North American Datum (NAD 83) East Zone of the New York State Plane Coordinate System and were referenced to the 1988 North American Vertical Datum (NAVD88). Elevations were surveyed to the nearest 0.01 foot. These locations were added to the base map.

3.15 Water Well Research

Due to the presence of MGP-related impacts in bedrock and bedrock groundwater, additional activities were performed during the SC and RI to further evaluate the potential presence and status of domestic wells in the vicinity of the Rye former Gas Works Site. These activities include the following:

- Reviewing the Groundwater Resources of Westchester County, New York 1955 (USGS 1955) and the October 21, 2009 EDR Report (on file in the Chestnut Ridge, NY AECOM office) to identify wells within 1 mile of the site.
- Conducting field reconnaissance of identified well locations.
- Conducting on-line research of the NY State GIS Clearinghouse, NY State Department of Health, Westchester County Health Department, City of Rye, NYSDEC water well information search, NYSDEC Water Well Drilling Program, and the USGS National Water Information system mapper.
- Performing continuous water level monitoring for one week using pressure transducers in MGP-MW-101D and MGP-MW-109D to evaluate whether other bedrock wells are active and pumping nearby. Water levels were recorded continuously every 15 minutes for one week at each of these locations.

The results of the water well research and the water level data are provided in Appendix K and presented in Section 4.

4.0 Site Topography and Drainage, Geology and Hydrogeology

This section presents a summary of historic and local information as well as field measurements and observations made during the SC and RI activities. Included is a discussion of the topography and drainage, geology, and hydrogeology of the site.

4.1 Topography and Drainage

The site topography is illustrated on Figure 4-1 and generally ranges between approximately 60 and 85 feet NAVD88. The topographic contours illustrated on Figure 4-1 are based on topographic contours provided by the City of Rye website (www.ryeny.gov) and are relative to NAVD88. A detailed site topographic map is provided as Con Edison drawing A251756-0 in Appendix A and is dated 1991. The topography illustrated on the ConEdison drawing is referenced as being generated by photogrammetric mapping in 1987. The topographic contours on the Con Edison drawing are more detailed and appear to be relative to the national geodetic vertical datum of 1929 (NGVD1929) which is approximately 1 foot higher than NAVD88 in Rye, New York, but are in general agreement with topographic contours provided on the City of Rye website for the site and adjacent areas.

The highest elevation on site is at the top of the rock outcrop situated adjacent to the parking area in the eastern portion of the site where the former 3 million cf gas holder was situated. The top of this outcrop is approximately 85 ft NAVD88 and the adjacent parking area is at approximately 70 ft NAVD88. The land surface slopes to the east, north, and west from this area to an elevation of approximately 60 ft NAVD88 along the western site boundary adjacent to the railroad and along the northern site boundary. Individual rock outcrops across the site are occasionally present and at a higher elevation than the surrounding ground surface. A small intermittent drainage swale is situated adjacent to the northeast corner of the site.

The majority of the site is paved or covered with buildings and surface water from precipitation events is collected in onsite storm drains. There is a storm sewer running along the east side of the service center building that drains the parking lot into the sewer.

AECOM obtained drawings from the New York State Thruway Authority that show the grades, configuration, and drainage system details for the portions of I95 that run to the northeast and southwest of the site. AECOM evaluated these drawings to determine if the I95 drainage system could act as a sink for groundwater flowing from the site to the west-northwest. The relevant drawings (plan view sheets P-20FRI, P-21RI and P-22RI, profile sheets PR-20F, PR-21, and PR-22RI and typical section sheet TS-1RI) are included in Appendix L.

The drawings show the I95 surface at elevation 58 ft above the national geodetic vertical datum of 1929 (NGVD1929) to the south of the site (Station 482+50). Moving north along I95 the surface slopes upward to a high point at elevation 60.46 NGVD29 directly northwest of the site (Station 487+75). In the site vicinity, NGVD 1929 is approximately 1.1 ft higher than NAVD88, therefore 1.1 ft should be subtracted from the drainage system elevations to directly compare with the site elevations. Continuing north along I95, the surface slopes back downward to elevation 58 NGVD29 north of the site (Station 493+00). Stormwater runoff flows northeast and southwest from the highpoint. This runoff is intercepted by catch basins along the edge of the travel lanes and conveyed through 18 inch reinforced concrete pipe (RCP) to larger stormwater conveyance systems flowing away from the highway.

An under drain system consisting of 6-inch perforated pipe in a gravel lined trench is located beneath the median strip and below the outer edges of the northbound and southbound travel lanes. The bottom of the under drain is approximately 3 to 4 feet below surface grade (elevation 54 to 56 NAVD88). The under drains flow into the stormwater conveyance system described above.

As reported in the historic report (RETEC 2001), three surface water bodies are in the vicinity of the site:

- The nearest surface water body is Mead Pond 1,000 feet to the southwest of the site.
- The Beaver Swamp Brook is located approximately 1,500 feet west of the site. The Beaver Swamp Brook surface water classification is C – waters best usage is fishing. The water shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
- Blind Brook is approximately 1,500 feet to the east of the site. The Blind Brook surface water classification is SC – waters best usage is fishing. These waters shall be for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

The locations of the surface water bodies and wetlands near the site are illustrated on an overview map and a detail map in Appendix A of this RI report and were excerpted from the 2009 EDR report. According to the database search completed by Environmental Data Resources, Inc. (EDR), the site is not located within a mapped Federal Emergency Management Agency (FEMA) flood zone. The nearest flood zone is the area around the creek bed of Blind Brook to the east of the site. The site itself is not mapped as a designated wetland area. The closest mapped wetland areas are two small, discrete areas approximately 350 feet to the east and south of the site.

4.2 Site Geology

Information concerning site stratigraphy and bedrock geology was obtained from published geologic mapping, bedrock outcrop evaluation, and observations made during the installation of borings and monitoring wells and the excavation of test pits at the site during previous investigations and the SC and RI. Geologic details are provided on the boring, coring, test pit, and well logs provided in Appendix B. Eight geologic cross sections of the site were developed. Cross section locations are illustrated on Figure 4-2 and the sections are provided as Figures 4-3 through 4-6. Three geologic units identified beneath the site include fill, glacial till and bedrock.

4.2.1 Overburden

The overburden beneath the site is comprised of fill and glacial till. The fill is discontinuous across the site and includes sand and silt, gravel, cobble, concrete, brick, glass, and some piping and wire. Fill was found between 0 and approximately 8 ft bgs and is generally thicker within and adjacent to former structures such as the below grade gas holders. The till is generally comprised of silty sand with varying amounts of cobble/gravel and is sometimes dense. The fill is frequently difficult to distinguish from the underlying till unless it contains anthropogenic material. The overburden, comprised of fill and till, ranges in thickness from 0 to approximately 18 feet at the site as illustrated in the overburden thickness isopach map presented as Figure 4-7. The overburden is thickest in the southern corner of the site at MGP-MW-112D where it was measured to be 16 feet thick and towards the one portion of the northwestern-western edge of the site where it was measured to be 18 feet thick. Based on the site topography, bedrock outcrops, and the overburden thickness northwest of I95 it appears that the overburden is continuous from the northwestern edge of the site across I95 to the City of Rye Park at locations MGP-MW-113D and MGP-MW-116D. Bedrock outcrops are present north and south of the site on both sides of I95 at the general locations (not surveyed) illustrated on Figure 4-7, indicating that the overburden thins and/or is absent in these directions.

4.2.2 Bedrock

Published geologic mapping (Geologic Map of New York, Lower Hudson Sheet; bedrock geology layer in New York State GIS) shows that the site is underlain by the Hartland formation, described as “basal amphibolites overlain by pelitic schist” (Geologic Map of New York). The southeastern edge of the map area of the Hartland formation occurs south of Theodore Fremd Avenue, within the Rye Nature Center; south of the contact the bedrock is mapped as the Harrison Gneiss, a “biotite-hornblende-quartz-plagioclase gneiss with accessory garnet and sphene” ; the “plagioclase commonly occurs as augen” (Geologic Map of New York, Lower Hudson Sheet), lenticular or eye-shaped mineral masses within the gneiss.

Eight bedrock outcrops at the site, two outcrops offsite and southeast of I95, and two outcrops offsite and northwest of I95 were evaluated during the site investigations. Appendix M contains details regarding the bedrock outcrop evaluation and Figure 4-8 illustrates the outcrop locations. These locations include additional outcrops that were located but not evaluated. The bedrock lithology is generally consistent, with a range of variations, for all outcrops observed, and the lithology is consistent with the published description for the Hartland Formation schist (no amphibolite was observed). The bedrock consists of light gray to dark gray mica schist, with varying amounts of muscovite and biotite and occasional quartz veins. The rock is cut by irregular pegmatite dikes, observed in most of the larger outcrops. Most of the onsite outcrops occur as polished, pavement type outcrops, with one outcrop (#4) showing glacial grooves. Some of the onsite and offsite outcrops have vertical faces formed by blasting. A few natural, ridge-type outcrops were observed offsite.

Metamorphic foliation generally strikes north-northeast (NNE) to northeast (NE) (10 to 40 degrees east of true north) and is vertical to steeply dipping (either to the northwest [NW] or the southeast [SE]). Some folding and crinkling of foliation was observed, but this was uncommon. Some of the metamorphic foliations have coincident fractures, with weathered zones less commonly observed. West-northwest (WNW) to NW-striking fractures that cross-cut foliation are fairly common and generally strike from 40 to 90 degrees west of true north. Most of the fractures observed in outcrops were steeply dipping , with fewer moderately dipping and very few low angle or horizontal fractures observed (see rose diagram and stereo plot in Appendix M). In summary, the most common fracture trends are NNE to NE and WNW to NW. It should be noted that pavement outcrops favor the observation of vertical and steeply dipping fractures, while horizontal or low-angle fractures are difficult to observe or will not intersect a pavement type outcrop.

Bedrock crops out at several locations across the site and in general the top surface of bedrock dips to the north-northwest across the majority of the site as illustrated on Figure 4-8. The top of bedrock in the southern portion of the site dips to the south from the outcrops in the southern site area towards MGP-MW-112D. The top of bedrock in the northeastern portion of the site dips to the northeast from the large outcrop near the parking area and former large gas holder towards MGP-MW-114D. Bedrock outcrops are present west and north of the site along the railway and I95 as generally illustrated on Figure 4-8. These outcrop locations were approximated based on field observations and are not surveyed locations or sizes; however, they help illustrate the undulating surface of the bedrock at the site and in the site vicinity. On the northwest side of I95, the top of bedrock dips to the south from Clinton Avenue where outcrops are visible along I95 towards the City of Rye Park and locations MGP-MW-116D and MGP-MW-113D.

The data generated during the subsurface bedrock investigations performed during the SC and RI at the site were compiled on spreadsheets and include drilling and coring observations, geophysical logging results, FLUTe NAPL liner evaluations, and discrete (packer) fracture sampling and analytical results. The bedrock data summary spreadsheets for each bedrock borehole installed as part of the SC and RI are provided in Appendix N and were used to generate the cross sections illustrated on Figures 4-3 through 4-6.

Bedrock observations during coring for the SC boreholes are generally consistent with published bedrock descriptions and the outcrop observations made during the SC but provide more detailed information on the bedrock beneath the site and north of the site. With the exception of a portion of MGP-MW-113D, which was cored, the RI boreholes (MGP-MW-109D, 110D, 112D, 113D, 114D, and 116D) were installed using air rotary or roller cone drilling; drill cuttings were described but provided less detailed lithologic descriptions than the cores collected and described during the SC (see drilling logs in Appendix B and Bedrock Data Summary Spreadsheets in Appendix N). For all the bedrock boreholes, AECOM described the predominant lithology as biotite schist with varying amounts of quartz. Other lithologies noted include pegmatite and quartz veins. In one borehole (MGP-MW-106D, in the western portion of the site), quartzite was noted. The biotite schist varies from almost black to light gray. The variations appear to be due to grain size and the percentage of quartz in the rock. Occasionally, brown schist was noted, with the brown appearance probably due to the presence of iron oxide and/or tan feldspar. In addition to biotite and quartz, other minerals noted in the schist include varying amounts of muscovite, orange-pink (“salmon-colored”) feldspar, iron oxide (rust), white feldspar (plagioclase identified in MGP-101D near southeast edge of the site), and occasionally chlorite (especially in weathered zones in MGP-MW-101D, 108D, and 9DD). Usually, when present, feldspar is part of the schistose rock mass; feldspar also occurs with quartz in the pegmatites and rarely in zones that are exclusively or primarily feldspar. The following minerals are only occasionally or rarely present: garnet, pyrite, rose quartz, and milky quartz. Clay was also rarely noted but may be more common than observed because it may not be recovered during coring. The clay may be derived from weathered rock or fault gouge.

The bedrock cores commonly show metamorphic foliation, with dips varying from vertical to horizontal relative to the core axis; swirling or contorted foliations were also observed. Quartz or pegmatite veins sometimes coincide with or parallel foliation and sometimes cross cut foliation. Weathered zones, rubble zones, and missing core were also noted. For the five-foot core runs, recovery varied from 3.5 feet to full recovery, with full recovery occurring most of the time. Rock quality designation (RQD) varied from 52% to 100% and was usually greater than 80%.

AECOM also measured and described fractures observed in the recovered cores (see Coring Logs in Appendix B and spreadsheets in Appendix N). AECOM used professional judgment to interpret each observed fracture as natural or coring-induced (shown on some logs as “mechanical” or “artificial”). The presence of such natural features as mineralization, rust or other evidence of weathering, or slickensides (polished and striated surfaces that result from friction along a fault plane) was taken as clear evidence of a natural fracture. Breaks that were very fresh and/or irregular were interpreted as coring-induced or mechanical. In other cases, the evidence was less clear and professional judgment was used. These decisions and the core lithologic and fracture descriptions were made and/or checked in the field by a geologist experienced with drilling and coring in crystalline bedrock. For each natural fracture, the dip angle from the horizontal (assuming the core axis is vertical) was measured and recorded. It should be noted that a vertical borehole or core preferentially samples horizontal and low-angle fractures, while vertical or steeply-dipping fractures can easily be missed by a vertical borehole.

Borehole geophysical survey (Section 3.6.4) results (Appendix E) provide additional information on bedrock geology beneath the site and north of the site. Where the optical televiewer (OTV) was run and the water in the borehole was sufficiently clear, the OTV provided information on lithology (dark rock versus light rock), foliations and veins, and fractures. This information typically confirms lithologic observations of the cores and can provide information on the rock type in areas of poor core recovery. The acoustic televiewer (ATV) was used primarily to locate, rank, and determine the orientation of subsurface fractures that intersect the boreholes. AECOM's subcontractor, Hager-Richter, interpreted fractures that appear as sinusoidal traces on the ATV logs, as described in Appendix E. Hager-Richter ranked each fracture on a scale of R1 to R4 during the SC and R1 to R3 during the RI, with R3 and R4 interpreted as most open and capable of transmitting groundwater or NAPL and R1 least open (fracture ranking system described in Appendix E). Because of the loss of resolution in the non-cored RI boreholes for the ATV data, it is difficult to break the fracture ranks down to four categories. The ranking system used for the RI work in 2012 uses a Rank 1-3 system. The Rank 1 fracture category (minor fractures) from the Rank 1-4 system is the same as the Rank 1 fracture category (minor fractures) from the Rank 1-3 system. In the Rank 1-4 system, both Ranks 2 and 3 are intermediate fractures, with Rank 2 fractures having no aperture and Rank 3 fractures having little aperture. In the Rank 1-3 system, both types of intermediate fractures are consolidated into the Rank 2 category. Some boreholes have no R4 fractures, so that R3 fractures are the most open fractures observed in these cases. R1 and R2 fractures have little or no apparent aperture where they intersect the borehole.

For each fracture, Hager-Richter determined the depth, dip azimuth (relative to magnetic north), dip angle (from horizontal), and fracture rank and provided the data on a spreadsheet. AECOM converted the orientation data so it is relative to true north and determined the strike and dip in right-hand rule format. The fracture data was then summarized on the Bedrock Data Summary Spreadsheets (Appendix N) and was also used in selecting key fracture zones for packer sampling and for illustration on the cross sections (Figures 4-3 through 4-6). For each well, Hager-Richter (Appendix E) provided summary stereonet plots of poles to fractures, rose diagrams of dip azimuths, and dip histograms showing the relative distributions of dip angles from the horizontal; the two former plots are relative to true north. Hager-Richter also provided tabular form and three corresponding plots for an additional category “foliations and veins”. Generally, the ATV fracture results show that most fractures are low angle, dip moderately (50 – 75 degrees) to the northwest, or dip moderately to the southeast. However, almost the full range of dips (0 to 85 degrees) is present. Foliations and veins always dip to the northwest or the southeast (strike NE/SW) and dip moderately to steeply. It should be remembered that a vertical borehole provides a data set that is statistically biased in favor of low angle fractures and that undercounts steeply dipping fractures. Because the outcrop observations noted that many NE or NNE striking fractures coincide with foliation, the outcrop and borehole fracture data are generally consistent.

Caliper logs measure borehole diameter and provide a characterization of borehole morphology, roughness versus smoothness, and borehole breakouts. Borehole enlargements commonly occur where fractures (especially of higher rank) or fracture zones intersect a borehole. Borehole enlargements also occur at weathered zones. AECOM considered caliper enlargements along with other factors in identifying active flow and transport zones within the subsurface. Portions of boreholes that appear smooth on the OTV, ATV, and caliper were sought when selecting zones in which to place packers (see below).

In summary, bedrock beneath the site and north of the site consists of biotite schist with varying amounts of quartz and occasional pegmatite. The rock is variably fractured, with the most common fracture orientations NE to NNE (often coinciding with metamorphic foliation) and steeply dipping and NW-trending fractures of varying dip angle. Some of the NE-trending fractures likely intersect more than one NW-trending fracture, based on fracture length and spacing measurements.

4.3 Site Hydrogeology

Fourteen overburden monitoring wells, seven bedrock monitoring wells, and 17 FLUTe lined bedrock boreholes were installed at the site during previous investigations, the SC and the RI. Table 4-1 provides a summary of the overburden and bedrock monitoring wells including the well designations, total depth, elevation, screened interval, and groundwater elevation measurements. The monitoring well locations are illustrated on Figure 3-1.

4.3.1 Overburden Groundwater

Groundwater is present in the overburden, where the overburden is present in sufficient thickness, at depths ranging between approximately 2.7 and 10 ft bgs. Figures 4-9 and 4-10 Illustrate overburden groundwater elevation contours for the site based on measurements collected on March 8, 2010 and April 13, 2012. Groundwater flow in the overburden at the site is to the northwest. A more northerly component to the groundwater flow direction is evident on Figure 4-10 when the groundwater elevation was slightly lower in April 2012 relative to the March 2010 elevation measurements. The overburden groundwater hydraulic gradient appears relatively consistent across the site in March 2010, averaging approximately 0.019 ft/ft. The overburden groundwater hydraulic gradient in April 2012 appears somewhat flatter in the western portion of the site and is steeper in northern portion of the site between MW-10 and MGP-MW-103S and MGP-MW-104S. The hydraulic gradient ranges from approximately 0.014 ft/ft in the western portion of the site to approximately 0.04 ft/ft in the northern portion of the site based on the contours presented on Figure 4-10.

As discussed above, an under drain system consisting of 6-inch perforated pipe in a gravel lined trench is located beneath the I95 median strip and below the outer edges of the northbound and southbound travel lanes. The bottom of the under drain is approximately 4 feet below surface grade (elevation of approximately 54 to 56 ft (when converted to NADV88). The under drains flow into the stormwater conveyance system northwest of the site. Drawings illustrating the drainage system along I95 northwest of the site are provided in Appendix L.

The observed overburden groundwater elevation along the western portion of the site ranges from approximately 54 to 56 ft NAVD88 and was measured at 53.6 ft bgs in the overburden on the west side of I95 indicating that the water table beneath the travel lanes is at or slightly below the under drain system. During periods of high water table, the under drains may intercept some groundwater flowing from the site. Since the under drains would only penetrate the very top of the groundwater within the overburden, the majority of the overburden groundwater flow would not be intercepted. The bottom of the 18 inch storm sewer running parallel to the site at the edge of the north bound travel lane (from Station 489+50 to 494+00) is at an elevation of approximately 52 ft (when converted to NAVD88). Therefore, pipe bedding or pipe leaks may also intercept groundwater flowing from the site.

Single well slug tests were performed in 5 monitoring well clusters at the site to evaluate the hydraulic conductivity of the overburden. Prior to hydraulic conductivity testing at the site, groundwater levels in 10 monitoring wells were monitored and recorded for 24 hours to determine whether background conditions at and near the site would significantly influence groundwater levels (i.e., trains passing by the site). The background survey was performed from 10:00 a.m. on March 1, 2010 through 10:00 a.m. on March 2, 2010 and included the following monitoring wells: MW-4, MW-4D, MW-4DD, MW-5, MW-5D, MW-6D, MW-9, MW-9D, MW-9DD, and MW-103S. The background survey data are compiled and graphed in Appendix H. The majority of wells surveyed (6 of the 10) showed changes in water level of less than 0.10 feet during the course of the survey. These wells include: MW-4, MW-4D, MW-4DD, MW-5D, MW-6D, and MW-9. The maximum change in MW-5 was approximately 0.25 ft. Monitoring well MW-9D showed a water level change of less than 0.10 feet during the course of the survey following a rapid change of approximately 1.9 feet recorded at 10:44 a.m. on March 1, 2010. Monitoring well MW-103S also showed a water level change of less than 0.10 feet during the course of the survey following a rapid change of approximately 1.6 feet recorded at 10:14 a.m. on March 1, 2010. It appears the transducers may have slipped inside the well casing at these locations. The maximum change in MGP-MW-9DD appears to be approximately 1 ft with a sharp increase of approximately 0.8 ft in the first half of the survey. It is unknown why this change occurred however, MGP-MW-9DD was lined with a FLUTe during the background survey and hydraulic conductivity testing which may have affected the readings. Overall the background survey results indicated that background water level changes would not affect the hydraulic conductivity test results.

Weather data were acquired from Weather Underground (www.wunderground.com) for both days of the background survey. There was no precipitation during the background survey. The average temperature during the background survey was 39.1 degrees Fahrenheit; average humidity was 61.36%; average pressure (in Hg) was 29.80; and the average wind speed was 14.30 mph.

Single well slug tests were performed at five monitoring well cluster locations: MW-4/MW-4D, MW-5/MW-5D, MW-6/MW-6D, MW-9/MW-9D, and MW-103S/MW-103D. Slug tests were only conducted on wells screened in the overburden. The data were evaluated using the Bouwer and Rice Method (1976) to estimate the hydraulic conductivity of the overburden material. Table 4-2 provides a summary of the wells tested, the type of material within the screened intervals, the test and solution methods, and the estimated range of hydraulic conductivity values. The slug test data, recovery curves, and hydraulic conductivity calculations are provided in Appendix H.

The estimated hydraulic conductivity values for these wells screened in the overburden were relatively consistent between all wells tested except for MW-103S. The shallow well screened intervals consisted of fill materials of sand, silt, and some gravel. Depth to water ranged from 0.64 to 2.01 ft bgs at MW-103S during slug testing field activities. Due to the shallow water table, only rising head slug tests were performed at this location in an attempt to limit the loss of water over the top of the well. Water was lost, however, during slug testing at MW-103S and it is possible that data from those tests does not accurately describe the hydraulic conductivity in that area of the site.

Water levels were monitored in the adjacent wells making up the well clusters during each single well slug test. There were no measured effects on water levels in adjacent wells screened below the test well during the testing events.

Groundwater seepage velocities were calculated using measured horizontal hydraulic gradients and estimated hydraulic conductivity values using a modification of Darcy's Law:

$$V = Ki/n$$

Where:
V = Groundwater seepage velocity (ft/day)
i = Horizontal hydraulic gradient (ft/ft)
K = Hydraulic conductivity (ft/day)
n = Porosity of aquifer sediments

Calculations to determine mean hydraulic conductivity and seepage velocity in the overburden do not take the data from MW-103S into account due to problems encountered during slug testing field activities. The horizontal hydraulic gradient (i) for the overburden based on the March 2010 groundwater elevation contours was 0.019 ft/ft and based on the April 2012 contours was 0.014 ft/ft to the northwest and 0.04 ft/ft to the north. The average geometric mean hydraulic conductivity value (K) was 2.4 ft/day . An estimated porosity value of 30% was used for each calculation, which is typical for sandy material. Using the above equation, horizontal groundwater seepage velocity within the overburden is calculated to range between approximately 0.112 and 0.333 ft/day.

4.3.2 Bedrock

Bedrock groundwater at the site was investigated through the installation of seven bedrock monitoring wells and 17 FLUTe lined boreholes. Table 4-1 summarizes the construction details for the seven bedrock monitoring wells. Details regarding the 17 FLUTe lined boreholes are provided on well logs in Appendix B and bedrock summary spreadsheets in Appendix N. The seven bedrock monitoring wells were installed as part of the UST investigations at the site and were constructed so that the screened interval bracketed the shallowest water bearing fractures at each location. The screened intervals range between 15 and 57 ft bgs and screen lengths range between 8 and 20 ft. Water levels were recorded in March 2010 and April 2012 in the seven bedrock monitoring wells. These bedrock well construction details and water levels are summarized in Table 4-1.

Groundwater elevations measured in the seven bedrock monitoring wells were not contoured since the connectivity of the fractures is unknown and the elevations do not indicate a consistent flow direction. The bedrock groundwater elevations ranged between 62.13 and 56.88 ft NAVD88 during the March 2010 event and between 58.39 and 53.74 ft NAVD88 during the April 2012 event. The March 2010 bedrock groundwater elevations ranged from 1.04 to 3.74 feet higher than the April 2013 elevations. The highest bedrock groundwater elevation was measured at MW-6D and the lowest bedrock groundwater elevation was measured at MW-5D during each sampling event. Four of the bedrock monitoring wells are paired with overburden monitoring wells, including MW-4/4D, MW-5/5D, MW-6/6D, and MW-9/9D. The vertical hydraulic gradient between the overburden and bedrock was consistently downward in monitoring well pairs MW-4/4D, MW-5/5D, and MW-6/6D and was upward in monitoring well pair MW-9/9D. The vertical hydraulic gradient was greatest in well pairs MW-4/4D (3.94 ft in March 2010 and 3.74 ft in April 2013) and MW-5/5D (4.51 ft in March 2010 and 4.69 in April 2012) and least in well pairs MW-6/6D (0.44 ft in March 2010 and 0.48 ft in April 2013) and MW-9/9D (0.51 ft in March 2010 and 0.12 ft in April 2012).

Groundwater flow can be expected to occur from areas of high head to areas of low head within fractured rock, if and only if some of the fractures are permeable and intersect with other permeable fractures. Identification of specific flow paths within fractured rock depends on the morphology and connectivity of individual fractures. Individual fractures can have different heads than other nearby fractures so that boreholes that intersect multiple fractures can have upward flow or downward flow in certain zones in response to these head differences. A DNAPL such as tar can be expected to move in response to gravity, for example down dip in an open bedrock fracture. DNAPL transport in response to head differences is not the key factor governing DNAPL movement. The FLUTe liners within each bedrock borehole prevent vertical migration of water and DNAPL within the borehole.

Based on outcrop measurements and ATV results, NNE to NE and WNW to NW appear to be the most likely orientations for potentially conductive bedrock fractures. Based on fracture length and fracture spacing measurements at two outcrops (Appendix M), NE-striking fractures (often coincident with foliation) that are open to semi-open and steeply dipping appear to have a sufficient average length to intersect several cross-cutting NW-striking fractures. On the other hand, only certain NW-trending fractures appear to be long enough to intersect more than one NE-trending fracture. These observations may indicate that groundwater flow is more likely toward the NNE-NE (or SSW-SW) than to the NW (SE). The fracture length data do not indicate whether it is reasonable to project key fractures that intersect the boreholes up to the top surface of the bedrock (Appendix M).

Some of the borehole geophysical surveys performed at the site (Appendix E) provide information as to flow into, out of, and within the boreholes. These surveys include fluid temperature, fluid conductivity, and heat pulse flowmeter surveys. The temperature and conductivity logs show inflections or changes in slope at locations within a borehole at which water of slightly different conductivity or temperature exits or enters the borehole. These locations are generally fracture zones. The heat pulse flowmeter is not a continuous logging tool but takes velocity measurements at discrete locations within the borehole. Changes of velocity from one reading to the next or a change from upward flow to downward flow indicate that between the two readings, water is entering or leaving the borehole. Temperature, conductivity, caliper, ATV, and/or OTV can be used to determine the most likely fracture or fractures at which water is entering or leaving the borehole between two different heat pulse flowmeter readings. As described in Section 3.6.4, it was not possible to perform heat pulse flowmeter surveys in some of the boreholes because observed tar posed a threat to the instrument. In these boreholes, selection of fractures likely to provide inflow or outflow for that borehole was less definite. For boreholes in which heat pulse flowmeter surveys were done, from two to eight fracture zones per borehole were identified as inflow or outflow zones to the borehole (see Appendix E or the cross sections, Figures 4-3 through 4-6). AECOM notes that the heat pulse flowmeter may not detect all fractures capable of transmitting groundwater or NAPL. If two adjacent fractures have the same head, there will be no upflow or downflow in the borehole under ambient conditions, even if one or both of the fractures is highly transmissive.

As described above, several types of investigation produced multiple data sets to characterize the geology and hydrogeology of the bedrock beneath the site and northwest of the site. In order to produce the optimal characterization of potential pathways for groundwater flow and contaminant transport (both dissolved phase and DNAPL), it was necessary to synthesize the information from the various investigations. This synthesis allowed the careful selection of zones within each borehole for packer sampling in addition to the overall characterization of the fractured bedrock hydrogeology. In order to synthesize geologic descriptions of core; core fracture measurements; ATV fracture measurements; geophysical anomalies (temperature inflections, conductivity inflections, and caliper enlargements); flowmeter results; NAPL FLUTe liner observations; and packer sample results, a Bedrock Data Summary Spreadsheet (Appendix N) was constructed for each bedrock borehole. The spreadsheets allowed a foot-by-foot comparison of results and observations for each of the investigations listed above.

As described in Section 3.6.5, after the first three bedrock boreholes were drilled and simultaneously sampled with a single inflatable packer system during the SC (MGP-MW-4DD, MGP-MW-9DD and MGP-MW-0DD), dual packers were used to sample fracture zones selected for each borehole after it was completed. The borehole geophysical information, FLUTe liner observations of potential tar-bearing fractures, and core descriptions were used to select potentially flowing fractures for packer sampling. The caliper logs and ATV and OTV output displays were used to select apparently smooth and competent borehole sections above and below each selected fracture zone for packer placement, to improve the chances that the inflatable packers would form good seals against the formation. The packer zones and results for key analytes are shown on the spreadsheets in Appendix N. From the standpoint of minimizing unsuccessful packer sample collection attempts, the approach described above, synthesizing geophysical and other information, was very effective in selecting zones for packer sampling. For most of the boreholes, there were no “dry” samples and one or zero packer zones that were not sampled for any reason. For the boreholes sampled prior to geophysical surveys, 10 of 15 packer zones in which sampling was attempted were dry in MGP-MW 0DD; for MGP-MW-4DD, 2 of 13 zones attempted were dry; for MGP-MW-9DD 3 of 11 zones attempted were dry. Typically, the packers were set with a 5-foot spacing, and from 0 to 12 gallons were pumped from each zone during sample collection; the typical amount pumped was 3 gallons. Pumping rates during sample collection varied from 0 to 1.5 gallons per minute, with pumping rates of a few tenths of a gallon per minute typical. While the packer sample collections do not represent controlled yield tests for the various fracture zones, these do provide very relative comparisons of the yield of particular fracture zones beneath the site (see logs in Appendix B for packer test yield data).

During drilling for the SC phase, AECOM observed the following anecdotal evidences of well-to-well hydraulic connections or lack thereof:

- *MGP-MW-4DD (during drilling from 100 to 150 feet) is hydraulically connected to MGP-MW-9DD (when 100 feet deep):* On at least one occasion between September 17 and 22, 2009, while MGP-MW-4DD was being deepened from 100 feet to 150 feet, MGP-MW-9DD experienced a water level rise to an overflowing condition. At this time, MGP- MW-9DD was 100 feet deep, so there is a hydraulic connection from shallower than 150 feet (and probably deeper than 100 feet) in MGP-MW-4DD to some depth in the upper 100 feet of MGP-MW-9DD. The overflow in MGP-MW-9DD was probably due to the injection of water into the formation during the drilling of MGP-MW-4DD. The exact flow path(s) between the two boreholes cannot be identified for sure, but one of two outflowing zones in MGP-MW-4DD (73 - 74 feet below ground surface (bgs) or 82.5 – 83.5 feet bgs) is likely part of this connection. In MGP- MW-9DD, significant fractures and associated visible and FLUTe impacts between 43 and 50 feet (Section 5, Appendix D, Appendix N) may be the entry point(s) for groundwater flowing from the MGP-MW-4DD area. Because heat pulse flowmeter surveys were not performed in MGP-MW-9DD, inflow and outflow locations for this borehole are not known. The distance between these two wells is about 160 feet.

- *MGP-MW-4DD (during drilling from 150 to 200 feet) is hydraulically connected to MGP-MW-9DD (when 150 feet deep):* On December 8 or December 9, 2009, while MGP-MW-4DD was being deepened from 150 to 200 feet, MGP-MW-9DD began overflowing. As of these dates, MGP-MW-9DD had already been deepened to 150 feet. Both wells had packer samples with high levels of naphthalene just below 100 feet bgs (102 – 110 feet bgs in 4DD and 100 – 105 feet bgs in 9DD). FLUTe impacts at 106 – 107 feet bgs in 4DD (Section 5, Appendix D, Appendix N) may indicate that impacted groundwater flowed from MGP-MW-4DD at this depth and entered MGP-MW-9DD at between 100 and 105 feet bgs. Flow between the boreholes at the shallower depths discussed in the previous bullet may also be responsible for the overflowing condition in MGP-MW-9DD.

- *MGP-MW-4DD (during drilling from 150 to 200 feet) is hydraulically connected to MGP-MW-108D:* On December 8 or December 9, 2009, while MGP-MW-4DD was being deepened from 150 to 200 feet, MGP-MW-108D began overflowing. The overflow in MGP-MW-108D was probably due to water injection during MGP-MW-4DD drilling. Because of heavy visible and FLUTe impacts in MW-108D (Section 5, Appendix D, Appendix N), neither heat pulse flowmeter nor packer sampling was performed for this well. Therefore the entry or exit points in MGP-MW-108D for a hydraulic connection(s) with MGP-MW-4DD are not known. The distance between these two wells is about 220 feet.

The following potential hydraulic connection exists, based on evidence during drilling:

- *MGP-MW-4DD (during drilling from 150 to 200 feet) may be hydraulically connected to MGP-MW-104D:* During MGP-MW-104D drilling, drillers and AECOM field personnel noted that significant quantities of water were lost to the formation during drilling. While deepening MGP-MW-4DD from 150 to 200 feet on December 8 or December 9, 2009, FLUTe installation occurred in MGP-MW-104D, and this installation was difficult, presumably due to pressure or inflow of formation water in the borehole. These observations, in combination, may indicate a hydraulic connection between MGP-MW-4DD and MGP-MW-104D, with water injected into the former during drilling and flowing to the latter. Several open, low-angle fractures intersect MGP-MW-104D, with significant FLUTe impacts and naphthalene concentrations in packer samples noted from several depths (Section 5, Appendix D, and Appendix N). These lines of evidence suggest the possibility of a hydraulic connection between the two wells; although MGP-MW-4DD and MGP-MW-104D are farther apart than any other well pairs known to be hydraulically connected. However, it is also possible that the observed phenomena are coincidental. The distance between these two wells is approximately 360 feet.

The following example of no hydraulic connection was observed:

- *MGP-MW-0DD (after coring to 20 feet) was not connected to MW-4D or MW-9D:* During the early coring for MGP-MW-0DD, as the borehole was pumped for sample collection, water levels in MW-4D and MW-9D were measured with an electronic water level probe both before and after pumping in MGP-MW-0DD and did not change significantly. The distances between MGP-MW-0DD and MW-4D and MW-9D, respectively, are about 110 and 120 feet. It is possible that a hydraulic connection may have been created between MGP-MW-0DD and either of these wells (or the DD wells at these locations; MW-4D is only 30 feet deep, and MW-9D is only 45 feet deep) as MGP-MW-0DD was drilled deeper, but observations to confirm or deny these possibilities were not obtained.

In summary, the relatively limited anecdotal information described above demonstrates that well-to-well hydraulic connections (presumably by bedrock fractures) can occur over distances as great as 220 feet and maybe as great as 360 feet. On the other hand, wells that are much closer together may not be connected. Fracture connections between wells or between site locations depend on depth as well as map distance; these connections depend on particular fractures, their morphology, and their connectivity. Perhaps coincidentally, each of the well pairs known or suspected to be connected is aligned in a NNE or NE direction.

Cross sections (Figures 4-3 through 4-6) are another method used to compile and illustrate the diverse data sets that contribute to characterizing the bedrock hydrogeology of the site. The cross sections are constructed with no vertical exaggeration (horizontal and vertical scales equal) in order to depict the geometry of key fractures or fracture zones in the various boreholes. The sections show the various overburden and bedrock wells, test pits, soil borings, and cultural features along each section. The cross sections are straight (Figure 4-2); wells or other features that do not lie on the cross sections are projected to the sections and are so indicated on the section. The sections show overburden and bedrock, but do not attempt to show quartz veins, pegmatites, or lithologic gradations within the schist bedrock. Key fractures that intersect boreholes are shown on the cross sections with the apparent dip for each particular fracture or fracture zone in the plane of that particular cross section. The method for determining the depth, attitude, and length of each fracture shown on the sections is described in Appendix M. The fractures shown on the sections represent a small subset of the fractures described from the ATV. The sections also show visible impacts (tar or MGP-related) observed during drilling and coring, visible impacts from the FLUTe NAPL liners (see Section 5), and potential flow (blue arrows) into or out of the boreholes along key fractures. The key fractures were selected as described in Appendix M, and inflow versus outflow was determined from heat pulse flowmeter results.

Selected packer sample results are also shown on the cross sections. For each packer zone, the result for the highest-concentration constituent in that particular zone is posted and is assumed to be naphthalene unless otherwise indicated. The results are color coded based on concentration. For laboratory analytical sample results and discussion, see Section 5.

The cross sections not only served to visualize a variety of data types compiled together, but also provided an opportunity to identify potential fracture connections between wells (green dashed lines on Figures 4-3 through 4-6). It should be noted that the hypothetical connections are speculative and not proven. The following criteria were considered in making these interpretations: geometric alignment of a key fracture in one well with a fracture in a neighboring well, especially if one is known to be an inflowing and one an outflowing fracture. The interpretations also are favored if one or both fractures is located at a point in the well that showed visible or FLUTe impacts or a significant concentration of dissolved contaminants, especially naphthalene. Where well-to-well connections are hypothesized, these are assumed to be straight paths (I.e. single fractures), whereas zig-zag or contorted path ways may be present. For example, a hydraulic connection is known to exist between MGP-MW-4DD and 9DD, as shown on cross section E-E’ (Figure 4-5). Cross section E-E’ shows two potential path ways that may represent this connection; the deeper path way was selected because it connects horizontal or subhorizontal fractures that intersect each borehole at depths with high naphthalene concentrations in both wells and FLUTe impacts in MGP- MW-4DD. The shallower hypothetical path way connects an outflowing fracture at MGP-MW-4DD with a zone with visible core impacts in MGP-MW-9DD; similar naphthalene concentrations were obtained from packer samples in both wells.

Other examples of potential fracture connections include:

- A possible connection from the shallow portion of MGP-MW-9DD to mid-depth on MGP-MW-0DD (Cross Section A-A’ Figure 4-3) based on alignment of fractures, FLUTe impacts in both wells, and relatively high naphthalene concentrations in both wells.

- Several potential connections between MGP-MW-108D and MGP-MW-104D (Cross Section A-A’ Figure 4-3) based on high naphthalene concentrations in packer samples in the latter well and visible impacts in MGP-MW-108D. FLUTe impacts were observed in both wells, but were especially heavy in MGP-MW-104D. For this reason, ATV was not conducted in this well, so fracture orientations are not known. Because of the extensive visible impacts in MGP-MW-104D, packer sampling was not conducted in this well; heat pulse flowmeter was not run in either well. These factors contribute uncertainty in identifying potential fracture connections (flow paths) between two wells at the site.

- Several potential connections between MGP-MW-4DD and MGP-MW-0DD (Cross Section D-D’ Figure 4-5) based on fracture geometry, inflowing and outflowing fractures, packer sample results, and visible impacts in MGP-MW-0DD. (Note that this is not precluded by the lack of connection between MGP-MW-0DD and MW-4D, described above, because MGP-MW-0DD had not yet been drilled to depth when the lack of connection was noted.)

Because of the distance and the relative lack of impacts in the RI wells drilled northwest of the site, only two potential fracture connections were identified on the cross sections. One connection extends from an east-dipping fracture at 130 feet bgs in MGP-MW-116D to a deep fracture in MGP-MW-0DD (Cross Section G-G’ Figure 4-4). The former extends from a zone with a low naphthalene detection in MGP-MW-116D (one of the few detections northwest of the site) to an outflowing fracture near a visible impact near the bottom of MGP- MW-0DD. Although these wells are nearly 400 feet apart, the fractures in question are deep, and a potential connection between wells 360 feet apart exists on the site. The other potential connection is illustrated on Cross Section F-F’ (Figure 4-6) between MGP-MW-109D and MGP-MW-104D where subhorizontal fractures are present.

4.3.3 Water Use and Water Well Survey

Public water supply is provided in the City of Rye by Westchester Joint Water works. Westchester Joint Water Works purchases their water from the New York City water system which derives its supply from surface water reservoirs. The Westchester Joint Water Works does not utilize wells and groundwater for the public water supply. The presence and status of domestic wells in the vicinity of the site was researched as part of the SC. A summary of the research and results is provided in Appendix K. An inquiry to Westchester County regarding drinking water wells in Rye, New York resulted in a response from the county to NYSDEC that the county has no knowledge of any private drinking water wells in Rye. Therefore, additional private water well research was not performed.

To further evaluate the potential presence and status of domestic wells in the vicinity of the Rye former Gas Works Site continuous water level monitoring was performed for one week using pressure transducers in MGP-MW-101D and MGP-MW-109D to evaluate whether other bedrock wells are active and pumping nearby. Water levels were recorded continuously every 15 minutes for one week at each of these locations. Graphs illustrating the groundwater levels within these wells during the survey are provided in Appendix K. The maximum water level change measured in MGP-MW-109D over the one week period was approximately 0.13 ft and in MGP-MW-101D was approximately 0.30 ft. There appears to be some evidence of recharge from precipitation and possible tidal effects, but distinct changes caused by nearby pumping wells are not evident.

5.0 Visible/Olfactory Observations and Analytical Results

To meet the data quality objectives for this project, NYSDEC ASP were used and Category B deliverable packages were prepared by the laboratory for the analyses. Summary result pages from the full Category B data deliverable packages (Form 1s), including data validation qualifiers for the samples collected as part of the 2009 SC and 2012 RI, are compiled on a compact disk included in Appendix O.

Comprehensive data packages were submitted by Chemtech and Hampton Clarke-Veritech for the soil and groundwater samples and by Air Toxics for soil vapor and air samples for validation by a qualified chemist. Data Usability Summary Reports (DUSRs) were prepared by AECOM for the soil samples and the groundwater samples. The DUSRs for this project are included in Appendix P. Data was validated according to method specifications and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, EPA540/R-99/008, October 1999 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA540-R-04-004, October 2004, as they apply to the analytical methods employed.

Organic data quality was evaluated by reviewing the following parameters: holding times, GC/MS tuning and performance, internal standards, initial and continuing calibrations, surrogate recoveries, matrix spike/matrix spike duplicate (MS/MSD) samples, MS/MSD relative percent differences (RPDs), laboratory control standards (LCSs), laboratory blanks, field duplicates, compound identification, and compound quantitation.

Inorganic data quality was evaluated by reviewing the following parameters: holding times, initial and continuing calibrations, contract required detection limit (CRDL) standard recoveries, MS/MSD samples, LCSs, laboratory duplicates, Inductively Coupled Plasma (ICP) interference check sample results, ICP serial dilution results, laboratory blanks, and field duplicates.

As part of the data validation process, the laboratory report sheets and the analytical result tables were revised to include the data validation qualifiers to indicate the limits of data usability. A glossary of USEPA-defined organic and inorganic data qualifiers and their definitions are provided as notes on the analytical result tables. Overall, the data are considered to be usable and any noted data qualifications will not affect site decisions.

5.1 Surface Soil Analytical Results

The majority of the surface of the Rye former gas works site is covered by buildings and paved surfaces with some rock outcrops and grassy areas with trees. The site is surrounded by a fence with two locked gate entrances, one of which is controlled by a security guard during hours of operation. Surface soil samples were collected from five grass/nonpaved locations around the site perimeter from depths of 0 to 0.2 ft bgs to evaluate surface soil quality at the site as summarized in Table 3-1.

Analytical results for VOCs, SVOCs, metals, and total cyanide in surface soil are provided in Table 5-1. Table 5-1 includes only analytes that were detected in at least one surface soil sample. A table summarizing the surface soil results of every analyte is provided as Table 1 in Appendix O. Table 5-1 provides a summary of the surface soil sample analytical results compared to the NYSDEC Part 375

Unrestricted Use Soil Cleanup Objectives (URUSCOs). Figure 5-1 illustrates the surface soil analytical results.

5.1.1 Volatile Organic Compounds

No VOCs were detected at concentrations exceeding URUSCOs in the surface soil samples collected during the SC.

5.1.2 Semivolatile Organic Compounds

SVOCs, mostly PAHs, were detected in the surface soil samples. Only PAHs were detected at concentrations exceeding URUSCOs as summarized in Table 5-1 and illustrated on Figure 5-1. Total PAH concentrations ranged between 2.65 and 22.59 milligrams per kilogram (mg/Kg). All of the surface soil sample PAH results are below the Restricted Commercial Use Soil Cleanup Objectives (RCUSCOs) except for benzo(a)pyrene where both the URUSCO and RCUSCO is 1 mg/Kg. Estimated concentrations of benzo(a)pyrene were detected in all of the surface soil samples at concentrations ranging between 0.29 and 1.6 mg/Kg.

5.1.3 Metals

A few metals were detected in surface soil samples at concentrations exceeding URUSCOs including arsenic, chromium, copper, lead, mercury, and zinc as illustrated on Figure 5-1. Only arsenic and lead were detected at concentrations exceeding the RCUSCOs of 16 and 1000 mg/Kg, respectively.

5.1.4 Total Cyanide

Total cyanide was detected in two surface soil samples at concentrations of 2.37 and 2.51 mg/Kg, below the URUSCO of 27 mg/Kg.

5.1.5 Surface Soil Analytical Summary

The concentrations of compounds detected in the surface soil samples are generally consistent with or lower than urban background and/or commercial uses. Additional surface soil sampling and analysis was not required during the RI.

5.2 Subsurface Soil Visible Impacts and Analytical Results

Subsurface or overburden soil beneath the site consists of fill and glacial till. Visible and olfactory impacts and analytical results indicate that the overburden has been impacted by former MGP and UST operations. Table 5-2 summarizes visible and olfactory impacts observed in overburden soil beneath the site during previous investigation, SC, and RI activities. These impacts are divided into categories which are color coded and are summarized by depth and elevation at each location. The areal distribution of the visible and olfactory impacts encountered in the overburden is illustrated on Figure 5-2. The vertical distribution of visible and olfactory overburden impacts is illustrated on cross sections A through H on Figures 4-3 through 4-6.

As illustrated on Figure 5-2, the majority of the overburden visible and olfactory impacts were observed in the central western portion of the site near the former 6,000 and 100,000 cf gas holders, the former UST areas, and near the former oil tank and tar pits beneath the service center building and extend west to MGP-MW-9DD and MGP-MW-108S and north to MGP-MW-104S and MGP-MW-103S. Tar coating and/or saturation, illustrated by pink and red color coding, respectively, were noted in the overburden within or adjacent to the former 6,000 and 100,000 cf holders, the former oil tank and tar pits beneath the service center building, and west of the building in MGP-MW-9DD. Tar was observed at or near the top of bedrock at location MGP-MW-TP4 in the 6,000 cf holder, location MGP-SB-10 near a former tar pit beneath the service center building and possibly at MGP-SB-5 and MGP-SB-9 beneath the service center building near a former oil tank and former tar pit, respectively). Tar blebs, globules, or sheen illustrated in orange color, were noted in these areas as well as in the former UST area and to the north and west of the service center building. Some petroleum-type odors and staining were noted generally in the former UST and hydraulic lift areas as illustrated by the light blue color on Figure 5-2. Visible and olfactory impacts were not noted in overburden in the eastern and southern areas of the site or northwest of I95 as illustrated by the green color coding on Figure 5-2.

As is typical at former MGP sites, the analytical results for the site correlate well with the observed visible impacts. The overburden subsurface soil analytical results are summarized in Table 5-3. Table 5-3 includes only analytes that were detected in at least one subsurface soil sample. A table summarizing the subsurface soil results of every analyte is provided as Table 2 in Appendix O. Table 5-3 provides a summary of the subsurface soil sample analytical results compared to the NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (URUSCOs). Figure 5-2 illustrates the surface soil analytical results.

In general higher VOC and PAH concentrations were detected at locations where stain, sheen, tar and odors were noted. One exception is location MGP-SB-5 where tar-like and oil-like material were noted between 10 and 13 ft bgs yet the VOC and PAH concentrations, while exceeding URUSCOs, are relatively low. In general, the samples collected during previous UST area and hydraulic lift area investigations generally contained greater concentrations of VOCs than PAHs, however, the earliest previous investigation samples were not analyzed for PAHs.

5.2.1 Volatile Organic Compounds

Benzene, toluene, ethylbenzene, and xylene (BTEX) were the most common VOCs detected in the site overburden soils. Detected total BTEX concentrations ranged between 0.0033 and 3,910 mg/Kg. The greatest BTEX concentration detected in overburden soil was detected in the sample collected from MGP-SB-3 which was collected from 1.5 and 2 ft bgs in the former 6,000 cf holder and exhibited a strong naphthalene odor and sheen. Several other VOCs were detected in overburden/subsurface soil samples, however only six were detected at concentrations exceeding URUSCOs and include 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acetone, n-propylbenzene, n-butylbenzene, and tetrachloroethene. Tetrachlorethene was the only chlorinated VOC detected above the URUSCOs at two locations (SB-HL-5-A [1.45 mg/Kg] in the hydraulic lift area and MGP-SB-5(11-13)[1.5 mg/Kg] near the former oil tank, both beneath the service center building).

5.2.2 Semivolatile Organic Compounds

Polycyclic aromatic hydrocarbons (PAHs) were the most commonly detected SVOCs in the site overburden soils. Detected total PAH concentrations ranged from 0.038 to 13,074 mg/Kg. Similar to VOCs, the greatest total PAH concentration was detected in the soil sample collected from MGP-SB-3 located in the former 6,000 cf holder. Several other SVOCs were detected in the subsurface soil samples as summarized in Table 5-3, however only one, dibenzofuran, was detected at concentrations exceeding the URUSCOs in four samples. The four samples in which dibenzofuran was detected at concentrations exceeding URUSCOs also contained PAHs at concentrations exceeding the URUSCOs.

5.2.3 Metals

Eight metals including arsenic, chromium, copper, lead, mercury, nickel, selenium and zinc were detected in subsurface soil samples at concentrations exceeding URUSCOs. Lead (19 of 83 samples) and zinc (11 of 55 samples) were the most commonly detected metals at concentrations exceeding the URUSCOs. Of the 20 locations where metals were detected at concentrations exceeding URUSCOs, seven locations did not contain VOCs or PAHs that exceeded URUSCOs and 13 locations did contain concentrations of VOCs and/or PAHs that exceeded URUSCOs.

5.2.4 Total Cyanide

Total cyanide was analyzed in 48 subsurface soil samples and was detected in 10 samples. None of the detected cyanide concentrations exceed the URUSCO of 27 mg/Kg. Detected total cyanide concentrations ranged from 0.706 to 20 mg/Kg.

5.2.5 Polychlorinated Biphenyls

Twenty-four subsurface soil samples were analyzed for PCBs. Aroclor 1260 was the only PCB detected at concentrations below the total PCB URUSCO. Aroclor 1260 was detected two samples,(MGP-MW-105S from 1.5 to 2 ft bgs and from 2 to 4 ft bgs, at concentrations of 0.054 and 0.065 mg/Kg, respectively.

5.2.6 Fingerprint Analysis

One soil sample was collected for fingerprint analysis during the SC. The sample was collected to characterize the source of petroleum odor in slag and cinders encountered between 1 and 2 ft bgs in MGP-SG-5. The fingerprint analysis was performed by Chemtech and can identify gasoline, #2, #4, #5, and #6 fuel oil, jet fuel, kerosene, coal tar, paint thinner, 30W, 40W, and 50W lubricating oil and mineral spirits. The material in MGP-SG-5 did not match any of the calibrated fuel types. The fingerprint analytical results are provided in Appendix Q.

5.2.7 Subsurface Soil Summary

Based on the subsurface soil visible and olfactory impacts and analytical results, the overburden beneath the site has been impacted by former UST and MGP operations. The majority of the impacts are present in the central western portion of the site near the former 6,000 and 100,000 cf gas holders, the former UST areas, and near the former oil tank and tar pits beneath the service center building and extend west to MGP-MW-9DD and MGP-MW-108S and north to MGP-MW-104S and MGP-MW-103S. The horizontal extent of the visible impacts has been delineated to the south and east and the horizontal extent of the analytical exceedance impacts has generally been delineated to the south and east. In the south-southwestern portion of the site, benzo(a)anthracene, benzo(b)fluouranthene, and chrysene were detected in the sample collected from MW-13D, chromium and nickel were detected in the sample collected from MGP-SB-7, and lead was detected in the sample collected from SB-SA11-NW1-A at concentrations exceeding the URUSCOs, however none of the detected concentrations exceed the RCUSCOs. Along the eastern boundary of the site, lead was detected in the sample collected from MGP-MW-101 at a concentration exceeding the URUSCO but below the RCUSCO. Although visible and analytical impacts extend to the west – northwest site boundary adjacent to the Metro North rail line, they were not observed or detected in soil samples collected on the northwest side of I95. Impacts extend to the northern property boundary at MGP-MW-104S and MGP-MW-103S, however access to the north could not be acquired and delineation has not been accomplished in this direction.

5.3 Bedrock Quality

Bedrock quality was evaluated through the observation of bedrock core, FLUTe NAPL liners, geophysical data, and discrete fracture groundwater sampling results. Bedrock summary spreadsheets summarizing these data by depth were developed for each of the 17 FLUTe lined boreholes advanced during the SC and RI field programs and are provided in Appendix N. In addition, 7 bedrock monitoring wells were installed during previous UST investigations. Samples of bedrock were not collected for laboratory analysis. A summary of visible and olfactory impacts encountered during drilling, coring, and FLUTe NAPL liner bedrock activities is provided in Table 5-2. The visible and olfactory impacts and FLUTe liner observations summarized in Table 5-2 are illustrated on Figure 5-3 by elevation range. Bedrock monitoring wells and FLUTe lined boreholes are shown in individual panels only if they extend into the elevation range being illustrated. Therefore, none of the bedrock monitoring wells which are screened in the first significant water-bearing zones are included in the lower elevation ranges since they were not drilled to deep enough depths.

As illustrated on Figure 5-3, the visible and olfactory impacts observed in bedrock are centered in the central western portion of the site and extend to the west to MGP-MW-0DD, MGP-MW-9DD, MGP-MW-108D and to the north to MGP-MW-104D and MGP-MW-103D, similar to observations in the overburden. Tar coating and/or tar saturation were noted during coring activities at locations MGP-MW-TP4, MGP-MW-9DD, MGP-MW-108D, and MGP-MW-103D. Tar impacts were observed on FLUTe NAPL liners at locations MGP-MW-TP4, MGP-MW-105D, MGP-MW-0DD, MGP-MW-9DD, MGP-MW-108D, and MGP-MW-104D. Tar was noted in the base of monitoring well MW-12D during the April 2012 sampling event. MGP-MW-TP4 is situated in, MW-12D is adjacent to, and MGP-MW-105D is situated south of the former 6,000 cf holder. The remaining locations where tar impacts were observed are situated west and north of the former 6,000 and 100,000 cf holders and the former oil tank and tar pits beneath the service center building where tar impacts were observed in the overburden. Visible impacts were not observed in bedrock during coring activities or on FLUTe NAPL liners at locations MGP-MW-112D, MGP-MW-101D, MGP-MW-114D and MGP-MW-102D in the eastern and southeastern portions of the site, at locations MGP-MW-106D and MW-13D in the southwestern portion of the site and to the northwest of the site across I95 at locations MGP-MW-113D, MGP-MW-116D, MGP-MW-109D, and MGP-MW-110D as illustrated by the green color coding on Figure 5-3.

The majority of the tar impacts noted in bedrock were observed in the 65 to 15 and 15 to -35 ft NAVD elevation range as illustrated in the top two panels of Figure 5-3. The distribution of bedrock impacts is nearly identical in the top two panels although impacts were encountered in the deeper 15 to -35 ft NAVD88 zone in MGP-MW-105D that were not evident in the shallower 65 to 15 ft NAVD88 zone. Additionally, heavier FLUTe NAPL liner impacts are evident in MGP-MW-0DD in the deeper 15 to -35 ft NAVD88 zone than the shallower 65 to 15 ft NAVD88 zone.

Bedrock impacts between -35 ft and -85 ft NAVD88 appear less widespread than the shallower depth/higher elevation zones and are limited to FLUTe NAPL liner observations everywhere except MGP-MW-0DD where oil-like material (OLM) was observed in a fracture in the core at 119.8 ft bgs as well as on the FLUTe NAPL liner. The general distribution of visible bedrock impacts between -35 and -85 ft NAVD88 is similar to those observed between 65 ft and -35 ft NAVD88.

The vertical extent of the visible bedrock impacts illustrated at location MGP-MW- 9DD, MGP-MW-108D, and MGP-MW-104D were delineated as illustrated by the green color coding in the bottom right panel of Figure 5-3. Six of the FLUTe lined bedrock holes (MGP-MW-106D, MGP-MW-0DD, MGP-MW-105D, MGP-MW-TP4, MGP-MW-102D, and MGP-MW-101D) do not extend below -85 ft

NAVD88 and are not illustrated in the bottom right panel of Figure 5-3. Visible impacts were not noted during coring activities or on the FLUTe NAPL liners at three of these locations including MGP-MW-106D, MGP-MW-102D, and MGP-MW-101D. Visible impacts were noted in bedrock between -35 and -85 ft NAVD 88 (bottom left panel of Figure 5-3) in the remaining three locations that do not extend below -85 ft NAVD88, MGP-MW-105D, MGP-TP-4, and MGP-MW-0DD, suggesting that vertical delineation of the visible bedrock impacts has not been achieved at these locations. Visible impacts are illustrated below -85 ft NAVD88 in MGP-MW-4DD (bottom right panel of Figure 5-3) also suggesting vertical delineation of visible bedrock impacts has not been achieved at this location. However, details summarized on the bedrock spreadsheets provided in Appendix N indicate that visible impacts in bedrock decrease with depth at locations MGP-MW-0DD and MGP-MW-4DD as summarized below.

MGP-MW-0DD

- MGP-MW-0DD extends to 150 ft bgs.
- Visible core impacts were not observed deeper than the OLM noted in a core fracture at 119.8 ft bgs. Several fractures including rank 3 fractures were encountered deeper than 119.8 ft bgs that did not contain visible impacts.
- Tar impacts were noted on the FLUTe NAPL liner between 119.3 and 119.9 ft bgs. Impacts were not noted on the FLUTe NAPL liner below 119.9 ft bgs, other than two instances of migration along the pump tubing.
- The deepest fracture zones in this borehole were dry during packer sampling attempts at 103 to 105, 110 to 115, 119.5 to 125, and 133.5 to 135 ft bgs.

MGP-MW-4DD

- MGP-MW-4DD extends to 200 ft bgs
- Visible impacts were not observed during coring activities although sheen and odor were present in the overburden.
- Tar impacts were only noted on the FLUTe NAPL liner at 107 ft bgs
- Fracture aperture decreases with depth (no fractures greater than rank 2 fractures are noted below 120 ft bgs).
- The deepest fracture zones in this borehole were dry during packer sampling attempts at 165 to 170 and 185 to 190 ft bgs.

Details summarized on bedrock spreadsheets provided in Appendix N for locations MGP-MW-TP-4 and MGP-MW-105D suggest that vertical delineation of visible impacts in bedrock has not been achieved at these locations as noted below.

MGP-MW-TP4

- MGP-MW-TP4 extends to 150 ft bgs
- The deepest visible core impact was noted as tar in a fracture at 32.6 ft bgs.
- FLUTe NAPL liner impacts were noted between 12 and 148.5 ft bgs. The majority of the tar on the NAPL liner appears to be related to migration along the pump tubing however there are horizontal bands of tar at depths as deep as 131.7 and 147 ft bgs that coincide with

fractures based on ATV data and core observations that indicate deeper tar bearing fractures at this location.

- No optical televiewer (OTV) or heat pulse flow meter (HPFM) data were acquired and packer sampling was not performed in this borehole due to heavy tar impacts

MGP-MW-105D

- MGP-MW-105D extends to 150 ft bgs.
- The deepest visible core impact consisted of sheen at a depth of 83.25 to 83.75 ft bgs.
- Tar impacts were noted beginning at 68.7 ft bgs to the bottom of the FLUTe liner but it was uncertain where the point of entry for the deepest tar impact was along the borehole since the optical televiewer and heat pulse flow meters could not be used and the acoustic televiewer operated from within the FLUTe blank liner due to tar impacts in the borehole.
- The purge water from the deepest packer zone that extended from 144 to 149 ft bgs in MGP-MW-105D contained OLM.

5.3.1 NAPL Gauging and Recoverability

The recoverability of DNAPL at the site was evaluated as part of the RI by converting three FLUTe-lined bedrock boreholes that contained fractures with tar into recovery wells and gauging the wells to monitor DNAPL accumulation. The three locations that were converted to recovery wells are MGP-MW-TP4, MGP-MW-108D, and MGP-MW-104D. The construction details of these recovery wells are illustrated on the well logs in Appendix B. The wells were gauged periodically for the presence of DNAPL between April 2012 and June 2013. The gauging results are summarized in Table 5-4 and show that up to 9.6 feet of DNAPL accumulated in MGP-MW-104D and 3.8 feet in MW-12D but has not been present in measurable quantity in MGP-MW-TP4 or MGP-MW-108D as of June 2013.

A DNAPL sample was collected from the sump of MGP-MW-104D on December 7, 2012 using a bailer and analyzed for interfacial and surface tension, viscosity, density, and specific gravity. The specific gravity, density, and viscosity for the DNAPL collected from MGP-MW-104D were reported for temperatures of 70, 100, and 130 degrees Fahrenheit and are summarized in the table below.

MGP-MW-104D DNAPL				
Temperature F	Specific Gravity	Density g/cc	Viscosity	
			centistokes	centipoise
70	1.069	1.067	57.0	60.8
100	1.064	1.057	22.8	24.1
130	1.055	1.04	11.8	12.3
F = degrees Fahrenheit g/cc = grams per cubic centimeter				

Interfacial tension between the DNAPL and air was measured to be 34.14 dynes per centimeter (dynes/cm) and the surface tension between the DNAPL and water was measured to be 18.9 dynes/cm. The interfacial tension between water and air was 72.91 dynes/cm. The DNAPL sample results are provided in Appendix R.

A DNAPL sample was collected from the sump of MW-12D on June 13, 2013 using a bailer. This sample will be analyzed for the same parameters as the DNAPL sample collected from MGP-MW-104D. The laboratory results will be provided in future site documentation.

5.3.2 Bedrock Quality Summary

Visible tar, sheen, and olfactory impacts were noted in bedrock core and on FLUTe NAPL liners in 8 out of 17 bedrock boreholes advanced during the SC and RI activities. In addition, NAPL was measured in the base of monitoring well MW-12D screened in shallow bedrock. The visible bedrock impacts are present in the central and western portions of the site near the former 6,000 cf gas holder and west and north of the former 6,000 and 100,000 cf holders and former oil tank and tar pits beneath the service center building. These visible bedrock impacts extend to the west to MGP-MW-0DD, MGP-MW-9DD, and MGP-MW-108D and to the north to MGP-MW-104D and MGP-MW-103D. Visible bedrock impacts are also present below approximately 70 ft bgs southwest of the former 6,000 cf holder in MGP-MW-105D. The horizontal delineation of the visible bedrock impacts has been delineated to the west-northwest as evidenced by the lack of visible bedrock impacts noted in the bedrock boreholes advanced to 200 ft bgs on the northwest side of I95. Horizontal delineation of visible bedrock impacts has not been delineated to the north-northeast of MGP-MW-104D and MGP-MW-103D or to the west-southwest of MGP-MW-105D. Vertical delineation of visible bedrock impacts has not been completely defined at locations MGP-MW-TP4 and MGP-MW-105D.

5.4 Overburden Groundwater Analytical Results

During the SC and RI, overburden groundwater quality was assessed through the collection and laboratory analysis of groundwater samples from 14 overburden monitoring wells. The overburden monitoring wells include wells installed during previous UST investigations (MW-1 through MW-7, MW-9, and MW-12), wells installed during the SC (MGP-MW-103S, MGP-MW-104S, and MGP-MW-108S) and one well installed during the RI (MGP-MW-113S). Table 5-5 provides a summary of the compounds detected in at least one overburden groundwater sample during the SC and RI, broken down by BTEX, VOCs, PAHs, SVOCs, metals, total cyanide, PCB, and oil and grease categories. Table 5-5 only includes analytes that were detected in at least one overburden groundwater sample and compares the results to the NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGVs). Complete groundwater analytical results for all parameters analyzed in overburden and bedrock groundwater are provided in Table 3 in Appendix O. A summary of selected groundwater exceedances in overburden and in bedrock by elevation range is provided in Figure 5-4. Figure 5-5 illustrates the compounds that were detected in overburden and bedrock groundwater samples at concentrations exceeding AWQSGVs.

5.4.1 Volatile and Semi-volatile Organic Compounds

VOCs, predominantly BTEX, and naphthalene (a PAH) were the compounds detected in groundwater at concentrations exceeding AWQSGVs most frequently and are commonly associated with former MGP sites and gasoline/petroleum USTs. MTBE (a gasoline additive) and tetrachloroethene (common solvent) were infrequently detected at concentrations exceeding the AWQSGVs but may be site related due to current use of the site as a service center or related to offsite releases at nearby gasoline stations. The distribution of benzene, toluene, MTBE, tetrachloroethene, naphthalene, and NAPL in overburden groundwater is illustrated in the top left panel on Figure 5-4.

As shown in the top left panel of Figure 5-4, benzene and naphthalene were detected in seven groundwater samples and toluene was detected in four groundwater samples collected from 14 overburden monitoring wells. These compounds are present in groundwater in the former UST area in monitoring wells MW-1 through MW-4 as well as along the downgradient, north-northwestern site boundary in monitoring wells MW-9, MGP-MW-108S and MGP-MW-103S. Xylene was detected at a concentration exceeding AWQSGVs in groundwater collected from MGP-MW-104S. VOCs and SVOCs were not detected at concentrations exceeding the AWQSGVs in groundwater samples collected from overburden monitoring wells situated upgradient of the former UST area (MW-5, MW-6, MW-7, and MW-12), from monitoring well MGP-MW-113S situated generally side-downgradient on the northwest side of I95, or from downgradient monitoring well MW-10. The distribution of overburden groundwater impacts is similar to the distribution of visibly impacted overburden soils and overburden soils containing concentrations of VOCs and SVOCs exceeding URUSCOs. The BTEX concentrations in monitoring wells MW-1, MW-2 and MW-4 have generally decreased since 1996 or 2004 depending on when the well was installed (Table 5-5 and Figure 5-5). The BTEX concentrations in monitoring well MW-3 have remained relatively constant between 2004 and 2010 (Table 5-5 and Figure 5-5). The BTEX concentrations in groundwater samples collected from downgradient monitoring well MW-9 are one to two orders of magnitude less than the BTEX concentrations in the groundwater samples collected from monitoring wells MW-1 through 4. The BTEX concentrations in the groundwater sample collected from MGP-MW-108S along the northwestern property boundary are similar to or higher than those detected in the groundwater samples collected from MW-1 through 4 suggesting that the visible and analytical soil impacts near the former tar pits beneath the service center building may be the source of groundwater impacts in this area of the site. MTBE was detected in one groundwater sample (MW-9) at a concentration below the AWQSGV. Tetrachloroethene was not detected in any of the overburden groundwater samples.

Other VOCs (primarily benzene compounds) and SVOCs were detected at concentrations exceeding the AWQSGVs in overburden groundwater samples less frequently than BTEX and naphthalene as summarized in Table 5-5 and Figure 5-5. Chloroethane was detected in four overburden groundwater samples but the concentration only exceeded the AWQSGV in one sample (MW-3 at 11 ug/L). The SVOCs that were infrequently detected at concentrations exceeding AWQSGVs in overburden groundwater samples include 1,1'-byphenyl (MGP-MW-108S at 13 ug/L), bis(2-ethylhexyl)phthalate (MW-1 at 10.6 ug/L), pentachlorophenol (MW-3 at 8.9 ug/L), and phenol (three samples collected from MW-1 at concentrations ranging 5.2 ug/L in 2010 to 14.8 ug/L in 2004).

5.4.2 Metals

Several metals including barium, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, selenium, and sodium were detected at concentrations exceeding AWQSGVs in at least one overburden groundwater sample as summarized in Table 5-5. Beryllium, chromium, copper, and nickel were each only detected in one overburden groundwater sample (MW-2 in 1996) at concentrations exceeding the AWQSGVs. Every overburden groundwater sample contained manganese at concentrations exceeding the AWQSGV of 300 ug/L. Thirteen of 14 overburden groundwater samples contained iron at concentrations exceeding the AWQSGV of 300 ug/L and ranged in concentration from 421 to 90,000 ug/L. Fifty percent of the overburden groundwater samples contained magnesium at concentrations exceeding the AWQSGV of 35,000 ug/L. Barium and cadmium were each detected in five overburden groundwater samples and selenium was detected in four overburden groundwater samples at concentrations exceeding the respective AWQSGVs. Lead was only detected in two overburden groundwater samples at concentrations exceeding the 25 ug/L AWQSGV. Sodium was detected at concentrations 2 to 3 orders of magnitude higher than the AWQSGV in every overburden groundwater sample collected. The distribution of the sodium, iron, manganese, and magnesium concentrations in overburden groundwater suggest these metals are naturally occurring. The distribution of the remaining metals detected in one or more groundwater sample at concentrations exceeding AWQSGVs does not indicate a specific source of metal overburden groundwater impacts at the site.

5.4.3 Total Cyanide

Total cyanide was detected in every overburden groundwater sample in which it was analyzed except for two (MGP-MW-113S and duplicate). Total cyanide was detected at concentrations exceeding the AWQSGV of 200 ug/L in two overburden groundwater samples (MW-9 at 311 ug/L and MW-3 at 324 ug/L).

5.4.4 PCBs

Only two groundwater samples were analyzed for PCBs. These samples were collected from monitoring wells MW-1 and MW-2 in 1996. PCBs were not detected in either of the groundwater samples.

5.4.5 Total Petroleum Hydrocarbon and Oil and Grease Analyses

The 1996 groundwater samples collected from monitoring wells MW-1 and MW-2 were also analyzed for total petroleum hydrocarbons (TPH) and oil and grease. The results indicate TPH of 4,820 and 59,800 ug/L and oil and grease of 10,500 and 65,000 ug/L for the samples collected from MW-1 and MW-2, respectively.

5.4.6 Overburden Groundwater Quality Summary

Overburden groundwater contains BTEX and naphthalene in the vicinity of the former USTs and downgradient along the northwestern property line. Concentrations in the vicinity of the former USTs have generally decreased since 1996 and 2004. The concentrations in MGP-MW-108S suggest that the tar pits beneath the service center building might provide a separate source of BTEX and naphthalene to overburden groundwater in this area of the site. The overburden groundwater does not appear to be impacted by elevated site-related metal, total cyanide, or PCB concentrations. The overburden groundwater impacts have not been delineated to the north of the site due to access constraints. The degree to which impacted groundwater may be discharging to the I95 drainage system is uncertain but is believed to be minimal based on the relative elevations of the drainage system and water table. The degree to which impacted groundwater may be migrating along permeable bedding material associated with the storm sewer northwest of the site is unknown.

5.5 Bedrock Groundwater Quality

During the SC and RI, bedrock groundwater quality was assessed through the collection and laboratory analysis of groundwater samples from discrete fracture zones in 15 bedrock boreholes and from 7 previously installed bedrock monitoring wells. Groundwater samples were not collected from 2 of the 17 bedrock boreholes, MGP-MW-TP4 and MGP-MW-108D, due to the abundance of tar at these locations. The groundwater samples collected from discrete fracture zones using isolation packers were only analyzed for VOCs and naphthalene. The bedrock monitoring wells were installed during previous UST investigations and include MW-4D, MW-5D, MW-6D, MW-9D, MW-11D, MW-12D, and MW-13D. The groundwater samples collected from the bedrock monitoring wells were analyzed for VOCs, SVOCs, metals, and total cyanide. Table 5-6 provides a summary of the compounds detected in at least one bedrock groundwater sample during the SC and RI, broken down by BTEX, VOCs, PAHs, SVOCs, metals, and total cyanide categories. Table 5-6 only includes analytes that were detected in at least one bedrock groundwater sample and compares the results to the AWQSGVs. Complete groundwater analytical results for all parameters analyzed are provided in

Table 3 in Appendix O. A summary of selected groundwater exceedances in overburden and in bedrock by elevation range is provided in Figure 5-4. Figure 5-5 illustrates the compounds that were detected in overburden and bedrock groundwater samples at concentrations exceeding AWQSGVs. The blue lines on Figure 5-5 lead to results for bedrock groundwater samples and the green lines lead to results for overburden groundwater samples.

5.5.1 VOC and SVOCs

Similar to the overburden groundwater quality, VOCs, predominantly BTEX, and naphthalene (a PAH) were the compounds detected in bedrock groundwater at concentrations exceeding AWQSGVs most frequently, although the majority of bedrock groundwater samples were not analyzed for SVOCs (other than naphthalene), metals, or cyanide. BTEX and naphthalene are commonly associated with former MGP sites and gasoline/petroleum USTs. MTBE (a gasoline additive) and tetrachloroethene (common solvent) were infrequently detected at concentrations exceeding the AWQSGVs but may be site related due to current use of the site as a service center or related to offsite releases at nearby gasoline stations. The distribution of benzene, toluene, MTBE, tetrachloroethene, naphthalene, and NAPL in bedrock groundwater is illustrated by elevation in the top right and bottom panels on Figure 5-4.

Groundwater quality in fractured bedrock between 65 and 15 ft NAVD88 is illustrated in the top right panel of Figure 5-4. NAPL was present in bedrock in this elevation range in MGP-MW-104D, MGP-MW-TP4, MW-12D, and MGP-MW-108D. Benzene and toluene were the BTEX compounds that were detected at concentrations exceeding AWQSGVs most frequently however ethylbenzene and xylene were detected at concentrations exceeding AWQSGVs in approximately 25% of the bedrock groundwater samples. Benzene and naphthalene were detected at concentrations exceeding AWQSGVs in groundwater samples collected from boreholes near the former 6,000 and 100,000 cf holders, in the vicinity of the hydraulic lift area, and northwest towards the western property boundary extending from MW-13D (benzene only) to MGP-MW-104D. Benzene and naphthalene were not detected at concentrations exceeding AWQSGVs in bedrock groundwater samples collected along the southernmost portion of the western property boundary from MGP-MW-106D, along the eastern property boundary from MGP-MW-112D, MGP-MW-101D, and MGP-MW-114D, or from the four bedrock boring locations northwest of I-95. Benzene was not detected at any of these locations except for an estimated concentration of 0.082 ug/L from the 143 to 148 ft bgs sample collected from MGP-MW-106D. Naphthalene was detected in bedrock groundwater samples collected from several of these locations at concentrations below AWQSGVs but was not detected in any of the bedrock groundwater samples collected from MGP-MW-109D and MGP-MW-110D northwest of I95 or MGP-MW-112D and MGP-MW-114D along the eastern site boundary. The distribution of toluene concentrations exceeding AWQSGVs in the bedrock groundwater between 65 and 15 ft NAVD88 is similar to the benzene distribution near the former structures but is more widespread to the southwest and north at the site and was noted in three locations across I95 (MGP-MW-113D, MGP-MW-109D, and MGP-MW-110D).

Tetrachloroethene was detected at a concentration exceeding AWQSGV in bedrock groundwater collected from MGP-MW-4DD and MTBE was detected at concentrations exceeding the AWQSGV in bedrock groundwater collected from MW-9D and MGP-MW-9DD. Tetrachloroethene was not detected in the bedrock groundwater samples collected from any of the other locations at the site or from the boreholes northwest of I95. MTBE was detected at concentrations below AWQSGVs in bedrock groundwater samples collected from other site wells/boreholes (MGP-MW-0DD, MW-13D, and MGPMW-105D) and from one bedrock borehole northwest of I95 (MGP-MW-109D). Chloroform was detected at concentrations exceeding the AQWSGV in bedrock groundwater samples collected from 4 locations on site (MGP-MW-0DD, MGP-MW-4DD, MGP-MW-9DD, and MGP-MW-105D). Chloroform was detected in bedrock groundwater samples collected from three of the four locations northwest of I95 (MGP-MW-109D, MGP-MW-110D, and MGP-MW-116D) but only exceeded the AWQSGV in two samples collected from MGP-MW-116D. Chloroform was detected at concentrations below AWQSGV in bedrock groundwater samples collected from MGP-MW-101D, MGP-MW-103D, MGP-MW-102D, MGP-MW-106D, MGP-MW-112D, and MGP-MW-114D).

Other than toluene, VOCs were not detected at concentrations exceeding the AWQSGVs in bedrock groundwater collected from monitoring wells/bedrock boreholes along the eastern portion of the site (MW-5D, MGP-MW-112D, MGP-MW-101D, and MGP-MW-114D) in the southwestern area of the site (MGP-MW-106D) or across I95 (MGP-MW-113D, MGP-MW-109D, and MGP-MW-110D). Toluene was frequently detected at concentrations exceeding AWQSGVs in the bedrock groundwater samples collected via packer testing in boreholes. Toluene was only detected at concentrations exceeding AWQSGVs in groundwater collected from two bedrock monitoring wells (MW-4D and MW-9D) where benzene and/or MTBE were also detected at concentrations exceeding AWQSGVs. Due to the distribution and the widespread nature of the toluene concentrations exceeding AWQSGVs and the absence of other VOCs at concentrations exceeding AWQSGVs in bedrock groundwater samples collected from boreholes via isolation packer system sampling along the eastern property boundary (MGP-MW-112D, MGP-MW-114D), in the southwest portion of the site (MGP-MW-106D) and west-northwest of the site across I95(MGP-MW-113D, MGP-MW-116D, MGP-MW-109D, and MGP-MW-110D), explanations for this distribution of toluene were researched. Toluene may be present in bedrock groundwater in the site vicinity due to site impacts and documented releases from other potential sources such as the gasoline station to the south. Another source of the toluene may be related to the packer sampling system methodology employed during the SC and RI. Electric tape was used to bundle the tubing and electric lines to the rods used to raise and lower the system within the borehole. The adhesive used in electric tape contains toluene that may have leached into the groundwater during sampling. Future sampling activities will utilize zipties rather than electric tape to bundle the lines to the rods.

SVOCs were analyzed in the groundwater samples collected from the 7 bedrock monitoring wells at the site. The bedrock monitoring wells only extend into the 65 to 15 ft NAVD zone. A few PAHs and 1,1-biphenyl (MW-9D only) were the only SVOCs, other than naphthalene, detected at concentrations exceeding the AWQSGVs in groundwater collected from the bedrock monitoring wells. A few PAHs were detected at concentrations below the AWQSGVs in monitoring wells MW-11D, MW-12D, and MW-13D. PAHs/SVOCs were not detected in groundwater collected from bedrock monitoring wells MW-5D and MW-6D. Naphthalene was detected at a concentration exceeding the AWQSGV (10 ug/L) in the groundwater sample collected from MW-4D (120 ug/L near the UST area and former 6,000 cf and 100,00 cf holder areas). Acenaphthene, fluorene, naphthalene, phenanthrene, and 1,1-biphenyl were detected at concentrations exceeding the AWQSGVs in the groundwater sample collected from MW-9D situated west of the former oil tank and tar pits beneath the service center building.

Groundwater quality in deeper water bearing fractures between 15 and -35 ft NAVD88 is illustrated in the bottom left panel of Figure 5-4. Benzene and naphthalene were detected at concentrations exceeding the AWQSGVs in the bedrock boreholes in the central portion of the site, similar to the shallower 65 to 15 ft NAVD88 interval, except it was detected a little further northeast at MGP-MW-103D. Toluene concentrations exceeding AWQSGVs are widespread in this interval, extending to the property boundaries and the northwest side of I95. Tetrachloroethene was not detected at exceeding concentrations in bedrock groundwater in this interval and MTBE was only detected at an exceeding concentration in groundwater collected from MGP-MW-4DD.

Groundwater quality in the deepest water bearing fractures sampled at the site below -35 ft NAVD88 is illustrated in the bottom right panel of Figure 5-4. The distribution of benzene, toluene, and naphthalene concentrations exceeding AWQSGVs is similar to the shallower 15 to -35 ft NAVD88. As illustrated by an asterisk in the bottom right panel of Figure 5-4, groundwater samples were collected from the six RI bedrock boreholes at elevations below -85 ft NAVD88 (all of the RI bedrock boreholes extended to 200 ft bgs, whereas all of the SC bedrock boreholes were drilled to 150 ft bgs [except MGP-MW-4DD which extends 200 ft bgs]). Although MGP-MW-4DD extends to 200 ft bgs, the deepest fracture zones where groundwater sampling was attempted were dry. Toluene was the only compound detected at a concentration exceeding the AWQSGVs in the groundwater samples collected below -85 ft NAVD88. Toluene was detected at exceeding concentrations below -85 ft NAVD88 in groundwater collected from MGP-MW-112D and MGP-MW-114D along the eastern property boundary and from MGP-MW-109D northwest of the site.

BTEX and naphthalene concentration trends in bedrock groundwater are not consistent with depth across the site as illustrated by the analytical results for the bedrock boreholes on Figure 5-5. BTEX and naphthalene concentrations in bedrock groundwater increased with depth at locations MGP-MW-105D, MGP-MW-4DD, and MGP-MW-103D. BTEX and naphthalene concentrations in groundwater remained relatively consistent with depth at locations MGP-MW-102D and MGP-MW-104D. At locations MGP-MW-0DD and MGP-MW-9DD, the BTEX and naphthalene concentrations vary with depth but do not illustrate a concentration trend with depth. Frequently, the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones where tar or other visible impacts were noted in the core or on the NAPL liner at that location. Occasionally the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones that were not visibly impacted suggesting that the concentrations detected migrated through fractures. As illustrated on cross sections in Figures 4-3 through 4-6 and discussed in section 4.3.2, anecdotal information, fracture orientation, NAPL observations, and bedrock groundwater quality data, bedrock fractures appear connected to some degree. This premise is further supported by the detection of similar compounds in bedrock groundwater samples collected from visibly impacted locations near former potential source structures on the site and from non-visibly impacted locations onsite and northwest of I95. Specifically, benzene, naphthalene, MTBE, toluene, and chloroform were detected at concentrations exceeding AWQSGVs in groundwater samples collected from wells/bedrock borings near the former 6,000 cf and 100,000 cf holders and west-northwest of the former oil tank and tar pits beneath the service center building. These compounds, except benzene, were detected in bedrock groundwater samples collected from at least one or more of the bedrock boreholes northwest of I95 at concentrations below AWQSGVs (except chloroform exceeded its AWQSGV in two samples collected from MGP-MW-116D). This distribution suggests connection of fractures at the site and west-northwest of the site and delineation of dissolved impacts originating at the site and/or a contribution of compounds from a separate source in the areas northwest of the site across I95.

5.5.2 Metals

Groundwater samples collected from bedrock monitoring wells were analyzed for metals during the SC. The groundwater sample collected from MW-12D was only analyzed for lead in 2008. Monitoring well MW-12D was not sampled during the SC due to the presence of NAPL in the well. Groundwater samples collected from the packer tested zones within bedrock boreholes were not analyzed for metals. The bedrock groundwater monitoring well analytical results summarized in Table 5-6 and illustrated on Figure 5-5 indicate that iron, magnesium, manganese, selenium, and sodium were present at concentrations exceeding AWQSGVs in two or more of the bedrock groundwater monitoring well samples. Iron, sodium, and manganese were the most frequently detected metals at concentrations exceeding the AWQSGVs.

5.5.3 Total Cyanide

Total cyanide was detected in all of the groundwater samples collected and analyzed for total cyanide from the bedrock monitoring wells (the 2008 sample from MW-12D was not analyzed for total cyanide). None of the total cyanide concentrations exceeded the AWQSGV of 200 ug/L. The detected total cyanide concentrations ranged from 24 ug/L in the sample collected from MW-13D to 145 ug/L in the sample collected from MW-6D.

5.5.4 Bedrock Quality Summary

Bedrock groundwater quality at the site has been impacted by site operations and contains VOCs, predominantly BTEX, and naphthalene at concentrations exceeding AWQSGVs in the vicinity of the former 6,000 and 100,000 cf holders and to the west and north of the former oil tank and tar pits beneath the service center building. Toluene was detected at concentrations exceeding the AWQSGV in bedrock groundwater samples collected from the same locations as BTEX and naphthalene as well as across the site and northwest of the site across I95. Although toluene is likely associated with former site operations in the impacted areas of the site, the more widespread distribution of toluene may be an artifact of the sampling methodology employed during the packer isolation and groundwater sampling efforts or associated with other potential sources. Frequently, the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones where tar or other visible impacts were noted in the core or on the NAPL liner at that location. Occasionally the greatest BTEX and naphthalene bedrock groundwater concentrations were detected in zones that were not visibly impacted suggesting that the concentrations detected migrated through fractures. The compilation of the physical and chemical data gathered during the bedrock investigations indicate that some fractures are interconnected at the site. Fracture connectivity is further supported by the detection of similar compounds in bedrock groundwater samples collected from visibly impacted locations near former potential source structures on the site and from non-visibly impacted locations onsite and northwest of I95. The extent of dissolved phase impacts in bedrock has generally been delineated vertically other than limited toluene detections in groundwater in three groundwater samples collected below -85 ft NAVD88 and at locations MGP-MW-105D, MGP-MW-104D, MGP-MW-108D and MGP-MW-TP4 where either samples were not collected due to the presence of tar in the borehole or groundwater samples were not submitted for laboratory analysis due to the presence of OLM in the purged water. The horizontal extent of dissolved impacts in bedrock is difficult to determine, however the data suggest that delineation has been accomplished along the eastern property boundary, south along the western property boundary at MGP-MW-106D and west-northwest of the site across I95. Delineation of bedrock groundwater impacts has not been completed to the north-northeast of the site due to access constraints.

5.6 Soil Vapor Intrusion

Six soil gas samples, one crawlspace sample (MGP-SG-3), and two indoor air samples were collected and analyzed during the SC. One soil gas sample and one ambient outdoor air sample were collected during the RI. The soil gas and indoor air results are summarized in Table 5-7 and are compared to a database of typical background indoor air concentrations from fuel oil heated homes in New York State that was compiled by the NYSDOH in 2003, and revised in 2005. The background values are expressed as statistical values. The "75th percentile" value indicates that 75% of the background indoor air concentrations were below that value. Similarly, the "90th percentile" value indicates that 90% of the background indoor air concentrations were below that value. In the table, sample concentrations that are greater than the 75th and 90th percentile values are identified with yellow and green highlighting, respectively.

The soil gas data indicate the presence of chlorinated organic compounds, alkanes, and several aromatic hydrocarbons. The results suggest that subsurface impacts are associated with cleaning/degreasing solvents (chlorinated compounds), petroleum (aromatic compounds, alkanes) and potential MGP residuals (aromatic compounds). Associated indoor air samples demonstrated that elevated constituent levels, i.e. concentrations greater than established background levels (90^{th} percentile) are limited to a single chlorinated compound (1,4-dichlorobenzene) that is not associated with MGP residuals. The outdoor ambient air sample did not contain detectable concentrations of compounds other than acetone, trichlorofluoromethane (Freon11), and dichlorodifluoromethane (Freon 12) at concentrations below the background indoor air values. Additionally, several compounds likely to be specific to MGP residuals (indane, indene and thiophene) were not detected in the either the soil gas or indoor air samples. The outdoor ambient air sample did not contain detectable concentrations of compounds other than acetone, trichlorofluoromethane (Freon11), and dichlorodifluoromethane (Freon 12) at concentrations below the background indoor air values.

The results demonstrate that MGP residuals have not significantly impacted soil gas at the site and that the vapor intrusion exposure pathway is not complete. An evaluation of the results from the program using NYSDOH guidance and decision matrices (NYSDOH, 2006) indicates that no further investigation of vapor intrusion, or remedial action is required at the site. However, based on detected concentrations of compounds in soil gas samples collected from MGP-SG-5 and MGP-SG-8 and the visible and/or analytical results for soil, bedrock, and groundwater in the northern portion of the site, as well as the residential property use to the north of the site, two additional soil gas sample locations were proposed in the RI. These samples could not be collected since access to the property north of the site was not granted.

6.0 Qualitative Human Health and Environmental Assessment

This section integrates the data and information gathered during the SC and RI and provides a qualitative assessment of the potential for exposure to MGP-related contaminants that are associated with the environmental conditions encountered at the site. This assessment was performed by identifying potential sources, migration routes for the constituents of concern (COC) discussed in Section 5, potential receptors, and potential exposure pathways at and in the vicinity of the site. The assessment follows guidelines specified in the *NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2010).

6.1 Site Setting

A description of the site is presented in Section 2.1. The site is utilized by Con Edison for the maintenance and dispatching location for their fleet of service vehicles. The facility occupies approximately 9 acres and includes a mix of office, shop, and utility space surrounded by open parking lots and storage areas, diesel/gasoline refueling pumps, compressed natural gas (CNG) storage/refueling pumps, and grassy, vegetated areas. The site is surrounded by a fence with two locked gate entrances on Theodore Fremd Avenue, one of which is controlled by a security guard during hours of operation. This area encompasses the historic boundary of the former Rye Gas Works and the former MGP's gas production, purification, and storage facilities and structures.

6.2 Exposure Assessment

Exposure is the process by which humans come into contact with COC in their environment. Humans can be exposed to COC in a variety of environmental media including surface soil, subsurface soil, surface water, sediment, groundwater, and air. Exposure to these media can occur through several routes including ingestion, dermal contact, and inhalation. The exposure assessment identifies pathways by which humans are potentially exposed to COC. The assessment includes the following:

1) Developmen t of a conceptual site model

2) Discussion of potential sources

3) Discussion of potential release mechanisms

4) Identification of potential human receptors and receptor-specific exposure pathways

The potential for exposure to COCs via drinking impacted site groundwater is not considered in the analysis presented below. The City of Rye obtains drinking water from sources located in upstate areas. Other than an evaluation of potential incidental ingestion of impacted groundwater during subsurface repair or construction activities, this pathway is not further discussed in this exposure assessment. The NYSDEC groundwater classification for the site area is GA (aesthetic-fresh waters). The management of groundwater impacted by site-related residuals will be addressed in the alternatives analysis report.

6.3 Conceptual Site Model

Figure 6-1 presents the conceptual model for the OU1 RI investigation area. Included on the figure is information regarding the known or potential sources of COC, the identified release mechanisms, and the affected source media. The potential migration pathways, the exposure media, and the potential exposure routes are identified. Note that the exposure routes are considered potential unless there is an on-going or documented exposure.

Information regarding the potential receptors identified in each area of interest is presented in Table 6-1.

6.4 Potential Sources of Residuals

The sources of environmental impact for the site are residual materials associated with the former MGP structures and process areas and petroleum USTs. Exposure to surface soil could be a potential exposure pathway; however, the concentrations of COC in the surface soil samples collected at the site are generally within typical background concentrations with total PAH concentrations less than 22 ppm. Hydrocarbon materials, including NAPL, and soils containing constituents at concentrations exceeding the URUSCOs have been observed in subsurface soil and bedrock beneath the site. Volatile and semi-volatile compounds in these materials have leached to groundwater which is not used for potable purposes. In the MGP-impacted areas, the lower molecular weight hydrocarbons could also volatilize and migrate into ambient and/or indoor air.

6.5 Potential Release Mechanisms

As shown on Table 6-1, there are several potential release mechanisms by which the constituents identified in the soil and groundwater may be transported to other media. Each mechanism is considered for the identified media and potential receptor group. Potential release mechanisms for soil include the following:

1) **Fugitive Dust.** Constituents in surface and subsurface soil could be a potential source for fugitive dust via physical disturbance.
2) **Volatilization.** Volatile constituents may potentially be transported from subsurface soil and bedrock fractures by volatilizing into soil-pore space and eventually emanate into ambient or indoor air.
3) **Leaching.** Constituents in surface, subsurface soil, or bedrock could potentially leach to groundwater.

There are three mechanisms by which constituents in groundwater can be transported to other media. These migration pathways include the following:

1) **Adsorption.** Constituents in groundwater may be sorbed onto subsurface soils.
2) **Volatilization to Ambient Air.** Volatile constituents in groundwater may potentially desorb into soil gas and be transported into ambient or indoor air.
3) **Extraction.** Constituents in groundwater may migrate to other media by extraction and use of impacted groundwater.

Each of these potential release mechanisms is evaluated for each potential receptor group on Table 6-1.

6.6 Potential human receptors and exposure pathways

This section discusses the identified potential receptors and the potential that the receptor may be exposed to Site-related residuals. An exposure pathway analysis for receptors at the former Rye Gas Works site is summarized in Table 6-1. The analysis includes an identification of each potential receptor group, a listing of each potential exposure media and potential pathway, and a rationale for inclusion or exclusion of each potential receptor in the consideration of future remedial actions in the alternatives analysis report. Each of the site receptor groups, and the potential exposure pathways, are identified in Table 6-1. Potential receptor groups and potential exposure pathways that may exist for the site are discussed below.

6.6.1 Facility Building Worker

The main service center facility building is present within the footprint of the former MGP process area. Employees/workers within the building could potentially be exposed to MGP-related COC by the inhalation of impacted indoor air. The results of the SVI evaluation demonstrate that MGP residuals have not significantly impacted soil gas at the site and that the vapor intrusion exposure pathway is not complete. Therefore, the potential for an employee/worker to be exposed to air impacted with MGP-related COC is considered to be low under standard conditions. However, future potential sub-slab construction within the building may provide a potential pathway for subsurface vapors into the building. Therefore, the inhalation of VOCs by employees/workers pathway is considered to be potentially complete and will be addressed in the alternatives analysis report.

As indicated above, sampling and analysis of surface soils has indicated that the concentrations of VOCs and SVOCs are low and similar to background concentrations. Surface soils at the site are grass-covered or landscaped and the potential for employees/workers to come into contact with surface soils is low. For these reasons, the potential for a site employee/worker to be exposed to COCs in surface soil is considered to be low. Site employee/workers will not be exposed to subsurface soils as part of their work activities, for this reason the potential for exposure to COCs in subsurface soil is considered to be low.

6.6.2 Maintenance Worker – Indoor/Outdoor

A maintenance worker at the site could be involved in indoor and/or outdoor maintenance or construction activities. Based on the results of the SVI sampling performed in each of the site buildings, MGP residuals have not significantly impacted soil gas at the site and the vapor intrusion exposure pathway is not complete. However, sub-slab construction within the main service center building may provide a potential pathway for subsurface vapors into the building. Therefore, the inhalation of VOCs by indoor maintenance workers pathway is considered to be potentially complete and will be addressed in the alternatives analysis report.

Another potential exposure pathway for outdoor maintenance workers is via direct contact with impacted soils (i.e., incidental ingestion, dermal contact, and inhalation of volatiles or particulates) while performing light maintenance activities such as lawn care or landscaping. However, the concentrations of MGP-related COC in surface soils are low, and the soil is covered with grass or landscaping materials. The period of time that a worker would be in contact with subsurface soils is anticipated to be minimal. For these reasons, the potential for an outdoor maintenance worker to be exposed to MGP-related COC in surface and subsurface soils is considered to be low.

6.6.3 Subsurface Outdoor Maintenance or Utility Workers

Outdoor maintenance workers and subsurface utility workers could potentially be exposed to soil containing NAPL and other COC in subsurface soil and groundwater via incidental ingestion, dermal contact, and inhalation of volatiles or particulates if subsurface excavation work is needed to repair or replace underground features such as gas, water or sewer lines, or other utilities or structures at the site. NAPL-impacted subsurface soil was observed in the central portions of the site near the former 6,000 cf and 100,000 cf gas holders at depths less than 10 ft bgs. Impacted groundwater is present in portions of the site at depths ranging from approximately 2.5 to more than 100 ft bgs (in bedrock). Only properly trained personnel should complete subsurface work at the site using methods specified in a site-specific HASP, until the area has been cleared of impacted materials.

6.6.4 Site Visitors or Trespasser

Site visitors and trespassers could potentially contact surface soil in the landscaped areas of the site, or inhale impacted indoor air while visiting site buildings or surrounding areas. As indicated above, the potential for exposure for each of these media is considered to be low under standard conditions. However, a site visitor could potentially be exposed to impacts to indoor air if sub-slab construction occurs in the building that they visit. Therefore, the inhalation of VOCs by site visitors pathway is considered to be potentially complete and will be addressed in the alternatives analysis report.

6.6.5 Adjacent Metro North Rail Line and Interstate I95 Area

Subsurface utility workers who perform subsurface utility repair or installation work along the Metro North rail line and possibly along I95 could potentially be exposed to constituents in soil, bedrock or groundwater in this area via direct contact pathways (*i.e.*, dermal contact, ingestion, and inhalation of volatiles) if subsurface work is performed in this area. Workers performing subsurface work in this area should be properly trained and should perform this work using procedures specified in a HASP.

6.7 Conclusion

Based on this assessment, MPG impacts do not pose a significant risk to facility building workers/employees, an indoor/outdoor maintenance worker, or site visitor/trespasser, however, subsurface soil and overburden groundwater impacts may pose a direct contact risk to future utility/construction workers.

As noted previously in this report, additional investigation is proposed north of the facility to further delineate site impacts, once access can be acquired. This evaluation of potential human health risks associated with site impacts will be reviewed and updated once the additional investigative activities are completed.

7.0 Fish and Wildlife Resource Impact Analysis

The purpose of the Fish and Wildlife Resources Impact Analysis (FWRIA) is to identify actual or potential impacts to fish and wildlife resources from site contaminants of ecological concern. The site is fully developed with degraded habitat and wildlife resources limited to common urban species. There is not permanent surface water habitat on site. The nearest potential ecological resource is the Rye Nature Center which is situated east of the site across Theodore Fremd Avenue. The Center is located on 47 acres of wildlife preserve, and has over two miles of hiking trails, ponds, streams and granite outcroppings. Red Maple Swamp, a perennial swamp within the Rye Nature Center, is situated along Theodore Fremd Avenue east of the Rye former gas works site.

The majority of the site is paved or covered with buildings. Based on the SC and RI results, MGP impacts are not present on the site surface. The location of MGP subsurface impacts is summarized on Figures 5-2 and 5-3. Surface water from precipitation events is collected in onsite storm drains. There is a storm sewer running along the east side of the service center building that drains the parking lots into the local sewer system. Although the site surface slopes to the north and east of the large bedrock outcrop adjacent to the upper, circular paved parking are at the site, the surface between the parking area and Theodore Fremd Avenue is grassy and any runoff will infiltrate rather than flow offsite. The paved vehicle parking area situated further northeast at the site drains northeast towards an onsite drainage swale t the property boundary. A portion of this parking area drains east down the driveway to catch basins along Theodore Fremd Avenue. It is surmised that these catch basins drain to Red Maple Swamp, although the discharge point could not be confirmed by field observations or the City of Rye engineering department. Although some surface runoff from the northeastern parking area at the site may reach Red Maple Swamp, MGP impacts are not present at the site surface and will not migrate from the site via surface runoff. Therefore, a complete exposure path from the MGP site to Red Maple Swamp does not exist.

A Con Edison historic drawing (Drawing A251756-0 in Appendix A) illustrates a culvert beneath Theodore Fremd Avenue which appears to connect Red Maple Swamp to the drainage swale. No evidence of this culvert was found during field reconnaissance and the City of Rye Engineering Department has no records regarding the culvert. Even if the culvert is present and open to flow, a potential exposure pathway for MGP impacts to reach the swale and Red Maple Swamp is not complete since surficial MGP impacts are not present and will not migrate via runoff.

Overburden and bedrock groundwater at the site contain site-related constituents (predominantly VOCs consisting of BTEX and naphthalene) at concentrations exceeding the AWQSGVs. Groundwater flow in the overburden is to the west-northwest away from the drainage swale and the Rye Nature Center. In addition, saturated overburden conditions were not encountered along the eastern side of the site due to thin overburden and bedrock outcrops. Based on the elevation of the underdrains beneath I95 and the water table, it is likely that the surface of the overburden groundwater leaving the site intersects these underdrains. The underdrains discharge to the storm sewer via catch basins along I95. In areas where overburden is absent, bedrock groundwater may intersect the drainage features along I95. If site-related groundwater VOC impacts enter the storm water drainage system they are likely volatilized as the water moves through the system. Therefore, site-related VOCs that may enter the system would not reach the discharge point and the potential exposure pathway would not be complete. Groundwater flow in the bedrock is dependent on fracture interconnection, however groundwater analytical results illustrate that site-related bedrock groundwater impacts are not present along the eastern site property boundary adjacent to Theodore Fremd Avenue and therefore would not extend beneath the Rye Nature Center.

Based on this assessment a full FWRIA is not required for this site since there are no complete exposure pathways for MGP-related constituents to impact fish and wildlife resources.

8.0 Summary and Conclusions and Site Conceptual Model

The Rye former gas works site is a former MGP and current service center located at 178 Theodore Fremd Avenue in Rye, New York. The site occupies approximately 9 acres that are completely fenced with two gated entrances. The majority of the site is paved and covered with buildings although there are some grassy areas with trees. Surface water from precipitation events is collected in onsite storm drains or absorbed in the grassy areas. Limited surface water from precipitation events flows into a small swale at the northeast corner of the site. Public water is supplied to the City of Rye by the Westchester Joint Water Works which purchases water from the New York City water system which drives its supply from surface water reservoirs.

The material beneath the site includes fill and till which together comprise the overburden and bedrock. The overburden is discontinuous across the site and ranges in thickness from 0 to 18 feet thick. Based on the site topography, bedrock outcrops, and the overburden thickness northwest of I95 it appears that the overburden is continuous from the northwestern edge of the site across I95 to the City of Rye Park. Bedrock outcrops are present north and south of the site on both sides of I95 indicating that the overburden thins and/or is absent in these directions. Bedrock beneath the site and northwest of the site consists of biotite schist with varying amounts of quartz and occasional pegmatite. The rock is variably fractured, with the most common fracture orientations northeast to north-northeast (often coinciding with metamorphic foliation) and steeply dipping northwest-trending fractures of varying dip angle. Some of the northeast-trending fractures likely intersect more than on northwest-trending fracture, based on fracture length and spacing measurements.

Groundwater is present in the overburden, where the overburden is present in sufficient thickness, at depths ranging between 2.7 and 10 ft bgs. Groundwater flow in the overburden is to the northwest. The surface of the overburden groundwater leaving the site is likely intercepted by the underdrain system associated with I95 during periods of high water table. The underdrain system ties into an 18 inch storm sewer running along the north bound travel lane through catch basins. The bottom elevation of the storm sewer is below the water table and therefore pipe bedding or pipe leaks may also intercept groundwater flowing from the site.

Groundwater is present in bedrock, however the elevations measured in bedrock monitoring wells do not indicate a consistent flow direction. Bedrock groundwater flow can be expected to occur from areas of high head to areas of low head within the fractured rock, if and only if some of the fractures are permeable and intersect with other permeable fractures. Based on outcrop measurements and borehole geophysical results, north-northeast to northeast and west-northwest to northwest appear to be the most likely orientations for potentially conductive bedrock fractures. Observations during bedrock drilling activities demonstrate that borehole to borehole hydraulic connections, presumably by bedrock fractures, can occur over distances as great as 220 feet and possibly as great as 360 feet at the site.

Site characterization and remedial investigation field activities have detected site-related residuals including tar, BTEX, PAHs, MTBE, and chlorinated compounds related to the site uses. The concentrations of compounds detected in surface soil samples are generally consistent with or lower than urban background and/or commercial uses. The majority of the subsurface soil and bedrock impacts are present in the central western portion of the site near the former 6,000 and 100,000 cf gas holders, the former UST areas, and near the former oil tank and tar pits beneath the service center building and extend west to the property boundary along the Metro North rail line and north-northeast towards the northern property boundary. The horizontal extent of visible impacts and analytical exceedances in the subsurface soil has been delineated to the south and east. Although subsurface soil visible and analytical impacts extend to the west-northwest site boundary adjacent to the Metro North rail line, they were not observed or detected in soil samples collected on the northwest side of I95. Subsurface soil impacts extend to the northern property boundary, however access to the north could not be acquired and delineation has not been accomplished in this direction. The horizontal delineation of the visible bedrock impacts has been delineated to the west-northwest as evidenced by the lack of visible bedrock impacts noted in the bedrock boreholes advanced to 200 ft bgs on the northwest side of I95 and to the east as evidenced by the lack of visible bedrock impacts noted in the bedrock boreholes advanced to 200 ft bgs along the eastern site property boundary. Horizontal delineation of visible bedrock impacts has not been achieved to the north-northeast where access to the adjacent northern property was not acquired. Horizontal delineation of the bedrock impacts noted in the vicinity of 6,000 cf holder has not been completed to the west-southwest. Vertical delineation of visible bedrock impacts has not been completely defined near the 6,000 cf holder (locations MGP-MW-TP4 and MGP-MW-105D).

DNAPL recoverability at the site was evaluated as part of the RI by converting three FLUTe-lined bedrock boreholes that contained fractures with tar into recovery wells and gauging the wells to monitor DNAPL accumulation. The gauging results show that up to 9.6 feet of DNAPL accumulated in MGP-MW-104D and 3.8 feet of DNAPL accumulated in MW-12D, but has not been present in measurable quantity in MGP-MW-TP4 or MGP-MW-108D as of June 2013. A DNAPL sample was collected from the sump of MGP-MW-104D on December 7, 2012 using a bailer and analyzed for interfacial and surface tension, viscosity, density, and specific gravity. A DNAPL sample was collected from the sump of MW-12D on June 13, 2013, and analyzed for the same physical parameters as the sample collected from MGP-MW-104D. The results of the analyses will be provide in future site documentation.

Overburden groundwater contains BTEX and naphthalene in the vicinity of the former USTs and downgradient along the northwestern property line. Concentrations in the vicinity of the former USTs have generally decreased since 1996 and 2004. The concentrations in MGP-MW-108S suggest that the tar pits beneath the service center building might provide a separate source of BTEX and naphthalene to overburden groundwater in this area of the site. The overburden groundwater impacts have not been delineated to the north of the site due to access constraints. The degree to which impacted groundwater may be discharging to the I95 drainage system is uncertain but is believed to be minimal based on the relative elevations of the drainage system and water table. The degree to which impacted groundwater may be migrating along permeable bedding material associated with the storm sewer northwest of the site is unknown.

Bedrock groundwater quality at the site has been impacted by site operations and contains VOCs at concentrations exceeding Ambient Water Quality Standards and Guidance Values (AWQSGVs) in the vicinity of the former 6,000 and 100,000 cf holders and to the west and north of the former oil tank and tar pits beneath the service center building. The compilation of the physical and chemical data gathered during the bedrock investigations indicate that some fractures are interconnected at the site. Fracture connectivity is further supported by the detection of similar compounds in bedrock groundwater samples collected from visibly impacted locations near former potential source structures on the site and from non-visibly impacted locations onsite and northwest of I95. The extent of dissolved phase impacts in bedrock has generally been delineated vertically other than limited toluene detections in groundwater in three groundwater samples collected below -85 ft NAVD88 and at locations MGP-MW-105D, MGP-MW-104D, MGP-MW-108D and MGP-MW-TP4 where either samples were not collected due to the presence of tar in the borehole or groundwater samples were not submitted for laboratory analysis due to the presence of OLM in the purged water. The horizontal extent of dissolved impacts in bedrock is difficult to determine, however the data suggest that delineation has been accomplished along the eastern property boundary, south along the western property boundary and west-northwest of the site across I95. Delineation of bedrock groundwater impacts has not been completed to the north-northeast of the site due to access constraints.

The soil gas and ambient air results demonstrate that MGP residuals have not significantly impacted soil gas at the site and that the vapor intrusion exposure pathway is not complete. However, based on detected concentrations of compounds in soil gas samples collected from MGP-SG-5 and MGP-SG-8 and the visible and/or analytical results for soil, bedrock, and groundwater in the northern portion of the site, as well as the residential property use to the north of the site, two additional soil gas sample locations were proposed in the RI. These samples were not collected since access to the property north of the site was not granted.

The qualitative human health and environmental assessment indicates that MPG impacts do not pose a significant risk to current site workers, however, subsurface soil and overburden groundwater impacts may pose a short-term direct contact risk to future utility/construction workers.

Based on an evaluation of the site conditions and surrounding ecological resources, a full FWRIA is not required for this site since there are no complete exposure pathways for site-related constituents to impact fish and wildlife resources.

8.1 Site Conceptual Model

Based on the above summary it is apparent that the MGP residuals and service center residuals have impacted the subsurface soil, bedrock, overburden and bedrock groundwater quality at the site in the vicinity of the former MGP 6,000 and 100,000 cf gas holder, oil tank, and tar pit structures, and the former service center USTs, likely through spills and leaks. These impacts have migrated to the northwestern and northern property boundaries but have generally been delineated to the south and east, although additional investigation of the extent of tar in bedrock south of MGP-MW-105D is warranted. These impacts have not been observed on the northwest side of I95, indicating that delineation has been achieved in this direction. These impacts have not been delineated to the north due to access constraints. The impacts encountered at the site do not pose a significant risk to current site workers but subsurface soil and overburden groundwater impacts may pose a short-term direct contact risk to future utility/construction workers. The site impacts do not present a risk to fish or wildlife resources.

9.0 Recommendations

The following recommendations are made based on the SC and RI findings.

- Complete the overburden, bedrock, and soil gas investigations proposed as part of the RI to the north of the site to further delineate the northern extent of site impacts.
- Drill an additional bedrock boring south-southwest of MGP105D to delineate the extent of visible impacts in bedrock to the south-southwest. Drill the additional boring to 200 ft for vertical delineation as well as horizontal delineation of impacts.
- Perform DNAPL baildown tests in MGP-MW-104D and MW-12D to further evaluate DNAPL recoverability. Evaluate the results for the DNAPL sample collected from MW-12D and compare with the DNAPL results from MGP-MW-104D.

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USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA540-R-04-004, October 2004

All Appendices Provided on 2 Separate CDs

Appendix A

Historical Site Maps and Aerial Photographs, EDR Maps, and Spills Records

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Boring, Coring, Test Pit, and Well Construction Logs for Previous Investigations and the SC and RI

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Summary of Surface Soil Samples
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

Sample ID	Depth Interval (ft bgs)	Date Collected	Sample Collection Method	Sample Rationale	Laboratory Analysis
SS-1(0-0.2)	0 - 0.2	8/10/2009	Stainless steel trowel	Characterize surface soil quality in the western portion of the site	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
SS-2(0-0.2)	0 - 0.2	8/10/2009	Stainless steel trowel	Characterize surface soil on the northwestern edge of the site (sample collected north of the black rock and west of the dumpster within the grassy area along the rail line).	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
SS-3(0-0.2)	0 - 0.2	8/10/2009	Stainless steel trowel	Characterize surface soil on the eastern edge of the site in the upland portion of the site away from the wetland area.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
SS-4(0-0.2)	0 - 0.2	8/10/2009	Stainless steel trowel	Characterize surface soil on the southeastern edge of the site	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
SS-5(0-0.2)	0 - 0.2	8/10/2009	Stainless steel trowel	Characterize surface soil on the eastern edge of the site, north and east of the former large holder foundation.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total

Notes:
ft bgs = feet below ground surface
VOCs + 10 TICs - TCL volatile organic compounds plus 10 tentatively identified compounds using USEPA Method 8260B
SVOCs +20 TICs - TCL semivolatile organic compounds plus 20 tentatively identified compounds using USEPA Method 8270C
TCL - Target Compound List
Cn - Cyanide, total using USEPA Method 9012 A.
TAL Metals - Target Analyte List Metals using USEPA Methods 6010 and 7471.

Table 3-2
Summary of Test Pit Soil Samples
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID	Depth Interval (ft bgs)	Date Collected	Method	Sample Rationale	Laboratory Analysis
TP1 (5-5.5)	5-5.5	8/11/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate the soil quality at the test pit completion depth. Holder bottom was encountered during test pitting activities.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP2 (1-1.3)	1-1.3	8/12/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate the soil quality at the bedrock interface. Concrete holder bottom was encountered during test pitting activities on the southwest portion of the excavation. The holder bottom was not penetrated.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP3 (2-2.5)	2-2.5	8/25/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality at top of wall of SE structure. Three brick structures (possible foundation walls) were encountered.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP3 (5-5.5)	5-5.5	8/25/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality above NAPL seep.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP3 (6-6.5)	6-6.5	8/25/2009	Stainless steel trowel/ excavator bucket	Evaluate the soil quality at the base of the NW structure below NAPL seep. Three brick structures (possible foundation walls) were encountered.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP3 (8.5-9)	8.5-9	8/25/2009	Stainless steel trowel/ excavator bucket	Evaluate soil quality at the bottom of the excavation outside the three structures.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP4 (3-3.5)	3-3.5	8/27/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil with elevated PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total, PCBs
TP4 (5.5)	5.5	8/27/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil at base of excavation with lower PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total, PCBs
TP5 (0.5-1)	0.5-1	8/24/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality on top of concrete foundation.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP5 (8-10)	8-10	8/24/2009	Stainless steel trowel/ excavator bucket	Evaluate soil quality in the vadose zone in the southern portion of the site.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP5 (10-10.5)	10-10.5	8/24/2009	Stainless steel trowel/ excavator bucket	Evaluate soil quality at the base of the test pit.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total

Table 3-2
Summary of Test Pit Soil Samples
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID	Depth Interval (ft bgs)	Date Collected	Method	Sample Rationale	Laboratory Analysis
TP-5 082109 con	7	8/24/2009	Stainless steel trowel/ hand auger/posthole digger	Confirm that there was no TPH after hydraulic leak.	TPH
TP6 (2-2.5)	2-2.5	8/14/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality on top of the concrete pad.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP6 (5-5.8)	5-5.8	8/14/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality at the base of the test pit.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP7 (5.5-6)	5.5-6	8/20/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate soil quality at the overburden-bedrock interface south of the former MGP purifier area.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP8 (3.5-4)	3.5-4	8/20/2009	Stainless steel trowel/ excavator bucket	Evaluate soil quality on top of possible boiler foundation.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total
TP8 (6.5-7)	6.5-7	8/20/2009	Stainless steel trowel/ excavator bucket	Evaluate soil quality at overburden-bedrock interface along the southwestern portion of the site.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn total

Notes:
ft bgs = feet below ground surface
VOCs 10 TICs - TCL volatile organic compounds plus 10 tentatively identified compounds using USEPA Method 8260B
SVOCs 20 TICs - TCL semivolatile organic compounds plus 20 tentatively identified compounds using USEPA Method 8270C
TCL - Target Compound List
Cn - Cyanide, Total using USEPA Method 9012 A
TAL Metals - Target Analyte List Metals using USEPA Methods 6010 and 7471.

Table 3-3
Summary of Subsurface Soil Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Sample ID	Depth Interval (ft bgs)	Date Collected	Sample Collection Method	Sample Rationale	Laboratory Analysis
Site Characterization Samples					
MGP-SG-5 (1-2.2)	1-2.2	7/28/2009	Stainless steel trowel/ hand auger/posthole digger	Characterize slag/cinder material with petroleum odor.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total), PCBs
MGP-SB-2 (5-6)	5-6	8/13/2009	Split spoon	Evaluate soil quality at the base of the former 100,000 cf holder.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-3 (1.5-2.0)	1.5-2	8/5/2009	Stainless steel trowel/ hand auger/posthole digger	Characterize soil with sheen and elevated PID readings within 6000 CFof gas holder.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-4 (6-8)	6-8	8/13/2009	Split spoon	Evaluate soil quality at refusal depth on concrete - possibly associated with former 10,000 gallon fuel oil tank.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-5 (10-11)	10-11	8/16/2009	Split spoon	Evaluate soil in former oil tank area in the vadose zone	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-5 (11-13)	11-13	8/16/2009	Split spoon	Characterize soil with TLM and elevated PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-5 (16-17)	16-17	8/16/2009	Split spoon	Vertically delineate shallower visible impacts.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-6 (7-8)	7-8	8/12/2009	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-7 (6-7.3)	6-7.3	8/13/2009	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-8 (9"-12")	9"-12"	8/10/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate potential presence of PCBs in soil downgradient of former transformer house.	PCBs
MGP-SB-8 (1-2)	1-2	8/10/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate potential presence of PCBs in soil downgradient of former transformer house.	PCBs
MGP-SB 8 (10-12)	10-12	8/13/2009	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-9 (8-10)	8-10	8/15/2009	Split spoon	Characterize soil with sheen and elevated PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-SB-9 (11-12.5)	11-12.5	8/15/2009	Split spoon	Characterize soil with OLM and elevated PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW-101S (2.0-2.5)	2-2.5	8/18/2009	Split spoon	Evaluate soil quality at overburden bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW103S (11-12.5)	11-12.5	8/26/2009	Split spoon	Evaluate soil quality at overburden bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW104S (9-11)	9-11	8/25/2009	Split spoon	Characterize soil with sheen and MGPO.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW105S (2"-4")	2"-4"	8/13/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate potential presence of PCBs near former transformer storage area.	PCBs
MGP-MW105S (1.5-2)	1.5-2	8/13/2009	Stainless steel trowel/ hand auger/posthole digger	Evaluate potential presence of PCBs near former transformer storage area.	PCBs
MGP-MW105S (5-6.5)	5-6.5	9/4/2009	Split spoon	Evaluate soil quality at the overburden-bedrock interface downgradient of the former MGP building that housed the purifiers and retorts and other former MGP structues.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW-108S (12-14)	12-14	9/28/2009	Split spoon	Characterize soil with sheen and elevated PID readings.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW-108S (14-15)	14-15	9/28/2009	Split spoon	Vertically delineate observed impacts and evaluate soil quality at overburden-bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW10D (12-13.7)	12-13.7	9/3/2009	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)

Table 3-3
Summary of Subsurface Soil Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Sample ID	Depth Interval (ft bgs)	Date Collected	Sample Collection Method	Sample Rationale	Laboratory Analysis
MGP-MW4DD (5-7)	5-7	8/19/2009	Split spoon	Evaluate soil with elevated PID readings and hydrocarbon like odors.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW4DD (7-8)	7-8	8/19/2009	Split spoon	Evaluate soil with elevated PID readings and hydrocarbon like odors.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW9DD ('5-7)	5-7	8/19/2009	Split spoon	Evaluate soil at groundwater interface.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW9DD (11.4-12.5)	11.4-12.5	8/12/2009	Split spoon	Characterize soil with OLM and MGPO.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
MGP-MW9DD (14-15)	14-15	8/19/2009	Split spoon	Evaluate vertical extent of shallower visible impacts.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
TP-3 (11-13)	11-13	8/26/2009	Split spoon	Characterize soil with sheen and MGPO	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
TP-3boring (5-6)	5-6	9/29/2009	Stainless steel trowel/ hand auger/posthole digger	Characterize soil with elevated PID readings. Presence of possible drain-like or cistern structure was seen at 3' bgs.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
TP-3boring (6-6.5)	6-6.5	9/29/2009	Stainless steel trowel/ hand auger/posthole digger	Characterize soil with OLM, sheen, and MGPO.	VOCs + 10 TICs, SVOCs + 20 TICs, TAL Metals, Cn (total)
Remedial Investigation Samples					
MGP-MW-109D (4-5)	4-4.5	3/10/2012	Split spoon	Evaluate soil quality at presumed overburden-bedrock interface.	VOCs, SVOCs
MGP-MW-110D (1.5-2.2)	1.5-2.2	1/4/2012	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs, SVOCs
MGP-MW- 112D (7-8.5)	7-8.5	1/12/2012	Split spoon	Evaluate soil quality at groundwater interface.	VOCs, SVOCs
MGP-MW-112D (15-16.5)	15-16.5	1/12/2012	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs, SVOCs
MGP-MW-113D (7- 8.5)	7-8.5	1/6/2012	Split spoon	Evaluate soil quality at groundwater interface.	VOCs, SVOCs
MGP-MW- 113D (11-13)	11-13	1/6/2012	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs, SVOCs
MGP-MW-114D (11-14)	11-14	2/24/2012	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs, SVOCs
MGP-MW-116D (10-12)	10-12	1/10/2012	Split spoon	Evaluate soil quality at groundwater interface.	VOCs, SVOCs
MGP-MW-116D (12-12.5)	12-12.5	1/10/2012	Split spoon	Evaluate soil quality at overburden-bedrock interface.	VOCs, SVOCs
MGP-SB-10 (6-7)	6-7*	2/25/2012	Geoprobe	Evaluate soil quality under crawl space	VOCs, SVOCs
MGP-SB-10 (15-16)	15-16*	2/25/2012	Geoprobe	Characterize soil with TLM and MGPO.	VOCs, SVOCs
MGP-SB-10 (19-20.4)	19-20.4*	2/25/2012	Geoprobe	Evaluate soil quality at bedrock interface	VOCs, SVOCs

Notes:
ft bgs = feet below ground surface
TLM - Tar Like Material
OLM - Oil Like Material
NAPL - Non-Aqueous Phase Liquid
MGPO - Manufactured Gas Plant-Like Odor
PLO -Petroleum-Like Odor
TCL - Target Compound List
VOCs + 10 TICs - TCL volatile organic compounds plus 10 tentatively identified compounds using EPA Method 8260B
SVOCs 20 TICs - TCL semivolatile organic compounds plus 20 tentatively identified compounds using EPA Method 8270C
Cn - Cyanide, total using EPA Method 9012 A
TAL Metals - Target Analyte List Metals using EPA Methods 6010 and 7471.
*Sample interval for these samples is relative to feet below the building floor which is 5.5 feet above ground surface. Therefore depth below ground surface is shallower than the interval indicated by 5.5 feet.

Table 3-4
Summary of Fingerprint Soil Sample and DNAPL Physical Property Sample
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Sample ID	Depth Interval (ft bgs)	Date Collected	Sample Collection Method	Sample Rationale	Laboratory Analysis
MGP-SG5 (1-2)	1-2	7/28/2009	Stainless steel trowel/ hand auger/posthole digger	Characterize source of Petroleum odor in slag/cinders.	Fingerprint*
MGP-MW-108D	22-24	12/7/2012	Bailer	Characterize physical properties of DNAPL	Interfacial and surface tension Viscosity Density Specific Gravity

Notes:
ft bgs = feet below ground surface
*- fingerprint analysis performed by CHEMTECH
Interfacial and surface tension by the DuNuoy Method ASTM D971
Viscosity by ASTM D445
Density by ASTMD1381
Specific Gravity by API RP40

Table 3-5
Summary of Bedrock Packer Test Groundwater Grab Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Bedrock ID	Packer Depth (feet bgs)	Date collected	Groundwater Sampling Rationale	Laboratory Analysis
Site Characterization Samples				
MGP-MW-0DD (17-20)	17-20	10/1/2009	Evaluate the horizontal extent of impacts observed in both MW-4DD and MW-9DD, and, to provide bedrock data at a third site location to help triangulate data.	VOC + 10 tics
MGP-MW-0DD (37-40)	37-40	10/2/2009		
MGP-MW-0DD (57.5-60)	57.5-60	10/5/2009		
MGP-MW-0DD (60-65)	60-65	10/5/2009		
MGP-MW-0DD (76-80)	76-80	10/6/2009		
MGP-MW-4DD (35-41.5)	35-41.5	8/18/2009	Evaluate bedrock groundwater quality at natural fracture zones to determine the vertical extent of bedrock groundwater impacts noted in MW-4D during previous investigations and to determine the total depth of the well.	VOC + 10 tics
MGP-MW-4DD (45-51.6)	45-51.6	8/19/2009		
MGP-MW-4DD (55-60.5)	55-60.5	8/19/2009		
MGP-MW-4DD (60-65.6)	60-65.6	8/20/2009		
MGP-MW-4DD (70-75.5)	70-75.5	8/21/2009		
MGP-MW-4DD (75.5-80.0)	75.5-80.0	8/21/2009		
MGP-MW-4DD (80-85.2)	80-85.2	8/24/2009		
MGP-MW4DD (87-100.4)	87-100.4	8/25/2009		
MGP-MW-4DD (100-105.5)	100-105.5	9/17/2009	Evaluate bedrock groundwater quality at natural fracture zones to determine the vertical extent of bedrock groundwater impacts noted in MW-4DD during previous sampling activities and to determine the total depth of the well.	VOC + 10 tics
MGP-MW-4DD (102-110.5)	102-110.5	9/18/2009		
MGP-MW-4DD (117-125.5)	117-125.5	9/21/2009		
MGP-MW9DD (23-30.5)	23-30.5	8/27/2009	Evaluate bedrock groundwater quality at natural fracture zones to determine the vertical extent of bedrock groundwater impacts noted in MW-9D during previous investigations and to determine the total depth of the well.	VOC + 10 tics
MGP-MW-9DD (41- 46.6)	41-46.6	8/27/2009		
MGP-MW-9DD (52-55.4)	52-55.4	8/31/2009		
MGP-MW- 9DD (60-65.5)	60-65.5	9/1/2009		
MGP-MW 9DD (73-80.5)	73-80.5	9/1/2009		
MGP-MW-9DD (87-97)	87-97.0	9/2/2009		
MGP-MW-9DD (100-105)	100-105	9/23/2009	Evaluate bedrock groundwater quality at natural fracture zones to determine the vertical extent of bedrock groundwater impacts noted in MW-9DD during previous sampling activities and to determine the total depth of the well.	VOC + 10 tics
MGP-MW101D (17-22)	17-22	2/4/2010	Characterize bedrock groundwater quality at natural fracture zones upgradient of the former 3 MCF holder.	VOC + 10 tics
MGP-MW101D (35-40)	35-40	2/4/2010		
MGP-MW101D (46-51)	46-51	2/4/2010		
MGP-MW101D (103-108)	103-108	2/5/2010		
MGP-MW101D (108-113)	108-113	2/5/2010		
MGP-MW101D (132-137)	132-137	2/5/2010		
MGP-MW-102D (10-15)	10-15	2/8/2010	Evaluate bedrock groundwater quality to the east and side-gradient of MW-11D (screened 15-25 ft bgs) where bedrock groundwater contained concentration of BTEX exceeding the AWQSGVs and to evaluate bedrock groundwater quality at natural fracture zones east of the former MGP tar wells.	VOC + 10 tics
MGP-MW-102D (26-31)	26-31	2/8/2010		
MGP-MW-102D (37-42)	37-42	2/8/2010		
MGP-MW-102D (44-49)	44-49	2/8/2010		
MGP-MW-102D (47-52)	47-52	2/8/2010		
MGP-MW-102D (76-81)	76-81	2/8/2010		
MGP-MW-102D (81-86)	81-86	2/8/2010		
MGP-MW-102D (111-116)	111-116	2/8/2010		
MGP-MW-102D (116-121)	116-121	2/8/2010		
MGP-MW-102D (132-137)	132-137	2/8/2010		
MGP-MW-103D (24-29)	24-29	2/9/2010	Characterize bedrock groundwater quality at natural fracture zones to evaluate the north-northeastern extent of bedrock groundwater impacts.	VOC + 10 tics
MGP-MW-103D (30-35)	30-35	2/9/2010		
MGP-MW-103D (33-38)	33-38	2/9/2010		
MGP-MW-103D (38-43)	38-43	2/9/2010		
MGP-MW-103D (45-50)	45-50	2/9/2010		
MGP-MW-103D (51-56)	51-56	2/12/2010		
MGP-MW-103D (55-60)	55-60	2/12/2010		
MGP-MW-103D (63-68)	63-68	2/12/2010		
MGP-MW-103D (70-75)	70-75	2/12/2010		
MGP-MW-103D (82-87)	82-87	2/9/2010		
MGP-MW-103D (88-93)	88-93	2/9/2010		
MGP-MW-103D (94-99)	94-99	2/9/2010		
MGP-MW-103D (107-112)	107-112	2/9/2010		
MGP-MW-104D (23-28)	23-28	2/17/2010	Characterize bedrock groundwater quality at natural fracture zones to evaluate the northwestern extent of bedrock groundwater impacts.	VOC + 10 tics
MGP-MW-104D (33-38)	33-38	2/17/2010		
MGP-MW-104D (66-71)	66-71	2/17/2010		
MGP-MW-104D (71-76)	71-76	2/17/2010		
MGP-MW-104D (91-96)	91-96	2/17/2010		
MGP-MW-104D (102-107)	102-107	2/17/2010		
MGP-MW-105D (21-26)	21-26	2/15/2010	Charecterize groundwater quality at natural fracture zones to evaluate the southeastern extent of bedrock groundwater impacts.	VOC + 10 tics
MGP-MW-105D (26-31)	26-31	2/15/2010		
MGP-MW-105D (32-37)	32-37	2/15/2010		
MGP-MW-105D (51-56)	51-56	2/15/2010		
MGP-MW-105D (68-73)	68-73	2/15/2010		
MGP-MW-105D (80-85)	80-85	2/16/2010		
MGP-MW-105D (99-104)	99-104	2/16/2010		
MGP-MW-105D (114-119)	114-119	2/16/2010		
MGP-MW-105D (120-125)	120-125	2/16/2010		

Table 3-5
Summary of Bedrock Packer Test Groundwater Grab Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Bedrock ID	Packer Depth (feet bgs)	Date collected	Groundwater Sampling Rationale	Laboratory Analysis
Site Characterization Samples				
MGP-MW-106D (8-13)	8-13	12/15/2009	Characterize groundwater quality to evaluate the southwestern extent of bedrock groundwater impacts at natural fracture zones.	VOC + 10 tics
MGP-MW-106D (20-25)	20-25	12/15/2009		
MGP-MW-106D (25-30)	25-30	12/15/2009		
MGP-MW-106D (43.5-48.5)	43.5-48.5	12/15/2009		
MGP-MW-106D (51-56)	51-56	12/16/2009		
MGP-MW-106D (63-68)	63-68	12/16/2009		
MGP-MW-106D (88-93)	88-93	12/16/2009		
MGP-MW-106D (104-109)	104-109	12/16/2009		
MGP-MW-106D (136-141)	136-141	12/16/2009		
MGP-MW-106D (143-148)	143-148	12/16/2009		
Remedial Investigation Samples				
MGP-MW-109D (30-35)	30-35	4/14/2012	Evaluate the northwestern extent of bedrock NAPL and groundwater impacts noted in MW-9D/DD and MGP-MW-108D.	VOCs
MGP-MW-109D (35-40)	35-40	4/14/2012		
MGP-MW-109D (43-48)	43-48	4/14/2012		
MGP-MW-109D (54-59)	54-59	4/14/2012		
MGP-MW-109D (66-71)	66-71	4/14/2012		
MGP-MW-109D (74-79)	74-79	4/15/2012		
MGP-MW-109D (89.5-94.5)	89.5-94.5	4/15/2012		
MGP-MW-109D (107.5-112.5)	107.5-112.5	4/15/2012		
MGP-MW-109D (149-154)	149-154	4/15/2012		
MGP-MW-109D (163.5- 168.5)	163.5-168.5	4/15/2012		
MGP-MW-109D (168.5-173.5)	168.5-173.5	4/15/2012		
MGP-MW-109D (184-189)	184-189	4/15/2012		
MGP-MW-109D (189-194)	189-194	4/15/2012		
MGP-MW-110D (15-20)	15-20	2/21/2012	Evaluate the northern extent of bedrock NAPL and groundwater impacts noted in MGP-MW-108D and MGP-MW-104D.	VOCs
MGP-MW-110D (23-28)	23-28	2/21/2012		
MGP-MW-110D (28-33)	28-33	2/21/2012		
MGP-MW-110D (33-39)	33-38	2/21/2012		
MGP-MW-110D (39-44)	39-44	2/21/2012		
MGP-MW-110D (48-53)	48-53	2/22/2012		
MGP-MW-110D (54-59)	54-59	2/22/2012		
MGP-MW-110D (73-78)	73-78	2/22/2012		
MGP-MW-110D (81-86)	81-86	2/22/2012		
MGP-MW-110D (94-99)	94-99	2/22/2012		
MGP-MW-110D (103-108)	103-108	2/22/2012		
MGP-MW-110D (108.5-113.5)	108.5-113.5	2/22/2012		
MGP-MW-110D (114-119)	114-119	2/23/2012		
MGP-MW-110D (121-126)	121-126	2/23/2012		
MGP-MW-110D (145-150)	145-150	2/23/2012		
MGP-MW-110D (165-170)	165-170	2/23/2012		
MGP-MW-110D (170-175)	170-175	2/23/2012		
MGP-MW-112D (7-8.5)	7-8.5	3/12/2012	Evaluate the south-southeastern extent of bedrock NAPL and/or groundwater impacts noted in MGP-MW-105D and MW-6D.	VOCs
MGP-MW-112D (15-16.5)	15-16.5	3/12/2012		
MGP-MW-112D (20-25)	20-25	3/12/2012		
MGP-MW-112D (23-28)	23-28	3/12/2012		
MGP-MW-112D (28-33)	28-33	3/12/2012		
MGP-MW-112D (33-38)	33-38	3/12/2012		
MGP-MW-112D (44-49)	44-46	3/12/2012		
MGP-MW-112D (50-55)	50-55	3/12/2012		
MGP-MW-112D (57-62)	57-62	3/12/2012		
MGP-MW-112D (65-70)	65-70	3/12/2012		
MGP-MW-112D (105-110)	105-110	3/13/2012		
MGP-MW-112D (186-191)	186-191	3/13/2012		
MGP-MW-112D (191-196)	191-196	3/13/2012		
MGP-MW-113D (17-22)	17-22	2/14/2012		
MGP-MW-113D (22-27)	22-27	2/14/2012	Evaluate the western extent of bedrock NAPL and/or groundwater impacts noted in MGP-MW-0DD and MW-13D.	VOCs
MGP-MW-113D (28-33)	28-33	2/14/2012		
MGP-MW-113D (35-40)	35-40	2/14/2012		
MGP-MW-113D (41-46)	41-46	2/14/2012		
MGP-MW-113D (45-50)	45-50	2/14/2012		
MGP-MW-113D (51-56)	51-56	2/14/2012		
MGP-MW-113D (71-76)	71-76	2/14/2012		
MGP-MW-113D (103-108)	103-108	2/14/2012		
MGP-MW-113D (124.5-128.5)	124.5-128.5	2/15/2012		
MGP-MW-113D (129.5-134.5)	129.5-134.5	2/15/2012		
MGP-MW-113D (135-140)	135-140	2/15/2012		
MGP-MW-113D (140-145)	140-145	2/15/2012		
MGP-MW-113D (158-163)	158-163	2/15/2012		
MGP-MW-113D (174-179)	174-179	2/15/2012		
MGP-MW-113D (180-185)	180-185	2/15/2012		

Table 3-5
Summary of Bedrock Packer Test Groundwater Grab Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Bedrock ID	Packer Depth (feet bgs)	Date collected	Groundwater Sampling Rationale	Laboratory Analysis
Remedial Investigation Samples				
MGP-MW-114D (24-29)	24-29	3/7/2012	Evaluate the eastern extent of bedrock groundwater impacts noted in MGP-MW-102D.	VOCs
MGP-MW-114D (40-45)	40-45	3/7/2012		
MGP-MW-114D (48-53)	48-53	3/7/2012		
MGP-MW-114D (67-72)	67-72	3/7/2012		
MGP-MW-114D (72-77)	72-77	3/7/2012		
MGP-MW-114D (79-84)	79-84	3/7/2012		
MGP-MW-114D (91-96)	91-96	3/7/2012		
MGP-MW-114D (103-108)	103-108	3/7/2012		
MGP-MW-114D (136-141)	136-141	3/8/2012		
MGP-MW-114D (141-146)	141-146	3/8/2012		
MGP-MW-114D (147.5-152.5)	147.5-152.5	3/8/2012		
MGP-MW-114D (153-158)	153-158	3/8/2012		
MGP-MW-114D (163-168)	163-168	3/8/2012		
MGP-MW-114D (168-173)	168-173	3/8/2012		
MGP-MW-114D (179-184)	179-184	3/8/2012		
MGP-MW-116D (24-29)	24-29	2/16/2012		
MGP-MW-116D (30-35)	30-35	2/16/2012	Evaluate the western extent of bedrock NAPL and/or groundwater impacts noted in MGP-MW-9DD and MGP-MW-108D and MGP-MW-104D.	VOCs
MGP-MW-116D (37-42)	37-42	2/16/2012		
MGP-MW-116D (44-49)	44-49	2/16/2012		
MGP-MW-116D (48.5-53.5)	48.5-53.5	2/16/2012		
MGP-MW-116D (53.5-58.5)	53.5-58.5	2/17/2012		
MGP-MW-116D (68-73)	68-73	2/17/2012		
MGP-MW-116D (73-78)	73-78	2/17/2012		
MGP-MW-116D (81-86)	81-86	2/17/2012		
MGP-MW-116D (94-99)	94-99	2/17/2012		
MGP-MW-116D (99.5-104.5)	99.5-104.5	2/17/2012		
MGP-MW-116D (128-133)	128-133	2/17/2012		
MGP-MW-116D (141-146)	141-146	2/17/2012		
MGP-MW-116D (167-172)	167-172	2/20/2012		
MGP-MW-116D (172-177)	172-177	2/20/2012		
MGP-MW-116D (176-181)	176-181	2/20/2012		
MGP-MW-116D (180-185)	180-185	2/20/2012		

Table 3-6
Summary of Groundwater Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

Monitoring Well ID	Screen Depth	Date Installed	Groundwater Sampling Rationale	Groundwater Sampling Method (date)	Groundwater Sampling Laboratory Analysis
Site Characterazation Samples					
MW-1	?-6	8/96	Evaluate overburden groundwater quality in the former UST area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-2	?-5.25	8/96	Evaluate overburden groundwater quality in the former UST area	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-3	5-10	11/04	Evaluate overburden groundwater quality in the former UST area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-4	3-7.3	11/04	Evaluate overburden groundwater quality in the former 100,000 cf holder area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-4D	5.5-20	8/06	Evaluate shallow bedrock groundwater quality in the former 100,000 cf holder area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-5	5-11	8/06	Evaluate overburden groundwater quality east of the MGP process area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-5D	42-57	3/07	Evaluate shallow bedrock groundwater quality east of the MGP process area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-6	6.5-11.5	8/06	Evaluate overburden groundwater quality of former coal pile and MGP process area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-6D	25-45	3/07	Evaluate shallow bedrock groundwater quality of former coal pile and MGP process area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-7	4.5-14.5	8/06	Evaluate overburden groundwater quality south of former MGP process area	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-9	8-13	8/06	Evaluate overburden groundwater quality west of former MGP process area	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-9D	35-45	3/07	Evaluate shallow bedrock groundwater quality west of former MGP process area	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-10	7-12	8/06	Evaluate overburden groundwater quality north of former MGP process area	Low flow (3/8/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-11D	15-25	3/07	Evaluate shallow bedrock groundwater quality east of former hydraulic lift area	Low flow (3/9/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-12	4.5-12.5	12/08	Evaluate overburden groundwater quality south of former UST and MGP process area	Low flow (3/11/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-12D	41-49	3/8/10	Evaluate shallow bedrock groundwater quality south of former UST and MGP process area	Not Sampled due to NAPL at BOH	VOCs, SVOCs, TAL Metals, Cn total
MW-13D	43-53	12/08	Evaluate shallow bedrock groundwater quality west of former UST and MGP process area	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-103S	5-10	8/09	Evaluate groundwater quality and groundwater impacts in the overburden to the east and side gradient of MW-10 (screened 7-12 ft bgs) when overburden groundwater contained benzene at a concentration exceeding AWQSGVs.	Low flow (3/8/2010)	VOCs, SVOCs, TAL Metals, Cn total

Table 3-6
Summary of Groundwater Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Monitoring Well ID	Screen Depth	Date Installed	Groundwater Sampling Rationale	Groundwater Sampling Method (date)	Groundwater Sampling Laboratory Analysis
MW-104S	2-12	8/09	Evaluate groundwater quality and benzene impacts in overburden down gradient and north of MW-10 (screened 7-12 ft bgs) and northeast of MW-9S (screened 8-13 ft bgs) where BTEX and some PAHs were detected at concentrations exceeding AWQSGVs in overburden groundwater.	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
MW-108S	2-13	9/09	Evaluate groundwater quality in overburden northeast of MW-9S (screened 8-13 ft bgs) where BTEX and some PAHs were detected at concentrations exceeding AWQSGVs in overburden groundwater.	Low flow (3/10/2010)	VOCs, SVOCs, TAL Metals, Cn total
Remedial Investigation Samples					
MW-113S	5-9	2/13/12	Evaluate the western extent of groundwater impacts detected in MW-9 and MGP-MW-108S.	Low Flow (3/16/12)	VOCs, SVOCs, TAL Metals, Cn total

Notes:
All groundwater samples collected using low-flow sampling protocols
bgs - below ground surface
S - overburden wells
D - shallow bedrock wells
VOCs - TCL volatile organic compounds using USEPA Method 8260B
SVOCs - TCL semivolatile organic compounds using USEPA Method 8270C
Cn - Cyanide, total USEPA Method 9012A .
TAL Metals - Target Analyte List Metals using USEPA Methods 6010 and 7471.
NAPL - Non-aqueous phase liquid
BOH - Bottom of hole
Cf - Cubic feet

Table 3-7
Summary of Soil Gas/ Indoor Air Samples
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

Sample ID	Depth Interval (ft bgs)	Date Collected	Sample Rationale	Laboratory Analysis
Site Characterization Samples				
MGP-SG-1	2.9-3.6	8/2/2009	At the northeastern corner of the garage to evaluate soil gas quality.	VOCs, Helium
MGP-SG-2	4.5-5.2	8/2/2009	In the locker room of the 1-story brick storage building in the southern portion of the site to evaluate soil gas quality.	VOCs, Helium
MGP-SG-3	Crawlspace	8/2/2009	At the northwestern corner of the storage building in the crawlspace along the western boundary of the site to evaluate soil gas quality.	VOCs, Helium
MGP-SG-4	3.7-4.4	8/2/2009	Along the eastern property boundary of the site to evaluate soil gas quality between the site and nearby residences.	VOCs, Helium
MGP-SG-5	0.5-1.2	8/2/2009	Near the sewer line in the pipe bedding on the northern portion of the property to evaluate the soil gas quality in the vicinity of the sewer which may be a potential migration pathway.	VOCs, Helium
MGP-SG-6	1.9-2.6	8/2/2009	Near the sewer line in the pipe bedding on the northern portion of the property to evaluate the soil gas quality in the vicinity of the sewer which may be a potential migration pathway.	VOCs, Helium
MGP-SG-7	1.2-1.8	8/2/2009	To the north of former Storage Holder no. 2 to evaluate soil gas quality between the site and residences.	VOCs, Helium
AMB-1 (indoor air)	Breathing Zone	8/2/2009	Inside the 1-story brick storage building in the southern portion of the site to evaluate ambient indoor air quality. (Duplicate sample collected here)	VOCs, Helium
AMB-2 (indoor air)	Breathing Zone	8/2/2009	Inside the storage building along the western boundary of the site to evaluate ambient indoor air quality.	VOCs, Helium
Remedial Investigation Samples				
MGP-SG-8	2-2.4	2/25/2012	North-northeast of MGP-SG-7 to Evaluate the extent of the elevated concentration of 1,1,1 trichloroethane detected during the site characterization and to evaluate the potential for offsite soIl vapor impacts in this area.	VOCs, Helium
AMB-1 (outdoor air)	Breathing Zone	2/25/2012	Adjacent to MGP-SG-8 B2to evaluate outside ambient air quality	VOCs, Helium

Notes:
ft bgs = feet below ground surface

VOCs - volatile organic compounds and naphthalene, 2-methylpentane, isopentane, 2,3 dimethylpentane, isooctane, indene, indan, thiophane, and helium using USEPA Method TO-15.

Table 3-8
Summary of Investigation Derived Waste Manifests
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Date	Manifest No.	No. of Drums	Liquid (1299)	C+D (1293)	Soil (1297)	Rolloff
8/18/2009	CEI308000014894	24	6	9	9	0
8/24/2009	CEI308000015633	31	28	3	0	0
8/28/2009	CEI308000016053	10	0	0	0	0
9/1/2009	CEI308000016292	24	15	9	0	0
9/15/2009	CEI308000017491	38	26	6	62	0
9/21/2009	CEI308000017996	23	21	2	0	0
10/12/2009	CEI308000019232	46	30	11	5	0
11/17/2009	CEI308000021217	61	49	8	4	0
12/8/2009	CEI308000022051	48	41	7	0	0
1/19/2010	CEI308000024453	56	32	11	133	0
3/12/2010	CEI308000027510	63	38	194	6	0
1/25/2012	214924	40	28	6	6	0
1/27/2012	214998	20	9	6	5	0
2/3/2012	215106	22	15	4	3	0
2/22/2012 (1)	109630	27	12	8	7	0
3/7/2012	109682	32	13	5	14	0
3/21/2012	109794	24	11	11	2	0
3/27/2012	210125	33	26	3	4	0
3/30/2012	210169	20	6	9	5	0
4/9/2012	210186	15	14	1	0	0
4/13/2012	109819	20	0	0	20	0
4/16/2012	109818	15	1	3	11	0
4/24/2012	195546	N/A	N/A	N/A	N/A	C+D

Notes:

C+D - Construction Debris
The numbers in parentheses next to the waste type correspond to the codes used in section 11 and J on the manifests.
1 - Manifest belongs to 20 cubic yard (cy) rolloff of soil. Manifests included in Appendix M.
2 - AECOM's notes indicated 8 soil drums removed while Clean Earth indicated 6 soil drums.
3 - AECOM's notes indicated 14 soil drums removed while Clean Earth indicated 13 soil drums.
4 - AECOM's notes indicated 20 Construction Debris drums removed while Clean Earth indicated 19 soil drums.
5 - Two 20 cy containers of construction debris from testpits were removed by Paragon. The manifests are not included.
6 - Soil and C + D drums were switched on the maifest.

Table 4-2
Summary of Overburden Hydraulic Conductivity
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Well	Test #	Generalized Soil Type in Screened Interval	Screened Interval (ft bgs)	Test Method	Solution Method	Estimated Hydraulic Conductivity (ft/sec)	(ft/day)	Observations
MW-4	F1	Sand with some silt; refusal on bedrock at 10' bgs	3 - 8	Slug - Falling Head	Bouwer and Rice	3.45E-05	2.98	No change in coupled bedrock well (MW-4D)
	R1			Slug - Rising Head	Bouwer and Rice	3.01E-05	2.60	
	F2			Slug - Falling Head	Bouwer and Rice	4.38E-05	3.79	
	R2			Slug - Rising Head	Bouwer and Rice	5.00E-06	0.43	
	Average:					*3.62E-05*	*3.12*	
	Geometric Mean:					*2.18E-05*	*1.89*	
MW-5	F1	Clayey silt and poorly graded sand with trace silt and gravel; refusal on bedrock at 11' bgs	5 - 11	Slug - Falling Head	Bouwer and Rice	3.04E-05	2.63	No change in coupled bedrock well (MW-5D)
	R1			Slug - Rising Head	Bouwer and Rice	2.71E-05	2.34	
	F2			Slug - Falling Head	Bouwer and Rice	4.18E-05	3.61	
	R2			Slug - Rising Head	Bouwer and Rice	2.74E-05	2.37	
	Average:					*3.17E-05*	*2.74*	
	Geometric Mean:					*3.12E-05*	*2.69*	
MW-6	F1	Sandy silt with little clay and trace gravel	6.5 - 11.5	Slug - Falling Head	Bouwer and Rice	7.81E-05	6.74	No change in coupled bedrock well (MW-6D)
	R1			Slug - Rising Head	Bouwer and Rice	2.82E-05	2.44	
	F2			Slug - Falling Head	Bouwer and Rice	9.34E-05	8.07	
	R2			Slug - Rising Head	Bouwer and Rice	3.31E-06	0.29	
	Average:					*5.07E-05*	*4.38*	
	Geometric Mean:					*2.87E-05*	*2.48*	
MW-9	F1	Poorly graded medium to fine sandy silt with little to some gravel below 10' bgs	8 - 13	Slug - Falling Head	Bouwer and Rice	8.37E-05	7.23	No change in coupled bedrock well (MW-9D)
	R1			Slug - Rising Head	Bouwer and Rice	1.75E-05	1.51	
	F2			Slug - Falling Head	Bouwer and Rice	1.84E-05	1.59	
	R2			Slug - Rising Head	Bouwer and Rice	2.49E-05	2.15	
	Average:					*3.61E-05*	*3.12*	
	Geometric Mean:					*2.86E-05*	*2.47*	

Table 4-1
Monitoring Well Construction Details and March 2010 and April 2012 Groundwater Elevations
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

						March 8, 2010		April 13, 2012	
Well ID	**Total Depth of PVC Well**	**Ground Surface Elevation (ft)**	**Top of Casing Elevation (ft)**	**Screened Interval (ft)**	**Well Type**	**Depth to Groundwater (ft)**	**Groundwater Elevation (ft)**	**Depth to Groundwater (ft)**	**Groundwater Elevation (ft)**
MW-1	6.00	64.31	63.72	?-6	OVB	4.97	59.34	5.61	58.11
MW-2	5.28	63.88	63.55	?-5.25	OVB	2.69	61.19	dry	dry
MW-3	10.00	64.9	64.64	5-10	OVB	4.35	60.55	6.5	58.14
MW-4	8.00	64.83	64.58	3-7.3	OVB	3.02	61.81	5.64	58.94
MW-4D	30.2	64.71	64.33	21-30	BDRK	6.82	57.89	9.13	55.2
MW-5	11.2	68.4	68.35	5-11	OVB	6.9	61.5	9.92	58.43
MW-5D	57	68.39	68.03	42-57	BDRK	11.37	57.02	14.29	53.74
MW-6	11.7	67.57	67.37	6.5-11.5	OVB	4.93	62.64	8.5	58.87
MW-6D	45	67.64	67.2	25-45	BDRK	5.44	62.2	8.81	58.39
MW-7	14.7	66.75	66.47	4.5-14.5	OVB	5.11	61.64	8.44	58.03
MW-9	13	61.67	61.39	8-13	OVB	4.82	56.85	6.32	55.07
MW-9D	45	61.63	61.24	35-45	BDRK	4.28	57.35	6.05	55.19
MW-10	12	64.19	64.00	7-12	OVB	7.19	57	5.88	58.12
MW-11D	25.2	64.34	64.02	15-25	BDRK	4.33	60.01	7.59	56.43
MW-12	12.5	67.34	67.01	4.5-12.5	OVB	5.2	62.14	8.25	58.76
MW-12D*	51	67.19	66.64	41-49	BDRK	9.21	57.98	10.78	55.86
MW-13D	55.5	67.7	67.46	43-53	BDRK	10.07	57.63	11.98	55.48
MW-103S [1]	12	59.55	58.95	5-10	OVB	2.21	57.34	5.24	53.71
MW-104S [1]	13	59.66	59.26	2-12	OVB	3.12	56.54	5.46	53.8
MW-108S [1]	15	61.02	60.3	2-13	OVB	4.75	56.27	5.41	54.89
MW-113S	13	58.47	58.02	5-9	OVB	NI	NI	4.42	53.6

*Was not sampled due to presence of NAPL - approximately 0.6' of NAPL in base of well on March 8, 2010 and approximately 0.02' of LNAPL on April 13, 2012
[1] PVC <0.5 feet above top of berock due to slough
Not Installed
OVB = oveburden monitoring well
BDRK = bedrock monitoring well

Table 5-1
Surface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SS-01 8/10/2009 SS-1(0-0.2)081009 0-0.2	SS-02 8/10/2009 SS-2(0-0.2)081009 0-0.2	SS-03 8/10/2009 SS-3(0-0.2)081009 0-0.2	SS-04 8/10/2009 SS-4(0-0.2)081009 0-0.2	SS-04 DUP 8/11/2009 SS-DUP(0-0.2)081109 0-0.2	SS-05 8/10/2009 SS-5(0-0.2)081009 0-0.2
BTEX (mg/Kg)		ND	ND	ND	ND	ND	ND
VOC (mg/Kg)		ND	ND	ND	ND	ND	ND
PAH (mg/Kg)							
Acenaphthylene	100	2.1 U	8 U	**0.98 J**	**0.96 J**	**0.99 J**	**0.25 J**
Anthracene	100	2.1 U	8 U	**0.49 J**	**0.29 J**	**0.25 J**	**0.11 J**
Benzo(a)anthracene	1	**0.27 J**	**1.6 J**	**1.4 J**	**2 J**	**1.7 J**	**0.72**
Benzo(a)pyrene	1	**0.29 J**	**1.6 J**	**1.5 J**	**1.4 J**	**1.3 J**	**0.55**
Benzo(b)fluoranthene	1	**0.45 J**	**2.4 J**	**2.3**	**3.1**	**2.7**	**1**
Benzo(ghi)perylene	100	**0.29 J**	**1.4 J**	**1.4 J**	**2.1**	**1.8 J**	**0.64**
Benzo(k)fluoranthene	0.8	***2.1 U***	***8 U***	**0.75 J**	**0.9 J**	**0.78 J**	**0.28 J**
Chrysene	1	**0.35 J**	**1.7 J**	**2.1 J**	**2.4**	**2.2**	**0.81**
Dibenz(a,h)anthracene	0.33	***2.1 U***	***8 U***	**0.28 J**	**0.37 J**	**0.35 J**	**0.13 J**
Fluoranthene	100	**0.51 J**	**2.3 J**	**2.9**	**3**	**2.4**	**0.98**
Indeno(1,2,3-cd)pyrene	0.5	***2.1 U***	**1.1 J**	**1.1 J**	**1.5 J**	**1.4 J**	**0.49**
Phenanthrene	100	2.1 U	8 U	**1.5 J**	**0.87 J**	**0.76 J**	**0.4**
Pyrene	100	**0.49 J**	**2.3 J**	**3.5**	**3.7 J**	**3.2**	**1.2**
Total PAH	NL	**2.65**	**14.4**	**20.2**	**22.59**	**19.83**	**7.56**
BAP Equivalents	NL	**0.36235**	**2.1117**	**2.2696**	**2.4414**	**2.24**	**0.90461**
SVOC (mg/Kg)							
Benzaldehyde	NL	2.1 U	8 U	2.1 U	**1 J**	2.1 U	0.4 U
bis(2-Ethylhexyl) phthalate	NL	2.1 U	**1.1 J**	**0.55 J**	2 U	**0.22 J**	**0.054 J**
Carbazole	NL	2.1 U	8 U	2.1 U	2 U	2.1 U	**0.045 J**
Total SVOC	NL	**2.65**	**15.5**	**20.75**	**23.59**	**20.05**	**7.659**
Metals (mg/Kg)							
Aluminum	NL	**9040**	**5570**	**10200**	**12400**	**12500**	**9810**
Antimony	NL	**0.69 J**	**1.050 J**	**0.96 J**	**1.070 J**	**0.75 J**	**1.020 J**
Arsenic	13	**6.240 J**	**17.1 J**	**34.4 J**	**9.240 J**	**10.1 J**	**4.470 J**
Barium	350	**81.5**	**56.8**	**92.6**	**49.5**	**45.7**	**85.7**
Beryllium	7.2	**0.36**	**0.29 J**	**0.42**	**0.56**	**0.56**	**0.42**
Cadmium	2.5	**0.99**	**1.950**	**2.180**	**1.080**	**1.010**	**2.080**
Calcium	NL	**6850 J**	**28800 J**	**3540 J**	**1180 J**	**645 J**	**912 J**
Chromium	30	**17.1 J**	**26.1 J**	**36.4 J**	**20.6 J**	**22.2 J**	**31.9 J**
Cobalt	NL	**5.290**	**6.370**	**7.400**	**6.140**	**6.460**	**6.800**
Copper	50	**21.3 J**	**59.3 J**	**41.3 J**	**32.9 J**	**33.3 J**	**25.9 J**
Iron	NL	**13300 J**	**20300 J**	**17400 J**	**19600 J**	**20600 J**	**17400 J**
Lead	63	**65**	**143**	**334**	**291**	**306**	**1890**
Magnesium	NL	**5630 J**	**18900 J**	**3710 J**	**2890 J**	**2860 J**	**2480 J**
Manganese	1600	**262 J**	**308 J**	**298 J**	**267 J**	**281 J**	**268 J**
Mercury	0.18	**1.6 J+**	**0.146 J+**	**0.612 J+**	**0.432 J+**	**0.514 J+**	**0.282 J+**
Nickel	30	**13.3**	**17.5**	**27.7**	**15.8**	**16.4**	**15.7**
Potassium	NL	**788**	**1130**	**1310**	**511**	**461**	**790**
Selenium	3.9	**0.54 J-**	1.010 UJ	**0.97 J-**	**0.71 J-**	**0.74 J-**	**0.63 J-**
Sodium	NL	**131 J**	**554 J**	**216 J**	**501 J**	**295 J**	**540 J**
Vanadium	NL	**22.0**	**27.5**	**38.9**	**35.6**	**35.3**	**24.6**
Zinc	109	**71.4 J**	**167 J**	**310 J**	**84.5 J**	**75.5 J**	**407 J**
Cyanide (mg/Kg)							
Cyanide, Total	27	0.623 U	**2.370**	0.641 U	0.605 U	0.644 U	**2.510**

Notes:
NA = Not Applicable
mg/Kg = milligram per kilogram
Bold = detected
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
values bold and italics = nondetects above NYSDEC Part 375-6 Unrestricted Use
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run

Table 5-1
Surface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	Summary Statistics											
		Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
BTEX (mg/Kg)													
VOC (mg/Kg)													
PAH (mg/Kg)													
Acenaphthylene	100	6	4	2	0	0	0.99	SS-DUP(0-0.2)081109	0.25	SS-5(0-0.2)081009	0.795	2.1	8
Anthracene	100	6	4	2	0	0	0.49	SS-3(0-0.2)081009	0.11	SS-5(0-0.2)081009	0.285	2.1	8
Benzo(a)anthracene	1	6	6	0	4	0	2	SS-4(0-0.2)081009	0.27	SS-1(0-0.2)081009	1.281666667	-	-
Benzo(a)pyrene	1	6	6	0	4	0	1.6	SS-2(0-0.2)081009	0.29	SS-1(0-0.2)081009	1.106666667	-	-
Benzo(b)fluoranthene	1	6	6	0	4	0	3.1	SS-4(0-0.2)081009	0.45	SS-1(0-0.2)081009	1.991666667	-	-
Benzo(ghi)perylene	100	6	6	0	0	0	2.1	SS-4(0-0.2)081009	0.29	SS-1(0-0.2)081009	1.271666667	-	-
Benzo(k)fluoranthene	0.8	6	4	2	1	2	0.9	SS-4(0-0.2)081009	0.28	SS-5(0-0.2)081009	0.6775	2.1	8
Chrysene	1	6	6	0	4	0	2.4	SS-4(0-0.2)081009	0.35	SS-1(0-0.2)081009	1.593333333	-	-
Dibenz(a,h)anthracene	0.33	6	4	2	2	2	0.37	SS-4(0-0.2)081009	0.13	SS-5(0-0.2)081009	0.2825	2.1	8
Fluoranthene	100	6	6	0	0	0	3	SS-4(0-0.2)081009	0.51	SS-1(0-0.2)081009	2.015	-	-
Indeno(1,2,3-cd)pyrene	0.5	6	5	1	4	1	1.5	SS-4(0-0.2)081009	0.49	SS-5(0-0.2)081009	1.118	2.1	2.1
Phenanthrene	100	6	4	2	0	0	1.5	SS-3(0-0.2)081009	0.4	SS-5(0-0.2)081009	0.8825	2.1	8
Pyrene	100	6	6	0	0	0	3.7	SS-4(0-0.2)081009	0.49	SS-1(0-0.2)081009	2.398333333	-	-
Total PAH	NL	6	6	0	0	0	22.59	SS-4(0-0.2)081009	2.65	SS-1(0-0.2)081009	14.53833333	-	-
BAP Equivalents	NL	6	6	0	0	0	22.59	SS-4(0-0.2)081009	2.65	SS-1(0-0.2)081009	14.53833333	-	-
SVOC (mg/Kg)													
Benzaldehyde	NL	6	1	5	0	0	1	SS-4(0-0.2)081009	1	SS-4(0-0.2)081009	1	0.4	8
bis(2-Ethylhexyl) phthalate	NL	6	4	2	0	0	1.1	SS-2(0-0.2)081009	0.054	SS-5(0-0.2)081009	0.481	2	2.1
Carbazole	NL	6	1	5	0	0	0.045	SS-5(0-0.2)081009	0.045	SS-5(0-0.2)081009	0.045	2	8
Total SVOC	NL	6	6	0	0	0	23.59	SS-4(0-0.2)081009	2.65	SS-1(0-0.2)081009	15.03316667	-	-
Metals (mg/Kg)													
Aluminum	NL	6	6	0	0	0	12500	SS-DUP(0-0.2)081109	5570	SS-2(0-0.2)081009	9920	-	-
Antimony	NL	6	6	0	0	0	1.07	SS-4(0-0.2)081009	0.69	SS-1(0-0.2)081009	0.923333333	-	-
Arsenic	13	6	6	0	2	0	34.4	SS-3(0-0.2)081009	4.47	SS-5(0-0.2)081009	13.59166667	-	-
Barium	350	6	6	0	0	0	92.6	SS-3(0-0.2)081009	45.7	SS-DUP(0-0.2)081109	68.63333333	-	-
Beryllium	7.2	6	6	0	0	0	0.56	SS-4(0-0.2)081009	0.29	SS-2(0-0.2)081009	0.435	-	-
Cadmium	2.5	6	6	0	0	0	2.18	SS-3(0-0.2)081009	0.99	SS-1(0-0.2)081009	1.548333333	-	-
Calcium	NL	6	6	0	0	0	28800	SS-2(0-0.2)081009	645	SS-DUP(0-0.2)081109	6987.833333	-	-
Chromium	30	6	6	0	2	0	36.4	SS-3(0-0.2)081009	17.1	SS-1(0-0.2)081009	25.71666667	-	-
Cobalt	NL	6	6	0	0	0	7.4	SS-3(0-0.2)081009	5.29	SS-1(0-0.2)081009	6.41	-	-
Copper	50	6	6	0	1	0	59.3	SS-2(0-0.2)081009	21.3	SS-1(0-0.2)081009	35.66666667	-	-
Iron	NL	6	6	0	0	0	20600	SS-DUP(0-0.2)081109	13300	SS-1(0-0.2)081009	18100	-	-
Lead	63	6	6	0	6	0	1890	SS-5(0-0.2)081009	65	SS-1(0-0.2)081009	504.8333333	-	-
Magnesium	NL	6	6	0	0	0	18900	SS-2(0-0.2)081009	2480	SS-5(0-0.2)081009	6078.333333	-	-
Manganese	1600	6	6	0	0	0	308	SS-2(0-0.2)081009	262	SS-1(0-0.2)081009	280.6666667	-	-
Mercury	0.18	6	6	0	5	0	1.6	SS-1(0-0.2)081009	0.146	SS-2(0-0.2)081009	0.597666667	-	-
Nickel	30	6	6	0	0	0	27.7	SS-3(0-0.2)081009	13.3	SS-1(0-0.2)081009	17.73333333	-	-
Potassium	NL	6	6	0	0	0	1310	SS-3(0-0.2)081009	461	SS-DUP(0-0.2)081109	831.6666667	-	-
Selenium	3.9	6	5	1	0	0	0.97	SS-3(0-0.2)081009	0.54	SS-1(0-0.2)081009	0.718	1.01	1.01
Sodium	NL	6	6	0	0	0	554	SS-2(0-0.2)081009	131	SS-1(0-0.2)081009	372.8333333	-	-
Vanadium	NL	6	6	0	0	0	38.9	SS-3(0-0.2)081009	22	SS-1(0-0.2)081009	30.65	-	-
Zinc	109	6	6	0	3	0	407	SS-5(0-0.2)081009	71.4	SS-1(0-0.2)081009	185.9	-	-
Cyanide (mg/Kg)													
Cyanide, Total	27	6	2	4	0	0	2.51	SS-5(0-0.2)081009	2.37	SS-2(0-0.2)081009	2.44	0.605	0.644

Table 5-2
Visible Impacts
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location ID	Ground Surface Elevation (ft NAVD88)	Total Depth (ft bgs)	Elev of Bottom of Hole (ft NAVD88)	Top of Bedrock Elevation (ft NAVD88)	Visible Impact Description (ft bgs)	Drilling and Coring Visible Impact Summary												FLUTe Liner Visible Impact Summary					
						No Visible Impact		Stain, Odor		Blebs, Globs, Sheen		Coated Material , Lenses		Tar Saturated		Petroleum Impacts Staining and Odors		Light		Medium		Heavy	
						Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)
SITE CHARACTERIZATION SOIL GAS POINTS																							
MGP-SG-1	64.28	3.8	60.48	<60.48	No visible impacts.	0-3.8	64.28-60.48																
MGP-SG-2	71.84	5.5	66.34	66.34?	No visible impacts.	0-5.5	71.84-66.34																
MGP-SG-3	67.71	NA	NA	NA	Taken in crawl space. No visible impacts.																		
MGP-SG-4	71.87	4.5	67.37	67.37	Water not encountered. No Visible impacts.	0-4.5	71.87-67.37																
MGP-SG-5	58.91	2.2	56.71	<56.71	Water not encountered. Strong petroleum odor at 2-2.2 feet no visible impacts	0-2.5	58.91-56.71									2-2.2	56.91-56.71						
MGP-SG-6	64.08	2.7	61.38	<61.38	No water encountered. No visible impacts.	0-2.7	64.08-61.38																
MGP-SG-7	62.31	2.5	59.81	59.81	Water not encountered. No Visible impacts.	0-2.5	62.31-59.81																
SITE CHARACTERIZATION TEST PITS																							
TP-1	69.84	6	63.84	63.94	No visible impacts.	0-6	69.84-63.84																
TP-2	70.37	1.5	68.87	69.07	No visible impacts.	0-1.5	70.37-68.87																
TP-3	64.88	9.0	55.88	<55.88	Tar at 0.66-0.9' on north west side, strong odor at 1-9.8	0-0.66	64.88-64.22	1-9.0	63.88-55.88					0.66-0.9	64.22-63.98								
TP3 boring	64.88	13	51.88	51.88	Tar at 0.66-0.9, strong MGPO 1-11, MGPO and sheen 11-12.1	0-0.66	64.88-64.33	1-11	63.88-53.88	11-12.1	53.88-52.78			0.66-0.9	64.22-63.98								
TP-4	66.99	5.5	61.49	<61.49	1.33 to 5 ' strong petroleum odor pid 2390, No visible impact 5-5.5 slight odor pid 724	0-5.5	66.99-61.49									1.33-5.5	65.66-61.49						
TP-5	68.08	10.5	57.58	<57.08	Opened additional area to north on top of concrete and brick pad No visible impact	0-10.5	68.08-57.58																
TP-6	66.36	6.8	59.56	<59.56	Total depth 6.8 no odor no visible impacts	0-6.8	66.36-59.56																
TP-7	67.05	6	61.05	<61.05	Total depth 6' no odor no visible impacts	0- 6.0	67.05- 61.05																
TP-8	67.67	7	60.67	60.67?	Total depth 7 feet no odor no visible impacts	0-7.0	67.67-60.67																
SITE CHARACTERIZATION SOIL BORINGS																							
MGP-SB-1	70.87	4	66.87	66.87	Holder at 2' bedrock at 4' no contamination	0-4.0	70.87- 66.87																
MGP-SB-2	65.01	6	59.01	<59.01	Tar at 0.5-1 Petro odor 2-5 feet dry no visible impacts (2-5). 5-6 slight petro odor Refusal 6' concrete.	1.0- 6.0	64.01-59.01					0.5-1	64.51-64.01	0.5-1	64.51-64.1	2-5 5-6	63.01-60.01 60.01-59.01						
MGP-SB-3	66.53	3.2	63.33	<63.33	Odor and sheen 1.5-3.2 refusal 3.2	0-1.5	66.53-65.03			1.5-3.2	65.03-63.33												
MGP-SB-4	66.98	8.1	58.88	<58.88	No odor or visible impacts. Refusal due to concrete	0-8.1	66.98-58.88																
MGP-SB-5	68.13	17	51.13	54.13	10.9-13 odor and TLM, OLM, 13-13.8 sheen and OLM blebs, 16-17 odor- weathered schist. No deeper due to lack of rods.	0-10.9	68.13 - 57.23	16 - 17	52.13 - 51.13	13-13.8	55.13-54.33	10.9-13.8	57.23-54.33										
MGP-SB-6	64.1	8	56.10	56.1	5-8 ' mgp odor no visible impacts, Bedrock at 8'	0-8	64.1-56.10	5-8	59.1 - 56.1														
MGP-SB-7	67.23	8	59.23	59.23	Not impacted refusal 8' bedrock	0-8.0	67.23-59.23																
MGP-SB-8	68.93	12	56.93	56.93	No impacts 12' refusal bedrock	0-12.0	68.93-56.93																
MGP-SB-9	68.08	12.5	55.58	<55.58	10-11 naphthalene odor and sheen. 11-12.5 OLM. refusal at 12.5. no rock	0-10	68.08-58.08			10-11	58.08-57.08			11-12.5	57.08-55.58								
SITE CHARACTERIZATION MONITORING WELLS																							
MGP-MW-101S	71.56	4.4	67.16	67.23	Precleared to 4.4 feet bedrock refusal will become 101D no visible impacts - monitoring well not installed.	0-4.4	71.56- 67.16																
MGP-MW-101D	71.56	150	-78.44	67.23	No visual or odor impacts noted during drilling or coring. The FLUTe NAPL liner showed 2 black spots (approximately 1/4 inch) of unknown origin at 137.4 ft bgs for certain. Therefore, these points are not illustrated in the light category.	0-150	71.56 - -78.44											No impacts observed on FLUTe					
MGP-MW-102S	64.01	3.5	60.51	61.01	Precleared to 3.5 feet no odor or visual impacts - monitoring well not installed	0-3.5	64.01- 61.01																
MGP-MW-102D	64.01	150	-85.99	61.01	No visual or odor impacts noted during drilling or coring or on the FLUTe NAPL liner	0-150	64.01 - -85.99											No impacts observed on FLUTe					
MGP-MW-103S [2]	59.55	12.5	47.05	47.05	MGP like odor 2-3; MGPO 6; slight sheen & MGPO 8-9.3; PID detects 1-12	0-2 3-6 9.3-12.5	59.55-57.55 56.55-53.55 50.25-47.05	2-3 6	57.55-56.55 53.55	8-9.3	51.55-50.25												
MGP-MW-103D	59.60	151.5	-91.90	47.1	40.5-40.9 OLM stains, little OLM blebs on core; 53.15-53.5 heavy OLM staining on core No visible OLM/TLM impacts observed on FLUTe liner.	0-40.5 40.9-53.15 53.5-151.5	59.60-19.10 18.7-6.45 6.1- -01.9	40.5-40.9	19.1-18.7			40.5-40.9 53.15-53.5	19.1-18.7 6.45-6.1					No impacts observed on FLUTe					
MGP-MW-104S [2]	59.66	13.2	46.46	45.86	See impacts below for MGP-MW-104D																		

Table 5-2
Visible Impacts
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location ID	Ground Surface Elevation (ft NAVD88)	Total Depth (ft bgs)	Elev of Bottom of Hole (ft NAVD88)	Top of Bedrock Elevation (ft NAVD88)	Visible Impact Description (ft bgs)	Drilling and Coring Visible Impact Summary												FLUTe Liner Visible Impact Summary					
						No Visible Impact		Stain, Odor		Blebs, Globs, Sheen		Coated Material , Lenses		Tar Saturated		Petroleum Impacts Staining and Odors		Light		Medium		Heavy	
						Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)
SITE CHARACTERIZATION MONITORING WELLS (CONT'D)																							
MGP-MW-104D	59.66	151	-91.34	45.86	9.9-10 strong MGPO & sheen; 10-13.8 strong MGPO & sheen; PID detects 4-13. No odor or visual impacts noted during bedrock coring. However, the groundwater sample collected from packer zone 131-136 ft bgs was not submitted to the laboratory for analysis due to the presence of OLM in the sample.	0-9.9 13.8-131 136-151	59.66-49.76 45.86 - -71.34 -76.34 - -91.34			9.9-13.8	49.76-45.86	131-136	-71.34 - -76.34										
MGP-MW-104D	59.65	151	-91.35	45.85	FLUTe observations - light to heavy tar impacts were noted on the NAPL liner as indicated in the light, medium, heavy categories. Heavy impacts begin at 24.2 ft bgs and thick vertical finger(s) of tar extend downhole to approximately 77 ft bgs. Many individual small (<1/4 inch) tar blebs are evident on the liner and were likely suspended in the water column during the time the FLUTe was everted. These individual small blebs are not listed individually in the light category due to their abundance.													37 39.2 95.3 100.5 104.9	22.65 20.45 -35.65 -40.85 -45.25	19-19.3 19.55-19.65 21.4-21.8 22.9-23.1 64.1-64.3 72.3-72.7 84.3-84.6 89.8-90.4 127.7-128	40.65-40.35 40.1-40.00 38.25-37.85 36.75-36.55 -4.46--4.66 -12.65--13.05 -23.75--24.05 -30.25--30.75 -68.05---68.35	24.2-25.9 50.1-50.35 69.7-70.2	35.45-33.75 9.54-9.29 -10.05--10.55
MGP-MW-105D	67.59	151	-83.41	60.59	83.25-83.75 HCLO & slight sheen; 89 slight HCLO; 118.2-118.5 very slight HCLO in fracture zone	0 - 83.25 83.75 - 89 89- 151	67.59 - -15.66 -16.16 - -21.41 -21.41 - -83.41	89 118.2 - 118.5	`-21.41 -50.61 - -50.91	83.25-83.75	-15.66- -16.16												
MGP-MW-105D	67.59	151	-83.41	60.59	FLUTe observations - Abundant splattering of small to medium (<1/4 inch to 1/2 inch) throughout the liner between 79.8 ft bgs and 146 ft bgs. Tar smearing is evident between 129.7 -130.6, 132-138.2, and 142.7-144.5 but source/cause is uncertain. The FLUTe liner is tar saturated at the base from 148 to 149 ft bgs. The majority of the tar splotches observed on the liner are not included in the light, medium, heavy categories because their entry point into the boring is unknown.													79.8-80	-12.21--12.41	68.7-69.2 93.7	-1.11--1.61 -26.11	148-149	-80.41--81.41
MGP-MW-106S	65.74	1.5	64.24	64.24	Bedrock at 1.5 - shallow monitoring well not installed																		
MGP-MW-106D	65.74	150	-84.26	64.24	No visual or odor impacts noted during drilling or coring	0-150	65.74- -84.26																
MGP-MW-106D	65.74	150	-84.26	64.24	FLUTe observations - essentially no visible impacts were noted on the liner. There were few instances of very small black spots of unknown origin and one 3-inch long very thin black diagonal line at approximately 91 ft bgs of unknown origin. Also noted 2 black spots at 143.5 ft bgs. These minimal observations are not included in the impact categories due to their uncertain origin.													No impacts observed on FLUTe					
MGP-MW-107S					Not completed																		
MGP-MW-107D					Not completed																		
MGP-MW-108S[2]	61.02	15.85	45.17	46.02	6.9-8 sheen, 8,-8.6 very slight sheen & MGPO; 8.6-9.8 slight sheen & MGPO; 10 more sheen; 12 very slight sheen, MGPO;13-14 very slight MGPO; 4-13 PID detects	0-6.9 12-15.85	61.02 - 54.12 49.02 - 45.17	8 - 14	53.02 - 47.02	6.9-12	54.12- 49.02												
MGP-MW-108D	60.92	151	-90.08	45.92	23-24 sheen on edge & outside of core; NAPL bleb, sheen on core; 29 -30 NAPL blebs; 38-39 sheen on fractures; 50 tar, TLO; 55 tar in fracture zone; 64 heavy tar odor in rubble zone w/ heavy sheen; 76 strong odor and smeared tar; 77 fracture w/ possible tar; 91 sheen and blebs;	0-6.9 12-23 24-29 30-38 39-50 50-55 55-64 64-76 77-91 91-151	60.92-54.02 48.92 - 37.92 36.92 - 31.92 30.92 - 22.92 21.92 - 10.92 10.92 - 5.92 5.92 - -3.08 -3.08 - -15.08 -16.08 - -30.08 -30.08 - -90.08			23-24 29-30 38-39 64 91	37.92-36.92 31.92-30.92 22.92-21.92 -3.08 -30.08	76 77	-15.08 -16.08	50 55	10.92 5.92								
MGP-MW-108D	60.92	151	-90.08	45.92	FLUTe observations - light to heavy tar impacts were noted on the NAPL liner. Heavy impacts begin at 24.7 ft bgs and thick vertical finger(s) of tar extend downhole to approximately 69ft bgs. Many individual small (<1/4 inch) tar blebs are evident on the liner and were likely suspended in the water column during the time the FLUTe was everted. These individual small blebs are not listed individually in the light category due to their abundance.															22.9 23.5 53.5-53.8 59.9-60.2 69.1-69.2 144.9-145	38.02 37.42 7.42-7.12 1.02-0.72 -8.18- -8.28 -83.98- -84.05	24.7-25 32.1-32.3 34.2-34.4 43.2-43.4 83.5-85.3 87.9-88.7	36.22-35.92 28.82-28.62 26.72-26.52 17.72-17.52 -22.58- -24.38 -26.98- -27.78
MGP-MW-10D	63.98	19	44.98	50.28	Pre cleared to 5 feet MGP like odor at 4-5 feet	0-19	63.98 - 44.98	4-5	59.98-58.98														
MGP-MW-4DD	64.61	200	-135.39	56.61	2-7 strong HCLO; slight sheen @2; PID detects 1-7;7.75 hydrocarbon like odor	0-1 7.75 - 200	64.61 - 63.61 56.86 - -135.39	1-7.75	63.61 - 56.86	2 - 7	62.61 - 57.61												
MGP-MW-4DD	64.61	200	-135.39	56.61	FLUTe observations - few light to heavy tar impacts were noted on the NAPL liner. Heavy impacts were noted from 106.9 to 107.3 ft bgs with short thin vertical fingers extending down hole. Many individual small (<1/4 inch) tar blebs are evident on the liner between 106 and 118 ft bgs and were likely suspended in the water column during the time the FLUTe was everted. These individual small blebs are not listed individually in the light category due to their abundance.													106.5 177.4	-41.89 -112.79			106.9-107.3	-42.29- -42.69
MGP-MW-9DD	61.52	150	-88.48	43.52	Petro odor 0.3-2 and 4-5, 7-12 MGP odor, 10-11.4 visible coal tar; 12-14 sheen on sand and odor; 45 sheen in fracture zone, MGPO, PID detect; 50 sheen observed at horizontal fracture, PID impact; 54 OLM blebs, MGPO, sheen, PID impacts; 86 PID impact; 90 slight sheen PID impact	0-10 14 - 45 45 - 50 50-54 54-90-150	61.52 - 51.52 47.52 - 11.52 11.52 - 7.52 7.52 - -88.48	7 - 12	54.52 - 49.52	12-14 45 50 90	49.52-47.52 16.52 11.52 -28.48	54	7.52	10-11.4	51.52-50.12	0.3 - 2 4 - 5	61.82 - 59.52 57.52 - 56.52						

Table 5-2
Visible Impacts
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location ID	Ground Surface Elevation (ft NAVD88)	Total Depth (ft bgs)	Elev of Bottom of Hole (ft NAVD88)	Top of Bedrock Elevation (ft NAVD88)	Visible Impact Description (ft bgs)	Drilling and Coring Visible Impact Summary: No Visible Impact Depth (ft bgs)	No Visible Impact Elev (ft NAVD88)	Stain, Odor Depth (ft bgs)	Stain, Odor Elev (ft NAVD88)	Blebs, Globs, Sheen Depth (ft bgs)	Blebs, Globs, Sheen Elev (ft NAVD88)	Coated Material , Lenses Depth (ft bgs)	Coated Material , Lenses Elev (ft NAVD88)	Tar Saturated Depth (ft bgs)	Tar Saturated Elev (ft NAVD88)	Petroleum Impacts Staining and Odors Depth (ft bgs)	Petroleum Impacts Staining and Odors Elev (ft NAVD88)	FLUTe Liner Visible Impact Summary: Light Depth (ft bgs)	Light Elev (ft NAVD88)	Medium Depth (ft bgs)	Medium Elev (ft NAVD88)	Heavy Depth (ft bgs)	Heavy Elev (ft NAVD88)
MGP-MW-9DD	61.52	150	-88.48	43.52	FLUTe observations - few light to medium tar impacts were noted on the NAPL liner. Medium impacts were noted from 43.65-43.85 ft bgs with short thin vertical fingers extending down hole. Many individual small (<1/4 inch) tar blebs are evident on the liner between 23.2 and 61 ft bgs and few small blebs were evident between 61 and 138 ft bgs and were likely suspended in the water column during the time the FLUTe was everted. These individual small blebs are not listed individually in the light category due to their abundance.													23.2 26.7	38.32 34.83	43.65-43.85	17.87-17.67		
MGP-MW-0DD	66.13	150	-83.87	59.63	slight MGPO @ 52.8; 65.7 slight sheen on outside of core; 119.8 OLM, PID detect;	0-65.7 65.7 - 119.8 119.8 - 150	66.13 - 0.43 0.43 - -53.5 -53.5 - -83.87	52.8	13.33	65.7	0.43	119.8	-53.67										
MGP-MW-0DD	66.13	150	-83.87	59.63	FLUTe observations - few light to heavy tar impacts were noted on the NAPL liner. Heavy impacts were noted from 57.4 to 59.1 ft bgs with short thin vertical fingers extending down hole. Few individual small (<1/4 inch) tar blebs are evident on the liner and are not listed individually in the light category due to their abundance.													21.8 98.2-98.3 119.3-119.6	44.33 -32.07- -32.17 -53.17- -53.47	119.75-119.9	-53.62 --53.77	57.4 - 59.1	8.73- 7.03
MGP-TP-4	66.99	150	-83.01	58.49	Drilling/Test Pit observations: 3 ft - sheen at water table - 5.5-7 ft heavy sheen and strong MGPO 7-8.5 saturated with coal tar 9-9.5 probable tar on core 32.6 tar in fracture			5.5 - 7	61.49-59.99	3 5.5-7	63.99 61.49-59.99			7-8.5 9-9.5 32.6	59.99-58.49 57.99-57.49 34.39								
MGP-TP-4	66.99	150	-83.01	58.49	FLUTe observations - light to heavy tar impacts were noted on the NAPL liner as indicated in the light, medium, heavy categories. Heavy impacts begin at 15.6 ft bgs and thick vertical finger(s) of tar extend downhole to the bottom of the borehole. Many individual small (<1/4 inch) tar blebs are evident on the liner and were likely suspended in the water column during the time the FLUTe was everted. These individual small blebs are not listed individually in the light category due to their abundance. Tar saturation was observed wicked on the bottom of the FLUTe liner.													13-13.5 143.6	53.99-53.49 -76.61	12.5-12.7 14.2-14.4 55.5-55.7 131.7-131.8 145 147-147.2 148.3-148.5	54.49-54.29 '52.79-52.59 11.49-11.29 -64.71- -64.81 -78.01 -80.01- -80.21 -81.31- -81.51	15.6-16.7	51.39-50.29
PREVIOUS INVESTIGATION LOCATIONS																							
MW-1	64.31	NA	NA	NA	no Data																		
MW-2	63.88	NA	NA	NA	No Data																		
MW-3/SB SA9-8 [1]	64.9	10	54.90	<54.9	No Visible impact	0-10	64.9-54.9																
MW-4/SB-SA9-7	64.83	8	56.83	<56.8	2-8 strong petroleum odor No Visible impact	0-8	64.83-56.83									2-8.0	62.83-56.83						
MW-4D	64.71	30.2	34.51	56.71	1.5-2 Strong naphthalene odors, 4-5 slightly stained sand 5-7 naphthalene and coal tar odor- no visible impact	0-4 5- 30.2	64.71 - 60.71 59.71 - 34.51	1.5-2 4-5 5-7	63.21-62.71 60.71-59.71 59.71-57.71														
MW-5/SA-SA9-E1	68.4	11.2	57.20	57.2	No Visible impact	0-11.2	68.4-57.2																
MW-5D	68.39	57	11.39	57.39	No Visible impact	0-57	68.39-11.39																
MW-6/SB-SA11-S1	67.57	11.7	55.87	55.07?	5-9 slight petroleum odor, no visible impacts	0-11.7										5-9.0	62.57-58.57						
MW-6D	67.64	45	22.64	55.64	No Visible impact	0-45	67.64-22.64																
W-7/SB-SA11-SW	66.75	14.7	52.05	52.05	No Visible impact	0-14.7	66.75-52.05																
W-9/SB-SA10-W	61.67	13	48.67	48.67	6.5- 7 strong petro odor. 7-9 slight petro odor no visible impact	0-13	61.67-48.67									6.5-9.0	55.17-52.67						
MW-9D	61.63	45	16.63	45.63	Strong petro odor 38-40 LNAPL ~1 gallon	0-38	61.63 - 23.63							38-40	23.63- 21.63	38-40	23.63-21.63						
W-10/SB-sa11-NE	64.19	12	52.19	52.19	No Visible impact	0-12	64.19-52.19																
MW-11D	64.34	25.2	39.14	57.34	No Visible impact	0-25.2	64.34-39.14																
MW-12	67.19	12.5	54.69	57.89	No Visible impact	0-12.5	67.19-54.69																
MW-12D*	67.19	51	16.19	57.89	10.3-13 trace sheen and petroleum like odor; 13-14.1 blebs, sheen and MGPO tar in bottom of well during gw sampling event	0-10.3 14.1 - 51	67.19 - 56.89 47.09 - 16.19			10.3-14.1	56.89-53.09			50.4-51	16.79-16.19								
MW-13D	67.7	55.5	12.20	60.5	No Visible impact	0-55.5	67.7-12.2																
SB-HL1	69.72	7	62.72	62.72	2.5-3 Petroleum odor 5-7 strong petroleum odor no visible impacts	0-7.0	69.72-62.72									2.5-3 5-7	67.22-66.72 64.72- 62.72						
SB-HL2	69.75	5	64.75	64.75	No Visible impact	0-5	69.75-64.75																
SB-HL3	64.96	4	60.96	60.96	No Visible impact	0-4	64.96-60.69																
SB-HL4	65.02	5	60.02	60.02	No Visible impact	0-5	65.02-60.2																
SB-HL5	69.63	2	67.63	67.63	0.5-2 light petroleum odor, coal fragments- no visible impacts	0-2	69.63-67.63									0.5-2	69.13-67.63						
SB-HL6	69.59	7	62.59	62.59	2.5-3 Petroleum odor, 4.5-7 strong petroleum odor no visible impacts	0-7	69.59 - 62.59									2.5-3 4.5-7	67.09-66.59 65.09-62.59						
SB-SA11-A1	66.85	6.5	60.35	60.35	No Visible impact	0-6.5	66.85-60.35																
SB-SA11-B1	67.53	12	55.53	55.53	3.5-5 heavy naphthalene odor, 8.5 strong petroleum odor and staining, 9-12 petroleum odor observed	0-8.5 9-12	67.53 - 59.03 58.53 - 55.53	3.5-5	64.03-62.53							8.5 9-12	59.03 58.53-55.53						
SB-SA11-C1	67.46	10.5	56.96	56.96	3.5-5 slight petro odor, staining observed	0-3.5 5-10.5	67.46 - 63.96 62.46 - 56.96									3.5-5	63.96-62.46						
SB-SA11-NW1	67.19	2	65.19	65.19?	Refusal at bedrock no visible impacts	0-2.0	67.19-65.19																
SB-SA9-5	63.5	5	58.50	<58.5	No Visible impact	0-5	63.5-58.50																
SB-SA9-6	64	5	59.00	<59	No Visible impact	0-5	64-59																
SB-SA9-7/MW4	64.83	8	56.83	<56.8	2-8 strong petroleum odor No Visible impact	0-8	64.83-56.83									2-8.0	62.83-56.83						
SB-SA9-8/MW3 [1]	64.9	10	54.90	52.9	10.2-12 strong petro odor No Visible impact	0-10	64.9-54.9									10.2-12	54.7-52.9						
SB-SA9-9	63	8	55.00	<55	4.5-7staining and Strong petro odor	0-4.5 7-8	63 - 58.5 56 - 55									4.5-7	58.5-56						
SB-SA9-11	*64.1	7.5	56.60	*<56.6	5.5-7.5 gray stained silty clay	0-5.5	64.1 - 58.6	5.5-7.5	58-55.5														
SB-SA10-10	*64.3	8	56.30	*<56.3	No Visible impact	0-8	64.3-56.30																
SB-SA10-12	65	12	53.00	<53	11-12 staining and slight petro odor	0-11	65 - 54									11-12	54-53						
SB-SA10-13	NA	13	NA	NA	No Visible impact	0-13	NA																
SB-SA11-NE1	*64.3	1	63.30	*<63.30	No Visible impact	0-1	64.3-63.30																
SB-SA11-14	64.7	4.2	60.50	<60.5	0.25-4.4 staining			0.25-4,2	64.45-60.5														
SB-SA11-17	65	13	52.00	<52	No Visible impact	0-13	65-52.00																
REMEDIAL INVESTIGATION SOIL GAS POINTS																							
MGP-SG-8	63.44	2.4	61.04	61.04	No Visible impact	0-2.4	63.44-61.04																
REMEDIAL INVESTIGATION TEST PITS																							
TP-9	66.74	8.5	72.24	NE	1.5 - 8.5 some discontinuous black staining and MGPO 6 - small tar seep in holder wall	0-1.5	66.74 - 65.24	1.5-8.5	65.24 - 54.94					6	60.74								
TP-10	64.72	5.5	59.22	NE	1.3 - 5.5 MGPO and some black staining	0 - 1.3	64.72 - 63.42	1.3 - 5.5	63.42 - 59.22														

Table 5-2
Visible Impacts
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location ID	Ground Surface Elevation (ft NAVD88)	Total Depth (ft bgs)	Elev of Bottom of Hole (ft NAVD88)	Top of Bedrock Elevation (ft NAVD88)	Visible Impact Description (ft bgs)	Drilling and Coring Visible Impact Summary												FLUTe Liner Visible Impact Summary					
						No Visible Impact		Stain, Odor		Blebs, Globs, Sheen		Coated Material , Lenses		Tar Saturated		Petroleum Impacts Staining and Odors		Light		Medium		Heavy	
						Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)	Depth (ft bgs)	Elev (ft NAVD88)
REMEDIAL INVESTIGATION SOIL BORINGS																							
MGP-SB-10	68.02	20.5	47.52	47.5	9-12 Sheen and strong tar like odor, 13-15 grains coated with TLM and strong tar like odor, 15- 16 Tar saturated, 17.5-20.5 Tar saturated.	0-9	68.02 - 59.02			9 -12	59.02 - 56.02	13 - 15	55.02 - 53.02	15 - 16 17.5 - 20.5	53.02 - 52.02 50.52 - 47.52								
MGP-SB-11	64.72	11.8	53.22	52.9	5-7 Some black stain and slight TLO, 7-7.9 Sheen, few tar blebs, moderate TLO, 7.9-8.5 Sheen, some black stain and moderate to strong TLO, 9-9.8 sheen and few blebs, 9.8-10.5 Black laminar staining, moderate TLO, 11-11.4 sheen and odor, 11.4-11.7 black staining and moderate TLO	0-5	64.72 - 59.72	5-7 7.9-8.5 9.8-10.5 11-11.7	59.72 - 57.72 56.82 - 56.22 54.92 - 54.22 53.72 - 53.02	7-8.5 9-9.8 11-11.4	57.72 - 56.22 55.72 - 54.92 53.72 - 53.32												
MGP-SB12	64.73	13	51.73	51.7	1.5-5 Slight to moderate TLO, 5-7Black staining, sheen, few blebs, and slight TLO, 7-7.2 little black staining, 7.2-7.7 few blebs and moderate TLO, 8.1-8.2 slight TLO, 9-9.8 some black staining and moderate TLO, 12.4-12.8 very slight TLO,	0-5	64.73 - 59.73	1.5-7.7 8.1-8.2 9-9.8 12.4-12.8	63.23-57.03 56.63-56.53 55.73-54.93 52.33-51.93	5-7 7.2-7.7	59.73-57.73 57.53-57.03												
REMEDIAL INVESTIGATION MONITORING WELLS																							
MGP-MW-109D	81.48	150	-68.52	74.48	No visible impacts.	0-150	81.48- -68.52											No impacts observed on FLUTe					
MGD MW-110D	72.44	150	-77.56	67.44	No visible impacts.	0-150	72.44- -77.56											No impacts observed on FLUTe					
MPG MW-112D	65.76	150	-84.24	48.76	No visible impacts.	0-150	65.76- -84.24											No impacts observed on FLUTe					
MGP-MW-113S	58.47	13	45.47	45.3	No visible impacts.	0-13	58.47-45.47											No impacts observed on FLUTe					
MGP MW-113D	58.47	150	-91.53	45.3	No visible impacts.	0-150	58.47- -91.53											No impacts observed on FLUTe					
MPG MW-114D	58.98	150	-91.02	45.98	No visible impacts.	0-150	58.98- -91.02											No impacts observed on FLUTe					
MGD MW-116D	60.92	150	-89.08	48.42	No visible impacts.	0-150	60.92- -89.08											No impacts observed on FLUTe					

NOTES:
[1] Auger refusal for MW-3 at 10 ft bgs, Geoprobe refusal at 12 ft bgs
[2] Monitoring well is< 0.5 feet above top of bedrock due to slough
ft NAVD88 - feet above the National Geodetic Vertical Datum of 1988
ft bgs - feet below ground surface
Elev - elevation
OLM - oil like material
TLM - tar like material
NA - not available
HCLO - hydrocarbon like odor
MGPO - manufactured gas plant like odor
PID - photoionization detector
Light - indicates individual OLM/TLM blebs less than 0.5 inches in diameter and/or discontinuous horizontal line of individual OLM/TLM blebs that are less than 0.5 inches in diameter.
Medium - indicates individual tar blebs or splotches between 0.5 and 4 inches in diameter, discontinuous horizontal line of tar blebs or a thin tar band that is less than 2 inches thick and may or may not extend across the FLUTe liner.
Heavy - indicates tar splotches greater than 4 inches in diameter and/or horizontal tar bands that are greater than 2 inches thick and generally extend across the FLUTe liner and may or may not have vertical fingers of tar extending down hole from the horizontal tar bands.
*estimated
FLUTe not used at these locations
Hardened Tar, Petroleum Impacts Saturation and Sheens, and Purifier Waste and Odor were not observed

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW-4DD(5-7) 8/19/2009 5-7	MGP-MW-4DD(7-8) 8/19/2009 7-8	MGP-MW-9DD(5-7) 8/19/2009 5-7	MGP-MW-9DD(11.4-12.5) 8/12/2009 11.4-12.5	MGP-MW-9DD(14-15) 8/19/2009 14-15	MGP-MW-10D(12-13.7) 9/3/2009 12-13.7	MW12D(6.2-9.3) 11/20/2008 6.2-9.3	MW12D(13-14.1) 11/20/2008 13-14.1	MW13D(6-7.2) 11/20/2008 6-7.2	MW13D(6-7.2) DUP 11/20/2008 6-7.2	MGP-MW-101S (2-2.5) 8/18/2009	MGP-MW-103S(11-12.5) 8/26/2009 11-12.5	MGP-MW-104S(9-11) 8/25/2009 9-11
BTEX mg/Kg														
Benzene	0.06	<0.0058 U	<0.57 UJ	<0.0057 U	0.0047 J	<0.0058 U	<0.0059 U	<0.0041 U	0.061	<0.0041 U	<0.0041 U	<0.0056 U	<0.0057 UJ	<0.0058 U
Ethylbenzene	1	0.041 J	39	<0.0057 U	0.0071	<0.0058 U	<0.0059 UJ	4.9	0.62 J	<0.0046 U	<0.0046 U	<0.0056 U	<0.0057 UJ	0.0045 J
Toluene	0.7	0.0025 J	18 J	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	0.41 J	0.091	<0.0051 U	<0.0051 U	<0.0056 U	<0.0057 UJ	<0.0058 U
m&p-Xylene	NL	0.21 J	160	<0.011 U	0.025	<0.012 U	<0.012 UJ	4.1	0.18	<0.011 U	<0.011 U	<0.011 U	<0.011 UJ	0.0037 J
o-Xylene	NL	2	65	<0.0057 U	0.024	<0.0058 U	<0.0059 U	2.2	0.26	<0.0044 U	<0.0044 U	<0.0056 U	<0.0057 UJ	0.027
Total Xylene (calculated)/Xylen	0.26	2.21	225	ND	0.049	ND	ND	6.3	0.44	ND	ND	ND	ND	0.0307
Total BTEX	*NL*	*2.2535*	*282*	*ND*	*0.0608*	*ND*	*ND*	*11.61*	*1.212*	*ND*	*ND*	*ND*	*ND*	*0.0352*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	<0.0058 U	<0.57 UJ	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	<0.0037 U	R	<0.0038 U	<0.0038 U	<0.0056 U	<0.0057 UJ	<0.0058 U
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	0.12	<0.029 U	<2.9 UJ	<0.029 U	<0.029 U	<0.029 U	<0.029 U	<0.028 U	<0.029 U	<0.029 U	<0.029 U	<0.028 U	<0.029 UJ	<0.029 U
2-Hexanone	NL	<0.029 U	<2.9 UJ	<0.029 U	<0.029 U	<0.029 U	<0.029 U	<0.025 U	<0.025 U	<0.025 U	<0.025 U	<0.028 U	<0.029 UJ	<0.029 U
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	0.05	<0.029 U	<2.9 UJ	<0.029 U	<0.029 U	<0.029 U	<0.029 U	0.17	<0.097 U	<0.098 U	<0.098 U	<0.028 U	<0.029 UJ	<0.029 U
Bromoform	NL	<0.0058 U	<0.57 UJ	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	<0.0046 U	<0.0046 U	<0.0047 U	<0.0047 U	<0.0056 U	<0.0057 UJ	<0.0058 U
Cyclohexane	NL	1.2 D	21	<0.0057 U	0.0089	<0.0058 U	<0.0059 U	<0.0057 U	<0.0058 U	<0.0059 U	<0.0059 U	<0.0056 U	<0.0057 UJ	<0.0058 U
Isopropylbenzene	NL	0.1 J	7.8 J	<0.0057 U	0.0069	<0.0058 U	<0.0059 U	0.27 J	1.6	<0.0047 U	<0.0047 U	<0.0056 U	<0.0057 UJ	0.0036 J
Methyl tert-butyl ether	0.93	<0.0058 U	<0.57 UJ	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	<0.005 U	<0.0051 U	<0.0051 U	<0.0051 U	<0.0056 U	<0.0057 UJ	<0.0058 U
Methylcyclohexane	NL	2.8 D	40	<0.0057 U	0.038	<0.0058 U	<0.0059 U	<0.0047 U	0.15	<0.0048 U	<0.0048 U	<0.0056 U	<0.0057 UJ	0.0071
Methylene chloride	0.05	<0.0058 U	<0.57 UJ	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	<0.014 U	<0.014 U	<0.014 U	<0.014 U	<0.0056 U	<0.0057 UJ	<0.0058 U
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	NL	<0.0058 U	5.1 J	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 UJ	0.039	0.018 J	<0.0036 U	<0.0036 U	<0.0056 U	<0.0057 UJ	<0.0058 U
Tetrachloroethene	1.3	<0.0058 U	<0.57 UJ	<0.0057 U	<0.0058 U	<0.0058 U	<0.0059 U	<0.007 U	<0.007 U	<0.0071 U	<0.0071 U	<0.0056 U	<0.0057 UJ	<0.0058 UJ
Total VOC	*NL*	*6.3535*	*355.9*	*ND*	*0.1146*	*ND*	*ND*	*12.089*	*2.98*	*ND*	*ND*	*ND*	*ND*	*0.0459*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	2.8	3.4	1.1 J	110	<0.38 U	<0.39 U	120	3.7 J	0.15 J	0.11 J	<0.37 U	0.55	0.3 J
Acenaphthene	20	0.06 J	<1.9 U	1.2 J	76	0.27 J	<0.39 U	55	28	<0.0082 U	<0.0082 U	<0.37 U	0.93	3.5
Acenaphthylene	100	0.14 J	<1.9 U	<3.8 U	9.2	0.074 J	<0.39 U	13	5.6	0.26 J	0.22 J	<0.37 U	0.46	0.57
Anthracene	100	0.16 J	<1.9 U	<3.8 U	28	0.2 J	<0.39 U	25	23	0.084 J	0.066 J	<0.37 U	1	2.8
Benzo(a)anthracene	1	0.3 J	<1.9 U	<3.8 U	20	0.2 J	<0.39 U	15	18	1.1	0.94	<0.37 U	1.2 J	1.6
Benzo(a)pyrene	1	0.12 J	<1.9 U	<3.8 U	17	0.17 J	<0.39 U	11 J	16	0.72 J	0.7	<0.37 U	0.82	1.2
Benzo(b)fluoranthene	1	0.2 J	<1.9 U	<3.8 U	14	0.16 J	<0.39 U	11 J	14	1.6 J	1.4	0.041 J	0.75	1.2
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	0.12 J	<1.9 U	<3.8 U	10	0.096 J	<0.39 U	1.6 J	3.8	0.26 J	0.27 J	<0.37 U	0.42	0.36 J
Benzo(k)fluoranthene	0.8	0.096 J	<1.9 U	<3.8 U	5	0.04 J	<0.39 U	4.4 J	5.7	0.75 J	0.66	<0.37 U	0.27 J	0.36 J
Chrysene	1	0.29 J	0.21 J	<3.8 U	18	0.2 J	<0.39 U	16	18	1.2	1.1	<0.37 U	1.1	1.6
Dibenz(a,h)anthracene	0.33	<0.38 U	<1.9 U	<3.8 U	1.4 J	<0.38 U	<0.39 U	<0.56 UJ	0.83 J	0.083 J	0.095 J	<0.37 U	0.099 J	0.085 J
Fluoranthene	100	0.62	0.39 J	<3.8 U	61	0.45	<0.39 U	29	37	0.89	0.9	<0.37 U	2.2 J	3.8
Fluorene	30	0.3 J	0.29 J	0.47 J	51	0.19 J	<0.39 U	33	18	0.058 J	<0.01 U	<0.37 U	1	2.4
Indeno(1,2,3-cd)pyrene	0.5	0.095 J	<1.9 U	<3.8 U	6.3	0.073 J	<0.39 U	0.8 J	2.1 J	0.15 J	0.16 J	<0.37 U	0.33 J	0.36 J
Naphthalene	12	12	22	1.2 J	290	<0.38 U	<0.39 U	340	5.7	0.27 J	0.21 J	<0.37 U	0.24 J	2.4
Phenanthrene	100	1.3	0.9 J	0.75 J	130	0.89	<0.39 U	89	94	0.39	0.29 J	<0.37 U	4.4	11
Pyrene	100	0.76	0.5 J	0.4 J	65	0.63	<0.39 U	42	48	1.8	1.6	0.039 J	3.2	5.7
Total PAH	*NL*	*19.361*	*27.69*	*5.12*	*911.9*	*3.643*	*ND*	*805.8*	*341.43*	*9.765*	*8.721*	*0.08*	*18.969*	*39.235*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	0.23 J	0.47 J	<3.8 U	21	<0.38 U	<0.39 U	19	5.2	<0.011 U	<0.011 U	<0.37 U	<0.38 U	0.47
3+4-Methylphenol	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.23 U	<0.11 U	<0.012 U	<0.012 U	<0.37 U	<0.38 U	<0.38 U
Acetophenone	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.23 U	<0.11 U	<0.011 U	<0.011 U	<0.37 U	<0.38 U	<0.38 U
Benzaldehyde	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.25 U	<0.13 U	<0.013 U	<0.013 U	0.077 J	<0.38 U	<0.38 U
bis(2-Ethylhexyl) phthalate	NL	0.064 J	<1.9 U	<3.8 U	<3.8 U	0.061 J	<0.39 U	<0.29 U	<0.14 U	0.042 J	0.046 J	0.038 J	0.11 J	0.081 J
Butyl benzyl phthalate	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.48 U	<0.24 U	<0.024 U	<0.024 U	<0.37 U	<0.38 U	<0.38 U
Carbazole	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.58 U	<0.29 U	<0.029 U	<0.029 U	<0.37 U	<0.38 U	<0.38 U
Dibenzofuran	7	<0.38 U	<1.9 U	<3.8 U	2.2 J	<0.38 U	<0.39 U	3.8 J	1.7 J	<0.012 U	<0.012 U	<0.37 U	0.086 J	0.17 J
Diethyl phthalate	NL	0.074 J	<1.9 U	<3.8 U	<3.8 U	0.074 J	<0.39 U	<0.26 U	<0.13 U	<0.013 U	<0.013 U	0.078 J	<0.38 U	<0.38 U
Dimethyl phthalate	NL	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	0.47	<0.22 U	<0.11 U	<0.011 U	<0.011 U	<0.37 U	<0.49 U	<0.38 U
Di-n-butyl phthalate	NL	0.043 J	<1.9 U	<3.8 U	<3.8 U	0.048 J	<0.39 U	<0.36 U	<0.18 U	<0.018 U	<0.018 U	0.077 J	<0.38 U	0.1 J
Phenol	0.33	<0.38 U	<1.9 U	<3.8 U	<3.8 U	<0.38 U	<0.39 U	<0.21 U	<0.1 U	<0.011 U	<0.011 U	<0.37 U	<0.38 U	<0.38 U
Total SVOC	NL	19.772	28.16	5.12	935.1	3.826	0.47	828.6	348.33	9.807	8.767	0.35	19.165	40.056

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW-4DD(5-7) 8/19/2009 5-7	MGP-MW-4DD(7-8) 8/19/2009 7-8	MGP-MW-9DD(5-7) 8/19/2009 5-7	MGP-MW-9DD(11.4-12.5) 8/12/2009 11.4-12.5	MGP-MW-9DD(14-15) 8/19/2009 14-15	MGP-MW-10D(12-13.7) 9/3/2009 12-13.7	MW12D(6.2-9.3) 11/20/2008 6.2-9.3	MW12D(13-14.1) 11/20/2008 13-14.1	MW13D(6-7.2) 11/20/2008 6-7.2	MW13D(6-7.2) DUP 11/20/2008 6-7.2	MGP-MW-101S (2-2.5) 8/18/2009	MGP-MW-103S(11-12.5) 8/26/2009 11-12.5	MGP-MW-104S(9-11) 8/25/2009 9-11
Metals (mg/Kg)														
Aluminum	NL	**8850**	**7900**	**5620**	**6010**	**5360**	**10400**	NS	NS	NS	NS	**12900**	**5770**	**4850**
Antimony	NL	<2.580 U	<2.580 U	**0.85 J**	<2.690 U	**0.50 J**	<2.720 U	NS	NS	NS	NS	**0.72 J**	<1.970 U	<1.700 U
Arsenic	13	**0.99 J**	**1.490**	**146**	**1.490**	**1.430**	<1.090 U	NS	NS	NS	NS	**1.300**	**0.86**	**9.040**
Barium	350	**55.6**	**48.0**	**25.5**	**44.0**	**51.9**	**82.2**	NS	NS	NS	NS	**92.2**	**47.0**	**29.6**
Beryllium	7.2	**0.28 J**	**0.34**	**0.25 J**	**0.26 J**	**0.16 J**	**0.31 J**	NS	NS	NS	NS	**0.54**	**0.21 J**	**0.19 J**
Cadmium	2.5	<0.31 U	<0.31 U	<0.33 U	<0.32 U	<0.24 U	**0.67**	NS	NS	NS	NS	<0.34 U	<0.24 U	<0.20 U
Calcium	NL	**736**	**3970**	**8780**	**1470**	**1060**	**2210**	NS	NS	NS	NS	**467**	**1650**	**1460**
Chromium	30	**13.1**	**11.8**	**11.3**	**15.5 J**	**10.2**	**33.2**	NS	NS	NS	NS	**22.9**	**14.2**	**11.3**
Cobalt	NL	**5.740**	**6.420**	**2.800**	**6.210**	**5.680**	**10.0**	NS	NS	NS	NS	**9.070**	**5.310**	**3.810**
Copper	50	**12.9**	**19.6**	**9.330**	**17.2 J**	**11.3**	**20.2**	NS	NS	NS	NS	**35.1**	**21.8**	**10.3**
Iron	NL	**14600**	**16300**	**11100**	**14700**	**11300**	**19000**	NS	NS	NS	NS	**22500**	**13200**	**8940**
Lead	63	**6.070**	**9.160**	**7.810**	**6.510**	**2.580**	**3.960**	**6.97**	**3.15**	**45**	**50.3**	**78.1**	**6.930**	**12.3**
Magnesium	NL	**3290**	**5300**	**5660**	**3090**	**2620**	**6190**	NS	NS	NS	NS	**4910**	**2650**	**1440**
Manganese	1600	**318**	**290**	**135**	**228**	**228**	**256**	NS	NS	NS	NS	**341**	**159**	**108**
Mercury	0.18	**0.013**	**0.005 J**	**0.877**	**0.017 J-**	**0.004 J**	**0.005 J**	NS	NS	NS	NS	**0.026**	**0.021**	**0.045**
Nickel	30	**11.1**	**14.1**	**6.260**	**15.2**	**12.2**	**19.4**	NS	NS	NS	NS	**18.9**	**13.6**	**9.610**
Potassium	NL	**866**	**810**	**467**	**1420**	**2280**	**2440**	NS	NS	NS	NS	**2900**	**1770**	**566**
Selenium	3.9	<1.030 U	<1.030 U	<1.100 U	<1.070 U	<0.80 U	<1.090 U	NS	NS	NS	NS	<1.120 U	**0.48 J**	**0.44 J**
Silver	2	<0.52 U	<0.52 U	<0.55 U	<0.54 U	<0.40 U	<0.54 U	NS	NS	NS	NS	<0.56 U	<0.39 U	<0.34 U
Sodium	NL	**448**	**349**	**353**	**402**	**267**	**1120**	NS	NS	NS	NS	**131**	**285**	**276**
Thallium	NL	<2.060 U	<2.060 U	<2.210 U	<2.150 U	<1.610 U	**0.78 J**	NS	NS	NS	NS	<2.250 U	<1.570 U	<1.360 U
Vanadium	NL	**21.6**	**17.4**	**15.4**	**15.4**	**15.6**	**29.9**	NS	NS	NS	NS	**35.8**	**21.0**	**11.5**
Zinc	109	**32.9 J-**	**42.5 J-**	**22.1 J-**	**39.3 J**	**31.7 J-**	**35.1**	NS	NS	NS	NS	**60.5 J-**	**30.4**	**20.5**
Cyanide (mg/Kg)														
Cyanide, Total	27	<0.58 U	<0.57 U	<0.57 U	<0.580 U	<0.58 U	<0.587 U	NS	NS	NS	NS	<0.56 U	<0.57 U	<0.58 U
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.019 UJ	NS
Total PCB	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW105S (1.5-2) 8/13/2009 1.5-2	MGP-MW-105S(2-4) 8/13/2009 2-4	MGP-MW-105S(5-6.5) 9/4/2009 5-6.5	MGP-MW105D(5-7) 1/5/2010 5-7	MGP-MW-108S(12-14) 9/28/2009 12-14	MGP-MW-108S(14-15) 9/28/2009 14-15	MGP-MW-109D(4-5) 3/10/2012 4-5	MGP-MW-109D(4-5) DUP 3/10/2012 4-5	MGP-MW-110D(1.5-2.2) 1/4/2012 1.5-2.2	MGP-MW-112D(7-8.5) 1/12/2012 7-8.5	MGP-MW-112D(15-16.4) 1/12/2012 15-16.4	MGP-MW-113D(7-8.5) 1/6/2012 7-8.5	MGP-MW-113D(11-13) 1/6/2012 11-13
BTEX mg/Kg														
Benzene	0.06	NS	NS	<0.0055 U	<0.0056 U	***<0.56 U***	***<0.54 U***	<0.0010 UJ	<0.0011 UJ	<0.0010 U	<0.0012 U	<0.0011 U	<0.0011 U	<0.0011 U
Ethylbenzene	1	NS	NS	<0.0055 U	<0.0056 U	**3.9**	**2.5**	<0.0010 UJ	<0.0011 UJ	<0.0010 U	<0.0012 U	<0.0011 U	<0.0011 U	<0.0011 U
Toluene	0.7	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0010 UJ	<0.0011 UJ	<0.0010 U	<0.0012 U	<0.0011 U	<0.0011 U	<0.0011 U
m&p-Xylene	NL	NS	NS	<0.011 U	<0.011 U	**6.4**	**3.5**	<0.0010 UJ	<0.0011 UJ	<0.0010 UJ	<0.0012 U	<0.0011 U	<0.0011 UJ	<0.0011 UJ
o-Xylene	NL	NS	NS	<0.0055 U	<0.0056 U	**4.2**	**2.2**	<0.0010 UJ	<0.0011 UJ	<0.0010 U	<0.0012 U	<0.0011 U	<0.0011 U	<0.0011 U
Total Xylene (calculated)/Xylen	0.26	NS	NS	ND	ND	**10.6**	**5.7**	<0.0010 U	<0.0011 U	<0.0010 U	<0.0012 U	<0.0011 U	<0.0011 U	<0.0011 U
Total BTEX	*NL*	*NS*	*NS*	*ND*	*ND*	***14.5***	***8.2***	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	<0.0021 UJ	**0.0031 J**	<0.0021 UJ	<0.0023 U	<0.0022 U	<0.0021 UJ	<0.0022 UJ
1,2,4-Trichlorobenzene	NL	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0021 UJ	**0.0023 J**	<0.0021 UJ	<0.0023 U	<0.0022 U	<0.0021 UJ	<0.0022 UJ
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	0.12	NS	NS	<0.028 U	<0.028 U	***<2.8 U***	***<2.7 U***	R	R	<0.0021 U	<0.0023 U	<0.0022 U	<0.0021 U	<0.0022 U
2-Hexanone	NL	NS	NS	<0.028 U	<0.028 U	<2.8 U	<2.7 U	<0.0021 U	<0.0022 U	<0.0021 U	<0.0023 U	<0.0022 U	<0.0021 U	<0.0022 U
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	0.05	NS	NS	<0.028 U	<0.028 U	***<2.8 U***	***<2.7 U***	R	R	<0.010 U	<0.012 U	<0.011 U	<0.011 U	<0.011 U
Bromoform	NL	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0021 UJ	<0.0022 UJ	<0.0021 UJ	<0.0023 UJ	<0.0022 UJ	<0.0021 UJ	<0.0022 UJ
Cyclohexane	NL	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0021 U	<0.0022 U	<0.0021 U	<0.0023 U	<0.0022 U	<0.0021 U	<0.0022 U
Isopropylbenzene	NL	NS	NS	<0.0055 U	<0.0056 U	**1.2**	**0.71**	<0.0010 UJ	<0.0011 UJ	<0.0010 UJ	<0.0012 U	<0.0011 U	<0.0011 UJ	<0.0011 UJ
Methyl tert-butyl ether	0.93	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0010 U	<0.0011 U	<0.00052 U	<0.00058 U	<0.00056 U	<0.00053 U	<0.00055 U
Methylcyclohexane	NL	NS	NS	<0.0055 U	<0.0056 U	**0.2 J**	**0.29 J**	<0.0021 U	<0.0022 U	<0.0021 U	<0.0023 U	<0.0022 U	<0.0021 U	<0.0022 U
Methylene chloride	0.05	NS	NS	<0.0055 U	<0.0056 U	***<0.56 U***	***<0.54 U***	<0.0021 U	<0.0022 U	<0.0029 U	<0.0023 U	<0.0022 U	<0.0021 U	<0.0022 U
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	NL	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0021 UJ	<0.0022 UJ	<0.0021 UJ	<0.0023 U	<0.0022 U	<0.0021 UJ	<0.0022 UJ
Tetrachloroethene	1.3	NS	NS	<0.0055 U	<0.0056 U	<0.56 U	<0.54 U	<0.0010 U	<0.0011 U	<0.0021 UJ	<0.0023 U	<0.0022 U	<0.0021 UJ	<0.0022 UJ
Total VOC	*NL*	*NS*	*NS*	*ND*	*ND*	***15.9***	***9.2***	*ND*	***0.0054***	*ND*	*ND*	*ND*	*ND*	*ND*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	NS	NS	**0.27 J**	<0.37 U	**110**	**72**	<0.037 U	<0.038 U	<0.036 U	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Acenaphthene	20	NS	NS	**0.2 J**	<0.37 U	**47**	**35**	<0.037 U	<0.038 U	<0.036 U	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Acenaphthylene	100	NS	NS	**0.089 J**	<0.37 U	**5**	**4.2**	<0.037 U	<0.038 U	**0.051**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Anthracene	100	NS	NS	**0.15 J**	<0.37 U	**20**	**20**	<0.037 U	<0.038 U	**0.058**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Benzo(a)anthracene	1	NS	NS	**0.11 J**	**0.093 J**	**13**	**10**	<0.037 U	<0.038 U	**0.38**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Benzo(a)pyrene	1	NS	NS	**0.081 J**	**0.09 J**	**9.2**	**6.4**	<0.037 U	<0.038 U	**0.37**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Benzo(b)fluoranthene	1	NS	NS	**0.073 J**	**0.12 J**	**6.6**	**4.8**	<0.037 U	<0.038 U	**0.45**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	NS	NS	**0.058 J**	**0.097 J**	**4**	**3.6**	<0.037 U	<0.038 U	**0.29**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Benzo(k)fluoranthene	0.8	NS	NS	**0.039 J**	**0.065 J**	**2.4**	**1.5 J**	<0.037 U	<0.038 U	**0.14**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Chrysene	1	NS	NS	**0.1 J**	**0.11 J**	**11**	**8.9**	<0.037 U	<0.038 U	**0.37**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Dibenz(a,h)anthracene	0.33	NS	NS	***<0.37 U***	***<0.37 U***	**0.72 J**	**0.68 J**	<0.037 U	<0.038 U	**0.10**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Fluoranthene	100	NS	NS	**0.21 J**	**0.18 J**	**24**	**23**	<0.037 U	<0.038 U	**0.35**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Fluorene	30	NS	NS	**0.15 J**	<0.37 U	**24**	**23**	<0.037 U	<0.038 U	<0.036 U	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Indeno(1,2,3-cd)pyrene	0.5	NS	NS	**0.042 J**	**0.074 J**	**2.6**	**2.9 J**	<0.037 U	<0.038 U	**0.24**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Naphthalene	12	NS	NS	**0.7**	<0.37 U	**300**	**190**	<0.0093 U	<0.0096 U	<0.0090 U	<0.0099 U	<0.0096 U	<0.010 U	<0.0095 U
Phenanthrene	100	NS	NS	**0.62**	**0.078 J**	**96**	**63**	<0.037 U	<0.038 U	**0.086**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Pyrene	100	NS	NS	**0.31 J**	**0.17 J**	**37**	**28**	<0.037 U	<0.038 U	**0.70**	<0.040 U	<0.038 U	<0.040 U	<0.038 U
Total PAH	*NL*	*NS*	*NS*	***3.202***	***1.077***	***712.52***	***496.98***	*ND*	*ND*	***3.585***	*ND*	*ND*	*ND*	*ND*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	NS	NS	**0.049 J**	<0.37 U	**11**	**8.3**	NS	NS	NS	NS	NS	NS	NS
3+4-Methylphenol	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Acetophenone	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Benzaldehyde	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	NL	NS	NS	**0.22 J**	**0.052 J**	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Butyl benzyl phthalate	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Carbazole	NL	NS	NS	<0.37 U	<0.37 U	**0.24 J**	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	7	NS	NS	<0.37 U	<0.37 U	**1.7 J**	**1.7 J**	NS	NS	NS	NS	NS	NS	NS
Diethyl phthalate	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Dimethyl phthalate	NL	NS	NS	0.5 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Di-n-butyl phthalate	NL	NS	NS	<0.37 U	<0.37 U	<1.8 U	<3.6 U	NS	NS	NS	NS	NS	NS	NS
Phenol	0.33	NS	NS	***<0.37 U***	**0.052 J**	***<1.8 U***	***<3.6 U***	NS	NS	NS	NS	NS	NS	NS
Total SVOC	NL	NS	NS	**3.971**	**1.181**	**725.46**	**506.98**	ND	ND	**3.585**	ND	ND	ND	ND

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW105S (1.5-2) 8/13/2009 1.5-2	MGP-MW-105S(2-4) 8/13/2009 2-4	MGP-MW-105S(5-6.5) 9/4/2009 5-6.5	MGP-MW105D(5-7) 1/5/2010 5-7	MGP-MW-108S(12-14) 9/28/2009 12-14	MGP-MW-108S(14-15) 9/28/2009 14-15
Metals (mg/Kg)							
Aluminum	NL	NS	NS	**12100**	**7420**	**4930**	**3920**
Antimony	NL	NS	NS	**0.65 J**	<2.780 U	**0.39 J**	<2.270 U
Arsenic	13	NS	NS	**61.6**	**4.040**	**6.260**	**15.1**
Barium	350	NS	NS	**132**	**97.5**	**34.3**	**28.5**
Beryllium	7.2	NS	NS	**0.42**	**0.25 J**	**0.18 J**	**0.13 J**
Cadmium	2.5	NS	NS	**0.58**	<0.33 U	**0.18 J**	**0.16 J**
Calcium	NL	NS	NS	**1320**	**2060**	**4980**	**39000**
Chromium	30	NS	NS	**33.6**	**15.7**	**13.4**	**9.540**
Cobalt	NL	NS	NS	**10.1**	**6.150**	**5.530**	**3.120**
Copper	50	NS	NS	**24.6**	**16.6 J**	**17.4**	**7.600**
Iron	NL	NS	NS	**20400**	**12800**	**11400**	**7820**
Lead	63	NS	NS	**9.120**	**21.0**	**4.610**	**4.010**
Magnesium	NL	NS	NS	**5390**	**2400**	**4820**	**25700**
Manganese	1600	NS	NS	**304**	**192**	**148**	**124**
Mercury	0.18	NS	NS	**0.087**	**0.048**	**0.004 J**	**0.004 J**
Nickel	30	NS	NS	**24.2**	**15.8**	**13.2**	**7.660**
Potassium	NL	NS	NS	**5960**	**1480**	**1230**	**1290**
Selenium	3.9	NS	NS	<1.100 U	<1.110 U	<0.66 U	<0.91 U
Silver	2	NS	NS	<0.55 U	<0.56 U	<0.33 U	<0.45 U
Sodium	NL	NS	NS	**330**	**611**	**190**	**198**
Thallium	NL	NS	NS	**1.810 J**	<2.220 U	<1.320 U	<1.820 U
Vanadium	NL	NS	NS	**34.7**	**18.9**	**15.2**	**12.4**
Zinc	109	NS	NS	**213**	**46.5**	**24.8**	**16.8**
Cyanide (mg/Kg)							
Cyanide, Total	27	NS	NS	<0.557 U	<0.556 U	<0.559 U	<0.545 U
Fuel Oil (mg/Kg)							
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)							
Aroclor 1260	NL	**0.054**	**0.065**	NS	NS	NS	NS
Total PCB	0.1	**0.054**	**0.065**	NS	NS	NS	NS
Percent Solids							
Solids, percent	NL	NS	NS	NS	NS	NS	NS

Sample ID Sample Date Depth	MGP-MW-109D(4-5) 3/10/2012 4-5	MGP-MW-109D(4-5) DUP 3/10/2012 4-5	MGP-MW-110D(1.5-2.2) 1/4/2012 1.5-2.2	MGP-MW-112D(7-8.5) 1/12/2012 7-8.5	MGP-MW-112D(15-16.4) 1/12/2012 15-16.4	MGP-MW-113D(7-8.5) 1/6/2012 7-8.5	MGP-MW-113D(11-13) 1/6/2012 11-13
Metals (mg/Kg)							
Aluminum	NS	NS	NS	NS	NS	NS	NS
Antimony	NS	NS	NS	NS	NS	NS	NS
Arsenic	NS	NS	NS	NS	NS	NS	NS
Barium	NS	NS	NS	NS	NS	NS	NS
Beryllium	NS	NS	NS	NS	NS	NS	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS
Calcium	NS	NS	NS	NS	NS	NS	NS
Chromium	NS	NS	NS	NS	NS	NS	NS
Cobalt	NS	NS	NS	NS	NS	NS	NS
Copper	NS	NS	NS	NS	NS	NS	NS
Iron	NS	NS	NS	NS	NS	NS	NS
Lead	NS	NS	NS	NS	NS	NS	NS
Magnesium	NS	NS	NS	NS	NS	NS	NS
Manganese	NS	NS	NS	NS	NS	NS	NS
Mercury	NS	NS	NS	NS	NS	NS	NS
Nickel	NS	NS	NS	NS	NS	NS	NS
Potassium	NS	NS	NS	NS	NS	NS	NS
Selenium	NS	NS	NS	NS	NS	NS	NS
Silver	NS	NS	NS	NS	NS	NS	NS
Sodium	NS	NS	NS	NS	NS	NS	NS
Thallium	NS	NS	NS	NS	NS	NS	NS
Vanadium	NS	NS	NS	NS	NS	NS	NS
Zinc	NS	NS	NS	NS	NS	NS	NS
Cyanide (mg/Kg)							
Cyanide, Total	NS	NS	NS	NS	NS	NS	NS
Fuel Oil (mg/Kg)							
Gasoline Range Organics (GR	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)							
Aroclor 1260	NS	NS	NS	NS	NS	NS	NS
Total PCB	NS	NS	NS	NS	NS	NS	NS
Percent Solids							
Solids, percent	**90**	**87**	**93**	**84**	**87**	**83**	**88**

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW-114D(11-13) 2/24/2012 11-13	MGP-MW-116D(10-12) 1/10/2012 10-12	MGP-MW-116D(12-12.5) 1/10/2012 12-12.5	MGP-SB-2(5-6) 8/13/2009 5-6	MGP-SB-3(1.5-2.0) 8/5/2009 1.5-2	MGP-SB-4(6-8) 8/13/2009 6-8	MGPSB5(10-11) 8/16/2009 10-11	MGPSB5(11-13) 8/16/2009 11-13	MGPSB5(16-17) 8/16/2009 16-17	MGP-SB-6(7-8) 8/12/2009 7-8	MGP-SB-7(6-7.3) 8/13/2009 6-7.3	MGP-SB-8(0.75-1) 8/10/2009 0.75-1	MGP-SB-8(1-2) 8/10/2009 1-2
BTEX mg/Kg														
Benzene	0.06	<0.0013 U	<0.0011 U	<0.0011 U	**0.016**	**550**	<0.0058 U	<0.0057 UJ	**0.71 J**	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Ethylbenzene	1	<0.0013 UJ	<0.0011 U	<0.0011 U	**0.065**	**1200**	<0.0058 U	<0.0057 UJ	**4.4 J**	<0.0056 UJ	**0.011 J**	<0.0058 U	NS	NS
Toluene	0.7	<0.0013 UJ	<0.0011 U	<0.0011 U	**0.0037 J**	**670**	<0.0058 U	<0.0057 UJ	***<3 U***	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
m&p-Xylene	NL	<0.0013 U	<0.0011 U	<0.0011 U	**0.012 J**	**1000**	<0.012 U	<0.011 UJ	**2.6 J**	<0.011 UJ	**0.011 J**	<0.012 U	NS	NS
o-Xylene	NL	<0.0013 U	<0.0011 U	<0.0011 U	**0.019**	**490**	<0.0058 U	<0.0057 UJ	**4 J**	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Total Xylene (calculated)/Xylen	0.26	<0.0013 U	<0.0011 U	<0.0011 U	**0.031**	**1490**	ND	ND	**6.6**	ND	**0.011**	ND	NS	NS
Total BTEX	*NL*	*ND*	*ND*	*ND*	***0.1157***	***3910***	*ND*	*ND*	***11.71***	*ND*	***0.022***	*ND*	*NS*	*NS*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	<0.0025 UJ	<0.0021 U	<0.0022 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	<0.0025 UJ	<0.0021 U	<0.0022 U	<0.0062 UJ	<0.82 U	<0.0058 U	<0.0057 UJ	<3 U	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	0.12	R	<0.0021 U	<0.0022 U	<0.031 U	***<4.1 U***	<0.029 U	<0.029 UJ	***<15 U***	<0.028 UJ	<0.029 UJ	<0.029 U	NS	NS
2-Hexanone	NL	<0.0025 U	<0.0021 U	<0.0022 U	<0.031 U	<4.1 U	<0.029 U	<0.029 UJ	<15 U	<0.028 UJ	<0.029 UJ	<0.029 U	NS	NS
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	0.05	R	<0.011 U	<0.011 U	<0.031 U	***<4.1 U***	<0.029 U	<0.029 UJ	***<15 U***	<0.028 UJ	<0.029 UJ	<0.029 U	NS	NS
Bromoform	NL	<0.0025 UJ	<0.0021 UJ	<0.0022 UJ	<0.0062 U	<0.82 U	<0.0058 U	<0.0057 UJ	<3 U	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Cyclohexane	NL	<0.0025 U	<0.0021 U	<0.0022 U	**0.0054 J**	**0.66 J**	<0.0058 U	<0.0057 UJ	<3 U	<0.0056 UJ	**1.9**	<0.0058 U	NS	NS
Isopropylbenzene	NL	<0.0013 U	<0.0011 U	<0.0011 U	**0.045**	**95**	<0.0058 U	<0.0057 UJ	**1.6 J**	<0.0056 UJ	**0.04 J**	<0.0058 U	NS	NS
Methyl tert-butyl ether	0.93	<0.0013 U	<0.00054 U	<0.00054 U	<0.0062 U	<0.82 U	<0.0058 U	<0.0057 UJ	***<3 U***	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Methylcyclohexane	NL	<0.0025 U	<0.0021 U	<0.0022 U	**0.029**	**1.9**	<0.0058 U	<0.0057 UJ	**1 J**	<0.0056 UJ	**8.1 D**	<0.0058 U	NS	NS
Methylene chloride	0.05	<0.0025 U	<0.0021 U	<0.0022 U	<0.0062 U	***<0.82 U***	<0.0058 U	<0.0057 UJ	***<3 U***	<0.0056 UJ	<0.0058 UJ	**0.0024 J**	NS	NS
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	NL	<0.0025 UJ	<0.0021 U	<0.0022 U	<0.0062 UJ	<0.82 U	<0.0058 U	<0.0057 J	<3 U	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Tetrachloroethene	1.3	<0.0025 UJ	<0.0021 U	<0.0022 U	<0.0062 U	<0.82 U	<0.0058 U	<0.0057 UJ	**1.5 J**	<0.0056 UJ	<0.0058 UJ	<0.0058 U	NS	NS
Total VOC	*NL*	*ND*	*ND*	*ND*	***0.1951***	***4007.56***	*ND*	*ND*	***15.81***	*ND*	***10.062***	***0.0024***	*NS*	*NS*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	<0.042 U	<0.039 U	<0.037 U	**0.12 J**	**1600**	<0.38 U	<7.6 U	**5.9 J**	**0.2 J**	**0.19 J**	**1.3 J**	NS	NS
Acenaphthene	20	<0.042 U	<0.039 U	<0.037 U	**0.1 J**	**850**	<0.38 U	<7.6 U	**2.2 J**	**0.15 J**	**0.045 J**	<1.9 U	NS	NS
Acenaphthylene	100	**0.11**	<0.039 U	<0.037 U	**0.43**	**130**	<0.38 U	**9.1**	**1.2**	**0.1 J**	<0.38 U	<1.9 U	NS	NS
Anthracene	100	**0.076**	<0.039 U	<0.037 U	**0.24 J**	**330**	<0.38 U	**1.9 J**	**3.7**	**0.28 J**	<0.38 U	<1.9 U	NS	NS
Benzo(a)anthracene	1	**0.45**	<0.039 U	<0.037 U	**1.3**	**240**	<0.38 U	**8.8 J**	**1.9 J**	**0.19 J**	<0.38 U	**0.26 J**	NS	NS
Benzo(a)pyrene	1	**0.31**	<0.039 U	<0.037 U	**0.78**	**190**	<0.38 U	**13 J**	**1.5 J**	**0.22 J**	<0.38 U	**0.33 J**	NS	NS
Benzo(b)fluoranthene	1	**0.46**	<0.039 U	<0.037 U	**1.7**	**160**	<0.38 U	**17**	**1.2**	**0.24 J**	<0.38 U	**0.42 J**	NS	NS
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	**0.21**	<0.039 U	<0.037 U	**0.98**	**100**	<0.38 U	**16**	**0.74**	**0.21 J**	<0.38 U	**0.32 J**	NS	NS
Benzo(k)fluoranthene	0.8	**0.14**	<0.039 U	<0.037 U	**0.49**	**44**	<0.38 U	**4.7 J**	**0.36 J**	**0.067 J**	<0.38 U	***<1.9 U***	NS	NS
Chrysene	1	**0.40**	<0.039 U	<0.037 U	**1.4**	**230**	<0.38 U	**9.6 J**	**1.7 J**	**0.21 J**	<0.38 U	**0.3 J**	NS	NS
Dibenz(a,h)anthracene	0.33	**0.075**	<0.039 U	<0.037 U	**0.22 J**	**18 J**	***<0.38 U***	**2.8 J**	**0.16 J**	***<0.37 U***	***<0.38 U***	***<1.9 U***	NS	NS
Fluoranthene	100	**0.61**	<0.039 U	<0.037 U	**1.3**	**560**	<0.38 U	**7.3 J**	**4.7 J**	**0.31 J**	**0.055 J**	**0.3 J**	NS	NS
Fluorene	30	<0.042 U	<0.039 U	<0.037 U	**0.18 J**	**610**	<0.38 U	**0.8 J**	**3.4**	**0.16 J**	**0.071 J**	<1.9 U	NS	NS
Indeno(1,2,3-cd)pyrene	0.5	**0.18**	<0.039 U	<0.037 U	**0.71**	**62**	<0.38 U	**12**	**0.64**	**0.15 J**	<0.38 U	**0.21 J**	NS	NS
Naphthalene	12	**0.046**	<0.0097 U	<0.0093 U	**0.6**	**5700**	<0.38 U	<7.6 U	**24**	**0.41**	**0.11 J**	<1.9 U	NS	NS
Phenanthrene	100	**0.28**	<0.039 U	<0.037 U	**0.92**	**1500**	<0.38 U	**3.7 J**	**12 J**	**0.66**	**0.18 J**	**0.55 J**	NS	NS
Pyrene	100	**0.84**	<0.039 U	<0.037 U	**1.9**	**750**	<0.38 U	**12 J**	**5.7 J**	**0.51 J**	**0.074 J**	**0.52 J**	NS	NS
Total PAH	*NL*	***4.187***	*ND*	*ND*	***13.37***	***13074***	*ND*	***118.7***	***71***	***4.067***	***0.725***	***4.51***	*NS*	*NS*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	NS	NS	NS	<0.41 U	**190**	<0.38 U	<7.6 UJ	**1.5 J**	**0.065 J**	<0.38 U	<1.9 U	NS	NS
3+4-Methylphenol	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 U	<0.4 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
Acetophenone	NL	NS	NS	NS	**0.051 J**	<43 U	<0.38 U	<7.6 U	<0.4 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
Benzaldehyde	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 U	<0.4 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
bis(2-Ethylhexyl) phthalate	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 UJ	<0.4 UJ	**0.047 J**	**0.068 J**	<1.9 U	NS	NS
Butyl benzyl phthalate	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 UJ	<0.4 U	<0.37 UJ	<0.38 U	<1.9 U	NS	NS
Carbazole	NL	NS	NS	NS	<0.41 U	**7.2 J**	<0.38 U	<7.6 U	<0.4 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
Dibenzofuran	7	NS	NS	NS	<0.41 U	**58**	<0.38 U	***<7.6 UJ***	**0.21 J**	<0.37 UJ	<0.38 U	<1.9 U	NS	NS
Diethyl phthalate	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 U	<0.4 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
Dimethyl phthalate	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 U	<0.5 U	<0.37 U	<0.38 U	<1.9 U	NS	NS
Di-n-butyl phthalate	NL	NS	NS	NS	<0.41 U	<43 U	<0.38 U	<7.6 UJ	<0.4 UJ	<0.37 UJ	<0.38 U	<1.9 U	NS	NS
Phenol	0.33	NS	NS	NS	***<0.41 U***	***<43 U***	***<0.38 U***	***<7.6 U***	***<0.4 U***	***<0.37 U***	***<0.38 U***	***<1.9 U***	NS	NS
Total SVOC	NL	**4.187**	ND	ND	**13.421**	**13329.2**	ND	**118.7**	**72.71**	**4.179**	**0.793**	**4.51**	NS	NS

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-MW-114D(11-13) 2/24/2012 11-13	MGP-MW-116D(10-12) 1/10/2012 10-12	MGP-MW-116D(12-12.5) 1/10/2012 12-12.5	MGP-SB-2(5-6) 8/13/2009 5-6	MGP-SB-3(1.5-2.0) 8/5/2009 1.5-2	MGP-SB-4(6-8) 8/13/2009 6-8	MGPSB5(10-11) 8/16/2009 10-11	MGPSB5(11-13) 8/16/2009 11-13	MGPSB5(16-17) 8/16/2009 16-17	MGP-SB-6(7-8) 8/12/2009 7-8	MGP-SB-7(6-7.3) 8/13/2009 6-7.3	MGP-SB-8(0.75-1) 8/10/2009 0.75-1	MGP-SB-8(1-2) 8/10/2009 1-2
Metals (mg/Kg)														
Aluminum	NL	NS	NS	NS	**6780**	**7950**	**4420**	**8820 J**	**8150 J**	**13600 J**	**8530**	**12300**	NS	NS
Antimony	NL	NS	NS	NS	**0.87 J**	**2.390 J**	<2.340 U	**1.180 J**	<3.020 U	**1.070 J**	<2.530 U	<2.230 U	NS	NS
Arsenic	13	NS	NS	NS	**3.540**	**10.4**	<0.94 U	**6.640**	**1.390**	<1.120 U	<1.010 U	<0.89 U	NS	NS
Barium	350	NS	NS	NS	**68.0**	**68.5**	**24.5**	**128 J**	**66.8 J**	**202 J**	**85.2**	**105**	NS	NS
Beryllium	7.2	NS	NS	NS	**0.32 J**	**0.36 J**	**0.17 J**	**0.42**	**0.43**	**0.32 J**	**0.26 J**	**0.44**	NS	NS
Cadmium	2.5	NS	NS	NS	<0.36 U	**1.960**	<0.28 U	<0.35 U	<0.36 U	<0.34 U	<0.30 U	<0.27 U	NS	NS
Calcium	NL	NS	NS	NS	**2080**	**17700**	**786**	**16500**	**1550**	**1270**	**1340**	**1910**	NS	NS
Chromium	30	NS	NS	NS	**16.3 J**	**13.7**	**8.160 J**	**20.6 J**	**19.5 J**	**28.7 J**	**24.9 J**	**52.0 J**	NS	NS
Cobalt	NL	NS	NS	NS	**5.930**	**5.520**	**3.170**	**9.180**	**7.540**	**11.8**	**8.140**	**8.630**	NS	NS
Copper	50	NS	NS	NS	**29.5 J**	**53.1**	**10.7 J**	**57.8 J**	**20.7 J**	**19.4 J**	**21.2 J**	**31.0 J**	NS	NS
Iron	NL	NS	NS	NS	**26100**	**14700**	**7030**	**29600 J**	**19600 J**	**27700 J**	**17000**	**17800**	NS	NS
Lead	63	NS	NS	NS	**69.2**	**486**	**2.010**	**297**	**6.650**	**7.010**	**4.040**	**10.7**	NS	NS
Magnesium	NL	NS	NS	NS	**2330**	**4250**	**1090**	**4840**	**3410**	**6470**	**3980**	**6800**	NS	NS
Manganese	1600	NS	NS	NS	**206**	**282**	**231**	**397**	**381**	**365**	**255**	**442**	NS	NS
Mercury	0.18	NS	NS	NS	**0.026 J-**	**0.147**	<0.012 UJ	**0.154**	**0.010 J**	**0.004 J**	**0.084 J-**	**0.003 J-**	NS	NS
Nickel	30	NS	NS	NS	**15.7**	**13.2**	**9.090**	**23.9**	**16.3**	**23.3**	**26.4**	**44.9**	NS	NS
Potassium	NL	NS	NS	NS	**1250**	**1270**	**882**	**2400**	**1760**	**11200**	**4170**	**3460**	NS	NS
Selenium	3.9	NS	NS	NS	<1.180 U	**4.59**	<0.94 U	<1.150 U	<1.210 U	<1.120 U	<1.010 U	<0.89 U	NS	NS
Silver	2	NS	NS	NS	<0.59 U	**0.39 J**	<0.47 U	<0.58 U	<0.60 U	<0.56 U	<0.51 U	<0.45 U	NS	NS
Sodium	NL	NS	NS	NS	**256**	**1040**	**217**	**385**	**272**	**521**	**345**	**648**	NS	NS
Thallium	NL	NS	NS	NS	<2.370 U	<2.620 U	<1.870 U	<2.310 U	<2.420 U	**1.250 J**	<2.030 U	<1.780 U	NS	NS
Vanadium	NL	NS	NS	NS	**21.8**	**19.4**	**10.6**	**29.7**	**23.4**	**49.6**	**28.9**	**31.7**	NS	NS
Zinc	109	NS	NS	NS	**140 J**	**182**	**26.4 J**	**77.2 J**	**44.6 J**	**66.5 J**	**35.3 J**	**47.8 J**	NS	NS
Cyanide (mg/Kg)														
Cyanide, Total	27	NS	NS	NS	**2.860**	**4.510**	<0.581 U	**2.480**	<0.604 U	<0.561 U	<0.577 U	<0.579 U	NS	NS
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR(	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.02 U	<0.02 U
Total PCB	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND
Percent Solids														
Solids, percent	NL	**80**	**86**	**90**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-SB-8(10-12) 8/13/2009 10-12	MGP-SB-8(10-12)DUP 8/13/2009 10-12	MGPSB9(8-10) 8/15/2009 8-10	MGPSB9(11-12.5) 8/15/2009 11-12.5	MGPSB9(11-12.5)DUP 8/15/2009 11-12.5	MGP-SB-10(6-7) 2/25/2012 6-7	MGP-SB-10(15-16) 2/25/2012 15-16	MGP-SB-10(19-20.4) 2/25/2012 19-20.4	MGPSG5(1-2.2) 7/28/2009 1-2.2	TP-1(5-5.5) 8/11/2009 5-5.5	TP-2(1.0-1.3) 8/12/2009 1-1.3	TP-3(2.0-2.5) 8/25/2009 2-2.5	TP-3(5.0-5.5) 8/25/2009 5-5.5
BTEX mg/Kg														
Benzene	0.06	<0.0056 UJ	<0.0057 U	<0.0060 U	3.6	<2.8 U	<0.0011 U	1.3	<0.11 U	0.0033 J	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Ethylbenzene	1	<0.0056 UJ	<0.0057 U	<0.0060 U	29	7.4	<0.0011 UJ	23	5.3	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Toluene	0.7	<0.0056 UJ	<0.0057 U	<0.0060 U	15	2.3 J	<0.0011 UJ	3	<0.23 U	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
m&p-Xylene	NL	<0.011 UJ	<0.011 U	<0.012 U	56	16	<0.0011 U	27	7.5	<0.013 U	<0.011 U	<0.011 U	<0.011 U	<0.011 U
o-Xylene	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	27	9	<0.0011 U	15	5.0	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Total Xylene (calculated)/Xylen	0.26	ND	ND	ND	83	25	<0.0011 U	42	12.5	ND	ND	ND	ND	ND
Total BTEX	*NL*	*ND*	*ND*	*ND*	*130.6*	*34.7*	*ND*	*69.3*	*17.8*	*0.0033*	*ND*	*ND*	*ND*	*ND*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	<0.0023 UJ	<1.2 U	<0.23 U	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	<2.8 U	1.7 J	<0.0023 UJ	<1.2 U	<0.23 U	<0.0065 U	<0.0057 U	<0.0055 UJ	<0.0057 U	<0.0055 U
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	0.12	<0.028 UJ	<0.029 U	<0.03 U	<14 U	<14 U	R	<1.2 U	<0.23 U	0.013 J	<0.029 U	<0.028 U	<0.028 U	<0.028 U
2-Hexanone	NL	<0.028 UJ	<0.029 U	0.0087 J	<14 U	<14 U	<0.0023 U	<1.2 U	<0.23 U	<0.032 U	<0.029 U	<0.028 U	<0.028 U	<0.028 U
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	0.05	<0.028 UJ	<0.029 U	<0.03 U	<14 U	<14 U	R	<12 UJ	<2.3 U	0.1	<0.029 U	<0.028 U	<0.028 U	<0.028 U
Bromoform	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	<2.8 U	<2.8 U	<0.0023 UJ	<1.2 UJ	<0.23 UJ	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Cyclohexane	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	<2.8 U	<2.8 U	<0.0023 U	<1.2 U	0.67	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Isopropylbenzene	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	2.5 J	1.2 J	<0.0011 U	2.1	2.5	<0.0065 U	<0.0057 U	<0.0055 UJ	<0.0057 U	<0.0055 U
Methyl tert-butyl ether	0.93	<0.0056 UJ	<0.0057 U	<0.0060 U	<2.8 U	<2.8 U	<0.0011 U	<0.60 U	<0.11 UJ	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Methylcyclohexane	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	0.77 J	<2.8 U	<0.0023 U	5.7	2.1	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 U	<0.0055 U
Methylene chloride	0.05	0.0029 J	0.0026 J	<0.0060 U	<2.8 U	<2.8 U	<0.0023 U	<1.2 U	<0.23 U	<0.0065 U	<0.0057 U	0.0027 J	<0.0057 U	<0.0055 U
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	NL	<0.0056 UJ	<0.0057 U	<0.0060 U	4.1	1.7 J	<0.0023 U	<1.2 U	<0.23 U	<0.0065 U	<0.0057 U	<0.0055 UJ	<0.0057 U	<0.0055 U
Tetrachloroethene	1.3	<0.0056 UJ	<0.0057 U	<0.0060 U	<2.8 UJ	<2.8 UJ	<0.0023 UJ	<1.2 U	<0.23 U	<0.0065 U	<0.0057 U	<0.0055 U	<0.0057 UJ	<0.0055 UJ
Total VOC	*NL*	*0.0029*	*0.0026*	*0.0087*	*137.97*	*39.3*	*ND*	*77.1*	*23.07*	*0.1163*	*ND*	*0.0027*	*ND*	*ND*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	<0.37 U	<0.38 U	<7.8 U	380	220	<2.3 U	77	92	2.9 J	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Acenaphthene	20	<0.37 U	<0.38 U	<7.8 U	33	20	<2.3 U	45	90	1.6 J	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Acenaphthylene	100	<0.37 U	<0.38 U	7.7 J	130	87	14	6.7	11	4.8	1.2 J	1.4 J	<0.37 U	<0.37 U
Anthracene	100	<0.37 U	<0.38 U	1.5 J	150	90	4.3	21	34	6.1	1.1 J	0.68 J	<0.37 U	<0.37 U
Benzo(a)anthracene	1	<0.37 U	<0.38 U	2.4 J	58	43 J	20	19	30	11	4.3	4.4 J	<0.37 U	<0.37 U
Benzo(a)pyrene	1	<0.37 U	<0.38 U	13 J	47	37 J	18	12	23	9	2.6	5.2 J	<0.37 U	<0.37 U
Benzo(b)fluoranthene	1	<0.37 U	<0.38 U	11	42	30	28	10	18	11	3.4	6.7 J	<0.37 U	<0.37 U
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	<0.37 U	<0.38 U	11	27	17	25	<6.0 U	11	7.3	2.2	4.8 J	<0.37 U	<0.37 U
Benzo(k)fluoranthene	0.8	<0.37 U	<0.38 U	2.7 J	10	7 J	9.5	<6.0 U	<5.7 U	3.7 J	1.1 J	1.9 J	<0.37 U	<0.37 U
Chrysene	1	<0.37 U	<0.38 U	6 J	60	42 J	23	14	25	12	4.6	4 J	<0.37 U	<0.37 U
Dibenz(a,h)anthracene	0.33	<0.37 U	<0.38 U	3 J	4.7 J	3.1 J	7.8	<6.0 U	<5.7 U	1.5 J	0.49 J	0.62 J	<0.37 U	<0.37 U
Fluoranthene	100	<0.37 U	<0.38 U	1.2 J	150	110	17	39	68	22	4.9	8	<0.37 U	<0.37 U
Fluorene	30	<0.37 U	<0.38 U	<7.8 U	130	87	<2.3 U	34	54	3.5 J	0.33 J	<3.7 U	<0.37 U	<0.37 U
Indeno(1,2,3-cd)pyrene	0.5	<0.37 U	<0.38 U	9.7	20	14	20	<6.0 U	6.4	5	1.7 J	3.4 J	<0.37 U	<0.37 U
Naphthalene	12	<0.37 U	<0.38 U	<7.8 U	1000	510	<0.57 U	220	170	3.1 J	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Phenanthrene	100	<0.37 U	<0.38 U	<7.8 U	410	280	4.0	120	220	22	4.5	1.1 J	<0.37 U	<0.37 U
Pyrene	100	<0.37 U	<0.38 U	3.9 J	190	140 J	35	57	110	29 D	8.4	8	<0.37 U	<0.37 U
Total PAH	*NL*	*ND*	*ND*	*73.1*	*2841.7*	*1737.1*	*225.6*	*674.7*	*962.4*	*155.5*	*40.82*	*50.2*	*ND*	*ND*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	<0.37 U	<0.38 U	<7.8 UJ	65	41 J	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
3+4-Methylphenol	NL	<0.37 U	<0.38 U	<7.8 U	<7.3 U	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Acetophenone	NL	<0.37 U	<0.38 U	<7.8 U	0.96 J	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Benzaldehyde	NL	<0.37 U	<0.38 U	<7.8 U	<7.3 U	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
bis(2-Ethylhexyl) phthalate	NL	0.09 J	0.075 J	<7.8 UJ	<7.3 U	<7.4 UJ	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Butyl benzyl phthalate	NL	<0.37 U	<0.38 U	<7.8 UJ	<7.3 U	<7.4 UJ	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Carbazole	NL	<0.37 U	<0.38 U	<7.8 U	0.98 J	<7.4 U	NS	NS	NS	0.49 J	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Dibenzofuran	7	<0.37 U	<0.38 U	<7.8 UJ	10	6.8 J	NS	NS	NS	1.3 J	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Diethyl phthalate	NL	<0.37 U	<0.38 U	<7.8 U	<7.3 U	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Dimethyl phthalate	NL	<0.37 U	<0.38 U	<7.8 U	<7.3 U	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.71 U	<0.37 U
Di-n-butyl phthalate	NL	<0.37 U	<0.38 U	<7.8 UJ	<7.3 U	<7.4 UJ	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Phenol	0.33	<0.37 U	<0.38 U	<7.8 U	<7.3 U	<7.4 U	NS	NS	NS	<4.3 U	<1.9 U	<3.7 U	<0.37 U	<0.37 U
Total SVOC	NL	0.09	0.075	73.1	2508.64	1784.9	225.6	674.7	962.4	157.29	40.82	50.2	ND	ND

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	MGP-SB-8(10-12) 8/13/2009 10-12	MGP-SB-8(10-12)DUP 8/13/2009 10-12	MGPSB9(8-10) 8/15/2009 8-10	MGPSB9(11-12.5) 8/15/2009 11-12.5	MGPSB9(11-12.5)DUP 8/15/2009 11-12.5	MGP-SB-10(6-7) 2/25/2012 6-7	MGP-SB-10(15-16) 2/25/2012 15-16	MGP-SB-10(19-20.4) 2/25/2012 19-20.4	MGPSG5(1-2.2) 7/28/2009 1-2.2	TP-1(5-5.5) 8/11/2009 5-5.5	TP-2(1.0-1.3) 8/12/2009 1-1.3	TP-3(2.0-2.5) 8/25/2009 2-2.5	TP-3(5.0-5.5) 8/25/2009 5-5.5
Metals (mg/Kg)														
Aluminum	NL	**5840**	**6340**	**10800 J**	**7310 J**	**7310 J**	NS	NS	NS	**7500**	**10200**	**5690**	**9600**	**8880**
Antimony	NL	<2.820 U	<2.000 U	**0.82 J**	<1.880 U	**0.51 J**	NS	NS	NS	**4.240**	**0.66 J**	<2.790 U	<1.660 U	<1.800 U
Arsenic	13	<1.130 U	<0.80 U	**1.460**	<0.75 U	<0.83 U	NS	NS	NS	**537**	**3.540 J**	**6.520**	**0.80**	**0.61 J**
Barium	350	**42.8**	**49.7**	**48.6 J**	**60.9 J**	**63.0 J**	NS	NS	NS	**132**	**49.7**	**67.6**	**63.8**	**62.3**
Beryllium	7.2	**0.17 J**	**0.17 J**	**0.41**	**0.25**	**0.30**	NS	NS	NS	**0.59**	**0.42**	**0.25 J**	**0.32**	**0.29**
Cadmium	2.5	<0.34 U	**0.08 J**	<0.31 U	<0.33 U	<0.34 U	NS	NS	NS	**1.750**	**1.780**	**2.380**	**0.31**	**0.17 J**
Calcium	NL	**1460**	**1420**	**652**	**1520**	**1380**	NS	NS	NS	**2940**	**1550 J**	**65200**	**907**	**1010**
Chromium	30	**17.4 J**	**22.3 J**	**20.1 J**	**17.0 J**	**19.4 J**	NS	NS	NS	**23.3**	**15.1 J**	**23.6 J**	**18.1**	**19.9**
Cobalt	NL	**5.040**	**5.830**	**6.830**	**5.360**	**7.730**	NS	NS	NS	**7.670**	**7.800**	**5.920**	**7.800**	**7.160**
Copper	50	**13.1 J**	**15.4 J**	**15.1 J**	**15.8 J**	**21.6 J**	NS	NS	NS	**86.6**	**27.2 J**	**50.2 J**	**20.6**	**22.4**
Iron	NL	**11300**	**12400**	**18400 J**	**11800 J**	**15700 J**	NS	NS	NS	**23200**	**18000 J**	**13300**	**17000**	**15400**
Lead	63	**2.770**	**3.230**	**9.410**	**4.960**	**5.800**	NS	NS	NS	**349**	**111**	**659**	**4.690**	**10.4**
Magnesium	NL	**2530**	**3150**	**2640**	**2820**	**3050**	NS	NS	NS	**2380**	**2690 J**	**36700**	**3300**	**3210**
Manganese	1600	**295**	**291**	**292**	**282**	**325**	NS	NS	NS	**253**	**201 J**	**228**	**161**	**150**
Mercury	0.18	<0.011 UJ	<0.011 UJ	**0.026**	**0.006 J**	**0.011 J**	NS	NS	NS	**0.552**	**0.087 J+**	**0.162**	**0.012**	**0.012**
Nickel	30	**14.9**	**17.3**	**12.9**	**17.3**	**23.0**	NS	NS	NS	**19.4**	**17.2**	**19.1**	**20.5**	**20.7**
Potassium	NL	**1420**	**1540**	**1440**	**1600**	**1980**	NS	NS	NS	**1310**	**1090**	**2050**	**2480**	**2170**
Selenium	3.9	<1.130 U	<0.80 U	<1.050 U	<0.75 U	<0.83 U	NS	NS	NS	**2.34**	<1.130 UJ	<1.120 U	**0.37 J**	**0.30 J**
Silver	2	<0.56 U	<0.40 U	<0.52 U	<0.38 U	<0.41 U	NS	NS	NS	<0.61 U	<0.57 U	<0.56 U	<0.33 U	<0.36 U
Sodium	NL	**400**	**427**	**176**	**150**	**177**	NS	NS	NS	**1450**	**590 J**	**833**	**686**	**708**
Thallium	NL	<2.260 U	<1.600 U	<2.100 U	<1.500 U	<1.660 U	NS	NS	NS	<2.430 U	<2.260 UJ	<2.230 U	<1.330 U	<1.440 U
Vanadium	NL	**18.5**	**20.9**	**30.5**	**16.0**	**22.5**	NS	NS	NS	**26.8**	**22.8**	**19.8**	**23.4**	**23.3**
Zinc	109	**22.9 J**	**27.8 J**	**33.7 J**	**34.5 J**	**35.2 J**	NS	NS	NS	**205**	**939 J**	**390 J**	**29.3**	**32.6**
Cyanide (mg/Kg)														
Cyanide, Total	27	<0.564 U	<0.572 U	<0.593 U	<0.556 U	<0.560 U	NS	NS	NS	**1.73**	<0.577 U	**20**	<0.56 U	<0.55 U
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	NS	NS	NS	<0.023 U	NS	NS	NS	NS
Total PCB	0.1	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	**88**	**84**	**88**	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	TP-3(6.0-6.5) 8/25/2009 6-6.5	TP-3(8.5-9.0) 8/25/2009 8.5-9	TP-3-(11-13) 8/26/2009 11-13	TP-3BORING(5-6) 9/29/2009 5-6	TP-3BORING(6-6.5) 9/29/2009 6-6.5	TP-4(3.0-3.5) 8/27/2009 3-3.5	TP-4(5.5) 8/27/2009 5.5-5.5	MGP-TP-4(7-8.5) 9/4/2009 7-8.5	TP-5B(0.5-1.0) 8/24/2009 0.5-1	TP-5(8.0-8.5) 8/24/2009 8-8.5	TP-5(10.0-10.5) 8/24/2009 10-10.5	TP-5CONF 8/21/2009 0-0.5	TP-6(2.0-2.5) 8/14/2009 2-2.5
BTEX mg/Kg														
Benzene	0.06	<0.0058 U	<0.0056 U	<0.0060 U	3	6.9	140	210	430	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Ethylbenzene	1	0.085	<0.0056 U	<0.0060 U	170	290	670	790	1000	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Toluene	0.7	0.0065	<0.0056 U	<0.0060 U	66	160	490	620	920	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
m&p-Xylene	NL	0.026	<0.011 U	<0.012 U	240	390	550	630	800	<0.012 U	<0.011 U	<0.012 U	NS	<0.011 U
o-Xylene	NL	0.11	<0.0056 U	<0.0060 U	97	150	270	300	350	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Total Xylene (calculated)/Xylen	0.26	0.136	ND	ND	337	540	820	930	1150	ND	ND	ND	NS	ND
Total BTEX	*NL*	*0.2275*	*ND*	*ND*	*576*	*996.9*	*2120*	*2550*	*3500*	*ND*	*ND*	*ND*	*NS*	*ND*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	<0.0058 U	<0.0056 U	<0.0060 U	<0.6 U	<0.64 U	<3.2 U	<3.5 U	<6.6 U	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	0.12	<0.029 U	<0.028 U	<0.03 U	<3 U	<3.2 U	<16 U	<17 U	<33 U	<0.031 U	<0.028 U	<0.029 U	NS	<0.028 U
2-Hexanone	NL	<0.029 U	<0.028 U	<0.03 U	<3 U	<3.2 U	<16 U	<17 U	<33 U	<0.031 U	<0.028 U	<0.029 U	NS	0.012 J
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetone	0.05	<0.029 U	<0.028 U	<0.03 U	<3 U	<3.2 U	<16 U	<17 U	<33 U	<0.031 U	<0.028 U	<0.029 U	NS	<0.028 U
Bromoform	NL	<0.0058 U	<0.0056 U	<0.0060 U	<0.6 U	<0.64 U	<3.2 U	<3.5 U	<6.6 U	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Cyclohexane	NL	0.027	<0.0056 U	<0.0060 U	4.4	12	<3.2 U	<3.5 U	<6.6 U	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Isopropylbenzene	NL	0.054	<0.0056 U	<0.0060 U	17	18	74	73	85	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Methyl tert-butyl ether	0.93	<0.0058 U	<0.0056 U	<0.0060 U	<0.6 U	<0.64 U	<3.2 U	<3.5 U	<6.6 U	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Methylcyclohexane	NL	0.2	<0.0056 U	<0.0060 U	35	87 D	<3.2 U	<3.5 U	4.8 J	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Methylene chloride	0.05	<0.0058 U	<0.0056 U	<0.0060 U	<0.6 U	<0.64 U	<3.2 U	<3.5 U	<6.6 U	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	NL	<0.0058 U	<0.0056 U	<0.0060 U	1.6	3.4	<3.2 U	<3.5 U	5.4 J	<0.0061 U	<0.0057 U	<0.0058 U	NS	<0.0056 U
Tetrachloroethene	1.3	<0.0058 UJ	<0.0056 UJ	<0.0060 UJ	<0.6 U	<0.64 U	<3.2 U	<3.5 U	<6.6 U	<0.0061 UJ	<0.0057 UJ	<0.0058 U	NS	<0.0056 U
Total VOC	*NL*	*0.5085*	*ND*	*ND*	*634*	*1117.3*	*2194*	*2623*	*3595.2*	*ND*	*ND*	*ND*	*NS*	*0.012*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	2.8	<0.37 U	0.29 J	26 D	3.9	620	750	0.77	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Acenaphthene	20	0.19 J	<0.37 U	<0.39 U	0.49	0.14 J	300	350	0.97	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Acenaphthylene	100	0.045 J	<0.37 U	<0.39 U	1	0.2 J	42	48	0.25 J	<2 U	<0.37 U	<0.38 U	NS	1.3 J
Anthracene	100	0.087 J	<0.37 U	<0.39 U	0.33 J	0.086 J	130	150	0.97	<2 U	<0.37 U	<0.38 U	NS	0.46 J
Benzo(a)anthracene	1	0.13 J	<0.37 U	<0.39 U	0.54	0.12 J	74	84	0.8	0.21 J	<0.37 U	<0.38 U	NS	2.4 J
Benzo(a)pyrene	1	0.073 J	<0.37 U	<0.39 U	0.27 J	0.065 J	51	57	0.53	0.23 J	<0.37 U	<0.38 U	NS	2.5 J
Benzo(b)fluoranthene	1	0.13 J	<0.37 U	<0.39 U	0.4	0.081 J	46	47	0.45	0.29 J	<0.37 U	<0.38 U	NS	3.9
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	0.075 J	<0.37 U	<0.39 U	0.25 J	0.043 J	26	27	0.25 J	<2 U	<0.37 U	<0.38 U	NS	3.9
Benzo(k)fluoranthene	0.8	0.041 J	<0.37 U	<0.39 U	0.16 J	0.048 J	12 J	18 J	0.16 J	<2 U	<0.37 U	<0.38 U	NS	1.1 J
Chrysene	1	0.16 J	<0.37 U	<0.39 U	0.56	0.14 J	67	75	0.82	0.24 J	<0.37 U	<0.38 U	NS	2.8 J
Dibenz(a,h)anthracene	0.33	<0.38 U	<0.37 U	<0.39 U	0.041 J	<0.42 U	6 J	6.9 J	0.06 J	<2 U	<0.37 U	<0.38 U	NS	0.62 J
Fluoranthene	100	0.32 J	<0.37 U	<0.39 U	1.1	0.21 J	150	170	1.5	0.38 J	<0.37 U	<0.38 U	NS	2.6
Fluorene	30	0.22 J	<0.37 U	<0.39 U	0.93	0.19 J	160	170	1.1	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Indeno(1,2,3-cd)pyrene	0.5	0.21 J	<0.37 U	<0.39 U	0.2 J	<0.42 U	16 J	19 J	0.21 J	<2 U	<0.37 U	<0.38 U	NS	2.9
Naphthalene	12	9.2 D	<0.37 U	1	260	46	1800	2100	0.31 J	<2 U	<0.37 U	<0.38 U	NS	0.59 J
Phenanthrene	100	0.7	<0.37 U	0.065 J	2.6	0.56	440	510	4.2	<2 U	<0.37 U	0.045 J	NS	1.5 J
Pyrene	100	0.44	<0.37 U	0.04 J	1.6	0.31 J	170	190	2.7	0.4 J	0.038 J	<0.38 U	NS	4.6 J
Total PAH	*NL*	*14.821*	*ND*	*1.395*	*296.471*	*52.093*	*4110*	*4771.9*	*16.05*	*1.75*	*0.038*	*0.045*	*NS*	*31.17*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	0.3 J	<0.37 U	<0.39 U	1.7	0.3 J	59	69	0.11 J	<2 U	<0.37 U	<0.38 U	NS	<1.9 UJ
3+4-Methylphenol	NL	<0.38 U	<0.37 U	<0.39 U	0.099 J	0.046 J	3 J	3.9 J	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Acetophenone	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Benzaldehyde	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
bis(2-Ethylhexyl) phthalate	NL	<0.38 U	0.097 J	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 UJ
Butyl benzyl phthalate	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 UJ
Carbazole	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	2.7 J	2.8 J	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Dibenzofuran	7	<0.38 U	<0.37 U	<0.39 U	0.046 J	<0.42 U	19 J	22 J	0.095 J	<2 U	<0.37 U	<0.38 U	NS	<1.9 UJ
Diethyl phthalate	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Dimethyl phthalate	NL	<0.38 U	<0.57 U	<0.39 U	<0.44 U	<0.5 U	<21 U	<22 U	0.56 U	<2 U	<0.47 U	<0.38 U	NS	<1.9 U
Di-n-butyl phthalate	NL	<0.38 U	<0.37 U	<0.39 U	<0.4 U	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 UJ
Phenol	0.33	<0.38 U	<0.37 U	<0.39 U	0.052 J	<0.42 U	<21 U	<22 U	<0.43 U	<2 U	<0.37 U	<0.38 U	NS	<1.9 U
Total SVOC	NL	15.121	0.097	1.395	298.368	52.439	4193.7	4869.6	16.815	1.75	0.038	0.385	NS	31.17

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	TP-3(6.0-6.5) 8/25/2009 6-6.5	TP-3(8.5-9.0) 8/25/2009 8.5-9	TP-3-(11-13) 8/26/2009 11-13	TP-3BORING(5-6) 9/29/2009 5-6	TP-3BORING(6-6.5) 9/29/2009 6-6.5	TP-4(3.0-3.5) 8/27/2009 3-3.5	TP-4(5.5) 8/27/2009 5.5-5.5	MGP-TP-4(7-8.5) 9/4/2009 7-8.5	TP-5B(0.5-1.0) 8/24/2009 0.5-1	TP-5(8.0-8.5) 8/24/2009 8-8.5	TP-5(10.0-10.5) 8/24/2009 10-10.5	TP-5CONF 8/21/2009 0-0.5	TP-6(2.0-2.5) 8/14/2009 2-2.5
Metals (mg/Kg)														
Aluminum	NL	**10100**	**7240**	**6830**	**11900**	**11200**	**12300**	**16500**	**6990**	**8500**	**12000**	**4840**	NS	**9620 J**
Antimony	NL	<1.680 U	<1.680 U	<1.590 U	**0.52 J**	**0.68 J**	<3.170 U	**1.060 J**	**3.210 J**	<1.980 U	<1.670 U	<1.540 U	NS	**0.78 J**
Arsenic	13	**0.43 J**	**0.39 J**	**0.98**	<0.83 U	<1.080 U	**3.280**	**2.070**	**14.3**	**8.910**	**0.89**	**0.27 J**	NS	**39.7**
Barium	350	**77.3**	**49.0**	**52.6**	**80.9**	**77.6**	**59.3**	**71.1**	**53.5**	**83.3**	**73.6**	**33.9**	NS	**182 J**
Beryllium	7.2	**0.34**	**0.26**	**0.22**	**0.47**	**0.56**	**0.52**	**0.50**	**0.34 J**	**0.34**	**0.45**	**0.19**	NS	**0.47**
Cadmium	2.5	**0.43**	**0.08 J**	**0.17 J**	**0.50**	**0.17 J**	**0.19 J**	**1.650**	**1.460**	**0.37**	**0.11 J**	**0.11 J**	NS	**0.90**
Calcium	NL	**1450**	**809**	**1270**	**5700**	**1590**	**2980**	**1300**	**5340**	**9450**	**749**	**863**	NS	**25200**
Chromium	30	**20.8**	**14.9**	**16.8**	**24.8**	**22.4**	**17.8**	**78.4**	**13.5**	**18.4**	**24.1**	**8.510**	NS	**25.9 J**
Cobalt	NL	**9.470**	**6.270**	**7.150**	**9.610**	**8.070**	**6.520**	**17.0**	**7.590**	**5.900**	**7.930**	**5.060**	NS	**7.580**
Copper	50	**22.1**	**16.6**	**32.0**	**25.0**	**16.1**	**39.4**	**22.1**	**63.9**	**24.6**	**21.2**	**16.6**	NS	**38.7 J**
Iron	NL	**17500**	**12800**	**11800**	**18100**	**17300**	**17300**	**24000**	**13400**	**13300**	**15500**	**10000**	NS	**21600 J**
Lead	63	**9.240**	**3.400**	**5.180**	**115**	**8.750**	**109**	**83.8**	**393**	**43.9**	**5.340**	**2.670**	NS	**268**
Magnesium	NL	**3930**	**2450**	**3330**	**4810**	**3410**	**3380**	**7280**	**4820**	**7000**	**3550**	**1370**	NS	**8450**
Manganese	1600	**234**	**284**	**198**	**331**	**219**	**341**	**644**	**244**	**343**	**192**	**142**	NS	**345**
Mercury	0.18	**0.009 J**	**0.005 J**	**0.014**	**0.006 J**	**0.013 J**	**0.193**	**0.171**	**0.446**	**0.213**	**0.006 J**	<0.012 U	NS	**4.3**
Nickel	30	**23.5**	**17.1**	**18.2**	**23.3**	**16.2**	**16.7**	**73**	**12.5**	**13.7**	**22.2**	**18.8**	NS	**18.8**
Potassium	NL	**3070**	**1650**	**2180**	**2370**	**1100**	**1040**	**1320**	**1300**	**938**	**2550**	**912**	NS	**3950**
Selenium	3.9	<0.67 U	**0.46 J**	<0.63 U	<0.83 U	**0.54 J**	**1.910**	**1.670**	**7.21**	<0.79 U	**0.41 J**	**0.28 J**	NS	<1.060 U
Silver	2	<0.34 U	<0.34 U	<0.32 U	<0.42 U	<0.54 U	<0.63 U	<0.53 U	**0.47 J**	<0.40 U	<0.33 U	<0.31 U	NS	<0.53 U
Sodium	NL	**607**	**315**	**434**	**380**	**533**	**512**	**556**	**1800**	**704**	**279**	**138**	NS	**578**
Thallium	NL	<1.350 U	<1.340 U	<1.270 U	<1.670 U	<2.150 U	<2.540 U	<2.120 U	**2.300 J**	<1.580 U	**0.27 J**	<1.230 U	NS	<2.110 U
Vanadium	NL	**32.6**	**19.0**	**21.1**	**30.6**	**31.0**	**25.8**	**28.3**	**18.3**	**20.7**	**26.9**	**14.9**	NS	**33.0**
Zinc	109	**32.6**	**23.4**	**27.9**	**41.0**	**31.4**	**105**	**442**	**169**	**70.1**	**28.8**	**15.2**	NS	**186 J**
Cyanide (mg/Kg)														
Cyanide, Total	27	<0.58 U	<0.57 U	<0.59 U	<0.600 U	<0.641 U	**1.730**	**0.988**	**4.080**	<0.61 U	<0.57 U	<0.57 U	NS	<0.565 UJ
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**642**	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	<0.023 UJ	<0.023 UJ	NS	NS	NS	NS	NS	NS
Total PCB	0.1	NS	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	TP-6(2.0-2.5) DUP 8/14/2009 2-2.5	TP-6(5.5-5.8) 8/14/2009 5.5-5.8	TP7(5.5-6.0) 8/20/2009 5.5-6	TP8(3.5-4.0) 8/20/2009 3.5-4	TP8(6.5-7.0) 8/20/2009 6.5-7	MW-1, S2(DRILL) 8/7/1996	MW-1, S2(DRILL) 8/6/1996	MW-4D-A 8/28/2006 5-5.5	MW-4D-B 8/28/2006 6.5-7	MW-4D-C 8/28/2006 7.5-8	SB-1, S1(HE) 7/26/1996	SB-1, S1(HE) 8/7/1996	SB-2(HE) 7/26/1996
BTEX mg/Kg														
Benzene	0.06	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	ND	ND	*<0.576 U*	*<0.592 U*	*<0.611 U*	ND	0.14	0.012
Ethylbenzene	1	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	2.9	27	17.9	57.5	0.32 J	1.3	0.22	0.019
Toluene	0.7	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	1.4	ND	9.72	31.9	0.34 J	0.43	0.13	0.008
m&p-Xylene	NL	<0.011 U	<0.012 U	<0.011 U	<0.011 U	<0.011 U	NS	NS	NS	NS	NS	NS	NS	NS
o-Xylene	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	NS	NS	NS	NS	NS	NS	NS	NS
Total Xylene (calculated)/Xylen	0.26	ND	ND	ND	ND	ND	19	99	168	386	2.56	3.8	0.84	0.062
Total BTEX	*NL*	*ND*	*ND*	*ND*	*ND*	*ND*	*23.3*	*126*	*195.62*	*475.4*	*3.22*	*5.53*	*1.33*	*0.101*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6.1	0.43	0.2
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.2	0.18	0.072
2-Butanone	0.12	<0.027 U	<0.03 U	<0.028 U	<0.029 U	<0.028 U	ND	ND	NS	NS	NS	NS	NS	NS
2-Hexanone	NL	0.017 J	<0.03 U	<0.028 U	<0.029 U	<0.028 U	ND	ND	NS	NS	NS	NS	NS	NS
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.28	ND	0.006
Acetone	0.05	<0.027 U	<0.03 U	<0.028 U	<0.029 U	<0.028 U	ND	ND	NS	NS	NS	NS	NS	NS
Bromoform	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	ND	ND	<1.15 U	<1.18 U	0.611	NS	NS	NS
Cyclohexane	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	NS	NS	NS	NS	NS	NS	NS	NS
Isopropylbenzene	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	NS	NS	NS	NS	NS	0.89	0.028	0.027
Methyl tert-butyl ether	0.93	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	ND	ND	NS	NS	NS	ND	0.019	0.006
Methylcyclohexane	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	NS	NS	NS	NS	NS	NS	NS	NS
Methylene chloride	0.05	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	ND	ND	*<1.15 U*	*<1.18 U*	*<0.611 U*	NS	NS	NS
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.77	0.07	0.073
Naphthalene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.5	0.68	0.07
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4.2	0.2	0.3
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.1	0.008	0.019
Styrene	NL	<0.0054 U	<0.0060 U	<0.0056 U	<0.0057 U	<0.0056 U	ND	ND	NS	NS	NS	NS	NS	NS
Tetrachloroethene	1.3	<0.0054 U	<0.0060 U	<0.0056 UJ	<0.0057 UJ	<0.0056 UJ	ND	ND	<1.15 U	<1.18 U	<0.611 U	NS	NS	NS
Total VOC	*NL*	*0.017*	*ND*	*ND*	*ND*	*ND*	*23.3*	*126*	*195.62*	*475.4*	*3.831*	*21.57*	*2.945*	*0.874*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	<3.5 U	0.22 J	<3.7 U	<0.38 U	<0.37 U	NS	NS	2.92	10.9	1.08	NS	NS	NS
Acenaphthene	20	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	ND	ND	0.206	0.424	0.165	ND	ND	ND
Acenaphthylene	100	1.6 J	0.47 J	<3.7 U	0.62	<0.37 U	NS	NS	0.234	1.02	<0.221 U	NS	NS	NS
Anthracene	100	0.57 J	0.47 J	<3.7 U	0.16 J	<0.37 U	0.63	ND	0.387	0.804	<0.221 U	ND	ND	ND
Benzo(a)anthracene	1	3.5 J	2.2 J	*<3.7 U*	0.79	0.16 J	ND	ND	0.986	1.32	<0.221 U	ND	ND	ND
Benzo(a)pyrene	1	3.3 J	1.6 J	*<3.7 U*	1.3	0.13 J	0.42	ND	0.366	0.514	<0.221 U	ND	ND	ND
Benzo(b)fluoranthene	1	5.1	2.1	*<3.7 U*	1.9	0.22 J	ND	ND	0.442	0.578	<0.221 U	ND	ND	ND
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	4.5	1.3 J	<3.7 U	2.4	0.13 J	ND	ND	0.417	0.457	<0.221 U	ND	ND	ND
Benzo(k)fluoranthene	0.8	1.4 J	0.73 J	*<3.7 U*	0.49	0.079 J	ND	ND	0.53	0.672	<0.221 U	ND	ND	ND
Chrysene	1	4.2 J	2.3 J	*<3.7 U*	0.94	0.17 J	ND	ND	1.12	1.53	0.166	ND	ND	ND
Dibenz(a,h)anthracene	0.33	0.75 J	0.26 J	*<3.7 U*	0.29 J	*<0.37 U*	ND	ND	<0.211 U	<0.222 U	<0.221 U	ND	ND	ND
Fluoranthene	100	3.5 J	3.2	<3.7 U	0.72	0.35 J	0.96	ND	1.99	2.75	0.172	ND	ND	ND
Fluorene	30	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	0.69	ND	0.828	1.74	0.192	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.5	3.5 J	1.1 J	*<3.7 U*	1.4	0.087 J	ND	ND	0.269	0.356	<0.221 U	ND	ND	ND
Naphthalene	12	0.49 J	0.32 J	<3.7 U	0.039 J	<0.37 U	6.8	5.1	7.4	35.4	2.32	ND	ND	ND
Phenanthrene	100	1.4 J	2.7	<3.7 U	0.25 J	0.2 J	2.8	ND	4.38	7.3	0.632	ND	ND	ND
Pyrene	100	6.4 J	5.1 J	<3.7 U	1.5	0.32 J	1.5	ND	2.88	4.17	0.313	ND	53	ND
Total PAH	*NL*	*40.21*	*24.07*	*ND*	*12.799*	*1.846*	*7*	*ND*	*25.355*	*69.935*	*5.04*	*ND*	*53*	*ND*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	<3.5 UJ	<2 UJ	<3.7 U	<0.38 U	<0.37 U	NS	NS	NS	NS	NS	NS	NS	NS
3+4-Methylphenol	NL	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	NS	NS	NS	NS	NS	NS	NS	NS
Acetophenone	NL	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	NS	NS	NS	NS	NS	NS	NS	NS
Benzaldehyde	NL	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	NL	<3.5 UJ	<2 UJ	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	0.137	NS	NS	NS
Butyl benzyl phthalate	NL	<3.5 UJ	<2 UJ	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Carbazole	NL	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Dibenzofuran	7	<3.5 UJ	<2 UJ	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Diethyl phthalate	NL	<3.5 U	<2 U	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Dimethyl phthalate	NL	<3.5 U	<2 U	<3.7 U	<0.86 U	<0.84 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Di-n-butyl phthalate	NL	<3.5 UJ	<2 UJ	<3.7 U	<0.38 U	<0.37 U	NS	NS	<0.211 U	<0.222 U	<0.221 U	NS	NS	NS
Phenol	0.33	*<3.5 U*	*<2 U*	*<3.7 U*	0.038 J	*<0.37 U*	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	NL	40.21	24.07	ND	13.697	2.686	7	ND	25.355	69.935	5.177	ND	53	ND

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	TP-6(2.0-2.5) DUP 8/14/2009 2-2.5	TP-6(5.5-5.8) 8/14/2009 5.5-5.8	TP7(5.5-6.0) 8/20/2009 5.5-6	TP8(3.5-4.0) 8/20/2009 3.5-4	TP8(6.5-7.0) 8/20/2009 6.5-7	MW-1, S2(DRILL) 8/7/1996	MW-1, S2(DRILL) 8/6/1996	MW-4D-A 8/28/2006 5-5.5	MW-4D-B 8/28/2006 6.5-7	MW-4D-C 8/28/2006 7.5-8	SB-1, S1(HE) 7/26/1996	SB-1, S1(HE) 8/7/1996	SB-2(HE) 7/26/1996
Metals (mg/Kg)														
Aluminum	NL	**10000 J**	**7830 J**	**12600**	**14200**	**12200**	NS	NS	NS	NS	NS	NS	NS	NS
Antimony	NL	**1.460 J**	**1.020 J**	<2.540 U	**0.82 J**	**0.71 J**	ND	ND	NS	NS	NS	NS	NS	NS
Arsenic	13	**25.7**	**39.2**	**0.56 J**	**2.710**	<1.110 U	**2.23**	**2.22**	NS	NS	NS	NS	NS	NS
Barium	350	**183 J**	**146 J**	**84.7**	**59.5**	**94.9**	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	7.2	**0.46**	**0.51**	**0.46**	**0.57**	**0.43**	**1.85**	**1.45**	NS	NS	NS	NS	NS	NS
Cadmium	2.5	**0.68 J**	**0.66 J**	<0.31 U	<0.30 U	<0.33 U	ND	ND	NS	NS	NS	NS	NS	NS
Calcium	NL	**22100**	**25100**	**827**	**4070**	**1390**	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	30	**26.3 J**	**17.8 J**	**23.0**	**24.1**	**32.6**	**12.1**	**10.7**	NS	NS	NS	NS	NS	NS
Cobalt	NL	**7.120**	**7.930**	**8.380**	**6.800**	**8.420**	NS	NS	NS	NS	NS	NS	NS	NS
Copper	50	**32.1 J**	**27.4 J**	**20.0**	**42.4**	**26.2**	**10.5**	**19.3**	NS	NS	NS	NS	NS	NS
Iron	NL	**17300 J**	**17100 J**	**18900**	**20600**	**18800**	NS	NS	NS	NS	NS	NS	NS	NS
Lead	63	**305**	**169**	**6.470**	**18.0**	**4.270**	**11.4**	**9.06**	**11.5**	**11.2**	**9.39**	NS	NS	NS
Magnesium	NL	**8390**	**10900**	**4180**	**3660**	**4650**	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	1600	**324**	**337**	**369**	**189**	**453**	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	0.18	**3**	**0.586**	**0.033**	**0.118**	<0.011 U	ND	ND	NS	NS	NS	NS	NS	NS
Nickel	30	**18.4**	**33.2**	**19.4**	**16.9**	**27.7**	**11.4**	**16.5**	NS	NS	NS	NS	NS	NS
Potassium	NL	**4380**	**2410**	**3030**	**1400**	**3580**	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	3.9	<1.040 U	**1.110**	<1.020 U	<1.000 U	<1.110 U	ND	ND	NS	NS	NS	NS	NS	NS
Silver	2	<0.52 U	<0.48 U	<0.51 U	<0.50 U	<0.55 U	ND	ND	NS	NS	NS	NS	NS	NS
Sodium	NL	**557**	**656**	**254**	**1710**	**520**	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	NL	<2.080 U	**0.59 J**	**0.86 J**	**1.130 J**	**0.84 J**	ND	ND	NS	NS	NS	NS	NS	NS
Vanadium	NL	**32.3**	**25.5**	**33.0**	**32.8**	**33.3**	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	109	**161 J**	**126 J**	**37.4**	**36.7**	**47.7**	**21.1**	**26.7**	NS	NS	NS	NS	NS	NS
Cyanide (mg/Kg)														
Cyanide, Total	27	**0.706 J**	<0.602 UJ	<0.554 U	**0.906**	<0.558 U	NS	NS	NS	NS	NS	NS	NS	NS
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	ND	ND	NS	NS	NS	ND	ND	ND
Total PCB	0.1	NS	NS	NS	NS	NS	ND	ND	NS	NS	NS	ND	ND	ND
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-2, S1(HE) 8/6/1996	SB-2, S2(DRILL) 8/6/1996	SB-3, S1(HE) 7/26/1996	SB-3, S1(HE) 8/7/1996	SB-3, S2(DRILL) 8/5/1996	SB-3, S2(DRILL) 8/7/1996	SB-4, S1(HE) 7/26/1996	SB-4, S1(HE) 8/6/1996	SB-4, S2(DRILL) 8/5/1996	SB-4, S2(DRILL) 8/6/1996	SB-4, S55(HE) 7/26/1996	SB-HL-1-A 8/22/2006 3-3.5	SB-HL-1-B 8/23/2006 6.5-7
BTEX mg/Kg														
Benzene	0.06	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND	*<0.617 U*	*<0.28 U*
Ethylbenzene	1	20	4.9	0.56	2.5	5.5	ND	35	0.51	14	5.1	57	<0.617 U	<0.56 U
Toluene	0.7	1.4	0.57	0.56	ND	ND	ND	3.6	0.26	1.2	1.1	6.9	<0.617 U	<0.56 U
m&p-Xylene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
o-Xylene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Xylene (calculated)/Xylen	0.26	97	29	1.4	2.4	29	ND	160	2	72	31	260	*<0.617 U*	2.88
Total BTEX	*NL*	*118.4*	*34.47*	*2.52*	*4.9*	*34.5*	*ND*	*198.6*	*2.88*	*87.2*	*37.2*	*323.9*	*ND*	*2.88*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trimethylbenzene	3.6	66	NS	4.7	11	NS	NS	110	1.3	NS	NS	160	NS	NS
1,3,5-Trimethylbenzene	8.4	21	NS	0.97	0.46	NS	NS	30	0.28	NS	NS	46	NS	NS
2-Butanone	0.12	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
2-Hexanone	NL	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
4-Isopropyltoluene	NL	ND	NS	ND	0.33	NS	NS	0.93	0.032	NS	NS	1.4	NS	NS
Acetone	0.05	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Bromoform	NL	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	<0.617 U	<0.56 U
Cyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Isopropylbenzene	NL	5.2	NS	0.29	0.97	NS	NS	5.6	0.1	NS	NS	9.1	NS	NS
Methyl tert-butyl ether	0.93	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	NS	NS
Methylcyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene chloride	0.05	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	*<0.617 U*	*<0.56 U*
n - Propylbenzene	3.9	8.7	NS	0.84	2.2	NS	NS	15	0.21	NS	NS	24	NS	NS
Naphthalene	12	8.3	NS	1.4	1.3	NS	NS	11	0.18	NS	NS	12	NS	NS
n-Butylbenzene	12	27	NS	2.1	3.6	NS	NS	32	0.39	NS	NS	50	NS	NS
sec-Butylbenzene	11	1.4	NS	0.13	0.67	NS	NS	1.4	0.053	NS	NS	2.3	NS	NS
Styrene	NL	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Tetrachloroethene	1.3	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	<0.617 U	<0.56 U
Total VOC	*NL*	*256*	*34.47*	*12.95*	*25.43*	*34.5*	*ND*	*404.53*	*5.435*	*87.2*	*37.2*	*628.7*	*ND*	*2.88*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	4.18
Acenaphthene	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.189
Acenaphthylene	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	<0.211 U
Anthracene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.193
Benzo(a)anthracene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.301
Benzo(a)pyrene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.197
Benzo(b)fluoranthene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.234
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.13
Benzo(k)fluoranthene	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.17
Chrysene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.296
Dibenz(a,h)anthracene	0.33	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	<0.211 U
Fluoranthene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.173	0.622
Fluorene	30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.266
Indeno(1,2,3-cd)pyrene	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.128
Naphthalene	12	ND	ND	ND	ND	2.2	ND	ND	ND	2.1	2.1	ND	<0.235 U	<0.211 U
Phenanthrene	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.144	0.722
Pyrene	100	0.51	ND	ND	0.62	ND	ND	ND	ND	ND	ND	ND	<0.235 U	0.64
Total PAH	*NL*	*0.51*	*ND*	*ND*	*0.62*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.317*	*8.268*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3+4-Methylphenol	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acetophenone	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzaldehyde	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	0.482
Butyl benzyl phthalate	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	0.493
Carbazole	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	<0.211 U
Dibenzofuran	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	<0.211 U
Diethyl phthalate	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	<0.211 U
Dimethyl phthalate	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	<0.211 U
Di-n-butyl phthalate	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.235 U	0.138
Phenol	0.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	NL	0.51	ND	ND	0.62	ND	ND	ND	ND	ND	ND	ND	0.317	9.381

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

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Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-2, S1(HE) 8/6/1996	SB-2, S2(DRILL) 8/6/1996	SB-3, S1(HE) 7/26/1996	SB-3, S1(HE) 8/7/1996	SB-3, S2(DRILL) 8/5/1996	SB-3, S2(DRILL) 8/7/1996	SB-4, S1(HE) 7/26/1996	SB-4, S1(HE) 8/6/1996	SB-4, S2(DRILL) 8/5/1996	SB-4, S2(DRILL) 8/6/1996	SB-4, S55(HE) 7/26/1996	SB-HL-1-A 8/22/2006 3-3.5	SB-HL-1-B 8/23/2006 6.5-7
Metals (mg/Kg)														
Aluminum	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Antimony	NL	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Arsenic	13	NS	**2**	NS	NS	**2.4**	**5.94**	NS	NS	**3.7**	**4.44**	NS	NS	NS
Barium	350	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	7.2	NS	**3.69**	NS	NS	**1.92**	**3.1**	NS	NS	**2.25**	**2.34**	NS	NS	NS
Cadmium	2.5	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Calcium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	30	NS	**30.3**	NS	NS	**19.8**	**31.5**	NS	NS	**22.4**	**25.1**	NS	NS	NS
Cobalt	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	50	NS	**54.6**	NS	NS	**24.9**	**37.2**	NS	NS	**25**	**25.8**	NS	NS	NS
Iron	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	63	NS	**15.1**	NS	NS	**14.5**	**12.3**	NS	NS	**17.1**	**15.3**	NS	**9.63**	**8.86**
Magnesium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	1600	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	0.18	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Nickel	30	NS	**33.6**	NS	NS	**24.3**	**36.4**	NS	NS	**27.6**	**29.8**	NS	NS	NS
Potassium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	3.9	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Silver	2	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Sodium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	NL	NS	ND	NS	NS	ND	ND	NS	NS	ND	ND	NS	NS	NS
Vanadium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	109	NS	**80.3**	NS	NS	**50.9**	**52.7**	NS	NS	**62.9**	**42.7**	NS	NS	NS
Cyanide (mg/Kg)														
Cyanide, Total	27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Total PCB	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-HL-1-BD 8/23/2006 6.5-7	SB-HL-2-A 8/22/2006 5-5.5	SB-HL-5-A 8/21/2006 2-2.5	SB-HL-6-A 8/23/2006 6.5-7	SB-SA-10-10 10/22/2004 7.5-8	SB-SA10-12 10/21/2004 11.5-12	SB-SA10-13 10/22/2004 7.5-8	SB-SA10-W1-A 8/24/2006 6.5-7	SB-SA10-W1-B 8/24/2006 9-9.5	SB-SA11-17A 10/21/2004 6.5-7	SB-SA11-17B 10/21/2004 9.5-10	SB-SA11-A1-A 8/18/2006 6-6.5	SB-SA11-B1-A 8/18/2006 8.5-9
BTEX mg/Kg														
Benzene	0.06	<0.281 U	<0.553 U	<0.613 U	<0.27 U	0.00887	<0.0021 U	0.41	<0.057 U	<0.057 U	<0.0024 U	<0.0021 U	<0.0062 U	0.355
Ethylbenzene	1	<0.562 U	<0.553 U	<0.613 U	<0.54 U	0.0234	<0.011 U	12.2	<0.115 U	<0.114 U	<0.012 U	<0.011 U	<0.0062 U	18.9
Toluene	0.7	<0.562 U	<0.553 U	<0.613 U	<0.54 U	0.0128	<0.011 U	0.77	<0.115 U	<0.114 U	<0.012 U	<0.011 U	<0.0062 U	2.46
m&p-Xylene	NL	NS	NS	NS	NS	0.0863	<0.021 U	46.6	NS	NS	<0.024 U	<0.021 U	NS	NS
o-Xylene	NL	NS	NS	NS	NS	0.0348	<0.011 U	4.22	NS	NS	<0.012 U	<0.011 U	NS	NS
Total Xylene (calculated)/Xylen	0.26	3.05	<0.553 U	<0.613 U	2.78	0.1211	ND	50.82	<0.115 U	<0.114 U	ND	ND	<0.0062 U	25
Total BTEX	NL	3.05	ND	ND	2.78	0.16617	ND	64.2	ND	ND	ND	ND	ND	46.715
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	<0.011 U	<0.011 U	<0.59 U	NS	NS	<0.012 U	<0.011 U	NS	NS
1,2,4-Trichlorobenzene	NL	NS	NS	NS	NS	<0.011 U	<0.011 U	<0.59 U	<0.115 U	<0.114 U	<0.012 U	<0.011 U	NS	NS
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	0.0875	<0.011 U	43.6	NS	NS	<0.012 U	<0.011 U	NS	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	0.025	<0.011 U	11.1	NS	NS	<0.012 U	<0.011 U	NS	NS
2-Butanone	0.12	NS	NS	NS	NS	<0.057 U	<0.054 U	<3 U	<0.115 U	<0.114 U	<0.06 U	<0.053 U	NS	NS
2-Hexanone	NL	NS	NS	NS	NS	<0.057 U	<0.054 U	<3 U	NS	NS	<0.06 U	<0.053 U	NS	NS
4-Isopropyltoluene	NL	NS	NS	NS	NS	<0.011 U	<0.011 U	<0.59 U	NS	NS	<0.012 U	<0.011 U	NS	NS
Acetone	0.05	NS	NS	NS	NS	0.234	<0.054 U	<3 U	<0.287 U	<0.285 U	<0.06 U	<0.053 U	NS	NS
Bromoform	NL	<0.562 U	<0.553 U	<0.613 U	<0.54 U	<0.011 U	<0.011 U	<0.59 U	NS	NS	<0.012 U	<0.011 U	<0.0062 U	<0.618 U
Cyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Isopropylbenzene	NL	NS	NS	NS	NS	<0.011 U	<0.011 U	1.94	NS	NS	<0.012 U	<0.011 U	NS	NS
Methyl tert-butyl ether	0.93	NS	NS	NS	NS	<0.011 U	<0.011 U	<0.59 U	NS	NS	<0.012 U	<0.011 U	NS	NS
Methylcyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene chloride	0.05	<0.562 U	<0.553 U	<0.613 U	<0.54 U	<0.011 U	<0.011 U	<0.59 U	<0.115 U	<0.114 U	<0.012 U	<0.011 U	<0.0062 U	<0.618 U
n - Propylbenzene	3.9	NS	NS	NS	NS	<0.011 U	<0.011 U	5.58	NS	NS	<0.012 U	<0.011 U	NS	NS
Naphthalene	12	NS	NS	NS	NS	0.165	<0.011 U	10.4	NS	NS	<0.012 U	<0.011 U	NS	NS
n-Butylbenzene	12	NS	NS	NS	NS	<0.011 U	<0.011 U	2.34	NS	NS	<0.012 U	<0.011 U	NS	NS
sec-Butylbenzene	11	NS	NS	NS	NS	<0.011 U	<0.011 U	0.642	NS	NS	<0.012 U	<0.011 U	NS	NS
Styrene	NL	NS	NS	NS	NS	<0.011 U	<0.011 U	<0.59 U	NS	NS	<0.012 U	<0.011 U	NS	NS
Tetrachloroethene	1.3	<0.562 U	<0.553 U	1.45	<0.54 U	<0.011 U	<0.011 U	<0.59 U	<0.115 U	<0.114 U	<0.012 U	<0.011 U	<0.0062 U	<0.618 U
Total VOC	NL	3.05	ND	1.45	2.78	0.40017	ND	66.14	ND	ND	ND	ND	ND	46.715
PAH (mg/Kg)						0.67767		139.802						
2-Methylnaphthalene	NL	4.67	<0.218 U	0.829	1.37	<0.56 U	<0.53 U	5.48	<0.038 U	<0.039 U	<0.56 U	<0.56 U	7.65	1.45
Acenaphthene	20	0.2	<0.218 U	<0.24 U	<0.212 U	<0.56 U	<0.53 U	<0.58 U	0.492	<0.045 U	<0.56 U	<0.56 U	4.88	1.98
Acenaphthylene	100	<0.214 U	<0.218 U	<0.24 U	<0.212 U	<0.56 U	<0.53 U	<0.58 U	0.187	<0.032 U	<0.56 U	<0.56 U	1.14	0.473
Anthracene	100	0.174	<0.218 U	0.206	0.158	<0.56 U	<0.53 U	<0.58 U	1.01	<0.066 U	<0.56 U	<0.56 U	2.42	1.72
Benzo(a)anthracene	1	0.331	<0.218 U	0.434	<0.212 U	<0.31 U	<0.3 U	0.436	1.09	<0.032 U	<0.31 U	<0.31 U	1.62	1.11
Benzo(a)pyrene	1	0.213	<0.218 U	0.35	<0.212 U	<0.36 U	<0.34 U	<0.37 U	0.933	<0.032 U	<0.36 U	<0.36 U	1.3	0.863
Benzo(b)fluoranthene	1	0.191	<0.218 U	0.578	<0.212 U	NS	NS	NS	0.533	<0.073 U	NS	NS	0.726	0.446
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	<0.67 U	<0.64 U	<0.69 U	NS	NS	<0.67 U	<0.67 U	NS	NS
Benzo(ghi)perylene	100	0.137	<0.218 U	0.435	<0.212 U	<0.33 U	<0.32 U	<0.35 U	0.567	<0.148 U	<0.34 U	<0.33 U	0.784	0.504
Benzo(k)fluoranthene	0.8	0.215	<0.218 U	0.327	<0.212 U	NS	NS	NS	0.569	<0.054 U	NS	NS	0.729	0.565
Chrysene	1	0.28	<0.218 U	1.87	<0.212 U	<0.34 U	<0.33 U	0.416	1.21	<0.054 U	<0.35 U	<0.34 U	1.53	1.09
Dibenz(a,h)anthracene	0.33	<0.214 U	<0.218 U	0.346	<0.212 U	<0.36 U	<0.34 U	<0.37 U	<0.101 U	<0.103 U	<0.36 U	<0.36 U	0.182	0.16
Fluoranthene	100	0.688	<0.218 U	0.684	<0.212 U	<0.56 U	<0.53 U	0.886	1.86	<0.039 U	<0.56 U	<0.56 U	4.15	2.99
Fluorene	30	0.243	<0.218 U	<0.24 U	<0.212 U	<0.56 U	<0.53 U	<0.58 U	0.621	<0.039 U	<0.56 U	<0.56 U	3.9	1.97
Indeno(1,2,3-cd)pyrene	0.5	<0.214 U	<0.218 U	0.343	<0.212 U	<0.37 U	<0.35 U	<0.38 U	0.405	<0.126 U	<0.37 U	<0.37 U	0.555	0.379
Naphthalene	12	<0.214 U	<0.218 U	0.734	<0.212 U	1.08	<0.53 U	10.7	<0.029 U	<0.03 U	<0.56 U	<0.56 U	19.3	1.35
Phenanthrene	100	0.73	<0.218 U	1.18	0.235	<0.56 U	<0.53 U	1.25	4.66	<0.056 U	<0.56 U	<0.56 U	10.7	7.27
Pyrene	100	0.718	<0.218 U	0.63	0.135	<0.56 U	<0.53 U	1.34	3.26	<0.034 U	<0.56 U	<0.56 U	4.59	3.27
Total PAH	NL	8.79	ND	8.946	1.898	1.08	ND	20.508	17.397	ND	ND	ND	66.156	27.59
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3+4-Methylphenol	NL	NS	NS	NS	NS	<2.2 U	<2.1 U	<2.3 U	NS	NS	<2.2 U	<2.2 U	NS	NS
Acetophenone	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzaldehyde	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	NL	0.429	<0.218 U	<0.24 U	0.703	<0.56 U	<0.53 U	<0.58 U	<0.055 U	<0.056 U	<0.56 U	<0.56 U	<0.244 U	<0.236 U
Butyl benzyl phthalate	NL	0.237	<0.218 U	<0.24 U	0.547	<0.56 U	<0.53 U	<0.58 U	<0.086 U	<0.088 U	<0.56 U	<0.56 U	<0.244 U	<0.236 U
Carbazole	NL	<0.214 U	<0.218 U	<0.24 U	<0.212 U	NS	NS	NS	NS	NS	NS	NS	<0.244 U	<0.236 U
Dibenzofuran	7	<0.214 U	<0.218 U	<0.24 U	<0.212 U	NS	NS	NS	<0.027 U	<0.028 U	NS	NS	0.302	0.15
Diethyl phthalate	NL	<0.214 U	<0.218 U	<0.24 U	0.252	<0.56 U	<0.53 U	<0.58 U	<0.034 U	<0.034 U	<0.56 U	<0.56 U	<0.244 U	<0.236 U
Dimethyl phthalate	NL	<0.214 U	<0.218 U	<0.24 U	<0.212 U	<0.56 U	<0.53 U	<0.58 U	<0.036 U	<0.036 U	<0.56 U	<0.56 U	<0.244 U	<0.236 U
Di-n-butyl phthalate	NL	0.155	<0.218 U	<0.24 U	0.16	<0.56 U	<0.53 U	<0.58 U	<0.048 U	<0.049 U	<0.56 U	<0.56 U	<0.244 U	<0.236 U
Phenol	0.33	NS	NS	NS	NS	<0.56 U	<0.53 U	<0.58 U	<0.069 U	<0.071 U	<0.56 U	<0.56 U	NS	NS
Total SVOC	NL	9.611	ND	8.946	3.56	1.08	ND	20.508	17.397	ND	ND	ND	66.458	27.74

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-HL-1-BD 8/23/2006 6.5-7	SB-HL-2-A 8/22/2006 5-5.5	SB-HL-5-A 8/21/2006 2-2.5	SB-HL-6-A 8/23/2006 6.5-7	SB-SA-10-10 10/22/2004 7.5-8	SB-SA10-12 10/21/2004 11.5-12	SB-SA10-13 10/22/2004 7.5-8	SB-SA10-W1-A 8/24/2006 6.5-7	SB-SA10-W1-B 8/24/2006 9-9.5	SB-SA11-17A 10/21/2004 6.5-7	SB-SA11-17B 10/21/2004 9.5-10	SB-SA11-A1-A 8/18/2006 6-6.5	SB-SA11-B1-A 8/18/2006 8.5-9
Metals (mg/Kg)														
Aluminum	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Antimony	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	350	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	7.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	2.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	63	**8.61**	**4.99**	**11.3**	**5.24**	NS	NS	NS	**3.95**	**8.59**	NS	NS	**10.8**	**5.2**
Magnesium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	1600	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vanadium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	109	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (mg/Kg)														
Cyanide, Total	27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR(	NL	NS	NS	NS	NS	<53.3 U	<57 U	**4140**	NS	NS	<60.6 U	<57.3 U	NS	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	<53.3 U	<57 U	**1270**	NS	NS	<60.6 U	<57.3 U	NS	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PCB	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-SA11-C1-A 8/18/2006 10-10.5	SB-SA11-NE2-A 8/24/2006 11-11.5	SB-SA11-NW1-A 8/18/2006 2-2.5	SB-SA11-S1-A 8/18/2006 12-12.5	SB-SA11-SW1-A 8/24/2006 5-5.5	SB-SA11-SW1-B 8/24/2006 9.5-10	SB-SA9-6 10/20/2004 2.5-3	SB-SA9-5 10/21/2004 4-4.5	SB-SA9-7 10/21/2004 6.5-7	SB-SA9-9 10/21/2004 7-7.5	SB-SA9-11 10/22/2004 7-7.5	SB-SA9-8 10/21/2004 7.5-8	SB-SA9-E1-A 8/18/2006 10.5-11
BTEX mg/Kg														
Benzene	0.06	<0.0056 U	**0.103**	<0.00625 U	<0.006 U	<0.054 U	<0.056 U	<0.0021 U	<0.0024 U	***<0.12 U***	***<0.11 U***	**0.445**	<0.0022 U	<0.006 U
Ethylbenzene	1	<0.0056 U	<0.112 U	<0.00625 U	<0.006 U	<0.109 U	<0.113 U	<0.010 U	<0.012 U	**4.44**	**14**	**18.6**	<0.011 U	<0.006 U
Toluene	0.7	<0.0056 U	<0.112 U	<0.00625 U	<0.006 U	<0.109 U	<0.113 U	<0.010 U	<0.012 U	<0.58 U	<0.56 U	**1.66**	<0.011 U	<0.006 U
m&p-Xylene	NL	NS	NS	NS	NS	NS	NS	<0.021 U	<0.024 U	**6.65**	**23.9**	**95**	<0.022 U	NS
o-Xylene	NL	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**3.97**	**1.58**	**32.4**	<0.011 U	NS
Total Xylene (calculated)/Xylen	0.26	<0.0056 U	<0.112 U	<0.00625 U	<0.006 U	<0.109 U	<0.113 U	ND	ND	**10.62**	**25.5**	**127.4**	ND	<0.006 U
Total BTEX	*NL*	*ND*	***0.103***	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	***15.06***	***39.48***	***148.105***	*ND*	*ND*
VOC (mg/Kg)														
1,2,3-Trichlorobenzene	NL	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	NS
1,2,4-Trichlorobenzene	NL	NS	<0.112 U	NS	NS	<0.109 U	<0.113 U	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	NS
1,2,4-Trimethylbenzene	3.6	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**39.7**	**74.4**	**69.2**	<0.011 U	NS
1,3,5-Trimethylbenzene	8.4	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**6.57**	**8.08**	**16.6**	<0.011 U	NS
2-Butanone	0.12	NS	<0.112 U	NS	NS	<0.109 U	<0.113 U	<0.052 U	<0.06 U	***<2.9 U***	***<2.8 U***	***<2.8 U***	<0.055 U	NS
2-Hexanone	NL	NS	NS	NS	NS	NS	NS	<0.052 U	<0.06 U	<2.9 U	<2.8 U	<2.8 U	<0.055 U	NS
4-Isopropyltoluene	NL	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**1.24**	**0.641**	**0.683**	<0.011 U	NS
Acetone	0.05	NS	***<0.281 U***	NS	NS	***<0.271 U***	***<0.282 U***	***<0.052 U***	***<0.06 U***	***<2.9 U***	***<2.8 U***	***<2.8 U***	**0.138**	NS
Bromoform	NL	<0.0056 U	NS	<0.00625 U	<0.006 U	NS	NS	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	<0.006 U
Cyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Isopropylbenzene	NL	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**3.36**	**4.2**	**4.55**	<0.011 U	NS
Methyl tert-butyl ether	0.93	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	NS
Methylcyclohexane	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Methylene chloride	0.05	<0.0056 U	***<0.112 U***	<0.00625 U	<0.006 U	***<0.109 U***	***<0.113 U***	<0.010 U	<0.012 U	***<0.58 U***	***<0.56 U***	***<0.56 U***	<0.011 U	<0.006 U
n - Propylbenzene	3.9	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**3.75**	**8.94**	**8.74**	<0.011 U	NS
Naphthalene	12	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	**113**	**88.7**	**11.4**	**0.0168**	NS
n-Butylbenzene	12	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	<0.58 U	**3.56**	**3.75**	<0.011 U	NS
sec-Butylbenzene	11	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	<0.58 U	**0.995**	**1.08**	<0.011 U	NS
Styrene	NL	NS	NS	NS	NS	NS	NS	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	NS
Tetrachloroethene	1.3	<0.0056 U	<0.112 U	<0.00625 U	<0.006 U	<0.109 U	<0.113 U	<0.010 U	<0.012 U	<0.58 U	<0.56 U	<0.56 U	<0.011 U	<0.006 U
Total VOC	*NL*	*ND*	***0.103***	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	***182.68***	***228.996***	***264.108***	***0.1548***	*ND*
PAH (mg/Kg)														
2-Methylnaphthalene	NL	<0.215 U	<0.02 U	<0.243 U	<0.229 U	**4.65**	<0.02 U	<0.57 U	<0.6 U	**15.5**	**3.11**	**4.1**	<0.53 U	<0.234 U
Acenaphthene	20	<0.215 U	<0.023 U	<0.243 U	<0.229 U	**0.862**	<0.023 U	<0.57 U	<0.6 U	**0.701**	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Acenaphthylene	100	<0.215 U	<0.016 U	<0.243 U	<0.229 U	**0.169**	<0.016 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Anthracene	100	**0.176**	<0.034 U	<0.243 U	<0.229 U	**0.336**	<0.034 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Benzo(a)anthracene	1	**0.413**	<0.016 U	**0.188**	<0.229 U	<0.031 U	<0.016 U	**1.16**	<0.33 U	**0.65**	<0.31 U	<0.31 U	<0.3 U	<0.234 U
Benzo(a)pyrene	1	**0.272**	<0.016 U	**0.174**	<0.229 U	<0.031 U	<0.016 U	**0.428**	<0.38 U	<0.37 U	<0.36 U	<0.36 U	<0.34 U	<0.234 U
Benzo(b)fluoranthene	1	**0.384**	<0.037 U	**0.2**	<0.229 U	<0.069 U	<0.037 U	NS	NS	NS	NS	NS	NS	<0.234 U
Benzo(b,k)fluoranthene	NL	NS	NS	NS	NS	NS	NS	**1.44**	<0.72 U	<0.7 U	<0.66 U	<0.67 U	<0.64 U	NS
Benzo(ghi)perylene	100	**0.205**	<0.075 U	**0.159**	<0.229 U	<0.141 U	<0.076 U	**0.661**	<0.36 U	<0.35 U	<0.33 U	<0.34 U	<0.32 U	<0.234 U
Benzo(k)fluoranthene	0.8	**0.228**	<0.027 U	<0.243 U	<0.229 U	<0.051 U	<0.027 U	NS	NS	NS	NS	NS	NS	<0.234 U
Chrysene	1	**0.408**	<0.027 U	**0.188**	<0.229 U	**0.199**	<0.027 U	**1.34**	<0.37 U	**0.784**	<0.34 U	<0.35 U	<0.33 U	<0.234 U
Dibenz(a,h)anthracene	0.33	<0.215 U	<0.052 U	<0.243 U	<0.229 U	<0.098 U	<0.053 U	***<0.36 U***	***<0.38 U***	***<0.37 U***	***<0.36 U***	***<0.36 U***	***<0.34 U***	<0.234 U
Fluoranthene	100	**1.14**	<0.02 U	**0.408**	<0.229 U	**0.177**	<0.02 U	**0.98**	<0.6 U	**1.27**	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Fluorene	30	<0.215 U	<0.02 U	<0.243 U	<0.229 U	**1.05**	<0.02 U	<0.57 U	<0.6 U	**0.855**	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Indeno(1,2,3-cd)pyrene	0.5	**0.19**	<0.064 U	<0.243 U	<0.229 U	<0.121 U	<0.065 U	**0.51**	<0.39 U	<0.38 U	<0.37 U	<0.37 U	<0.35 U	<0.234 U
Naphthalene	12	<0.215 U	<0.015 U	<0.243 U	<0.229 U	**0.213**	<0.015 U	<0.57 U	<0.6 U	**70.1**	**3.34**	**6.99**	<0.53 U	<0.234 U
Phenanthrene	100	**0.812**	**0.16**	<0.243 U	<0.229 U	**2.91**	<0.029 U	<0.57 U	<0.6 U	**3.44**	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Pyrene	100	**0.628**	**0.093**	**0.299**	<0.229 U	**0.505**	<0.018 U	**1.51**	<0.6 U	**1.64**	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Total PAH	*NL*	***4.856***	***0.253***	***1.616***	*ND*	***11.071***	*ND*	***8.029***	*ND*	***94.94***	***6.45***	***11.09***	*ND*	*ND*
SVOC (mg/Kg)														
1,1'-Biphenyl	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3+4-Methylphenol	NL	NS	NS	NS	NS	NS	NS	<2.3 U	<2.4 U	<2.3 U	<2.2 U	<2.2 U	<2.1 U	NS
Acetophenone	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzaldehyde	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	NL	<0.215 U	<0.028 U	<0.243 U	<0.229 U	**0.331**	<0.029 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Butyl benzyl phthalate	NL	<0.215 U	<0.044 U	<0.243 U	<0.229 U	<0.084 U	<0.045 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Carbazole	NL	<0.215 U	NS	<0.243 U	<0.229 U	NS	NS	NS	NS	NS	NS	NS	NS	<0.234 U
Dibenzofuran	7	<0.215 U	<0.014 U	<0.243 U	<0.229 U	**0.411**	<0.014 U	NS	NS	NS	NS	NS	NS	<0.234 U
Diethyl phthalate	NL	<0.215 U	<0.017 U	<0.243 U	<0.229 U	<0.033 U	<0.018 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Dimethyl phthalate	NL	<0.215 U	<0.018 U	<0.243 U	<0.229 U	<0.035 U	<0.019 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Di-n-butyl phthalate	NL	<0.215 U	<0.025 U	<0.243 U	<0.229 U	<0.047 U	<0.025 U	<0.57 U	<0.6 U	<0.58 U	<0.55 U	<0.56 U	<0.53 U	<0.234 U
Phenol	0.33	NS	<0.036 U	NS	NS	<0.068 U	<0.036 U	***<0.57 U***	***<0.6 U***	***<0.58 U***	***<0.55 U***	***<0.56 U***	***<0.53 U***	NS
Total SVOC	NL	**4.856**	**0.253**	**1.616**	ND	**11.813**	ND	**6.589**	ND	**94.94**	**6.45**	**11.09**	ND	ND

Table 5-3
Subsurface Soil Analytical Data
Remedial Investigation
Rye Gas Works Former MGPSite, Rye, New York

AECOM

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	SB-SA11-C1-A 8/18/2006 10-10.5	SB-SA11-NE2-A 8/24/2006 11-11.5	SB-SA11-NW1-A 8/18/2006 2-2.5	SB-SA11-S1-A 8/18/2006 12-12.5	SB-SA11-SW1-A 8/24/2006 5-5.5	SB-SA11-SW1-B 8/24/2006 9.5-10	SB-SA9-6 10/20/2004 2.5-3	SB-SA9-5 10/21/2004 4-4.5	SB-SA9-7 10/21/2004 6.5-7	SB-SA9-9 10/21/2004 7-7.5	SB-SA9-11 10/22/2004 7-7.5	SB-SA9-8 10/21/2004 7.5-8	SB-SA9-E1-A 8/18/2006 10.5-11
Metals (mg/Kg)														
Aluminum	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Antimony	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	350	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Beryllium	7.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	2.5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	63	**4.65**	**7.12**	**139**	**4.33**	**6.46**	**2.42**	NS	NS	NS	NS	NS	NS	**2.08**
Magnesium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	1600	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	0.18	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	30	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	3.9	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Thallium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Vanadium	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	109	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (mg/Kg)														
Cyanide, Total	27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fuel Oil (mg/Kg)														
Gasoline Range Organics (GR	NL	NS	NS	NS	NS	NS	NS	<55.8 U	<61.4 U	**4150**	**2560**	**2520**	<55.5 U	NS
Petroleum Contaminant	NL	NS	NS	NS	NS	NS	NS	<55.8 U	<61.4 U	<58.3 U	<56.4 U	<53.8 U	<55.5 U	NS
TPH (SGT-HEM)	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PCBs (mg/Kg)														
Aroclor 1260	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PCB	0.1	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Percent Solids														
Solids, percent	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
BTEX mg/Kg													
Benzene	0.06	112	21	91	16	16	550	MGP-SB-3(1.5-2.0)080509	0.0033	MGPSG5(1-2.2)072809	64.15137476	-	2.8
Ethylbenzene	1	112	46	66	33	0	1200	MGP-SB-3(1.5-2.0)080509	0.0045	MGP-MW-104S(9-11)082509	99.14404348	-	0.617
Toluene	0.7	112	34	78	21	1	920	MGP-TP-4(7-8.5)090409	0.0025	MGP-MW-4DD(5-7)081909	89.09513235	-	3
m&p-Xylene	NL	76	27	49	0	0	1000	MGP-SB-3(1.5-2.0)080509	0.0037	MGP-MW-104S(9-11)082509	150.5853333	0.001	0.024
o-Xylene	NL	76	26	50	0	0	490	MGP-SB-3(1.5-2.0)080509	0.019	MGP-SB-2(5-6)081309	70.58633846	0.001	0.012
Total Xylene (calculated)/Xylen	0.26	63	25	38	19	0	1490	MGP-SB-3(1.5-2.0)080509	0.011	MGP-SB-6(7-8)081209	233.861952	-	-
Total BTEX	*NL*	*112*	*52*	*60*	*0*	*0*	*3910*	*MGP-SB-3(1.5-2.0)080509*	*0.0033*	*MGPSG5(1-2.2)072809*	*312.2218379*	-	-
VOC (mg/Kg)													
1,2,3-Trichlorobenzene	NL	24	1	23	0	0	0.0031	DUP-5-031012	0.0031	DUP-5-031012	0.0031	0.0021	1.2
1,2,4-Trichlorobenzene	NL	81	2	79	0	0	1.7	MGPSBDUPLICATE-081609	0.0023	DUP-5-031012	0.85115	0.0021	6.6
1,2,4-Trimethylbenzene	3.6	20	14	6	10	0	160	SB-4, S55(HE)072696	0.0875	SB-SA-10-10-102204	41.90839286	0.01	0.012
1,3,5-Trimethylbenzene	8.4	20	14	6	5	0	46	SB-4, S55(HE)072696	0.025	SB-SA-10-10-102204	10.18121429	0.01	0.012
2-Butanone	0.12	88	1	87	0	18	0.013	MGPSG5(1-2.2)072809	0.013	MGPSG5(1-2.2)072809	0.013	-	33
2-Hexanone	NL	83	3	80	0	0	0.017	TP-DUP-081409	0.0087	MGPSB9(8-10)081509	0.012566667	-	33
4-Isopropyltoluene	NL	20	9	11	0	0	1.4	SB-4, S55(HE)072696	0.006	SB-2(HE)072696	0.615777778	-	0.59
Acetone	0.05	88	4	84	4	31	0.234	SB-SA-10-10-102204	0.1	MGPSG5(1-2.2)072809	0.1605	-	33
Bromoform	NL	98	1	97	0	0	0.611	MW-4D-C-082806	0.611	MW-4D-C-082806	0.611	-	6.6
Cyclohexane	NL	65	10	55	0	0	21	MGP-MW-4DD(7-8)081909	0.0054	MGP-SB-2(5-6)081309	4.18713	0.0021	6.6
Isopropylbenzene	NL	85	35	50	0	0	95	MGP-SB-3(1.5-2.0)080509	0.0036	MGP-MW-104S(9-11)082509	11.99955714	0.001	0.012
Methyl tert-butyl ether	0.93	92	3	89	0	6	0.019	SB-1, S1(HE)080796	0.006	SB-2(HE)072696	0.011666667	-	6.6
Methylcyclohexane	NL	65	18	47	0	0	87	TP-3BORING(6-6.5)092909	0.0071	MGP-MW-104S(9-11)082509	10.56022778	0.0021	3.5
Methylene chloride	0.05	103	4	99	0	33	0.0029	MGP-SB-8(10-12)081309	0.0024	MGP-SB-7(6-7.3)081309	0.00265	-	6.6
n - Propylbenzene	3.9	20	13	7	6	0	24	SB-4, S55(HE)072696	0.07	SB-1, S1(HE)080796	6.067153846	0.01	0.012
Naphthalene	12	20	15	5	2	0	113	SB-SA9-7-102104	0.0168	SB-SA9-8-102104	17.34078667	0.01	0.012
n-Butylbenzene	12	20	12	8	3	0	50	SB-4, S55(HE)072696	0.2	SB-1, S1(HE)080796	10.78666667	0.01	0.58
sec-Butylbenzene	11	20	12	8	0	0	2.3	SB-4, S55(HE)072696	0.008	SB-1, S1(HE)080796	0.816416667	0.01	0.58
Styrene	NL	83	8	75	0	0	5.4	MGP-TP-4(7-8.5)090409	0.018	MW12D(13-14.1)112008	2.669625	-	3.5
Tetrachloroethene	1.3	103	2	101	2	5	1.5	MGPSB5(11-13)081609	1.45	SB-HL-5-A-082106	1.475	-	6.6
Total VOC	*NL*	*112*	*61*	*51*	*0*	*0*	*4007.56*	*MGP-SB-3(1.5-2.0)080509*	*0.0024*	*MGP-SB-7(6-7.3)081309*	*278.1747831*	-	-
PAH (mg/Kg)													
2-Methylnaphthalene	NL	96	46	50	0	0	1600	MGP-SB-3(1.5-2.0)080509	0.11	DUPLICATE-112008	92.95345652	0.02	7.8
Acenaphthene	20	112	37	75	11	0	850	MGP-SB-3(1.5-2.0)080509	0.045	MGP-SB-6(7-8)081209	52.73362162	-	7.8
Acenaphthylene	100	96	44	52	2	0	130	MGPSB9(11-12.5)081509	0.045	TP-3(6.0-6.5)082509	12.32527273	0.016	3.8
Anthracene	100	112	50	62	4	0	330	MGP-SB-3(1.5-2.0)080509	0.058	MW-110D(1.5-2.2)010412	21.13482	-	3.8
Benzo(a)anthracene	1	112	55	57	31	3	240	MGP-SB-3(1.5-2.0)080509	0.093	MGP-MW105D(5-7)010509	12.83294545	-	3.8
Benzo(a)pyrene	1	112	54	58	25	3	190	MGP-SB-3(1.5-2.0)080509	0.065	TP-3BORING(6-6.5)092909	10.38590741	-	3.8
Benzo(b)fluoranthene	1	101	53	48	27	3	160	MGP-SB-3(1.5-2.0)080509	0.041	MGP-MW-1015-081809	9.611264151	-	3.8
Benzo(b,k)fluoranthene	NL	11	1	10	0	0	1.44	SB-SA9-6-102004	1.44	SB-SA9-6-102004	1.44	0.64	0.72
Benzo(ghi)perylene	100	112	51	61	0	0	100	MGP-SB-3(1.5-2.0)080509	0.043	TP-3BORING(6-6.5)092909	6.255588235	-	6
Benzo(k)fluoranthene	0.8	101	47	54	18	7	44	MGP-SB-3(1.5-2.0)080509	0.039	MGP-MW-105S(5-6.5)090409	3.091276596	-	6
Chrysene	1	112	58	54	34	2	230	MGP-SB-3(1.5-2.0)080509	0.1	MGP-MW-105S(5-6.5)090409	11.70943103	-	3.8
Dibenz(a,h)anthracene	0.33	112	32	80	18	39	18	MGP-SB-3(1.5-2.0)080509	0.041	TP-3BORING(5-6)092909	1.9426875	-	6
Fluoranthene	100	112	61	51	5	0	560	MGP-SB-3(1.5-2.0)080509	0.055	MGP-SB-6(7-8)081209	25.15483607	-	3.8
Fluorene	30	112	42	70	9	0	610	MGP-SB-3(1.5-2.0)080509	0.058	MW13D(6-7.2)112008	33.85938095	-	7.8
Indeno(1,2,3-cd)pyrene	0.5	112	48	64	25	5	62	MGP-SB-3(1.5-2.0)080509	0.042	MGP-MW-105S(5-6.5)090409	4.5845	-	6
Naphthalene	12	112	52	60	18	0	5700	MGP-SB-3(1.5-2.0)080509	0.039	TP8(3.5-4.0)082009	253.6185	-	7.8
Phenanthrene	100	112	62	50	8	0	1500	MGP-SB-3(1.5-2.0)080509	0.045	TP-5(10.0-10.5)082409	65.90546774	-	7.8
Pyrene	100	112	69	43	6	0	750	MGP-SB-3(1.5-2.0)080509	0.038	TP-5(8.0-8.5)082409	29.77321739	-	3.7
Total PAH	*NL*	*112*	*74*	*38*	*0*	*0*	*13074*	*MGP-SB-3(1.5-2.0)080509*	*0.038*	*TP-5(8.0-8.5)082409*	*444.3877027*	-	-
SVOC (mg/Kg)													
1,1'-Biphenyl	NL	52	20	32	0	0	190	MGP-SB-3(1.5-2.0)080509	0.049	MGP-MW-105S(5-6.5)090409	24.6847	0.011	7.8
3+4-Methylphenol	NL	63	4	59	0	0	3.9	TP-4(5.5)-082709	0.046	TP-3BORING(6-6.5)092909	1.76125	0.012	43
Acetophenone	NL	52	2	50	0	0	0.96	MGPSB9(11-12.5)081509	0.051	MGP-SB-2(5-6)081309	0.5055	0.011	43
Benzaldehyde	NL	52	1	51	0	0	0.077	MGP-MW-1015-081809	0.077	MGP-MW-1015-081809	0.077	0.013	43
bis(2-Ethylhexyl) phthalate	NL	83	19	64	0	0	0.703	SB-HL-6-A-082306	0.038	MGP-MW-1015-081809	0.167	0.028	43
Butyl benzyl phthalate	NL	83	3	80	0	0	0.547	SB-HL-6-A-082306	0.237	SB-HL-1-BD-082306	0.425666667	0.024	43
Carbazole	NL	67	6	61	0	0	7.2	MGP-SB-3(1.5-2.0)080509	0.24	MGP-MW-108S(12-14)092809	2.401666667	0.029	7.8
Dibenzofuran	7	72	19	53	4	2	58	MGP-SB-3(1.5-2.0)080509	0.046	TP-3BORING(5-6)092909	6.824736842	0.012	7.8
Diethyl phthalate	NL	83	4	79	0	0	0.252	SB-HL-6-A-082306	0.074	MGP-MW-9DD(14-15)081909	0.1195	0.013	43
Dimethyl phthalate	NL	83	4	79	0	0	0.86	TP8(3.5-4.0)082009	0.34	TP-5(10.0-10.5)082409	0.6275	0.011	43
Di-n-butyl phthalate	NL	83	7	76	0	0	0.16	SB-HL-6-A-082306	0.043	MGP-MW-4DD(5-7)081909	0.103	0.018	43
Phenol	0.33	68	3	65	0	56	0.052	TP-3BORING(5-6)092909	0.038	TP8(3.5-4.0)082009	0.047333333	0.011	43
Total SVOC	NL	112	78	34	0	0	13329.2	MGP-SB-3(1.5-2.0)080509	0.038	TP-5(8.0-8.5)082409	429.9994615	-	-

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Sample ID Sample Date Depth	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives	Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
Metals (mg/Kg)													
Aluminum	NL	48	48	0	0	0	16500	TP-4(5.5)-082709	3920	MGP-MW-108S(14-15)092809	8768.75	-	-
Antimony	NL	55	22	33	0	0	4.24	MGPSG5(1-2.2)072809	0.39	MGP-MW-108S(12-14)092809	1.141363636	-	3.17
Arsenic	13	55	43	12	8	0	537	MGPSG5(1-2.2)072809	0.27	TP-5(10.0-10.5)082409	22.87953488	0.75	1.13
Barium	350	48	48	0	0	0	202	MGPSB5(16-17)081609	24.5	MGP-SB-4(6-8)081309	75.39375	-	-
Beryllium	7.2	55	55	0	0	0	3.69	SB-2, S2(DRILL)080696	0.13	MGP-MW-108S(14-15)092809	0.601818182	-	-
Cadmium	2.5	55	25	30	0	0	2.38	TP-2(1.0-1.3)081209	0.08	TP-3(8.5-9.0)082509	0.7	-	0.36
Calcium	NL	48	48	0	0	0	65200	TP-2(1.0-1.3)081209	467	MGP-MW-1015-081809	6260.958333	-	-
Chromium	30	55	55	0	7	0	78.4	TP-4(5.5)-082709	8.16	MGP-SB-4(6-8)081309	21.05109091	-	-
Cobalt	NL	48	48	0	0	0	17	TP-4(5.5)-082709	2.8	MGP-MW-9DD(5-7)081909	7.162291667	-	-
Copper	50	55	55	0	6	0	86.6	MGPSG5(1-2.2)072809	7.6	MGP-MW-108S(14-15)092809	26.16418182	-	-
Iron	NL	48	48	0	0	0	29600	MGPSB5(10-11)081609	7030	MGP-SB-4(6-8)081309	16362.29167	-	-
Lead	63	83	83	0	19	0	100000000	SB-4, S1(HE)080696	2.01	MGP-SB-4(6-8)081309	4819328.199	-	-
Magnesium	NL	48	48	0	0	0	36700	TP-2(1.0-1.3)081209	1090	MGP-SB-4(6-8)081309	5305.416667	-	-
Manganese	1600	48	48	0	0	0	644	TP-4(5.5)-082709	108	MGP-MW-104S(9-11)082509	272.0208333	-	-
Mercury	0.18	55	43	12	8	0	4.3	TP-6(2.0-2.5)081409	0.003	MGP-SB-7(6-7.3)081309	0.268953488	-	0.012
Nickel	30	55	55	0	5	0	73	TP-4(5.5)-082709	6.26	MGP-MW-9DD(5-7)081909	20.10036364	-	-
Potassium	NL	48	48	0	0	0	11200	MGPSB5(16-17)081609	467	MGP-MW-9DD(5-7)081909	2169.395833	-	-
Selenium	3.9	48	14	34	2	0	7.21	MGP-TP-4(7-8.5)090409	0.28	TP-5(10.0-10.5)082409	1.579285714	0.63	1.21
Silver	2	55	2	53	0	0	0.47	MGP-TP-4(7-8.5)090409	0.39	MGP-SB-3(1.5-2.0)080509	0.43	-	0.63
Sodium	NL	48	48	0	0	0	1800	MGP-TP-4(7-8.5)090409	131	MGP-MW-1015-081809	516.125	-	-
Thallium	NL	55	9	46	0	0	2.3	MGP-TP-4(7-8.5)090409	0.27	TP-5(8.0-8.5)082409	1.092222222	-	2.62
Vanadium	NL	48	48	0	0	0	49.6	MGPSB5(16-17)081609	10.6	MGP-SB-4(6-8)081309	24.23958333	-	-
Zinc	109	55	55	0	11	0	939	TP-1(5-5.5)081109	15.2	TP-5(10.0-10.5)082409	89.17090909	-	-
Cyanide (mg/Kg)													
Cyanide, Total	27	48	10	38	0	0	20	TP-2(1.0-1.3)081209	0.706	TP-DUP-081409	3.999	0.545	0.641
Fuel Oil (mg/Kg)													
Gasoline Range Organics (GR	NL	11	4	7	0	0	4150	SB-SA9-7-102104	2520	SB-SA9-11-102204	3342.5	53.3	61.4
Petroleum Contaminant	NL	11	1	10	0	0	1270	SB-SA10-13 -102204	1270	SB-SA10-13 -102204	1270	53.3	61.4
TPH (SGT-HEM)	NL	1	1	0	0	0	642	TP-5-082109CON-082109	642	TP-5-082109CON-082109	642	-	-
PCBs (mg/Kg)													
Aroclor 1260	NL	24	2	22	0	0	0.065	MGP-MW-105S(2-4)081309	0.054	MGP-MW105S (1.5-2)081309	0.0595	-	0.023
Total PCB	0.1	24	2	22	0	0	0.065	MGP-MW-105S(2-4)081309	0.054	MGP-MW105S (1.5-2)081309	0.0595	-	-
Percent Solids													
Solids, percent	NL	9	9	0	0	0	93	MW-110D(1.5-2.2)010412	83	MW-113D(7-8.5)010612	87.55555556	-	-

Table 5-4
NAPL Well Gauging
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

Date Gauged	NAPL Thickness		
	MGP-TP-4	MGP-MW-108D	MGP-MW-104D
4/1/2012	none	none	none
4/4/2012	none	none	none
4/9/2012	none	none	smear
4/13/2012	none	none	smear
4/19/2012	none	none	smear
4/24/2012	none	none	smear
5/1/2012	none	none	0.6
5/14/2012	smear	none	2.5
5/31/2012	smear	none	3
12/7/2013	smear	none	6

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Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-01 8/7/1996 MW-1/SB-1-080796 ?-6	MW-01 5/11/2004 MW-1-051104 ?-6	MW-01 11/16/2004 MW-1-111604 ?-6	MW-01 3/29/2005 MW-1-032905 ?-6	MW-01 6/3/2005 MW-1-060305 ?-6	MW-01 12/22/2008 MW-1-122208 ?-6	MW-01 3/9/2010 MW-1-030910 ?-6	MW-02 8/7/1996 MW-2-080796 ?-5.25	MW-02 5/11/2004 MW-2-051104 ?-5.25	MW-02 11/16/2004 MW-2-111604 ?-5.25	MW-02 3/29/2005 MW-2-032905 ?-5.25	MW-02 6/3/2005 MW-2-060305 ?-5.25	MW-02 12/21/2005 MW-2-122105 ?-5.25	MW-02 3/10/2010 MW-2-031010 ?-5.25
BTEX (ug/L)			OVERBURDEN							OVERBURDEN						
Benzene	71-43-2	1	5300	639	852	959	857	62.9	170	ND	<0.7 U	<0.7 U	<1 U	<1.0 U	<5.0 U	1.8
Ethylbenzene	100-41-4	5	450	19.6	26	21.9	<25 U	1.53	12	2200	<5 U	<5 U	<1 U	2.96	22.8	20
m&p-Xylene	1330-20-7-m,p	NL	NS	39.7	45.9	36.2	111	3.27	24	NS	<10 U	<10 U	<1 U	<1.0 U	20.2	13
o-Xylene	95-47-6	NL	NS	36.3	43.5	50	86.9	2.50	19	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	5.3
Toluene	108-88-3	5	2800	69.7	96.9	92.8	157	4.74	31	ND	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	1.1
Xylenes (total)	1330-20-7	5	3900	76	89.4	86.2	197.9	5.77	43	7900	ND	ND	ND	ND	20.2	18.3
Total BTEX	CALC-BTEX	NL	12450	804.3	1064.3	1159.9	1211.9	74.94	256	10100	ND	ND	ND	2.96	43	41.2
VOC (ug/L)																
1,1-Dichloroethane	75-34-3	5	ND	<5 U	<5 U	NS	NS	NS	<1.0 U	ND	<5 U	<5 U	NS	NS	NS	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	<5 U	<5 U	5.24	<25 U	1.36	NS	NS	11.1	<5 U	<1 U	2.94	10.9	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	<5 U	<5 U	1.33	<25 U	<0.82 U	NS	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	NS
1,4-Dioxane	123-91-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	ND	<25 U	<25 U	NS	NS	NS	4.7 J	ND	<25 U	<25 U	NS	NS	NS	8.8
4-Isopropyltoluene	99-87-6	NL	NS	<5 U	<5 U	<1 U	<25 U	<0.81 U	NS	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	NS
Acetone	67-64-1	50	ND	<25 U	<25 U	NS	NS	NS	12 J	ND	<25 U	<25 U	NS	NS	NS	<5.0 UJ
Acrylonitrile	107-13-1	NL	ND	<25 U	<25 U	NS	NS	NS	NS	ND	<25 U	<25 U	NS	NS	NS	NS
Chloroethane	75-00-3	5	ND	<5 U	<5 U	NS	NS	NS	2.2 J	ND	<5 U	<5 U	NS	NS	NS	<1.0 U
Chloromethane	74-87-3	5	ND	<5 U	<5 U	NS	NS	NS	<1.0 U	ND	<5 U	<5 U	NS	NS	NS	<1.0 U
Cyclohexane	110-82-7	NL	NS	NS	NS	NS	NS	NS	0.91 J	NS	NS	NS	NS	NS	NS	6.8
Dichlorodifluoromethane	75-71-8	5	ND	<5 U	<5 U	NS	NS	NS	<1.0 U	ND	<5 U	<5 U	NS	NS	NS	<1.0 U
Isopropylbenzene	98-82-8	5	NS	<5 U	<5 U	<1 U	<25 U	<0.86 U	<1.0 U	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	2.3
Methyl tert-butyl ether	1634-04-4	10	ND	<5 U	<5 U	<1 U	<25 U	<0.88 U	<1.0 U	ND	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	<1.0 U
Methylcyclohexane	108-87-2	NL	NS	NS	NS	NS	NS	NS	<1.0 U	NS	NS	NS	NS	NS	NS	3.2
Naphthalene	91-20-3	10	NS	34.3	45.3	36	195	2.18	16 NJ	NS	<5 U	<5 U	<2 U	<2.0 U	<5.0 U	35 NJ
n-Butylbenzene	104-51-8	5	NS	<5 U	<5 U	<1 U	<25 U	<0.83 U	NS	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	NS
n-Propylbenzene	103-65-1	5	NS	<5 U	<5 U	<1 U	<25 U	<0.81 U	NS	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	NS
sec-Butylbenzene	135-98-8	5	NS	<5 U	<5 U	<1 U	<25 U	<0.78 U	NS	NS	<5 U	<5 U	<1 U	<1.0 U	<5.0 U	NS
Styrene	100-42-5	5	ND	<5 U	<5 U	NS	NS	NS	<1.0 U	ND	<5 U	<5 U	NS	NS	NS	<1.0 U
Total VOC	CALC-VOC	NL	12450	914.6	1199	1288.67	1604.8	78.48	318.81	10100	11.1	ND	ND	5.9	74.1	80.6
PAH (ug/L)																
2-Methylnaphthalene	91-57-6	NL	NS	<5.8 U	<5 U	<12.5 U	<7.4 U	NS	<12 U	NS	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Acenaphthene	83-32-9	20	ND	8.05	8.79	<12.5 U	<7.4 U	<1.02 U	1.8 J	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Acenaphthylene	208-96-8	NL	NS	7.85	<5 U	<12.5 U	<7.4 U	<0.93 U	<12 U	NS	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Anthracene	120-12-7	50	ND	<5.8 U	<5 U	<12.5 U	<7.4 U	<0.84 U	<12 U	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Benzo(a)anthracene	56-55-3	0.002	ND	4	<2 U	<12.5 U	<7.4 U	<1.03 U	<12 U	ND	<2.6 U	<2 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Benzo(a)pyrene	50-32-8	NL	ND	8.4	<2 U	<12.5 U	<7.4 U	<0.91 U	<12 U	ND	<2.6 U	<2 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Benzo(b,k)fluoranthene	BENZOBK	NL	NS	7.24	<4 U	<12.5 U	NS	NS	NS	NS	<5.1 U	<4 U	<11.1 U	NS	NS	NS
Benzo(ghi)perylene	191-24-2	NL	ND	6.64	<2 U	<12.5 U	<7.4 U	<1.05 U	<12 U	ND	<2.6 U	<2 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Chrysene	218-01-9	0.002	ND	3.7	<1 U	<12.5 U	<7.4 U	<0.95 U	<12 U	ND	<1.3 U	<1 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Fluoranthene	206-44-0	50	ND	12	<5 U	<12.5 U	<7.4 U	<0.86 U	<12 U	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Fluorene	86-73-7	50	ND	6.15	5.2	<12.5 U	<7.4 U	<0.91 U	<12 U	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	ND	4.45	<2 U	<12.5 U	<7.4 U	<0.95 U	<12 U	ND	<2.6 U	<2 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Naphthalene	91-20-3	10	700	27.1	50.7	23	15.4	<0.87 U	12 J	290	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	1.7 J
Phenanthrene	85-01-8	50	ND	18.7	11.2	<12.5 U	<7.4 U	<0.90 U	<12 U	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Pyrene	129-00-0	50	ND	20.1	<5 U	<12.5 U	<7.4 U	<1.01 U	<12 U	ND	<6.4 U	<5 U	<11.1 U	<5.6 U	<5.7 U	<10 U
Total PAH	CALC-PAH	NL	700	134.38	75.89	23	15.4	ND	13.8	290	ND	ND	ND	ND	ND	1.7
SVOC (ug/L)																
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	<12 U	NS	NS	NS	NS	NS	NS	<10 U
2,4-Dimethylphenol	105-67-9	50	NS	<12 U	<10 U	NS	NS	NS	<12 U	NS	<13 U	<10 U	NS	NS	NS	<10 U
3+4-Methylphenols	3&4 MPH	NL	NS	<23 U	<20 U	NS	NS	NS	<12 U	NS	<26 U	<20 U	NS	NS	NS	<10 U
Acetophenone	98-86-2	NL	NS	NS	NS	NS	NS	NS	<12 U	NS	NS	NS	NS	NS	NS	<10 U
Benzoic acid	65-85-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	117-81-7	5	NS	10.6	<5 U	NS	NS	NS	<12 U	NS	<6.4 U	<5 U	NS	NS	NS	<10 U
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	<12 U	NS	NS	NS	NS	NS	NS	<10 U
Dibenzofuran	132-64-9	NL	NS	<5.8 U	<5 U	NS	NS	NS	<12 U	NS	<6.4 U	<5 U	NS	NS	NS	<10 U
Pentachlorophenol	87-86-5	1	NS	<5.8 U	<5 U	NS	NS	NS	<12 U	NS	<6.4 U	<5 U	NS	NS	NS	<10 U
Phenol	108-95-2	1	NS	8.38	14.8	NS	NS	NS	5.2 J	NS	<6.4 U	<5 U	NS	NS	NS	<10 R
Total SVOC	CALC-SVOC	NL	700	153.36	90.69	23	15.4	ND	19	290	ND	ND	ND	ND	ND	1.7

Table 5-5
Overburden Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-01 8/7/1996 MW-1/SB-1-080796 ?-6	MW-01 5/11/2004 MW-1-051104 ?-6	MW-01 11/16/2004 MW-1-111604 ?-6	MW-01 3/29/2005 MW-1-032905 ?-6	MW-01 6/3/2005 MW-1-060305 ?-6	MW-01 12/22/2008 MW-1-122208 ?-6	MW-01 3/9/2010 MW-1-030910 ?-6	MW-02 8/7/1996 MW-2-080796 ?-5.25	MW-02 5/11/2004 MW-2-051104 ?-5.25	MW-02 11/16/2004 MW-2-111604 ?-5.25	MW-02 3/29/2005 MW-2-032905 ?-5.25	MW-02 6/3/2005 MW-2-060305 ?-5.25	MW-02 12/21/2005 MW-2-122105 ?-5.25	MW-02 3/10/2010 MW-2-031010 ?-5.25
Metals (ug/L)																
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	**48.8 J**	NS	NS	NS	NS	NS	NS	**54.8 J**
Arsenic	7440-38-2	25	**20**	NS	NS	NS	NS	NS	**10.5**	ND	NS	NS	NS	NS	NS	<10.0 U
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	**263**	NS	NS	NS	NS	NS	NS	**310**
Beryllium	7440-41-7	3	ND	NS	NS	NS	NS	NS	<3.000 U	**4**	NS	NS	NS	NS	NS	<3.000 U
Cadmium	7440-43-9	5	ND	NS	NS	NS	NS	NS	**2.480 J**	ND	NS	NS	NS	NS	NS	<3.000 U
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	**247000 J**	NS	NS	NS	NS	NS	NS	**163000 J**
Chromium	7440-47-3	50	**26**	NS	NS	NS	NS	NS	**5.070**	**82**	NS	NS	NS	NS	NS	<5.000 UJ
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	<15.0 U	NS	NS	NS	NS	NS	NS	<15.0 U
Copper	7440-50-8	200	**54**	NS	NS	NS	NS	NS	<10.0 UJ	**305**	NS	NS	NS	NS	NS	<10.0 UJ
Iron	7439-89-6	300	NS	NS	NS	NS	**15100**	NS	**33600 J-**	NS	NS	NS	NS	**5660**	**56700**	**12100 J-**
Lead	7439-92-1	25	**56**	NS	NS	NS	NS	**6.9**	**8.000**	**296**	NS	NS	NS	NS	NS	<6.000 U
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	**48100 J**	NS	NS	NS	NS	NS	NS	**10200 J**
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	**16200 J**	NS	NS	NS	NS	NS	NS	**1290 J**
Mercury	7439-97-6	0.7	ND	NS	NS	NS	NS	NS	<0.20 U	ND	NS	NS	NS	NS	NS	<0.20 U
Nickel	7440-02-0	100	**16**	NS	NS	NS	NS	NS	**8.610 J**	**101**	NS	NS	NS	NS	NS	<20.0 U
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	**1650 J**	NS	NS	NS	NS	NS	NS	**14500 J**
Selenium	7482-49-2	NL	**10**	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	**11.3**	NS	NS	NS	NS	NS	NS	<10.0 U
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	**673000**	NS	NS	NS	NS	NS	NS	**9360000**
Thallium	7440-28-0	0.5	ND	NS	NS	NS	NS	NS	***<20.0 U***	ND	NS	NS	NS	NS	NS	***<20.0 U***
Vanadium	7440-62-2	NL	NS	NS	NS	NS	NS	NS	<20.0 UJ	NS	NS	NS	NS	NS	NS	<20.0 UJ
Zinc	7440-66-6	2000	**110**	NS	NS	NS	NS	NS	**47.8 J**	**199**	NS	NS	NS	NS	NS	**50.8 J**
Cyanide (ug/L)																
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	**148**	NS	NS	NS	NS	NS	NS	**62**
PCBs (ug/L)																
Total PCB	CALC-PCB	NL	ND	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS
Oxygen Demand (ug/L)																
Biochemical Oxygen Demand (BOD)	BOD	NL	NS	NS	NS	NS	<4000 U	NS	NS	NS	NS	NS	NS	<4000	**7800**	NS
Chemical Oxygen Demand (COD)	COD	NL	NS	NS	NS	NS	**185000**	NS	NS	NS	NS	NS	NS	**133000**	**1312000**	NS
TPH (ug/L)																
TPH (SGT-HEM)	TPH	NL	**4820**	NS	NS	NS	NS	NS	NS	**59800**	NS	NS	NS	NS	NS	NS
Gasoline (ug/L)																
Gasoline	GASOLINE	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Non calibrateduel type detected	NON CALIBRATED	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OIL & GREASE (ug/L)																
Oil and Grease	OIL & GREASE	NL	**10500**	NS	NS	NS	NS	NS	NS	**65000**	NS	NS	NS	NS	NS	NS
TSS	TSS	NL	**413000**	NS	NS	NS	NS	NS	NS	**6460000**	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-5
Overburden Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-03 11/16/2004 MW-3-111604 5-10	MW-03 3/29/2005 MW-3-032905 5-10	MW-03 6/3/2005 MW-3-060305 5-10	MW-03 12/21/2005 MW-3-122105 5-10	MW-03 12/22/2008 MW-3-122208 5-10	MW-03 3/9/2010 MW-3-030910 5-10	MW-04 11/16/2004 MW-4-111604 3-7.3	MW-04 3/29/2005 MW-4-032905 3-7.3	MW-04 6/3/2005 MW-4-060305 3-7.3	MW-04 12/21/2005 MW-4-122105 3-7.3	MW-04 12/22/2008 MW-4-122208 3-7.3	MW-04 3/9/2010 MW-4S-030910 3-7.3	MW-05 12/21/2005 MW-5-122105 5-11	MW-05 2/3/2009 MW-5-020309 5-11	MW-05 3/9/2010 MW-5S-030910 5-11
BTEX (ug/L)			OVERBURDEN						OVERBURDEN						OVERBURDEN		
Benzene	71-43-2	1	391	189	157	383	229	130	<40 U	158	<100 U	10.7	<0.88 U	16	445	<0.43 U	<1.0 U
Ethylbenzene	100-41-4	5	411	540	418	393	346	600	1060	457	656	61.4	2.92	130	449	<0.41 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	962	563	290	494	714	1300	2150	1220	1930	372	4.77	200	545	<0.86 U	<2.0 U
o-Xylene	95-47-6	NL	377	49.9	24.7	255	263	590	1150	905	1250	422	12.2	250	306	<0.37 U	<1.0 U
Toluene	108-88-3	5	559	80	29.6	516	174	690	252	266	165	49.8	1.49	34	582	<0.45 U	<1.0 U
Xylenes (total)	1330-20-7	5	1339	612.9	314.7	749	977	1890	3300	2125	3180	794	16.97	450	851	<0.86	ND
Total BTEX	CALC-BTEX	NL	2700	1421.9	919.3	2041	1726	3310	4612	3006	4001	915.9	21.38	630	2327	ND	ND
VOC (ug/L)																	
1,1-Dichloroethane	75-34-3	5	<5 U	NS	NS	NS	NS	<1.0 U	<250 U	NS	NS	NS	NS	<1.0 U	NS	NS	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	318	291	194	93.2	279	NS	1350	752	1070	210	2.93	100 NJ	96.5	<0.44 U	NS
1,3,5-Trimethylbenzene	108-67-8	5	100	182	51.6	17.5	31.7	NS	362	418	<100 U	<5.0 U	<0.82 U	18 NJ	<5.0 U	<0.43 U	NS
1,4-Dioxane	123-91-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<25 U	NS	NS	NS	NS	<5.0 U	<1300 U	NS	NS	NS	NS	<5.0 U	NS	NS	<5.0 U
4-Isopropyltoluene	99-87-6	NL	<5 U	<1 U	<10 U	<5.0 U	3.38	NS	<250 U	<50 U	<100 U	<5.0 U	<0.81 U	1.9 NJ	<5.0 U	<0.34 U	NS
Acetone	67-64-1	50	<25 U	NS	NS	NS	NS	<5.0 UJ	<1300 U	NS	NS	NS	NS	<5.0 UJ	NS	NS	<5.0 UJ
Acrylonitrile	107-13-1	NL	<25 U	NS	NS	NS	NS	NS	<1300 U	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	5	<5 U	NS	NS	NS	NS	11 J	<250 U	NS	NS	NS	NS	1.8 J	NS	NS	<1.0 U
Chloromethane	74-87-3	5	<5 U	NS	NS	NS	NS	<1.0 U	<250 U	NS	NS	NS	NS	<1.0 U	NS	NS	<1.0 U
Cyclohexane	110-82-7	NL	NS	NS	NS	NS	NS	69	NS	NS	NS	NS	NS	18	NS	NS	<1.0 U
Dichlorodifluoromethane	75-71-8	5	<5 U	NS	NS	NS	NS	<1.0 U	<250 U	NS	NS	NS	NS	<1.0 U	NS	NS	<1.0 U
Isopropylbenzene	98-82-8	5	32.4	51	27.3	<5.0 U	7.1	26	<250 U	<50 U	<100 U	<5.0 U	<0.86 U	20	<5.0 U	<0.44 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<5 U	<1 U	<10 U	<5.0 U	<0.88 U	<1.0 U	<250 U	<50 U	<100 U	<5.0 U	<0.88 U	<1.0 U	<5.0 U	<0.50 U	<1.0 U
Methylcyclohexane	108-87-2	NL	NS	NS	NS	NS	NS	35	NS	NS	NS	NS	NS	44	NS	NS	<1.0 U
Naphthalene	91-20-3	10	131	97.5	145	97.3	127	110 NJ	6930	3120	7750	934	18.8	610 NJ	44.1	<0.33 U	0.79 NJ
n-Butylbenzene	104-51-8	5	<5 U	<1 U	<10 U	<5.0 U	<0.83 U	NS	<250 U	<100 U	<100 U	<5.0 U	<0.83 U	0.78 NJ	<5.0 U	<0.43 U	NS
n-Propylbenzene	103-65-1	5	58.6	61.4	49.1	12.2	9.2	NS	<250 U	<50 U	473	98.2	<0.81 U	15 NJ	12.1	<0.41 U	NS
sec-Butylbenzene	135-98-8	5	<5 U	<1 U	<10 U	<5.0 U	1.54	NS	<250 U	91.6	<100 U	90.2	<0.78 U	NS	<5.0 U	<0.36 U	NS
Styrene	100-42-5	5	<5 U	NS	NS	NS	NS	<1.0 U	<250 U	NS	NS	NS	NS	3.2	NS	NS	<1.0 U
Total VOC	CALC-VOC	NL	4679	2717.7	1701	3010.2	2184.92	5341	16554	9512.6	16474	3042.3	43.11	1167	3330.7	ND	ND
PAH (ug/L)																	
2-Methylnaphthalene	91-57-6	NL	11.8	17.8	13.1	8.26	NS	5.4 J	138	280	202	26.8	NS	9.4 J	7.8	NS	<10 U
Acenaphthene	83-32-9	20	<5.4 U	<10 U	<5.0 U	<5.6 U	<1.02 U	<10 U	<110 U	<10.5 U	<5.0 U	<5.6 U	<1.02 U	<10 U	<5.4 U	<1.02 U	<10 U
Acenaphthylene	208-96-8	NL	<5.4 U	<10 U	<5.0 U	<5.6 U	<0.93 U	<10 U	<110 U	15.4	16.0	<5.6 U	<0.93 U	<10 U	<5.4 U	<0.93 U	<10 U
Anthracene	120-12-7	50	<5.4 U	<10 U	<5.0 U	<5.6 U	<0.84 U	<10 U	<110 U	<10.5 U	<5.0 U	<5.6 U	<0.84 U	<10 U	<5.4 U	<0.84 U	<10 U
Benzo(a)anthracene	56-55-3	0.002	<2.2 U	<10 U	<5.0 U	<5.6 U	<1.03 U	<10 U	<43 U	<10.5 U	<5.0 U	<5.6 U	<1.03 U	<10 U	<5.4 U	<1.03 U	<10 U
Benzo(a)pyrene	50-32-8	NL	<2.2 U	<10 U	<5.0 U	<5.6 U	<0.91 U	<10 U	<43 U	<10.5 U	<5.0 U	<5.6 U	<0.91 U	<10 U	<5.4 U	<0.91 U	<10 U
Benzo(b,k)fluoranthene	BENZOBK	NL	<4.3 U	<10 U	NS	NS	NS	NS	<86 U	<10.5 U	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	191-24-2	NL	<2.2 U	<10 U	<5.0 U	<5.6 U	<1.05 U	<10 U	<43 U	<10.5 U	<5.0 U	<5.6 U	<1.05 U	<10 U	<5.4 U	<1.05 U	<10 U
Chrysene	218-01-9	0.002	<1.1 U	<10 U	<5.0 U	<5.6 U	<0.95 U	<10 U	<22 U	<10.5 U	<5.0 U	<5.6 U	<0.95 U	<10 U	<5.4 U	<0.95 U	<10 U
Fluoranthene	206-44-0	50	<5.4 U	<10 U	<5.0 U	<5.6 U	<0.86 U	<10 U	<110 U	<10.5 U	<5.0 U	<5.6 U	<0.86 U	<10 U	<5.4 U	<0.86 U	<10 U
Fluorene	86-73-7	50	<5.4 U	<10 U	<5.0 U	<5.6 U	<0.91 U	<10 U	<110 U	<10.5 U	10.4	<5.6 U	<0.91 U	<10 U	<5.4 U	<0.91 U	<10 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	<2.2 U	<10 U	<5.0 U	<5.6 U	<0.95 U	<10 U	<43 U	<10.5 U	<5.0 U	<5.6 U	<0.95 U	<10 U	<5.4 U	<0.95 U	<10 U
Naphthalene	91-20-3	10	91.9	74.3	63.3	77	65.5	75	2410	3920	2350	599	<0.87 U	NS	72	<0.87 U	<10 U
Phenanthrene	85-01-8	50	<5.4 U	<10 U	<5.0 U	<5.6 U	<0.90 U	<10 U	<110 U	<10.5 U	<5.0 U	<5.6 U	<0.90 U	<10 U	<5.4 U	<0.90 U	<10 U
Pyrene	129-00-0	50	<5.4 U	<10 U	<5.0 U	<5.6 U	<1.01 U	<10 U	<110 U	<10.5 U	<5.0 U	<5.6 U	<1.01 U	<10 U	<5.4 U	<1.01 U	<10 U
Total PAH	CALC-PAH	NL	103.7	92.1	76.4	85.26	65.5	80.4	2548	4215.4	2578.4	625.8	ND	9.4	79.8	ND	ND
SVOC (ug/L)																	
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	<10 U	NS	NS	NS	NS	NS	<10 U	NS	NS	<10 U
2,4-Dimethylphenol	105-67-9	50	27.5	NS	NS	NS	NS	2.3 J	<220 U	NS	NS	NS	NS	3.3 J	NS	NS	<10 U
3+4-Methylphenols	3&4 MPH	NL	<21.6 U	NS	NS	NS	NS	<10 U	<432 U	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Acetophenone	98-86-2	NL	NS	NS	NS	NS	NS	17 J	NS	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Benzoic acid	65-85-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	117-81-7	5	<5.4 U	NS	NS	NS	NS	<10 U	<110 U	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	<10 U	NS	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Dibenzofuran	132-64-9	NL	<5.4 U	NS	NS	NS	NS	<10 U	<110 U	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Pentachlorophenol	87-86-5	1	<5.4 U	NS	NS	NS	NS	8.9 J	<110 U	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Phenol	108-95-2	1	<5.4 U	NS	NS	NS	NS	<10 U	<110 U	NS	NS	NS	NS	<10 U	NS	NS	<10 U
Total SVOC	CALC-SVOC	NL	131.2	92.1	76.4	85.26	65.5	108.6	2548	4215.4	2578.4	625.8	ND	12.7	79.8	ND	ND

Table 5-5
Overburden Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-03 11/16/2004 MW-3-111604 5-10	MW-03 3/29/2005 MW-3-032905 5-10	MW-03 6/3/2005 MW-3-060305 5-10	MW-03 12/21/2005 MW-3-122105 5-10	MW-03 12/22/2008 MW-3-122208 5-10	MW-03 3/9/2010 MW-3-030910 5-10	MW-04 11/16/2004 MW-4-111604 3-7.3	MW-04 3/29/2005 MW-4-032905 3-7.3	MW-04 6/3/2005 MW-4-060305 3-7.3	MW-04 12/21/2005 MW-4-122105 3-7.3	MW-04 12/22/2008 MW-4-122208 3-7.3	MW-04 3/9/2010 MW-4S-030910 3-7.3	MW-05 12/21/2005 MW-5-122105 5-11	MW-05 2/3/2009 MW-5-020309 5-11	MW-05 3/9/2010 MW-5S-030910 5-11
Metals (ug/L)																	
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	**30.9 J**	NS	NS	NS	NS	NS	<50.0 UJ	NS	NS	<50.0 UJ
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	<10.0 U	NS	NS	NS	NS	NS	<10.0 U	NS	NS	<10.0 R
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	**867**	NS	NS	NS	NS	NS	**1360**	NS	NS	**1430 J**
Beryllium	7440-41-7	3	NS	NS	NS	NS	NS	<3.000 U	NS	NS	NS	NS	NS	<3.000 U	NS	NS	<3.000 R
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	**8.14**	NS	NS	NS	NS	NS	**21.5**	NS	NS	**22.1 J**
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	**163000 J**	NS	NS	NS	NS	NS	**577000 J**	NS	NS	**261000 J**
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	<5.000 UJ	NS	NS	NS	NS	NS	**5.830 J-**	NS	NS	<5.000 R
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	**5.950 J**	NS	NS	NS	NS	NS	**14.4 J**	NS	NS	<15.0 R
Copper	7440-50-8	200	NS	NS	NS	NS	NS	<10.0 UJ	NS	NS	NS	NS	NS	<10.0 UJ	NS	NS	<10.0 R
Iron	7439-89-6	300	NS	NS	**52200**	**90000**	NS	**20800 J-**	NS	NS	**41000**	**18200**	NS	**13700 J-**	**79500**	NS	**84.6 J-**
Lead	7439-92-1	25	NS	NS	NS	NS	**4.0**	**5.610 J**	NS	NS	NS	NS	**3.3**	**8.840**	NS	**9.7**	**17.6 J**
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	**22500 J**	NS	NS	NS	NS	NS	**77800 J**	NS	NS	**47000 J**
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	**7510 J**	NS	NS	NS	NS	NS	**30300 J**	NS	NS	**3.100 J**
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	<0.20 U	NS	NS	NS	NS	NS	<0.20 U	NS	NS	<0.20 R
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	**16.6 J**	NS	NS	NS	NS	NS	**14.3 J**	NS	NS	<20.0 R
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	**6790 J**	NS	NS	NS	NS	NS	**21000 J**	NS	NS	**9850 J**
Selenium	7482-49-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	**5.160 J**	NS	NS	NS	NS	NS	**12.6**	NS	NS	<10.0 R
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	**1710000**	NS	NS	NS	NS	NS	**2910000**	NS	NS	**3020000 J**
Thallium	7440-28-0	0.5	NS	NS	NS	NS	NS	***<20.0 U***	NS	NS	NS	NS	NS	***<20.0 U***	NS	NS	***<20.0 R***
Vanadium	7440-62-2	NL	NS	NS	NS	NS	NS	<20.0 UJ	NS	NS	NS	NS	NS	<20.0 UJ	NS	NS	<20.0 R
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	**52.6 J**	NS	NS	NS	NS	NS	**75.6 J**	NS	NS	**101 J**
Cyanide (ug/L)																	
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	**324**	NS	NS	NS	NS	NS	**42**	NS	NS	**42**
PCBs (ug/L)																	
Total PCB	CALC-PCB	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Oxygen Demand (ug/L)																	
Biochemical Oxygen Demand (BOD)	BOD	NL	NS	NS	**4900**	<4000 U	NS	NS	NS	NS	**11620**	<50000 U	NS	NS	**70500**	NS	NS
Chemical Oxygen Demand (COD)	COD	NL	NS	NS	**202000**	**480000**	NS	NS	NS	NS	**243000**	**106000**	NS	NS	**451000**	NS	NS
TPH (ug/L)																	
TPH (SGT-HEM)	TPH	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Gasoline (ug/L)																	
Gasoline	GASOLINE	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Non calibrateduel type detected	NON CALIBRATED	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
OIL & GREASE (ug/L)																	
Oil and Grease	OIL & GREASE	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TSS	TSS	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Table 5-5
Overburden Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-06 2/3/2009 MW-6-020309 6.5-11	MW-06 3/9/2010 MW-6-030910 6.5-11	MW-07 2/3/2009 MW-7-020309 4.5-14.5	MW-07 3/10/2010 MW-7-031010 4.5-14.5	MW-09 12/22/2008 MW-9-122208 8-13	MW-09 3/10/2010 MW-9-031010 8-13	MW-10 2/3/2009 MW-10-020309 7-12	MW-10S 3/8/2010 MW-10S-030810 7-12	MW-12 11/20/2008 MW12-112008 4.5-12.5	MW-12 12/23/2008 MW-12-122308 4.5-12.5	MW-12 3/11/2010 MW-12-031110 4.5-12.5	MW-103S 3/8/2010 MW-103S-030810 5-10	MW-103S 3/8/2010 MW-DUP-030810 5-10	MW-104S 3/10/2010 MW-104S-031010 2-12	MW-108S 3/10/2010 MW-108S-031010 2-13	MW-113S 3/16/2012 MW-113S-031612 5-9	MW-113S 3/16/2012 DUP-7-031612 5-9
BTEX (ug/L)			OVERBURDEN		OVERBURDEN	OVERBURDEN			OVERBURDEN		OVERBURDEN			OVERBURDEN		OVERBURDEN	OVERBURDEN	OVERBURDEN	
Benzene	71-43-2	1	<0.43 U	0.51 J	<0.43 U	<1.0 U	1.01	5.9	<0.43 U	<1.0 U	NS	<0.88 U	<1.0 U	29	31	<1.0 U	340	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<0.41 U	1.0 J	<0.41 U	<1.0 U	2.80	18	<0.41 U	<1.0 U	NS	<0.89 U	<1.0 U	7.6	7.6	1.3	690	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<0.86 U	<2.0 U	<0.86 U	<2.0 U	7.78	11	<0.86 U	<2.0 U	NS	<1.74 U	<2.0 U	2.7	2.7	1.6 J	1500	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<0.37 U	<1.0 U	<0.37 U	<1.0 U	2.12	4.4	<0.37 U	<1.0 U	NS	<0.85 U	<1.0 U	4.6	4.6	0.88 J	930	<1.0 U	<1.0 U
Toluene	108-88-3	5	<0.45 U	<1.0 U	<0.45 U	<1.0 U	1.09	2.8	<0.45 U	<1.0 U	NS	<1.08 U	<1.0 U	1.5	1.7	<1.0 U	160	<1.0 U	<1.0 U
Xylenes (total)	1330-20-7	5	<0.86	NS	<0.86	NS	9.9	15.4	<0.86	ND	ND	<1.74	ND	7.3	7.3	2.48	2430	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	ND	1.51	ND	ND	14.8	42.1	ND	ND	ND	ND	ND	45.4	47.6	3.78	3620	ND	ND
VOC (ug/L)																			
1,1-Dichloroethane	75-34-3	5	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	1.3	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	<0.44 U	NS	<0.44 U	NS	3.73	5.7 NJ	<0.44 U	NS	NS	<0.84 U	NS	4.1 NJ	4.0 NJ	0.51 NJ	190 NJ	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	<0.43 U	NS	<0.43 U	NS	<0.82 U	2.4 NJ	<0.43 U	NS	NS	<0.82 U	NS	1.0 NJ	1.0 NJ	NS	51 NJ	NS	NS
1,4-Dioxane	123-91-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<50 UJ	140 J
2-Butanone	78-93-3	50	NS	<5.0 U	NS	<5.0 U	NS	14	NS	<5.0 U	NS	NS	<5.0 U	8.0	8.0	<5.0 U	<5.0 U	<1.0 U	<1.0 U
4-Isopropyltoluene	99-87-6	NL	<0.34 U	NS	<0.34 U	NS	<0.81 U	NS	<0.34 U	NS	NS	<0.81 U	NS	NS	NS	NS	4.7 NJ	NS	NS
Acetone	67-64-1	50	NS	<5.0 UJ	NS	<5.0 UJ	NS	<5.0 UJ	NS	<5.0 UJ	NS	NS	<5.0 UJ	35 J	32 J	<5.0 UJ	49 J	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chloroethane	75-00-3	5	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	4.4 J	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	NS	<1.0 U	0.59 J	0.79 J	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cyclohexane	110-82-7	NL	NS	<1.0 U	NS	<1.0 U	NS	140	NS	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	12	<1.0 U	<1.0 U
Dichlorodifluoromethane	75-71-8	5	NS	0.91 J	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ
Isopropylbenzene	98-82-8	5	<0.44 U	<1.0 U	<0.44 U	<1.0 U	<0.86 U	3.5	<0.44 U	<1.0 U	NS	<0.86 U	<1.0 U	1.5	1.6	<1.0 U	66	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<0.50 U	<1.0 U	<0.50 U	<1.0 U	2.67	<1.0 U	<0.50 U	<1.0 U	NS	<0.88 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<0.50 U	<0.50 U
Methylcyclohexane	108-87-2	NL	NS	<1.0 U	NS	<1.0 U	NS	54	NS	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	17	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	<0.33 U	0.86 NJ	<0.33 U	6.9 NJ	2.07	120 NJ	<0.33 U	NS	NS	<0.61 U	2.5 NJ	50 NJ	50 NJ	16 NJ	1100 NJ	NS	NS
n-Butylbenzene	104-51-8	5	<0.43 U	NS	<0.43 U	NS	<0.83 U	NS	<0.43 U	NS	NS	<0.83 U	NS	NS	NS	NS	3.8 NJ	NS	NS
n-Propylbenzene	103-65-1	5	<0.41 U	NS	<0.41 U	NS	<0.81 U	1.7 NJ	<0.41 U	NS	NS	<0.81 U	NS	0.62 NJ	0.54 NJ	NS	12 NJ	NS	NS
sec-Butylbenzene	135-98-8	5	<0.36 U	NS	<0.36 U	NS	<0.78 U	NS	<0.36 U	NS	NS	<0.78 U	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	<1.0 U	NS	NS	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	ND	2.42	ND	ND	23.27	269	ND	1.3	ND	ND	ND	97.79	97.29	6.26	6198.4	ND	140
PAH (ug/L)																			
2-Methylnaphthalene	91-57-6	NL	NS	<10 U	NS	<10 U	NS	7.6 J	NS	<10 U	NS	NS	<10 U	3.3 J	5.3 J	<10 U	590	<2.0 U	<2.0 U
Acenaphthene	83-32-9	20	<1.02 U	<10 U	<1.02 U	<10 U	<1.02 U	10	<1.02 U	<10 U	NS	<0.81 U	<10 U	13	19	<10 U	190	<2.0 U	<2.0 U
Acenaphthylene	208-96-8	NL	<0.93 U	<10 U	<0.93 U	<10 U	<0.93 U	<10 U	<0.93 U	<10 U	NS	<0.72 U	<10 U	1.5 J	1.5 J	<10 U	7.5 J	<2.0 U	<2.0 U
Anthracene	120-12-7	50	<0.84 U	<10 U	<0.84 U	<10 U	<0.84 U	<10 U	<0.84 U	<10 U	NS	<0.85 U	<10 U	<11 U	1.5 J	<10 U	12	<2.0 U	<2.0 U
Benzo(a)anthracene	56-55-3	0.002	<1.03 U	<10 U	<1.03 U	<10 U	<1.03 U	<10 U	<1.03 U	<10 U	NS	<0.92 U	<10 U	<11 U	<11 U	<10 U	<10 U	<2.0 U	<2.0 U
Benzo(a)pyrene	50-32-8	NL	<0.91 U	<10 U	<0.91 U	<10 U	<0.91 U	<10 U	<0.91 U	<10 U	NS	<0.93 U	<10 U	<11 UJ	<11 U	<10 U	<10 U	<2.0 U	<2.0 U
Benzo(b,k)fluoranthene	BENZOBK	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Benzo(ghi)perylene	191-24-2	NL	<1.05 U	<10 U	<1.05 U	<10 U	<1.05 U	<10 U	<1.05 U	<10 U	NS	<1.02 U	<10 U	<11 UJ	<11 U	<10 U	<10 U	<2.0 U	<2.0 U
Chrysene	218-01-9	0.002	<0.95 U	<10 U	<0.95 U	<10 U	<0.95 U	<10 U	<0.95 U	<10 U	NS	<1.12 U	<10 U	<11 U	<11 U	<10 U	<10 U	<2.0 U	<2.0 U
Fluoranthene	206-44-0	50	<0.86 U	<10 U	<0.86 U	<10 U	<0.86 U	<10 U	<0.86 U	<10 U	NS	<0.97 U	<10 U	<11 U	<11 U	<10 U	5.3 J	<2.0 U	<2.0 U
Fluorene	86-73-7	50	<0.91 U	<10 U	<0.91 U	<10 U	<0.91 U	2.7 J	<0.91 U	<10 U	NS	<0.83 U	<10 U	1.9 J	3.0 J	<10 U	54	<2.0 U	<2.0 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	<0.95 U	<10 U	<0.95 U	<10 U	<0.95 U	<10 U	<0.95 U	<10 U	NS	<1.02 U	<10 U	<11 UJ	<11 U	<10 U	<10 U	<2.0 U	<2.0 U
Naphthalene	91-20-3	10	<0.87 U	<10 U	<0.87 U	<10 U	2.32	74	<0.87 U	<10 U	NS	<0.83 U	<10 U	24	34	10 J	6900	<0.50 U	<0.50 U
Phenanthrene	85-01-8	50	<0.90 U	<10 U	<0.90 U	<10 U	<0.90 U	2.3 J	<0.90 U	<10 U	NS	<0.94 U	<10 U	6.2 J	8.7 J	<10 U	63	<2.0 U	<2.0 U
Pyrene	129-00-0	50	<1.01 U	<10 U	<1.01 U	<10 U	<1.01 U	<10 U	<1.01 U	<10 U	NS	<0.84 U	<10 U	<11 U	<11 U	<10 U	7.0 J	<2.0 U	<2.0 U
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	2.32	96.6	ND	ND	ND	ND	ND	49.9	73	10	7828.8	ND	ND
SVOC (ug/L)																			
1,1'-Biphenyl	92-52-4	5	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	48	NS	NS
2,4-Dimethylphenol	105-67-9	50	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	<10 UJ	NS	NS
3+4-Methylphenols	3&4 MPH	NL	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	1.7 J	2.0 J	<10 U	<10 U	NS	NS
Acetophenone	98-86-2	NL	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	44 J	NS	NS
Benzoic acid	65-85-0	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
bis(2-Ethylhexyl) phthalate	117-81-7	5	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	<10 U	NS	NS
Carbazole	86-74-8	NL	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	6.7 J	NS	NS
Dibenzofuran	132-64-9	NL	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	5.6 J	NS	NS
Pentachlorophenol	87-86-5	1	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 U	<11 U	<11 U	<10 U	<10 U	NS	NS
Phenol	108-95-2	1	NS	<10 U	NS	<10 U	NS	<10 U	NS	<10 U	NS	NS	<10 R	<11 U	<11 U	<10 U	<10 U	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	2.32	96.6	ND	ND	ND	ND	ND	51.6	75	10	7933.1	ND	ND

Location	CAS Number	NYSDEC Groundwater Guidance or Standard Value	MW-06	MW-06	MW-07	MW-07	MW-09	MW-09	MW-10	MW-10S	MW-12	MW-12	MW-12	MW-103S	MW-103S	MW-104S	MW-108S	MW-113S	MW-113S
Sample Date			2/3/2009	3/9/2010	2/3/2009	3/10/2010	12/22/2008	3/10/2010	2/3/2009	3/8/2010	11/20/2008	12/23/2008	3/11/2010	3/8/2010	3/8/2010	3/10/2010	3/10/2010	3/16/2012	3/16/2012
Sample ID			MW-6-020309	MW-6-030910	MW-7-020309	MW-7-031010	MW-9-122208	MW-9-031010	MW-10-020309	MW-10S-030810	MW12-112008	MW-12-122308	MW-12-031110	MW-103S-030810	MW-DUP-030810	MW-104S-031010	MW-108S-031010	MW-113S-031612	DUP-7-031612
Screened Interval		(Note 1)	6.5-11	6.5-11	4.5-14.5	4.5-14.5	8-13	8-13	7-12	7-12	4.5-12.5	4.5-12.5	4.5-12.5	5-10	5-10	2-12	2-13	5-9	5-9
Metals (ug/L)																			
Aluminum	7429-90-5	NL	NS	**77.9 J**	NS	**101 J**	NS	**39.7 J**	NS	**18.1 J**	NS	NS	**64.5 J**	**1200 J**	**131 J**	**36.3 J**	**120 J**	NS	NS
Arsenic	7440-38-2	25	NS	<10.0 U	NS	<10.0 U	NS	**8.760 J**	NS	**11.7**	NS	NS	<10.0 U	<10.0 U	<10.0 U	**20.0**	<10.0 U	NS	NS
Barium	7440-39-3	1000	NS	**330**	NS	**549**	NS	**476**	NS	**286**	NS	NS	**1150**	**1010**	**1070**	**421**	**351**	NS	NS
Beryllium	7440-41-7	3	NS	<3.000 U	NS	<3.000 U	NS	<3.000 U	NS	<3.000 U	NS	NS	<3.000 U	<3.000 U	<3.000 U	<3.000 U	<3.000 U	NS	NS
Cadmium	7440-43-9	5	NS	**2.290 J**	NS	**3.670**	NS	**2.310 J**	NS	**0.63 J**	NS	NS	<3.000 U	**6.28**	**5.2**	**1.530 J**	**0.73 J**	NS	NS
Calcium	7440-70-2	NL	NS	**272000 J**	NS	**209000 J**	NS	**345000 J**	NS	**281000**	NS	NS	**402000 J**	**505000 J**	**523000 J**	**261000 J**	**158000 J**	NS	NS
Chromium	7440-47-3	50	NS	<5.000 UJ	NS	<5.000 UJ	NS	**2.220 J-**	NS	<5.000 UJ	NS	NS	<5.000 UJ	<5.000 UJ	<5.000 UJ	<5.000 UJ	<5.000 UJ	NS	NS
Cobalt	7440-48-4	NL	NS	<15.0 U	NS	**5.880 J**	NS	**6.810 J**	NS	<15.0 U	NS	NS	**21.7**	**15.4**	**13.6 J**	**16.0**	<15.0 U	NS	NS
Copper	7440-50-8	200	NS	**7.640 J-**	NS	<10.0 UJ	NS	<10.0 UJ	NS	<10.0 UJ	NS	NS	<10.0 UJ	<10.0 UJ	<10.0 UJ	<10.0 UJ	<10.0 UJ	NS	NS
Iron	7439-89-6	300	NS	**2770 J-**	NS	**421 J-**	NS	**37000 J-**	NS	**2190 J-**	NS	NS	**64300 J-**	**4720 J-**	**3280 J-**	**63400 J-**	**44100 J-**	NS	NS
Lead	7439-92-1	25	**6**	**3.030 J**	**14**	**5.310 J**	**2.1**	**6.940**	**7.3**	**3.540 J**	NS	<1.7 U	<6.000 U	**8.520**	**3.150 J**	<6.000 U	**4.770 J**	NS	NS
Magnesium	7439-95-4	35000	NS	**27200 J**	NS	**50100 J**	NS	**80800 J**	NS	**30400 J**	NS	NS	**34400 J**	**47300 J**	**50700 J**	**29900 J**	**29600 J**	NS	NS
Manganese	7439-96-5	300	NS	**1590 J**	NS	**5990 J**	NS	**17200 J**	NS	**4280 J**	NS	NS	**12400 J**	**3030 J**	**3520 J**	**8380 J**	**12000 J**	NS	NS
Mercury	7439-97-6	0.7	NS	**0.13 J**	NS	**0.10 J**	NS	<0.20 U	NS	<0.20 U	NS	NS	<0.20 U	**0.10 J**	<0.20 U	<0.20 U	<0.20 U	NS	NS
Nickel	7440-02-0	100	NS	**11.8 J**	NS	**14.8 J**	NS	**16.0 J**	NS	<20.0 U	NS	NS	**15.5 J**	**19.8 J**	**18.5 J**	<20.0 U	**7.700 J**	NS	NS
Potassium	7440-09-7	NL	NS	**13300 J**	NS	**10200 J**	NS	**9960 J**	NS	**11400 J**	NS	NS	**41100 J**	**67500 J**	**69700 J**	**18900 J**	**6550 J**	NS	NS
Selenium	7482-49-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	<10.0 U	NS	<10.0 U	NS	**10.3**	NS	<10.0 U	NS	NS	**6.120 J+**	<10.0 U	<10.0 U	**11.4**	**9.570 J**	NS	NS
Sodium	7440-23-5	20000	NS	**1130000**	NS	**3110000**	NS	**2380000**	NS	**1090000**	NS	NS	**4290000**	**17700000**	**16700000**	**700000**	**463000**	NS	NS
Thallium	7440-28-0	0.5	NS	***<20.0 U***	NS	***<20.0 U***	NS	***<20.0 U***	NS	***<20.0 U***	NS	NS	***<20.0 U***	***<20.0 U***	***<20.0 U***	***<20.0 U***	***<20.0 U***	NS	NS
Vanadium	7440-62-2	NL	NS	<20.0 UJ	NS	<20.0 UJ	NS	<20.0 UJ	NS	<20.0 UJ	NS	NS	<20.0 UJ	<20.0 UJ	<20.0 UJ	<20.0 UJ	<20.0 UJ	NS	NS
Zinc	7440-66-6	2000	NS	**248 J**	NS	**87.1 J**	NS	**271 J**	NS	**27.5 J**	NS	NS	**48.4 J**	**1430 J**	**1250 J**	**33.3 J**	**34.0 J**	NS	NS
Cyanide (ug/L)																			
Cyanide, Total	57-12-5	200	NS	**63**	NS	**33**	NS	**311**	NS	**16**	NS	NS	**34**	**29**	**27**	**29**	**31**	<20 U	MGMGP-
PCBs (ug/L)																			
Total PCB	CALC-PCB	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Oxygen Demand (ug/L)																			
Biochemical Oxygen Demand (BOD)	BOD	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chemical Oxygen Demand (COD)	COD	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TPH (ug/L)																			
TPH (SGT-HEM)	TPH	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Gasoline (ug/L)																			
Gasoline	GASOLINE	NL	NS	NS	NS	NS	NS	NS	NS	NS	**0**	NS	NS	NS	NS	NS	NS	NS	NS
Non calibrateduel type detected	NON CALIBRATED	NL	NS	NS	NS	NS	NS	NS	NS	NS	**0**	NS	NS	NS	NS	NS	NS	NS	NS
OIL & GREASE (ug/L)																			
Oil and Grease	OIL & GREASE	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TSS	TSS	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
ND = Non Detected
NL = No Limit
NS = Not Sampled
mg/Kg = milligram per kilogram
Yellow highlighted values exceed NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
Bold = Detected
values bold and italics = nondetects above NYSDEC SubSurface Soil Standards
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	Summary Statistics											
			Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
BTEX (ug/L)														
Benzene	71-43-2	1	45	24	21	23	3	5300	MW-1/SB-1-080796	0.51	MW-6-030910	473.2425	-	100
Ethylbenzene	100-41-4	5	45	30	15	24	1	2200	MW-2-080796	1	MW-6-030910	300.9803333	0.41	25
m&p-Xylene	1330-20-7-m,p	NL	43	27	16	0	0	2150	MW-4-111604	1.6	MW-104S-031010	465.3266667	0.86	10
o-Xylene	95-47-6	NL	43	26	17	0	0	1250	MW-4-060305	0.88	MW-104S-031010	270.9576923	0.37	5
Toluene	108-88-3	5	45	26	19	19	0	2800	MW-1/SB-1-080796	1.09	MW-9-122208	262.2776923	-	5
Xylenes (total)	1330-20-7	5	45	29	16	28	0	7900	MW-2-080796	2.48	MW-104S-031010	1086.848214	-	1.74
Total BTEX	CALC-BTEX	NL	45	31	14	0	0	12450	MW-1/SB-1-080796	1.51	MW-6-030910	1923.381935	-	-
VOC (ug/L)														
1,1-Dichloroethane	75-34-3	5	24	1	23	0	1	1.3	MW-10S-030810	1.3	MW-10S-030810	1.3	-	250
1,2,4-Trimethylbenzene	95-63-6	5	36	26	10	17	1	1350	MW-4-111604	0.51	MW-104S-031010	198.1619231	0.44	25
1,3,5-Trimethylbenzene	108-67-8	5	35	16	19	10	2	418	MW-4-032905	0.67	MW-2-031010	79.19	0.43	100
1,4-Dioxane	123-91-1	NL	2	1	1	0	0	140	DUP-7-031612	140	DUP-7-031612	140	50	50
2-Butanone	78-93-3	50	24	5	19	0	1	14	MW-9-031010	4.7	MW-1-030910	8.7	-	1300
4-Isopropyltoluene	99-87-6	NL	30	4	26	0	0	4.7	MW-108S-031010	0.75	MW-3-030910	2.6825	0.34	250
Acetone	67-64-1	50	24	4	20	0	1	49	MW-108S-031010	12	MW-1-030910	32	-	1300
Acrylonitrile	107-13-1	NL	9	1	8	0	0	51	MW-3-030910	51	MW-3-030910	51	-	1300
Chloroethane	75-00-3	5	24	4	20	1	1	11	MW-3-030910	1.8	MW-4S-030910	4.85	-	250
Chloromethane	74-87-3	5	24	2	22	0	1	0.79	MW-DUP-030810	0.59	MW-103S-030810	0.69	-	250
Cyclohexane	110-82-7	NL	16	6	10	0	0	140	MW-9-031010	0.91	MW-1-030910	41.11833333	1	1
Dichlorodifluoromethane	75-71-8	5	24	1	23	0	1	0.91	MW-6-030910	0.91	MW-6-030910	0.91	-	250
Isopropylbenzene	98-82-8	5	43	11	32	7	4	66	MW-108S-031010	1.5	MW-103S-030810	21.7	0.44	250
Methyl tert-butyl ether	1634-04-4	10	45	1	44	0	4	2.67	MW-9-122208	2.67	MW-9-122208	2.67	-	250
Methylcyclohexane	108-87-2	NL	16	5	11	0	0	54	MW-9-031010	3.2	MW-2-031010	30.64	1	1
Naphthalene	91-20-3	10	40	30	10	24	0	7750	MW-4-060305	0.79	MW-5S-030910	727.5866667	0.33	5
n-Butylbenzene	104-51-8	5	30	3	27	0	5	3.8	MW-108S-031010	0.78	MW-4S-030910	2.326666667	0.43	250
n-Propylbenzene	103-65-1	5	35	16	19	11	3	473	MW-4-060305	0.54	MW-103S-030810	52.83375	0.41	250
sec-Butylbenzene	135-98-8	5	28	4	24	2	4	91.6	MW-4-032905	1.54	MW-3-122208	46.31	0.36	250
Styrene	100-42-5	5	24	1	23	0	1	3.2	MW-4S-030910	3.2	MW-4S-030910	3.2	-	250
Total VOC	CALC-VOC	NL										1870.6	-	-
PAH (ug/L)														
2-Methylnaphthalene	91-57-6	NL	34	15	19	0	0	590	MW-108S-031010	3.3	MW-103S-030810	88.43733333	2	12.5
Acenaphthene	83-32-9	20	45	7	38	1	1	190	MW-108S-031010	1.8	MW-1-030910	35.80571429	-	110
Acenaphthylene	208-96-8	NL	43	6	37	0	0	16	MW-4-060305	1.5	MW-103S-030810	8.291666667	0.72	110
Anthracene	120-12-7	50	45	2	43	0	1	12	MW-108S-031010	1.5	MW-DUP-030810	6.75	-	110
Benzo(a)anthracene	56-55-3	0.002	45	1	44	1	42	4	MW-1-051104	4	MW-1-051104	4	-	43
Benzo(a)pyrene	50-32-8	NL	45	1	44	0	0	8.4	MW-1-051104	8.4	MW-1-051104	8.4	-	43
Benzo(b,k)fluoranthene	BENZOBK	NL	10	1	9	0	0	7.24	MW-1-051104	7.24	MW-1-051104	7.24	4	86
Benzo(ghi)perylene	191-24-2	NL	45	1	44	0	0	6.64	MW-1-051104	6.64	MW-1-051104	6.64	-	43
Chrysene	218-01-9	0.002	45	1	44	1	42	3.7	MW-1-051104	3.7	MW-1-051104	3.7	-	22
Fluoranthene	206-44-0	50	45	2	43	0	1	12	MW-1-051104	5.3	MW-108S-031010	8.65	-	110
Fluorene	86-73-7	50	45	7	38	1	1	54	MW-108S-031010	1.9	MW-103S-030810	11.90714286	-	110
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	45	1	44	1	42	4.45	MW-1-051104	4.45	MW-1-051104	4.45	-	43
Naphthalene	91-20-3	10	45	26	19	23	1	6900	MW-108S-031010	1.7	MW-2-031010	706.2392308	0.5	11.1
Phenanthrene	85-01-8	50	45	6	39	1	1	63	MW-108S-031010	2.3	MW-9-031010	18.35	-	110
Pyrene	129-00-0	50	45	2	43	0	1	20.1	MW-1-051104	7	MW-108S-031010	13.55	-	110
Total PAH	CALC-PAH	NL	45	26	19	0	0	7828.8	MW-108S-031010	1.7	MW-2-031010	764.1426923	-	-
SVOC (ug/L)														
1,1'-Biphenyl	92-52-4	5	14	1	13	1	13	48	MW-108S-031010	48	MW-108S-031010	48	10	12
2,4-Dimethylphenol	105-67-9	50	20	3	17	0	1	27.5	MW-3-111604	2.3	MW-3-030910	11.03333333	10	220
3+4-Methylphenols	3&4 MPH	NL	20	2	18	0	0	2	MW-DUP-030810	1.7	MW-103S-030810	1.85	10	432
Acetophenone	98-86-2	NL	14	2	12	0	0	44	MW-108S-031010	17	MW-3-030910	30.5	10	12
Benzoic acid	65-85-0	NL	3	3	0	0	0	25	MW-DUP-030810	17	MW-3-030910	22	-	-
bis(2-Ethylhexyl) phthalate	117-81-7	5	20	1	19	1	17	10.6	MW-1-051104	10.6	MW-1-051104	10.6	5	110
Carbazole	86-74-8	NL	14	1	13	0	0	6.7	MW-108S-031010	6.7	MW-108S-031010	6.7	10	12
Dibenzofuran	132-64-9	NL	20	1	19	0	0	5.6	MW-108S-031010	5.6	MW-108S-031010	5.6	5	110
Pentachlorophenol	87-86-5	1	20	1	19	1	19	8.9	MW-3-030910	8.9	MW-3-030910	8.9	5	110
Phenol	108-95-2	1	20	3	17	3	17	14.8	MW-1-111604	5.2	MW-1-030910	9.46	5	110
Total SVOC	CALC-SVOC	NL	8	4	4	0	0	2548	MW-4-111604	90.69	MW-1-111604	729.0025	-	-

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Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	Summary Statistics										
			Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
Metals (ug/L)														
Aluminum	7429-90-5	NL	14	12	2	0	0	1200	MW-103S-030810	18.1	MW-10S-030810	160.25	50	50
Arsenic	7440-38-2	25	16	5	11	0	0	20	MW-104S-031010	8.76	MW-9-031010	14.192	-	10
Barium	7440-39-3	1000	14	14	0	5	0	1430	MW-5S-030910	263	MW-1-030910	705.2142857	-	-
Beryllium	7440-41-7	3	16	1	15	1	0	4	MW-2-080796	4	MW-2-080796	4	-	3
Cadmium	7440-43-9	5	16	12	4	5	0	22.1	MW-5S-030910	0.63	MW-10S-030810	6.405	-	3
Calcium	7440-70-2	NL	14	14	0	0	0	577000	MW-4S-030910	158000	MW-108S-031010	311928.5714	-	-
Chromium	7440-47-3	50	16	5	11	1	0	82	MW-2-080796	2.22	MW-9-031010	24.224	5	5
Cobalt	7440-48-4	NL	14	8	6	0	0	21.7	MW-12-031110	5.88	MW-7-031010	12.4675	15	15
Copper	7440-50-8	200	16	3	13	1	0	305	MW-2-080796	7.64	MW-6-030910	122.2133333	10	10
Iron	7439-89-6	300	22	22	0	21	0	90000	MW-3-122105	84.6	MW-5S-030910	30037.52727	-	-
Lead	7439-92-1	25	25	21	4	2	0	296	MW-2-080796	2.1	MW-9-122208	22.88619048	1.7	6
Magnesium	7439-95-4	35000	14	14	0	7	0	80800	MW-9-031010	10200	MW-2-031010	41857.14286	-	-
Manganese	7439-96-5	300	14	14	0	13	0	30300	MW-4S-030910	3.1	MW-5S-030910	8835.221429	-	-
Mercury	7439-97-6	0.7	16	3	13	0	0	0.13	MW-6-030910	0.1	MW-103S-030810	0.11	-	0.2
Nickel	7440-02-0	100	16	12	4	1	0	101	MW-2-080796	7.7	MW-108S-031010	21.7175	20	20
Potassium	7440-09-7	NL	14	14	0	0	0	69700	MW-DUP-030810	1650	MW-1-030910	21600	-	-
Selenium	7482-49-2	NL	2	1	1	0	0	10	MW-1/SB-1-080796	10	MW-1/SB-1-080796	10	-	-
Selenium	7782-49-2	10	14	7	7	4	0	12.6	MW-4S-030910	5.16	MW-3-030910	9.492857143	10	10
Sodium	7440-23-5	20000	14	14	0	14	0	17700000	MW-103S-030810	463000	MW-108S-031010	4659714.286	-	-
Thallium	7440-28-0	0.5	16	0	16	0	14	-	-	-	-	-	-	20
Vanadium	7440-62-2	NL	14	0	14	0	0	-	-	-	-	-	20	20
Zinc	7440-66-6	2000	16	16	0	0	0	1430	MW-103S-030810	27.5	MW-10S-030810	254.13125	-	-
Cyanide (ug/L)														
Cyanide, Total	57-12-5	200	16	14	2	2	0	324	MW-3-030910	16	MW-10S-030810	85.07142857	20	20
PCBs (ug/L)														
Total PCB	CALC-PCB	NL	2	0	2	0	0	-	-	-	-	-	-	-
Oxygen Demand (ug/L)														
Biochemical Oxygen Demand (BOD)	BOD	NL	8	4	4	0	0	70500	MW-5-122105	4900	MW-3-060305	23705	4000	50000
Chemical Oxygen Demand (COD)	COD	NL	8	8	0	0	0	1312000	MW-2-122105	106000	MW-4-122105	389000	-	-
TPH (ug/L)														
TPH (SGT-HEM)	TPH	NL	2	2	0	0	0	59800	MW-2-080796	4820	MW-1/SB-1-080796	32310	-	-
Gasoline (ug/L)														
Gasoline	GASOLINE	NL	1	1	0	0	0	-	MW12-112008	-	MW12-112008	-	-	-
Non calibrateduel type detected	NON CALIBRATED	NL	1	1	0	0	0	-	MW12-112008	-	MW12-112008	-	-	-
OIL & GREASE (ug/L)														
Oil and Grease	OIL & GREASE	NL	2	2	0	0	0	65000	MW-2-080796	10500	MW-1/SB-1-080796	37750	-	-
TSS	TSS	NL	2	2	0	0	0	6460000	MW-2-080796	413000	MW-1/SB-1-080796	3436500	-	-

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

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Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-0DD 10/1/2009 MGP-MW-0DD (17-20)100109 17-20	MW-0DD 10/2/2009 MGP-MW-0DD (37-40)100209 37-40	MW-0DD 10/5/2009 MGP-MW-0DD (57.5-60)100509 57.5-60	MW-0DD 10/5/2009 MGP-MW-0DD (60-65)100509 60-65	MW-0DD 10/6/2009 MGP-MW-0DD (76-80)1005609 76-80	MW-04D 4/11/2007 MW-4D-041107 21-30	MW-04D 12/22/2008 MW-4D-122208 21-30	MW-04D 3/9/2010 MW-4D-030910 21-30	MW-04DD 8/18/2009 MGP-MW-4DD (35-41.5)081809 35-41.5	MW-04DD 8/19/2009 MGP-MW-4DD (45-51.6)081909 45-51.5	MW-04DD 8/19/2009 MGP-MW-4DD (55-60.5)081909 55-60.5	MW-04DD 8/20/2009 MGP-MW-4DD (60-65.6)082009 60-65.6	MW-04DD 8/21/2009 MGP-MW-4DD (70-75.5)082109 70-75.5	MW-04DD 8/21/2009 MGP-MW-4DD (75.5-80)082109 75.5-80	MW-04DD 8/24/2009 MGP-MW-4DD (80-85.2)082409 80-85.2	MW-04DD 8/25/2009 MGP-MW-4DD (85-100.4)082509 87-100.4	MW-04DD 9/17/2009 MGP-MW-4DD (100-105.5)091709 100-105.5	MW-04DD 9/18/2009 MGP-MW-4DD (102-110.5)091809 102-110.5	MW-04DD 9/21/2009 MGP-MW-4DD (117-125.5)092109 117-125.5
BTEX (ug/L)					BEDROCK				BEDROCK									BEDROCK			
Benzene	71-43-2	1	5.1	2.9	11	11	0.91 J	246	4.76	200	2.8	<1.0 U	1.2	13	9.1	6.1	11	85	79	250	400
Ethylbenzene	100-41-4	5	9.3	2.2	28	40	3.6	564	0.89	320	0.71 J	0.66 J	0.64 J	2.9	8.8	4.4	12	190	260	840	18
m&p-Xylene	1330-20-7-m,p	NL	2.4	1.1 J	51	30	4.4	NS	1.99	260	2.1	1.9 J	1.4 J	3.5	6.4	6.6	9.6	51	41	450	65
o-Xylene	95-47-6	NL	5.3	1.4	27	27	2.8	NS	2.29	92	0.67 J	0.55 J	0.49 J	2.8	3.2	2.1	5.4	61	77	440	39
Toluene	108-88-3	5	2.9	2.3	29	9.5	3.7	115	<1.08 U	90	<1.0 U	<1.0 U	<1.0 U	0.85 J	1.5	1.5	2.0	8.3	8.4	57	21
Xylenes (total)	1330-20-7	5	NS	NS	NS	NS	NS	873	4.28	352	2.77	2.45	1.89	6.3	9.6	8.7	15	112	118	890	104
Total BTEX	CALC-BTEX	NL	17.3	7.4	68	60.5	8.21	1798	9.93	962	6.28	3.11	3.73	23.05	29	20.7	40	395.3	465.4	2037	543
VOC (ug/L)																					
1,2,3-Trichlorobenzene	87-61-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.45 U	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	1.4	<1.0 U	*<10 U*	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	17 NJ	1.3 NJ	24 NJ	42 NJ	4.0 NJ	NS	0.84	NS	0.80 NJ	0.90 NJ	0.56 NJ	1.8 NJ	1.4 NJ	1.6 NJ	4.0 NJ	41 NJ	48 NJ	420 NJ	31 NJ
1,3,5-Trimethylbenzene	108-67-8	5	0.55 NJ	NS	6.5 NJ	17 NJ	1.5 NJ	NS	2.48	NS	NS	NS	NS	0.69 NJ	0.62 NJ	0.67 NJ	1.1 NJ	11 NJ	14 NJ	140 NJ	7.2 NJ
2-Butanone	78-93-3	50	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<2.95 U	NS	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<50 U	<5.0 U
4-Isopropyltoluene	99-87-6	NL	0.87 NJ	NS	NS	3.6 NJ	NS	NS	<0.81 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<4.05 U	NS	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<50 U	<5.0 U
Acetone	67-64-1	50	<5.0 UJ	6.8 J	<5.0 UJ	<5.0 UJ	<5.0 UJ	<5.65 U	NS	<5.0 UJ	<5.0 UJ	<5.0 UJ	<5.0 UJ	3.9 J	<5.0 UJ	<5.0 UJ	<5.0 UJ	<5.0 U	<5.0 U	<50 U	16 J
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	3.2	7.3	3.9	2.8	3.2	NS	NS	<1.0 U	3.7	1.8	5.0	4.8	0.72 J	13	10	<1.0 U	2.8	<10 U	4.4
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<3 U	NS	6.1 J	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	*<10 U*	<1.0 U
Chloroform	67-66-3	7	31	45	35	33	62	<1.9 U	NS	<1.0 U	14	32	21	20	15	48	52	26	28	14	31
Chloromethane	74-87-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	*<10 U*	<1.0 U
Cyclohexane	110-82-7	NL	1.9	<1.0 U	5.3	12	<1.0 U	NS	NS	85	<1.0 U	<1.0 U	<1.0 U	<1.0 U	1.5	1.5	1.4	4.7	2.7	16	2.9
Dibromochloromethane	124-48-1	5	<1.0 U	1.4	<1.0 U	<1.0 U	<1.0 U	<1.3 U	NS	<1.0 U	0.65 J	<1.0 U	0.96 J	1.1	<1.0 U	2.8	2.0	<1.0 U	<1.0 U	*<10 U*	<1.0 U
Isopropylbenzene	98-82-8	5	11	1.4	3.6	15	0.81 J	NS	<0.86 U	45	<1.0 U	<1.0 U	<1.0 U	1.6	2.1	1.1	2.1	21	27	130	9.4
Methyl tert-butyl ether	1634-04-4	10	0.76 J	0.91 J	<1.0 U	2.4	0.70 J	NS	<0.88 U	<1.0 U	<1.0 U	<1.0 U	1.9	5.7	6.1	1.3	1.7	13	6.2	14	2.8 J
Methylcyclohexane	108-87-2	NL	9.9	<1.0 U	20	36	<1.0 U	NS	NS	85	<1.0 U	<1.0 U	<1.0 U	<1.0 U	1.6	1.5	1.6	6.2	3.5	18	3.6
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	*<9.95 U*	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	0.46 J	<1.0 U	<1.0 U	0.66 J	<1.0 U	<1.0 U	8.7 J	<1.0 U
Naphthalene	91-20-3	10	27 NJ	31 NJ	490 NJ	480 NJ	240 NJ	NS	2.66	190 NJ	5.9 NJ	6.1 NJ	4.9 NJ	49 NJ	55 NJ	16 NJ	94 NJ	640 NJ	600 NJ	5300 NJ	440 NJ
n-Butylbenzene	104-51-8	5	1.8 NJ	NS	NS	NS	NS	NS	<0.83 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	4.7 NJ	NS	3.3 NJ	6.9 NJ	NS	NS	<0.81 U	NS	NS	NS	NS	0.60 NJ	0.97 NJ	1.1 NJ	1.3 NJ	5.0 NJ	8.5 NJ	50 NJ	1.8 NJ
sec-Butylbenzene	135-98-8	5	0.75 NJ	NS	NS	1.0 NJ	NS	NS	<0.78 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	6.6	3.7	<1.0 U	NS	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	9.5 J	4.6
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.35 U	NS	<1.0 U	6.5	9.7	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	*<10 U*	<1.0 U
Total VOC	CALC-VOC	NL	82.76	72.71	220.4	222.4	82.12	1798	15.91	1535.1	33.9	49.06	34.48	66.91	65.62	98.6	126.46	579.6	653.6	3137.2	721.7
PAH (ug/L)																					
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	15.6	NS	7.8 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	0.646	<1.02 U	1.6 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	0.561	<0.93 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	<0.428 U	<0.84 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	<0.576 U	<0.86 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	0.895	<0.91 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	159	<0.87 U	120	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	1.47	<0.90 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	<0.288 U	<1.01 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	178.172	ND	129.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																					
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	*<10 U*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	<0.26 U	NS	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	178.172	ND	129.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-0DD 10/1/2009 MGP-MW-0DD (17-20)100109 17-20	MW-0DD 10/2/2009 MGP-MW-0DD (37-40)100209 37-40	MW-0DD 10/5/2009 MGP-MW-0DD (57.5-60)100509 57.5-60	MW-0DD 10/5/2009 MGP-MW-0DD (60-65)100509 60-65	MW-0DD 10/6/2009 MGP-MW-0DD (76-80)1005609 76-80	MW-04D 4/11/2007 MW-4D-041107 21-30	MW-04D 12/22/2008 MW-4D-122208 21-30	MW-04D 3/9/2010 MW-4D-030910 21-30	MW-04DD 8/18/2009 MGP-MW-4DD (35-41.5)081809 35-41.5	MW-04DD 8/19/2009 MGP-MW-4DD (45-51.6)081909 45-51.5	MW-04DD 8/19/2009 MGP-MW-4DD (55-60.5)081909 55-60.5	MW-04DD 8/20/2009 MGP-MW-4DD (60-65.6)082009 60-65.6	MW-04DD 8/21/2009 MGP-MW-4DD (70-75.5)082109 70-75.5	MW-04DD 8/21/2009 MGP-MW-4DD (75.5-80)082109 75.5-80	MW-04DD 8/24/2009 MGP-MW-4DD (80-85.2)082409 80-85.2	MW-04DD 8/25/2009 MGP-MW-4DD (85-100.4)082509 87-100.4	MW-04DD 9/17/2009 MGP-MW-4DD (100-105.5)091709 100-105.5	MW-04DD 9/18/2009 MGP-MW-4DD (102-110.5)091809 102-110.5	MW-04DD 9/21/2009 MGP-MW-4DD (117-125.5)092109 117-125.5
Metals (ug/L)																						
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	**363 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	<10.0 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	**826**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	**0.96 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	**250000 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	**3.630 J-**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	<15.0 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	<10.0 UJ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	**39000 J-**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	**3.4**	**7.200**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	**48000 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	**20600 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	<0.20 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	<20.0 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	**14500 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	**9.410 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	<5.000 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	**1220000**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	**38.2 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																						
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	**57**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-05D 4/11/2007 MW-5D-041107 42-57	MW-05D 2/3/2009 MW-5D-020309 42-57	MW-05D 3/9/2010 MW-5D-030910 42-57	MW-06D 4/11/2007 MW-6D-041107 25-45	MW-06D 12/22/2008 MW-6D-122208 25-45	MW-06D 3/9/2010 MW-6D-030910 25-45	MW-09D 4/11/2007 MW-9D-041107 35-45	MW-09D 12/22/2008 MW-9D-122208 35-45	MW-09D 3/10/2010 MW-9D-031010 35-45
BTEX (ug/L)				BEDROCK			BEDROCK			BEDROCK	
Benzene	71-43-2	1	<0.28 U	<0.43 U	<1.0 U	<0.28 U	<0.88 U	1.1	277	<0.88 U	180
Ethylbenzene	100-41-4	5	<0.23 U	<0.41 U	<1.0 U	<0.23 U	<0.89 U	0.78 J	58.4	<0.89 U	240
m&p-Xylene	1330-20-7-m,p	NL	NS	<0.86 U	<2.0 U	NS	<1.74 U	1.4 J	NS	2.60	40
o-Xylene	95-47-6	NL	NS	<0.37 U	<1.0 U	NS	<0.85 U	0.77 J	NS	<0.85 U	94
Toluene	108-88-3	5	<0.22 U	<0.45 U	<1.0 U	<0.22 U	<1.08 U	1.0 J	33.2	<1.08 U	19
Xylenes (total)	1330-20-7	5	<0.85	<0.86	NS	<0.85	<1.74	2.17	363	3.25	NS
Total BTEX	CALC-BTEX	NL	ND	ND	ND	ND	ND	5.05	731.6	3.25	439
VOC (ug/L)											
1,2,3-Trichlorobenzene	87-61-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	120-82-1	5	<0.29 U	NS	<1.0 U	<0.29 U	NS	<1.0 U	*<14.5 U*	NS	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	<0.44 U	NS	NS	<0.84 U	NS	NS	1.38	110 NJ
1,3,5-Trimethylbenzene	108-67-8	5	NS	<0.43 U	NS	NS	<0.82 U	NS	NS	<0.82 U	2.1 NJ
2-Butanone	78-93-3	50	<0.59 U	NS	<5.0 U	<0.59 U	NS	<5.0 U	<29.5 U	NS	<5.0 U
4-Isopropyltoluene	99-87-6	NL	NS	<0.34 U	NS	NS	<0.81 U	NS	NS	<0.81 U	5.7 NJ
4-Methyl-2-pentanone	108-10-1	NL	<0.81 U	NS	<5.0 U	<0.81 U	NS	<5.0 U	<40.5 U	NS	<5.0 U
Acetone	67-64-1	50	<1.13 U	NS	<5.0 UJ	<1.13 U	NS	<5.0 UJ	*<56.5 U*	NS	<5.0 UJ
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	16 NJ
Bromodichloromethane	75-27-4	50	NS	NS	<1.0 U	NS	NS	<1.0 U	NS	NS	<1.0 U
Chloroethane	75-00-3	5	<0.6 U	NS	<1.0 U	<0.6 U	NS	<1.0 U	*<30 U*	NS	1.7 J
Chloroform	67-66-3	7	<0.38 U	NS	<1.0 U	<0.38 U	NS	<1.0 U	*<19 U*	NS	<1.0 U
Chloromethane	74-87-3	5	NS	NS	<1.0 U	NS	NS	<1.0 U	NS	NS	<1.0 U
Cyclohexane	110-82-7	NL	NS	NS	<1.0 U	NS	NS	<1.0 U	NS	NS	58
Dibromochloromethane	124-48-1	5	<0.26 U	NS	<1.0 U	<0.26 U	NS	<1.0 U	*<13 U*	NS	<1.0 U
Isopropylbenzene	98-82-8	5	NS	<0.44 U	<1.0 U	NS	<0.86 U	<1.0 U	NS	<0.86 U	46
Methyl tert-butyl ether	1634-04-4	10	NS	<0.50 U	<1.0 U	NS	<0.88 U	<1.0 U	NS	<0.88 U	12
Methylcyclohexane	108-87-2	NL	NS	NS	<1.0 U	NS	NS	<1.0 U	NS	NS	87
Methylene chloride	75-09-2	5	<1.99 U	NS	<1.0 U	<1.99 U	NS	<1.0 U	*<99.5 U*	NS	<1.0 U
Naphthalene	91-20-3	10	NS	<0.33 U	1.7 NJ	NS	<0.61 U	1.5 NJ	NS	<0.61 U	690 NJ
n-Butylbenzene	104-51-8	5	NS	<0.43 U	NS	NS	<0.83 U	NS	NS	<0.83 U	1.4 NJ
n-Propylbenzene	103-65-1	5	NS	<0.41 U	NS	NS	<0.81 U	NS	NS	<0.81 U	30 NJ
sec-Butylbenzene	135-98-8	5	NS	<0.36 U	NS	NS	<0.78 U	NS	NS	<0.78 U	NS
Styrene	100-42-5	5	NS	NS	<1.0 U	NS	NS	<1.0 U	NS	NS	<1.0 U
Tetrachloroethene	127-18-4	5	<0.27 U	NS	<1.0 U	<0.27 U	NS	<1.0 U	*<13.5 U*	NS	<1.0 U
Total VOC	CALC-VOC	NL	ND	ND	ND	ND	ND	7.22	731.6	4.63	777.7
PAH (ug/L)											
2-Methylnaphthalene	91-57-6	NL	<0.264 U	NS	<11 U	<0.264 U	NS	<10 U	226	NS	14
Acenaphthene	83-32-9	20	<0.17 U	<1.02 U	<11 U	<0.17 U	<1.02 U	<10 U	117	<1.02 U	240
Acenaphthylene	208-96-8	NL	<0.158 U	<0.93 U	<11 U	<0.158 U	<0.93 U	<10 U	23.2	<0.93 U	6.1 J
Anthracene	120-12-7	50	<0.428 U	<0.84 U	<11 U	<0.428 U	<0.84 U	<10 U	6.02	<0.84 U	13
Fluoranthene	206-44-0	50	<0.576 U	<0.86 U	<11 U	<0.576 U	<0.86 U	<10 U	<11.5 U	<0.86 U	4.8 J
Fluorene	86-73-7	50	<0.256 U	<0.91 U	<11 U	<0.256 U	<0.91 U	<10 U	39	<0.91 U	61
Naphthalene	91-20-3	10	<0.158 U	<0.87 U	1.5 J	<0.158 U	<0.87 U	<10 U	2280	<0.87 U	980
Phenanthrene	85-01-8	50	<0.44 U	<0.90 U	<11 U	<0.44 U	<0.90 U	<10 U	48.8	<0.90 U	85
Pyrene	129-00-0	50	<0.288 U	<1.01 U	<11 U	<0.288 U	<1.01 U	<10 U	<5.76 U	<1.01 U	5.8 J
Total PAH	CALC-PAH	NL	ND	ND	1.5	ND	ND	ND	2740.02	ND	1409.7
SVOC (ug/L)											
1,1'-Biphenyl	92-52-4	5	NS	NS	*<11 U*	NS	NS	*<10 U*	NS	NS	41
Carbazole	86-74-8	NL	NS	NS	<11 U	NS	NS	<10 U	NS	NS	2.3 J
Dibenzofuran	132-64-9	NL	<0.26 U	NS	<11 U	<0.26 U	NS	<10 U	<5.2 U	NS	7.4 J
Total SVOC	CALC-SVOC	NL	ND	ND	1.5	ND	ND	ND	2740.02	ND	1460.4

Location Sample Date Sample ID Screened Interval	MW-09DD 8/27/2009 MGP-MW-9DD (23-30.5)082709 23-30.5	MW-09DD 8/31/2009 MGP-MW9DD (46-50.5)083109 46-50.5	MW-09DD 8/31/2009 MGP-MW9DD (52-55.4)083109 52-55.4	MW-09DD 9/1/2009 MGP-MW9DD (60-60.5)090109 60-65.5	MW-09DD 9/1/2009 MGP-MW9DD (73-80.5)090109 73-80.5	MW-09DD 9/2/2009 MGP-MW-9DD (87-97)090209 87-97	MW-09DD 9/23/2009 MGP-MW-9DD (100-105)092309 100-105	MW-11D 4/11/2007 DUPE-041107 15-25	MW-11D 4/11/2007 MW-11D-041107 15-25	MW-11D 12/22/2008 MW-11D-122208 15-25	MW-11D 3/9/2010 MW-11D-030910 15-25	MW-12D 12/23/2008 MW-12D-122308 41-49
BTEX (ug/L)				BEDROCK					BEDROCK			BEDROCK
Benzene	720	58	7.8	<1.0 UJ	0.70 J	140	280	26.7	27.9	5.36	3.8	6.05
Ethylbenzene	700	57	12	<1.0 UJ	<1.0 U	130	230	101	108	<0.89 U	3.6	18.1
m&p-Xylene	280	37	14	<2.0 UJ	<2.0 U	46	110	NS	NS	<1.74 U	2.8	7.77
o-Xylene	290	26	8.5	<1.0 UJ	<1.0 U	61	83	NS	NS	<0.85 U	1.1	6.81
Toluene	76	11	4.4	0.97 J	3.3	39	26	10.5	11	<1.08 U	1.4	6.8
Xylenes (total)	NS	NS	NS	NS	NS	NS	NS	65.6	70.6	<1.74	3.9	14.58
Total BTEX	1496	126	24.2	0.97	4	309	536	203.8	217.5	5.36	12.7	45.53
VOC (ug/L)												
1,2,3-Trichlorobenzene	2.0 NJ	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<0.29 U	<0.29 U	NS	<1.0 U	NS
1,2,4-Trimethylbenzene	260 NJ	29 NJ	11 NJ	NS	NS	NS	NS	NS	NS	<0.84 U	0.77 NJ	3.51
1,3,5-Trimethylbenzene	68 NJ	7.4 NJ	4.4 NJ	NS	NS	NS	NS	NS	NS	<0.82 U	NS	2.24
2-Butanone	9.9	<5.0 U	<5.0 U	<5.0 UJ	<5.0 U	<5.0 U	<5.0 U	<0.59 U	<0.59 U	NS	<5.0 U	NS
4-Isopropyltoluene	9.2 NJ	NS	NS	NS	NS	NS	NS	NS	NS	<0.81 U	NS	<0.81 U
4-Methyl-2-pentanone	<5.0 U	<5.0 U	<5.0 U	<5.0 UJ	<5.0 U	<5.0 U	<5.0 U	<0.81 U	<0.81 U	NS	<5.0 U	NS
Acetone	<5.0 U	<5.0 U	10	6.8 J	9.9	5.0	<5.0 U	<1.13 U	<1.13 U	NS	<5.0 UJ	NS
Acrylonitrile	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	<1.0 U	3.7	<1.0 U	6.2 J	3.8	5.0	<1.0 U	NS	NS	NS	<1.0 U	NS
Chloroethane	3.8	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<0.6 U	<0.6 U	NS	<1.0 U	NS
Chloroform	<1.0 U	29	27	30 J	33	23	8.9	<0.38 U	<0.38 U	NS	<1.0 U	NS
Chloromethane	26	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	NS	NS	NS	<1.0 U	NS
Cyclohexane	120	18	1.1	<1.0 UJ	<1.0 U	11	45	NS	NS	NS	1.9	NS
Dibromochloromethane	<1.0 U	<1.0 U	<1.0 U	1.0 J	<1.0 U	1.0	<1.0 U	<0.26 U	<0.26 U	NS	<1.0 U	NS
Isopropylbenzene	87	11	2.4	<1.0 UJ	<1.0 U	6.5	27	NS	NS	3.49	1.1	1.47
Methyl tert-butyl ether	14	1.8	<1.0 U	<1.0 UJ	<1.0 U	9.9	7.4	NS	NS	<0.88 U	<1.0 U	<0.88 U
Methylcyclohexane	130	30	3.8	<1.0 UJ	<1.0 U	9.8	61	NS	NS	NS	<1.0 U	NS
Methylene chloride	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.99 U	<1.99 U	NS	<1.0 U	NS
Naphthalene	1700 NJ	440 NJ	370 NJ	5.9 NJ	2.6 NJ	320 NJ	1100 NJ	NS	NS	<0.61 U	4.2 NJ	10.3
n-Butylbenzene	2.9 NJ	NS	NS	NS	NS	NS	NS	NS	NS	<0.83 U	NS	<0.83 U
n-Propylbenzene	53 NJ	5.9 NJ	1.2 NJ	NS	NS	NS	NS	NS	NS	<0.81 U	1.1 NJ	<0.81 U
sec-Butylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.78 U	NS	<0.78 U
Styrene	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	12	1.5	NS	NS	NS	<1.0 U	NS
Tetrachloroethene	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<0.27 U	<0.27 U	NS	<1.0 U	NS
Total VOC	2456.7	282.5	91	44.97	50.7	499.2	879.8	203.8	217.5	8.85	19.6	63.05
PAH (ug/L)												
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS	NS	<0.132 U	<0.132 U	NS	<10 U	NS
Acenaphthene	NS	NS	NS	NS	NS	NS	NS	<0.085 U	<0.085 U	<1.02 U	<10 U	3.83
Acenaphthylene	NS	NS	NS	NS	NS	NS	NS	<0.079 U	<0.079 U	<0.93 U	<10 U	<0.72 U
Anthracene	NS	NS	NS	NS	NS	NS	NS	<0.214 U	<0.214 U	<0.84 U	<10 U	<0.85 U
Fluoranthene	NS	NS	NS	NS	NS	NS	NS	<0.288 U	<0.288 U	<0.86 U	<10 U	<0.97 U
Fluorene	NS	NS	NS	NS	NS	NS	NS	<0.128 U	<0.128 U	<0.91 U	<10 U	<0.83 U
Naphthalene	NS	NS	NS	NS	NS	NS	NS	3.17	1.05	<0.87 U	1.6 J	<0.83 U
Phenanthrene	NS	NS	NS	NS	NS	NS	NS	<0.22 U	<0.22 U	<0.90 U	<10 U	<0.94 U
Pyrene	NS	NS	NS	NS	NS	NS	NS	<0.144 U	<0.144 U	<1.01 U	<10 U	<0.84 U
Total PAH	ND	ND	ND	ND	ND	ND	ND	3.17	1.05	ND	1.6	3.83
SVOC (ug/L)												
1,1'-Biphenyl	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	*<10 U*	NS
Carbazole	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10 U	NS
Dibenzofuran	NS	NS	NS	NS	NS	NS	NS	<0.13 U	<0.13 U	NS	<10 U	NS
Total SVOC	ND	ND	ND	ND	ND	ND	ND	3.17	1.05	ND	1.6	3.83

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location / Sample Date / Sample ID / Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-05D 4/11/2007 MW-5D-041107 42-57	MW-05D 2/3/2009 MW-5D-020309 42-57	MW-05D 3/9/2010 MW-5D-030910 42-57	MW-06D 4/11/2007 MW-6D-041107 25-45	MW-06D 12/22/2008 MW-6D-122208 25-45	MW-06D 3/9/2010 MW-6D-030910 25-45	MW-09D 4/11/2007 MW-9D-041107 35-45	MW-09D 12/22/2008 MW-9D-122208 35-45	MW-09D 3/10/2010 MW-9D-031010 35-45
Metals (ug/L)											
Aluminum	7429-90-5	NL	NS	NS	**36.8 J**	NS	NS	**51.0 J**	NS	NS	**54.2 J**
Arsenic	7440-38-2	25	NS	NS	<10.0 U	NS	NS	<10.0 U	NS	NS	**9.060 J**
Barium	7440-39-3	1000	NS	NS	**92.9**	NS	NS	**279**	NS	NS	**981**
Cadmium	7440-43-9	5	NS	NS	<3.000 U	NS	NS	<3.000 U	NS	NS	**1.370 J**
Calcium	7440-70-2	NL	NS	NS	**46700 J**	NS	NS	**118000 J**	NS	NS	**299000 J**
Chromium	7440-47-3	50	NS	NS	**2.550 J-**	NS	NS	**33.5 J-**	NS	NS	**4.290 J-**
Cobalt	7440-48-4	NL	NS	NS	<15.0 U	NS	NS	<15.0 U	NS	NS	<15.0 U
Copper	7440-50-8	200	NS	NS	<10.0 UJ	NS	NS	<10.0 UJ	NS	NS	<10.0 UJ
Iron	7439-89-6	300	NS	NS	**109 J-**	NS	NS	**45100 J-**	NS	NS	**41800 J-**
Lead	7439-92-1	25	NS	<1.7 U	<6.000 U	NS	**3.7**	**4.580 J**	NS	<1.7 U	**9.150**
Magnesium	7439-95-4	35000	NS	NS	**8220 J**	NS	NS	**14600 J**	NS	NS	**74100 J**
Manganese	7439-96-5	300	NS	NS	**15.4 J**	NS	NS	**10500 J**	NS	NS	**27700 J**
Mercury	7439-97-6	0.7	NS	NS	<0.20 U	NS	NS	**0.19 J**	NS	NS	<0.20 U
Nickel	7440-02-0	100	NS	NS	<20.0 U	NS	NS	**15.5 J**	NS	NS	<20.0 U
Potassium	7440-09-7	NL	NS	NS	**5870 J**	NS	NS	**6860 J**	NS	NS	**12900 J**
Selenium	7782-49-2	10	NS	NS	<10.0 U	NS	NS	**10.9**	NS	NS	**16.2**
Silver	7440-22-4	50	NS	NS	<5.000 U	NS	NS	<5.000 U	NS	NS	<5.000 U
Sodium	7440-23-5	20000	NS	NS	**250000**	NS	NS	**417000**	NS	NS	**1060000**
Zinc	7440-66-6	2000	NS	NS	**28.0 J**	NS	NS	**20.5 J**	NS	NS	**29.4 J**
Cyanide (ug/L)											
Cyanide, Total	57-12-5	200	NS	NS	**28**	NS	NS	**145**	NS	NS	**94**

Location / Sample Date / Sample ID / Screened Interval	MW-09DD 8/27/2009 MGP-MW-9DD (23-30.5)082709 23-30.5	MW-09DD 8/31/2009 MGP-MW9DD (46-50.5)083109 46-50.5	MW-09DD 8/31/2009 MGP-MW9DD (52-55.4)083109 52-55.4	MW-09DD 9/1/2009 MGP-MW9DD (60-60.5)090109 60-65.5	MW-09DD 9/1/2009 MGP-MW9DD (73-80.5)090109 73-80.5	MW-09DD 9/2/2009 MGP-MW-9DD (87-97)090209 87-97	MW-09DD 9/23/2009 MGP-MW-9DD (100-105)092309 100-105	MW-11D 4/11/2007 DUPE-041107 15-25	MW-11D 4/11/2007 MW-11D-041107 15-25	MW-11D 12/22/2008 MW-11D-122208 15-25	MW-11D 3/9/2010 MW-11D-030910 15-25	MW-12D 12/23/2008 MW-12D-122308 41-49
Metals (ug/L)												
Aluminum	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**59.3 J**	NS
Arsenic	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0 U	NS
Barium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**85.6**	NS
Cadmium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<3.000 U	NS
Calcium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**61400 J**	NS
Chromium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.000 UJ	NS
Cobalt	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<15.0 U	NS
Copper	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0 UJ	NS
Iron	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**980 J-**	NS
Lead	NS	NS	NS	NS	NS	NS	NS	NS	NS	<1.7 U	<6.000 U	**5.9**
Magnesium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**7610 J**	NS
Manganese	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**507 J**	NS
Mercury	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.20 U	NS
Nickel	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<20.0 U	NS
Potassium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**6830 J**	NS
Selenium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<10.0 U	NS
Silver	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.000 U	NS
Sodium	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**417000**	NS
Zinc	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**19.0 J**	NS
Cyanide (ug/L)												
Cyanide, Total	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**30**	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

Location / Sample Date / Sample ID / Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-13D 2/3/2009 MW-13D-020309 43-53	MW-13D 3/10/2010 MW-13D-031010 43-53	MW-101D 2/4/2010 MGP-MW-101D (17-22) 17-22	MW-101D 2/4/2010 MGP-MW-101D (35-40) 35-40	MW-101D 2/4/2010 MGP-MW-101D (46-51) 46-51	MW-101D 2/5/2010 MGP-MW-101D (103-108) 103-108	MW-101D 2/5/2010 MGP-MW-101D (108-113) 108-113	MW-101D 2/5/2010 MGP-MW-101D (132-137) 132-137	MW-102D 2/8/2010 MGP-MW-102D (10-15)020810 10-15	MW-102D 2/8/2010 MGP-MW-102D (26-31)020810 26-31	MW-102D 2/8/2010 MGP-MW-102D (37-42)020810 37-42	MW-102D 2/8/2010 MGP-MW-102D (44-49)020810 44-49	MW-102D 2/8/2010 MGP-MW-102D (47-52)020810 47-52	MW-102D 2/8/2010 MGP-MW-102D (76-81)020810 76-81	MW-102D 2/8/2010 MGP-MW-102D (81-86)020810 81-86	MW-102D 2/8/2010 MGP-MW-102D (111-116)020810 111-116	MW-102D 2/8/2010 MGP-MW-102D (116-121)020810 116-121	MW-102D 2/8/2010 MGP-MW-102D (132-137)020810 132-137
BTEX (ug/L)			**BEDROCK**		**BEDROCK**						**BEDROCK**							**BEDROCK**		
Benzene	71-43-2	1	<0.43 U	**4.6**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**47**	**40**	**31**	**31**	**31**	**29**	**29**	**34**	**33**	**33**
Ethylbenzene	100-41-4	5	<0.41 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**52**	**40**	**39 J**	**38 J**	**34 J**	**33 J**	**35 J**	**32**	**30**	**30**
m&p-Xylene	1330-20-7-m,p	NL	<0.86 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	<2.0 U	**59**	**43**	**50 J**	**49 J**	**45 J**	**42 J**	**43 J**	**35**	**30**	**34**
o-Xylene	95-47-6	NL	<0.37 U	**0.56 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**10**	**7.7**	**9.3 J**	**8.9 J**	**8.1 J**	**7.7 J**	**7.9 J**	**5.9**	**5.5**	**5.8**
Toluene	108-88-3	5	<0.45 U	<1.0 U	<1.0 U	<1.0 U	**0.82 J**	**1.1 J**	**1.2 J**	**1.2 J**	**40**	**31**	**23 J**	**23 J**	**23 J**	**22 J**	**21 J**	**26**	**25**	**27**
Xylenes (total)	1330-20-7	5	<0.86	**0.56**	ND	ND	ND	ND	ND	ND	**69**	**50.7**	**59.3**	**57.9**	**53.1**	**49.7**	**50.9**	**40.9**	**35.5**	**39.8**
Total BTEX	CALC-BTEX	NL	ND	**5.16**	ND	ND	**0.82**	**1.1**	**1.2**	**1.2**	**208**	**161.7**	**152.3**	**149.9**	**141.1**	**133.7**	**135.9**	**132.9**	**123.5**	**129.8**
VOC (ug/L)																				
1,2,3-Trichlorobenzene	87-61-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	120-82-1	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	<0.44 U	NS	NS	NS	NS	NS	NS	NS	**9.7 NJ**	**6.9 NJ**	**20 NJ**	**19 NJ**	**16 NJ**	**15 NJ**	**15 NJ**	**5.3 NJ**	**3.8 NJ**	**6.8 NJ**
1,3,5-Trimethylbenzene	108-67-8	5	<0.43 U	NS	NS	NS	NS	NS	NS	NS	**3.1 NJ**	**2.1 NJ**	**4.1 NJ**	**4.0 NJ**	**3.5 NJ**	**3.1 NJ**	**3.4 NJ**	**1.6 NJ**	**1.3 NJ**	**1.7 NJ**
2-Butanone	78-93-3	50	NS	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**1.8 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U
4-Isopropyltoluene	99-87-6	NL	<0.34 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	NS	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
Acetone	67-64-1	50	NS	<5.0 UJ	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	NS	<1.0 U	<1.0 U	<1.0 U	**0.52 J**	**0.44 J**	**0.45 J**	**0.41 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.55 J**	**0.82 J**	**1.1**	<1.0 U	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cyclohexane	110-82-7	NL	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**34**	**26**	**6.7**	**6.3**	**5.0**	**5.4**	**6.5**	**18**	**18**	**17**
Dibromochloromethane	124-48-1	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	<0.44 U	**0.94 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**13**	**9.5**	**10**	**9.6**	**8.5**	**8**	**8.4**	**7.2**	**6.6**	**6.4**
Methyl tert-butyl ether	1634-04-4	10	**2.91**	**5.5**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylcyclohexane	108-87-2	NL	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**28**	**21**	**12**	**12**	**8.4**	**9.0**	**12**	**14**	**13**	**13**
Methylene chloride	75-09-2	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	<0.33 U	**2.2 NJ**	NS	**2.0 NJ**	**1.1 NJ**	**0.93 NJ**	**0.94 NJ**	**0.97 NJ**	**18 NJ**	**15 NJ**	**14 NJ**	**13 NJ**	**11 NJ**	**11 NJ**	**11 NJ**	**10 NJ**	**9.6 NJ**	**9.6 NJ**
n-Butylbenzene	104-51-8	5	<0.43 U	NS	NS	NS	NS	NS	NS	NS	**3.7 NJ**	**2.6 NJ**	**5.7 NJ**	**5.2 NJ**	NS	NS	NS	**1.8 NJ**	**1.6 NJ**	NS
n-Propylbenzene	103-65-1	5	<0.41 U	NS	NS	NS	NS	NS	NS	NS	**22 NJ**	**16 NJ**	**17 NJ**	**17 NJ**	**14 NJ**	**13 NJ**	**14 NJ**	**11 NJ**	**10 NJ**	**10 NJ**
sec-Butylbenzene	135-98-8	5	<0.36 U	NS	NS	NS	NS	NS	NS	NS	**1.8 NJ**	**1.4 NJ**	**1.4 NJ**	**1.3 NJ**	**1.1 NJ**	**1.0 NJ**	**1.1 NJ**	**0.95 NJ**	**0.84 NJ**	**0.92 NJ**
Styrene	100-42-5	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	NS	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**2.91**	**12.16**	ND	ND	**1.34**	**1.54**	**1.65**	**1.61**	**352**	**268.9**	**240.3**	**235.7**	**216.65**	**208.42**	**214.8**	**213**	**196.6**	**206**
PAH (ug/L)																				
2-Methylnaphthalene	91-57-6	NL	NS	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	<1.02 U	**1.6 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	<0.93 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	<0.84 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	<0.86 U	**3.0 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	<0.91 U	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	<0.87 U	**1.7 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	<0.90 U	**2.6 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	<1.01 U	**3.9 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	**12.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																				
1,1'-Biphenyl	92-52-4	5	NS	**2.7 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	<10 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	**15.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-13D 2/3/2009 MW-13D-020309 43-53	MW-13D 3/10/2010 MW-13D-031010 43-53	MW-101D 2/4/2010 MGP-MW-101D (17-22) 17-22	MW-101D 2/4/2010 MGP-MW-101D (35-40) 35-40	MW-101D 2/4/2010 MGP-MW-101D (46-51) 46-51	MW-101D 2/5/2010 MGP-MW-101D (103-108) 103-108	MW-101D 2/5/2010 MGP-MW-101D (108-113) 108-113	MW-101D 2/5/2010 MGP-MW-101D (132-137) 132-137	MW-102D 2/8/2010 MGP-MW-102D (10-15)020810 10-15	MW-102D 2/8/2010 MGP-MW-102D (26-31)020810 26-31	MW-102D 2/8/2010 MGP-MW-102D (37-42)020810 37-42	MW-102D 2/8/2010 MGP-MW-102D (44-49)020810 44-49	MW-102D 2/8/2010 MGP-MW-102D (47-52)020810 47-52	MW-102D 2/8/2010 MGP-MW-102D (76-81)020810 76-81	MW-102D 2/8/2010 MGP-MW-102D (81-86)020810 81-86	MW-102D 2/8/2010 MGP-MW-102D (111-116)020810 111-116	MW-102D 2/8/2010 MGP-MW-102D (116-121)020810 116-121	MW-102D 2/8/2010 MGP-MW-102D (132-137)020810 132-137
Metals (ug/L)																				
Aluminum	7429-90-5	NL	NS	**95.2 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	**16.2**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	**722**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	**4.540**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	**462000 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	**4.060 J-**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	**12.4 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	**8.470 J-**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	**498 J-**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	<1.7 U	**3.630 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	**110000 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	**23000 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	<0.20 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	**20.8**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	**21400 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	**15.1**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	**3.080 J+**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	**1390000**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	**81.7 J**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																				
Cyanide, Total	57-12-5	200	NS	**24**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-103D 2/9/2010 MGP-MW-103D (24-29)020910 24-29	MW-103D 2/9/2010 MGP-MW-103D (30-35)020910 30-35	MW-103D 2/9/2010 MGP-MW-103D (33-38)020910 33-38	MW-103D 2/9/2010 MGP-MW-103D (38-43)020910 38-43	MW-103D 2/9/2010 MGP-MW-103D (45-50)020910 45-50	MW-103D 2/12/2010 MGP-MW-103D (51-56)021210 51-56	MW-103D 2/12/2010 MGP-MW-103D (55-60)021210 55-60	MW-103D 2/12/2010 MGP-MW-103D (63-68)021210 63-68	MW-103D 2/12/2010 MGP-MW-103D (70-75)021210 70-75	MW-103D 2/9/2010 MGP-MW-103D (82-87)020910 82-87	MW-103D 2/9/2010 MGP-MW-103D (88-93)020910 88-93	MW-103D 2/9/2010 MGP-MW-103D (94-99)020910 94-99	MW-103D 2/8/2010 MGP-MW-103D (107-112)020810 107-112	MW-104D 2/17/2010 MGP-MW-104D (23-28)021710 23-28	MW-104D 2/17/2010 MGP-MW-104D (33-38)021710 33-38	MW-104D 2/17/2010 MGP-MW-104D (66-71)021710 66-71	MW-104D 2/17/2010 MGP-MW-104D (71-76)021710 71-76	MW-104D 2/17/2010 MGP-MW-104D (91-96)021710 91-96	MW-104D 2/17/2010 MGP-MW-104D (102-107)021710 102-107
BTEX (ug/L)									BEDROCK									BEDROCK			
Benzene	71-43-2	1	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.70 J**	**6.1**	<1.0 U	**1.6**	**3.1**	**17**	**250**	**270**	**230**	**290**	**280**	**280**
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**1000**	**1000**	**890**	**1000**	**980**	**880**
m&p-Xylene	1330-20-7-m,p	NL	**1.2 J**	**1.2 J**	**0.99 J**	**1.0 J**	<2.0 U	**1.1 J**	**1.0 J**	**1.5 J**	**1.1 J**	**1.3 J**	**1.2 J**	**1.2 J**	**0.96 J**	**700**	**690**	**620**	**700**	**690**	**620**
o-Xylene	95-47-6	NL	**0.67 J**	**0.82 J**	**0.59 J**	**0.65 J**	**0.58 J**	**0.80 J**	**0.74 J**	**0.94 J**	**1.1**	**0.70 J**	**0.81 J**	**1.0**	**2.2**	**500**	**490**	**450**	**510**	**510**	**440**
Toluene	108-88-3	5	**4.2**	**5.2**	**6.9**	**4.9**	**8.4**	**3.1**	**4.3**	**6.8**	**4.6**	**4.2**	**8.7**	**7**	**0.98 J**	**74**	**72**	**76**	**82**	**88**	**83**
Xylenes (total)	1330-20-7	5	**1.87**	**2.02**	**1.58**	**1.65**	**0.58**	**1.9**	**1.74**	**2.44**	**2.2**	**2**	**2.01**	**2.2**	**3.16**	**1200**	**1180**	**1070**	**1210**	**1200**	**1060**
Total BTEX	CALC-BTEX	NL	**6.07**	**7.22**	**8.48**	**6.55**	**8.98**	**5**	**6.04**	**9.94**	**12.9**	**6.2**	**12.31**	**12.3**	**21.14**	**2524**	**2522**	**2266**	**2582**	**2548**	**2303**
VOC (ug/L)																					
1,2,3-Trichlorobenzene	87-61-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**1.1 NJ**	**250 NJ**	**250 NJ**	**250 NJ**	**240 NJ**	**250 NJ**	**210 NJ**
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**87 NJ**	**89 NJ**	**94 NJ**	**91 NJ**	**91 NJ**	**78 NJ**
2-Butanone	78-93-3	50	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**11 NJ**	**11 NJ**	**11 NJ**	**10 NJ**	**9.3 NJ**	**7.6 NJ**
4-Methyl-2-pentanone	108-10-1	NL	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
Acetone	67-64-1	50	**13 J**	<5.0 U	<5.0 U	**11 J**	**10 J**	<5.0 U	**9.8 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**4.5**	**5.5**	**5.0**	**5.3**	**4.8**
Chloroform	67-66-3	7	**2.2**	**1.4**	**1.4**	**1.6**	**1.6**	**0.77 J**	**0.79 J**	**0.75 J**	**0.92 J**	**1.2**	**1.3**	**1.3**	**2.8**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**98**	**96**	**92**	**88**	**92**	**78**
Dibromochloromethane	124-48-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.71 J**	**100**	**100**	**100**	**100**	**100**	**86**
Methyl tert-butyl ether	1634-04-4	10	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.78 J**	<1.0 U	<1.0 U	<1.0 U	**2.3**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**140**	**140**	**120**	**120**	**120**	**100**
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	**1.4 NJ**	**1.4 NJ**	**1.3 NJ**	**1.3 NJ**	**1.6 NJ**	NS	**1.6 NJ**	**1.6 NJ**	**7.2 NJ**	**1.8 NJ**	**4.0 NJ**	**7.4 NJ**	**24 NJ**	**3400 NJ**	**2800 NJ**	**2900 NJ**	**2800 NJ**	**2900 NJ**	**3000 NJ**
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**39 NJ**	**39 NJ**	**39 NJ**	**38 NJ**	**38 NJ**	**32 NJ**
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**2.2**	**2.2**	**2.7**	**3.6**	**4.0**	**3.9**
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**23.14**	**10.64**	**11.46**	**20.8**	**21.16**	**7.67**	**18.37**	**13.13**	**16.8**	**9.4**	**15.62**	**15.8**	**30.11**	**4064.2**	**4044.7**	**3656.2**	**4108.6**	**4069.3**	**3635.7**
PAH (ug/L)																					
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																					
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-103D 2/9/2010 MGP-MW-103D (24-29)020910 24-29	MW-103D 2/9/2010 MGP-MW-103D (30-35)020910 30-35	MW-103D 2/9/2010 MGP-MW-103D (33-38)020910 33-38	MW-103D 2/9/2010 MGP-MW-103D (38-43)020910 38-43	MW-103D 2/9/2010 MGP-MW-103D (45-50)020910 45-50	MW-103D 2/12/2010 MGP-MW-103D (51-56)021210 51-56	MW-103D 2/12/2010 MGP-MW-103D (55-60)021210 55-60	MW-103D 2/12/2010 MGP-MW-103D (63-68)021210 63-68	MW-103D 2/12/2010 MGP-MW-103D (70-75)021210 70-75	MW-103D 2/9/2010 MGP-MW-103D (82-87)020910 82-87	MW-103D 2/9/2010 MGP-MW-103D (88-93)020910 88-93	MW-103D 2/9/2010 MGP-MW-103D (94-99)020910 94-99	MW-103D 2/8/2010 MGP-MW-103D (107-112)020810 107-112	MW-104D 2/17/2010 MGP-MW-104D (23-28)021710 23-28	MW-104D 2/17/2010 MGP-MW-104D (33-38)021710 33-38	MW-104D 2/17/2010 MGP-MW-104D (66-71)021710 66-71	MW-104D 2/17/2010 MGP-MW-104D (71-76)021710 71-76	MW-104D 2/17/2010 MGP-MW-104D (91-96)021710 91-96	MW-104D 2/17/2010 MGP-MW-104D (102-107)021710 102-107
Metals (ug/L)																					
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																					
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-105D 2/15/2010 MGP-MW-105D (21-26)021510 21-26	MW-105D 2/15/2010 MGP-MW-105D (26-31)021510 26-31	MW-105D 2/15/2010 MGP-MW-105D (32-37)021510 32-37	MW-105D 2/15/2010 MGP-MW-105D (51-56)021510 51-56	MW-105D 2/15/2010 MGP-MW-105D (68-73)021510 68-73	MW-105D 2/16/2010 MGP-MW-105D (80-85)021610 80-85	MW-105D 2/16/2010 MGP-MW-105D (99-104)021610 99-104	MW-105D 2/16/2010 MGP-MW-105D (114-119)021610 114-119	MW-105D 2/16/2010 MGP-MW-105D (120-125)021610 120-125	MW-106D 12/15/2009 MGP-MW-106D (8-13)121509 8-13	MW-106D 12/15/2009 MGP-MW-106D (20-25)121509 20-25	MW-106D 12/15/2009 MGP-MW-106D (25-30)121509 25-30	MW-106D 12/16/2009 MGP-MW-106D 43.5-48.5)121609 43.5-48.5	MW-106D 12/16/2009 MGP-MW-106D (51-56)121609 51-56	MW-106D 12/16/2009 MGP-MW-106D (63-68)121609 63-68	MW-106D 12/16/2009 MGP-MW-106D (88-93)121609 88-93	MW-106D 12/16/2009 MGP-MW-106D (104-109)121609 104-109	MW-106D 12/16/2009 MGP-MW-106D (136-141)121609 136-141	MW-106D 12/16/2009 MGP-MW-106D (143-148)121609 143-148
BTEX (ug/L)							**BEDROCK**							**BEDROCK**					**BEDROCK**		
Benzene	71-43-2	1	**15**	**35**	**20**	**21**	**23**	**23**	**91**	**110**	**62**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.82 J**
Ethylbenzene	100-41-4	5	**100**	**27**	**23**	**27**	**64**	**23**	**980**	**970**	**560**	<1.0 U	**0.70 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	**85**	**8.8**	**6.5**	**7.9**	**35**	**6.8**	**730**	**760**	**400**	<2.0 U	**3.2**	**2.2**	**1.5 J**	**1.4 J**	**1.1 J**	<2.0 U	<2.0 U	<2.0 U	<2.0 U
o-Xylene	95-47-6	NL	**48**	**8.2**	**7.3**	**8.7**	**25**	**7.4**	**450**	**470**	**260**	<1.0 U	**1.1**	**0.64 J**	**0.50 J**	**0.46 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	**50**	**3.7**	**2.7**	**3.5**	**13**	**2.9**	**320**	**340**	**190**	**0.62 J**	**15**	**8.3**	**5.8**	**5.8**	**4.0**	**6**	**6.7**	**2.6**	**12**
Xylenes (total)	1330-20-7	5	**133**	**17**	**13.8**	**16.6**	**60**	**14.2**	**1180**	**1230**	**660**	ND	4.3	2.84	2	1.86	1.1	ND	ND	ND	ND
Total BTEX	CALC-BTEX	NL	**298**	**82.7**	**59.5**	**68.1**	**160**	**63.1**	**2571**	**2650**	**1472**	**0.62**	**20**	**11.14**	**7.8**	**7.66**	**5.1**	**6**	**6.7**	**2.6**	**12.82**
VOC (ug/L)																					
1,2,3-Trichlorobenzene	87-61-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	**76 NJ**	**14 NJ**	**11 NJ**	**12 NJ**	**27 NJ**	**8.9 NJ**	**270 NJ**	**320 NJ**	**150 NJ**	NS	**1.2 NJ**	**0.67 NJ**	**0.54 NJ**	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	**23 NJ**	**3.8 NJ**	**2.7 NJ**	**3.0 NJ**	**7.9 NJ**	**2.0 NJ**	**98 NJ**	**120 NJ**	**50 NJ**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	**19 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**9.0 J**	**11 J**	**5.6 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
4-Isopropyltoluene	99-87-6	NL	**4.5 NJ**	**0.91 NJ**	**0.68 NJ**	**0.60 NJ**	**1.2 NJ**	NS	**7.7 NJ**	**12 NJ**	**5.5 NJ**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**2.8 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**5.1**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U
Acetone	67-64-1	50	**38 J**	**12 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**24 J**	**23 J**	**18 J**	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	<5.0 U	**5.7**	<5.0 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	**11**	**0.70 J**	**0.62 J**	**0.67 J**	**1.3**	<1.0 U	**5.4**	**6.1**	**2.9**	<1.0 U	**1.3**	**1.1**	**3.3**	**5.4**	**5.6**	**4.8**	**4.3**	**1.0**	**4.6**
Chloromethane	74-87-3	5	**0.67 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.76 J**	**0.71 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cyclohexane	110-82-7	NL	**2.2**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**1.5**	**1.7**	**0.87 J**	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
Dibromochloromethane	124-48-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	**25**	**5.6**	**4.8**	**5.6**	**9.8**	**4.2**	**94**	**110**	**50**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<1.0 U	**0.80 J**	**0.75 J**	**0.82 J**	**0.73 J**	**0.86 J**	**0.86 J**	**0.87 J**	**0.76 J**	<1.0 U	<1.0 U	<1.0 U	**1.3**	**1.7**	**2.3**	**1.6**	**1.8**	<1.0 U	**1.9**
Methylcyclohexane	108-87-2	NL	**8.9**	**0.98 J**	<1.0 U	<1.0 U	**1.2**	<1.0 U	**3.4**	**4.0**	**1.9**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	**0.69 J**	**0.57 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**0.86 J**	**0.76 J**	**0.58 J**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	**1200 NJ**	**350 NJ**	**270 NJ**	**300 NJ**	**570 NJ**	**210 NJ**	**2000 NJ**	**2300 NJ**	**1700 NJ**	NS	**4.3 NJ**	**3.5 NJ**	**6.4 NJ**	**6.6 NJ**	**5.1 NJ**	**5.3 NJ**	**5.7 NJ**	**1.3 NJ**	**5.0 NJ**
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	**11 NJ**	**2.0 NJ**	**1.7 NJ**	**1.8 NJ**	**3.5 NJ**	**1.3 NJ**	**31 NJ**	**38 NJ**	**17 NJ**	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	**15**	<1.0 U	<1.0 U	<1.0 U	**1.4**	<1.0 U	**92**	**110**	**46**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**551.46**	**120.35**	**79.47**	**91.79**	**234.43**	**82.36**	**3985.58**	**4148.14**	**2258.61**	**0.62**	**25.6**	**20.18**	**14.4**	**16.62**	**14.1**	**12.4**	**12.8**	**9.3**	**19.32**
PAH (ug/L)																					
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																					
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-105D 2/15/2010 MGP-MW-105D (21-26)021510 21-26	MW-105D 2/15/2010 MGP-MW-105D (26-31)021510 26-31	MW-105D 2/15/2010 MGP-MW-105D (32-37)021510 32-37	MW-105D 2/15/2010 MGP-MW-105D (51-56)021510 51-56	MW-105D 2/15/2010 MGP-MW-105D (68-73)021510 68-73	MW-105D 2/16/2010 MGP-MW-105D (80-85)021610 80-85	MW-105D 2/16/2010 MGP-MW-105D (99-104)021610 99-104	MW-105D 2/16/2010 MGP-MW-105D (114-119)021610 114-119	MW-105D 2/16/2010 MGP-MW-105D (120-125)021610 120-125	MW-106D 12/15/2009 MGP-MW-106D (8-13)121509 8-13	MW-106D 12/15/2009 MGP-MW-106D (20-25)121509 20-25	MW-106D 12/15/2009 MGP-MW-106D (25-30)121509 25-30	MW-106D 12/16/2009 MGP-MW-106D 43.5-48.5)121609 43.5-48.5	MW-106D 12/16/2009 MGP-MW-106D (51-56)121609 51-56	MW-106D 12/16/2009 MGP-MW-106D (63-68)121609 63-68	MW-106D 12/16/2009 MGP-MW-106D (88-93)121609 88-93	MW-106D 12/16/2009 MGP-MW-106D (104-109)121609 104-109	MW-106D 12/16/2009 MGP-MW-106D (136-141)121609 136-141	MW-106D 12/16/2009 MGP-MW-106D (143-148)121609 143-148
Metals (ug/L)																					
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																					
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
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NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-109D 4/14/2012 MW-109D (30-35)041412 30-35	MW-109D 4/14/2012 MW-109D (35-40)041412 35-40	MW-109D 4/14/2012 DUP-8-041412 35-40	MW-109D 4/14/2012 MW-109D (43-48)041412 43-48	MW-109D 4/14/2012 MW-109D (54-59)041412 54-59	MW-109D 4/14/2012 MW-109D (66-71)041412 66-71	MW-109D 4/15/2012 MW-109D (74-79)041512 74-79	MW-109D 4/15/2012 MW-109D (89.5-94.5)041512 89.5-94.5	MW-109D 4/15/2012 MW-109D(107.5-112.5)041512 107.5-112.5	MW-109D 4/15/2012 MW-109D(149-154)041512 149-154	MW-109D 4/15/2012 MW-109D(163.5-168.5)041512 163.5-168.5	MW-109D 4/15/2012 MW-109D(168.5-173.5)041512 168.5-173.5	MW-109D 4/15/2012 MW-109D(184-189)041512 184-189	MW-109D 4/15/2012 MW-109D(189-194)041512 189-194	MW-110D 2/21/2012 MW-110D(15-20)022112 15-20	MW-110D 2/21/2012 MW-110D (23-28)022112 23-28	MW-110D 2/21/2012 MW-110D (28-33)022112 28-33	MW-110D 2/21/2012 MW-110D (33-38)022112 33-38	MW-110D 2/21/2012 MW-110D (39-44)022112 39-44	MW-110D 2/22/2012 MW-110D (48-53)022212 48-53	MW-110D 2/22/2012 MW-110D (54-59)022212 54-59
BTEX (ug/L)								**BEDROCK**															
Benzene	71-43-2	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	**1.9**	**2.2**	**2.4**	<1.0 U	**5.6**	**1.4**	**2.3**	**1.7**	**7.0**	**19**	**36**	**34**	**14**	**32**	**4.2**	**9.2**	**9.6**	**8.2**	**8.4**	**3.6**	**5.6**
Xylenes (total)	1330-20-7	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	**1.9**	**2.2**	**2.4**	ND	**5.6**	**1.4**	**2.3**	**1.7**	**7.0**	**19**	**36**	**34**	**14**	**32**	**4.2**	**9.2**	**9.6**	**8.2**	**8.4**	**3.6**	**5.6**
VOC (ug/L)																							
1,2,3-Trichlorobenzene	87-61-6	NL	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Acetone	67-64-1	50	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<0.50 U	<0.50 U	**1.0**	<0.50 U	<0.50 U	**1.3**	**1.1**
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	**2.4**	<1.0 U	**2.0**	**4.2**	<1.0 U	<1.0 U	<1.0 U	**1.2**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**5.0**	**4.5**	**4.8**	**4.8**	**4.5**	**5.6**	**5.5**
Chloromethane	74-87-3	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Dibromochloromethane	124-48-1	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	**1.4 J**	**1.1 J**	**0.88 J**	**0.95 J**	**1.0 J**	**1.8 J**	**1.0 J**	**2.2 J**	**3.6 J**	**4.2 J**	**5.2 J**	**3.1**	**5.2 J**	**3.8**	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**5.7**	**3.3**	**5.28**	**5.15**	**6.6**	**3.2**	**3.3**	**5.1**	**10.6**	**23.2**	**41.2**	**37.1**	**19.2**	**35.8**	**9.2**	**13.7**	**15.4**	**13**	**12.9**	**10.5**	**12.2**
PAH (ug/L)																							
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																							
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-109D 4/14/2012 MW-109D (30-35)041412 30-35	MW-109D 4/14/2012 MW-109D (35-40)041412 35-40	MW-109D 4/14/2012 DUP-8-041412 35-40	MW-109D 4/14/2012 MW-109D (43-48)041412 43-48	MW-109D 4/14/2012 MW-109D (54-59)041412 54-59	MW-109D 4/14/2012 MW-109D (66-71)041412 66-71	MW-109D 4/15/2012 MW-109D (74-79)041512 74-79	MW-109D 4/15/2012 MW-109D (89.5-94.5)041512 89.5-94.5	MW-109D 4/15/2012 MW-109D(107.5-112.5)041512 107.5-112.5	MW-109D 4/15/2012 MW-109D(149-154)041512 149-154	MW-109D 4/15/2012 MW-109D(163.5-168.5)041512 163.5-168.5	MW-109D 4/15/2012 MW-109D(168.5-173.5)041512 168.5-173.5	MW-109D 4/15/2012 MW-109D(184-189)041512 184-189	MW-109D 4/15/2012 MW-109D(189-194)041512 189-194	MW-110D 2/21/2012 MW-110D(15-20)022112 15-20	MW-110D 2/21/2012 MW-110D (23-28)022112 23-28	MW-110D 2/21/2012 MW-110D (28-33)022112 28-33	MW-110D 2/21/2012 MW-110D (33-38)022112 33-38	MW-110D 2/21/2012 MW-110D (39-44)022112 39-44	MW-110D 2/22/2012 MW-110D (48-53)022212 48-53	MW-110D 2/22/2012 MW-110D (54-59)022212 54-59
Metals (ug/L)																								
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																								
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-110D 2/22/2012 DUP-3-022212 54-59	MW-110D 2/22/2012 MW-110D (73-78)022212 73-78	MW-110D 2/22/2012 MW-110D (81-86)022212 81-86	MW-110D 2/22/2012 MW-110D (94-99)022212 94-99	MW-110D 2/22/2012 MW-110D (103-108)022212 103-108	MW-110D 2/22/2012 MW-110D(108.5- 113.5)022212 108.5-113.5	MW-110D 2/23/2012 MW-110D (114-119)022312 114-119	MW-110D 2/23/2012 MW-110D (121-126)022312 121-126	MW-110D 2/23/2012 MW-110D (145-150)022312 145-150	MW-110D 2/23/2012 MW-110D (165-170)022312 165-170	MW-110D 2/23/2012 MW-110D (170-175)022312 170-175	MW-112D 3/12/2012 MW-112D (20-25)031212 20-25	MW-112D 3/12/2012 DUP-6-031212 20-25	MW-112D 3/12/2012 MW-112D (23-28)031212 23-28	MW-112D 3/12/2012 MW-112D (28-33)031212 28-33	MW-112D 3/12/2012 MW-112D (33-38)031212 33-38	MW-112D 3/12/2012 MW-112D (44-49)031212 44-49	MW-112D 3/12/2012 MW-112D (50-55)031212 50-55	MW-112D 3/12/2012 MW-112D (57-62)031212 57-62
BTEX (ug/L)			**BEDROCK**																**BEDROCK**		
Benzene	71-43-2	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	**5.9**	**8.1**	**7.6**	**8.8**	**6.1**	**7.6**	**2.6**	**2.7**	**3.6**	**2.6**	**1.8**	**4.5 J**	**2.0 J**	**1.9**	**1.1**	**3.9**	**5.0**	**7.2**	**8.9**
Xylenes (total)	1330-20-7	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	**5.9**	**8.1**	**7.6**	**8.8**	**6.1**	**7.6**	**2.6**	**2.7**	**3.6**	**2.6**	**1.8**	**4.5**	**2.0**	**1.9**	**1.1**	**3.9**	**5.0**	**7.2**	**8.9**
VOC (ug/L)																					
1,2,3-Trichlorobenzene	87-61-6	NL	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Acetone	67-64-1	50	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 UJ	<10 UJ	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	**1.3**	**1.3**	**1.3**	**1.2**	**1.4**	**1.5**	**1.4**	**1.4**	**1.3**	**1.3**	**1.4**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	**5.8**	**5.8**	**5.8**	**5.7**	**6.2**	**6.0**	**5.9**	**5.8**	**6.0**	**6.2**	**6.5**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Dibromochloromethane	124-48-1	5	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 UJ	<0.56 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**13**	**15.2**	**14.7**	**15.7**	**13.7**	**15.1**	**9.9**	**9.9**	**10.9**	**10.1**	**9.7**	**4.5**	**2**	**1.9**	**1.1**	**3.9**	**5**	**7.2**	**8.9**
PAH (ug/L)																					
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																					
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-110D 2/22/2012 DUP-3-022212 54-59	MW-110D 2/22/2012 MW-110D (73-78)022212 73-78	MW-110D 2/22/2012 MW-110D (81-86)022212 81-86	MW-110D 2/22/2012 MW-110D (94-99)022212 94-99	MW-110D 2/22/2012 MW-110D (103-108)022212 103-108	MW-110D 2/22/2012 MW-110D(108.5- 113.5)022212 108.5-113.5	MW-110D 2/23/2012 MW-110D (114-119)022312 114-119	MW-110D 2/23/2012 MW-110D (121-126)022312 121-126	MW-110D 2/23/2012 MW-110D (145-150)022312 145-150	MW-110D 2/23/2012 MW-110D (165-170)022312 165-170	MW-110D 2/23/2012 MW-110D (170-175)022312 170-175	MW-112D 3/12/2012 MW-112D (20-25)031212 20-25	MW-112D 3/12/2012 DUP-6-031212 20-25	MW-112D 3/12/2012 MW-112D (23-28)031212 23-28	MW-112D 3/12/2012 MW-112D (28-33)031212 28-33	MW-112D 3/12/2012 MW-112D (33-38)031212 33-38	MW-112D 3/12/2012 MW-112D (44-49)031212 44-49	MW-112D 3/12/2012 MW-112D (50-55)031212 50-55	MW-112D 3/12/2012 MW-112D (57-62)031212 57-62
Metals (ug/L)																						
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																						
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-112D 3/12/2012 MW-112D (65-70)031212 65-70	MW-112D 3/13/2012 MW-112D (105-110)031312 105-110	MW-112D 3/13/2012 MW-112D (186-191)031312 186-191	MW-112D 3/13/2012 MW-112D (191-196)031312 191-196	MW-113D 2/14/2012 MW-113D (17-22)021412 17-22	MW-113D 2/14/2012 MW-113D (22-27)021412 22-27	MW-113D 2/14/2012 MW-113D (28-33)021412 28-33	MW-113D 2/14/2012 MW-113D (35-40)021412 35-40	MW-113D 2/14/2012 DUP-1-021412 35-40	MW-113D 2/14/2012 MW-113D (41-46)021412 41-46	MW-113D 2/14/2012 MW-113D (45-50)021412 45-50	MW-113D 2/14/2012 MW-113D (51-56)021412 51-56	MW-113D 2/14/2012 MW-113D (71-76)021412 71-76	MW-113D 2/14/2012 MW-113D (103-108)021412 103-108	MW-113D 2/15/2012 MW-113D(124.5-129.5)021512 124.5-129.5	MW-113D 2/15/2012 MW-113D(129.5-134.5)021512 129.5-134.5	MW-113D 2/15/2012 MW-113D(135-140)021512 135-140	MW-113D 2/15/2012 MW-113D(140-145)021512 140-145	MW-113D 2/15/2012 MW-113D(158-163)021512 158-163	MW-113D 2/15/2012 MW-113D(174-179)021512 174-179	MW-113D 2/15/2012 MW-113D(180-185)021512 180-185
BTEX (ug/L)									BEDROCK								BEDROCK						
Benzene	71-43-2	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	**9.1**	**3.3**	**3.3**	**6.9**	**45**	**27**	**1.7**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**4.4**	**1.5**	**1.4**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Xylenes (total)	1330-20-7	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	**9.1**	**3.3**	**3.3**	**6.9**	**45**	**27**	**1.7**	ND	ND	ND	ND	**4.4**	**1.5**	**1.4**	ND	ND	ND	ND	ND	ND	ND
VOC (ug/L)																							
1,2,3-Trichlorobenzene	87-61-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U
Acetone	67-64-1	50	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<1.0 U	<1.0 U	<1.0 U	<0.50 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 U
Dibromochloromethane	124-48-1	5	<1.0 U	<1.0 U	<1.0 U	<0.56 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 U	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 UJ	<0.50 U	<0.50 UJ	<0.50 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 U	<1.0 UJ
Naphthalene	91-20-3	10	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	**1.7 J**	**2.1 J**	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U	<1.0 UJ	<1.0 UJ	**1.1**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**9.1**	**3.3**	**3.3**	**6.9**	**46.7**	**29.1**	**1.7**	ND	ND	ND	ND	**4.4**	**2.6**	**1.4**	ND	ND	ND	ND	ND	ND	ND
PAH (ug/L)																							
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																							
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-112D 3/12/2012 MW-112D (65-70)031212 65-70	MW-112D 3/13/2012 MW-112D (105-110)031312 105-110	MW-112D 3/13/2012 MW-112D (186-191)031312 186-191	MW-112D 3/13/2012 MW-112D (191-196)031312 191-196	MW-113D 2/14/2012 MW-113D (17-22)021412 17-22	MW-113D 2/14/2012 MW-113D (22-27)021412 22-27	MW-113D 2/14/2012 MW-113D (28-33)021412 28-33	MW-113D 2/14/2012 MW-113D (35-40)021412 35-40	MW-113D 2/14/2012 DUP-1-021412 35-40	MW-113D 2/14/2012 MW-113D (41-46)021412 41-46	MW-113D 2/14/2012 MW-113D (45-50)021412 45-50	MW-113D 2/14/2012 MW-113D (51-56)021412 51-56	MW-113D 2/14/2012 MW-113D (71-76)021412 71-76	MW-113D 2/14/2012 MW-113D (103-108)021412 103-108	MW-113D 2/15/2012 MW-113D(124.5-129.5)021512 124.5-129.5	MW-113D 2/15/2012 MW-113D(129.5-134.5)021512 129.5-134.5	MW-113D 2/15/2012 MW-113D(135-140)021512 135-140	MW-113D 2/15/2012 MW-113D(140-145)021512 140-145	MW-113D 2/15/2012 MW-113D(158-163)021512 158-163	MW-113D 2/15/2012 MW-113D(174-179)021512 174-179	MW-113D 2/15/2012 MW-113D(180-185)021512 180-185
Metals (ug/L)																							
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																							
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-114D 3/7/2012 MW-114D (24-29)030712 24-29	MW-114D 3/7/2012 MW-114D (40-45)030712 40-45	MW-114D 3/7/2012 DUP-4-030712 40-45	MW-114D 3/7/2012 MW-114D (48-53)030712 48-53	MW-114D 3/7/2012 MW-114D (67-72)030712 67-72	MW-114D 3/7/2012 MW-114D (72-77)030712 72-77	MW-114D 3/7/2012 MW-114D (79-84)030712 79-84	MW-114D 3/7/2012 MW-114D (91-96)030712 91-96	MW-114D 3/7/2012 MW-114D (103-108)030712 103-108	MW-114D 3/8/2012 MW-114D (136-141)030812 136-141	MW-114D 3/8/2012 MW-114D (141-146)030812 141-146	MW-114D 3/8/2012 MW-114D(147.5- 152.5)030812 147.5-152.5	MW-114D 3/8/2012 MW-114D(153- 158)030812 153-158	MW-114D 3/8/2012 MW-114D(163- 168)030812 163-168	MW-114D 3/8/2012 MW-114D(168- 173)030812 168-173	MW-114D 3/8/2012 MW-114D(179- 184)030812 179-184
BTEX (ug/L)			**BEDROCK**						**BEDROCK**									
Benzene	71-43-2	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	**2.1**	**4.0**	**4.3**	**7.5**	**5.0**	**10**	**7.5**	**8.5**	**10**	**8.3**	**8.9**	**8.9**	**9.2**	**8.9**	**10**	**8.5**
Xylenes (total)	1330-20-7	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	**2.1**	**4**	**4.3**	**7.5**	**5**	**10**	**7.5**	**8.5**	**10**	**8.3**	**8.9**	**8.9**	**9.2**	**8.9**	**10**	**8.5**
VOC (ug/L)																		
1,2,3-Trichlorobenzene	87-61-6	NL	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Acetone	67-64-1	50	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	<1.0 U	<1.0 U	<1.0 U	**1.0**	**1.2**	**1.2**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloromethane	74-87-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 U
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Dibromochloromethane	124-48-1	5	<0.56 U	<0.56 UJ	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U	<0.56 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	<1.0 U	<1.0 UJ	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**2.1**	**4**	**4.3**	**8.5**	**6.2**	**11.2**	**7.5**	**8.5**	**10**	**8.3**	**8.9**	**8.9**	**9.2**	**8.9**	**10**	**8.5**
PAH (ug/L)																		
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																		
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-114D 3/7/2012 MW-114D (24-29)030712 24-29	MW-114D 3/7/2012 MW-114D (40-45)030712 40-45	MW-114D 3/7/2012 DUP-4-030712 40-45	MW-114D 3/7/2012 MW-114D (48-53)030712 48-53	MW-114D 3/7/2012 MW-114D (67-72)030712 67-72	MW-114D 3/7/2012 MW-114D (72-77)030712 72-77	MW-114D 3/7/2012 MW-114D (79-84)030712 79-84	MW-114D 3/7/2012 MW-114D (91-96)030712 91-96	MW-114D 3/7/2012 MW-114D (103-108)030712 103-108	MW-114D 3/8/2012 MW-114D (136-141)030812 136-141	MW-114D 3/8/2012 MW-114D (141-146)030812 141-146	MW-114D 3/8/2012 MW-114D(147.5-152.5)030812 147.5-152.5	MW-114D 3/8/2012 MW-114D(153-158)030812 153-158	MW-114D 3/8/2012 MW-114D(163-168)030812 163-168	MW-114D 3/8/2012 MW-114D(168-173)030812 168-173	MW-114D 3/8/2012 MW-114D(179-184)030812 179-184
Metals (ug/L)																		
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																		
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-116D 2/16/2012 MW-116D (24-29)021612 24-29	MW-116D 2/16/2012 MW-116D (30-35)021612 30-35	MW-116D 2/16/2012 MW-116D (37-42)021612 37-42	MW-116D 2/16/2012 MW-116D (44-49)021612 44-49	MW-116D 2/16/2012 MW-116D (48.5-53.5)021612 48.5-53.5	MW-116D 2/17/2012 MW-116D (53.5-58.5)021712 53.5-58.5	MW-116D 2/17/2012 DUP-2-021712 53.5-58.5	MW-116D 2/17/2012 MW-116D (68-73)021712 68-73	MW-116D 2/17/2012 MW-116D (73-78)021712 73-78	MW-116D 2/17/2012 MW-116D (81-86)021712 81-86	MW-116D 2/17/2012 MW-116D (94-99)021712 94-99	MW-116D 2/17/2012 MW-116D (99.5-104.5)021712 99.5-104.5	MW-116D 2/17/2012 MW-116D(128-133)021712 128-133	MW-116D 2/17/2012 MW-116D(141-146)021712 141-146	MW-116D 2/20/2012 MW-116D(167-172)022012 167-172	MW-116D 2/20/2012 MW-116D(172-177)022012 172-177	MW-116D 2/20/2012 MW-116D(176-181)022012 176-181	MW-116D 2/20/2012 MW-116D(180-185)022012 180-185
BTEX (ug/L)							BEDROCK									BEDROCK				
Benzene	71-43-2	1	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Ethylbenzene	100-41-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
m&p-Xylene	1330-20-7-m,p	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
o-Xylene	95-47-6	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Toluene	108-88-3	5	<1.0 U	<1.0 U	<1.0 U	**1.0**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**2.4**	**1.3**	<1.0 U	<1.0 U	<1.0 U	**2.8**	<1.0 U	<1.0 U	**1.0**	**1.8**
Xylenes (total)	1330-20-7	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX	CALC-BTEX	NL	ND	ND	ND	**1**	ND	ND	ND	ND	**2.4**	**1.3**	ND	ND	ND	**2.8**	ND	ND	**1.0**	**1.8**
VOC (ug/L)																				
1,2,3-Trichlorobenzene	87-61-6	NL	**1.2**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ
1,2,4-Trichlorobenzene	120-82-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 UJ
1,2,4-Trimethylbenzene	95-63-6	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
1,3,5-Trimethylbenzene	108-67-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2-Butanone	78-93-3	50	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
4-Isopropyltoluene	99-87-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
4-Methyl-2-pentanone	108-10-1	NL	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
Acetone	67-64-1	50	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Acrylonitrile	107-13-1	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Bromodichloromethane	75-27-4	50	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroethane	75-00-3	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Chloroform	67-66-3	7	<1.0 U	<1.0 U	<1.0 U	**1.5**	<1.0 U	<1.0 U	<1.0 U	<1.0 U	**3.6**	<1.0 U	**7.5**	**8.0**	<1.0 U	**3.2**	<1.0 U	**1.0**	<1.0 U	**1.0**
Chloromethane	74-87-3	5	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
Cyclohexane	110-82-7	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Dibromochloromethane	124-48-1	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Isopropylbenzene	98-82-8	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methyl tert-butyl ether	1634-04-4	10	<0.50 U	<0.50 U	<0.50 U	<0.50 UJ	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U	<0.50 U
Methylcyclohexane	108-87-2	NL	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Methylene chloride	75-09-2	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Naphthalene	91-20-3	10	**1.2 J**	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ	**3.6 J**	**1.1 J**	<1.0 UJ	<1.0 UJ	<1.0 UJ	<1.0 UJ
n-Butylbenzene	104-51-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
n-Propylbenzene	103-65-1	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
sec-Butylbenzene	135-98-8	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Styrene	100-42-5	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Tetrachloroethene	127-18-4	5	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U	<1.0 U
Total VOC	CALC-VOC	NL	**2.4**	ND	ND	**2.5**	ND	ND	ND	ND	**6**	**1.3**	**7.5**	**8**	**3.6**	**7.1**	ND	**1**	**1**	**2.8**
PAH (ug/L)																				
2-Methylnaphthalene	91-57-6	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthene	83-32-9	20	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Acenaphthylene	208-96-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Anthracene	120-12-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluoranthene	206-44-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Fluorene	86-73-7	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Naphthalene	91-20-3	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Phenanthrene	85-01-8	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pyrene	129-00-0	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total PAH	CALC-PAH	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC (ug/L)																				
1,1'-Biphenyl	92-52-4	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbazole	86-74-8	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Dibenzofuran	132-64-9	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total SVOC	CALC-SVOC	NL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-116D 2/16/2012 MW-116D (24-29)021612 24-29	MW-116D 2/16/2012 MW-116D (30-35)021612 30-35	MW-116D 2/16/2012 MW-116D (37-42)021612 37-42	MW-116D 2/16/2012 MW-116D (44-49)021612 44-49	MW-116D 2/16/2012 MW-116D (48.5-53.5)021612 48.5-53.5	MW-116D 2/17/2012 MW-116D (53.5-58.5)021712 53.5-58.5	MW-116D 2/17/2012 DUP-2-021712 53.5-58.5	MW-116D 2/17/2012 MW-116D (68-73)021712 68-73	MW-116D 2/17/2012 MW-116D (73-78)021712 73-78	MW-116D 2/17/2012 MW-116D (81-86)021712 81-86	MW-116D 2/17/2012 MW-116D (94-99)021712 94-99	MW-116D 2/17/2012 MW-116D (99.5-104.5)021712 99.5-104.5	MW-116D 2/17/2012 MW-116D(128- 133)021712 128-133	MW-116D 2/17/2012 MW-116D(141- 146)021712 141-146	MW-116D 2/20/2012 MW-116D(167- 172)022012 167-172	MW-116D 2/20/2012 MW-116D(172- 177)022012 172-177	MW-116D 2/20/2012 MW-116D(176- 181)022012 176-181	MW-116D 2/20/2012 MW-116D(180- 185)022012 180-185
Metals (ug/L)																				
Aluminum	7429-90-5	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Arsenic	7440-38-2	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Barium	7440-39-3	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cadmium	7440-43-9	5	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Calcium	7440-70-2	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Chromium	7440-47-3	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cobalt	7440-48-4	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Copper	7440-50-8	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Iron	7439-89-6	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lead	7439-92-1	25	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Magnesium	7439-95-4	35000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Manganese	7439-96-5	300	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Mercury	7439-97-6	0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nickel	7440-02-0	100	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Potassium	7440-09-7	NL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Selenium	7782-49-2	10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Silver	7440-22-4	50	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sodium	7440-23-5	20000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Zinc	7440-66-6	2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Cyanide (ug/L)																				
Cyanide, Total	57-12-5	200	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
1 New York State Department of Environmental Conservation Divisiin of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient water quality standards and groundwater effluent limitations
NL = No Limit
ND = Not Detect
NS= Not Sampled
ug/L = micrograms per Liter
Bold = Detected
Bold and Italcis= Not detect exceeds NYS Groundwater Standards
Yellow highlighted values exceed Groundwater Standards
1,2,4-Trichlorobenzene,1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Hexachlorobutadiene,Naphthalene were analyzed under methods SW8260 (RETEC) and SW8270(Haley & Aldrich)
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+ = (Inorganics) The result is an estimated quantity, but the result may be biased high.
J- = (Inorganics) The result is an estimated quantity, but the result may be biased low.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N = (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ = (Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D = Diluted run
* = Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column
** = Sample was collected om 10/2/09, lab reported it as 10/1/09

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	Summary Statistics											
			Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
BTEX (ug/L)														
Benzene	71-43-2	1	191	64	127	60	0	720	MGP-MW-9DD(23-30.5)082709	0.7	MGP-MW-103D(63-68)021210	85.08125	0.28	1
Ethylbenzene	100-41-4	5	191	57	134	46	0	1000	MGP-MW-104D(71-76)021710	0.64	MGP-MW-4DD(55-60.5)081909	225.485614	0.23	1
m&p-Xylene	1330-20-7-m,p	NL	185	70	115	0	0	760	MGP-MW-105D(114-119)021610	0.96	MGP-MW-103D(107-112)020810	114.9158571	0.86	2
o-Xylene	95-47-6	NL	185	70	115	0	0	510	MGP-MW-104D(71-76)021710	0.46	MGP-MW-106D(51-56)121609	80.53485714	0.37	1
Toluene	108-88-3	5	191	152	39	87	0	340	MGP-MW-105D(114-119)021610	0.62	MGP-MW-106D(8-13)121509	19.30552632	0.22	1.08
Xylenes (total)	1330-20-7	5	191	69	105	49	0	1230	MGP-MW-105D(114-119)021610	0.56	MW-13D-031010	197.9723188	-	-
Total BTEX	CALC-BTEX	NL	191	157	34	0	0	2650	MGP-MW-105D(114-119)021610	0.62	MGP-MW-106D(8-13)121509	231.2496815	-	-
VOC (ug/L)														
1,2,3-Trichlorobenzene	87-61-6	NL	96	2	94	0	0	2	MGP-MW-9DD(23-30.5)082709	1.2	MW-116D(24-29)021612	1.6	1	1
1,2,4-Trichlorobenzene	120-82-1	5	184	1	183	0	2	1.4	MGP-MW-4DD(85-100.4)082509	1.4	MGP-MW-4DD(85-100.4)082509	1.4	0.29	14.5
1,2,4-Trimethylbenzene	95-63-6	5	60	56	4	38	0	420	MGP-MW-4DD(102-110.5)091809	0.54	MGP-MW-106D(43.5-48.5)121609	66.26375	0.44	0.84
1,3,5-Trimethylbenzene	108-67-8	5	51	46	5	22	0	140	MGP-MW-4DD(102-110.5)091809	0.55	MGP-MW-0DD(17-20)100109	25.98369565	0.43	0.82
2-Butanone	78-93-3	50	184	6	178	0	0	19	MGP-MW-105D(21-26)021510	1.8	MGP-MW-102D(76-81)020810	9.383333333	0.59	50
4-Isopropyltoluene	99-87-6	NL	32	25	7	0	0	23	MGP-MW-4DD(102-110.5)091809	0.5	MGP-MW-102D(37-42)020810	5.8536	0.34	0.81
4-Methyl-2-pentanone	108-10-1	NL	184	2	182	0	0	5.1	MGP-MW-106D(25-30)121509	2.8	MGP-MW-105D(99-104)021610	3.95	0.81	50
Acetone	67-64-1	50	184	17	167	0	1	38	MGP-MW-105D(21-26)021510	3.9	MGP-MW-4DD(60-65.6)082009	13.11176471	1.13	56.5
Acrylonitrile	107-13-1	NL	2	2	0	0	0	55	MW-4D-030910	16	MW-9D-031010	35.5	-	-
Bromodichloromethane	75-27-4	50	178	32	146	0	0	13	MGP-MW-4DD(75.5-80)082109	0.72	MGP-MW-4DD(70-75.5)082109	3.235	0.5	10
Chloroethane	75-00-3	5	184	8	176	3	2	6.1	MW-4D-030910	1.7	MW-9D-031010	4.5875	0.6	30
Chloroform	67-66-3	7	184	91	93	25	1	62	MGP-MW-0DD(76-80)1005609	0.41	MGP-MW-101D(132-137)	9.667142857	0.38	19
Chloromethane	74-87-3	5	178	4	174	1	1	26	MGP-MW-9DD(23-30.5)082709	0.67	MGP-MW-105D(21-26)021510	7.035	1	10
Cyclohexane	110-82-7	NL	178	38	140	0	0	120	MGP-MW-9DD(23-30.5)082709	0.87	MGP-MW-105D(120-125)021610	28.50184211	1	1
Dibromochloromethane	124-48-1	5	184	8	176	0	2	2.8	MGP-MW-4DD(75.5-80)082109	0.65	MGP-MW-4DD(35-41.5)081809	1.36375	0.26	13
Isopropylbenzene	98-82-8	5	185	50	135	35	0	130	MGP-MW-4DD(102-110.5)091809	0.71	MGP-MW-103D(107-112)020810	28.8184	0.44	1
Methyl tert-butyl ether	1634-04-4	10	185	50	135	4	0	14	MGP-MW-9DD(23-30.5)082709	0.7	MGP-MW-0DD(76-80)1005609	3.3308	0.5	1
Methylcyclohexane	108-87-2	NL	178	39	139	0	0	140	MGP-MW-104D(33-38)021710	0.98	MGP-MW-105D(26-31)021510	36.18666667	1	1
Methylene chloride	75-09-2	5	184	8	176	1	2	8.7	MGP-MW-4DD(102-110.5)091809	0.46	MGP-MW-4DD(60-65.6)082009	1.66	1	99.5
Naphthalene	91-20-3	10	182	88	94	44	0	5300	MGP-MW-4DD(102-110.5)091809	0.93	MGP-MW-101D(103-108)	457.4625	0.33	1
n-Butylbenzene	104-51-8	5	19	12	7	3	0	16	MGP-MW-4DD(102-110.5)091809	1.4	MW-9D-031010	4	0.43	0.83
n-Propylbenzene	103-65-1	5	51	44	7	28	0	58	MW-4D-030910	0.6	MGP-MW-4DD(60-65.6)082009	16.50386364	0.41	0.81
sec-Butylbenzene	135-98-8	5	21	14	7	0	0	2.6	MW-4D-030910	0.75	MGP-MW-0DD(17-20)100109	1.24	0.36	0.78
Styrene	100-42-5	5	178	17	161	7	0	110	MGP-MW-105D(114-119)021610	1.4	MGP-MW-105D(68-73)021510	18.87647059	1	1
Tetrachloroethene	127-18-4	5	184	2	182	2	2	9.7	MGP-MW-4DD(45-51.6)081909	6.5	MGP-MW-4DD(35-41.5)081809	8.1	0.27	13.5
Total VOC	CALC-VOC	NL	100	79	21	0	0	1800	MW-4D-041107	1.1	MW-112D(28-33)031212	46.74341772	-	-
PAH (ug/L)														
2-Methylnaphthalene	91-57-6	NL	12	4	8	0	0	226	MW-9D-041107	7.8	MW-4D-030910	65.85	0.132	11
Acenaphthene	83-32-9	20	19	6	13	2	0	240	MW-9D-031010	0.646	MW-4D-041107	60.77933333	0.085	11
Acenaphthylene	208-96-8	NL	19	3	16	0	0	23.2	MW-9D-041107	0.561	MW-4D-041107	9.953666667	0.079	11
Anthracene	120-12-7	50	19	2	17	0	0	13	MW-9D-031010	6.02	MW-9D-041107	9.51	0.214	11
Fluoranthene	206-44-0	50	19	2	17	0	0	4.8	MW-9D-031010	3	MW-13D-031010	3.9	0.288	11.5
Fluorene	86-73-7	50	19	3	16	1	0	61	MW-9D-031010	0.895	MW-4D-041107	33.63166667	0.128	11
Naphthalene	91-20-3	10	19	9	10	4	0	2280	MW-9D-041107	1.05	MW-11D-041107	394.2244444	0.158	10
Phenanthrene	85-01-8	50	19	4	15	1	0	85	MW-9D-031010	1.47	MW-4D-041107	34.4675	0.22	11
Pyrene	129-00-0	50	19	2	17	0	0	5.8	MW-9D-031010	3.9	MW-13D-031010	4.85	0.144	11
Total PAH	CALC-PAH	NL	19	10	9	0	0	2740.02	MW-9D-041107	1.05	MW-11D-041107	448.1242	-	-
SVOC (ug/L)														
1,1'-Biphenyl	92-52-4	5	6	2	4	1	4	41	MW-9D-031010	2.7	MW-13D-031010	21.85	10	11
Carbazole	86-74-8	NL	6	1	5	0	0	2.3	MW-9D-031010	2.3	MW-9D-031010	2.3	10	11
Dibenzofuran	132-64-9	NL	12	1	11	0	0	7.4	MW-9D-031010	7.4	MW-9D-031010	7.4	0.13	11
Total SVOC	CALC-SVOC	NL	6	4	2	0	0	2740.02	MW-9D-041107	1.05	MW-11D-041107	730.603	-	-

Table 5-6
Bedrock Groundwater Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Location Sample Date Sample ID Screened Interval	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	Summary Statistics											
			Samples	Detects	Non-Detects	Exceedances	DL Exceedances	Max Detected Concentration	ID for Max Concentration	Min Detected Concentration	ID for Min Concentration	Average Detected Concentration	Min DL for NonDetects	Max DL for NonDetects
Metals (ug/L)														
Aluminum	7429-90-5	NL	6	6	0	0	0	363	MW-4D-030910	36.8	MW-5D-030910	109.9166667	-	-
Arsenic	7440-38-2	25	6	2	4	0	0	16.2	MW-13D-031010	9.06	MW-9D-031010	12.63	10	10
Barium	7440-39-3	1000	6	6	0	0	0	981	MW-9D-031010	85.6	MW-11D-030910	497.75	-	-
Cadmium	7440-43-9	5	6	3	3	0	0	4.54	MW-13D-031010	0.96	MW-4D-030910	2.29	3	3
Calcium	7440-70-2	NL	6	6	0	0	0	462000	MW-13D-031010	46700	MW-5D-030910	206183.3333	-	-
Chromium	7440-47-3	50	6	5	1	0	0	33.5	MW-6D-030910	2.55	MW-5D-030910	9.606	5	5
Cobalt	7440-48-4	NL	6	1	5	0	0	12.4	MW-13D-031010	12.4	MW-13D-031010	12.4	15	15
Copper	7440-50-8	200	6	1	5	0	0	8.47	MW-13D-031010	8.47	MW-13D-031010	8.47	10	10
Iron	7439-89-6	300	6	6	0	5	0	45100	MW-6D-030910	109	MW-5D-030910	21247.83333	-	-
Lead	7439-92-1	25	13	7	6	0	0	9.15	MW-9D-031010	3.4	MW-4D-122208	5.365714286	1.7	6
Magnesium	7439-95-4	35000	6	6	0	3	0	110000	MW-13D-031010	7610	MW-11D-030910	43755	-	-
Manganese	7439-96-5	300	6	6	0	5	0	27700	MW-9D-031010	15.4	MW-5D-030910	13720.4	-	-
Mercury	7439-97-6	0.7	6	1	5	0	0	0.19	MW-6D-030910	0.19	MW-6D-030910	0.19	0.2	0.2
Nickel	7440-02-0	100	6	2	4	0	0	20.8	MW-13D-031010	15.5	MW-6D-030910	18.15	20	20
Potassium	7440-09-7	NL	6	6	0	0	0	21400	MW-13D-031010	5870	MW-5D-030910	11393.33333	-	-
Selenium	7782-49-2	10	6	4	2	3	0	16.2	MW-9D-031010	9.41	MW-4D-030910	12.9025	10	10
Silver	7440-22-4	50	6	1	5	0	0	3.08	MW-13D-031010	3.08	MW-13D-031010	3.08	5	5
Sodium	7440-23-5	20000	6	6	0	6	0	1390000	MW-13D-031010	250000	MW-5D-030910	792333.3333	-	-
Zinc	7440-66-6	2000	6	6	0	0	0	81.7	MW-13D-031010	19	MW-11D-030910	36.13333333	-	-
Cyanide (ug/L)														
Cyanide, Total	57-12-5	200	6	6	0	0	0	145	MW-6D-030910	24	MW-13D-031010	63	-	-

Table 5-7
Indoor Air and Soil Gas Analytical Data
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Type of Sample	CAS No.	NYSDOH Background Indoor Air Values[3]		Soilgas	Soilgas	Crawl Space	Soilgas	Soilgas	Soilgas	Soilgas	Indoor Air	Indoor Air	Indoor Air	Soilgas	Outdoor Air
Sample ID				MGP-SG-1	MGP-SG-2	MGP-SG-3	MGP-SG-4	MGP-SG-5	MGP-SG-6	MGP-SG-7	AMB-1	AMB-1 Duplicate	AMB-2	MGP-SG-8	AMB-1
Sampling Date		75th Percentile	90th Percentile	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	8/2/2009	2/25/2012	2/25/2012
Compound (µg/m³)															
Possibly MGP Related or Other Sources [1]															
1,2,4-Trimethylbenzene	95-63-6	4.3	9.5	**56**	**49**	*0.79 U*	**110**	**60**	**59**	**210**	**1.1**	**1.2**	**2.2**	**18**	*0.92 U*
1,3,5-Trimethylbenzene	108-67-8	1.7	3.6	**16**	**14**	*0.79 U*	**29**	**18**	**18**	**66**	*0.78 U*	*0.81 U*	*0.79 U*	*14 U*	*0.92 U*
2,2,4-Trimethylpentane	540-84-1	NL	NL	**58**	**50**	*3.8 U*	**17**	**25**	**130**	**570**	*3.7 U*	*3.8 U*	*3.8 U*	*68 U*	*4.4 U*
2,3-Dimethylpentane	565-59-3	2.2	7.5	**44**	**30**	*3.3 U*	*5.3 U*	**38**	*11 U*	*66 U*	*3.2 U*	*3.4 U*	*3.3 U*	*60 U*	*3.8 U*
2-Methylpentane	107-83-5	NL	NL	**80**	**80**	*2.8 U*	**52**	**31**	**81**	**520**	**4.6**	**4.3**	**4.2**	*51 U*	*3.3 U*
4-Ethyltoluene	622-96-8	NL	NL	**48**	**41**	*4.0 U*	**100**	**55**	**60**	**290**	*3.9 U*	*4.0 U*	*4.0 U*	*72 U*	*4.6 U*
Benzene	71-43-2	5.9	15	**110**	**77**	*0.51 U*	**20**	**22**	**25**	**320**	**1.0**	**1.0**	**2.5**	*9.3 U*	*0.60 U*
Carbon Disulfide	75-15-0	NL	NL	**18**	**51**	*2.5 U*	*4.0 U*	**18**	**50**	**250**	*2.5 U*	*2.6 U*	*2.5 U*	*45 U*	*2.9 U*
Cyclohexane	110-82-7	2.6	8.1	**22**	**20**	*2.8 U*	**12**	**13**	**35**	**120**	*2.7 U*	*2.8 U*	*2.8 U*	*50 U*	*3.2 U*
Ethylbenzene	100-41-4	2.8	7.4	**53**	**72**	*0.70 U*	**74**	**51**	**120**	**500**	**1.1**	**1.1**	**2.0**	**16**	*0.81 U*
Heptane	142-82-5	7.6	19	**77**	**62**	*3.3 U*	**36**	**22**	**120**	**600**	*3.2 U*	*3.4 U*	*3.3 U*	*60 U*	*3.8 U*
Hexane	110-54-3	6	18	**67**	**44**	*2.8 U*	**34**	**27**	**51**	**460**	**3.1 J**	*2.9 UJ*	**3.8**	*51 U*	*3.3 U*
Indan	496-11-7	NL	NL	*17 UJ*	*15 UJ*	*3.9 UJ*	**16 J**	**8.0 J**	*14 UJ*	*78 U*	*3.8 UJ*	*4.0 U*	*3.9 UJ*	*70 U*	*4.4 U*
Indene	95-13-6	NL	NL	*17 U*	*15 U*	*3.8 U*	*6.1 U*	*5.2 U*	*13 U*	*76 U*	*3.8 U*	*3.9 U*	*3.8 U*	*69 U*	*4.5 U*
Isopentane	78-784	NL	NL	**44**	**57**	**5.4**	**36**	**36**	**56**	**280**	**7.7**	**6.1**	**9.6**	*43 U*	*2.8 U*
Naphthalene	91-20-3	NL	NL	*19 U*	*16 U*	*4.2 U*	**12 J**	**9.7 J**	15 U	84 UJ	*4.1 U*	*4.3 UJ*	*4.2 U*	*76 U*	*4.9 U*
Styrene	100-42-5	0.64	1.3	*3.0 U*	*2.6 U*	*0.68 U*	*1.1 U*	*0.92 U*	*2.4 U*	*14 U*	*0.67 U*	*0.70 U*	*0.68 U*	*12 U*	*0.80 U*
Thiophene	110-02-1	NL	NL	*12 UJ*	*11 UJ*	*2.8 UJ*	*4.4 UJ*	*3.7 UJ*	*9.6 UJ*	*55 U*	*2.7 UJ*	*2.8 U*	*2.8 UJ*	*50 U*	*3.2 U*
Toluene	108-88-3	24.8	58	**830**	**750**	**2.0**	**310**	**180**	**470**	**3400**	**7.7**	**7.4**	**14**	**3200**	*0.70 U*
m/p-Xylenes	136777-61-2	4.6	12	**170**	**190**	**0.75**	**280**	**150**	**240**	**1400**	**3.4**	**3.2**	**6.6**	**61**	*0.81 U*
o-Xylene	95-47-6	3.1	7.6	**69**	**78**	*0.70 U*	**110**	**72**	**110**	**460**	**1.2**	**1.2**	**2.4**	**18**	*0.81 U*
Not MGP Related [2]															
1,1,1-Trichloroethane (1,1,1-TCA)	71-55-6	1.1	3.1	**5.3**	**23**	0.88 U	*1.4 U*	**1.6**	**380**	*18 U*	0.86 U	0.89 U	0.88 U	*16 U*	*1.0 U*
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	<0.25	*4.9 U*	*4.2 U*	*1.1 U*	*1.8 U*	*1.5 U*	*3.8 U*	*22 U*	*1.1 U*	*1.1 U*	*1.1 U*	*20 U*	*1.3 U*
1,1,2-Trichloroethane	79-00-5	<0.25	<0.25	*3.9 U*	*3.4 U*	*0.88 U*	*1.4 U*	*1.2 U*	*3.0 U*	*18 U*	*0.86 U*	*0.89 U*	*0.88 U*	*16 U*	*1.0 U*
1,1-Dichloroethane	75-34-3	<0.25	<0.25	*2.9 U*	*2.5 U*	*0.65 U*	*1.0 U*	*0.88 U*	**11**	*13 U*	*0.64 U*	*0.66 U*	*0.65 U*	*12 U*	*0.76 U*
1,1-Dichloroethene	75-35-4	<0.25	<0.25	*2.8 U*	*2.4 U*	*0.64 U*	*1.0 U*	*0.86 U*	*2.2 U*	*13 U*	*0.63 U*	*0.65 U*	*0.64 U*	*12 U*	*0.74 U*
1,2,4-Trichlorobenzene	120-82-1	<0.25	3.4	*26 U*	*23 U*	*6.0 U*	*9.6 U*	*8.0 U*	*21 U*	*120 UJ*	*5.9 U*	*6.1 UJ*	*6.0 U*	*110 U*	*6.9 U*
1,2-Dibromoethane (EDB)	106-93-4	<0.25	<0.25	*5.5 U*	*4.8 U*	*1.2 U*	*2.0 U*	*1.7 U*	*4.3 U*	*25 U*	*1.2 U*	*1.3 U*	*1.2 U*	*22 U*	*1.4 U*
1,2-Dichlorobenzene	95-50-1	<0.25	0.72	*4.3 U*	*3.7 U*	*0.97 U*	*1.6 U*	*1.3 U*	*3.4 U*	*19 U*	*0.95 U*	*0.99 U*	*0.97 U*	*18 U*	*1.1 U*
1,2-Dichloroethane	107-06-2	<0.25	<0.25	*2.9 U*	*2.5 U*	*0.65 U*	*1.0 U*	*0.88 U*	*2.3 U*	*13 U*	*0.64 U*	*0.66 U*	*0.65 U*	*12 U*	*0.76 U*
1,2-Dichloropropane	78-87-5	<0.25	<0.25	*3.3 U*	*2.9 U*	*0.74 U*	*1.2 U*	*1.0 U*	*2.6 U*	*15 U*	*0.73 U*	*0.76 U*	*0.74 U*	*13 U*	*0.86 U*
1,3-Butadiene	106-99-0	NL	NL	*7.9 U*	*6.8 U*	*1.8 U*	*2.8 U*	*2.4 U*	*6.2 U*	*36 U*	*1.7 U*	*1.8 U*	*1.8 U*	*32 U*	*2.1 U*
1,3-Dichlorobenzene	541-73-1	<0.25	0.6	*4.3 U*	*3.7 U*	*0.97 U*	*1.6 U*	*1.3 U*	*3.4 U*	*19 U*	*0.95 U*	*0.99 U*	*0.97 U*	*18 U*	*1.1 U*
1,4-Dichlorobenzene	106-46-7	0.54	1.3	*4.3 U*	*3.7 U*	*0.97 U*	*1.6 U*	*1.3 U*	*3.4 U*	*19 U*	*0.95 U*	*0.99 U*	**7.7**	*18 U*	*1.1 U*
1,4-Dioxane	123-91-1	NL	NL	*13 U*	*11 U*	*2.9 U*	*4.6 U*	*3.9 U*	*10 U*	*58 U*	*2.8 U*	*3.0 U*	*2.9 U*	*53 UJ*	*3.4 UJ*
2-Butanone (MEK)	78-93-3	7.3	16	**11**	**13**	**3.7**	**10**	**51**	**15**	*47 U*	**2.6**	**2.4**	*2.4 U*	*43 UJ*	*2.8 UJ*
2-Hexanone	591-78-6	NL	NL	*15 U*	*13 U*	*3.3 U*	*5.3 U*	**7.8**	*11 U*	*66 U*	*3.2 U*	*3.4 U*	*3.3 U*	*60 UJ*	*3.8 UJ*
4-Methyl-2-pentanone	108-10-1	0.86	2.2	*15 U*	*13 U*	*3.3 U*	*5.3 U*	**6.9**	*11 U*	*66 U*	*3.2 U*	*3.4 U*	*3.3 U*	*60 UJ*	*3.8 UJ*
Acetone	67-64-1	52	110	**30**	**52**	**9.5**	**14**	**160**	**34**	**50**	**8.4**	**7.7**	**13**	**59 J**	**2.8 J**
Benzyl chloride	100-44-7	NL	NL	*3.7 U*	*3.2 U*	*0.83 U*	*1.3 U*	*1.1 U*	*2.9 U*	*17 U*	*0.82 U*	*0.85 U*	*0.83 U*	*15 U*	*0.97 U*
Bromodichloromethane	75-27-4	NL	NL	*24 U*	*21 U*	*5.4 U*	*8.6 U*	*7.3 U*	*19 U*	*110 U*	*5.3 U*	*5.5 U*	*5.4 U*	*98 U*	*6.3 U*
Bromoform	75-25-2	NL	NL	*37 U*	*32 U*	*8.3 U*	*13 U*	*11 U*	*29 U*	*170 U*	*8.2 U*	*8.5 U*	*8.3 U*	*150 U*	*9.7 U*
Bromomethane	74-83-9	<0.25	0.6	*2.8 U*	*2.4 U*	*0.62 U*	*1.0 U*	*0.84 U*	*2.2 U*	*12 U*	*0.61 U*	*0.64 U*	*0.62 U*	*11 U*	*0.73 U*
Carbon Tetrachloride	56-23-5	0.59	0.81	*4.5 U*	*3.9 U*	*1.0 U*	*1.6 U*	*1.4 U*	*3.5 U*	*20 U*	*0.99 U*	*1.0 U*	*1.0 U*	*18 U*	*1.2 U*
Chlorobenzene	108-90-7	<0.25	<0.25	*3.3 U*	*2.8 U*	*0.74 U*	*1.2 U*	*1.0 U*	*2.6 U*	*15 U*	*0.73 U*	*0.76 U*	*0.74 U*	*13 U*	*0.86 U*
Chloroethane	75-00-3	<0.25	<0.25	*1.9 U*	*1.6 U*	*0.42 U*	*0.68 U*	*0.57 U*	*1.5 U*	*8.5 U*	*0.42 U*	*0.43 U*	*0.42 U*	*38 U*	*2.5 U*
Chloroform	67-66-3	0.54	1.4	**33**	**26**	*0.79 U*	**2.4**	**17**	**26**	**170**	*0.77 U*	*0.80 U*	*0.79 U*	*14 U*	*0.91 U*
Chloromethane	74-87-3	1.8	3.3	*1.5 U*	*1.3 U*	**0.57**	*0.53 U*	**1.6**	*1.2 U*	**11**	**1.2**	**1.2**	**1.1**	*6.0 U*	*0.39 U*
cis-1,2-Dichloroethene	156-59-2	<0.25	<0.25	*2.8 U*	*2.4 U*	*0.64 U*	*1.0 U*	*0.86 U*	*2.2 U*	*13 U*	*0.63 U*	*0.65 U*	*0.64 U*	*12 U*	*0.74 U*
cis-1,3-Dichloropropene	10061-01-5	<0.25	<0.25	*3.2 U*	*2.8 U*	*0.73 U*	*1.2 U*	*0.98 U*	*2.5 U*	*15 U*	*0.72 U*	*0.74 U*	*0.73 U*	*13 U*	*0.85 U*
Dibromochloromethane	124-48-1	NL	NL	*30 U*	*26 U*	*6.8 U*	*11 U*	*9.2 U*	*24 U*	*140 U*	*6.7 U*	*7.0 U*	*6.8 U*	*120 U*	*8.0 U*
Ethanol	64-17-5	540	1400	**15**	**8.8**	**2.7**	2.4 U	**17**	5.3 U	30 UJ	**7.0 J**	**4.6 J**	**18**	*28 UJ*	*1.8 UJ*
Trichlorofluoromethane (Freon 11)	75-69-4	5.4	17	4.0 U	**12**	**1.2**	1.4 U	1.2 U	3.1 U	*18 U*	**1.0**	**0.93**	**1.2**	*16 U*	**1.2**
1,1,2-Trichlorotrifluoroethane (Freon 113)	76-13-1	1.1	1.8	*5.5 U*	*4.8 U*	*1.2 U*	*2.0 U*	*1.7 U*	*4.3 U*	*25 U*	*1.2 U*	*1.2 U*	*1.2 U*	*22 U*	*1.4 U*
1,2-Dichlorotetrafluoroethane	76-14-2	<0.25	0.52	*5.0 U*	*4.3 U*	*1.1 U*	*1.8 U*	*1.5 U*	*3.9 U*	*22 U*	*1.1 U*	*1.1 U*	*1.1 U*	*20 U*	*1.3 U*
Dichlorodifluoromethane (Freon 12)	75-71-8	4.1	15	3.5 U	**7.9**	**2.2**	**1.6**	**2.3**	2.8 U	*16 U*	**2.0**	**2.0**	**2.2**	*14 U*	**2.4**
Hexachlorobutadiene (C-46)	87-68-3	<0.25	4.6	*38 U*	*33 U*	*8.6 U*	*14 U*	*12 U*	*30 U*	*170 UJ*	*8.4 U*	*8.7 UJ*	*8.6 U*	*160 U*	*10 U*
Methyl tert-Butyl Ether (MTBE)	1634-04-4	5.6	27	*13 U*	*11 U*	*2.9 U*	*4.6 U*	*3.9 U*	*10 U*	*58 U*	*2.8 U*	*3.0 U*	*2.9 U*	*53 UJ*	*3.4 U*
Methylene Chloride (Dichloromethane)	75-09-2	6.6	22	*2.5 U*	*2.2 U*	*0.56 U*	*0.90 U*	*0.75 U*	*1.9 U*	*11 U*	**0.61**	**0.58**	**0.77**	*10 UJ*	*0.65 UJ*
2-Propanol	67-63-0	NL	NL	*8.8 U*	*7.6 U*	*2.0 U*	*3.2 U*	*2.7 U*	*6.9 U*	*40 U*	**6.1 J**	2.0 UJ	**12**	*36 UJ*	*2.3 UJ*
Propene	115-07-1	NL	NL	**6.4**	**8.0**	*1.4 U*	*2.2 U*	**18**	**75**	**350**	*1.4 U*	*1.4 U*	*1.4 U*	*25 U*	*1.6 U*
Tetrachloroethene (PCE)	127-18-4	1.1	2.9	**11**	**31**	*1.1 U*	**13**	**24**	**60**	**360**	*1.1 U*	*1.1 U*	*1.1 U*	**57**	*1.3 U*
Tetrahydrofuran	109-99-9	0.35	3.3	*10 U*	*9.1 U*	*2.4 U*	*3.8 U*	*3.2 U*	*8.2 U*	*47 U*	*2.3 U*	*2.4 U*	*2.4 U*	*43 UJ*	*2.8 UJ*
trans-1,2-Dichloroethene	156-60-5	NA	NA	*14 U*	*12 U*	*3.2 U*	*5.1 U*	*4.3 U*	*11 U*	*64 U*	*3.1 U*	*3.2 U*	*3.2 U*	*58 U*	*3.7 U*
trans-1,3-Dichloropropene	10061-02-6	<0.25	<0.25	*3.2 U*	*2.8 U*	*0.73 U*	*1.2 U*	*0.98 U*	*2.5 U*	*15 U*	*0.72 U*	*0.74 U*	*0.73 U*	*13 U*	*0.85 U*
Trichloroethene (TCE)	79-01-6	<0.25	0.48	*3.8 U*	*3.3 U*	*0.86 U*	*1.4 U*	**3.0**	**8.1**	**48**	*0.85 U*	*0.88 U*	*0.86 U*	*16 U*	*1.0 U*
Vinyl Chloride	75-01-4	<0.25	<0.25	*1.8 U*	*1.6 U*	*0.41 U*	*0.66 U*	*0.55 U*	*1.4 U*	*8.2 U*	*0.40 U*	*0.42 U*	*0.41 U*	*7.5 U*	*0.48 U*

Notes:
All units in micrograms per cubic meter (µg/m³)
1 - These compounds may be related to either MGP sources or non-MGP sources, or both. MGP sources include MGP tars and petroleum feedstocks used in MGP processes, such as the carburetted water gas process. Non-MGP sources include cleaning products, floor wax and polish, vehicle exhaust, construction materials, and cigarette smoke.
2 - These compounds are not related to MGP sources and are present due to non-MGP sources, such as vehicle exhaust, heating and air conditioning systems, cleaning agents, art supplies, paints, etc.
3 - New York State Department of Health, November 14, 2005.
Bold - Compound detected in a concentration greater than the method reporting limits.
Italic - Compound not detected, but reporting limit exceeds the NYSDOH Background Indoor Air Values 75th or 90th Percentile.
Exceeds NYSDOH Bakground Indoor Air Values 75th Percentile
Exceeds NYSDOH Bakground Indoor Air Values 90th Percentile
Dup - As suffix on Sample ID indicates that the sample is a field duplicate.
NL - Not listed - data not available for background concentrations for these compounds.
U - The compound was analyzed for, but was not detected above the method reporting limit.
R - The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.
N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
NJ - The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
J - The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ - The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be UJ - inaccurate or imprecise.

Table 6-1
Exposure Pathway Analysis - Potential On-site Receptors
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

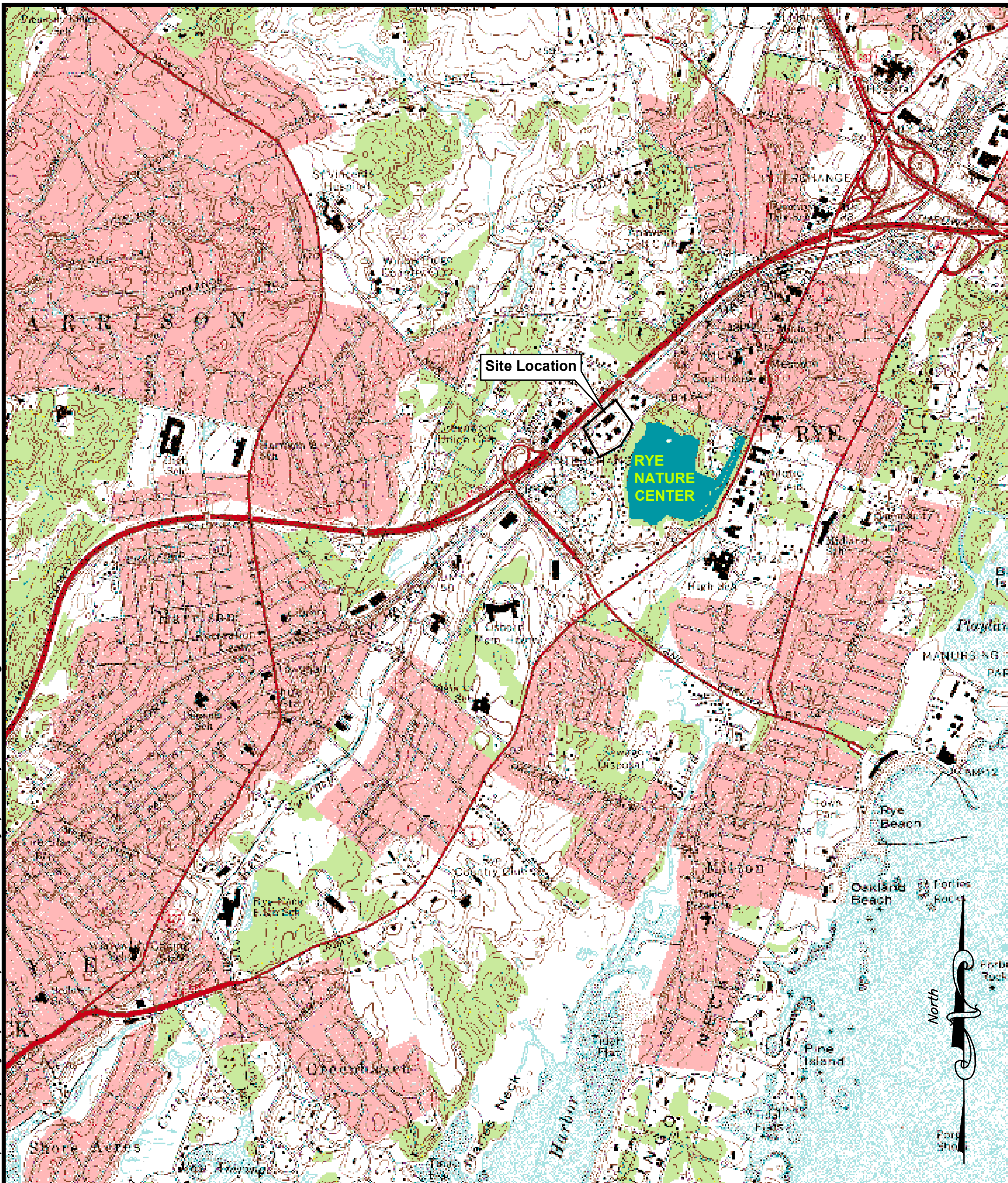
Receptor	Exposure Medium	Exposure Pathway	Pathway Not Considered Complete	Pathway Considered Potentially Complete, But Not Likely to Result in Exposure	Pathway Potentially Complete and Will Be Addressed in the Alternatives Analysis Report for the Site	Rationale for Inclusion or Exclusion
Facility Building Worker						
Facility Building Worker	Surface Soil (0-2 inches)	Ingestion	X	---	---	Surface soil is not impacted above typical urban background concentrations at the site.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	A facility building workert may be exposed to VOCs emanating from on-site residual materials; however, SVI evaluation sampling performed in the building indicated that the concentrations of possibly MGP-related COC were low or attributable to non-MGP sources, therefore, exposure is not likely.
		Inhalation of Volatiles in Indoor Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	A facility building worker is not likely to contact subsurface soils. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentiall complete and will be addressed in the alternatives analysis report.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Groundwater	Ingestion	X	---	---	A facility building worker is not likely to contact groundwater. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentiall complete and will be addressed in the alternatives analysis report.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Surface Water	Ingestion	X	---	---	Surface water is not present at the Site.
		Dermal contact	X	---	---	
Maintainence Worker - Indoor/Outdoor						
Maintainence Worker - Indoor	Surface Soil (0-2 inches)	Ingestion	X	---	---	An indoor maintenance worker would not contact surface soil.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	SVI evaluation sampling performed in all site buildings indicates that the concentrations of possibly MGP-related COC were low or attributable to non-MGP sources.
		Inhalation of Volatiles in Indoor Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	An indoor maintenance worker would not contact subsurface surface soil. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentiall complete and will be addressed in the alternatives analysis report.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
		Inhalation of Volatiles in Indoor Air	---	---	X	
	Groundwater	Ingestion	X	---	---	Sumps with groundwater are not present in the buildings. However, if planned or emergency work involves cutting or drilling through the concrete slabs in the basements of site buildings, there is the possibility that VOCs could be released into the air. Therefore, the inhalation of VOCs in indoor air pathway is considered potentiall complete and will be addressed in the alternatives analysis report.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
		Inhalation of Volatiles in Indoor Air	X	---	X	
	Surface Water	Ingestion	X	---	---	Surface water is not present at the Site.
		Dermal contact	X	---	---	

Table 6-1
Exposure Pathway Analysis - Potential On-site Receptors
Remedial Investigation
Rye Gas Works Former MGP Site, Rye, New York

AECOM

Receptor	Exposure Medium	Exposure Pathway	Pathway Not Considered Complete	Pathway Considered Potentially Complete, But Not Likely to Result in Exposure	Pathway Potentially Complete and Will Be Addressed in the Alternatives Analysis Report for the Site	Rationale for Inclusion or Exclusion
Outdoor Subsurface Maintenance or Utility Worker						
Outdoor Subsurface Maintenance or Utility Worker	**Surface Soil (0-2 inches)**	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers who repair or maintain equipment at the site may be exposed to residuals in surface soil or particulates, therefore the exposure pathway is considered potentially complete. Since the site is covered with pavement, buildings and grass and the concentrations of COC in surface soil is low, and the workers would only be on site for a short time, exposure is not likely.
		Dermal contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to NAPL or other residuals in subsurface soil, dust, or VOCs in ambient air while completing excavation work to repair or replace subsurface utilities or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the site.
		Dermal contact	---	---	X	
		Inhalation of Particulates	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	Groundwater	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to residuals in groundwater and VOCs in ambient air while completing excavation work to repair or replace pipes or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the Site.
		Dermal contact	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	Surface Water	Ingestion	---	X	---	Surface water does not collect or pool at the site other than in the drainage swale along and within the fenced in portion of the the northeast property boundary, therefore, subsurface utility repair work is unlikely to involve contact with this media.
		Dermal contact	---	X	---	
Visitor or Trespasser						
Site Visitor or Trespasser	**Surface Soil (0-2 inches)**	Ingestion	---	X	---	Visitors and trespassers may be exposed to residuals in surface soil and VOCs in ambient air while visiting the site; however, the concentrations of COC in surface soil is low, the site is covered with buildings, grass or pavement, the visitors or trespassers would only be on-site for a short time, and the site is secured and is an active facility with on-site personnel, therefore, exposure is not likely.
		Dermal contact	---	X	---	
		Inhalation of Particulates	---	X	---	
		Inhalation of Volatiles in Ambient Air	---	X	---	
	Subsurface Soil (>2 inches)	Ingestion	X	---	---	Visitors or trespassers would not be exposed to subsurface soil while visiting the Site.
		Dermal contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	---	---	
	Groundwater	Ingestion	X	---	---	Visitors or trespassers would not be exposed to groundwater while visiting the Site.
		Dermal contact	X	---	---	
		Inhalation of Volatiles in Ambient Air	---	---	---	
	Surface Water	Ingestion	X	---	---	Visitors or trespassers may potentially be exposed to surface water during rain events while visiting the site; however, surface water does not pool on the site, other than in the drainage swale within the fenced in portin of the northeast property boundary, and any contact would be likely to be for only a brief period of time, therefore, exposure is not likely.
		Dermal contact	X	---	---	
Adjacent Metro North Rail Line and Interstate I95 Area						
Adjacent Metro North Rail Line and Interstate I95 Area	**Surface Soil (0-2 inches)**	Ingestion	X	---	---	Surface soil covered by gravel and rail lines or pavement in majority of area. Near surface soils with residuals may be encountered during excavation work. Pathway considered potentially complete.
		Dermal Contact	X	---	---	
		Inhalation of Particulates	X	---	---	
		Inhalation of Volatiles in Ambient Air	X	---	---	
	Subsurface Soil (>2 inches)	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to NAPL or other residuals in subsurface soil, dust, or VOCs in ambient air while completing excavation work to repair or replace subsurface utilities or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the site.
		Dermal Contact	---	---	X	
		Inhalation of Particulates	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
	Groundwater	Ingestion	---	X	---	Outdoor subsurface maintenance or utility workers may be exposed to residuals in groundwater and VOCs in ambient air while completing excavation work to repair or replace pipes or other equipment that is present at the Site. Therefore, the pathway will be addressed in the alternatives analysis of potential remedial actions for the Site.
		Dermal contact	---	---	X	
		Inhalation of Volatiles in Ambient Air	---	---	X	
		Inhalation of Volatiles in Indoor Air	X	---	---	
	Surface Water	Ingestion	X	---	---	Surface water not present at this location.
		Dermal contact	X	---	---	

Figures



SOURCE:
USGS 7.5' TOPOGRAPHIC QUADRANGLE FOR MAMARONECK, NEW YORK – CONNECTICUT, 7.5 MINUTE SERIES (TOPOGRAPHY), 1967, PHOTOINSPECTED 1975.

2000 1000 0 2000

Scale in Feet

SITE LOCATION MAP
REMEDIAL INVESTIGATION
RYE GAS WORKS SITE
178 THEODORE FREMD AVE
RYE, NEW YORK

AECOM

SCALE:	DATE:	PROJECT NUMBER:	FIGURE NUMBER:
1:24,000	06–2013	60281931.810	2-1

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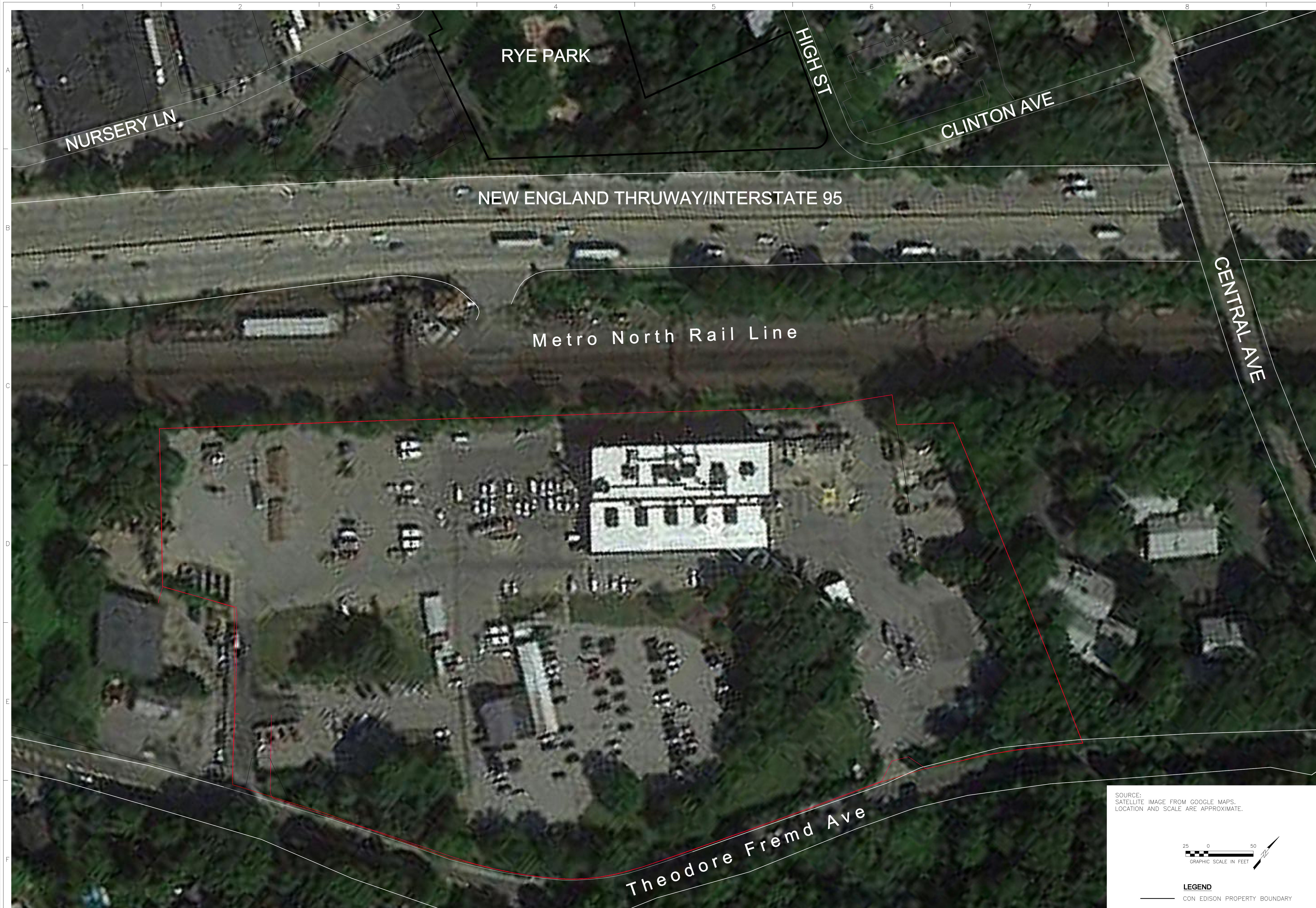
Piscataway on 'uspsw1fp004'(J)Project/ConEd/60155779 – Rye/Cadd/060210_Fig1 – Site Loc Map



SOURCE:
SATELLITE IMAGE FROM GOOGLE MAPS.
LOCATION AND SCALE ARE APPROXIMATE.

25 0 50
GRAPHIC SCALE IN FEET

LEGEND

CON EDISON PROPERTY BOUNDARY

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
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CONSOLIDATED EDISON
RYE GAS WORKS SITE
178 THEODORE FREMD AVE. RYE, NY

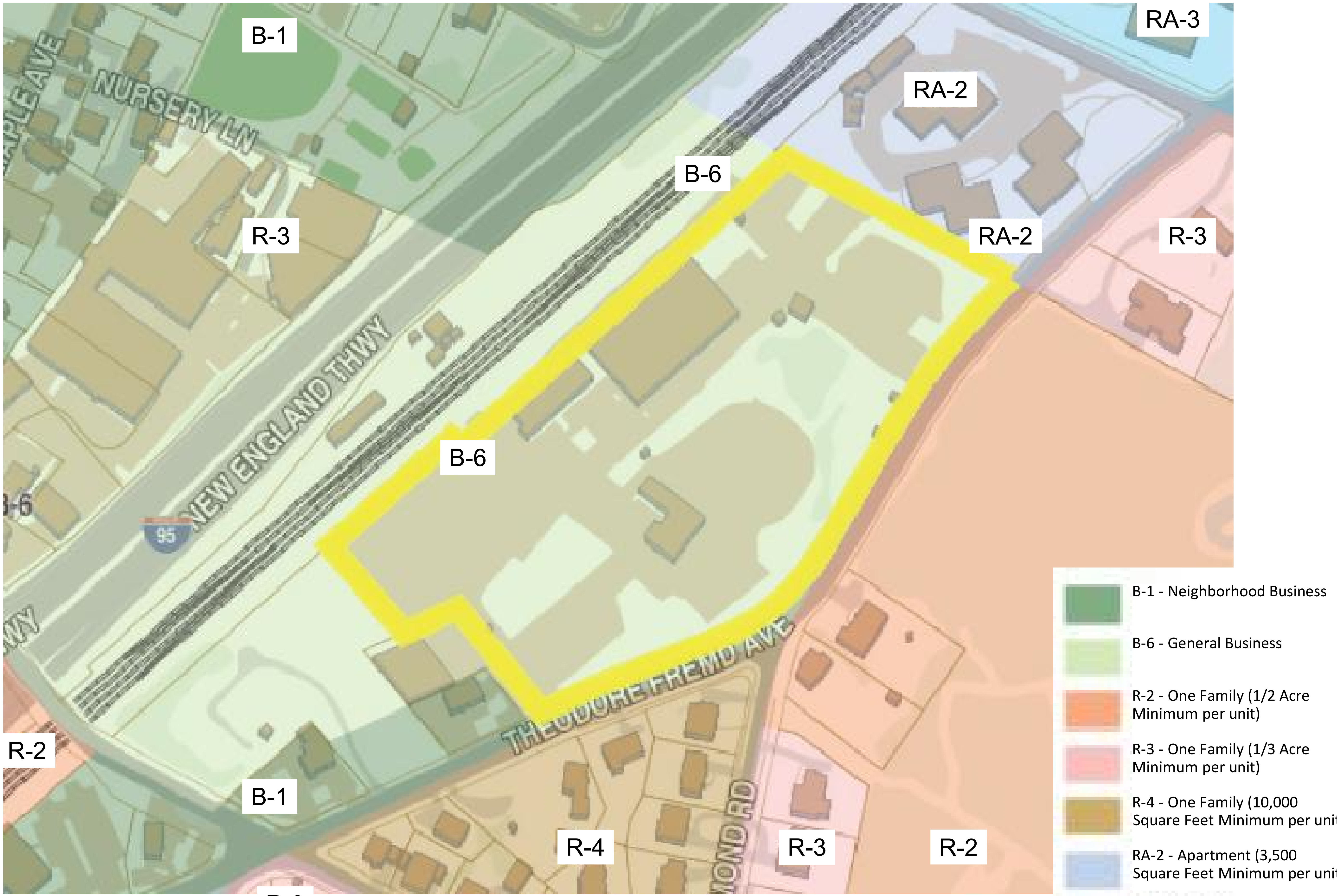
PROJ. NO.: 60281931.810 DATE: 06/2013

CURRENT SITE CONFIGURATION

REMEDIAL INVESTIGATION

DRAWING NUMBER:
2-2
SHEET NUMBER:

REVISION



SOURCE:
ONLINE ZONING MAPS FROM TOWN OF RYE, NY www.ryeny.gov

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CONSOLIDATED EDISON
RYE GAS WORKS SITE
178 THEODORE FREMD AVE. RYE, NY

PROJ. NO.: 60281931.810

DATE: 06/2013

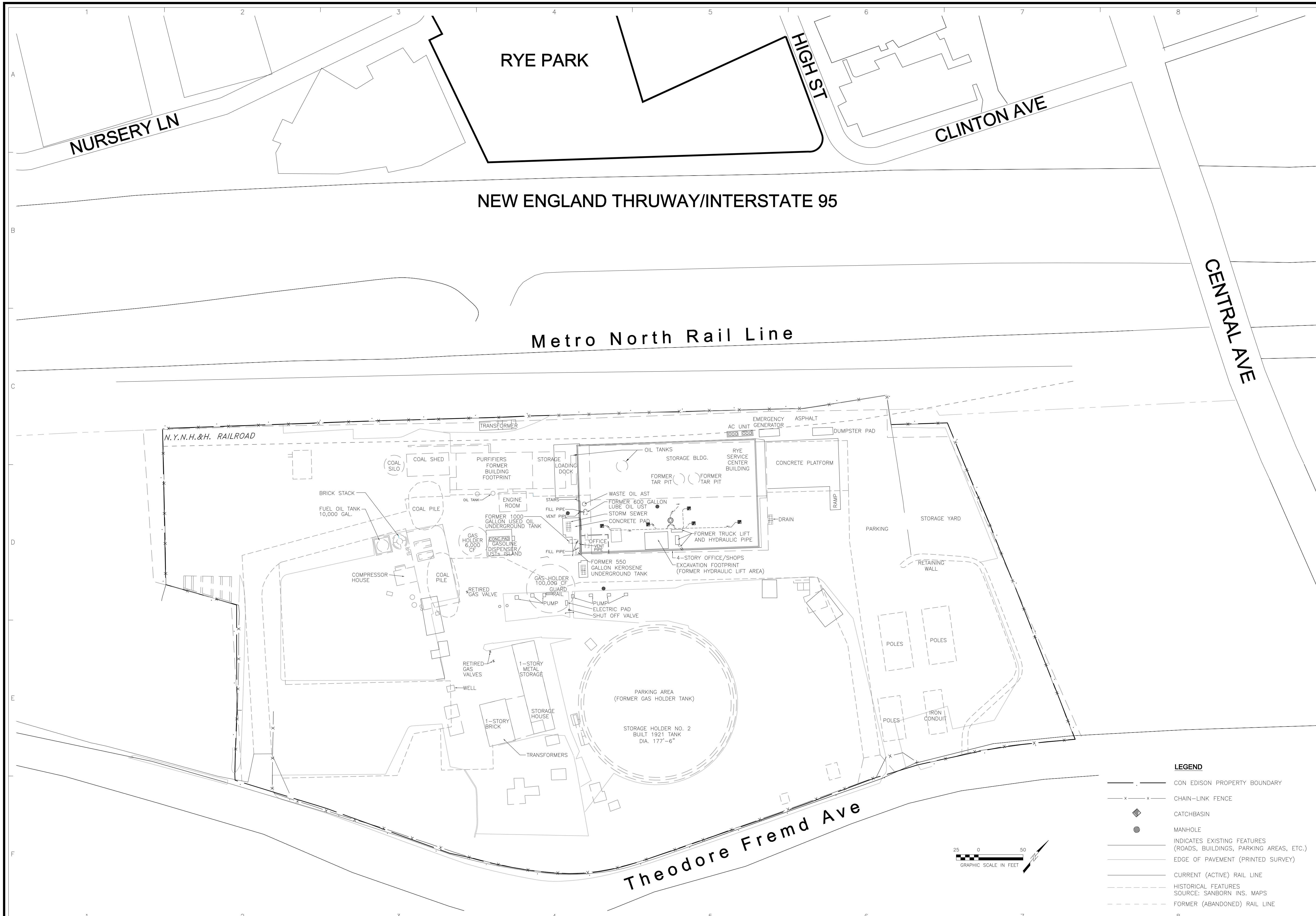
SITE ZONING

REMEDIAL INVESTIGATION

DRAWING NUMBER: 2-3

SHEET NUMBER:

REVISION



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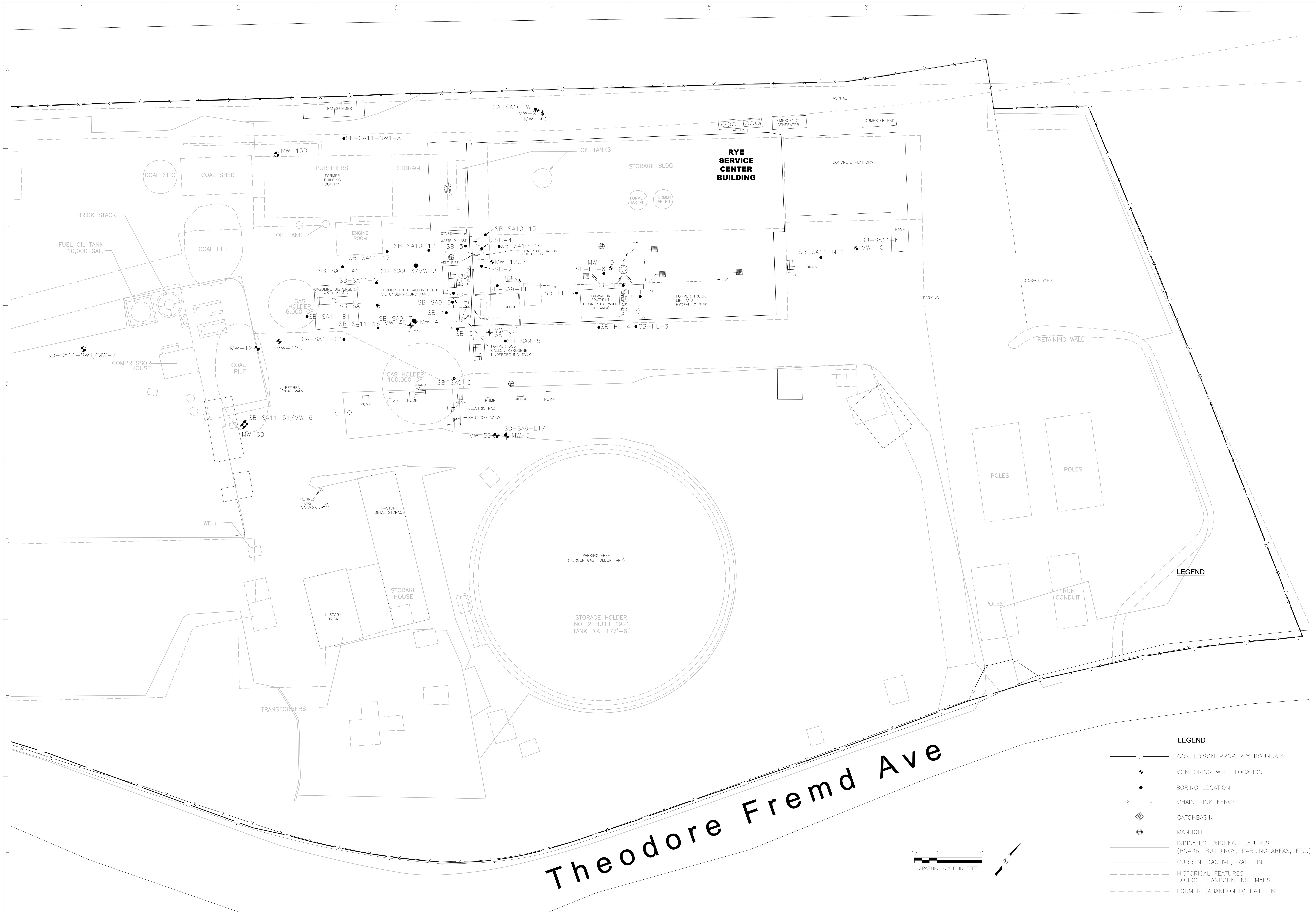
PROJ. NO.: 60281931.810
DATE: 06/2013

HISTORIC AND CURRENT SITE FEATURES

REMEDIAL INVESTIGATION

DRAWING NUMBER: 2-4
SHEET NUMBER:
REVISION 0

File: J:\Rem_Eng\Project Files\Con Edison\Rye\2013\60281931-710_C-02.dwg Layout: Fig 2-4 Hist & Current User: VERSHOWB Plotted: Jun 27, 2013 - 11:52am Xref's:



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PROJ. NO.: 60281931.810 DATE: 06/2013

PREVIOUS INVESTIGATION LOCATIONS

REMEDIAL INVESTIGATION

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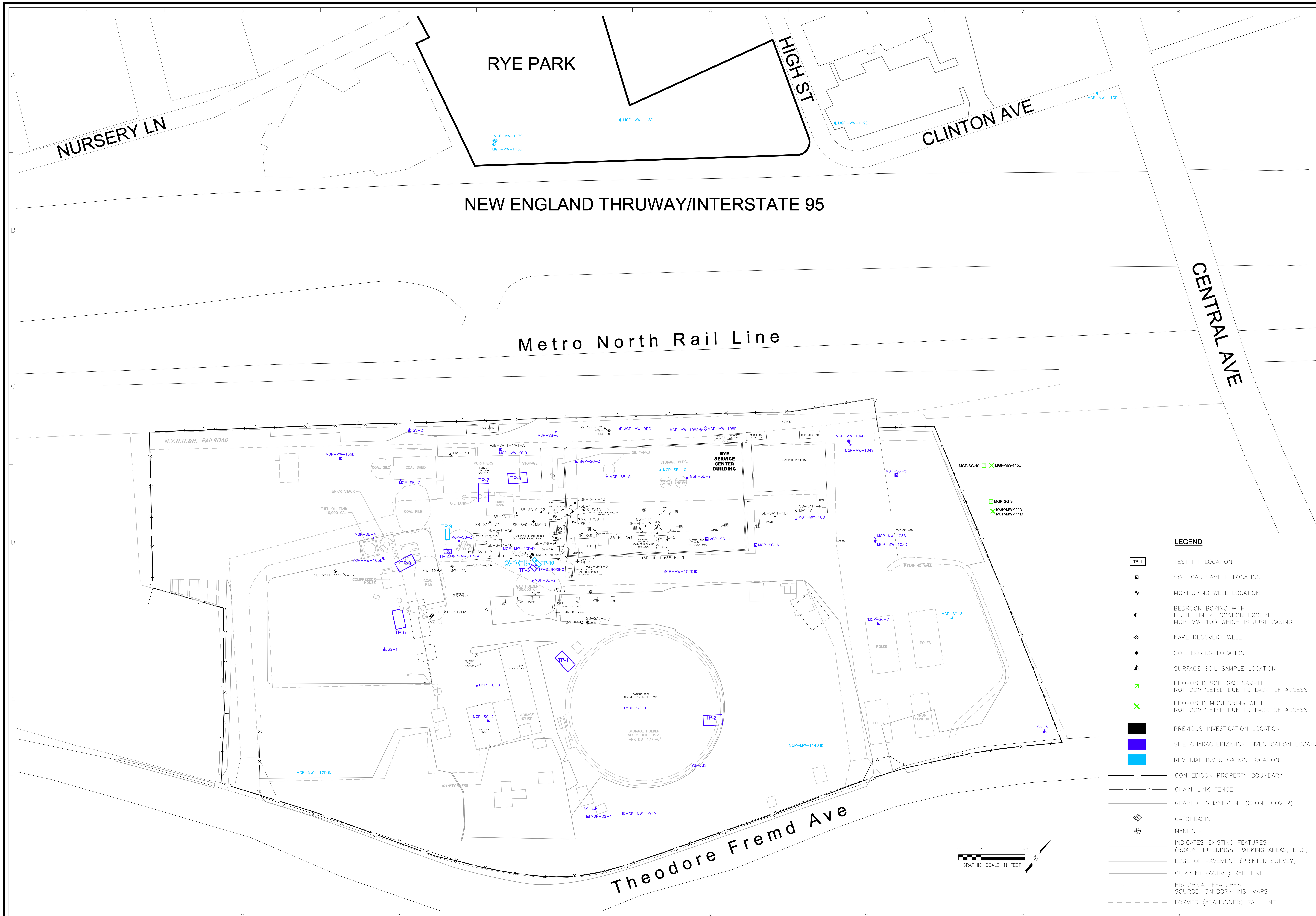
2-5
SHEET NUMBER:
REVISION | 0



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PROJ. NO.: 60281931.810
DATE: 06/2013

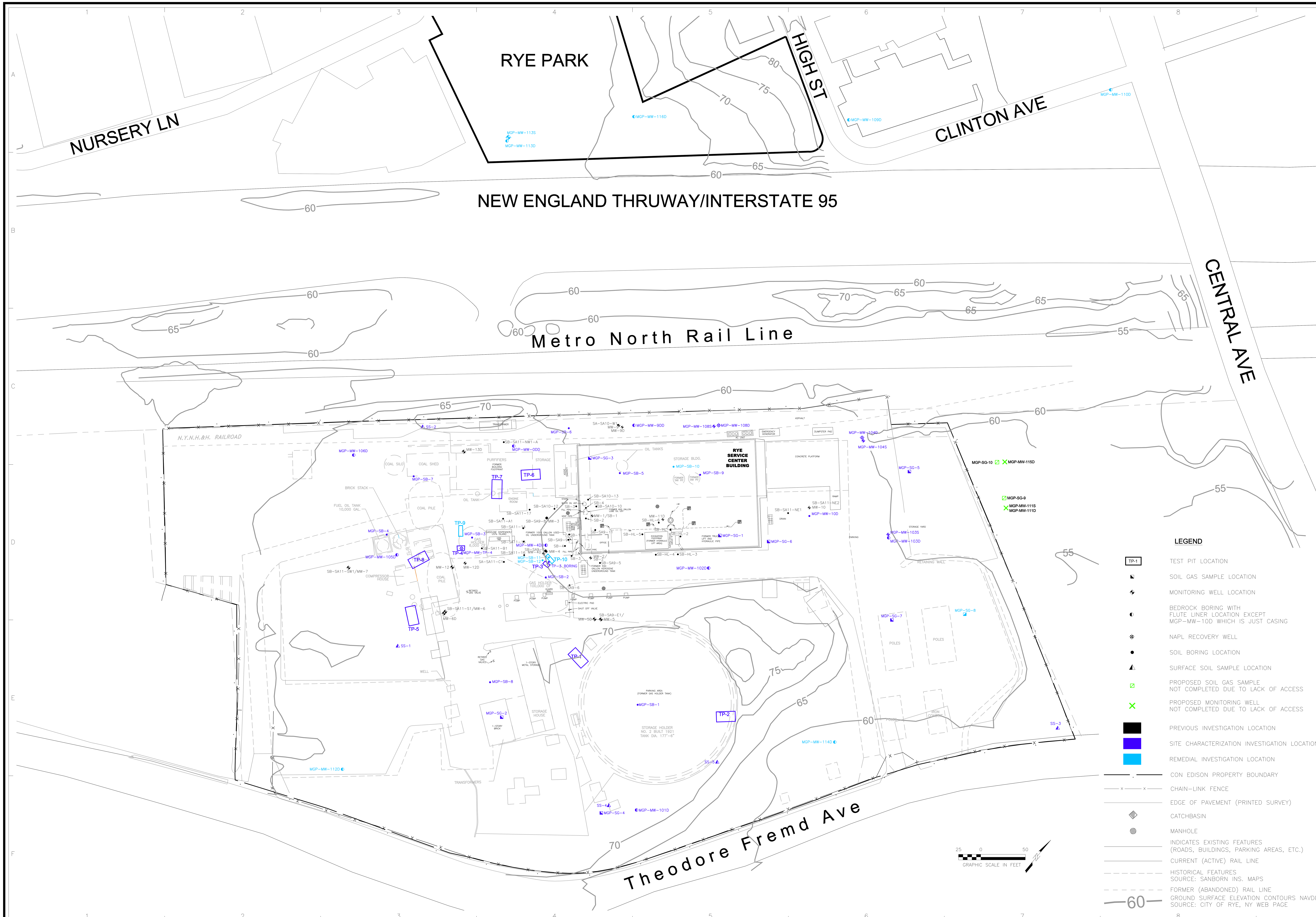
SITE CHARACTERIZATION AND REMEDIAL INVESTIGATION SAMPLE LOCATIONS

REMEDIAL INVESTIGATION

DRAWING NUMBER: 3-1

SHEET NUMBER:

REVISION 0



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PROJ. NO.: 60281931.810

DATE: 06/2013

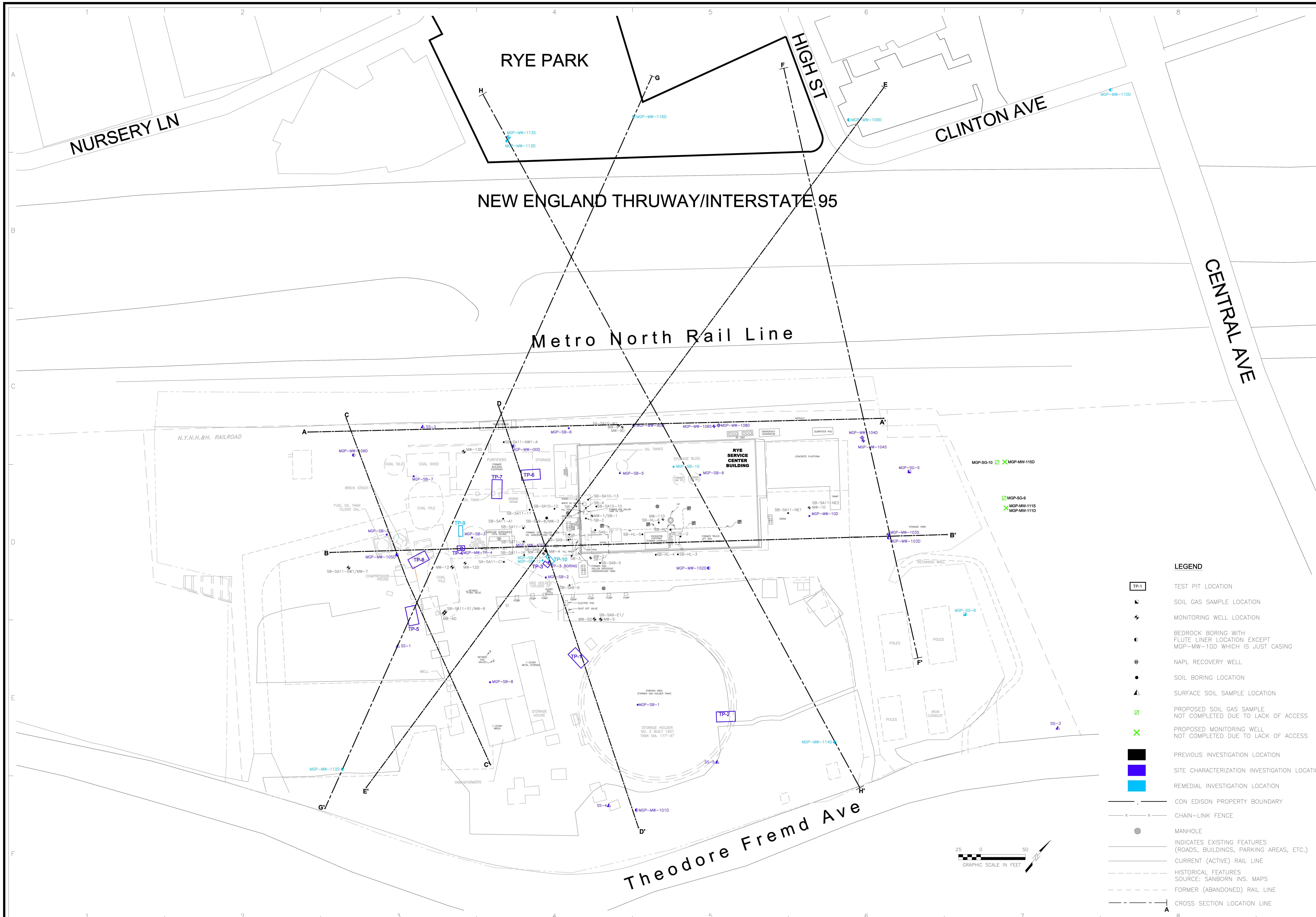
SITE TOPOGRAPHY

REMEDIAL INVESTIGATION

DRAWING NUMBER: 4-1

SHEET NUMBER:

REVISION 0



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PROJ. NO.: 60281931.810
DATE: 06/2013

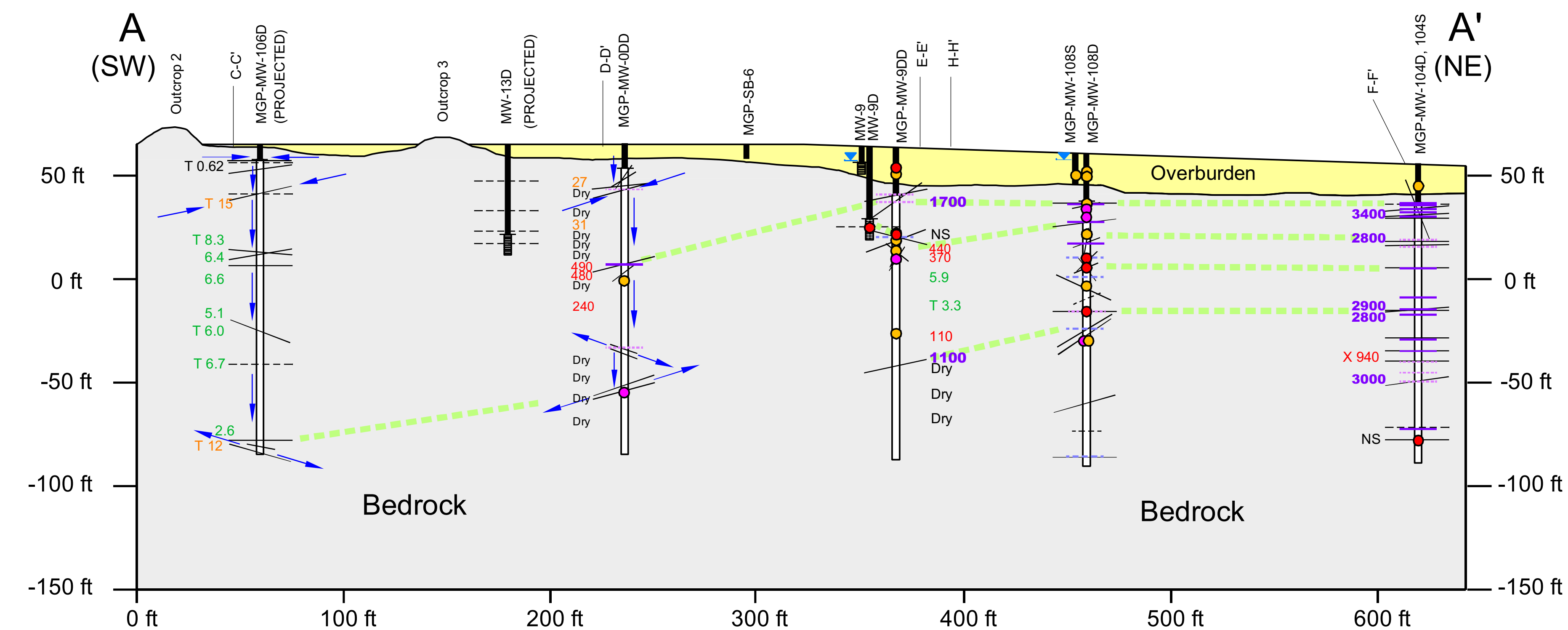
CROSS SECTION LOCATION MAP

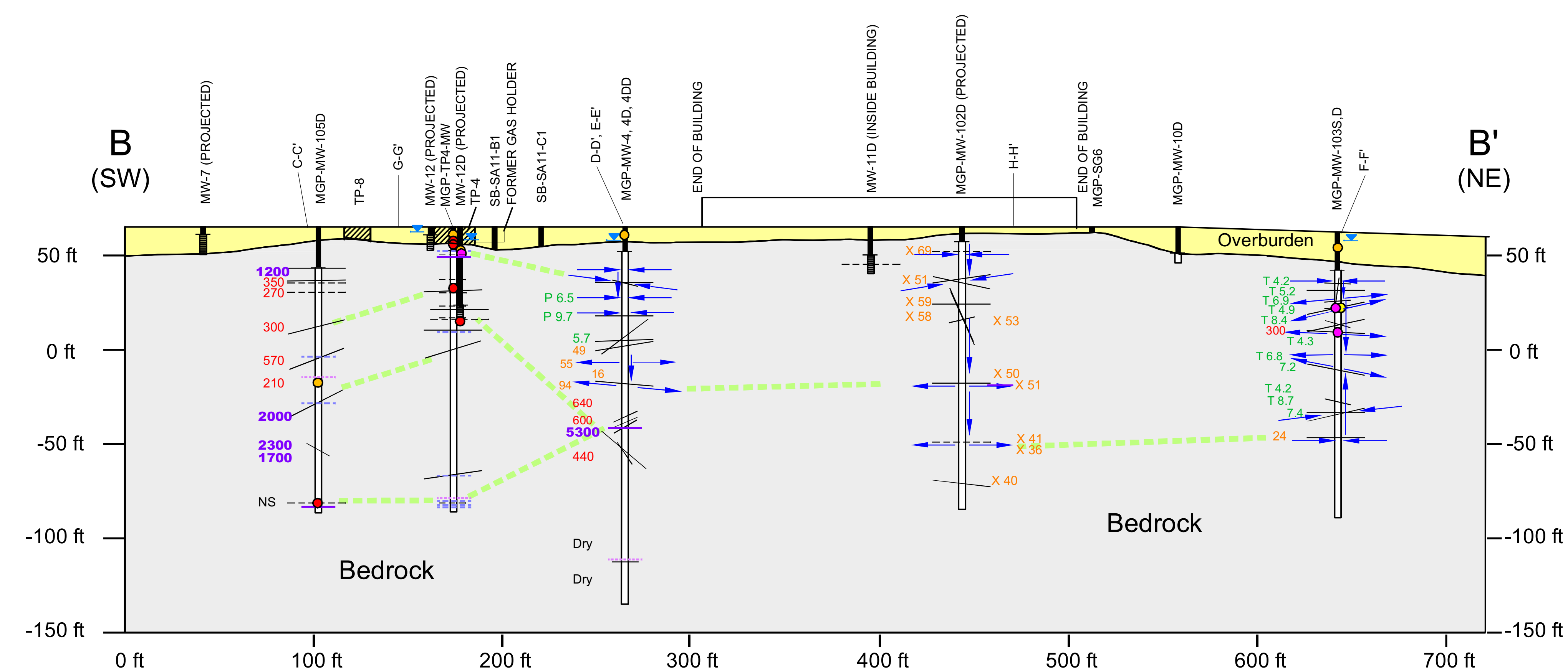
REMEDIAL INVESTIGATION

DRAWING NUMBER: 4-2

SHEET NUMBER:

REVISION 0





No Vertical Exaggeration

Legend:

- Piezometric surface in overburden
- Casing
- Well screen
- Open hole in bedrock
- Fracture (dashed where uncertain; see notes and Bedrock Fracture Mapping Memo)
- Flow direction from heat-pulse flowmeter
- Potential fracture connection (see notes)
- Top of bedrock

Visible Impacts from Logs:

- Blebs, globs, sheen
- Staining, odor
- Coated material, lenses
- Petroleum impacts, staining, odors
- Tar saturated

Note: No impacts observed where color absent

Visible Impacts from FLUTe liner (see note below for explanation):

- Heavy
- Medium
- Light

Packer sample results; assume maximum concentration is for naphthalene, unless otherwise noted: T = toluene; P = PCE; X = total xylenes

0.5	Maximum concentration <1ug/l
6.5	Maximum concentration >1ug/l, <10ug/l
49	Maximum concentration >10ug/l, <100ug/l
370	Maximum concentration >100ug/l, <1000ug/l
3000	Maximum concentration >1000ug/l
NS	No sample analyzed due to OLM in the sample
Dry	No sample collected due to insufficient yield

Notes:
1. Fracture length based on outcrop fracture observations; NE-trending fractures assigned length of 31 ft; NW-trending fractures assigned length of 14ft; low-angle or unknown fractures assigned a length based on a variety of factors. See bedrock fracture mapping memo for details.
2. Potential fracture connections based on fracture orientations, visible impacts, packer results, and flowmeter data.
3. Visible impacts from FLUTe liner defined as follows:
Heavy: tar splotches > 4 inches in diameter and/or horizontal tar bands > 2 inches thick and generally extend across the FLUTe liner; may or may not have vertical fingers of tar extending down hole from horizontal bands;
Medium: individual tar blebs or splotches 0.5 - 4 inches in diameter; discontinuous horizontal line of tar blebs or thin tar band < 2 inches thick; may or may not extend across FLUTe liner;
Light: individual OLM/TLM blebs < 0.5 inches in diameter and/or discontinuous horizontal line of individual OLM/TLM blebs < 0.5 inches in diameter.

NO	DRWN	DATE	CHKD	DATE	APPVD	DATE	REVISION
7							
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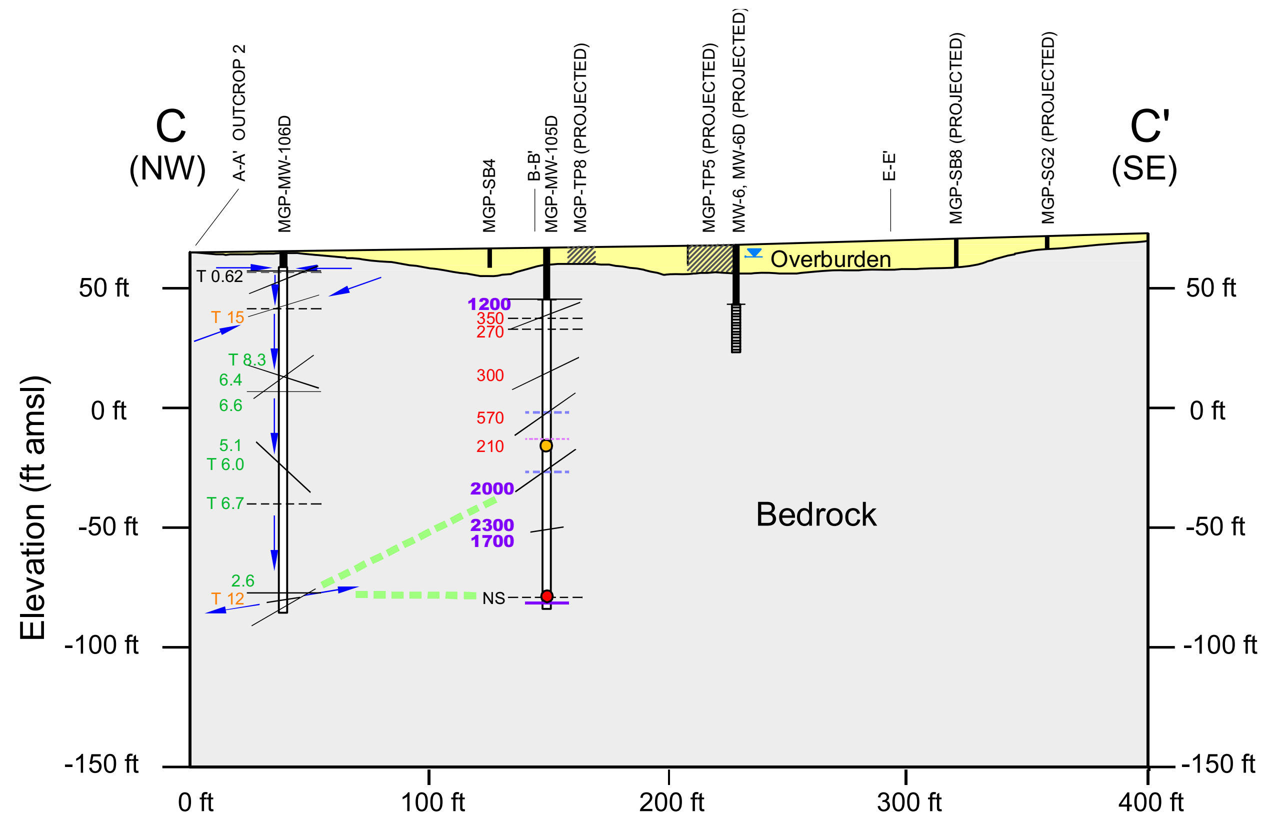
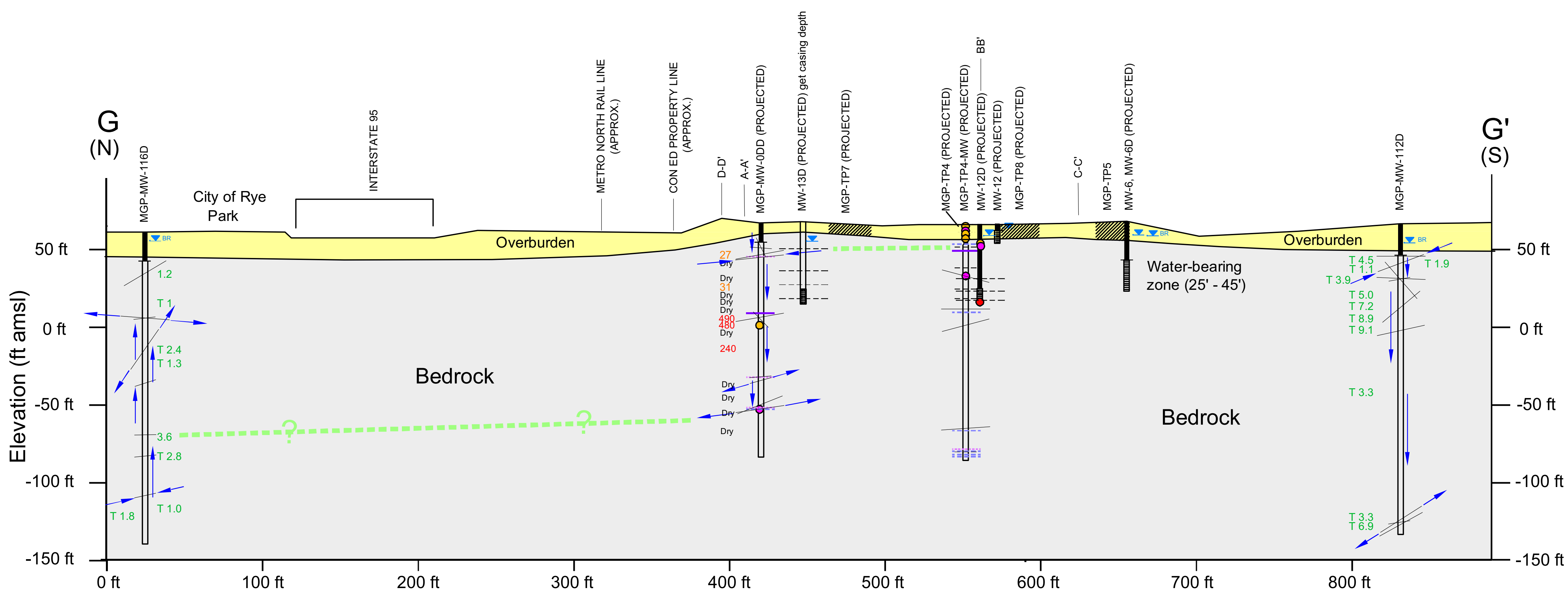
178 THEODORE FREMD AVE. RYE, NY

PROJ. NO.: 60281931.810
DATE: 04-2013

CROSS SECTIONS A-A' & B-B'

DRAWING NUMBER: 4-3
SHEET NUMBER:
REVISION 0





No Vertical Exaggeration

Legend:

- Piezometric surface in overburden (spring 2012)
- BR Piezometric surface in bedrock (spring 2012)
- Casing
- Well screen
- Open hole in bedrock
- Fracture (dashed where uncertain; see notes and Bedrock Fracture Mapping Memo)
- Flow direction from heat-pulse flowmeter
- Potential fracture connection (see notes)
- Top of bedrock

Visible Impacts from Logs:

- Blebs, globs, sheen
- Staining, odor
- Coated material, lenses
- Petroleum impacts, staining, odors
- Tar saturated

Note: no impacts observed where color absent

Visible Impacts from FLUTe liner (see notes for explanation):

- Heavy
- Medium
- Light

Packer sample results; assume maximum concentration is for naphthalene, unless otherwise noted: T = toluene; P = PCE; X = total xylenes; M = MTBE

0.5	Maximum concentration <1ug/l
6.5	Maximum concentration >1ug/l, <10ug/l
49	Maximum concentration >10ug/l, <100ug/l
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3000	Maximum concentration >1000ug/l
NS	No sample analyzed due to OLM in the sample
ND	Not detected
Dry	No sample collected due to insufficient yield

Notes:
1. Fracture length based on outcrop fracture observations; NE-trending fractures assigned length of 31 ft; NW-trending fractures assigned length of 14ft; low-angle or unknown fractures assigned a length based on a variety of factors. See bedrock fracture mapping memo for details.
2. Potential fracture connections based on fracture orientations, visible impacts, packer results, and flowmeter data.
3. Visible impacts from FLUTe liner defined as follows:
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Medium: individual tar blebs or splotches 0.5 - 4 inches in diameter; discontinuous horizontal line of tar blebs or thin tar band < 2 inches thick; may or may not extend across FLUTe liner;
Light: individual OLM/TLM blebs < 0.5 inches in diameter and/or discontinuous horizontal line of individual OLM/TLM blebs < 0.5 inches in diameter.

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
0							
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RYE GAS WORKS SITE
178 THEODORE FREMD AVE. RYE, NY

DATE: 04-2013

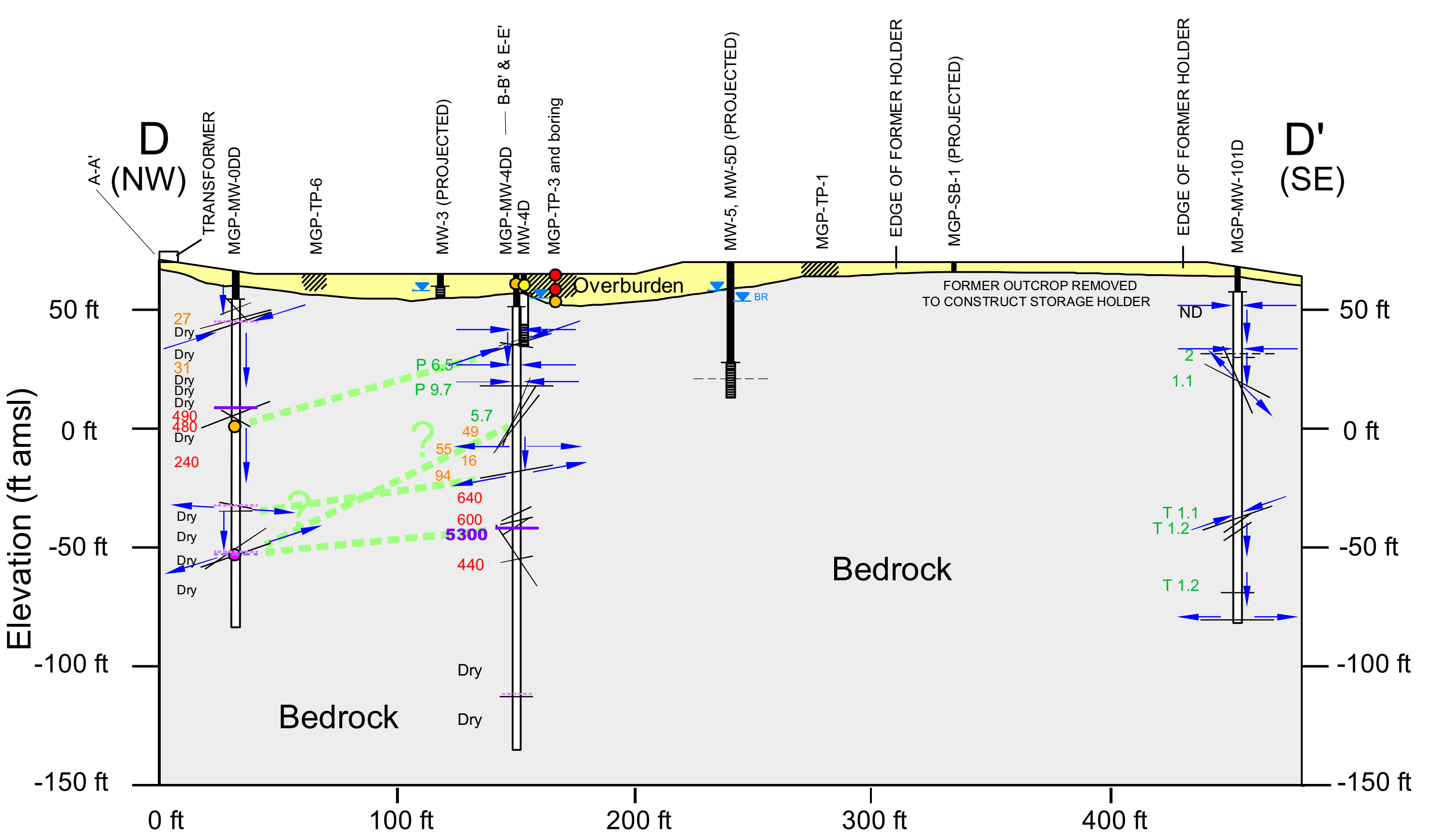
PROJ. NO.: 60281931.810

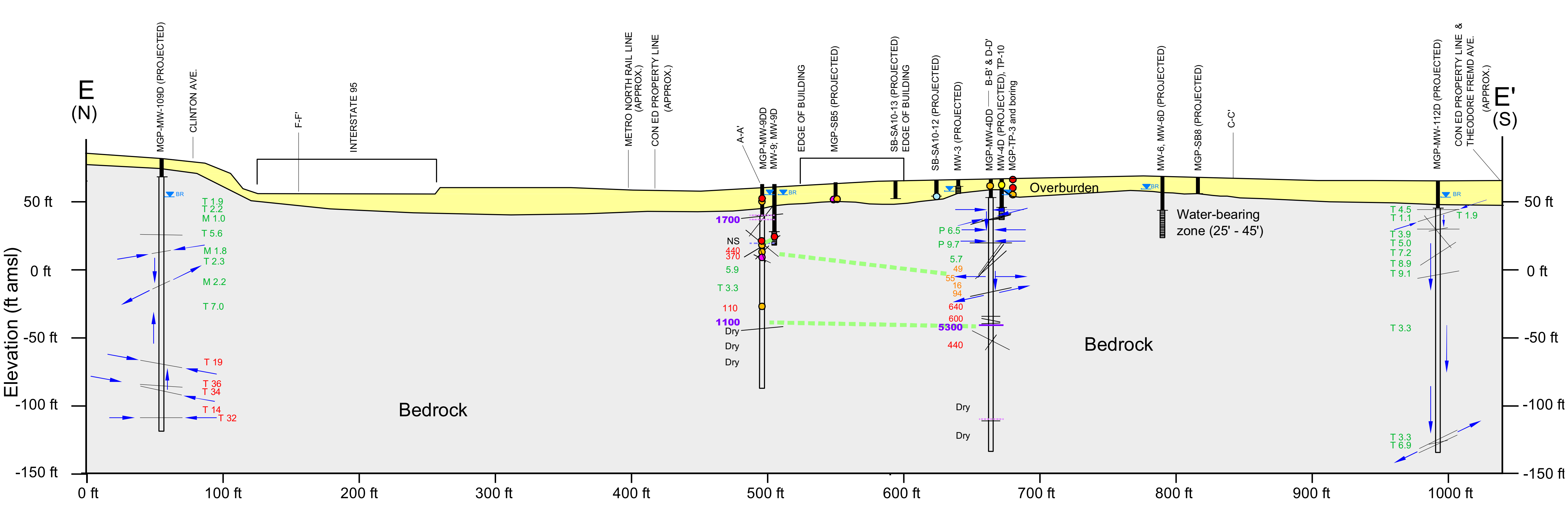
CROSS SECTIONS C-C' & G-G'

DRAWING NUMBER: 4-4

SHEET NUMBER:

REVISION 0





No Vertical Exaggeration

Legend:

Piezometric surface in overburden (spring 2012)

BR Piezometric surface in bedrock (spring 2012)

Casing

Well screen

Open hole in bedrock

Fracture (dashed where uncertain; see notes and Bedrock Fracture Mapping Memo)

Flow direction from heat-pulse flowmeter

Potential fracture connection (see notes)

Top of bedrock

Visible Impacts from Logs:

- Blebs, globs, sheen
- Staining, odor
- Coated material, lenses
- Petroleum impacts, staining, odors
- Tar saturated

Note: no impacts observed where color absent

Visible Impacts from FLUTe liner (see notes for explanation):

- Heavy
- Medium
- Light

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Light: individual OLM/TLM blebs < 0.5 inches in diameter and/or discontinuous horizontal line of individual OLM/TLM blebs < 0.5 inches in diameter.

NO	DRWN	DATE	CHKD	DATE	APPVD	DATE	REVISION
7							
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PROJ. NO.: 60281931.810

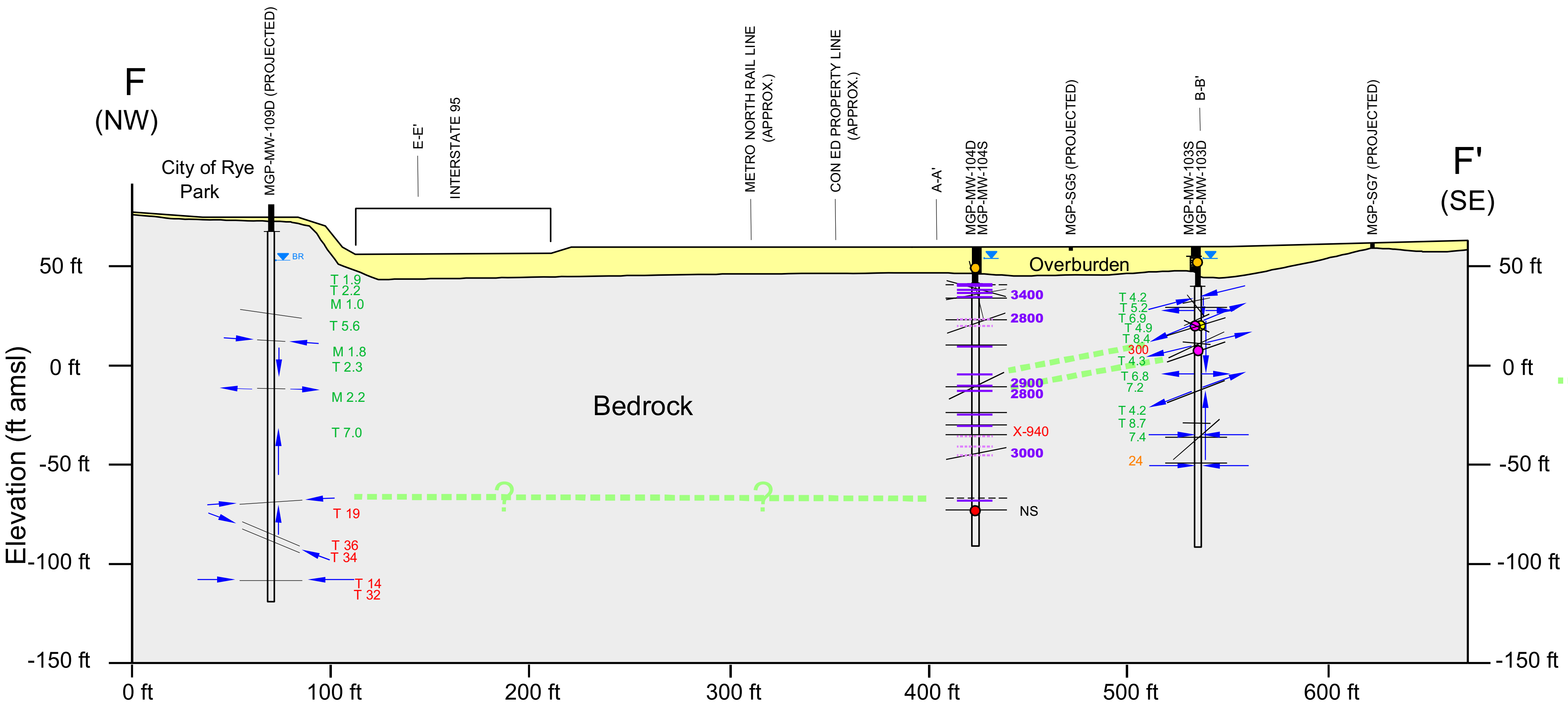
DATE: 04–2013

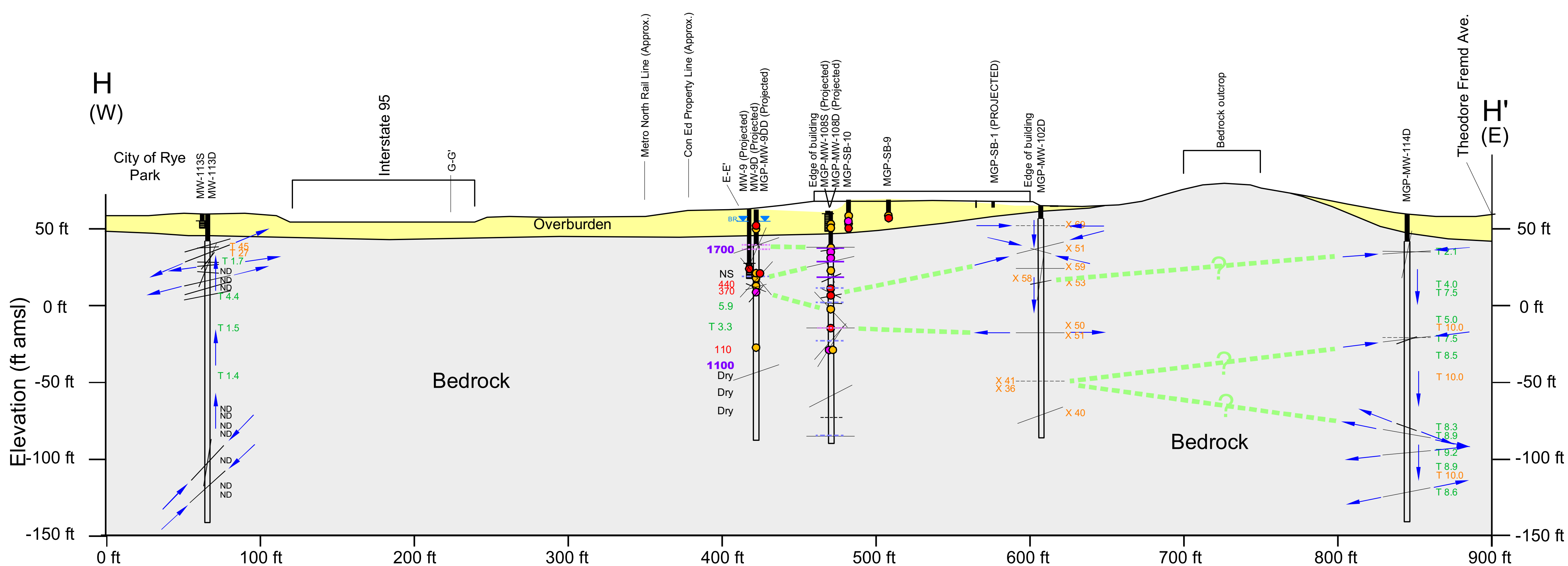
CROSS SECTIONS D-D' & E-E'

DRAWING NUMBER: 4-5

SHEET NUMBER:

REVISION 0





No Vertical Exaggeration

Legend:

Piezometric surface in overburden (spring 2012)
BR Piezometric surface in bedrock (spring 2012)
Casing
Well screen
Open hole in bedrock
Fracture (dashed where uncertain; see notes and Bedrock Fracture Mapping Memo)
Flow direction from heat-pulse flowmeter
Potential fracture connection (see notes)
Top of bedrock

Visible Impacts from Logs:
- Blebs, globs, sheen
- Staining, odor
- Coated material, lenses
- Petroleum impacts, staining, odors
- Tar saturated

Note: No impacts observed where color absent

Visible Impacts from FLUTe liner (see notes for explanation):
- Heavy
- Medium
- Light

Packer sample results; assume maximum concentration is for naphthalene, unless otherwise noted:
T = toluene; P = PCE; X = total xylenes; M = MTBE

0.5	Maximum concentration <1ug/l
6.5	Maximum concentration >1ug/l, <10ug/l
49	Maximum concentration >10ug/l, <100ug/l
370	Maximum concentration >100ug/l, <1000ug/l
3000	Maximum concentration >1000ug/l
NS	No sample analyzed due to OLM in the sample
ND	Not detected
Dry	No sample collected due to insufficient yield

Notes:
1. Fracture length based on outcrop fracture observations; NE-trending fractures assigned length of 31 ft; NW-trending fractures assigned length of 14ft; low-angle or unknown fractures assigned a length based on a variety of factors. See bedrock fracture mapping memo for details.
2. Potential fracture connections based on fracture orientations, visible impacts, packer results, and flowmeter data.
3. Visible impacts from FLUTe liner defined as follows:
Heavy: tar splotches > 4 inches in diameter and/or horizontal tar bands > 2 inches thick and generally extend across the FLUTe liner; may or may not have vertical fingers of tar extending down hole from horizontal bands;
Medium: individual tar blebs or splotches 0.5 - 4 inches in diameter; discontinuous horizontal line of tar blebs or thin tar band < 2 inches thick; may or may not extend across FLUTe liner;
Light: individual OLM/TLM blebs < 0.5 inches in diameter and/or discontinuous horizontal line of individual OLM/TLM blebs < 0.5 inches in diameter.

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
0							
1							
2							
3							
4							
5							
6							
7							

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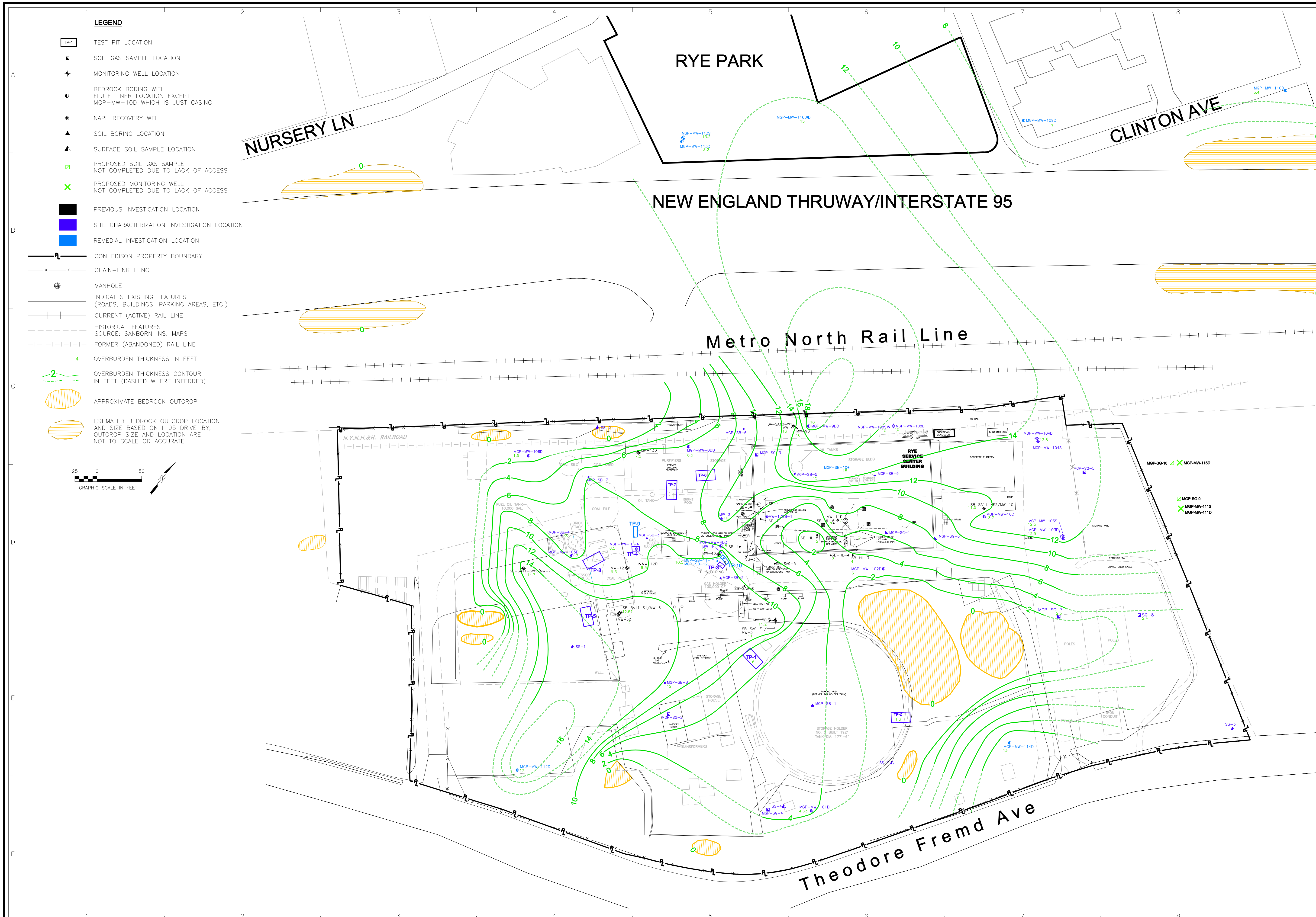
PROJ. NO.: 60281931.810
DATE: 04-2013

CROSS SECTIONS F-F' & H-H'

DRAWING NUMBER:
4-6
SHEET NUMBER:
REVISION 0



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DATE: 06/2013

OVERBURDEN THICKNESS ISOPACH MAP

REMEDIAL INVESTIGATION

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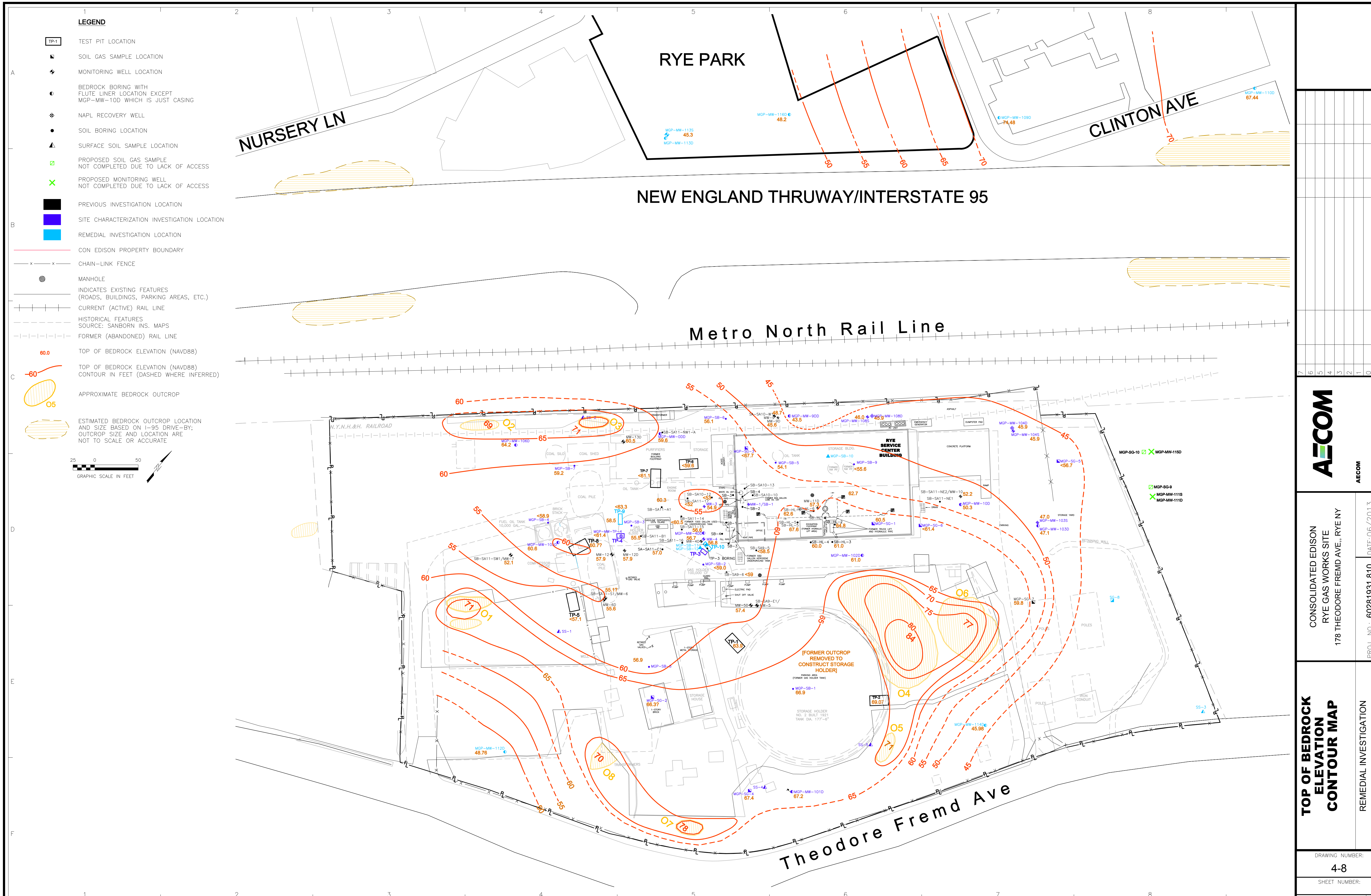
DRAWING NUMBER: 4-7

SHEET NUMBER:

REVISION 0



LEGEND
TEST PIT LOCATION
SOIL GAS SAMPLE LOCATION
MONITORING WELL LOCATION
BEDROCK BORING WITH FLUTE LINER LOCATION EXCEPT MGP-MW-10D WHICH IS JUST CASING
NAPL RECOVERY WELL
SOIL BORING LOCATION
SURFACE SOIL SAMPLE LOCATION
PROPOSED SOIL GAS SAMPLE NOT COMPLETED DUE TO LACK OF ACCESS
PROPOSED MONITORING WELL NOT COMPLETED DUE TO LACK OF ACCESS
PREVIOUS INVESTIGATION LOCATION
SITE CHARACTERIZATION INVESTIGATION LOCATION
REMEDIAL INVESTIGATION LOCATION
CON EDISON PROPERTY BOUNDARY
CHAIN-LINK FENCE
MANHOLE
INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
CURRENT (ACTIVE) RAIL LINE
HISTORICAL FEATURES SOURCE: SANBORN INS. MAPS
FORMER (ABANDONED) RAIL LINE
60.0
TOP OF BEDROCK ELEVATION (NAVD88)
-60
TOP OF BEDROCK ELEVATION (NAVD88) CONTOUR IN FEET (DASHED WHERE INFERRED)
O5
APPROXIMATE BEDROCK OUTCROP
ESTIMATED BEDROCK OUTCROP LOCATION AND SIZE BASED ON I-95 DRIVE-BY; OUTCROP SIZE AND LOCATION ARE NOT TO SCALE OR ACCURATE
25 0 50
GRAPHIC SCALE IN FEET
NURSERY LN
RYE PARK
CLINTON AVE
NEW ENGLAND THRUWAY/INTERSTATE 95
Metro North Rail Line
Theodore Fremd Ave
N.Y.N.H.&H. RAILROAD
RYE SERVICE CENTER BUILDING
[FORMER OUTCROP REMOVED TO CONSTRUCT STORAGE HOLDER]
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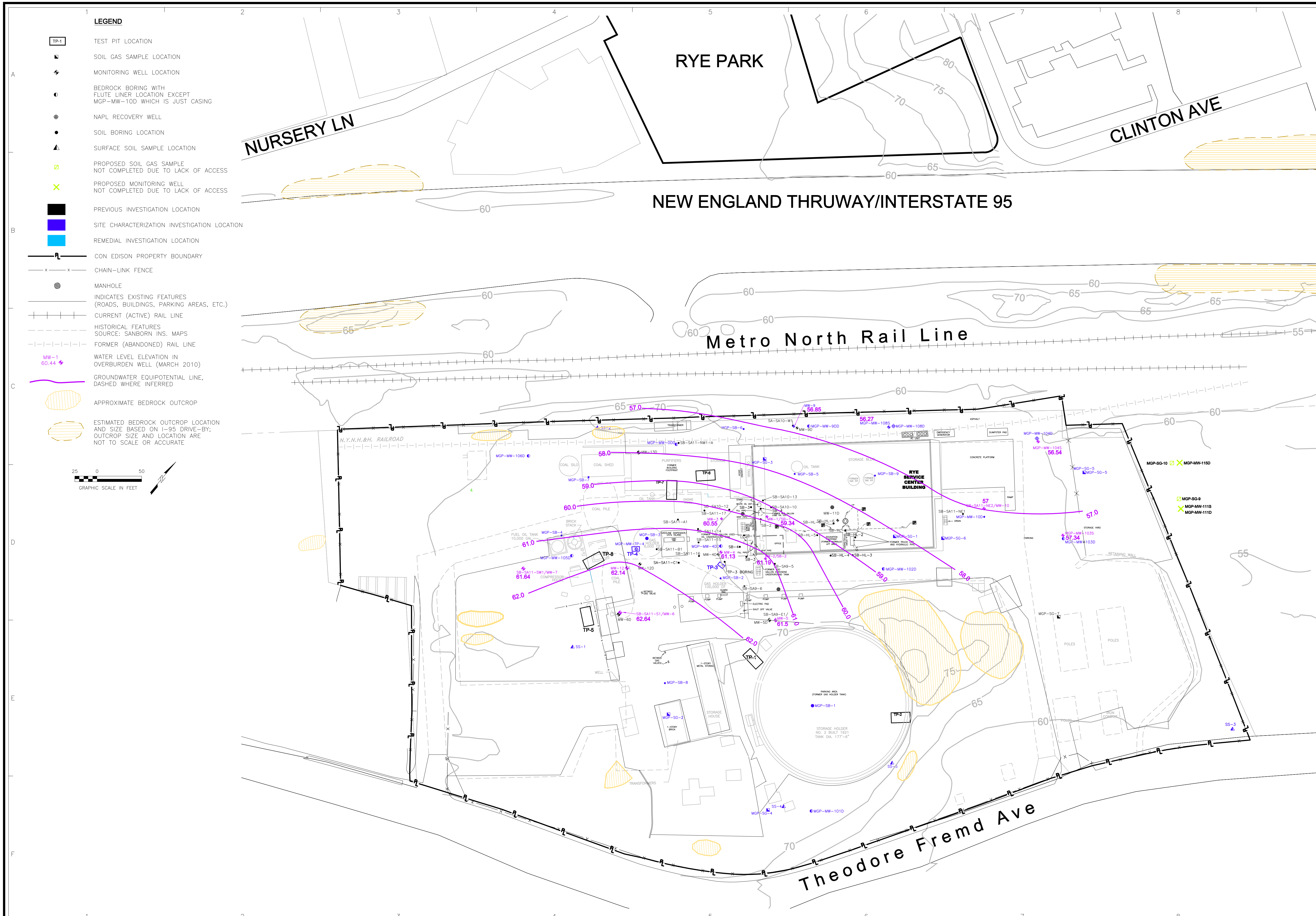
DATE: 06/2013
TOP OF BEDROCK ELEVATION CONTOUR MAP
REMEDIAL INVESTIGATION
DRAWING NUMBER:
4-8
SHEET NUMBER:
REVISION 0
NO DRWN DATE
CHKD DATE
APPD DATE
REVISION



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WATER LEVEL ELEVATIONS IN OVERBURDEN MARCH 2010

REMEDIAL INVESTIGATION

DRAWING NUMBER: 4-9

SHEET NUMBER:

REVISION 0

NO	DRWN	DATE	CHKD	DATE	APPVD	DATE	REVISION
0							
1							
2							
3							
4							
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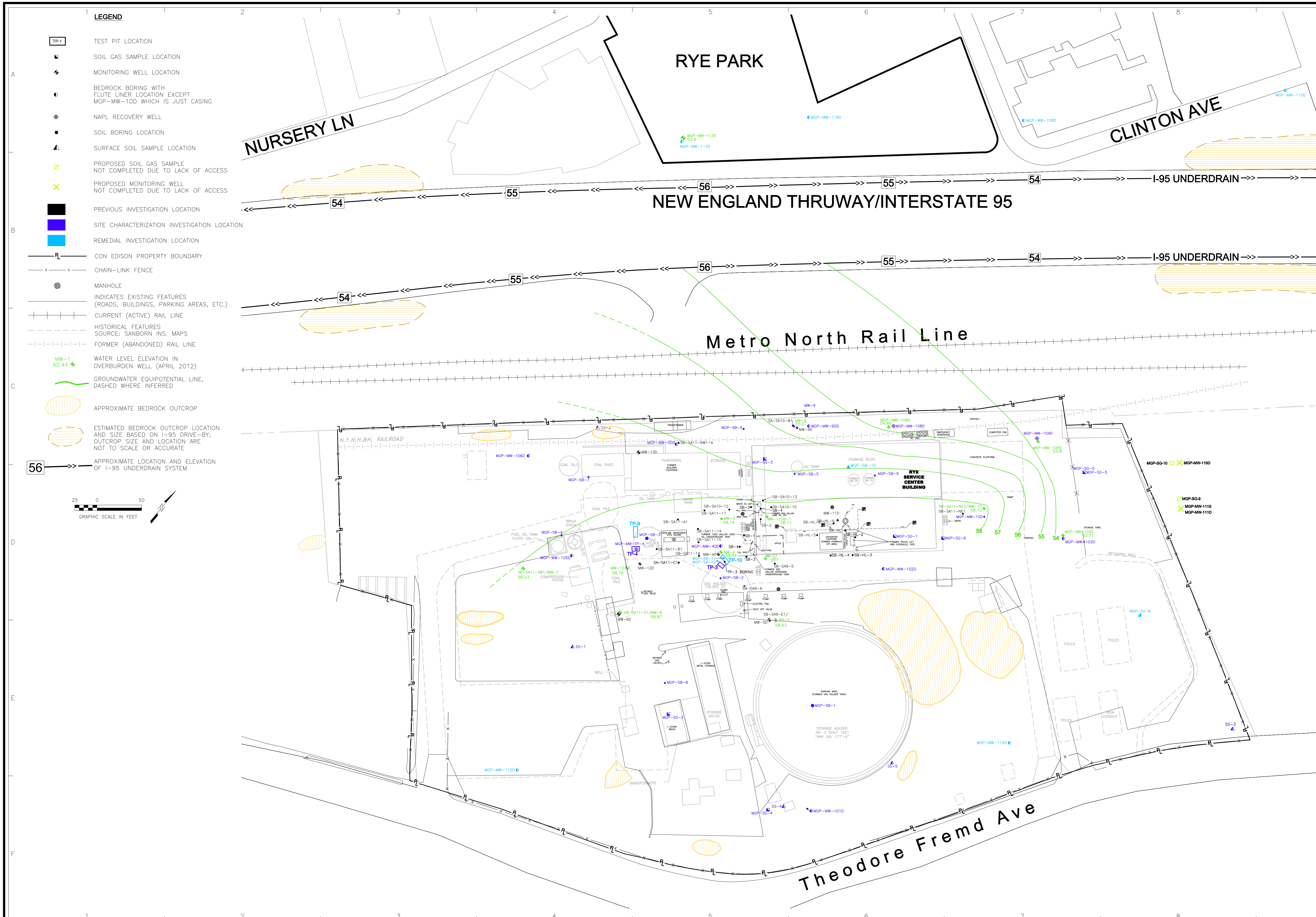
6							
7							



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WATER LEVEL ELEVATIONS IN OVERBURDEN APRIL 2012

REMEDIAL INVESTIGATION

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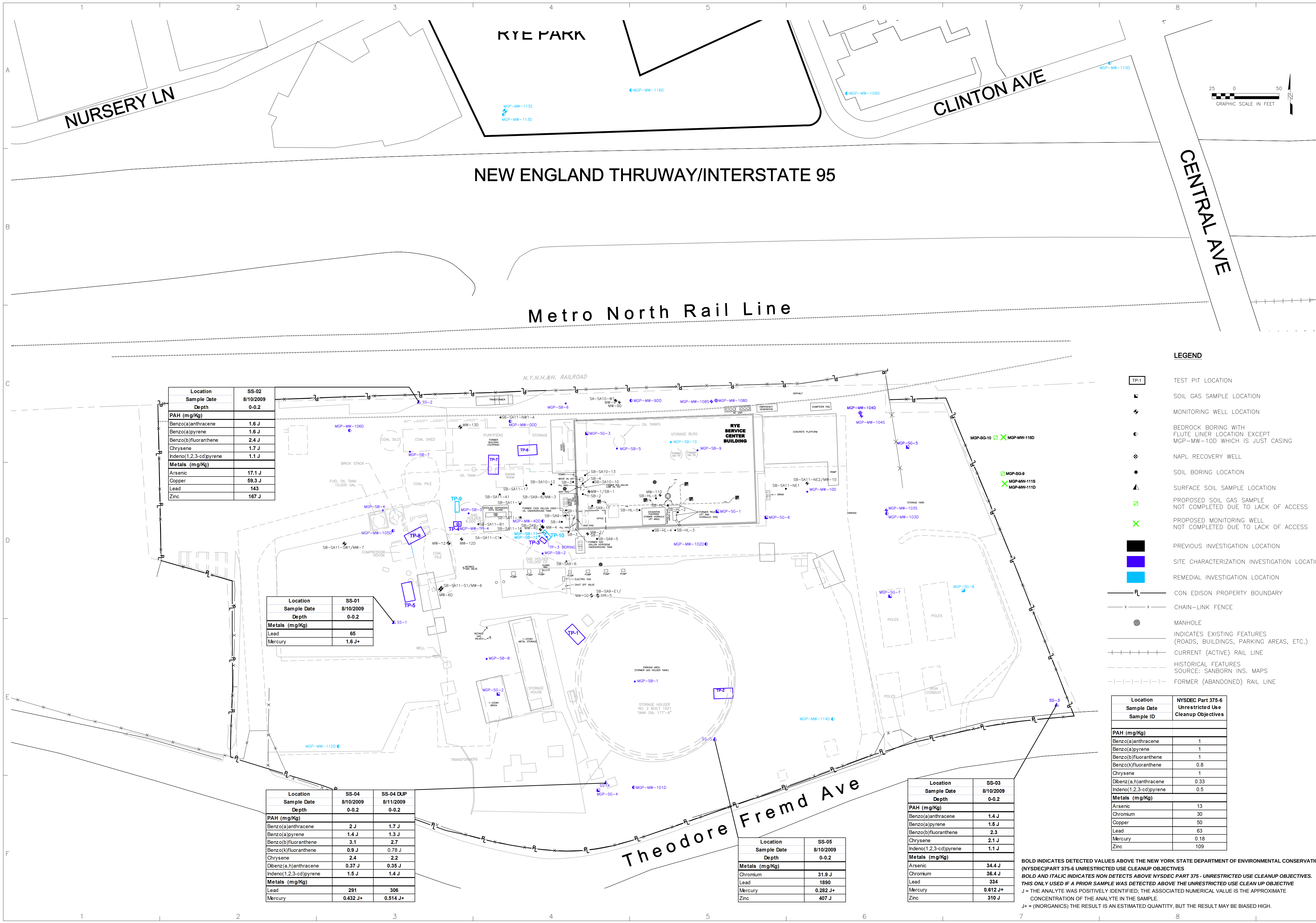
DRAWING NUMBER:
4-10

SHEET NUMBER:

REVISION 0



Location	SS-02
Sample Date	8/10/2009
Depth	0-0.2
PAH (mg/Kg)	
Benzo(a)anthracene	**1.6 J**
Benzo(a)pyrene	**1.6 J**
Benzo(b)fluoranthene	**2.4 J**
Chrysene	**1.7 J**
Indeno(1,2,3-cd)pyrene	**1.1 J**
Metals (mg/Kg)	
Arsenic	**17.1 J**
Copper	**59.3 J**
Lead	**143**
Zinc	**167 J**

Location	SS-01
Sample Date	8/10/2009
Depth	0-0.2
Metals (mg/Kg)	
Lead	**65**
Mercury	**1.6 J+**

Location	SS-04	SS-04 DUP
Sample Date	8/10/2009	8/11/2009
Depth	0-0.2	0-0.2
PAH (mg/Kg)		
Benzo(a)anthracene	**2 J**	**1.7 J**
Benzo(a)pyrene	**1.4 J**	**1.3 J**
Benzo(b)fluoranthene	**3.1**	**2.7**
Benzo(k)fluoranthene	**0.9 J**	0.78 J
Chrysene	**2.4**	**2.2**
Dibenz(a,h)anthracene	**0.37 J**	**0.35 J**
Indeno(1,2,3-cd)pyrene	**1.5 J**	**1.4 J**
Metals (mg/Kg)		
Lead	**291**	**306**
Mercury	**0.432 J+**	**0.514 J+**

Location	SS-05
Sample Date	8/10/2009
Depth	0-0.2
Metals (mg/Kg)	
Chromium	**31.9 J**
Lead	**1890**
Mercury	**0.282 J+**
Zinc	**407 J**

Location	SS-03
Sample Date	8/10/2009
Depth	0-0.2
PAH (mg/Kg)	
Benzo(a)anthracene	**1.4 J**
Benzo(a)pyrene	**1.5 J**
Benzo(b)fluoranthene	**2.3**
Chrysene	**2.1 J**
Indeno(1,2,3-cd)pyrene	**1.1 J**
Metals (mg/Kg)	
Arsenic	**34.4 J**
Chromium	**36.4 J**
Lead	**334**
Mercury	**0.612 J+**
Zinc	**310 J**

LEGEND

- TP-1 TEST PIT LOCATION
- SOIL GAS SAMPLE LOCATION
- MONITORING WELL LOCATION
- BEDROCK BORING WITH FLUTE LINER LOCATION EXCEPT MGP–MW–10D WHICH IS JUST CASING
- NAPL RECOVERY WELL
- SOIL BORING LOCATION
- SURFACE SOIL SAMPLE LOCATION
- PROPOSED SOIL GAS SAMPLE NOT COMPLETED DUE TO LACK OF ACCESS
- PROPOSED MONITORING WELL NOT COMPLETED DUE TO LACK OF ACCESS
- PREVIOUS INVESTIGATION LOCATION
- SITE CHARACTERIZATION INVESTIGATION LOCATION
- REMEDIAL INVESTIGATION LOCATION
- CON EDISON PROPERTY BOUNDARY
- CHAIN–LINK FENCE
- MANHOLE
- INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
- CURRENT (ACTIVE) RAIL LINE
- HISTORICAL FEATURES SOURCE: SANBORN INS. MAPS
- FORMER (ABANDONED) RAIL LINE

Location / Sample Date / Sample ID	NYSDEC Part 375-6 Unrestricted Use Cleanup Objectives
PAH (mg/Kg)	
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenz(a,h)anthracene	0.33
Indeno(1,2,3-cd)pyrene	0.5
Metals (mg/Kg)	
Arsenic	13
Chromium	30
Copper	50
Lead	63
Mercury	0.18
Zinc	109

BOLD INDICATES DETECTED VALUES ABOVE THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC)PART 375-6 UNRESTRICTED USE CLEANUP OBJECTIVES

BOLD AND ITALIC INDICATES NON DETECTS ABOVE NYSDEC PART 375 - UNRESTRICTED USE CLEANUP OBJECTIVES. THIS ONLY USED IF A PRIOR SAMPLE WAS DETECTED ABOVE THE UNRESTRICTED USE CLEAN UP OBJECTIVE

J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

J+ = (INORGANICS) THE RESULT IS AN ESTIMATED QUANTITY, BUT THE RESULT MAY BE BIASED HIGH.

NO	DRWN	DATE	CHKD	DATE	APPD	DATE	REVISION
0							
1							
2							
3							
4							
5							
6							
7							

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DATE: 04/2013

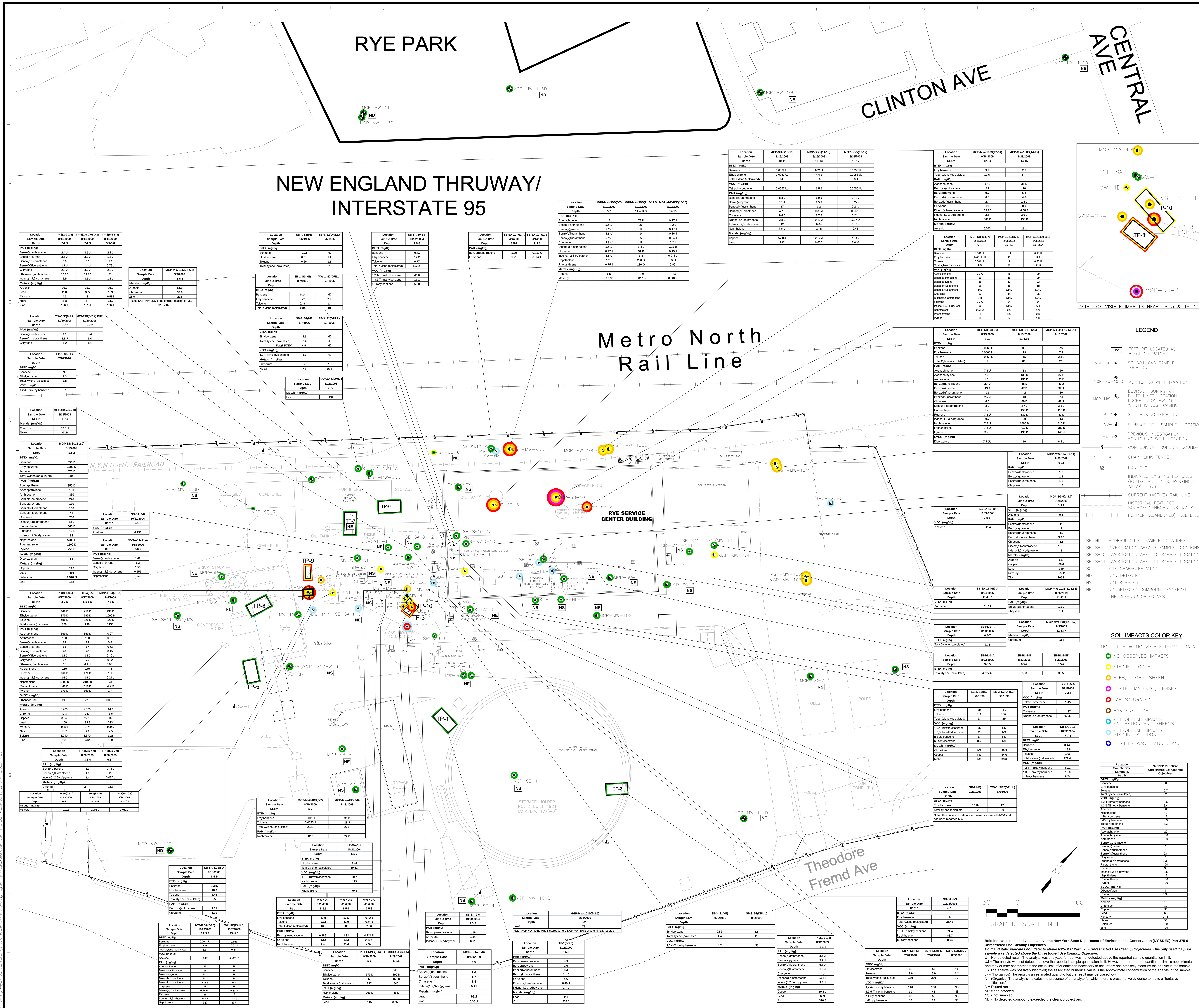
SURFACE SOIL ANALYTICAL RESULTS EXCEEDING CRITERIA

REMEDIAL INVESTIGATION

DRAWING NUMBER: 5-1

SHEET NUMBER:

REVISION 0



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DATE: 06/2013

SUBSURFACE SOIL EXCEEDANCES AND VISIBLE IMPACTS

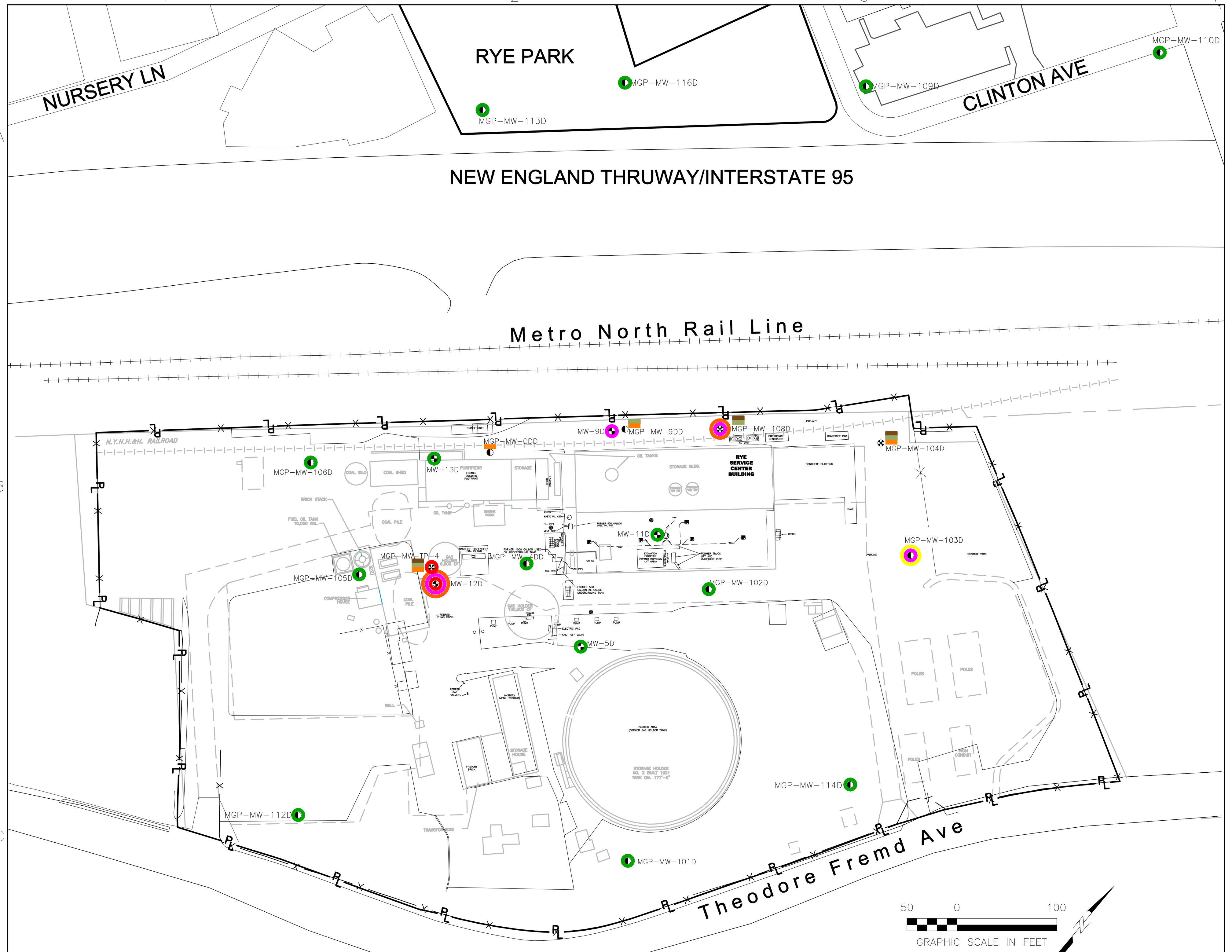
REMEDIAL INVESTIGATION

DRAWING NUMBER:

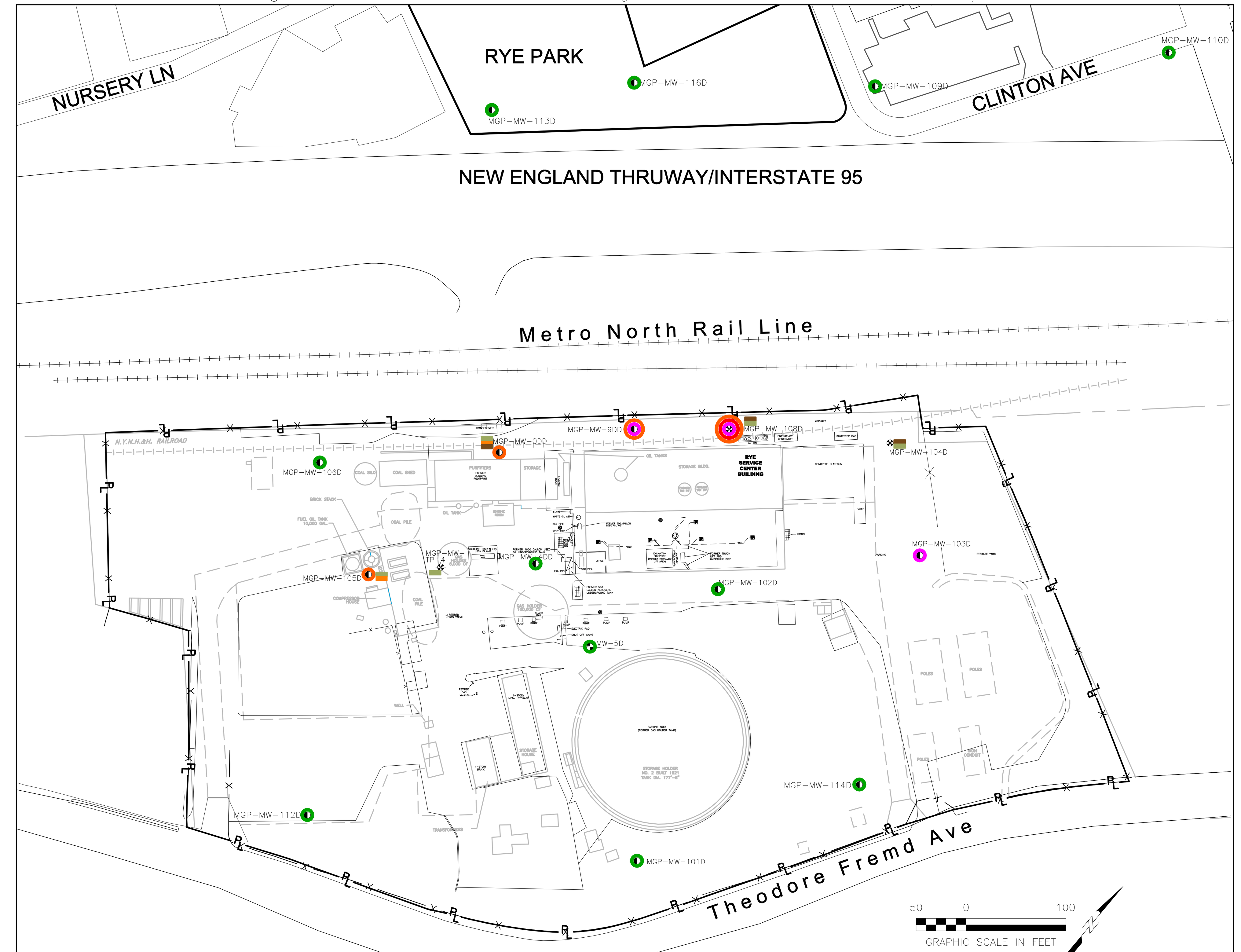
5-2

SHEET NUMBER:

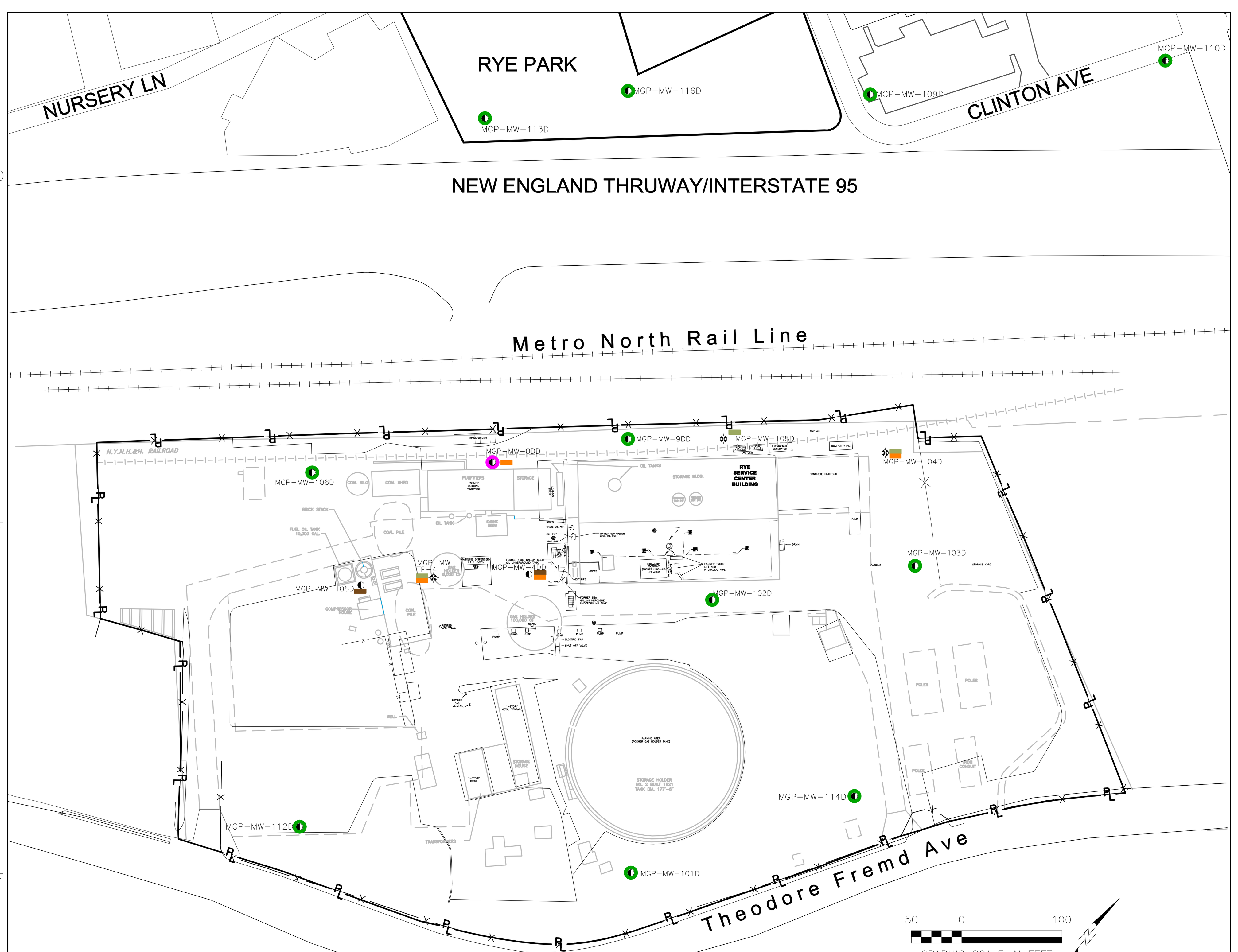
REVISION 0



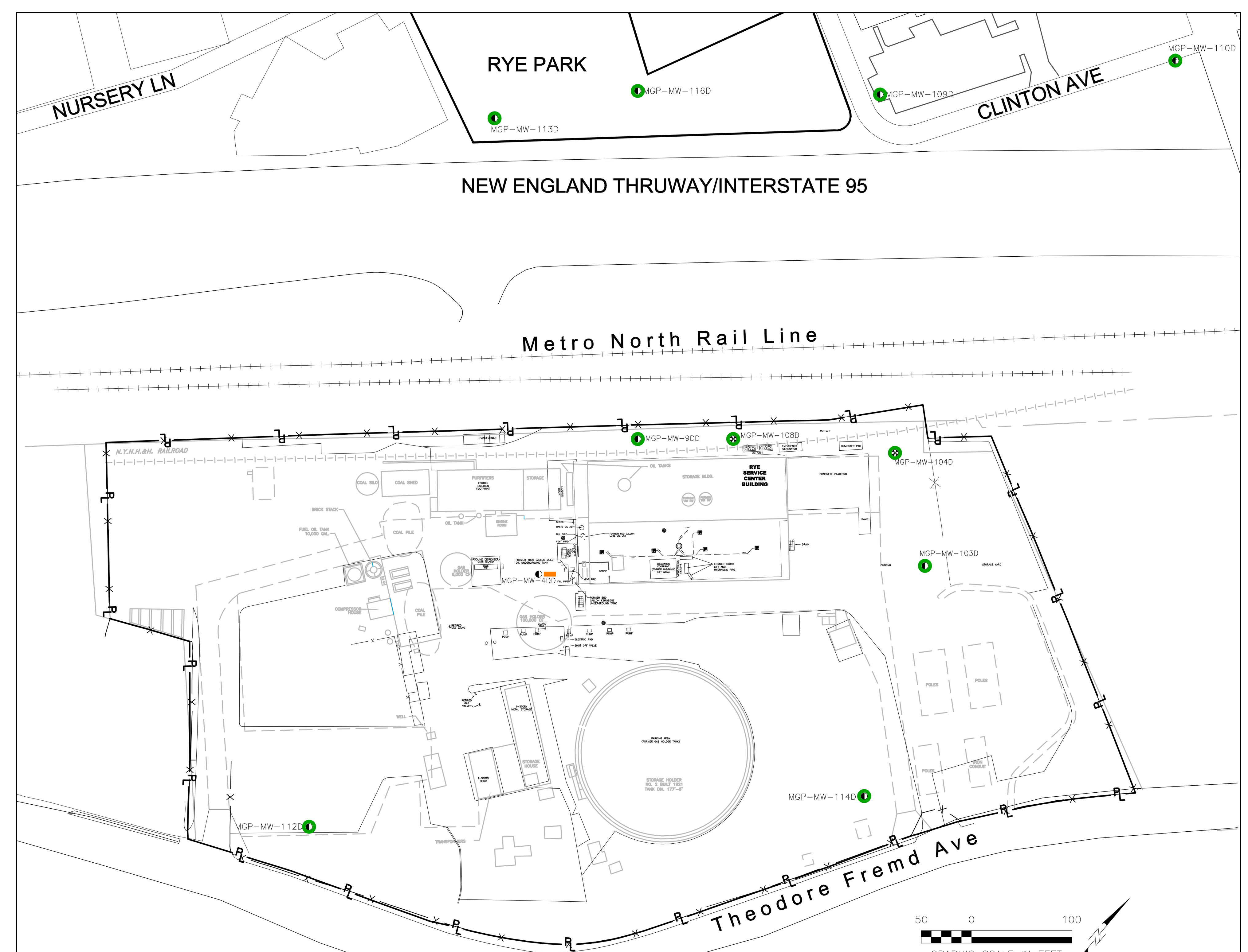
ELEVATION 65 to 15 FT NAVD88



ELEVATION 15 to -35 FT NAVD88



ELEVATION -35 to -85 FT NAVD88



ELEVATION <-85 FT NAVD88

LEGEND

MGP-MW-101D	BEDROCK BORING WITH FLUTe (EXCEPT MGP-MW-10D WHICH IS JUST CASING)
MW-4D	BEDROCK MONITORING WELL
MGP-MW-108D	NAPL RECOVERY WELL
	CON EDISON PROPERTY BOUNDARY
	CHAIN-LINK FENCE
	MANHOLE
	INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
	CURRENT (ACTIVE) RAIL LINE
	HISTORICAL FEATURES SOURCE: SANBORN INS. MAPS
	FORMER (ABANDONED) RAIL LINE

DRILLING AND CORING OBSERVATIONS

- NO OBSERVED IMPACTS
- STAIN
- SHEEN
- COATED MATERIAL, LENSES
- TAR SATURATED

FLUTe OBSERVATIONS

- LIGHT IMPACTS – INDICATES INDIVIDUAL OLM/TLM BLEBS LESS THAN 0.5 INCHES IN DIAMETER AND/OR DISCONTINUOUS HORIZONTAL LINE OF INDIVIDUAL OLM/TLM BLEBS LESS THAN 0.5 INCHES IN DIAMETER.
- MEDIUM IMPACTS – INDICATES INDIVIDUAL BLEBS OR SPLOTCHES BETWEEN 0.5 AND 4 INCHES IN DIAMETER, DISCONTINUOUS HORIZONTAL LINE OF TAR BLEBS, OR A THICK TAR BAND THAT IS LESS THAN 2 INCHES THICK AND MAY OR MAY NOT REACH ACROSS THE FLUTe LINER.
- HEAVY IMPACTS – INDICATES TAR SPLOTCHES GREATER THAN 4 INCHES IN DIAMETER AND/OR HORIZONTAL TAR BANDS THAT ARE GREATER THAN 2 INCHES THICK AND GENERALLY EXTEND ACROSS THE FLUTe LINER AND MAY OR MAY NOT HAVE VERTICAL FINGERS OF TAR EXTENDING DOWN HOLE FROM THE HORIZONTAL TAR BAND.

NOTES:

OLM = OIL LIKE MATERIAL
TLM = TAR LIKE MATERIAL
FT – FEET
NAVD88 – NORTH AMERICAN VERTICAL DATUM OF 1988

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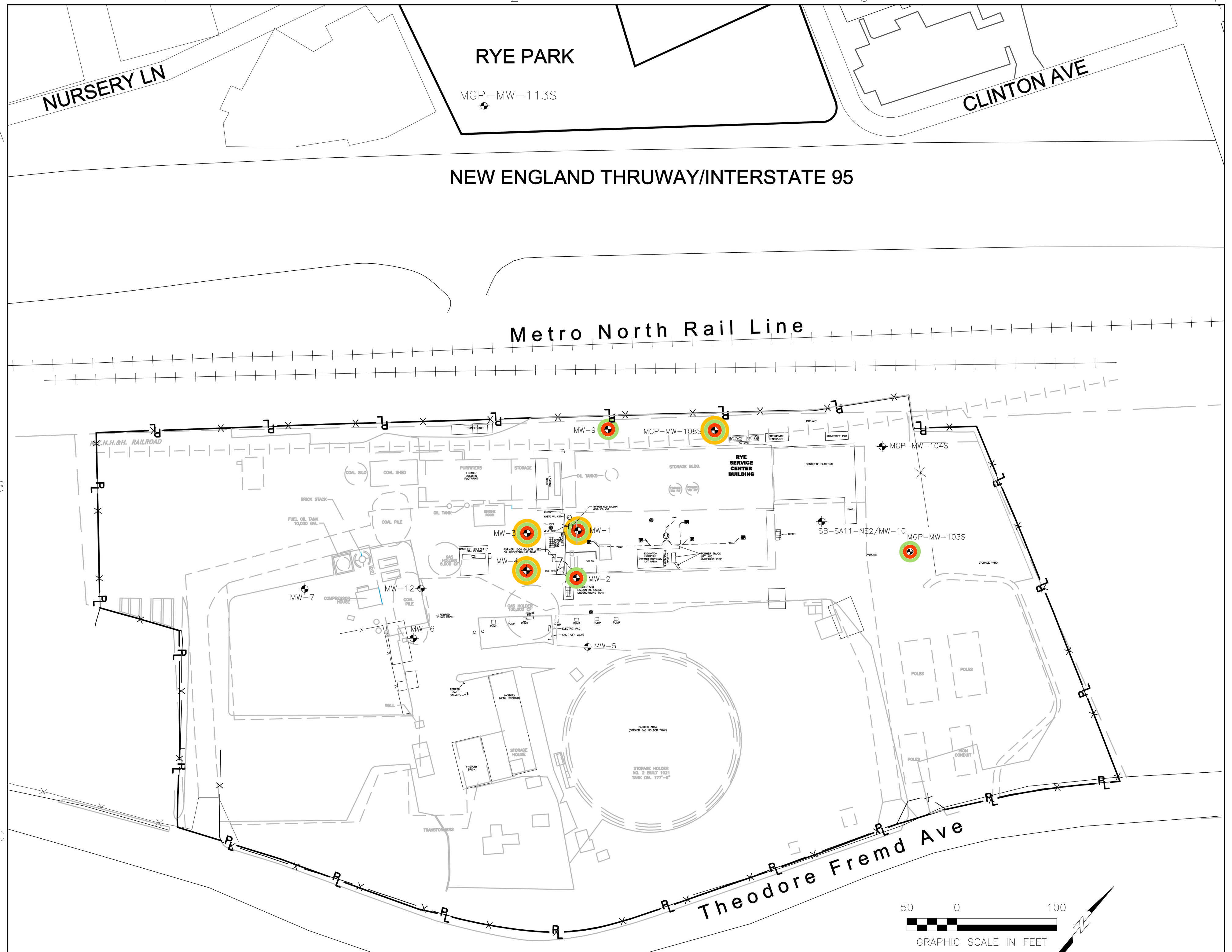
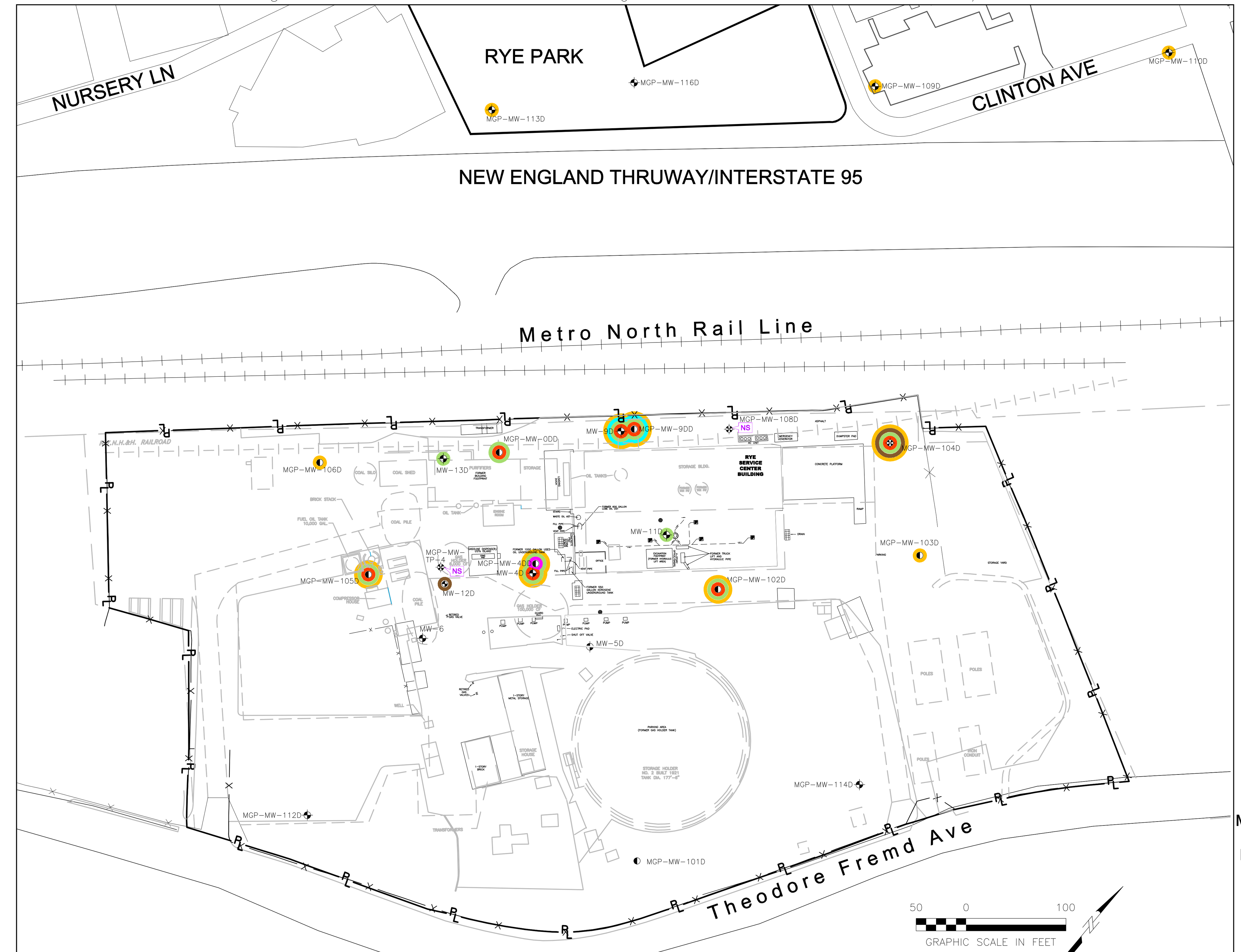
VISIBLE IMPACTS IN BEDROCK BY ELEVATION

REMEDIAL INVESTIGATION

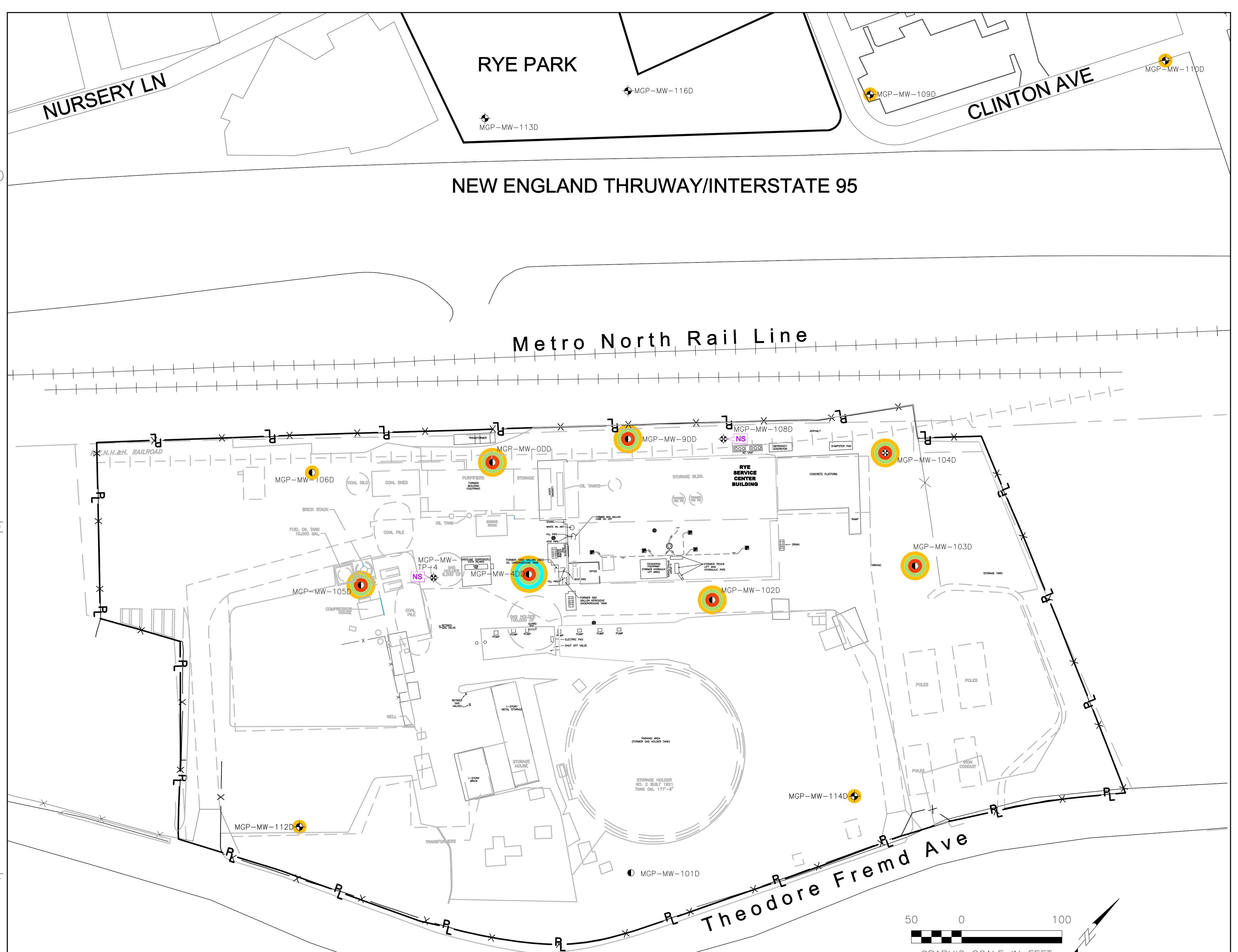
DRAWING NUMBER:
5-3
SHEET NUMBER:
REVISION 0



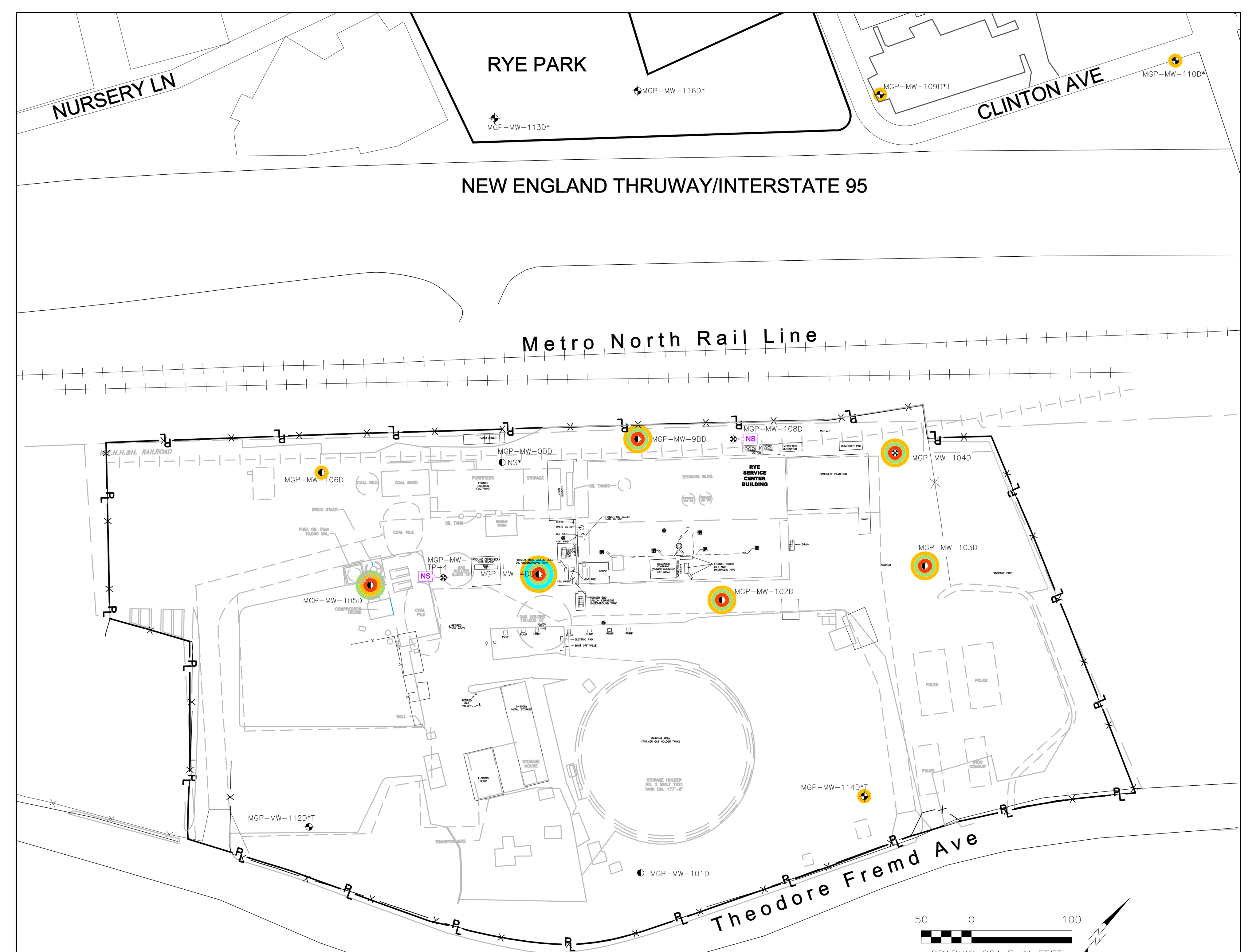
OVERBURDEN GROUNDWATER EXCEEDANCES



BEDROCK GROUNDWATER EXCEEDANCES 65 to 15 FT NAVD88



BEDROCK GROUNDWATER EXCEEDANCES 15 to -35 FT NAVD88



BEDROCK GROUNDWATER EXCEEDANCES -35 FT NAVD88 AND DEEPER

LEGEND

MGP-MW-103S	MONITORING WELL LOCATION
MGP-MW-0DD	BEDROCK BORINGS WITH FLUTE
MGP-MW-104D	NAPL RECOVERY WELL
	CON EDISON PROPERTY BOUNDARY
	CHAIN-LINK FENCE
	MANHOLE
	INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
	CURRENT (ACTIVE) RAIL LINE
	HISTORICAL FEATURES SOURCE: SANBORN INS. MAPS
	FORMER (ABANDONED) RAIL LINE
	BENZENE WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 1ug/L
	NAPHTHALENE WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 10ug/L
	MTBE WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 10ug/L
	OLM/TLM PRESENT IN WELL-SAMPLE NOT COLLECTED OR SAMPLE NOT SUBMITTED FOR LABORATORY ANALYSIS
	TETRACHLOROETHENE (PCE) WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 5 ug/L
	TOLUENE WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 5 ug/L
NS*	A GROUNDWATER SAMPLE WAS NOT COLLECTED BECAUSE THE FRACTURE ZONES IN THIS RANGE WERE DRY.
*	BEDROCK ZONES DEEPER THAN -85FT NAVD88 WERE SAMPLED AT THIS LOCATION
T	TOLUENE WAS DETECTED AT A CONCENTRATION EXCEEDING THE AWQSGV OF 5 UG/L IN BEDROCK ZONES DEEPER THAN -85FT NAVD88 AT THIS LOCATION
NS	GROUNDWATER PACKER SAMPLING WAS NOT PERFORMED AT THIS LOCATION DUE TO THE PRESENCE OF TAR IN THE BOREHOLE. TAR WAS OBSERVED ON THE FLUTe LINER OR IN THE CORE IN THIS ELEVATION RANGE.

NOTES:

OLM	OIL LIKE MATERIAL
TLM	TAR LIKE MATERIAL
AWQSGV	NYSDEC AMBIENT WATER QUALITY STANDARD OR GUIDANCE VALUE
FT	FEET
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988

NO	DRWN	DATE	CHKD	DATE	APPD	DATE	REVISION
7							
6							
5							
4							
3							
2							
1							
0							

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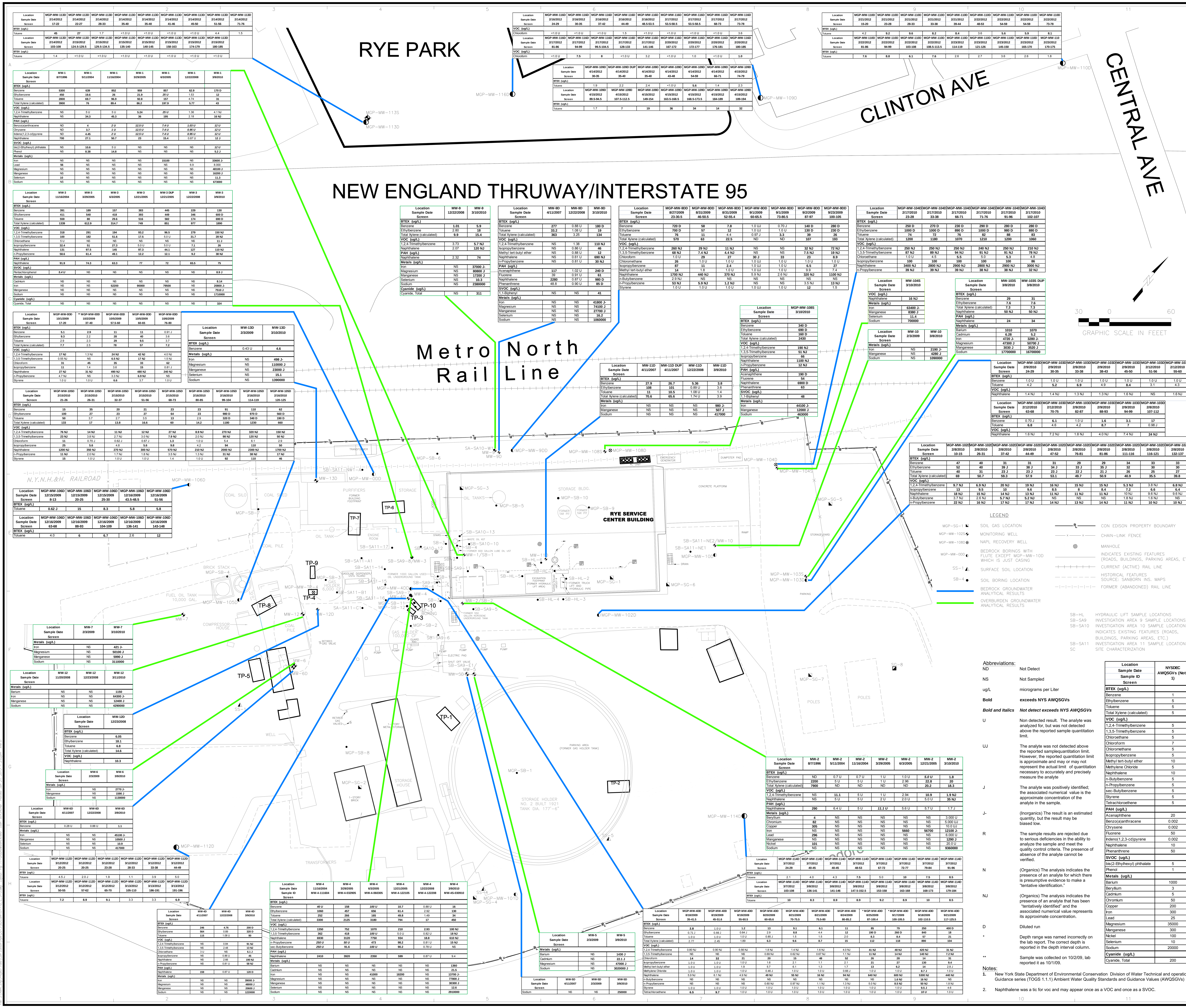
DATE: 06/2013

SUMMARY OF SELECTED GROUNDWATER EXCEEDANCES IN OVERBURDEN AND IN BEDROCK BY ELEVATION RANGE (2009-2012)

REMEDIAL INVESTIGATION

DRAWING NUMBER: 5-4
SHEET NUMBER:
REVISION 0



Location Sample Date Screen	MGP-MW-102D 2/8/2010 10-15	MGP-MW-102D 2/8/2010 26-31	MGP-MW-102D 2/8/2010 37-42	MGP-MW-102D 2/8/2010 44-49	MGP-MW-102D 2/8/2010 47-52	MGP-MW-102D 2/8/2010 76-81	MGP-MW-102D 2/8/2010 81-86	MGP-MW-102D 2/8/2010 111-116	MGP-MW-102D 2/8/2010 116-121	MGP-MW-102D 2/8/2010 132-137
BTEX (ug/L)										
Benzene	**47**	**40**	**31**	**31**	**31**	**29**	**29**	**34**	**33**	**33**
Ethylbenzene	**52**	**40**	**39 J**	**38 J**	**34 J**	**33 J**	**35 J**	**32**	**30**	**30**
Toluene	**40**	**31**	**23 J**	**23 J**	**23 J**	**22 J**	**21 J**	**26**	**25**	**27**
Total Xylene (calculated)	**69**	**50.7**	**59.3**	**57.9**	**53.1**	**49.7**	**50.9**	**40.9**	**35.5**	**39.8**
VOC (ug/L)										
1,2,4-Trimethylbenzene	**9.7 NJ**	**6.9 NJ**	**20 NJ**	**19 NJ**	**16 NJ**	**15 NJ**	**15 NJ**	**5.3 NJ**	3.8 NJ	**6.8 NJ**
Isopropylbenzene	**13**	**9.5**	**10**	**9.6**	**8.5**	**8**	**8.4**	**7.2**	**6.6**	**6.4**
Naphthalene	**18 NJ**	**15 NJ**	**14 NJ**	**13 NJ**	**11 NJ**	**11 NJ**	**11 NJ**	10 NJ	9.6 NJ	9.6 NJ
n-Butylbenzene	3.7 NJ	2.6 NJ	**5.7 NJ**	**5.2 NJ**	NS	NS	NS	1.8 NJ	1.6 NJ	NS
n-Propylbenzene	**22 NJ**	**16 NJ**	**17 NJ**	**17 NJ**	**14 NJ**	**13 NJ**	**14 NJ**	**11 NJ**	**10 NJ**	**10 NJ**

Location Sample Date Screen	MGP-MW-103D 2/9/2010 24-29	MGP-MW-103D 2/9/2010 30-35	MGP-MW-103D 2/9/2010 33-38	MGP-MW-103D 2/9/2010 38-43	MGP-MW-103D 2/9/2010 45-50	MGP-MW-103D 2/12/2010 51-56	MGP-MW-103D 2/12/2010 55-60
BTEX (ug/L)							
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	4.2	**5.2**	**6.9**	4.9	**8.4**	3.1	4.3
VOC (ug/L)							
Naphthalene	1.4 NJ	1.4 NJ	1.3 NJ	1.3 NJ	1.6 NJ	NS	1.6 NJ

Location Sample Date Screen	MGP-MW-103D 2/12/2010 63-68	MGP-MW-103D 2/12/2010 70-75	MGP-MW-103D 2/9/2010 82-87	MGP-MW-103D 2/9/2010 88-93	MGP-MW-103D 2/9/2010 94-99	MGP-MW-103D 2/8/2010 107-112
BTEX (ug/L)						
Benzene	0.70 J	**6.1**	1.0 U	**1.6**	**3.1**	**17**
Toluene	**6.8**	4.6	4.2	**8.7**	**7**	0.98 J
VOC (ug/L)						
Naphthalene	1.6 NJ	7.2 NJ	1.8 NJ	4.0 NJ	7.4 NJ	**24 NJ**

Location Sample Date Screen	MW-104S 3/10/2010
VOC (ug/L)	
Naphthalene	**16 NJ**
Metals (ug/L)	
Iron	**63400 J-**
Manganese	**8380 J**
Selenium	**11.4**
Sodium	**700000**

Location Sample Date Screen	MW-103S 3/8/2010	MW-103S DUP 3/8/2010
BTEX (ug/L)		
Benzene	**29**	**31**
Ethylbenzene	**7.6**	**7.6**
Total Xylene (calculated)	**7.3**	**7.3**
Naphthalene	**50 NJ**	**50 NJ**
PAH (ug/L)		
Naphthalene	**24**	**34**
Metals (ug/L)		
Barium	**1010**	**1070**
Cadmium	**6.28**	**5.2**
Iron	**4720 J-**	**3280 J-**
Magnesium	**47300 J**	**50700 J**
Manganese	**3030 J**	**3520 J**
Sodium	**17700000**	**16700000**

Location Sample Date Screen	MW-10 2/3/2009	MW-10 3/8/2010
Metals (ug/L)		
Iron	NS	**2190 J-**
Manganese	NS	**4280 J**
Sodium	NS	**1090000**

Location Sample Date Screen	MW-2 8/7/1996	MW-2 5/11/2004	MW-2 11/16/2004	MW-2 3/29/2005	MW-2 6/3/2005	MW-2 12/21/2005	MW-2 3/10/2010
BTEX (ug/L)							
Benzene	ND	0.7 U	0.7 U	1 U	1.0 U	***5.0 U***	**1.8**
Ethylbenzene	**2200**	5 U	5 U	1 U	2.96	**22.8**	**20**
Total Xylene (calculated)	**7900**	ND	ND	ND	ND	**20.2**	**18.3**
VOC (ug/L)							
1,2,4-Trimethylbenzene	NS	**11.1**	5 U	1 U	2.94	**10.9**	**1.9 NJ**
Naphthalene	NS	5 U	5 U	2 U	2.0 U	5.0 U	**35 NJ**
PAH (ug/L)							
Naphthalene	**290**	6.4 U	5 U	***11.1 U***	5.6 U	5.7 U	1.7 J
Metals (ug/L)							
Beryllium	**4**	NS	NS	NS	NS	NS	3.000 U
Chromium	**82**	NS	NS	NS	NS	NS	5.000 UJ
Copper	**305**	NS	NS	NS	NS	NS	10.0 UJ
Iron	NS	NS	NS	NS	**5660**	**56700**	**12100 J-**
Lead	**296**	NS	NS	NS	NS	NS	6.000 U
Manganese	NS	NS	NS	NS	NS	NS	**1290 J**
Nickel	**101**	NS	NS	NS	NS	NS	20.0 U
Sodium	NS	NS	NS	NS	NS	NS	**9360000**

Location Sample Date Screen	MGP-MW-114D 3/7/2012 24-29	MGP-MW-114D 3/7/2012 40-45	MGP-MW-114D 3/7/2012 40-45	MGP-MW-114D 3/7/2012 48-53	MGP-MW-114D 3/7/2012 67-72	MGP-MW-114D 3/7/2012 72-77	MGP-MW-114D 3/7/2012 79-84	MGP-MW-114D 3/7/2012 91-96
BTEX (ug/L)								
Toluene	2.1	4.0	4.3	**7.5**	5.0	**10**	**7.5**	**8.5**
Location Sample Date Screen	**MGP-MW-114D 3/7/2012 103-108**	**MGP-MW-114D 3/8/2012 136-141**	**MGP-MW-114D 3/8/2012 141-146**	**MGP-MW-114D 3/8/2012 147.5-152.5**	**MGP-MW-114D 3/8/2012 153-158**	**MGP-MW-114D 3/8/2012 163-168**	**MGP-MW-114D 3/8/2012 168-173**	**MGP-MW-114D 3/8/2012 179-184**
BTEX (ug/L)								
Toluene	**10**	**8.3**	**8.9**	**8.9**	**9.2**	**8.9**	**10**	**8.5**

LEGEND

MGP-SG-1	SOIL GAS LOCATION
MGP-MW-102S	MONITORING WELL
MGP-MW-108D	NAPL RECOVERY WELL
MGP-MW-0DD	BEDROCK BORINGS WITH FLUTE EXCEPT MGP-MW-10D WHICH IS JUST CASING
SS-1	SURFACE SOIL LOCATION
SB-4	SOIL BORING LOCATION
(blue line)	BEDROCK GROUNDWATER ANALYTICAL RESULTS
(green line)	OVERBURDEN GROUNDWATER ANALYTICAL RESULTS
PL	CON EDISON PROPERTY BOUNDARY
x	CHAIN-LINK FENCE
	MANHOLE
	INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
	CURRENT (ACTIVE) RAIL LINE
	HISTORICAL FEATURES SOURCE: SANBORN INS. MAPS
	FORMER (ABANDONED) RAIL LINE

SB-HL HYDRAULIC LIFT SAMPLE LOCATIONS
SB-SA9 INVESTIGATION AREA 9 SAMPLE LOCATIONS
SB-SA10 INVESTIGATION AREA 10 SAMPLE LOCATIONS
INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
SB-SA11 INVESTIGATION AREA 11 SAMPLE LOCATIONS
SC SITE CHARACTERIZATION

Abbreviations:

ND	Not Detect
NS	Not Sampled
ug/L	micrograms per Liter
Bold	**exceeds NYS AWQSGVs**
Bold and Italics	***Not detect exceeds NYS AWQSGVs***
U	Non detected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ	The analyte was not detected above the reported samplequantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J-	(Inorganics) The result is an estimated quantity, but the result may be biased low.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet the quality control criteria. The presence of absence of the analyte cannot be verified.
N	(Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	(Organics) The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
D	Diluted run
*	Depth range was named incorrectly on the lab report. The correct depth is reported in the depth interval column.
**	Sample was collected on 10/2/09, lab reported it as 10/1/09.

Location Sample Date Sample ID Screen	NYSDEC AWQSGVs (Note 1)
BTEX (ug/L)	
Benzene	1
Ethylbenzene	5
Toluene	5
Total Xylene (calculated)	5
VOC (ug/L)	
1,2,4-Trimethylbenzene	5
1,3,5-Trimethylbenzene	5
Chloroethane	5
Chloroform	7
Chloromethane	5
Isopropylbenzene	5
Methyl tert-butyl ether	10
Methylene Chloride	5
Naphthalene	10
n-Butylbenzene	5
n-Propylbenzene	5
sec-Butylbenzene	5
Styrene	5
Tetrachloroethene	5
PAH (ug/L)	
Acenaphthene	20
Benzo(a)anthracene	0.002
Chrysene	0.002
Fluorene	50
Indeno(1,2,3-cd)pyrene	0.002
Naphthalene	10
Phenanthrene	50
SVOC (ug/L)	
bis(2-Ethylhexyl) phthalate	5
Phenol	1
Metals (ug/L)	
Barium	1000
Beryllium	3
Cadmium	5
Chromium	50
Copper	200
Iron	300
Lead	25
Magnesium	35000
Manganese	300
Nickel	100
Selenium	10
Sodium	20000
Cyanide (ug/L)	
Cyanide, Total	200

Notes:
1. New York State Department of Environmental Conservation Division of Water Technical and operation Guidance series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values (AWQSGVs)
2. Naphthalene was a tic for voc and may appear once as a VOC and once as a SVOC.

AECOM
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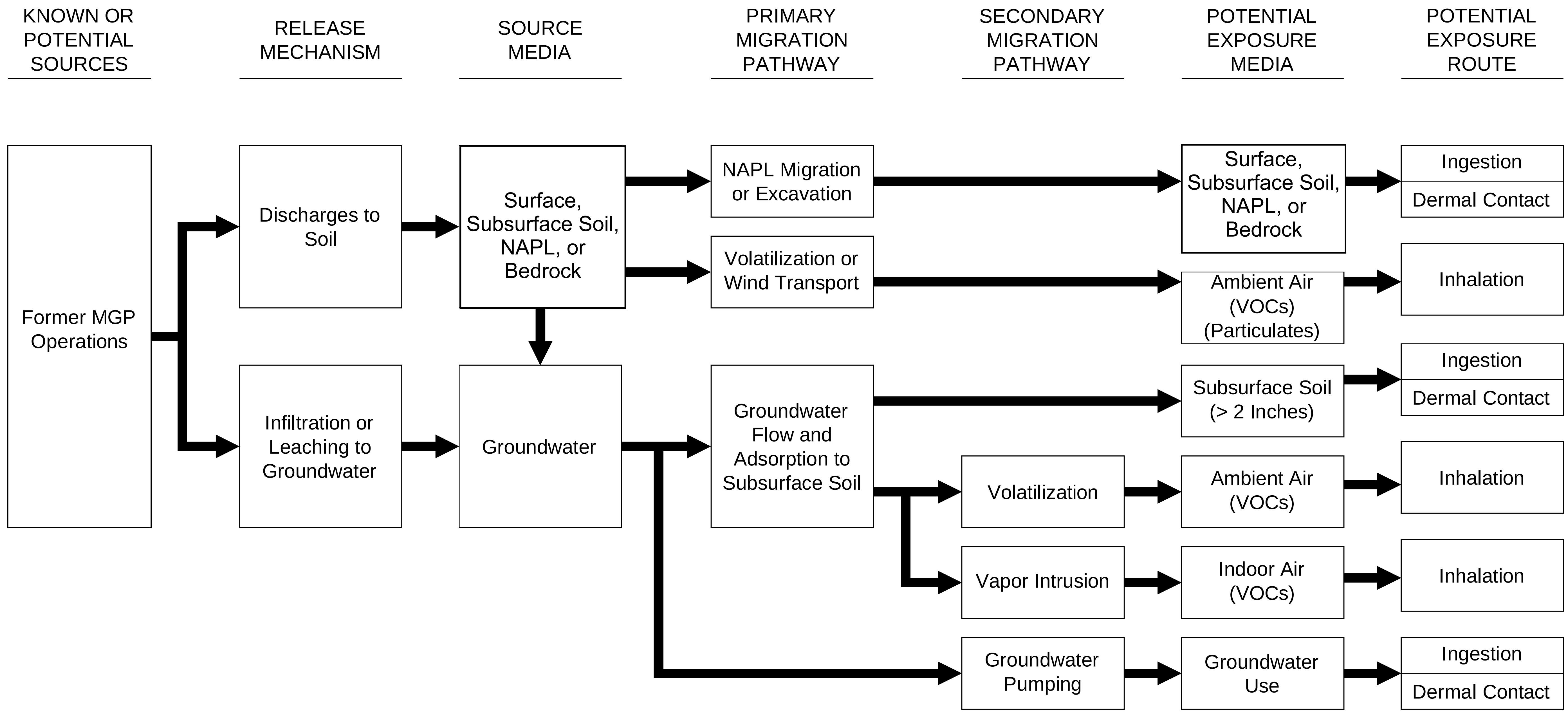
CONSOLIDATED EDISON
RYE GAS WORKS SITE
178 THEODORE FREMD AVE, RYE NY

PROJ. NO.: 60281931.810
DATE: 06/2013

GROUNDWATER ANALYTICAL RESULTS EXCEEDING CRITERIA

REMEDIAL INVESTIGATION

DRAWING NUMBER: 5-5
SHEET NUMBER:
REVISION 0



Note:
Table 6-1 provides summary information regarding the potential receptor groups identified for the Rye Gas Works Site

AECOM

CONSOLIDATED EDISON RYE GAS WORKS SITE 178 THEODORE FREMD AVE., RYE, NY	**CONCEPTUAL SITE MODEL**
6/28/2013 DRWN: BcV/W-MA	FIGURE 6-1

Environment

Prepared for:
Consolidated Edison Co.,
of New York, Inc.
Long Island City, New York

Prepared by:
AECOM
Chestnut Ridge, NY
60313672.100
March, 2014

Draft Remedial Investigation Work Plan Addendum

Rye Gas Works

Former Manufactured Gas Plant Site, Rye, New York

VCA #VC00571

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March, 2014

Draft Remedial Investigation Work Plan Addendum

Rye Gas Works

Former Manufactured Gas Plant Site, Rye, New York

VCA #VC00571

Prepared By [Anna Sullivan]

Reviewed By [Eleanor Vivaudou]

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List of Acronyms

ASTM	American Society of Testing Method
bgs	below ground surface
CAMP	Community Air Monitoring Plan
DER	Division of Environmental Remediation
DNAPL	dense nonaqueous phase liquid
EDR	Environmental Data Resource, Inc.
EH&S	Environmental Health & Safety
HASP	Health and Safety Plan
HSAs	hollow stem augers
IDW	investigation derived waste
MGP	Manufactured Gas Plant
NAPL	nonaqueous phase liquid
NAVD	North American Vertical Datum
NTU	nephlometric turbidity unit
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OLM/TLM	oil like material/tar like material
PAHs	polycyclic aromatic hydrocarbons
PID	photoionization detection
PIDs	photoionization detectors
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
SC	Site Characterization

SCWP	Site Characterization Work Plan
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compound

1.0 Introduction

On behalf of The Consolidated Edison Company of New York, Inc. (Con Edison), AECOM has prepared this Remedial Investigation Work Plan (RIWP) Addendum to address environmental impacts identified during the Site Characterization (SC) and Remedial Investigation (RI) of the Rye Gas Works former Manufactured Gas Plant (MGP) site. The Rye Gas Works site is located at the Con Edison Rye Service Center at 178 Theodore Fremd Avenue in Rye, New York. A SC was performed at the site between June 2009 and March 2010 in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Characterization Work Plan (SCWP) dated December 18, 2008. The SC data were compiled and a Remedial Investigation (RI) scope was developed and submitted to NYSDEC in a letter report from Con Edison dated June 25, 2010. On August 24, 2010, NYSDEC, Con Edison, and AECOM met to discuss the SC findings and RI scope, and NYSDEC subsequently issued a comment letter dated September 1, 2010. A RIWP was developed in accordance with NYSDEC Division of Environmental Remediation (DER) document DER -10 based on the SC findings, the August 24, 2010 meeting with NYSDEC and NYSDEC's September 1, 2010 comments. The RIWP was submitted to NYSDEC in October 2010 (AECOM 2010) and approved by NYSDEC on November 16, 2010. The RI was initiated in December 2011 and completed in April 2012, with the exception of investigation locations situated north-northeast of the site at 125 Central Avenue where Con Ed could not come to terms on an access agreement with the owner to enter the property. The Remedial Investigation Report (RIR) was submitted to NYSDEC in July, 2013 (AECOM 2013) and approved by NYSDEC on September 9, 2013. NYSDEC's September 9, 2013 approval letter requested that the additional investigations recommended in the RIR be performed with the results presented in an Alternative Analysis Report (AAR)/Feasibility Study (FS).

This RIWP Addendum outlines the proposed investigation activities and the methods and guidelines for sample collection for the investigations recommended in the RIR. The majority of the proposed RI Addendum activities will be performed in accordance with the methods and guidelines followed during the SC and RI and are incorporated by reference to the SCWP. Two companion documents were developed as part of the SCWP and will be followed during the RI Addendum. The Quality Assurance Project Plan (QAPP) was provided as Appendix A of the SCWP and specifies procedures for data collection and quality control that also will be followed in the field and laboratory during the RI. The site-specific Health and Safety Plan (HASP) was provided as Appendix B of the SCWP and provides a description of the procedures that will be followed during the RI to protect the health and safety of the field-personnel and the public in the vicinity of the site. In addition, Con Edison Utility Clearance processes are provided in Appendix C of the SCWP, and AECOM field methods and procedures are compiled in Appendix D of the SCWP. These methods and procedures will be followed during the RI Addendum.

The site description, history, and pre-SC investigations are detailed in the SCWP and the SC and RI findings are included in the July 2013 RIR. Therefore, these details are not repeated in this RIWP Addendum.

2.0 Remedial Investigations Objectives

Based on the RIR, MGP residuals and service center residuals have impacted the subsurface soil, bedrock, overburden and bedrock groundwater quality at the site in the vicinity of the former MGP 6,000 and 100,000 cubic foot (cf) gas holder, oil tank, and tar pit structures, and the former service center USTs, likely through spills and leaks. These impacts have migrated to the northwestern and northern property boundaries but have generally been delineated to the south and east, although additional investigation of the extent of tar in bedrock south of MGP-MW-105D is warranted. These impacts have not been observed on the northwest side of I95, indicating that delineation has been achieved in this direction. These impacts have not been delineated to the north due to access constraints. Therefore, RI Addendum activities are recommended to further evaluate the horizontal and vertical extent of impacts within these media and to continue to evaluate the recoverability of dense nonaqueous phase liquid (DNAPL) in bedrock.

The SC and RI results demonstrate that MGP residuals have not significantly impacted soil gas at the site and that the vapor intrusion exposure pathway is not complete. An evaluation of the results from the program using New York State Department of Health (NYSDOH) guidance and decision matrices (NYSDOH, 2006) indicates that no further investigation of vapor intrusion, or remedial action is required at the site. However, based on detected concentrations of compounds in soil gas samples collected from MGP-SG-5 and MGP-SG-8 and the visible and/or analytical results for soil, bedrock, and groundwater in the northern portion of the site, as well as the residential property use to the north of the site, two additional soil gas sample locations were proposed in the RIWP. These samples could not be collected since access to the property north of the site was not granted. The additional investigation location proposed to the northeast of the site for this RI Addendum is situated in the sidewalk along the north side of Central Avenue to the northeast of the property where access was not granted. The proposed location is situated in-line with MGP-MW-104D to further delineate the tar and groundwater impacts identified in MGP-MW-104S/D and is located where Central Avenue is raised with fill to cross the rail lines and I-95. Therefore, it is anticipated that 10 feet or more of fill material used to elevate the roadway may be encountered above the native material and that the depth to water may be 14 feet below ground surface or deeper. Based on these conditions, soil vapor analysis beneath Central Avenue is not proposed in the RIWP Addendum.

The objectives of the RI Addendum are:

- Further evaluate the north-northeastern horizontal extent of overburden MGP-related soil and groundwater impacts.
- Further evaluate the north-northeastern and southwestern horizontal and vertical extent of MGP-related bedrock fracture and groundwater impacts.
- Evaluate the recoverability of DNAPL in bedrock fractures at the site.
- Further develop the data set necessary to allow preparation of an Alternative Analysis Report to evaluate and select possible remedial alternatives for the site.

3.0 Scope of Work

The investigative work outlined in this RIWP Addendum includes the following field tasks:

- Locating underground utilities in the new investigation areas
- Community air monitoring during invasive activities
- Advancement of soil borings and collection of subsurface soil samples
- Advancement of bedrock borings via air rotary drilling
- FLUTe NAPL and blank liner eversion and evaluation
- Borehole geophysical surveys
- Discrete bedrock fracture groundwater sampling via packer testing
- Monitoring well installation
- Monitoring well development
- DNAPL recoverability activities
- Groundwater sampling
- Surveying of new sampling points
- Investigation residuals management

All field work will follow methods and guidelines provided in this RIWP Addendum, the RIWP, and in the SCWP, including the QAPP (Appendix A), HASP (Appendix B), Con Edison Utility Clearance Process (Appendix C), and Field Methods and Procedures (Appendix D) of the SCWP. The proposed sampling locations for this RI Addendum are described in Section 4. The proposed investigation locations were selected to delineate the extent of previously identified soil, bedrock, and groundwater impacts. If soil observations and photoionization detection (PID) screening results indicate that the proposed borings and monitoring wells do not adequately define the extent of MGP residuals, additional investigation locations will be selected in the field in consultation with NYSDEC and Con Edison. Depending on their location, investigations at some of these locations will be performed during the mobilization of the proposed RI work and others may require subsequent mobilizations based on access issues.

A summary of the proposed RI Addendum Field Investigation activities is included in the following section.

4.0 Remedial Investigation Field Activities

4.1 Underground Utility Clearance

Prior to the initiation of intrusive field work, AECOM will follow the Con Edison Utility Clearance Process for Intrusive Activities Environmental Health and Safety (EH&S) Remediation Program (Appendix C of the SCWP) and contact Dig Safely New York to arrange for the location and marking of all underground utilities in the vicinity of the proposed bedrock and monitoring well locations. Copies of available city sewer and water maps from the site vicinity will also be obtained and reviewed during underground utility clearance procedures. Following review of the utilities in the site area, AECOM will contract a private company to locate all underground electric and gas utilities in the vicinity of each proposed subsurface sampling location using geophysical methods. Outlying areas where information is required to confirm the location of suspected utilities that may act as preferential migration pathways may also be surveyed using geophysical methods. Lastly, all boring/well locations will be hand or vacuum excavated to a depth of five feet to check for any utilities not located by Dig Safely or geophysical methods. The soil from each of the cleared locations will be field screened with a PID and visually described for textural composition and any contaminant characteristics.

4.2 Community Air Monitoring Program

Community air monitoring requires real-time monitoring for VOCs, particulates (*i.e.*, dust), and MGP related odors at the downwind perimeter of each designated work area when certain activities are in progress at the site. The community air monitoring is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (*i.e.*, off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative work activities. The Community Air Monitoring Plan (CAMP) provided in Attachment G of the HASP specifies action levels which require increased monitoring, corrective actions to abate emissions, and/or work shutdown for the SC. Photoionization detectors (PIDs) used to monitor VOCs will be equipped with a 10.6eV lamp.

4.3 Soil Boring and Subsurface Soil Sampling

The overburden soils will be drilled and continuously sampled at the two proposed bedrock well locations. The locations and soil sampling rationale are provided in Table 4-1. Actual soil sample intervals and the number of samples chosen for laboratory analysis will be selected in the field based on field conditions and biased to provide the required delineation. In general, two or three samples will be collected from each boring location; one at the depth interval with the greatest observed impact based on olfactory and visual observations and PID readings, and one below the deepest impacts or at the top of bedrock to provide vertical delineation and top of bedrock quality information. In the event that olfactory and visual observations and PID readings do not indicate impacts at a location, a minimum of two samples will be collected one at the groundwater interface one at the bedrock interface for laboratory analysis. The soil samples will be analyzed for volatile organic compounds (VOCs) using EPA Method 8260B and for polycyclic aromatic hydrocarbons (PAHs) using EPA Method 8270C.

Soil borings will be advanced using either hollow stem augers (HSA) or rotosonic vibratory methods in accordance with the drilling, subsurface soil sampling, and decontamination procedures provided in Appendix D of the SCWP. Continuous samples will be collected from 5 feet until the base of each borehole and the soils will be field screened with a PID and visually described for textural composition and any contaminant characteristics. Borings will be advanced to the top of bedrock. The top of bedrock will be determined by sampler refusal and contents of the sampler. The borehole will be overdrilled into the top 5 feet of bedrock and a Schedule 40, 4-inch diameter steel casing will be grouted into the top of bedrock. After the grout has cured for a minimum of 24 hours, the borehole will be advanced through bedrock using air rotary drilling methods as described in subsection 4.5 below.

Investigation derived waste (IDW) generated during the drilling activities will be managed in accordance with Appendix D of the SCWP.

4.4 Overburden Groundwater Monitoring Well Installation

Additional groundwater investigations will be performed in the overburden through the installation of one shallow monitoring well. The proposed overburden monitoring well location is illustrated on Figure 4-1 and the rationale for its placement is summarized in Table 4-1. This well will be co-located with a proposed bedrock well.

The overburden monitoring well will be installed using hollow stem augers (HSAs) in accordance with monitoring well installation and development procedures provided in Appendix D of the SCWP. In general, the well will be constructed of 2-inch PVC with a 5 to 10 foot well screen with a 2 foot sump at the base of the well to collect any DNAPL that may be present, depending on the overburden thickness at this location. Quartz sand will be emplaced within the annulus to a minimum of 1' above the screened interval of the well and a 2 foot bentonite seal will be emplaced above the sandpack. Grout will be emplaced above the bentonite seal to grade. A flush-mounted, limited access road box will be used at the ground surface to complete the well and the surface will be restored to pre-existing conditions.

Following installation, the monitoring well will be developed to evacuate silts and other fine-grained sediments which may have accumulated within the well during its installation. Well development will not commence until at least 24 hours after well installation. A number of techniques may be used, including surging using a plunger, bailing, or pumping until the turbidity has stabilized (less than 50 nephlometric turbidity units [NTU] if possible). Special care will be taken to develop the well properly in order to ensure adequate hydraulic connection between the monitoring well and the aquifer and to obtain representative groundwater samples for chemical analysis.

4.5 Bedrock Investigation

Two deep bedrock borings will be drilled as part of the RI Addendum to further evaluate the extent of DNAPL and groundwater impacts detected in bedrock in MGP-MW-104D and MGP-MW-105D. During the RI Addendum, the deep bedrock borings will be advanced by air rotary methods rather than HQ wireline coring, similar to the RI. The proposed deep bedrock boring locations are illustrated on Figure 4-1 and the rationale for their placement is summarized in Table 4-1.

FLUTe eversion (NAPL and blank liner), geophysical surveys, and packer isolation and groundwater sampling of discrete fractures will be performed at each deep bedrock borehole location following the same methods and procedures as performed during the SC and detailed in the SCWP. These activities will provide fracture depth, orientation, and quality data. These data in combination with observations from the air rotary drilling will provide sufficient information to relate the additional RI bedrock boring locations to the SC bedrock boring locations. The RI Addendum bedrock boring locations will extend to 200 feet below ground surface (bgs) rather than 150 ft bgs because MGP-related impacts were noted at depth in some of the SC bedrock boring locations.

After the borehole is drilled to its total depth, it will be developed by pumping and/or airlifting to remove cuttings and improve fracture flow to the borehole. A FLUTe NAPL liner will be everted into each borehole following development, to evaluate the potential presence, depth, and relative quantity of DNAPL-bearing fractures. A photographic log will be made of the FLUTe NAPL liner for each borehole. Following FLUTe lining activities, borehole geophysical surveys will performed within each borehole and may include caliper, fluid temperature, fluid resistivity, acoustic televiewer, optical televiewer, and/or heat pulse flow meter. The full suite of geophysical tools may not be performed in boreholes containing significant amounts of tar. Specifically, optical televiewers and heat pulse flow meters cannot be used in boreholes with significant amounts of tar. Acoustic televiewers may be deployed through the FLUTe blank liner in boreholes with significant amounts of tar. The geophysical data and NAPL liner will be reviewed to select specific fracture zones for groundwater sampling via isolation packers in accordance with the isolation and sampling procedures specified in the SCWP. Groundwater samples collected from the specific zones will be analyzed for VOCs using EPA Method 8260B. A blank FLUTe liner will be everted into the borehole following groundwater sampling activities until future well completion methods are determined based on the combined field and analytical RI results.

4.6 Groundwater Gauging and Sampling

Following development, the newly installed RI Addendum overburden monitoring well will be allowed to stabilize for 2 weeks or more prior to groundwater gauging and sampling. The depth to water, total well depth, and NAPL thickness (if present) will be measured in all of the overburden and shallow bedrock monitoring wells prior to groundwater sampling activities. Groundwater samples have not been collected from the majority of the site monitoring wells since 2010 other than MGP-MW-113S which was sampled in 2012. Therefore, following gauging activities, all overburden and bedrock monitoring wells will be sampled in accordance with the groundwater sampling procedures provided in Appendix D of the SCWP to provide a recent data set of overburden and shallow bedrock groundwater quality. As discussed above, bedrock groundwater samples will be collected from discrete fracture zones during the RI bedrock investigations.

The monitoring wells will be sampled with a peristaltic pump using low-flow sampling methods with the tubing or pump placed at the approximate midpoint of the screened interval. At the ground surface, the water will pass through a sealed chamber containing probes that will measure the parameters to determine water quality. These include water temperature, dissolved oxygen, pH, conductivity, and oxidation-reduction potential. Samples of water discharging from the chamber will be collected at regular intervals and analyzed for turbidity using a hand-held field meter. After passing through this chamber, the water will be discharged to a calibrated 5-gallon bucket where the pumping rate will be calculated. When this bucket is full, the water will be transferred into a 55-gallon drum where it will be stored for future disposal. Pumping rates will be set below the maximum sustainable flow rate so as not to significantly lower the water level in the well. Groundwater analytical samples will be collected when water quality parameters have stabilized. Based on the SC groundwater analytical results, RI groundwater samples will be analyzed for TCL VOCs, PAHs, and total cyanide using EPA Methods 8260B, 8270C, and 9012A, respectively. All development and purge water will be managed in accordance with Appendix D of the SCWP.

4.7 NAPL Recoverability Evaluation

The recoverability of DNAPL at the site was evaluated as part of the RI by converting three FLUTe-lined bedrock boreholes that contained fractures with tar into recovery wells and gauging the wells to monitor DNAPL accumulation. The three locations that were converted to recovery wells are MGP-MW-TP4, MGP-MW-108D, and MGP-MW-104D. These wells, and bedrock monitoring well MW-12D where DNAPL was previously noted, were gauged periodically for the presence of DNAPL between April 2012 and June 2013. The gauging results are summarized in the RIR and show that up to 9.6 feet of DNAPL accumulated in MGP-MW-104D and 3.8 feet in MW-12D but has not been present in measurable quantity in MGP-MW-TP4 or MGP-MW-108D as of June 2013. DNAPL has been removed from the base of MGP-MW-104D and MW-12D and the recovery has been monitored. DNAPL removed from these wells was analyzed for the physical parameters listed below.

The samples were analyzed by PTS Laboratories of Santa Fe, California.

- Interfacial and surface tension by the DuNuoy Method – American Society of Testing Method (ASTM) D971
- Viscosity by ASTM D445
- Density by ASTM D1481
- Specific Gravity by API RP40

The DNAPL recovery wells and MW-12D will be gauged for the presence of DNAPL during the RI Addendum. DNAPL in the base of the wells will be removed and the recovery will be monitored and recorded in accordance with the RI procedures. DNAPL samples will be collected for analysis of the physical parameters listed above if it has collected in the base of MGP-MW-TP4 or MGP-MW-108D. Investigation derived waste generated during these activities will be managed in accordance with Appendix D of the SCWP.

4.8 Survey

A survey of the RI Addendum sampling points and other features of interest will be conducted at the end of the fieldwork by a New York State-licensed surveyor under the direct supervision of AECOM. All locations will be tied into the existing base map developed for the site. After the monitoring well is installed, a notch or mark will be made at the top of the inner casing. The vertical location of this point will be surveyed to a reference point determined in the field with accuracy of 0.01 of a foot. All elevations will be referenced to the North American Vertical Datum (NAVD) 1988. The horizontal locations of each point will be established from directly measuring from Site features with an accuracy of 0.1 foot.

4.9 Investigation Derived Waste Management

All investigation waste generated during the RI Addendum will be collected in properly labeled 55-gallon drums and grouped by environmental matrix (soil or groundwater). Subsequently, the drums will be characterized with laboratory analyses and properly disposed in accordance with Appendix D of the SCWP.

5.0 Alternative Analysis Report/Feasibility Study

At the completion of the RI Addendum field activities, the results of the RI Addendum work will be combined with the RIR data into a summary section in the beginning of the Alternative Analysis Report (AAR)/Feasibility Study (FS) for the site. The RI Addendum work may require additional phases of work not outlined in this RIWP Addendum or in the project schedule outlined in this RIWP Addendum if tar impacts are encountered at the proposed locations. When sufficient data has been collected to characterize the site, the AAR/FS will be prepared and will include:

- Executive summary
- Site description and history
- Descriptions of RI Addendum field activities performed and results including:
  - Updated field observations, field measurements, and laboratory analytical data summarized in tabular format
  - Updated plan-view and cross-section figures presenting laboratory analytical data and/or field observations of soil vapor, surface and subsurface soil, and groundwater, as appropriate
  - Updated geologic profiles summarizing both field observation and laboratory results as well as a top of bedrock elevation contour map, an overburden thickness isopach map, and overburden and bedrock groundwater elevation contour maps
  - Integration of field observations and measurements with laboratory analytical data to evaluate the nature and extent of contamination, and updated site conceptual model of potential contaminant migration
  - Updated qualitative human health exposure assessment
- Statement of Remedial Goals and Remedial Action Objectives;
- Evaluation of General Response Actions for feasibility;
- Evaluation of specific technologies within the selected General Response Actions for effectiveness;
- Development of remedial alternatives, using appropriate technologies identified for each media, with subsequent evaluation using a specified set of criteria; and
- Recommendation of an effective alternative and discussion of required pre-design data and activities.

Appendices to the report will include all pertinent data from the RI Addendum field activities,(including validated laboratory analytical results, stratigraphic boring and monitoring well construction logs, and all field sampling sheets [monitoring well development forms, aquifer testing results, groundwater sampling sheets, *etc].*), as well as technology and costing details referenced in the AAR/FS process.

6.0 Schedule

Figure 6-1 provides a schedule of proposed RI Addendum and AAR/FS activities. The schedule dates are subject to change pending NYSDEC review and access agreements, however the duration of tasks should remain constant.

Tables

Table 4-1
Summary of Proposed Remedial Investigation Sampling Locations
Former Rye Gas Works Site

AECOM

Location ID	Rationale	Total Depth (ft bgs)	Completion Type	Analytical Sampling: Rationale	Analytical Sampling: Laboratory Analysis
OVERBURDEN MONITORING WELL AND BEDROCK BORINGS (See Figure 4-1 for proposed locations)					
MGP-MW-111S	Northeast of MGP-MW-104S to evaluate the northweastern extent of shallow soil and groundwater impacts detected in MW-MW-104S and MGP-MW-103S.	TOB	Water table MW	Overburden soil: most impacted vertical extent TOB	VOCs, PAHs
MGP-MW-111D	Northeast of MGP-MW-104D and paired with MGP-MW-111S to evaluate the northeastern extent of bedrock NAPL and groundwater impacts noted in MGP-MW-104D.	200*	Open Hole Flute Lined	Discrete bedrock fracture zones TBD in field	VOCs
MGP-MW-115D	Southwest of MGP-MW-105D to evaluate the southwestern extent of bedrock NAPL and groundwater impacts noted in MGP-MW-105D.	200*	Open Hole Flute Lined	Overburden soil: most impacted vertical extent TOB Discrete bedrock fracture zones TBD in field	VOCs

Notes:
ft bgs - feet below ground surface
TOB - Top of Bedrock
200* - Estimated completion depth is approximately 200 ft bgs but the target depth is 50 feet below the deepest visible impact observed on site and will depend on ground surface elevation.
MW - monitoring well
VOCs - Volatile Organic Compounds by Method 8260B
PAHs - Polycyclic aromatic hydrocarbons (PAHs) by Method 8270C

Figures

Legend

MGP-SG-9	ORIGINAL PROPOSED SOIL GAS MONITORING POINT (NO ACCESS)
MGP-MW-111S MGP-MW-111D	ORIGINAL PROPOSED MONITORING WELL LOCATION (NO ACCESS)
MGP-MW-114	PROPOSED MONITORING WELL LOCATION 2014
MGP-MW-104D	MONITORING WELL CONVERTED TO NAPL RECOVERY WELL
TP-3	TEST PIT LOCATED AS BLACKTOP PATCH
MGP-SG-1	SC OR RI SOIL GAS SAMPLE LOCATION
MGP-MW-102S	SC OR RI MONITORING WELL LOCATION
MGP-MW-0DD	SC OR RI BEDROCK BORING WITH FLUTE LINER LOCATION EXCEPT MGP-MW-10D WHICH IS JUST CASING
MGP-SB-4	SC OR RI OIL BORING LOCATION
SS-1	SC OR RI SURFACE SOIL SAMPLE LOCATION
MW-1	PREVIOUS INVESTIGATION MONITORING WELL LOCATION
SB-4	PREVIOUS INVESTIGATION SOIL BORING LOCATION
	CON EDISON PROPERTY BOUNDARY
	CHAIN-LINK FENCE
	MANHOLE
	INDICATES EXISTING FEATURES (ROADS, BUILDINGS, PARKING AREAS, ETC.)
	GRAY LINES INDICATE HISTORICAL FEATURES (SOLID/DASHED)
SB-HL	HYDRAULIC LIFT SAMPLE LOCATIONS
SB-SA9	INVESTIGATION AREA 9 SAMPLE LOCATIONS
SB-SA10	INVESTIGATION AREA 10 SAMPLE LOCATIONS
SB-SA11	INVESTIGATION AREA 11 SAMPLE LOCATIONS
SC	SITE CHARACTERIZATION

NO	DRWN	DATE	CHKD	DATE	APPVD	DATE	REVISION
0							
1							
2							
3							
4							
5							
6							
7							

AECOM
100 RED SCHOOLHOUSE RD, SUITE B-1
CHESTNUT RIDGE, NY 10977 (845)-425-4980
www.aecom.com

CONSOLIDATED EDISON
RYE GAS WORKS SITE
178 THEODORE FREMD AVE. RYE, NY

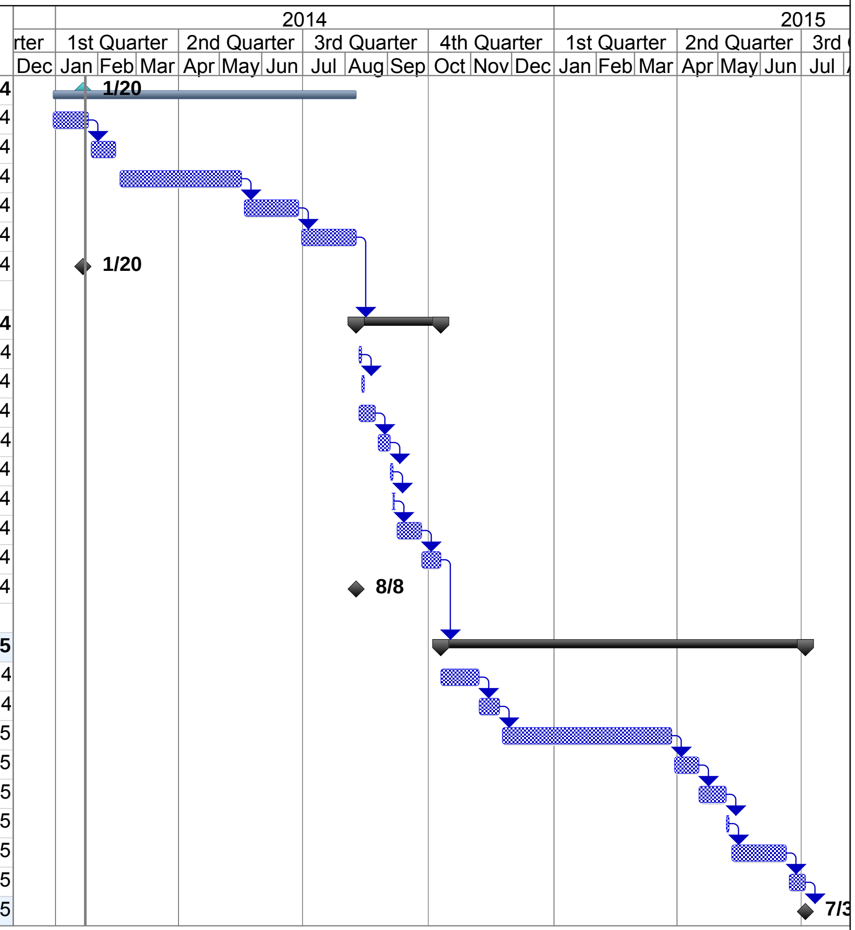
PROJ. NO.: 60281931.810
DATE: 01/2014

PROPOSED RI ADDENDUM SAMPLE LOCATIONS SITE CHARACTERIZATION RYE GAS WORKS SITE

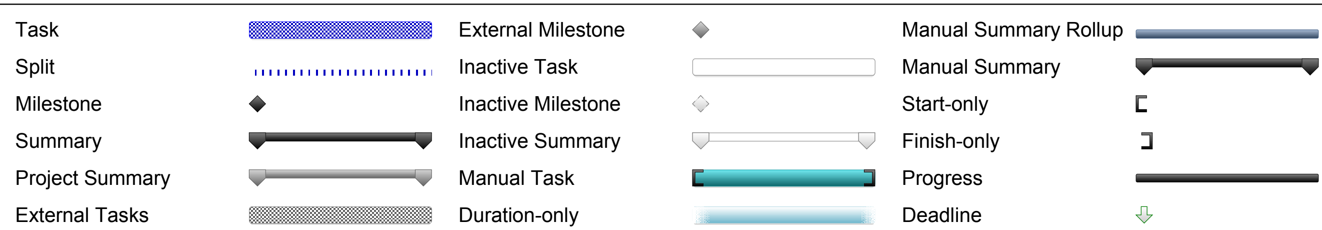
DRAWING NUMBER: 4-1
SHEET NUMBER:
REVISION 0

Table 6-1
Draft Schedule for RI Addendum Work plan and AAR/FS implementation
Rye Gas Works
Con Edison
Rye, New York

ID		Task Name	Duration	Start	Finish
1		**Work plan**	**0 days**	**Mon 1/20/14**	**Mon 1/20/14**
2		Development of WP addendum	20 days	Mon 12/30/13	Fri 1/24/14
3		Con Ed Review	14 days	Mon 1/27/14	Thu 2/13/14
4		NYSDEC review	65 days	Mon 2/17/14	Fri 5/16/14
5		Address NYSDEC comment	30 days	Mon 5/19/14	Fri 6/27/14
6		Final NYSDEC review and Approval	30 days	Mon 6/30/14	Fri 8/8/14
7		Submittal of Final WP	0 days	Mon 1/20/14	Mon 1/20/14
8					
9		**Fieldwork**	**44 days**	**Fri 8/8/14**	**Thu 10/9/14**
10		Utility Markout & Locate	2 days	Mon 8/11/14	Tue 8/12/14
11		Preclear	2 days	Wed 8/13/14	Thu 8/14/14
12		Bedrock location MW 111D, and MW115D	10 days	Mon 8/11/14	Fri 8/22/14
13		fluting , conductivity, geophysical	7 days	Mon 8/25/14	Tue 9/2/14
14		Monitoring Well installation shallow	2 days	Wed 9/3/14	Thu 9/4/14
15		well depevopment	1 day	Fri 9/5/14	Fri 9/5/14
16		Groundwater stabilization	14 days	Mon 9/8/14	Thu 9/25/14
17		Groundwater sampling	10 days	Fri 9/26/14	Thu 10/9/14
18		End of Field work	0 days	Fri 8/8/14	Fri 8/8/14
19					
20		**Report addendum and AAR/FS**	**191 days**	**Fri 10/10/14**	**Fri 7/3/15**
21		Lab turnaround and Validation	20 days	Fri 10/10/14	Thu 11/6/14
22		Boring logs and Data reduction	11 days	Fri 11/7/14	Fri 11/21/14
23		Draft addendum, AAR and FS Reports	90 days	Mon 11/24/14	Fri 3/27/15
24		Con Ed Comments	14 days	Mon 3/30/15	Thu 4/16/15
25		Report Revisions	14 days	Fri 4/17/15	Wed 5/6/15
26		Draft Report to NYSDEC	2 days	Thu 5/7/15	Fri 5/8/15
27		NYSDEC review	30 days	Mon 5/11/15	Fri 6/19/15
28		Address NYSDEC comments	10 days	Mon 6/22/15	Fri 7/3/15
29		Final report to NYSDEC	0 days	Fri 7/3/15	Fri 7/3/15



Project: Rye RI WPadd
Date: Thu 1/23/14



Detected Petroleum Constituents in Groundwater
Theodore Fremd Senior Affordable Housing
150 North Street - Rye, NY

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	**-**	***10***
B-1						
4/27/99	**650**	**5.7**	**46**	**103**	804	3.5
7/28/99	**7,080**	**110**	**508**	**372**	8,070	**4,470**
10/29/99	**8,800**	**3,100**	**1,300**	**2,100**	15,300	**3,500**
2/1/00	**1,300**	**66**	**230**	**128**	1,724	**4,300**
4/24/00	**54**	2.1	2.0		58	**74**
8/8/00	**3,400**	**230**	**470**	**510**	4,610	**2,800**
10/31/00	**8,300**	**1,400**	**1,400**	**2,800**	13,900	**2,500**
3/14/01						2.5
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01	Not Sampled - Monitoring Well Under Water					
11/28/01	Not Sampled - Monitoring Well Under Water					
2/27/02	**13,000**	**1,500**	**1,800**	**4,100**	20,400	**5,400**
6/12/02	0.8				0.8	**24**
8/20/02	**2,100**	**65**	**400**	**300**	2,865	**4,800**
11/4/02	**4,700**	**39**	**310**	**44**	5,093	**1,700**
2/6/03	**5,200**	**180**	**710**	**540**	6,630	**3,400**
5/28/03	**19**				19	**19**
8/18/03	**3,700**	**130**	**380**	**530**	4,740	**830**
11/20/03	**12**				12	**14**
3/25/04	**2,000**	**16**	**38**	**28**	2,082	**1,300**
6/16/04	**3,600**	**180**	**220**	**270**	4,270	**1,300**
8/5/04	**1,400**			**42**	1,442	**1,200**
11/1/04	**4,000**	**72**	**200**	**250**	4,522	**1,600**
3/30/05	**22**				22	**18**
3/23/06	**38**				38	**20**
6/20/06	**3.0**				3.0	
9/20/06						
12/12/06	**48**				48	4.0
4/4/07	**4.8**				4.8	2.7
6/26/07	**900**	**12**	**46**	**78**	1,036	
9/12/07	**490**		**15**		505	**22**
1/29/08	**1.3**		3.4		4.7	
4/8/08						
2/26/09	**5.6**				5.6	
10/27/09	**91**				91	7.8
2/2/10	**1,400**	**10**	**13**	**150**	1,573	160
8/29/13	**1,660**	**37.6**	**14**	**63.05**	1,775	57.6
3/25/14	**27.2**	0.29	0.77		28.3	3.8

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	***-***	***10***
B-A1						
4/27/99						
7/28/99						
10/29/99						
2/1/00				2.0	2.0	
4/24/00						
8/8/00						
10/31/00	**12**	**9.4**	**10**	**42**	73	
3/14/01	Not Sampled - Monitoring Well Under Water					
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01	Not Sampled - Monitoring Well Under Water					
11/28/01	Not Sampled - Monitoring Well Under Water					
2/27/02						7.8
6/12/02						
8/20/02						
11/4/02				1.5	1.5	
2/6/03						
5/28/03						
8/18/03						
11/20/03	Not Sampled - Monitoring Well Under Water					
3/25/04	Unable To Access Monitoring Well					
6/16/04	Unable To Access Monitoring Well					
8/5/04	Unable To Access Monitoring Well					
11/1/04	Unable To Access Monitoring Well					
3/30/05						
3/23/06						
6/20/06						
9/20/06						
12/12/06						
4/4/07						
6/26/07						
9/12/07						
1/29/08						
4/8/08						
2/26/09						
10/27/09	Not Sampled					
2/2/10	Not Sampled					
8/29/13	Not Sampled					
3/25/14	Not Sampled					

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	***-***	***10***
B-A3						
4/27/99	**792**		**24**	**11**	827	**677**
7/28/99	**2,970**	**34**	**217**	**179**	3,400	**1,940**
10/29/99	**3.0**			**9.4**	12	6.3
2/1/00	**3,800**		**440**	**2,710**	6,950	**2,000**
4/24/00				**6.7**	6.7	
8/8/00	**2.0**			**6.4**	8.4	6.1
10/31/00	**24**	1.0	1.8	3.9	31	
3/14/01	**2.1**	**10**		**29**	41	7.1
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01	**32**	3.2	2.8	**20**	58	
11/28/01	**49**	**74**	**46**	**350**	519	**20**
2/27/02	**640**	**33**	**69**	**43**	785	**47**
6/12/02	**3.5**			1.9	5.4	**31**
8/20/02	Not Sampled - Monitoring Well Dry					
11/4/02	**10**		2.4	**14**	26	**14**
2/6/03	**730**	**19**	**58**	**55**	862	**390**
5/28/03						
8/18/03	**140**	1.8	3.5	1.9	147	3.8
11/20/03						8.4
3/25/04	**130**	1.1	**10**	**5.8**	147	**40**
6/16/04	**20**	0.50	0.68	1.1	22	**18**
8/5/04	**42**	0.72	1.7	**48**	92	**19**
11/1/04	Not Sampled - Monitoring Well Dry					
3/30/05						
3/23/06	**39**		2.1	1.1	42	7.6
6/20/06						1.4
9/20/06						
12/12/06	**33**	1.8	3.3	**22**	60	**28**
4/4/07	**66**	**5.4**	**6.4**	**6.8**	85	6.2
6/26/07	**160**				160	**130**
9/12/07	**40**				40	
1/29/08	**160**	1.5		**6.6**	168	**38**
4/8/08						
2/26/09	**980**	**22**	**57**	**69**	1,128	**75**
10/27/09					0	
2/2/10	2				2	
8/29/13	**295**	**8.19**		**101**	404	
3/25/14	0.59				0.6	

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	**-**	***10***
B-B3						
4/27/99						1.6
7/28/99						2.9
10/29/99						1.1
2/1/00	**2.0**			**61**	63	
4/24/00						28
8/8/00				1.8	1.8	
10/31/00						1.9
3/14/01						
5/30/01		1.2			1.2	
8/14/01	Not Sampled - Monitoring Well Under Water					
11/28/01						2.2
2/27/02						3.7
6/12/02	Not Sampled - Unable to Locate Monitoring Well					
8/20/02						
11/4/02						8.3
2/6/03						3.4
5/28/03	Not Sampled - Monitoring Well Under Water					
8/18/03						
11/20/03	Not Sampled - Monitoring Well Under Water					
3/25/04						
6/16/04						
8/5/04				4.1	4.1	
11/1/04						
3/30/05						
3/23/06						
6/20/06						
9/20/06						
12/12/06						
4/4/07						
6/26/07						
9/12/07						
1/29/08						
4/8/08						
2/26/09						
10/27/09	Not Sampled					
2/2/10	Not Sampled					
8/29/13	Not Sampled					
3/25/14	Not Sampled					

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	***-***	***10***
B-D4						
4/27/99						**25**
7/28/99	**1.4**				1.4	**244**
10/29/99						6.1
2/1/00						**64**
4/24/00						**34**
8/8/00						4.3
10/31/00	**1.1**					**40**
3/14/01						**46**
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01						**13**
11/28/01						
2/27/02	**1.5**	3.6		1.1	6.2	**1,300**
6/12/02						1.2
8/20/02	**5.9**	**22**	**9.8**	**44**	82	**190**
11/4/02				1.8	1.8	1.7
2/6/03						5.7
5/28/03						**29**
8/18/03						1.7
11/20/03	Not Sampled - Monitoring Well Under Water					
3/25/04	Not Sampled - Unable to Access Monitoring Well					
6/16/04		1.6		1.4	3.0	6.0
8/5/04						
11/1/04						**14**
3/30/05						
3/23/06						
6/20/06						**25**
9/20/06						0.99
12/12/06						
4/4/07						
6/26/07	**1.7**				1.7	
9/12/07						
1/29/08						
4/8/08						
2/26/09						
10/27/09	Not Sampled					
2/2/10	Not Sampled					
8/29/13						
3/25/14	Not Sampled					

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	**-**	***10***
B-5						
4/27/99						**285**
7/28/99						**134**
10/29/99						**180**
2/1/00						**140**
4/24/00						**290**
8/8/00						**73**
10/31/00	**85**	1.2		2.2	88	**700**
3/14/01						
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01	Not Sampled - Monitoring Well Under Water					
11/28/01	Not Sampled - Monitoring Well Under Water					
2/27/02	**74**			1.4	75	**180**
6/12/02						
8/20/02	**2**				2	**270**
11/4/02						**89**
2/6/03	**2.6**					**200**
5/28/03						
8/18/03						
11/20/03						
3/25/04						5.4
6/16/04	0.67				0.67	**140**
8/5/04				9.5	9.5	**36**
11/1/04						**41**
3/30/05		0.82		1.3	2.1	
3/23/06						9.6
6/20/06						
9/20/06						
12/12/06						
4/4/07						
6/26/07						
9/12/07						
1/29/08						
4/8/08						
2/26/09	**400**	**13**		**12**	425	**140**
10/27/09	Not Sampled					
2/2/10	Not Sampled					
8/29/13	Not Sampled					
3/25/14	Not Sampled					

Detected Petroleum Constituents in Groundwater
Theodore Fremd Senior Affordable Housing
150 North Street - Rye, NY

MONITORING WELL ID/DATE	CONTAMINANT PARAMETER					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
Groundwater Guidance Values or Standards	***1.0***	***5.0***	***5.0***	***5.0***	***-***	***10***
B-10						
4/27/99						**19**
7/28/99						
10/29/99						**15**
2/1/00						**21**
4/24/00						**31**
8/8/00						**24**
10/31/00						**15**
3/14/01						**34**
5/30/01	Not Sampled - Monitoring Well Under Water					
8/14/01						1.1
11/28/01						
2/27/02						4.2
6/12/02						
8/20/02						4.6
11/4/02		1.0	**7.0**	**31**	39	8.2
2/6/03						
5/28/03						
8/18/03						
11/20/03						
3/25/04	Not Sampled - Unable to Access Monitoring Well					
6/16/04						8.3
8/5/04						9.2
11/1/04						5.2
3/30/05						2.3
3/23/06						
6/20/06						
9/20/06						
12/12/06						
4/4/07						
6/26/07						
9/12/07						
1/29/08						
4/8/08						
2/26/09						
10/27/09	Not Sampled					
2/2/10	Not Sampled					
8/29/13	Not Sampled					
3/25/14	Not Sampled					

MtBE: Methyl tertiary Butyl Ether
Results reported in parts per billion (ppb or micrograms per liter)
No data shown indicates concentration below applicable laboratory practical quantitation limits
NA: not analyzed
MtBE standard was 50 ppb; reduced to 10 ppb in 2000
Bolded values exceed NYSDEC Ambient Water Quality Standards or Guidance Values
NAPL: Non-Aqueous Phase Liquid
Samples analyzed by EPA Method 602, plus xylenes and MtBE

TABLE 2

LABORATORY ANALYTICAL RESULTS
Theodore Fremd Site
Theodore Fremd Ave. and North St.
Rye, NY

BTEX

Date	B-1	B-A1	B-A3	B-B3	B-D4	B-5	B-10
4/27/1999	804.3	0.5	826.6	0.5	0.5	0.5	0.5
7/28/1999	8070	0.5	3399.9	0.5	1.4	0.5	0.5
10/29/1999	15300	0.5	12.4	0.5	0.5	0.5	0.5
2/1/2000	1724	2	6950	63	0.5	0.5	0.5
4/24/2000	58.1	0.5	6.7	0.5	0.5	0.5	0.5
8/8/2000	4610	0.5	8.4	1.8	0.5	0.5	0.5
10/31/2000	13900	73.4	30.7	0.5	0.5	88.4	0.5
3/14/2001	0.5		41.1	0.5	0.5	0.5	0.5
5/30/2001				1.2			
8/14/2001			58		0.5		0.5
11/28/2001			519	0.5	0.5		0.5
2/27/2002	20400	0.5	785	0.5	6.2	75.4	0.5
6/12/2002	0.78	0.5	5.4		0.5	0.5	0.5
8/20/2002	2865	0.5		0.5	82.0	0.5	0.5
11/4/2002	5093	1.5	26.4	0.5	1.8	0.5	38.99
2/6/2003	6630	0.5	862	0.5	0.5	0.5	0.5
5/28/2003	19	0.5	0.5		0.5	0.5	0.5
8/18/2003	4740	0.5	147.2	0.5	0.5	0.5	0.5
11/20/2003	12		0.5			0.5	0.5
3/25/2004	2082		146.9	0.5		0.5	
6/16/2004	4270		22.28	0.5	3.0	0.67	0.5
8/5/2004	1442		92.42	4.1	0.5	9.5	0.5
11/1/2004	4522			0.5	0.5	0.5	0.5
3/30/2005	22	0.5	0.5	0.5	0.5	2.12	0.5
3/23/2006	38	0.5	42.2	0.5	0.5	0.5	0.5
6/20/2006	3	0.5	0.5	0.5	0.5	0.5	0.5
9/20/2006	0.5	0.5	0.5	0.5	0.5	0.5	0.5
12/12/2006	48	0.5	59.8	0.5	0.5	0.5	0.5
4/4/2007	4.8	0.5	84.6	0.5	0.5	0.5	0.5
6/26/2007	1036	0.5	160	0.5	1.7	0.5	0.5
9/12/2007	505	0.5	40	0.5	0.5	0.5	0.5
1/29/2008	4.7	0.5	168.1	0.5	0.5	0.5	0.5
4/8/2008	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2/26/2009	5.6	0.5	1128	0.5	0.5	425	0.5
10/27/2009	91		0				
10/27/2009	91		2.4				
2/2/2010	1573		404.19		0.5		
8/29/2013	1774.85		0.59				
3/25/2014	28.26						

Grey-shaded cells represent 1/2 of the typical MDL value for U (non-detect) qualified results
MDL: method detection limit
U: non detected above the MDL
Empty cells represent well/date pairs when samples were not collected

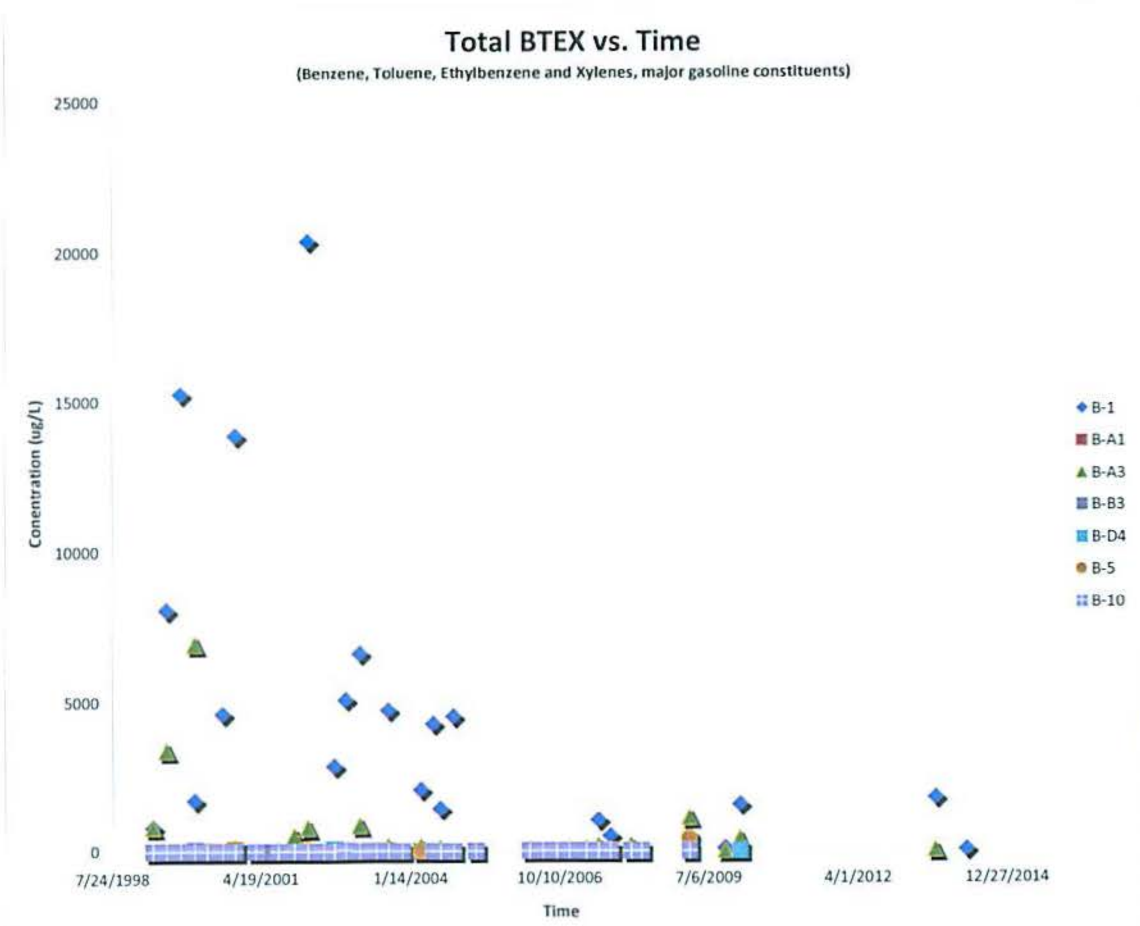


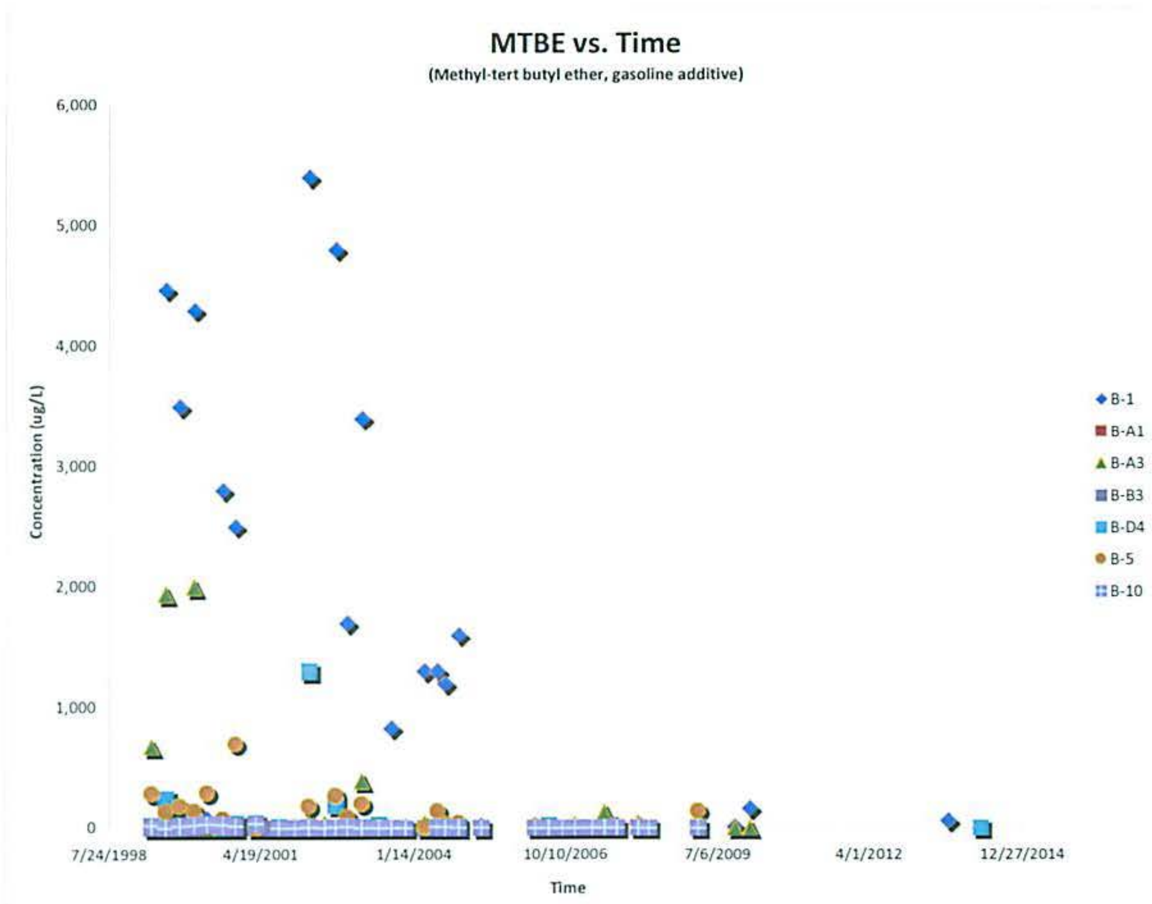
TABLE 2

LABORATORY ANALYTICAL RESULTS
Theodore Fremd Site
Theodore Fremd Ave. and North St.
Rye, NY

MTBE

Name	B-1	B-A1	B-A3	B-B3	B-D4	B-5	B-10
4/27/1999	4	1	677	2	25	285	19
7/28/1999	4,470	1	1,940	3	244	134	1
10/29/1999	3,500	1	6	1	6	180	15
2/1/2000	4,300	1	2,000	1	64	140	21
4/24/2000	74	1	1	28	34	290	31
8/8/2000	2,800	1	6	1	4	73	24
10/31/2000	2,500	1	1	2	40	700	15
3/14/2001	3		7	1	46	1	34
5/30/2001				1			
8/14/2001			1		13		1
11/28/2001			20	2	1		1
2/27/2002	5,400	8	47	4	1,300	180	4
6/12/2002	24	1	31		1	1	1
8/20/2002	4,800	1		1	190	270	5
11/4/2002	1,700	1	14	8	2	89	8
2/6/2003	3,400	1	390	3	6	200	1
5/28/2003	19	1	1		29	1	1
8/18/2003	830	1	4		2	1	1
11/20/2003	14		8			1	1
3/25/2004	1,300		40	1		5	
6/16/2004	1,300		18	1	6	140	8
8/5/2004	1,200		19	1	1	36	9
11/1/2004	1,600			1	14	41	5
3/30/2005	18	1	1	1	1		2
3/23/2006	20	1	8	1	1	10	1
6/20/2006	1	1	1	1	25	1	1
9/20/2006	1	1	1	1	1	1	1
12/12/2006	4	1	28	1	1	1	1
4/4/2007	3	1	6	1	1	1	1
6/26/2007	1	1	130	1	1	1	1
9/12/2007	22	1	1	1	1	1	1
1/29/2008	1	1	38	1	1	1	1
4/8/2008	1	1	1	1	1	1	1
2/26/2009	1	1	75	1	1	140	1
10/27/2009	8		1				
2/2/2010	160		1				
3/25/2014	NA		1		1		
10/27/2009	8						
2/2/2010	160						
8/29/2013	58						
3/25/2014	4						

Grey-shaded cells represent 1/2 of the typical MDL value for U (non-detect) qualified results
MDL: method detection limit
U: non detected above the MDL
Empty cells represent well/date pairs when samples were not collected



TIM
MILLER
ASSOCIATES, INC.

10 North Street, Cold Spring, NY 10516 (845) 265-4400 265-4418 fax www.timmillerassociates.com

September 30, 2014

Mr. Christian Miller, AICP
City of Rye Planning Department
1051 Boston Post Road
Rye, NY 10580

Re: The Courtyard at Theodore Fremd
Theodore Fremd Avenue, Wetlands Evaluation
City of Rye, Westchester County

Dear Mr. Miller:

At the property owner's request I walked the above-referenced site on September 23, 2014, to determine the presence or extent of regulated wetlands on the referenced site in the City of Rye. I am a certified Professional Wetland Scientist with more than 20 years experience in the field of wetland delineation, assessment and mitigation. I have worked for both private developers and municipalities evaluating wetland functions and potential impacts as the result of proposed developments. A copy of the relevant NWI map and NRCS soils map are attached.

The referenced property appears on the NWI as having no identified wetlands; the NRCS soils mapping shows the site as being Ub and Uf Urban fill lands, and no longer having natural soils profiles.

I also reviewed available aerial imagery from Westchester County GIS, and attached is a 2000 aerial showing the site with good resolution.

To summarize, I did not find areas on the site that would typically be classified as regulated wetlands. The years of filling, discharge of stormwater and commercial activities on the site have affected the site drainage and vegetation. Soil probes with an auger indicated a mix of soil types and consistencies, indicative of long term fill and site disturbance. The dominant plant species on the site, Japanese knotweed *(Polygonum cuspidatum)*, is an opportunistic invasive species commonly found on roadsides and disturbed sites (Photo 1). The USDA lists knotweed as FACU, which indicates it is more likely to be found outside of a wetland than within a wetland. Soils on the site were typically Munsell 10YR4/4, indicative of relative dry conditions, and not a hydric soil. Patches of pussy willow, which is commonly indicative of wet conditions, was found on the site, but not in densities or numbers that would result in a wetland determination (Photo 2). In areas where the knotweed has not taken over, and this is generally where the former access road was located, the vegetation is now dominated by ragweed *(Ambrosia artemisiifolia)*, an other invasive species (Photo 3).

A stormwater pipe does discharge stormwater from a catch basin on Theodore Fremd Avenue, and this does provide occasional hydrology to a swale on the site. However, there was no indication of regular flow through the site, and generally catch basins do not provide adequate hydrology for the development of wetlands. *Phragmites australis*, the common reed, was also observed in small patches on the site (Photo 4). Another opportunistic invasive, this species also inhabits disturbed sites. Some stormwater also seems to enter and exit the site under the Metro North tracks to the northwest, but this is not consistent and again not enough to create wetland conditions.

The 2000 aerial shows the site in use, with a traveled way through the center and small structures on the parcel. This access road is still visible closest to Theodore Fremd Avenue (Photo 5), but is overgrown with knotweed and ragweed further into the site.

In conclusion, while there are a few small patches of depressional areas that have a dominance of wetland vegetation, these areas do not meet the soils or hydrologic criteria to be determined wetlands, nor do they connect to other wetlands to form a larger community. In my opinion, this site does not contain wetlands that would be regulated by any of the relevant regulatory jurisdictions.

Please feel free to contact me if you have any further questions about this matter.

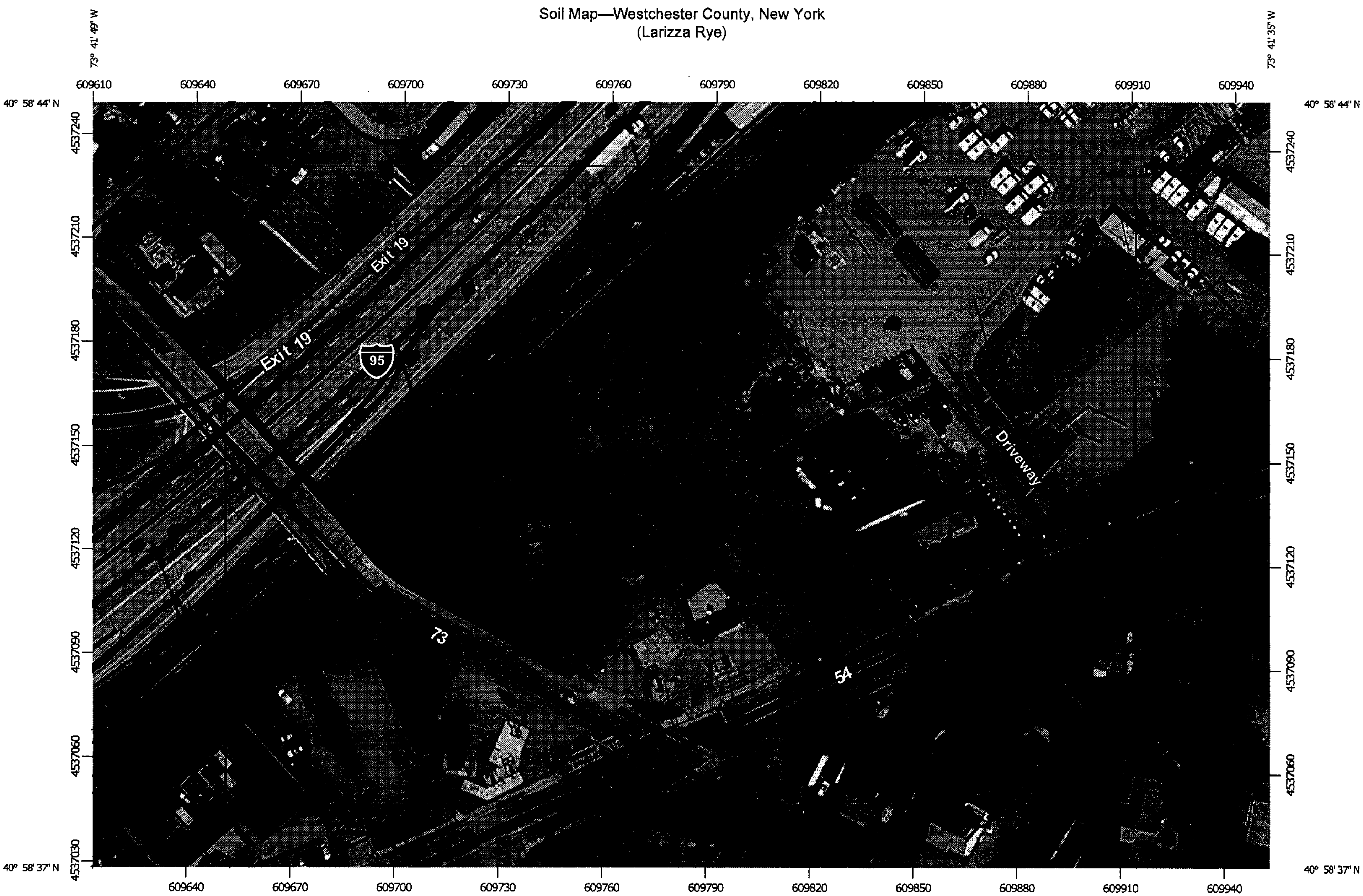
Sincerely,

Steve Marino, PWS
Senior Wetland Ecologist
Tim Miller Associates, Inc.

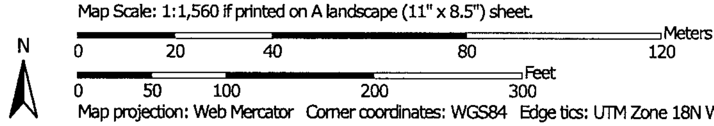
c: Lou Larizza
Ralph Mastromonaco, P.E.


Map
Aerial Photos
Street Label
N

Soil Map—Westchester County, New York
(Larizza Rye)



Map Scale: 1:1,560 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 9, Dec 15, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2011—Apr 16, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Westchester County, New York (NY119)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CrC	Charlton-Chatfield complex, rolling, very rocky	1.1	8.9%
Ub	Udorthents, smoothed	4.1	34.3%
Uf	Urban land	6.8	56.8%
Totals for Area of Interest		**12.0**	**100.0%**

U.S. Fish and Wildlife Service

National Wetlands Inventory

Theodore Fremd Avenue

Oct 1, 2014

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Larizza SiteRye, NY

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

TENEN ENVIRONMENTAL

MEMORANDUM

To: Rye City Council

From: Matthew Carroll, P.E. / Tenen Environmental

Date: August 4, 2014

Subject: Theodore Fremd Senior Housing Zoning District Change
150 North Street – Rye, New York
Review of Environmental Conditions

The City of Rye has retained Tenen Environmental to review the environmental information pertaining to contamination on the above property (the Site) to support the Rye City Council in their determination of whether the environmental impacts identified at the Site are a significant adverse impact and, specifically, whether the proposed action may have an impact on human health concerns associated with exposure to new or existing sources of contaminants. This memorandum briefly describes the proposed action and environmental setting, summarizes the Site's regulatory history and findings of prior environmental investigations, and provides recommendations for further actions.

Summary of Proposed Development and Site Setting

The Site is a 2.08-acre lot fronting North Street and Theodore Fremd Avenue in the City of Rye, Westchester County, New York. The proposed future use of the property is senior affordable housing, which requires a change in zoning designation to RA-5, *Senior Citizens Apartment*.

The Site has been largely vacant since at least 1925, with the exception of a small shed. A Phase I environmental site assessment (ESA) did not identify previous uses at the Site that would likely use petroleum or hazardous materials. The Site is located downgradient of two adjoining, gasoline service stations (Valero Service Station located at 300 Theodore Fremd Avenue and Banahan Brothers Service Station located at 310 Theodore Fremd Avenue).

Surficial geology of the project Site is mapped as glacial till consisting of poorly sorted sands. The Site is located over an unconfined aquifer consisting of sand and gravel oriented in a north-south direction. Bedrock was encountered at depths ranging from six to fifteen feet below grade (ft-bg), with the shallowest depths in the northern portion of the property. Groundwater flow is to the north-northeast. The depth to groundwater is approximately one to three feet below grade (ft-bg). Several wells on the property have existed since the initial 1992 investigation and have been routinely used as groundwater gauging and sample collection points.

Documents Reviewed

In the course of this review, the following sources were accessed:

- City of Rye, Theodore Fremd Senior Affordable Housing Zoning Change documentation, http://www.egovlink.com/rye/docs/menu/home.asp, http://www.ryeny.gov/TFseniorhousingZDC.cfm
- NYSDEC, Spill case file, 150 North Street, FOIL 14-1956.

- NYSDEC, Spill report and remedial documents, 300 Theodore Fremd Avenue, FOIL 14-0480.
- NYSDEC Spill report and remedial documents, 310 Theodore Fremd Avenue, FOIL 14-0479.
- Westchester County Department of Health, FOIL 14-348.
- Documents provided by John Shoemaker, Rye citizen. http://www.egovlink.com/public_documents300/rye/published_documents/Theodore%20Fremd%20Senior%20Housing%20Zoning%20District%20Change/Documents%20obtained%20through%20FOIL.pdf

Prior Environmental Investigation and Remediation at the Site

In 1992, a Phase I environmental study and subsurface investigation was completed at the property. The investigation included the advancement of soil borings to evaluate soil conditions and depth to bedrock. Groundwater monitoring wells were also installed. Results of the soil and groundwater analyses revealed elevated concentrations of petroleum-related compounds in both the soil and groundwater. The petroleum constituents above relevant standards were the compounds benzene, toluene, ethylbenzene and xylenes.

In 1993, an additional subsurface investigation was completed and included surface soil sampling, advancement of soil borings and the installation of groundwater monitoring wells. Results of the surface and subsurface soil analyses did not detect petroleum compounds, however, elevated concentrations of petroleum-related compounds were observed in the groundwater, with the highest recorded levels identified within the western portion of the property.

In 1994, a Site assessment conducted by the New York State Department of Environmental Conservation (NYSDEC) confirmed that the groundwater within the western portion of the property was impacted by petroleum-related compounds. NYSDEC subsequently contracted remediation contractors to further assess the conditions of the soil and groundwater and to employ remedial technologies for site closure.

Remediation, consisting of a high vacuum extraction (HVE) system, commenced in August 1996. The HVE system collected groundwater for on-site treatment and was operated for several years until it was no longer effective (i.e., no further decrease in the remaining residual concentrations). By February 2009, the groundwater concentrations were below relevant guidance levels in the sampled monitoring wells. Spill number 93-03102 for the Site was closed by the NYSDEC on August 19, 2009.

Current Site Conditions

Following closure of Spill number 93-03102, additional soil and groundwater samples have been collected. Soil concentrations were compared to the NYSDEC unrestricted use and restricted-residential use soil cleanup objectives (SCOs). Groundwater concentrations were compared to the NYSDEC Class GA standards, which are based on the best usage of the groundwater as drinking water. At the Site, drinking water will be provided by a regulated utility, United Water. Several other uses are considered by NYSDEC, although guidance and standards are not promulgated for every compound. The concentrations were also compared with levels for fish propagation, fish survival, wildlife protection and aesthetic considerations for fresh water; these are considered due to the presence of potential surface water bodies (i.e., wetlands and stream) at the Site.

Groundwater sampling was completed in 2010, 2013 and 2014 and showed that dissolved concentrations of petroleum constituents were again present above the Class GA standards, albeit at concentrations lower than the pre-remediation concentrations.

The most recent groundwater samples were collected in 2014 from two monitoring wells, designated NE and NW. Only one compound, benzene, was detected above the Class GA standards. The concentration was 27.2 micrograms per liter (ug/L) in well NE, above the standard of 1 ug/L, but significantly lower than 1,660 ug/L, the concentration of benzene detected in the 2013 sampling. The 27.2 ug/L concentration is below the standards for fish propagation, fish survival, wildlife protection and aesthetic considerations for fresh water. Note that the comparisons to fish propagation, fish survival and wildlife protection are conservative in nature as a potential stream is present but is not protected or classified by NYSDEC and is, therefore, not considered to be an important natural habitat.

In addition to the aforementioned benzene level, the 2013 sampling also identified other petroleum-related compounds above relevant standards. These concentrations are attributable to the off-site, hydraulically upgradient properties where remedial activities were completed.

One well in the southwest portion of the Site was sampled in 2013, but not 2014. Concentrations of three petroleum-related compounds were detected above the Class GA standards. Two compounds were detected slightly above the guidance for fish propagation. As noted above, this is a conservative comparison as the Site is not considered to be an important natural habitat. It is likely that the concentrations in this well will have decreased, similar to well NE; however, it is assumed that similar levels are present for the purposes of this analysis.

Soil sampling at the Site was conducted in April 2014 on behalf of the Applicant and in coordination with the Westchester County Department of Health (WCDOH). A comparison of the results to the current NYS Part 375 unrestricted use and restricted-residential use soil cleanup objectives (SCOs) indicates that acetone, arsenic, chromium, chrysene and lead were detected above the unrestricted use SCOs. Both arsenic and lead were also detected above the restricted-residential use SCOs, the appropriate comparison given the proposed Site use. Arsenic was detected at a concentration of 19.9 milligram/kilogram (mg/kg), slightly above the restricted-residential use SCO of 16 mg/kg and lead was detected at a concentration of 613 mg/kg, above the restricted-residential use SCO of 400 mg/kg.

Current Site Regulatory Status

NYSDEC has closed spill record #93-03102, which was associated with the Site. NYSDEC is aware of the proposed future use, the concentrations of residual contamination that remain at the Site and the status of the remedial efforts at the adjoining properties. NYSDEC has not imposed any requirements for engineering or institutional controls. However, in a May 7, 2014, letter report, the Westchester County Health Department (WCDOH) detailed, and indicated that NYSDEC agreed with, the following design-specific elements to address potential impacts:

- Open parking on the first floor.
- Sub-slab depressurization system (SSDS) or impervious liner beneath the enclosed spaces for the elevator. Potential waterproofing of elevator pits.
- Three feet of fill material to act as a cap.

No other regulatory requirements or guidance has been identified for the Site. Both NYSDEC and WCDOH have reviewed the environmental data in the context of the proposed future use.

Status of Upgradient Spill Sites

The Site is located downgradient of two gasoline service stations.

The Valero Service Station is located at 300 Theodore Fremd Avenue and is associated with NYSDEC Spill numbers 0402976, 0711483, 1101225 and 1309734. Currently, all Spill records have been closed by NYSDEC. Spill numbers 0711483 and 1309734 were closed on July 1, 2014.

The Banahan Brothers Service Station is located at 310 Theodore Fremd Avenue and is associated with NYSDEC Spill number 8900699. The Spill record has been closed by NYSDEC.

Reportedly, elevated levels of gasoline constituents remain in the weathered bedrock at the Banahan Brothers property and in the soil along the border of the Site adjacent to the Valero property. This indicates that low levels of petroleum constituents are likely to remain in the groundwater at the Site, at least in the near future, given that there are no known plans for additional remediation at either of the adjoining properties. Please note that a soil sample collected on-Site in the area of the Valero property did not show elevated concentrations of petroleum-related compounds.

Conclusions and Recommendations

Existing Contamination
The historical groundwater data shows that concentrations of petroleum-related compounds at the Site have decreased following remedial activities completed at the Site and two upgradient gasoline stations, with occasional concentration spikes. The sources of the contamination (leaking underground storage tanks) have been removed from both upgradient locations. Based on the most recent sampling, conducted on March 25, 2014, residual petroleum-related constituents remain in the groundwater at concentrations above the NYSDEC Class GA Standards, which are appropriate levels for drinking water. While this is the NYSDEC goal for all groundwater quality, drinking water will be provided by a regulated utility (United Water).

The existing information indicates that the petroleum constituents have migrated to the Site from the adjoining upgradient gasoline service stations (Valero Service Station located at 300 Theodore Fremd Avenue and Banahan Brothers Service Station located at 310 Theodore Fremd Avenue) through dispersion and transport through groundwater. Remediation has been completed at the Site and both adjoining properties with oversight by NYSDEC. The remedial activities have resulted in decreased concentrations of petroleum in soil and groundwater and all Spill records have been closed; however, residual impacts remain. In order to close a Spill, NYSDEC must make a determination that the implemented remedy will "ensure adequate protection of human health and the environment", as well as to "mitigate environmental damage" to the extent these have occurred (NYSDEC Technical Field Guidance, *Closing-Out a Spill*).

Soil sampling has shown several compounds above the NYSDEC unrestricted use SCOs, including two compounds, arsenic and lead, which are also above the restricted-residential use SCOs, the appropriate comparison given the proposed Site use as a multi-family residential development.

Development of properties with environmental impacts (i.e., residual contamination) for residential use is common practice in New York State and can be consistent with the SEQRA goal of limiting impacts to human health from exposure to new or existing sources of contamination. The requirements for such development include characterization of existing contamination and identification of potential impacts to human health. The characterization of the Site is consistent with typical investigations of petroleum releases and, as confirmed by the Spill record closure, consistent with NYSDEC requirements.

Potential Impacts to Human Health
A qualitative exposure assessment, as described in DER-10, Technical Guidance for Site Investigation and Remediation (NYSDEC, May 2010) considers five potential exposure routes: direct contact with surface soils (including incidental ingestion); direct contact with subsurface soils (including incidental ingestion); ingestion of groundwater; dermal (i.e., skin) contact with groundwater / inhalation of volatile groundwater constituents; and, inhalation of vapors (exposures related to soil vapor intrusion).

The first four exposure routes mainly relate to construction workers or environmental professionals and would be addressed through a Health & Safety Plan (HASP) as required by the Occupational Safety & Health Administration (OSHA).

The two exposure routes potentially affecting future building occupants and workers, absent engineering controls, are direct contact with surface soils and inhalation of vapors. Regarding direct contact, while petroleum-related compounds are not present at elevated levels in soil, two metals (arsenic and lead) are present at elevated levels. Inhalation of vapors is also possible given the concentrations of petroleum-related compounds in groundwater at the Site.

Recommendations
Within New York State, many properties with actual or perceived contamination have been developed for residential use, with the development including implementation of engineering and/or institutional controls (such as those identified in the WCDOH May 7, 2014 letter), to ameliorate potential impacts.

Based on our review of the data and experience on similar developments, and in order to be conservative with regard to potential impacts to future occupants of the 150 North Street Site, Tenen recommends that the following remedial design considerations be incorporated into any future development at the Site:

- Design and installation of a soil vapor intrusion mitigation system beneath occupied spaces in accordance with the New York State Department of Health (NYSDOH) *Final Guidance for Evaluating Soil Vapor Intrusion in New York State* (October 2006, or the most current version) and typical industry standards.
- Design and installation of a remedial cap in accordance with the New York State Department of Environmental Conservation (NYSDEC) *CP-51 Soil Cleanup Guidance* (October 21, 2010, or the most current version) and typical industry standards.

The above-referenced guidance documents consider different use categories and are not specific to the proposed development. The guidance documents also consider different types of building construction techniques (slab on-grade, basements, crawl spaces, etc.), which will allow for flexibility should an alternate design be proposed.

A soil vapor intrusions mitigation system vents the air beneath a building slab so that chemicals volatilizing from below do not concentrate below an occupied space; it also includes a vapor barrier or waterproofing to mitigate soil vapor or groundwater from entering the building.

A remedial cap consists of the building slab, paved areas and soil that is placed over areas with contaminant concentration that are inconsistent with the proposed use. The soil portion of the cap is tested prior to import to the Site to confirm that the appropriate SCOs are met. The NYSDEC guidance indicates that a two-foot cap is appropriate for residential and restricted-residential uses.

For the specific proposed development, the proposed engineering controls include capping the Site with a building slab, asphalt paving and imported soil; design of an open-air parking area on the majority of the first floor; and, installation of depressurization system or waterproofing (depending on the slab elevation as compared to groundwater) in the area of the first floor without parking. These remedial design considerations are generally consistent with the above guidance documents and documentation to that effect should be provided by the Applicant. Absent any additional soil testing, which may show a delineation of soil impacts, the cap should extend across the entire Site. Please note that any capping and filling should be consistent with State and local wetland regulations.

In prior meetings of the Rye City Council, the current building design has been discussed and the placement of future occupants on the second floor has been considered. In particular, if the occupants are not safe on the first floor, how can it be known they will be safe on the second floor? However, the occupants are not on the second floor to move them further from potential sources of environmental impacts but due to a design consideration where the parking acts as a venting system. Implementation of the NYSDOH guidance will incorporate venting below occupied spaces and this could be achieved with occupants present on the first floor.

TENEN ENVIRONMENTAL

MEMORANDUM

To: Rye City Council

From: Matthew Carroll, P.E. / Tenen Environmental

Date: August 4, 2014

Subject: Theodore Fremd Senior Housing Zoning District Change
150 North Street – Rye, New York
Review of Environmental Assessment Form

The City of Rye has retained Tenen Environmental to review environmental information pertaining to the above property (the Site) to support the Rye City Council in their determination of whether the environmental impacts identified at the Site are a significant adverse impact under the State Environmental Quality Review Act (SEQRA). This memorandum details our comments on the April 4, 2014 Full Environmental Assessment Form (EAF) provided by the Applicant and the July 3, 2014 memorandum from the City of Rye Department of Planning regarding the EAF.

These comments are provided to identify areas in the EAF where clarification and/or additional information should be provided by the Applicant in order to provide the City Council with a complete document for review.

The comments provided in this memorandum address incompleteness, requested documentation and error/clarifications. These comments are in addition to those included in the Department of Planning review. Both sets of comments need to be addressed in order for the City Council to have all the information necessary to make a Declaration under SEQRA.

Summary of Incompleteness

The following items were not completed and should be addressed by the Applicant.

D.2.c *ii, iv* – water demand
E.2.m – predominant wildlife species

Please also note that the following items should <u>not</u> be answered based on the Applicant's initial responses: B.i. *ii, iii* and D.2.t *v*.

Request for Documentation

In order to document the conclusions of the EAF, the following should be submitted.

E.2.j, k. A copy of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) with the Site highlighted should be provided by the Applicant. If any preliminary maps have been issued for this area post-Hurricane Sandy, they should also be provided.

E.2.e. The Applicant indicates that the soils are well-drained across the entire Site. Given the potential wetland and surface material of glacial till, please provide documentation from the Web Soil Survey (see: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) or a Site-specific survey to support this assertion.

E.2.l. A copy of a map showing Sole Source Aquifers (SSAs) with the Site location highlighted should be provided by the Applicant for review.

E.2.h. In addition to comments provided by the Department of Planning regarding wetlands, if a surface water body is present at the Site, confirmation of whether it is classified or protected by the New York State Department of Environmental Conservation (NYSDEC), as shown on their Environmental Resource Mapper (ERM), should be provided by the Applicant.

E.2.o, p. Applicant should provide documentation that the project area is not known to contain listed rare, threatened or endangered species, or associated critical habitat.

This may include a request for determination from the NY Natural Heritage Program and/or implementation of the US Fish and Wildlife Service's (USFWS) endangered species documentation process. See: http://www.dec.ny.gov/animals/31181.html and http://www.fws.gov/northeast/nyfo/es/section7.htm.

E.3.f. Applicant should provide documentation that the Site is not located in or adjacent to an archaeologically-sensitive area. This may include a final impact determination letter from the NYS Office of Parks, Recreation and Historic Preservation (SHPO) that was prepared pursuant to Section 106 of the National Historic Preservation Act of 1966.

Error/Clarification

B.g. The Applicant should answer consistent with the current regulatory status of the Site; therefore, NYSDEC approval is not required.

D.2.f. The Applicant should consider whether construction equipment will be a source of mobile air emission sources during construction operations.

D.2.m. The Applicant should consider whether construction equipment will be a source of noise that will exceed ambient noise levels.
See: http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf

E.1.h. This response is incorrect and should be changed to "Yes".

Additional information on the Manufactured Gas Plant (MGP) identified as NYSDEC Site ID V00571 should be provided, including, but not limited to, a Site Characterization Report (SCR).

The Applicant should also provide the map and output from the NYSDEC EAF Mapper (see: http://www.dec.ny.gov/eafmapper/).

The Applicant should list the Spill numbers associated with the Site and upgradient adjoining properties.

Please contact me if you need any additional information.

Christian K. Miller, AICP
City Planner
1051 Boston Post Road
Rye, New York 10580

Tel: (914) 967-7167
Fax: (914) 967-7185
E-mail: cmiller@ryeny.gov
http://www.ryeny.gov

CITY OF RYE
Department of Planning

Memorandum

To: Frank J. Culross, City Manager

From: Christian K. Miller, AICP, City Planner

cc: Kristen K. Wilson, Esq., Corporation Council

Date: July 3, 2014

Subject: **Review of Environmental Assessment Form Regarding Petition of Lazz Development/Pawling Holdings to Change the Zoning Designation of County-Owned Property Located on Theodore Fremd Avenue and North Street to the RA-5, *Senior Citizens Apartment*, District to Provide for the Construction of Affordable Senior Housing.**

This memorandum provides a review of the applicant's submission of Part 1 of the Full Environmental Assessment Form (EAF) and a discussion of Part 2 of the Full EAF, prepared by me for the City Council's review and consideration. The EAF and all supporting documents included as part of the official record are the information used by the City Council in making its determination of significance as required by the State Environmental Quality Review (SEQR) before reaching a final decision on the proposed action.

Background

As requested by the City in May and as required by the City, the applicant prepared and submitted Part 1 of the EAF (attached hereto). Also attached is Part 2 of the EAF, which is the responsibility of the Lead Agency for the Council's review and consideration. The EAF is intended to be used as a resource for the Lead Agency in determining potential project impacts and a determination of significance (i.e. Negative or Positive Declaration). A "Negative Declaration" on the proposed action can be issued if the Council finds that the proposed action does not have any significant adverse environmental impacts. If the Council finds that there are potentially significant adverse impacts associated with the proposed action a "Positive Declaration" must be issued requiring a more involved environmental review. This review involves a number of procedural requirements and typically takes a least a year to complete.

Review of Part 1 of the EAF

The applicant is requested to amend and resubmit the EAF to correct or clarify the following:

Page 1. Description of the Proposed Action. The project description should indicated that the proposed action includes a request to action under consideration is a local law to amend the City Zoning Map to change the zoning district designation of the subject property to the RA-5 District.

Page 1. Property Owner. The property owner and contact information should be provided.

Page 2. C.2.a. Responses to these questions regarding consistency with adopted plans should be indicated as "Yes".

Page 3. C.3.c. The response is incorrect. A zoning text amendment is not proposed. A Zoning District change of the subject property to the RA-5 District is requested.

Page 4. D.2.b. This response regarding on-site wetlands should be supported with a report from a certified soil scientist. This has been previously requested since there appears to be wetland on the property that would be subject to City of Rye and/or Army Corps of Engineers jurisdiction. If wetland is determined to be on the site its boundary should flagged and indicated on a survey.

Page 5. D.2.g. Responses to these questions regarding air quality impacts should be provided.

Page 7. D.2.j. Responses to these questions regarding traffic impacts should be provided and be consistent with the information provided in the applicant's traffic study.

Page 7. D.2.l. Responses to these questions regarding hours of operation should be provided.

Page 8. D.2.n.ii. This response is incorrect and should be changed to "Yes". There will be removal on existing vegetation that could provide a light barrier or screen.

Page 8. D.2. q. This response should be revised to indicate that there may be pesticide use associated with normal lawn maintenance.

Page 10. E.1.d. This response should be changed to "Yes". Please indicate that Rye Manor (an affordable senior housing community) is located within 1,500 feet of the project site.

Page 11. E.2. d. This response should be changed. According to sub-surface investigation reports provided by the applicant groundwater appears to be located between 1-3 feet below grade and not 5+ feet as indicated by the applicant.

Page 11. E.2.h. As indicated in response to page 4, D.2.b above, this response regarding on-site wetlands should be supported with a report from a certified soil scientist.

Review of Part 2 of the EAF

Attached hereto for the City Council's review is Part 2 of the EAF, which provides a preliminary assessment of the potential adverse environmental impacts. In response to the questions on this preliminary draft, some impacts have been identified, but all of those impacts are considered "small". The Council should review the draft and confirm that this assessment of impacts and the characterization of impacts as either "small" or "moderate to large" are consistent with the Council's assessment of the proposed action.

It is noted that two questions have not been completed on the form. Question 3, *Impacts on Surface Water*, have not been completed until the applicant has submitted a report from a certified soil scientist as to whether there are wetlands on the property.

Additionally, question 16, *Impact on Human Health*, should be completed based on consultation with the environmental consultant retained by the City.

A determination of significance is not required at this time since additional information is required to complete its review. If, however, based on the review of the information provided so far the Council finds that the proposed action may have a "significant adverse impact on the environment" a "Positive Declaration" should be issued and an Environmental Impact Statement and review process should be initiated sooner rather than later.

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: The Courtyard at Theodore Fremd		
Project Location (describe, and attach a general location map): 150 North Street, Rye, NY 10580		
Brief Description of Proposed Action (include purpose or need): The project is to construct 58 units of affordable senior housing in two (2) five story buildings with appurtenant parking and landscaping. There is a need for affordable senior housing in the community		
Name of Applicant/Sponsor: Lazz Development/Pawling Holdings, Lou Larizza	Telephone: 914-939-5736 E-Mail:	
Address: 211 South Ridge Street		
City/PO: Rye Brook	State: New York	Zip Code: 10573
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☑Yes☐No	City Council: Zoning Text Amendment	
b. City, Town or Village Planning Board or Commission ☑Yes☐No	Planning Commission: Site Plan Approval	
c. City Council, Town or Village Zoning Board of Appeals ☐Yes☑No		
d. Other local agencies ☐Yes☑No		
e. County agencies ☑Yes☐No	Planning Commission: Funding Approval	
f. Regional agencies ☐Yes☑No		
g. State agencies ☑Yes☐No	NYS DEC: Environmental Quality	
h. Federal agencies ☐Yes☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes☑No
If Yes,
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes☐No
iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes☐No
If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes☑No
If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes☑No
If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
B-1 Neighborhood Business District, B-6 General Business District

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☑ Yes ☐ No
If Yes,
i. What is the proposed new zoning for the site? A Zoning Text Amendment is required

C.4. Existing community services.

a. In what school district is the project site located? Rye City School District

b. What police or other public protection forces serve the project site?
City of Rye Police Department

c. Which fire protection and emergency medical services serve the project site?
City of Rye Fire Department and EMS Service

d. What parks serve the project site?
City of Rye Parks, Playland Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? The general nature of proposed action is residential.

b. a. Total acreage of the site of the proposed action? 2.07 acres
b. Total acreage to be physically disturbed? 2.07 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 2.07 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % ____________ Units: ____________

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? ________
iv. Minimum and maximum proposed lot sizes? Minimum ________ Maximum ________

e. Will proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: ____________

f. Does the project include new residential uses? ☑Yes☐No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				58
At completion of all phases				58

g. Does the proposed action include new non-residential construction (including expansions)? ☐Yes☑No

If Yes,

i. Total number of structures ___________

ii. Dimensions (in feet) of largest proposed structure: ________height; ________width; and _______ length

iii. Approximate extent of building space to be heated or cooled: ______________________ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes☑No

If Yes,

i. Purpose of the impoundment: ________________________

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: ________________________

iii. If other than water, identify the type of impounded/contained liquids and their source. ________________________

iv. Approximate size of the proposed impoundment. Volume: ____________ million gallons; surface area: ____________ acres

v. Dimensions of the proposed dam or impounding structure: ________ height; _______ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): ________________________

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes☑No (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i. What is the purpose of the excavation or dredging? ________________________

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): ________________________
- Over what duration of time? ________________________

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. ________________________

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes☐No

If yes, describe. ________________________

v. What is the total area to be dredged or excavated? ________________________ acres

vi. What is the maximum area to be worked at any one time? ________________________ acres

vii. What would be the maximum depth of excavation or dredging? ________________________ feet

viii. Will the excavation require blasting? ☐Yes☐No

ix. Summarize site reclamation goals and plan: ________________________

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): ________________________

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe:

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:
i. Total anticipated water usage/demand per day: 11,600 gallons/day
ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☐ No
If Yes:

- Name of district or service area: United Water Westchester
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), maximum pumping capacity: _______ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:
i. Total anticipated liquid waste generation per day: 11,000 gallons/day
ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Sanitary wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: Blind Brook Wastewater Treatment Plant
- Name of district: Blind Brook Sanitary Sewer District
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project site? ☑Yes ☐No
- Will line extension within an existing district be necessary to serve the project? ☐Yes ☑No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: ______

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:
- Applicant/sponsor for new district: ______
- Date application submitted or anticipated: ______
- What is the receiving water for the wastewater discharge? ______

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans): ______

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: ______

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 1.45 acres (impervious surface)

_____ Square feet or 2.07 acres (parcel size)

ii. Describe types of new point sources. Buildings and pavement

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Onsite Stormwater Management Facility

- If to surface waters, identify receiving water bodies or wetlands: ______
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☑No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles) ______

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers) ______

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation) ______

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- ______Tons/year (short tons) of Carbon Dioxide (CO_2)
- ______Tons/year (short tons) of Nitrous Oxide (N_2O)
- ______Tons/year (short tons) of Perfluorocarbons (PFCs)
- ______Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- ______Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- ______Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): ______

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): ______

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

______

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of ______ to ______.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: ______

iii. Parking spaces: Existing ______ Proposed ______ Net increase/decrease ______

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

______

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☑Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: ______

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

______

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: ______
- Saturday: ______
- Sunday: ______
- Holidays: ______

ii. During Operations:

- Monday - Friday: ______
- Saturday: ______
- Sunday: ______
- Holidays: ______

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? If yes: *i.* Provide details including sources, time of day and duration: ____________	☐ Yes ☑ No
ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? Describe: ____________	☐ Yes ☑ No
n.. Will the proposed action have outdoor lighting? If yes: *i.* Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures: Parking area illumination with wall mounted fixtures	☑ Yes ☐ No
ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? Describe: ____________	☐ Yes ☑ No
o. Does the proposed action have the potential to produce odors for more than one hour per day? If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: ____________	☐ Yes ☑ No
p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? If Yes: *i.* Product(s) to be stored ____________ *ii.* Volume(s) ______ per unit time __________ (e.g., month, year) *iii.* Generally describe proposed storage facilities: ____________	☐ Yes ☑ No
q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? If Yes: *i.* Describe proposed treatment(s): ____________	☐ Yes ☐ No
ii. Will the proposed action use Integrated Pest Management Practices?	☐ Yes ☐ No
r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? If Yes: *i.* Describe any solid waste(s) to be generated during construction or operation of the facility: • Construction: __________ tons per __________ (unit of time) • Operation : __________ tons per __________ (unit of time) *ii.* Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste: • Construction: ____________ • Operation: ____________ *iii.* Proposed disposal methods/facilities for solid waste generated on-site: • Construction: ____________ • Operation: ____________	☐ Yes ☐ No

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): ____________________

ii. Anticipated rate of disposal/processing:

- ________ Tons/month, if transfer or other non-combustion/thermal treatment, or
- ________ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: ____________________ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐Yes ☑No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: ____________________

ii. Generally describe processes or activities involving hazardous wastes or constituents: ____________________

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: ____________________

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐Yes ☑No

If Yes: provide name and location of facility: ____________________

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☑ Urban ☐ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): ____________________

ii. If mix of uses, generally describe:

Office buildings, Commercial buildings and residential uses

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	1.45	1.45
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)	2.07	0	2.07
• Other Describe: Landscaping			0.62

c. Is the project site presently used by members of the community for public recreation? *i.* If Yes: explain:	☐Yes ☑No
d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? If Yes, *i.* Identify Facilities:	☐Yes ☑No
e. Does the project site contain an existing dam? If Yes: *i.* Dimensions of the dam and impoundment: • Dam height: ________ feet • Dam length: ________ feet • Surface area: ________ acres • Volume impounded: ________ gallons OR acre-feet *ii.* Dam's existing hazard classification: *iii.* Provide date and summarize results of last inspection:	☐Yes ☑No
f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? If Yes: *i.* Has the facility been formally closed? ☐Yes ☐ No • If yes, cite sources/documentation: *ii.* Describe the location of the project site relative to the boundaries of the solid waste management facility: *iii.* Describe any development constraints due to the prior solid waste activities:	☐Yes ☑No
g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? If Yes: *i.* Describe waste(s) handled and waste management activities, including approximate time when activities occurred:	☐Yes ☑No
h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? If Yes: *i.* Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐Yes ☐No ☐ Yes – Spills Incidents database Provide DEC ID number(s): ☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): ☐ Neither database *ii.* If site has been subject of RCRA corrective activities, describe control measures: *iii.* Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑Yes ☐No If yes, provide DEC ID number(s): V00571 *iv.* If yes to (i), (ii) or (iii) above, describe current status of site(s): Voluntary Cleanup Program	☐Yes ☑ No

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: ______
- Describe the type of institutional control (e.g., deed restriction or easement): ______
- Describe any use limitations: ______
- Describe any engineering controls: ______
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: ______

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 2-10 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? ______%

c. Predominant soil type(s) present on project site: Urban Land Chatfield-Rock 100 %
______ ______%
______ ______%

d. What is the average depth to the water table on the project site? Average: 5+ feet

e. Drainage status of project site soils: ☑ Well Drained: 100 % of site
☐ Moderately Well Drained: ______% of site
☐ Poorly Drained ______% of site

f. Approximate proportion of proposed action site with slopes: ☑ 0-10%: 100 % of site
☐ 10-15%: ______% of site
☐ 15% or greater: ______% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: ______

h. Surface water features.
i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No
ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No
If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.
iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☐ No
iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name ______ Classification ______
- Lakes or Ponds: Name ______ Classification ______
- Wetlands: Name ______ Approximate Size ______
- Wetland No. (if regulated by DEC) ______

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No
If yes, name of impaired water body/bodies and basis for listing as impaired: ______

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100 year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500 year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:
i. Name of aquifer: ______

m. Identify the predominant wildlife species that occupy or use the project site: ______________________

______________________ ______________________ ______________________

______________________ ______________________ ______________________

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): ______________________

____

ii. Source(s) of description or evaluation: ______________________

iii. Extent of community/habitat:

- Currently: ______________ acres
- Following completion of project as proposed: ______________ acres
- Gain or loss (indicate + or -): ______________ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: ______________________

____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: ______________________

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site? ______________________

ii. Source(s) of soil rating(s): ______________________

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: ______________________

____

____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: ______________________

ii. Basis for designation: ______________________

iii. Designating agency and date: ______________________

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? If Yes: *i.* Nature of historic/archaeological resource: ☐Archaeological Site ☐Historic Building or District *ii.* Name: ____ *iii.* Brief description of attributes on which listing is based: ____	☐ Yes ☑ No
f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐ Yes ☑ No
g. Have additional archaeological or historic site(s) or resources been identified on the project site? If Yes: *i.* Describe possible resource(s): ____ *ii.* Basis for identification: ____	☐ Yes ☑ No
h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? If Yes: *i.* Identify resource: Long Island Sound *ii.* Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Local parks *iii.* Distance between project and resource: 4 miles.	☑ Yes ☐ No
i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? If Yes: *i.* Identify the name of the river and its designation: ____ *ii.* Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No	☐ Yes ☑ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Ralph G. Mastromonaco. P.E., P.C. Date April 4, 2014

Signature Ralph Masto Title ____

PRINT FORM

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Agency Use Only [If applicable]

Project :

Date :

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Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1) ☐ NO ☑ YES

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: ______________________________		☐	☐

2. Impact on Geological Features The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) *If "Yes", answer questions a - c. If "No", move on to Section 3.*	☑ NO		☐ YES
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. Identify the specific land form(s) attached: ____________	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: ____________	E3c	☐	☐
c. Other impacts: ____________		☐	☐

3. Impacts on Surface Water The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) *If "Yes", answer questions a - l. If "No", move on to Section 4.*	☐ NO		☐ YES
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☑	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: ______________________		☐	☐

4. Impact on groundwater
The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. ☑NO ☐YES
(See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t)
If "Yes", answer questions a - h. If "No", move on to Section 5.

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	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: ______________________	D2c	☐	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☐	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☐	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☐	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☐	☐
h. Other impacts: ______________________		☐	☐

5. Impact on Flooding
The proposed action may result in development on lands subject to flooding. ☑NO ☐YES
(See Part 1. E.2)
If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: ______________________________________		☐	☐

6. Impacts on Air The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D,2,h, D.2.g) *If "Yes", answer questions a - f. If "No", move on to Section 7.*	☑NO	☐YES	
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: ______________________________________		☐	☐

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7. Impact on Plants and Animals The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) *If "Yes", answer questions a - j. If "No", move on to Section 8.*	☐NO	☑YES	
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: ____________ DRAFT	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☑	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: ____________	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☑	☐
j. Other impacts: ____________		☐	☐

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑NO ☐YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: ____________		☐	☐

9. Impact on Aesthetic Resources The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.) *If "Yes", answer questions a - g. If "No", go to Section 10.*	☐NO	☑YES	

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	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	 ☐ ☐	 ☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	 ☐ ☐	 ☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: Project will be visible from Interstate 95 and area/neighboring properties		☑	☐

10. Impact on Historic and Archeological Resources The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.) *If "Yes", answer questions a - e. If "No", go to Section 11.*	☑NO	☐YES	

	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on or has been nominated by the NYS Board of Historic Preservation for inclusion on the State or National Register of Historic Places.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: ______________	E3g	☐	☐

d. Other impacts: ______________________		☐	☐
e. If any of the above (a-d) are answered "Yes", continue with the following questions to help support conclusions in Part 3:	DRAFT		
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: ______________________		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: ______________________		☐	☐

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. ☐ NO ☑ YES

(See Part 1. D.2.j)

If "Yes", answer questions a - g. If "No", go to Section 14.

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	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☑	☐
f. Other impacts: ______		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. ☑ NO ☐ YES

(See Part 1. D.2.k)

If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: ______			

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☑ NO ☐ YES

(See Part 1. D.2.m., n., and o.)

If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☐	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☐	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☐	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☐
f. Other impacts: ______________		☐	☐

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16. Impact on Human Health
The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☐ NO ☐ YES
If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No, or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: ______________		☐	☐

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. ☐ NO ☑ YES

(See Part 1. C.1, C.2. and C.3.)

If "Yes", answer questions a - h. If "No", go to Section 18.

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	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☑	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☑	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☑	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: ______		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. ☐ NO ☑ YES

(See Part 1. C.2, C.3, D.2, E.3)

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☑	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: ______		☐	☐

PRINT FULL FORM

Christian K. Miller, AICP
City Planner
1051 Boston Post Road
Rye, New York 10580

Tel: (914) 967-7167
Fax: (914) 967-7185
E-mail: cmiller@ryeny.gov
http://www.ryeny.gov

CITY OF RYE
Department of Planning

Memorandum

To: Scott Pickup, City Manager

From: Christian K. Miller, AICP, City Planner

cc: Kristen K. Wilson, Esq., Corporation Counsel

Date: March 7, 2014

Subject: **Additional Analysis Related to the Request of Lazz Development/Pawling Holdings to Change the Zoning Designation of County-Owned Property Located on Theodore Fremd Avenue and North Street to the RA-5, *Senior Citizens Apartment*, District to Provide for the Construction of Affordable Senior Housing.**

The Rye City Council as Lead Agency is responsible for the assessment and evaluation of potentially significant adverse impacts pursuant to the requirements of the State Environmental Quality Review (SEQR). During the public hearing there were questions and concerns raised by the public and City Council. To assist the City Council in assessing potential impacts it is recommended that the petitioner provide the following additional information and analysis:

- **Full Environmental Assessment Form**. The petitioner has provided a short Environmental Assessment Form (EAF) with its zoning petition, which is the minimum required by SEQR. Given the nature of the public comment it is recommended that a full EAF be submitted for the Council's review. This will provide a more complete environmental assessment of the proposed zoning change and future senior housing development proposal.

- **Sub-Surface Conditions**. Concerns remain with the status of the sub-surface environmental conditions on the site. It is recommended that the petitioner prepare a Phase II environmental study that includes current testing for potential sub-surface contaminants on the site. Recent clean-up activities in the area and adjacent to the site should also be addressed and their potential impact on the site. The status of the sub-surface environmental conditions is a threshold question for the City Council as it considers a change in zoning to allow for senior housing on a property that is currently restricted to light-industrial, commercial and other non-residential uses. The City has allowed the redevelopment of properties with prior sub-surface contamination for housing including many former gas station properties. It is anticipated that such redevelopment could be allowed in this case, provided that petitioner gives the Council current and complete information and clearance from the appropriate State and County agencies as to the specific redevelopment proposed by the petitioner.

- **Fiscal Impact Analysis**. Currently, since the County-owned property generates no property tax revenue, but also requires few municipal services. The petitioner should provide a fiscal impact analysis quantifying the anticipated total tax revenue (based on the total rent revenue of the project) and the anticipated municipal service demands. Using the existing senior housing development at 300 Theall Road will provide good comparables for potential service demands. The analysis should also try to quantify anticipated cost/revenue if the site were developed based on the uses permitted by existing zoning.

- **Traffic**. The petitioner should prepare a traffic study quantifying the anticipated trip generation of the full development of the site under the proposed RA-5 District standards and the impact on level of service at area intersections. This analysis should be compared to the anticipated traffic impact associated with development permitted by existing zoning on the property.

Upon receipt of this information the City Council will be in a better position to assess potential impacts and determine the appropriateness of the petitioner's request and whether additional mitigation measures may be necessary.

Planning Department
1051 Boston Post Road
Rye, New York 10580
Tel: (914) 967-7167
Fax: (914) 967-7185
www ryeny.gov

CITY OF RYE
Planning Commission

Memorandum

To: Rye City Council

From: Rye City Planning Commission
Christian K. Miller, City Planner

cc: Scott Pickup, City Manager
Kristen K. Wilson, Esq., Corporation Counsel

Date: February 5, 2014

Subject: **Recommendation to the Rye City Council Regarding the Petition of Lazz Development/Pawling Holdings to Change the Zoning Designation of County-Owned Property Located on Theodore Fremd Avenue and North Street to the RA-5, *Senior Citizens Apartment*, District to Provide for the Construction of Affordable Senior Housing.**

As requested, this memorandum provides the Planning Commission's recommendation to the Rye City Council regarding the petition of Lazz Development/Pawling Holdings to change the zoning designation of Westchester County-owned property located on Theodore Fremd Avenue and North Street to the RA-5, *Senior Citizens Apartment*, District to provide for the construction of affordable senior housing. This memorandum was prepared by the City Planner and reviewed and unanimously approved by the Planning Commission at its February 4, 2014 meeting.

Background

On or about December 10, 2013, the City Council received a petition from Lazz Development/Pawling Holdings to change the zoning of a property located at 150 North Street. The approximately 2.080-acre property has frontage on North Street, but is commonly referred to by its accessible frontage on Theodore Fremd Avenue rather than its legal address of 150 North Street. The request would change the zoning of the Westchester County-owned property from the B-6, *General Business*, District and the B-1, *Neighborhood Business*, District to the RA-5, *Senior Citizen's Apartment*, District (see Exhibit 1).

The existing zoning districts applicable to the property do not permit multi-family housing. The proposed zoning change to the RA-5 District would permit (and limit) future construction on the property to affordable senior housing. The petitioner has represented that if the zoning change is granted, he would seek subsequent approvals from the Rye City Planning Commission to construct approximately fifty-four (54) units of affordable age-restricted housing located in two buildings. The proposal would be limited to those over age 55 and consist of approximately 44 one-bedroom units and 10 two-bedroom units.

The proposed RA-5 District for the property is the same district adopted by the City Council in the mid-1980s to accommodate the nearly 100 units of affordable senior housing on an approximately 2-acre site at 300 Theall Road, also known as Rye Manor. The proposed units would be affordable and a minimum of 27 of the units would count towards the 750 units of fair and affordable housing that Westchester County is obligated to provide within 31 eligible municipalities as part of a stipulation of settlement with the U.S. Department of Housing and Urban Development (HUD). Rye has been identified in the housing settlement as one of the 31 eligible Westchester County communities.

The subject property has long been considered for affordable housing by the City of Rye. In the early 1990s a local not-for-profit in partnership with the City of Rye sought to change the zoning of the property to construct 12 two-family units (i.e. 24 total units). That proposal and the required zoning change were never advanced due to the identification of sub-surface contamination on the property in 1993. Since that time the property has been subject to an environmental clean-up, but the City continued to periodically advocate for its use as an affordable housing site (see Exhibit 2).

Unlike the affordable housing proposal twenty years ago the City of Rye is not a partner in the construction, property ownership or administration of the affordable housing units. Westchester County is the property owner and the petitioner is the County's preferred developer for the property. The City of Rye's role is typical of any other land use application, which is to review and consider the land use policy implications of the request.

Westchester County's interest is to advance its obligation under the housing settlement. The property in Rye is unique because there are few (if any) undeveloped County-owned properties within one of the 31 eligible housing settlement communities. It's also unique because the City has a 20-year history of advocating for the development of affordable housing. Rye's historic advocacy for affordable housing does not constitute a commitment or obligation to approve the petitioner's request, but is relevant in terms of the planning context and the City's affordable housing policy.

The petitioner's interest is to develop affordable housing. The petitioner has constructed a number of affordable housing communities in the Sound Shore area, including 27 units in two separate projects on Cottage Street in Rye. Both of those projects required the City's Council's legislative authority to either amend the City Zoning Code or de-map an unused road right-of-way. In an August 9, 2013 letter the Petitioner received authorization from Westchester County "to seek all necessary approvals from the City of Rye…" (see Exhibit 3). This letter was provided to the City and forwarded to the City Council on August 16, 2013. This letter was expected based on a meeting City Council members and staff attended at Westchester County in June 2013. A summary of that meeting was provided to the City Council (see Exhibit 4).

The City's interest is to potentially advance identified affordable housing needs in the area consistent with its land use planning and other policies. The County has only a limited allocation of housing that it can designate as age-restricted towards the 750-unit obligation under the settlement. If that age-restricted allocation is lost to another community, there will continue to be pressure to develop the County-owned property in Rye for affordable housing without the age restriction. Age-restricted housing eliminates the potential for the generation of school-age children and the potential for a land use outcome in which potential municipal and school district service costs from the proposed development exceed anticipated property tax revenue.

Zoning Petition Review Process

Any change to the City Zoning Code or Map is a discretionary action of the City Council. As is typical in most communities, legislative actions involving land use matters are referred to the City Planning Commission for its review and comment. The specific action under consideration is a local law to amend the City Zoning Map to change the zoning district designation of the subject property to the RA-5 District. The minimum legal requirements to implement the local law are as follows:

1. *Local Law and Petition Referral*. The draft local law and petition must be referred to the Westchester County Planning Board pursuant to Section 239-m of the GML and Section 451 of the Westchester County Administrative Code. This information was forwarded to the County on December 24, 2013. The City Council cannot take an action on the petition until it receives a response from the County or until 30 calendar days has passed from the date of such referral. That response was provided on January 30, 2014 (see Exhibit 5).

2. *Public Hearing.* As with any law change a public hearing is required and notification of such hearing must be published in the City's official newspaper. Unlike New York State Town or Village Law, Section 83 of the General City Law does not require any additional notification (e.g. signage on the property, mailing of hearing notice, etc.) to property owners affected by or within the vicinity of the proposed zoning change.

3. *SEQR.* Before making a decision on the local law, the City Council must comply with the requirements of State Environmental Quality Review (SEQR) and conduct an environmental assessment of the proposed action. The City Council has already taken the first step in this process by declaring at its December 18, 2013 meeting its intent to be Lead Agency for the environmental review. On December 24, 2013, staff circulated the Council's intent to be Lead Agency to other involved agencies. There has been no objection to the City Council being Lead Agency within the minimum required 30-day objection period. The City Council is therefore the Lead Agency at this time. As Lead Agency, the City Council must review the environmental assessment form (EAF) submitted by the applicant and conduct its own assessment of potentially adverse environmental impacts. If the Council finds that the proposed action does not have any significant adverse environmental impacts and issues a "Negative Declaration" a decision on the local law can be made. If the Council finds that there are potentially significant adverse impacts associated with the proposed action a "Positive Declaration" must be issued requiring a more involved environmental review. This review involves a number of procedural requirements and typically takes a least a year to complete.

4. *Decision.* After conducting and closing the public hearing and completing the SEQR process the City Council can make a decision. A simple majority vote is required for the adoption of the local law. A super majority vote of the Council (i.e. a minimum of three-fours of the members) is required if twenty percent or more of property owners subject to the zoning change or within 100 feet therefrom submit a written protest to the request. Based on a preliminary review it appears that a written objection by just three property owners within 100 feet of the site would trigger a super majority vote (or 6 of the 7 City Council members) to approve the zoning request.

Westchester County HUD Settlement and Its Implications for Rye

In 2009 Westchester County entered into an agreement with the U.S. Department of Housing and Urban Development (HUD) to settle a lawsuit. The civil lawsuit was initiated by the Anti-Discrimination Center of Metro New York, Inc. The lawsuit alleged that the County failed to affirmatively further fair housing (AFFH) in its administration of federal funds including the Community Development Block Grant (CDBG) program and other federal programs. Specially, the lawsuit alleged that the County did not conduct a meaningful Analysis of Impediments (AI) to fair housing choice and did not take appropriate actions to overcome the effects of any impediments identified through that analysis. The County's failure to comply with that obligation as a recipient of federal funds was alleged to be a violation of the False Claims Act.

There are many requirements of the stipulation of settlement. One requirement is that the County fund 750 affordable housing units within five years within eligible U.S Census Tracts of 31 municipalities in Westchester County. Eligible census tracts were identified as those having low percentages of minority populations. To date, the County has funded the construction of 27 affordable housing units in the City of Rye that count towards the 750-unit requirement. The City is not bound by the terms of the Settlement and is not required to approve any fair and affordable housing units, but has advanced affordable housing proposals when they were consistent with the land use, planning and housing objectives of the City.

A second significant requirement of the settlement is that the County is responsible for promoting and advancing a model affordable housing ordinance in each of the 31 eligible municipalities. The model ordinance, which was approved by the Monitor in October 2010, includes provisions to promote affordable housing including inclusionary zoning requirements, recommendations to increase multi-family housing zoning and other provisions. Westchester County is aggressively promoting the model ordinance, but no community is required to adopt it. In fact, most communities have not adopted it in full and many communities (including Rye) continue to review the model ordinance for its appropriateness given the existing land use planning and legal context.

A final significant requirement of the settlement relevant to Rye is that the City cannot receive CDBG and other federal funds administered by the County unless it advances fair and affordable housing. The City currently receives no such funding and therefore has no obligation.

The County and the monitor retained by HUD to oversee the implementation of the settlement have identified the County-owned property at 150 North Street as an opportunity to provide additional affordable housing in Rye. There have been conversations with the County and the City over the years both before and after the Settlement to discuss the potential for affordable housing at this location, but there has been no commitment by either party as to a specific development program. It has always been understood that any final action would require City Council approval because the property is not currently zoned for multi-family use.

In March 2013, Rye along with the other the 31 eligible communities identified in the Settlement were surprised to receive a “report card” directly from the Federal Monitor. Westchester County was not aware that report cards were being sent to communities, none of which are not party to the Settlement. The report card included an assessment of each community’s existing zoning code.

In many, if not all, cases the report cards were critical of the lack of multi-family zoning in each community and repeatedly stated that more land use changes would be needed to accommodate affordable housing needs. The need was not for the implementation of the 750 units under the Stipulation, but rather the need identified in the 2005 Affordable

Housing Allocation Plan prepared by the Westchester County Housing Opportunities Commission. This allocation plan was not adopted by the Westchester County Board of Legislators and is considered an advisory document. That document recommends the need for over 10,000 affordable housing units in Westchester County, which is significantly higher than the 750 units under the stipulation.

In the case of Rye the unadopted report allocates 167 affordable housing units in the City. The monitor's report card uses that number as the basis for his analysis of affordable housing deficiency. He notes that of the 167 units the City has already provided 27 under the Settlement leaving 140 affordable units of "required" allocation for the City. Accommodating this number of units in the City, particularly under the preferred 90/10 inclusionary development scenario recommended by the monitor will require very aggressive land use changes by the City Council.

As the City Council considers the petitioner's request it should be mindful of these non-binding affordable housing allocations. Development of additional affordable housing at this location could significantly advance the City's contribution to meeting affordable housing needs both under the settlement and the advisory housing allocation plan. At this time Westchester County has stated that a minimum of 27 of the proposed affordable housing units at the petitioner's site could be "counted" towards the housing settlement. Providing affordable housing units may help address some of the criticism of the City's land use and affordable housing policies.

Planning Analysis

The City Planning Commission supports the zoning petition and finds that the proposed use is consistent with the City's historic and future planning policies and housing objectives. In reaching this finding the Planning Commission considered the full development potential of the property under existing, planned and proposed zoning, the precedent established by the application of the RA-5 District and the compatibility of the requested change with surrounding land uses.

The petitioner has proposed a specific use and site plan for the property. As with all zone changes, however, the proper planning analysis requires an assessment not of the petitioner's specific proposal, but rather of the full development potential of the site after the zoning request is granted. Plans can and likely will change.

The petitioner's site plan accompanying his request proposes two four-story buildings, where the lowest story is unenclosed parking. The plan submitted shows approximately 75,600 square feet of total development, 90 parking spaces for an estimated 54 units and compliant with all other bulk and dimensional restrictions of the RA-5 District. This plan represents about 83% of the maximum development potential permitted under the proposed zoning. The proposed FAR of 1.0 is slightly higher than the 0.75 FAR permitted in the B-6 District located on the rear portion of the site and the 0.50 FAR permitted in the B-1 District located on the front of the site. The RA-5 District allows four stories within a maximum building height of 40 feet. The B-6 District allows just two stories, but the same building height of 40 feet. The B-1 District limits maximum building height to 2½ stories and 35 feet. The front yard setback for the proposed RA-5 District is 25 feet, which is greater than the 10-foot requirement for the B-1 and B-6 District. Side yard setback dimensions are also greater for the RA-5 District than the existing districts applicable to the site and the rear yard requirement is generally the same.

The RA-5 District is limited to just one use, which reads as follows:

> *Apartments for Senior Citizens and Handicapped. A detached residence for three or more families or housekeeping units or a group of buildings housing three or more families on one lot, undertaken by private nonprofit sponsors with public financial assistance, subject to the requirements of § 197-7.*

In the event the conditions were to change after the zoning were established for the property the future use would continue to be limited to senior multi-family housing including an element of "public financial assistance" (i.e. affordable housing). On the other hand, the existing B-6 District allows a boarder range of uses including automotive uses, storage establishments, public transportation and utilities, service/contractor businesses, bus storage and repair, kennels and veterinary hospitals and limited manufacturing. The B-1 District allows offices, retail and personal service businesses, garages, apartments over stores, lodging houses, service/contractor businesses and social clubs and lodges.

The City Development Plan (1986) does not cite a specific written recommendation for the property or area, but generally encourages creating additional affordable housing opportunities in the City (see Plan, Chapter 1, *Residential Development*). The future land use plan designates this area for office (see Plan, p. 8-9). Since that time only the property at 350 Theodore Fremd Avenue has been developed as an office building under the B-1 District designation. Since the early 1990s the plan for the subject property has been for the development of the site for affordable housing. The Planning Commission believes that office as recommended in the Development Plan is not an economically viable use as evidenced by the long-standing high vacancy rate of office in the City and County and that a change in use is required. In the last few years the City has seen the conversion of a large office building to medical office and a request to amend the B-4 Office Building District to allow a hotel at 120 Old Post Road.

Residential at this location would be more compatible with the residential properties located opposite the site on Theodore Fremd Avenue than many of the uses permitted under the existing B-6 and B-1 District. The site is in close proximity to other non-residential uses including gas stations, a contractor's yard for a landscape business, the ConEdison property and the Metro-North Railroad and Interstate 95. The Commission notes other multi-family communities (both affordable and market-rate) and other residential neighborhoods located adjacent to transportation corridors that bisect the City.

The use of an existing zoning district classification in the City also is in keeping with the City's land use planning objectives. The RA-5 District specifically provides for the affordable housing needs for seniors. Expanding that district to other appropriate locations in the City is considered a desirable planning objective.

SEQRA Considerations

The Planning Commission has reviewed the environmental assessment form submitted with the zoning petition. As Lead Agency the City Council should consider the following potential impacts and mitigation measures associated with the project prior to making a determination of environmental significance.

- *Sub-surface Conditions*. As the City Council considers the petitioner's request it is recommended that it secure written confirmation from Westchester County Health Department regarding the status of the sub-surface contamination on the site and the status of the environmental clean-up. The Planning Commission understands based on the petitioner's representations that the County Health Department will require that future development at the site require elevating the first habitable story above grade. The Health Department should conduct a review of the proposed plan including all proposed surface and sub-surface improvements such as utilities, stormwater drainage measures and sewer connections.

- *Sanitary Sewer Service*. There is an existing sanitary sewer line that extends from Nursery Lane under I-95 and MNRR tracks through the site to an existing connection in Theodore Fremd Avenue. The existing line is compromised and is difficult to service and maintain due to the high volume, high speed vehicular and rail traffic on a major regional transportation corridor. The City does not want to continue to maintain this existing sewer line through the site and accommodate the additional sewage flow from the petitioner's development. The Commission recommends that the existing public sewer line be abandoned and that the future development on the property be required to provide a new sewer connection from Nursery Lane to an existing sewer connection in North Street. This project has been identified in the City's Capital Improvement Program (CIP) for some time at a preliminary project cost of $150,000. This is a substantial off-site improvement and may challenge the fiscal feasibility of the project depending on the availability of funding to the petitioner. The sewer modification and extension may also require securing easements from Nursery Lane property owners and Westchester County approval of the sewer design.

- *Drainage/Wetland Impacts*. On its site inspection of the property, the Planning Commission noted a drainage pipe that extends from Theodore Fremd Avenue and discharges stormwater runoff from this roadway onto the site. It appears that this runoff has created what may be considered a wetland under the City's Wetlands and Watercourses Law[1]. The proposed development appears that it will result in the wetland loss of a relatively low-functioning wetland and require a drainage plan to replace the stormwater quantity and quality functions of this on-site wetland. If the area is considered a wetland a wetland permit from the Planning Commission will be required as part of a future site plan review process.

- *Municipal Services*. The existing property is County-owned and therefore generates no property tax revenue. The proposed zoning change to allow senior development will generate tax revenue based on the income approach (as opposed to the value of construction approach used for single-family residences). The income approach would be based on the total value of the below market rents after project completion. Since the project is age-restricted there will be no school-age children costs. There would be City expenditures for some municipal services including for sanitation, emergency medical, police, fire and recreation services.

- *Community Character and Aesthetics*. The proposed RA-5 District with a floor area ratio (FAR) of 1.0 would result in development at a greater intensity than the existing B-6 (FAR 0.75) District and B-1 (FAR 0.5) District currently on the property. Existing zoning permits buildings at or close to the same overall 40-foot building height as the proposed RA-5 District. Existing zoning is limited to commercial/general business, which is consistent with existing commercial and transportation uses abutting the site, but potentially inconsistent with the single-family residential character across the street. Overall, the bulk and scale of development under the proposed RA-5 District would likely be greater than development under existing zoning for the site, but not necessarily inconsistent with the character of the surrounding area. Reducing the scale of the building is complicated by the restriction that there can be no units located on the ground level due to the sub-surface contamination on the site. The lowest floor will be used for parking, which counts as a story under the City's Zoning Code but not towards the maximum permitted floor area since the parking is not enclosed.

- *Traffic*. The proposed RA-5 District would generate additional traffic associated with a future senior housing project. The relatively low anticipated trip generation would not adversely impact the relatively high intersection levels of service (LOS). The ITE Trip Generation Manual (ninth edition) provides trip generation

[1] Question 13 of the petitioner's EAF indicates that there are no wetlands on the property. This petitioner should provide additional information supporting this conclusion.

rates for two different types of senior housing units. The following was calculated by Brian Dempsey (Traffic and Pedestrian Safety Chair and NYS licensed traffic engineer) assuming a 60-unit senior housing development:

Senior Adult Housing Detached: Land Use 251
- Peak AM Hour of Adjacent Street: ranges from 5 in and 8 out to 14 in and 26 out
- Peak PM Hour of Adjacent Street: ranges from 10 in and 6 out to 19 in and 12 out
- Peak AM Hour of Generator: ranges from 7 in and 10 out to 15 in and 20 out
- Peak PM Hour of Generator: ranges from 11 in and 9 out to 31 in and 24 out
- Saturday Peak Hour of Generator: 7 in and 7 out (limited studies)

Senior Adult Housing Attached: Land Use 252
- Peak AM Hour of Adjacent Street: ranges from 4 in and 8 out to 4 in and 8 out
- Peak PM Hour of Adjacent Street: ranges from 8 in and 7 out to 9 in and 7 out
- Peak AM Hour of Generator: ranges from 11 in and 12 out to 11 in and 13 out
- Peak PM Hour of Generator: ranges from 10 in and 9 out to 12 in and 9 out
- Saturday Peak Hour of Generator: 11 in and 8 out (limited studies)

A recent traffic study conducted in connection with the sustainable Playland proposal shows that the Theodore Fremd Avenue/North Street intersection operates at the highest levels of service (i.e. “A” or “B”). This level of service is maintained in a 2016 future “build” scenario in the event the sustainable Playland project moves forward. It is also noted that the property is located along an existing bus route, which could potentially reduce trip generation. Given the relatively low trip generation rates associated with senior housing and existing intersection level of service adverse traffic impacts are not anticipated with the proposed change to the RA-5 District.

- *Reduction in Impacts*. As with any project potential impacts can be reduced or minimized by either the implementation of mitigation measures or the reduction in project scope. In considering impacts, the City Council should be mindful of the fact that the proposed RA-5 District requires that future development be affordable senior housing so project and off-site improvement costs and density are a significant consideration to make such projects economically viable, particularly given the incomes proposed to be served. The RA-5 District provides for a reasonable future development intensity that can create the opportunity to advance the City’s affordable housing objectives.

City of Rye, New York

Zoning Districts - Theodore Fremd Area

CITY OF RYE NY 1942
1660 1904

At a regular meeting of the City Council held March 30, 2005, Councilwoman Larr made a motion, seconded by Mayor Otis and Councilman Chu, to adopt the following resolution:

WHEREAS, The Rye Commission on Human Rights commissioned a survey in 2003 to ascertain existing and projected affordable housing needs for residents and those who serve the community; and

WHEREAS, the survey was conducted during the summer of 2004 and the results presented to the Council at it's regular meeting held March 9, 2005; and

WHEREAS, the Chairman of the Rye Commission on Human Rights made a request to the Council that it take action on several specific recommendations; now, therefore, be it

RESOLVED, that the Council strongly and unequivocally restates its interest in using the Theodore Fremd and North Street site, currently owned by the County, but in a state of contamination, to create 24 affordable housing units; and be it further

RESOLVED, that the Council urges the County to develop a complete and quick remediation plan for the Theodore Fremd and North Street site, and be it further

RESOLVED, that the City Manager urge the State Department of Environmental Conservation (DEC) to move meaningfully and expediently to develop a plan to decontaminate the Theodore Fremd and North Street site, and be it further

RESOLVED, that the Planning Commission specifically address the need for affordable housing among City employees, volunteer fire fighters and public and private school employees, as made clear from the response to the survey.

ROLL CALL:
AYES: Mayor Otis, Councilmen Chu, Cypher, Fahey, Larr and Seitz
NAYS: None
ABSENT: Councilman Hennes

STATE OF NEW YORK)
COUNTY OF WESTCHESTER)
CITY OF RYE)

THIS IS TO CERTIFY that I have compared the foregoing resolution with the original thereof, duly passed and adopted at a regular meeting of the Council of the City of Rye held on the 30th of March, 2005 by the affirmative vote of at least a majority of all members of said Council then in office, present and voting thereon, the vote upon passage thereof having been taken by recording the ayes and nays and duly entered in the minutes of said meeting of said Council and on file in this office, and **I DO HEREBY CERTIFY** said resolution to be a correct transcript thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the official seal of the City of Rye this 16th day of January 2016.

Dawn F. Nodarse

SEAL

DAWN F. NODARSE
CITY CLERK

Westchester
gov.com

Robert P. Astorino
County Executive

August 9, 2013

Mr. Louis Larizza
211 South Ridge Street
Rye Brook, New York 10573

Subject: **Proposed Theodore Fremd Senior Housing Development**
150 North Street, Rye New York

Dear Mr. Larizza:

Please allow this correspondence to serve as formal authorization from the County of Westchester (the "County") for you to seek all necessary approvals from the City of Rye, New York (the "City") for the development of approximately twenty-five (25) to fifty (50) affordable affirmatively furthering fair housing units (the "AFFH Units") on the County-owned property located at 150 North Street in Rye, New York (the "Proposed Development").

At this time, it is anticipated that the AFFH Units will be available for seniors earning at or below 50% and 60% of the Westchester County Area Median Income for fifty (50) years. These AFFH Units are expected to further the County's efforts to create new fair and affordable housing units under the 2009 lawsuit titled *United States of America ex rel. Anti-Discrimination Center of Metro New York, Inc. v. Westchester County, New York.*

Please note, that upon receipt of all approvals from the City, the Development and any related County funding shall be subject to all necessary County approvals, including but not limited to, approvals from the County Board of Legislators, and from the County's Board of Acquisition and Contract. Further be advised that the County makes no commitment for funding at this time, and all costs incurred in connection with the Proposed Development and any required local approvals shall be your sole responsibility, whether or not said approvals are ultimately granted by the City, whether or not the County grants or denies any necessary or related approvals, or if the County, in its sole discretion, determines not to proceed with or fund the Proposed Development. This letter shall not bind the County in any respect.

Please also be aware that, although formal plans have not yet been reviewed by the County that the Proposed Development must be consistent with Westchester County affordable housing policies and guiding principles:

REDUCE
REUSE
RECYCLE

- It will be compliant with the Westchester County Consolidated Plan submitted to HUD for the Westchester Urban County Consortium, of which the City of Rye is a member.

- It will be consistent with and reinforce *Westchester 2025 – Policies to Guide County Planning*, the County Planning Board's adopted long-range land use and development policies, by contributing to the development of "a range of housing types" affordable to all income levels and by channeling development to centers where infrastructure can support growth and where public transportation can be provided.

- As noted above, it will consistent with the housing settlement reached in the case of *United States of America ex rel. Anti-Discrimination Center of Metro New York, Inc. v. Westchester County, New York* and will contribute toward the County's requirement to ensure the development of seven hundred fifty (750) new affordable affirmatively furthering fair housing units in communities that meet certain demographic criteria.

We are available to discuss any questions you may have regarding this authorization and look forward to reviewing your proposal.

Sincerely,

Kevin J. Plunkett
Deputy County Executive

cc: Mary Mahon, Esq., Special Assistant to the County Executive
Robert F. Meehan, Esq., County Attorney
Edward Buroughs, AICP, Commissioner of Planning

Christian K. Miller, AICP
City Planner
1051 Boston Post Road
Rye, New York 10580

Tel: (914) 967-7167
Fax: (914) 967-7185
E-mail: cmiller@ryeny.gov
http://www ryeny.gov

CITY OF RYE
Department of Planning

CONFIDENTIAL – Memorandum

To: Scott Pickup, City Manager

From: Christian K. Miller, AICP, City Planner

cc: Kristen K. Wilson, Esq., Corporation Counsel

Date: June 14, 2013

Subject: **Summary of Meeting with Westchester County to discuss the Potential Development of Affordable Housing at County-owned Property located on Theodore Fremd Avenue near the Intersection of North Street.**

As requested, this memorandum provides a summary of our meeting today with Westchester County officials regarding the potential development of affordable housing at the approximately 2.07-acre County-owned property located on Theodore Fremd Avenue near the intersection of North Street. The meeting was requested by Westchester County and was held at the County Executive's Office. For approximately 20 years the City has advocated for the development of affordable housing at this location and has periodically had meetings with the County to discuss development possibilities.

Today's meeting was attended by the Mayor, Laura Brett, you and I as representatives from the City. From the County were representatives from the County Executive's office (Kevin Plunkett and Mary Mahon), Planning Department (Commissioner Ed Burroughs and Norma Drummond) and a representative from the County Attorneys office. Also in attendance was Lou Larriza who may be the County's preferred developer for the potential development of the site.

Summary

- *Sub-surface Environmental Conditions*. NYSDEC continues to monitor the site for the status of the environmental contaminants on the site. The last test was conducted in 2011 showed elevated levels from previous tests, but that additional tests are at the discretion of NYSDEC. The City requested that additional tests be conducted and that it preferred that the site be clean before development occurs. Ms. Drummond stated that the County Health Department is not concerned with potential future housing development on the property provided that there is no enclosed habitable space below grade or on the first floor. The City was advised that there is currently no on-going remediation on the property.

- *Development and Land Use Review Process.* The County stated that it would select a preferred developer for the development of housing on the property. The County stated that the City would not need to be in the chain of title for the property and would not need to select a developer or eligible not-for-profit to develop the property. The City would act as it does for all land use applications, including former affordable housing applications on Cottage Street, by requiring approvals from all relevant City land use boards. As with the applications on Cottage Street, the City noted that the property is not currently zoned for the proposed development and that changes in the zoning code or variances would be required. The County understands that the City has local land use authority.

- *Development Scenario.* Mr. Larriza discussed his development concept for the site. He stated that he is seeking 48 units of senior (i.e. age 55 and over) housing on the property. The number of units is dictated by the desire to use tax credit financing for the property, which limits household income to 50% and 60% of Area Median Income (AMI). He stated that the unit mix would be one- and two-bedroom units. The project would total approximately 50,000 square feet within two 4- or 5-story buildings on the rear half of the 2.07-acre property. Parking would be located at grade level under the building to comply with the Health Department requirement that there be no habitable space below grade or on the first floor.

  The County stated that County infrastructure bond money would also be used to assist with the project funding. The County confirmed that the proposed senior tax credit units would count towards the 750-unit obligation under the Housing Settlement. The County stated that only 187 out of the 750 units can be senior and that Rye would be using the last of that limited allocation.

- *Next Steps.* The County will complete its process to select a preferred developer and the City can expect an application for affordable housing development potentially in the fall. At that point, or sooner if it desires, the City will need to under take a zoning analysis and determine what, if any, land use modifications it would like to implement to accommodate affordable development on this or potentially other properties in the City.

Robert P. Astorino
County Executive

County Planning Board

January 30, 2014

Christian K. Miller, City Planner
Rye City Planning Department
1051 Boston Post Road
Rye, NY 10580

Subject: **Referral File No. RYC 14 - 001 – The Courtyard at Theodore Fremd**
Zoning Map Amendment and Site Plan
Lead Agency

Dear Mr. Miller:

The Westchester County Planning Board has received a notice of intent to serve as Lead Agency pursuant to the NYS Environmental Quality Review Act (SEQR), as well as a one-sheet preliminary site plan (dated December 9, 2013) and related materials for the above referenced application. The applicants are petitioning the City to rezone a 2.08-acre site, currently owned by Westchester County with frontage on Theodore Fremd Avenue (County Road 54) and North Street (County Road 73), from B-6 General Business and B-1 Neighborhood Business to RA-5 Senior Citizens Apartment District. The zone change would permit the development of up to 58 units of housing on the site. If successfully rezoned, the applicant intends to apply for a site plan approval to construct a 54-unit apartment building with 95 parking spaces. All of the proposed units would be age-restricted to seniors over the age of 55 and would be affordable affirmatively furthering fair housing (AFFH) units. The unit mix would consist of 44 one-bedroom units and 10 two-bedroom units.

We have no objection to the Rye City Council assuming Lead Agency status for this review. Since this proposal involves the disposition of County-owned land as well as potential funding administered by Westchester County, we recommend that the County Board of Legislators be included as an Involved Agency with respect to SEQR.

Because we have not received full site plans, we will reserve full comment on this matter under the provisions of Section 239 L, M and N of the General Municipal Law and Section 277.61 of the County Administrative Code for a later date. At this time we offer the following preliminary comment:

Fair and affordable housing – development of affordable AFFH units. We support the concept of this proposal as it will add to the supply of affordable AFFH units in Westchester County. We look forward to working with both the City and the applicant as this application moves forward. We recommend that the applicant consider adding an apartment within the proposed building for a building superintendant, which is typical for a development of this size.

Thank you for calling this matter to our attention.

Respectfully,
WESTCHESTER COUNTY PLANNING BOARD

FOR: ~~By~~:

Edward Buroughs, AICP
Commissioner

EEB/LH

622 STILES AVENUE MAMARONECK, NEW YORK 10543 TEL 914-698-8207 FAX 914-698-8208
chnarch@yahoo.com

Clark Neuringer Architect

CONNECTICUT
DELAWARE
FLORIDA
MARYLAND
NEW YORK

December 10, 2013

The Honorable Mayor Douglas French
Members of the City Council
Rye City Hall
1051 Boston Post Road
Rye, New York 10580

Re: Proposed Zoning Amendment;
The Courtyard at Theodore Fremd

Dear Mayor French and Members of the City Council,

On behalf of our client, Lazz Development / Pawling Holdings, we are pleased to submit this request for an amendment to the Zoning Code of the City of Rye with respect to a proposed fifty four (54) unit rental development located at the corner of Theodore Fremd Avenue and North Street, adjacent to the existing Con Edison operations and equipment facility. The proposed development will advance a long-term planning objective of the City to provide affordable housing on this Westchester County-owned property. The proposed development would consist of 44 one-bedroom units and 10 two-bedroom units all of which will be restricted to those over age 55.

The approximately 2.1-acre property is currently within both the B-6 General Business District and B-1 Neighborhood Business District. Our proposal is to re-zone the entire property to the RA-5 Senior Citizen's Apartment District, which is the same district adopted by the City Council in the 1980s to provide for the construction of the approximately 100 units of senior affordable housing at 300 Theall Road. Current uses permitted within the B-6 District are limited to light manufacturing; garages, parking lots, and filling stations; small boat facilities; and kennels and veterinary hospitals. The portion of the property located in the B-1 District allows for business, professional office, retail, single-family dwellings and two-family residences.

Multi-family is not currently permitted in either district. We respectfully request that the City Council amend the Zoning Map to change the zoning district classification of this property to the RA-5 Senior Citizens Apartment District.

Our proposed senior citizen residential development meets or exceeds the requirements of the RA-5 District and would be a beneficial addition to the City in general and to the particular neighborhood. Our proposal represents a lower intensity of use of the property compared to what could be developed under the current limited zoning. Even under the RA-5 District requirements, our proposed residential development has several distinct positive attributes as follows:

Area of the lot is more than double the size of minimum required.
Total amount of buildable floor area proposed to be constructed is 17% less than permitted.
Total amount of parking proposed is almost seven times more than minimum required.
Total amount of open space proposed is more than double amount required.

As a result, the requested amendment would allow a residential development that would act as a transition between existing residential uses to the south and commercial uses otherwise surrounding the property. The design of our proposed site development results in a separation between the closest existing neighborhood residential building and one of our apartment buildings of a distance in excess of approximately 250 feet. As such, there would be no adverse impact on any of the existing residential areas to the south of the site. Compared to other uses that would be permitted on the site, we believe the proposed residential community would be a more attractive and beneficial use to the neighborhood.

We look forward to further reviews and discussions with you regarding the requested zoning amendment.

Sincerely,

Clark Neuringer, R.A.; NCARB

Cc: Louis Larizza, Lazz Development / Pawling Holdings

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D R A F T

LOCAL LAW
CITY OF RYE NO. _____ -2014

A Local Law to Amend the "Zoning Map of the City for Rye, New York" to Change the Zoning Designation of a Property Known on the City of Rye Tax Map as Section 146.10, Block 1, Lot 66 from B-6, *General Business*, District and B-1, *Neighborhood Business*, District to RA-5, *Senior Citizens Apartment*, District.

Be it enacted by the City Council of the City of Rye as follows:

Section 1. **The Zoning Map of the City of Rye, New York is hereby amended to change the zoning district designation of a property known on the City of Rye Tax Map as Section 146.10, Block 1, Lot 66 from B-6, *General Business*, District and B-1, *Neighborhood Business*, District to RA-5, *Senior Citizens Apartment*, District.**

Section 2. **Severability**

The invalidity of any word, section, clause, paragraph, sentence, part or provision of this Local Law shall not affect the validity of any other part of this Local Law that can be given effect without such invalid part or parts.

Section 3. **Effective Date**

This Local Law shall take effect immediately upon its adoption and filing with the Secretary of State.

617.20
Appendix B
Short Environmental Assessment Form

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information City of Rye Affordable Senior Housing			
Name of Action or Project: The Courtyard at Theodore Fremd			
Project Location (describe, and attach a location map): Theodore Fremd Avenue and North Street, Rye, NY			
Brief Description of Proposed Action: 1. Construct 54 units of senior affordable housing units with parking areas for 95 cars on 2.08 acres in the City of Rye, NY. 2. Approval of a City of Rye zoning text amendment to permit certain residential types in the B6 (Business) zone.			
Name of Applicant or Sponsor: Pawling Holdings, LLC	Telephone: E-Mail:		
Address: 211 South Ridge Street, Suite 3R			
City/PO: Rye Brook	State: NY	Zip Code: 10573	
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.		**NO** ☑	**YES** ☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: City of Rye Planning Commission, City of Rye Coucil, the Home Fund, HIF, AHC agencies, County of Westchester DPW		**NO** ☐	**YES** ☑
3.a. Total acreage of the site of the proposed action? 2.08 acres b. Total acreage to be physically disturbed? 2.08 acres c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 2.08 acres			
4. Check all land uses that occur on, adjoining and near the proposed action. ☑ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): Railroad, Interstate Highway 95 ☐ Parkland			

	NO	YES	N/A
5. Is the proposed action, a. A permitted use under the zoning regulations?	☑	☐	☐
b. Consistent with the adopted comprehensive plan?	☐	☐	☑

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: ______	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation service(s) available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☐	☑
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: ______	☐	☑
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: ______	☐	☑
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: ______	☐	☑
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	☑	☐
b. Is the proposed action located in an archeological sensitive area?	☑	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: ______	☑	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:
☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☑ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100 year flood plain?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☐ NO ☑ YES	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☐ NO ☑ YES Existing Culvert beneath Metro North Rail Lines		

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: Three suburface detention vaults to be constructed beneath the parking areas. Size is generally 1000 square feet per system. The purpose is to limit flows to current levels.	☐	☑
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: NYS DEC database has no record of remediation 1978 to present.	☐	☑

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Lou Larizza Date: 11/6/2013

Signature:

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☑	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☐	☑
3. Will the proposed action impair the character or quality of the existing community?	☑	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☑	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☑	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☑	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☐	☑
b. public / private wastewater treatment utilities?	☐	☑
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☑	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☑	☐

	No, or small impact may occur	Moderate to large impact may occur
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☑	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☑	☐

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

2. The project will increase the intensity of use since the development of 54 apartments for seniors will occur on vacant land. Mitigation is proposed by providing sufficient stormwater controls to prevent floding, and water quality treament to reduce impacts to water courses. Traffic mitigation is considered to be mitigated by limiting occupancy to an over-55 years age group. Excess on-site parking is provided to eliminate off-street parking impacts. The site is on the County Bus route which affords opportunity to mitigate traffic. New local street sidewalks to be constructed will also help to mitigate traffic. The proposed landscaping, consisting of landscaled buffers, new trees, shrubs and decorative fencing throughout, will mitigate visual impacts. An erosion control plan in conformance with the NYS Stormwater Design Manual will be used to offset temporary impacts of erosion.

7a. Water supply: The water demand for the project of 54 units with average of a two-person occupancy is about 10,800 gallons per day. United Water Westchester provides 7.6 million gallons per day and the increase is nominal due to this project and should not impact the facilities. Mitigation of water use is provided in limiting the occupancy to an over-55 age group.

7b. Wastewater Treament: The project is in the County's Blind Brook Sewer District and sewage flow will be treated at the Blind Brook Treatment Plant which has a capacity of 5 mgd and is currently operating at 3.3 mgd. City-owned sewers at the site are adequately sized to handle the increased flow from this project. Therefore, given the reduced water use and in turn sewage generation, the project should not adversely impact these facilities.

Long term impacts are the same as short term impacts described above.

Cumulative impacts of the development are limited due to the lack of other new projects of this type in the area.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT

CITY COUNCIL AGENDA

NO. 7 DEPT.: City Manager's Office DATE: October 22, 2014

CONTACT: Frank J. Culross, City Manager

AGENDA ITEM: Continuation of Public Hearing to amend local law Chapter 197, "Zoning", of the Rye City Code by adding Section 197-15, "Special Permit for Historic Preservation in the B-2 Central Business District" to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER 197
SECTION 15

RECOMMENDATION: That the City Council continue the Public Hearing to add a new section to Chapter 197, "Zoning".

IMPACT: ☐ Environmental ☐ Fiscal ☒ Neighborhood ☐ Other:

BACKGROUND: Council is asked to consider the addition of a new Section to the Zoning Law, 197-15, "Special Permit for Historic Preservation in the B-2 Central Business District" to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council.

See attached Draft Local Law.

CITY OF RYE
LOCAL LAW NO. 2014

A local law to amend the City Code of the City of Rye Chapter 197 "Zoning" by adding Section 197-15 "Special Permit for Historic Preservation in the B-2 Central Business District" to permit banks on the first floor of a building when certain conditions are met upon approval of a Special Use Permit by the City Council as follows:

Section 1:
Article IV, *Use Regulations*, of the Code of the City of Rye is hereby amended to add the following:

§ 197-15. Banks in the B-2, Central Business District.

A. The Council creates this incentive-based special use permit in order to maintain the historic elements and convenience retail storefronts the contribute to the character of the City's Central Business District. As such, the Council adopts a policy to incentivize the preservation of the character of the Central Business District by allowing in the B-2 Central Business District banks to be located on the first floor of a building located on the condition that the historic nature of the building or its contributing elements, are preserved and maintained. The purpose of this law is to advance the following goals:

1. **Promoting the preservation of buildings that enhance and define the historic nature of Rye over the past decades.**
2. **Balancing the desire for historic preservation of certain buildings with the need to allow for financially viable uses of buildings.**
3. **Furthering the City's goal to provide incentive zoning techniques for development projects that meet a defined community need and desire such as historic preservation and maintaining community character.**

B. Procedures for Special Use Permits – permit applications.

a. **Applications for a permit shall be made to the City Clerk on forms furnished by the City Clerk's office.**
b. **An application for a permit shall not be deemed complete if it does not include all of the following information:**
    i. **The application fee;**
    ii. **Complete plans for the building(s), or portions thereof, that the applicant believes furthers the intent of this Section and for the bank or other uses of the building(s) on the property.**
    iii. **Full environmental assessment form in accordance with the State Environmental Quality Review Act, except that a short**

environmental assessment form may be submitted at the discretion of the City Council.

iv. **A narrative from the applicant setting forth the reasons why the proposed building(s) to be preserved would further the intent of this Section and what specific measures would be implemented to preserve the community character that the City wishes to maintain.**

v. **The City Council may require additional information as needed, such as the proposed plan to maintain the historic nature of the building(s).**

vi. **By filing an application, the applicant thereby consents to the entry onto his land by the City Council or other agents designated by the City Council for the purpose of undertaking any investigation, examination, survey or other activity necessary for the purposes of this chapter.**

C. Special Use Permit Requirements; determining historic significance of development plan.

1. **The Council will undertake a review of an application pursuant to this Section in a timely fashion and shall act within a reasonable period of time given the complexity of the application and the circumstances.**
2. **The Council may, at its sole discretion, refer any application for this Special Permit for Historic Preservation to the Landmarks Committee for its review and comment.**
3. **If the application is referred to the Landmarks Advisory Committee, the Committee shall provide any comments to the Council within thirty (30) days of the referral.**
4. **The City Council shall then review the development plan to determine if it furthers the goals and intent of this Section. The Applicant shall bear the burden of establishing why its building(s), or portions thereof, are an integral part of the historic nature of the B-2 Central Business District and that its application should be considered for the special use permit.**
5. **If the Council finds that the application furthers the intent of this Section, it shall simultaneously consider the application for the Special Use Permit and Site Development Plan in accordance with Rye City Code § 197-7. The City Council shall hold a public hearing to consider the approval of both the Special Use Permit and Site Development Plan.**
6. **As part of any approval of the Special Use Permit and Site Development Plan, the City Council shall consider the following conditions as part of its approval:**
    a. **A restrictive covenant that preserves the building(s), or portions thereof, in its current state and any modifications to such restrictive covenant shall be reviewed and approved by the City Council; and/or**
    b. **A deed restriction that preserves the building(s), or portions thereof, in its current state and any modifications to such deed restriction can only be approved by the City Council; and/or**

c. **A façade easement or other restrictive easement that preserves the building(s), or portions thereof, in its current state and any modifications to such easement can only be approved by the City Council; and**

d. **All covenants, restrictions, and/or easements shall be recorded in the County Clerk's office.**

e. **A maintenance plan that ensures the continued upkeep of the preserved building(s), or portions thereof.**

f. **A community amenity such as landscaping or other improvement to further enhance the community character in the area near the proposed development.**

g. **Any other condition that the City Council deems necessary to preserve the historical nature of the building(s) and to ensure that such preservation will continue into the future regardless of the owner.**

Section 3.
Section 197-86, Table of Regulations: Table B, Business Districts-Use Regulations, Column 1, Permitted Main Uses, B-2 Central Business Districts, of the Code of the City of Rye, New York is hereby amended to amend subsection (1) to read as follows:

(1) Nonresidence main uses permitted in B-1 Districts without restrictions as to location and conversions of existing buildings, except that offices for clerical, administrative, professional and agency uses shall not be located on the first floor of a building within the A Parking District, and banks shall not be permitted on the first floor of a building in the B-2 Central Business District**, except where approved by the City Council pursuant to §197-15.**

Section 2.
If any clause, sentence, paragraph, section or part of any section of this title shall be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair or invalidate the remainder thereof, but shall be confined in its operation to the clause, sentence, paragraph, section or part thereof directly involved in the controversy and in which such judgment shall have been rendered.

Section 3: This local law will take effect immediately on filing in the office of the Secretary of State.

NOTE: Proposed additions are shown in **underline and bold** and proposed deletions are shown in ~~strikethrough~~.

CITY COUNCIL AGENDA

NO. 8 DEPT.: City Manager's Office DATE: October 22, 2014

CONTACT: Frank J. Culross, City Manager

ACTION: Continuation of Public Hearing to amend Local Law Chapter 76, "Dogs", Section 76-5, "Running at large prohibited" and Section 76-6, "When Leash Required", to establish regulations for the leashing of dogs at Rye Town Park.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION:

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☒ Other:

BACKGROUND: A recommendation was made to amend Chapter 76, "Dogs" of the Rye City Code to permit dogs to be "at large" in Rye Town Park from 6:00 a.m. to 9:00 a.m. Coupled with the amendment is the suggestion that signage should be placed in the park advising early morning park visitors of the policy to allow dogs off leash until 9 a.m. After 9:00 a.m. all dogs must remain leashed in all areas of the park.

See attached draft Local Law.

CITY OF RYE
LOCAL LAW NO.   2014

A local law to amend Chapter 76 "Dogs" of the Code of the City of Rye to allow dogs to be at large during certain hours at Rye Town Park as follows:

Section 1: Chapter 76, Dogs

§ 76-5. Running at large prohibited; exceptions

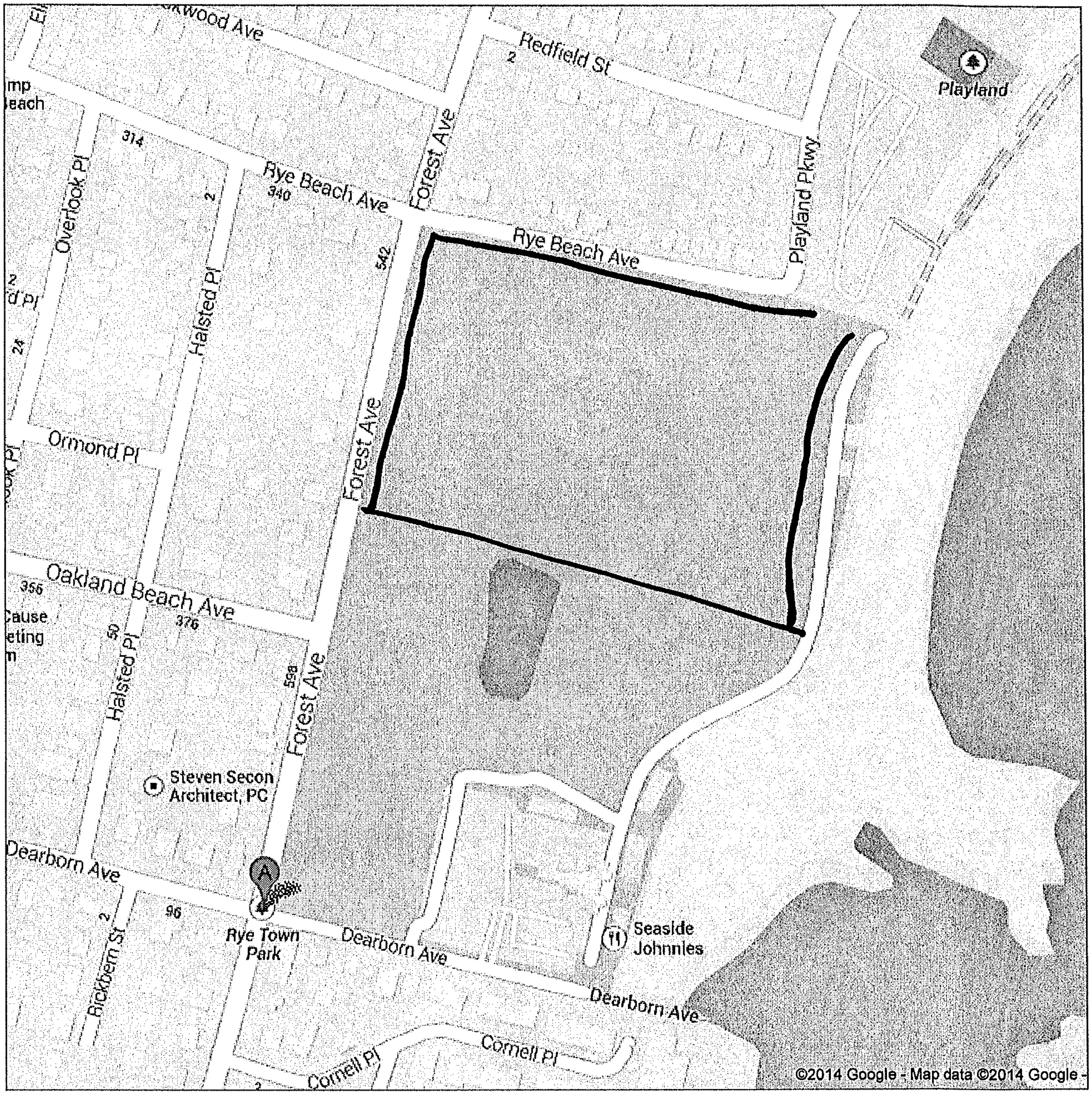
A. **Except as permitted in § 76-5(B), n**o person owning, harboring or having the custody and control of a dog shall permit such dog to be at large in the City of Rye, elsewhere than on the premises of the owner, except if it is on the premises of another person with the knowledge and assent of such other person.
B. **During the hours of 6 a.m. to 9 a.m., the owner, harborer or person having the custody and control of a dog visiting the designated areas in § 76-5(F) shall control such dog at all times, but need not restrain such dog by a chain or leash. The maximum number of dogs off-leash that any one person shall have custody and control over is three. At no time is a dog permitted in any ponds, on sidewalks, paved paths or ball fields. After 9 a.m., all dogs must be chained or leashed in accordance with this Chapter.**
C. **Any person wishing to allow his/her dog(s) to run at large without being restrained by a chain or leash in Rye Town Park pursuant to this Section shall register his/her dog(s) with the Rye Town Park Commission annually. Any dog at large must have a valid registration tag affixed to his/her collar at all times when the dog(s) are at large in Rye Town Park**
D. **Any violation of this Chapter may result in a fine of up to $250 per violation and/or suspension or termination of the off-leash registration.**
E. **The registration fee will be set annually by the Rye Town Park Commission.**
F. **The designated areas within the City where dogs are permitted to run at large from 6 a.m. to 9 a.m. are:**
    a. **Rye Town Park in the grass area bounded by the walking path, Forest Avenue, Rye Beach Avenue and the duck pond (see annexed map).**

§ 76-6. When leash required.

Except as set forth in § 76-5(B) above, the owner, harborer or person having the custody and control of a dog in the City of Rye which is not on the premises of the owner or upon the premises of another person with the knowledge and consent of such person shall control and restrain such dog by a chain or leash not exceeding eight feet in length.

Section 2: This local law will take effect immediately on filing in the office of the Secretary of State.

Google



A. **Rye Town Park**
95 Dearborn Ave, Rye, NY
(914) 967-0965
3 reviews

CITY COUNCIL AGENDA

NO. 9	DEPT.: City Manager's Office CONTACT: Frank J. Culross, City Manager	DATE: October 22, 2014

AGENDA ITEM: Public Hearing to amend local law Chapter 165 , "Signs", of the Rye City Code by adding Section §165-10,"Regulation of banners", to establish regulations for banners on City owned ball field fences and utility poles on City property.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER 165
SECTION 10

RECOMMENDATION: That the City Council hold a Public Hearing to amend Chapter 165, "Signs".

IMPACT: ☐ Environmental ☐ Fiscal ☒ Neighborhood ☐ Other:

BACKGROUND: Council is asked to consider amendments to Chapter 165, "Signs" of the Rye City Code to allow for the display of banners at City of Rye ball fields and utility poles on City property.

See attached Draft Local Law.

CITY OF RYE
LOCAL LAW NO. 2014

A local law to amend Chapter 165 "Signs" of the Code of the City of Rye by adding a new §165-10 to establish regulations for banners on City owned field fences and utility poles located on City propertyand to renumber the remaining section of the Chapter as follows:

Section 1: Chapter 165, Signs.

§ 165-10. Banners on City owned field fences and utility poles.

A. Banners are permitted on City owned field fences upon approval from the Board of Architectural Review. All permits will be issued by the City Clerk's office and are seasonal and will be approved for the spring, summer and/or fall season. No banners shall be displayed during the winter season.

(1) When reviewing applications for the display of banners on field fences, the Board of Architectural Review shall take into consideration the size of the banner, the design, and the colors to ensure that such are in harmony are appropriate for the placement on the field fences.

(2) In no event shall banners on field fences be larger than 32 square feet.

(3) The Board of Architectural Review will consider applications for banners on a first come/first serve basis and has the authority to limit the number of banners at any given time depending on the availability of fence space.

(4) The Board of Architectural Review may consult with the Recreation Commission to determine whether a particular banner is consistent with the type of activities performed on a given field area.

(5) Applications for the spring season must be received on or before February 1, for the summer season by May 1, and the fall season by August 1.

(6) The City reserves discretion as to the exact placement of the banners on the field fences.

B. Banners are permitted on City utility poles in the Central Business District upon receipt of a permit from the Board of Architectural Review.

(1) All banners to be placed on the utility poles shall be 30" by 60".

(2) Only banners supporting or advertising not-for-profit organizations shall be considered by the Board of Architectural Review.

(3) When reviewing applications, the Board of Architectural Review shall take into consideration the design and colors of the banners to ensure that such are appropriate for display in the Central Business District.

(4) The Board of Architectural Review will consider applications for banners on a first come/first serve basis.

(5) The maximum permitted time for display is twenty-one (21) days.

C. **Once a permit is issued, the permittee is required to provide the banner(s) to the Building Department for display.The City shall display and remove all banners.**

D. **If an application for a banner is disapproved, the applicant may appeal the decision pursuant to Chapter 53, § 53-10 as set forth in § 165-2(D) of this Chapter.**

E. **The permit fees shall be set annually by resolution of the City Council.**

§ 165-1~~0~~1. Severability.

If any phrase, sentence, part, section, subsection, or other portion of this chapter or any application thereof to any person or circumstance is declared void, unconstitutional or invalid for any reason, then such word, phrase, sentence, part, section, subsection or other portion, or the proscribed application thereof, shall be severable, and the remaining provisions of this chapter, an all applications thereof, not having been declared void, unconstitutional or invalid, shall remain in full force and effect.

Section 2: This local law will take effect immediately on filing in the office of the Secretary of State.

CITY COUNCIL AGENDA

NO. 11	DEPT.: City Council CONTACT: Julie Killian, Council member	DATE: October 22, 2014

AGENDA ITEM: Consideration for the City of Rye to join Sustainable Westchester.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council consider joining Sustainable Westchester.

IMPACT: ☒ Environmental ☐ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND: The Sustainability Committee recommends that the City join Sustainable Westchester which is a consortium of Westchester County local governments that facilitates effective sustainability initiatives, engages community stakeholders, and shares tools, resources, and incentives to create more healthy, vibrant and attractive communities. The organization is the result of a union between the Northern Westchester Energy Action Consortium or NWEAC and the Southern Westchester Energy Action Consortium known as SWEAC. The annual membership fee for the City is $1,000.

Additional information on the Sustainable Westchester organization can be found on their website: http://sustainablewestchester.org

CITY COUNCIL AGENDA

NO. 12 DEPT.: City Manager DATE: October 22, 2014

CONTACT: Frank J. Culross, City Manager

AGENDA ITEM: Authorization for Silverberg Zalantis LLP to represent the City of Rye in the Article 78 proceeding commenced by Douglas Liman.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council authorize Silverberg Zalantis LLP to represent the City at a rate not to exceed $280 per hour.

IMPACT: ☐ Environmental ☒ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND: The City was served with an Article 78 proceeding, *Douglas E. Liman v. Nick Everett, Martha Monserrate, Laura Brett, Barbara Cummings, Hugh Greechan, Peter Olsen, Alfred Vitiello, constituting the Planning Commission of the City of Rye, Pankaj Gupta and Emily Gupta, Pam McGuire and Eugene McGuire,* seeking to vacate and nullify actions taken by the Planning Commission in approving a development project proposed by Applicants Pankaj and Emily Gupta. The petition seeks an Order annulling the Planning Commission's Resolution granting a Wetland and Watercourse Permit to the applicants. The Council is asked to authorize Silverberg Zalantis LLP to defend the city in this matter. The expense for legal fees will be paid by the City and are not to exceed $10,000.

See attached Engagement letter.

SILVERBERG ZALANTIS LLP

Law Offices
Talleyrand Office Park
220 White Plains Road, 5th Fl.
Tarrytown, New York 10591
Tel. (914) 682-0707
Fax. (914) 682-0708
www.szlawfirm.net

October 14, 2014

BY E-MAIL

Joseph A. Sack, Esq.
Mayor City of Rye
Rye City Hall
1051 Boston Post Road
Rye, NY 10580

Re: Engagement Letter

Dear Mayor Sack:

We are pleased to confirm the terms of our engagement as required by the Joint Order of the Appellate Divisions of the Supreme Court of the State of New York and Part 1215 to Title 22 of the Official Compilation of Codes, Rules and Regulations of the State of New York, effective March 4, 2002.

Please review the enclosed Statement of Client's Rights and Responsibilities.

SCOPE OF ENGAGEMENT

We shall represent and defend the City of Rye Respondents in the Article 78 proceeding brought by Douglas Liman regarding the Gupta application ("Scope of Representation"). The understanding is that the City shall provide our firm with a copy of the entire record of proceedings with respect to this application so that we may prepare the Certified Record.

This engagement does not include any appeals to an appellate court. All of our services to be provided pursuant to the Scope of Our Representation shall end, unless otherwise expressly agreed in a writing signed by us, when we have completed all tasks assigned to us outlined in the Scope of Our Representation.

FEES, EXPENSES AND BILLING PRACTICE

We shall perform our services based upon the following fee schedule: $280 per hour for partners, $250 per hour for counsel to the firm and $210 per hour for associates.

I will be primarily responsible for this matter but we will assign personnel as may be warranted under the circumstances.

We review our fee schedule once each year and will advise you in advance of any proposed increase in our hourly fee schedule prior to implementing any change.

In addition, you will be responsible to us for any disbursements and expenses that may be incurred by us in connection with the Scope of Our Representation. Such disbursements and expenses may be included on our regular invoice or submitted separately. Such disbursements and expenses may include, but not necessarily be limited to, filing fees, expert fees, photocopying charges, messenger charges, fax charges, postage, telephone toll calls, and the like. In certain instances, we will forward the invoices for such services to you for direct payment to the service provider.

NOTE: After receiving our invoice, we expect that you will promptly remit payment. All fees are due within thirty (30) days of the date of invoice.

NO GUARANTEE OF OUTCOME

Please be advised that if your matter involves the consent or compliance of other individuals or entities, litigation or action of an administrative agency or body we cannot guarantee the outcome of your matter.

RIGHT TO ARBITRATION

In the event that a dispute arises between us relating to our fees, you may have the right to arbitration of the dispute pursuant to Part 137 of the Rules of the Chief Administrator of the Courts, a copy of which shall be provided to you upon request.

Please sign below indicating your acknowledgement of and agreement to the terms of this letter and the Scope of Our Representation on your behalf and return it to us. In the event the signed letter, is not received within five (5) days this offer to represent you shall automatically terminate. Should you have any questions regarding our engagement, please do not hesitate to call us.

It will be our pleasure to be of service to you.

Very truly yours,

SILVERBERG ZALANTIS LLP

Katherine Zalantis, Partner

SMS:no
Enclosure

AGREED:

City of Rye

By:______________________________
Joseph A. Sack, Mayor

STATEMENT OF CLIENT'S RIGHTS

The Departments of the Appellate Division of the Supreme Court, pursuant to the authority vested in them, do hereby amend, effective April 15, 2013, Part 1210 of the Official Compilation of Codes Rules, and Regulations of the State of New York, as follows:

1. You are entitled to be treated with courtesy and consideration at all times by your lawyer and the other lawyers and nonlawyer personnel in your lawyer's office.

2. You are entitled to have your attorney handle your legal matter competently and diligently, in accordance with the highest standards of the profession. If you are not satisfied with how your matter is being handled, you have the right to discharge your attorney and terminate the attorney-client relationship at any time. (Court approval may be required in some matters, and your attorney may have a claim against you for the value of services rendered to you up to the point of discharge.)

3. You are entitled to your lawyer's independent professional judgment and undivided loyalty uncompromised by conflicts of interest.

4. You are entitled to be charged reasonable fees and expenses and to have your lawyer explain before or within a reasonable time after commencement of the representation how the fees and expenses will be computed and the manner and frequency of billing. You are entitled to request and receive a written itemized bill from your attorney at reasonable intervals. You may refuse to enter into any arrangement for fees and expenses that you find unsatisfactory. In the event of a fee dispute, you may have the right to seek arbitration; your attorney will provide you with the necessary information regarding arbitration in the event of a fee dispute, or upon your request.

5. You are entitled to have your questions and concerns addressed promptly and to receive a prompt reply to your letters, telephone calls, emails, faxes, and other communications.

6. You are entitled to be kept reasonably informed as to the status of your matter and are entitled to have your attorney promptly comply with your reasonable requests for information, including your requests for copies of papers relevant to the matter. You are entitled to sufficient information to allow you to participate meaningfully in the development of your matter and make informed decisions regarding the representation.

7. You are entitled to have your legitimate objectives respected by your attorney. In particular, the decision of whether to settle your matter is yours and not your lawyer's. (Court approval of a settlement is required in some matters.)

8. You have the right to privacy in your communications with your lawyer and to have your confidential information preserved by your lawyer to the extent required by law.

9. You are entitled to have your attorney conduct himself or herself ethically in accordance with the New York Rules of Professional Conduct.

10. You may not be refused representation on the basis of race, creed, color, religion, sex, sexual orientation, age, national origin or disability.

STATEMENT OF CLIENT'S RESPONSIBILITIES

Reciprocal trust, courtesy and respect are the hallmarks of the attorney-client relationship. Within that relationship, the client looks to the attorney for expertise, education, sound judgment, protection, advocacy and representation. These expectations can be achieved only if the client fulfills the following responsibilities:

1. The client is expected to treat the lawyer and the lawyer's staff with courtesy and consideration.

2. The client's relationship with the lawyer must be one of complete candor and the lawyer must be apprised of all facts or circumstances of the matter being handled by the lawyer even if the client believes that those facts may be detrimental to the client's cause or unflattering to the client.

3. The client must honor the fee arrangement as agreed to with the lawyer, in accordance with law.

4. All bills for services rendered which are tendered to the client pursuant to the agreed upon fee arrangement should be paid promptly.

5. The client may withdraw from the attorney-client relationship, subject to financial commitments under the agreed to fee arrangement, and, in certain circumstances, subject to court approval.

6. Although the client should expect that his or her correspondence, telephone calls and other communications will be answered within a reasonable time frame, the client should recognize that the lawyer has other clients equally demanding of the lawyer's time and attention.

7. The client should maintain contact with the lawyer, promptly notify the lawyer of any change in telephone number or address and respond promptly to a request by the lawyer for information and cooperation.

8. The client must realize that the lawyer need respect only legitimate objectives of the client and that the lawyer will not advocate or propose positions which are unprofessional or contrary to law or the Lawyer's Code of Professional Responsibility.

9. The lawyer may be unable to accept a case if the lawyer has previous professional commitments which will result in inadequate time being available for the proper representation of a new client.

A lawyer is under no obligation to accept a client if the lawyer determines that the cause of the client is without merit, a conflict of interest would exist or that a suitable working relationship with the client is not likely.

Katherine Zalantis

Partner

Katherine Zalantis is a partner at Silverberg Zalantis LLP. Prior to joining Silverberg Zalantis LLP, she was a partner with one of the 50 largest law firms in the United States. Her areas of practice include zoning and land use, municipal, real estate and commercial law. She has substantial litigation experience in all of these areas, in both the New York State and Federal Courts. In addition, she has handled numerous appeals relating primarily to zoning and planning, environmental and general municipal law, including two cases of first impression before the Court of Appeals involving cellular service and the federal Telecommunications Act. She also has trial experience ranging from a jury trial in the Supreme Court, Bronx County to a complex damages hearing in the Commercial Part of Supreme Court, Westchester County. Kathy has worked on many real estate transactions representing individuals, small and large businesses, commercial landlords and lending institutions. She also is in charge of the firm's Connecticut zoning, land use and real estate practice.

In addition to providing services to corporations and individuals, Kathy continues to provide legal services to several municipalities including the Villages of Mamaroneck and New Hempstead and the Town of Haverstraw.

Kathy has been a speaker at a number of CLE programs on land use and zoning topics, including RLUIPA, SEQRA and Climate Change, and continues to contribute articles to major publications on topics such as <u>SEQRA</u> and <u>RLUIPA</u>. She also currently serves as co-chair of the Environmental and Land Use Committee of the Westchester Women's Bar Association.

Some of the cases where she received favorable results for her clients include the following published decisions:

- *DMAC LLC v. City of Peekskill*, 09 civ 5093 (SDNY 2012)
- Edwards v. Davison, *941 N.Y.S.2d 873 (2d Dep't 2012*)
- *South Liberty Partners LP v. Town of Haverstraw*, 82 A.D.3d. 956 (2d Dep't 2011)
- *Matter of Henderson v. Zoning Board of Appeals*, 72 A.D.3d 684, 897 N.Y.S2d 518 (2d Dep't 2010)

- *Matter of Vinrus Corp. v. Village of Pelham Manor Building Inspector, 66 A.D.3d 690, 885 N.Y.S.2d 444 (2d Dep't 2009)*
- *Matter of Lake Grove Partners LLC v. Middleton*, 29 A.D.3d 794, 814 N.Y.S.2d 741 (2d Dep't 2006)
- *Village of Mamaroneck v. Mamaroneck Affordable Condominium Corp.*, 13 A.D.3d 361, 786 N.Y.S.2d 103 (2d Dep't 2004)
- *Regatta Condominium Association v. Village of Mamaroneck*, 303 A.D.2d 737, 758 N.Y.S.2d 348 (2d Dep't 2003)
- *Kaufman v. Office of Building Inspector*, 295 A.D.2d 349, 743 N.Y.S.2d 880 (2d Dep't 2002)
- *Harbour View Racquet Club, Inc. v. Village of Mamaroneck*, 287 A.D.2d 437, 731 N.Y.S.2d 71 (2d Dep't 2001)
- *Paintball Sports, Inc. v. Pierpont*, 284 A.D.2d 537, 727 N.Y.S.2d 466 (2d Dep't 2001)
- *BMW Financial Services NA, Inc. v. Hassan*, 273 A.D.2d 428, 710 N.Y.S.2d 607 (2d Dep't 2000)

She obtained her undergraduate Bachelor of Arts degree from SUNY Stony Brook and graduated *cum laude* from Pace University School of Law in 1995, where after serving as a staff member of the Pace Law Review, she was appointed to the position of Executive Editor.

Jurisdictions Admitted to Practice

New York
Connecticut
U.S. District Courts (Southern, Eastern, Northern and Western Districts)

Steven M. Silverberg

Steven M. Silverberg is a partner in Silverberg Zalantis LLP. He has extensive experience in representing developers and municipalities in land use, zoning and environmental law matters including litigation and appeals in the New York State and Federal Courts. Starting his career as an assistant district attorney and then working as a town attorney, providing counsel in such diverse areas as land use, zoning, contracts, construction, telecommunications and employment law, prepared him for the services he continues to provide to businesses, municipalities and individuals. In addition to the approval process for residential and commercial development, he has negotiated complex development agreements and counseled clients in the financing of commercial projects.

Steve serves as counsel to several corporations providing services ranging from corporate organization and shareholders agreements to employment litigation. He has also counseled clients through all stages of construction projects including drafting of construction contracts, as well as litigation and arbitration of construction claims.

He has previously served as special counsel for the Village of Wesley Hills, the Town of Eastchester, the Village of Bronxville, Villages of Pelham Manor, Tarrytown and Suffern, the Greene County IDA, the Larchmont Public Library and the White Plains Housing Authority. Along with Kathy Zalantis, Steve is Planning and Zoning attorney for the Town of Haverstraw, Village of New Hempstead Village Attorney and serves as special counsel to the City of Mount Vernon City Council, City of White Plains City Council and the Villages of Mamaroneck and West Haverstraw. Previously, as attorney to the Town of Mamaroneck and Mamaroneck Village Attorney, he counseled all Town and Village boards and commissions. Steve has also served as counsel to the Town of Greenburgh Zoning Board of Appeals and the Greenburgh Housing Authority, and was a Deputy Town Attorney in the Town of Greenburgh

Steve is a former Adjunct Associate Professor of Law at New York Law School where he taught state and local government law. He is author of "Subdivisions and Site Plan Review", a chapter in Warren's Weed New York Real Property Law (Matthew Bender, 1990), co-author of the book Wetlands and Coastal Zone Regulation and Compliance (John Wiley & Sons, 1993) and a chapter in American Jurisprudence Proof of Facts 3d, Vol. 31, "Zoning Proof of Inverse Condemnation From Excessive Land Use Regulation" (Lawyers Cooperative Publishing, 1995). He also continues to periodically contribute articles to various publications on subjects such as condemnation and RLUIPA and serves as a member of the Board of Editors of the New York

Real Estate Law Reporter®. Since 2010 Steve has been named to Metro New York Super Lawyers and has received the highest possible attorney rating by the Martindale Hubbell and Avvo lawyer directories. Some of the reported cases he has either briefed or argued include:

- Avon Group LLC v. Mosdos Chofetz Chaim, Inc.12-CV-3827 (ER) United State District Court (SDNY, 2012)
- Edwards v. Davison, *941 N.Y.S.2d 873 (2d Dep't 2012)*
- *South Liberty Partners LP v. Town of Haverstraw*, 82 A.D.3d 956, 918 N.Y.S.2d 563 (2d Dep't 2011)
- *Matter of Vinrus Corp. v. Village of Pelham Manor Building Inspector, 66 A.D.3d 690, 885 N.Y.S.2d 444 (2d Dep't 2009)*
- *Xavier Contracting LLC v. City of Rye,* 29 A.D.3d 687, 815 N.Y.S.2d 638 (2d Dep't 2006)
- *Chambers v. Old Stone Hill*, 1 N.Y.3d 424, 774 N.Y.S.2d 866 (2004)
- *Bronxville Field Club v. Irwin Davison*, 305 A.D.2d 591, 759 N.Y.S.2d 382 (2d Dep't 2003)
- *Wickes v. Kaplan*, 304 A.D.2d 769, 758 N.Y.S.2d 383 (2nd Dept. 2003)

In addition, he served as chair of the Environmental Law Committee of the Westchester County Bar Association from 1998 to 2005, as a member of the Board of Directors of the Westchester Municipal Planning Federation from 2001 to 2008, Chair of the planning board of the Village of Piermont from 2008 to 2009, Trustee on the Piermont Village Board from 2010 to 2011 and January 2013 to the present, Chair of the Education Board of the American Bar Association Law Practice Management Section (LPM) from 2009 to 2010 and the governing Council of LPM from (2009 to 2012).

Steve is a graduate of Brooklyn College and the N.Y.U. School of Law.

Jurisdictions Admitted to Practice

New York
U.S. District Courts (Southern and Eastern Districts)
U.S. Supreme Court
U.S. Court of Appeals, Second Circuit

CITY COUNCIL AGENDA

NO. 13 DEPT.: Public Works DATE: October 22, 2014

CONTACT: Ryan X. Coyne, City Engineer

AGENDA ITEM: Authorization for City Manager to execute an Inter-municipal Agreement with the County of Westchester authorizing the operation of a transfer station at Public Works for organic waste.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council authorize the City Manager to sign an Inter-municipal Agreement with the County of Westchester authorizing the operation of a transfer station at the Public Works Department (141 Oakland Beach Avenue) for organic waste.

IMPACT: ☐ Environmental ☒ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND: This Agreement will extend the current agreement with Westchester County for the operation of a transfer station at the Public Works Department. The Department of Public Works chips wood waste and collects organic waste from residents; this organic waste then gets loaded into trailers which the County of Westchester removes. The City incurs a substantial savings for disposal of the organic waste by such agreement; effective January, 2014 the tip-fee is $16.56 per ton. The term of the Agreement is from April 1, 2013 to March 31, 2018.

See attached Agreement.

Westchester
gov.com

Office of the County Executive
Robert P. Astorino

Department of Environmental Facilities

Thomas J. Lauro, P.E.
Commissioner

October 15, 2014

Mayor Joseph A. Sack
City of Rye
1051 Boston Post Road
Rye, New York 10580

Dear Mayor Sack,

On December 16, 2013, the Westchester County Board of Legislators approved the IMA for Transfer of Organic Waste for Refuse Disposal District #1.

Effective January 2014 the tip-fee will be $16.56 per ton which will be subject to an Adjustment Factor Equal to the Consumer Price Index every January 1, thereafter.

Please return three (3) signed copies of the IMA together with the completed Certificate of Authority, Municipal Cooperation, and a certified copy of your authorized resolution as soon as possible.

If you have any questions please feel free to contact me at #914-813-5453.

Sincerely,

Mario A. Parise
Director of Operations
Solid Waste Division

MAP/ns

File: IMA Organic Waste

Division of Solid Waste
Wastewater Treatment
Water Agency

270 North Avenue
New Rochelle, New York 10801 Telephone: (914) 813-5400 Fax: (914) 813-5460 Website: westchestergov.com

REDUCE
REUSE
RECYCLE

INTERMUNICIPAL AGREEMENT (IMA)
for the
ORGANIC YARD WASTE TRANSFER PROGRAM

Instructions for completing the IMA:

1. **Complete page one (1), four (4), the Municipality's Acknowledgement, Certificate of Authority, and Schedule "A" of IMA.**

   Page 1: Fill-in date IMA is being signed, name of municipality and address in spaces provided.

   Page 4: Fill-in Municipal Department and address for where correspondence related to the IMA should be sent and sign under "The Municipality".

   Schedule "A": Specify the location (address) of the transfer station and current users. List all current transfer station users including other municipalities, local residents and local landscapers.

2. **Make three (3) copies of the IMA.**

3. **Execute all three copies with original signatures** appearing on the Municipal Acknowledgment and the Certificate of Authority.

4. **Return the three (3) signed copies, along with a copy of documentation indicating compliance with SEQRA for the use and operation of a local organic yard waste transfer site, to:**

Mario Parise
Westchester County Dept. of Environmental Facilities
270 North Avenue (6th floor)
New Rochelle, NY 10801

When all the above requirements are fulfilled, the County will execute its portion of the Agreement and return one original copy to the municipality.

Any questions? Contact Mario Parise at (914) 813-5453

DISTRICT MEMBER IMA

AGREEMENT made this ____ day of ____________, 201__ by and between

THE COUNTY OF WESTCHESTER, a municipal corporation of the State of New York, having an office and place of business in the Michaelian Office Building, 148 Martine Avenue, White Plains, New York 10601 (hereinafter referred to as the "County"), acting on behalf of the Westchester County Refuse Disposal District No. 1 (the "District")

and

____, a municipal corporation of the State of New York having an office and principal place of business at ____
(hereinafter referred to as the "Municipality")

WHEREAS, in order to divert additional recyclable materials from the waste stream, the County is initiating an Organic Yard Waste Management Program (the "Program") with municipalities within the District; and

WHEREAS, the Municipality desires to participate in the Program.

NOW, THEREFORE, in consideration of the terms and conditions contained herein, the parties agree as follows:

1. **Municipality's Responsibilities:**

(a) The Municipality shall collect organic yard waste within its boundaries and transport same to the organic yard waste transfer site (the "Transfer Site") specified in Schedule "A" which is attached hereto and made a part hereof. Organic yard waste shall be limited to grass, leaves, brush and wood waste not to exceed three inches (3") in diameter by four feet (4') in length.

(b) The Municipality, either individually or by agreement with another municipality within the District, shall designate the Transfer Site for such purpose, subject to County approval, and shall take any legally required action necessary to register or receive a permit to operate the Transfer Site. The Municipality shall conduct such site-specific environmental reviews as necessary to comply with the State Environmental Quality Review Act ("SEQRA") and its implementing regulations, coordinating such review with the County as an involved agency. The Municipality shall include with this signed Agreement evidence of its compliance with SEQRA, e.g., a Negative Declaration, a Findings Statement or, in the case of a Type II action, the minutes or a Resolution of the Municipality's governing board including a statement as to its Type II classification. In the event that the Municipality and another municipality enter into an agreement to jointly provide the Transfer Site, that agreement shall be appended to this Agreement.

(c) The Municipality shall negotiate in good faith with any other municipality within the District that wishes to use the Transfer Site, but the Municipality shall not charge a fee above the tip fee for garbage at the County's Resource Recovery Facility, as such tip fee may be adjusted from time to time. The names of all municipalities using the Transfer Site shall be included in Schedule "A".

(d) The Transfer Site shall be operated in accordance with Schedule "B" which is attached hereto and made a part hereof.

2. **County's Responsibilities:** The County, either directly or through an agent, shall enter into agreements with one or more contractors operating composting facilities for the recycling of organic yard waste collected by the Municipality. The County shall also arrange for transporting yard waste from the Transfer Site to the composting facilities and shall pay for such transportation and disposal costs.

3. **Term:** The term of this Agreement shall commence on April 1, 2013 and terminate on March 31, 2018, unless sooner terminated as hereinafter provided.

4. **Payment:** For the services to be rendered by the County pursuant to Paragraph "2" above, the Municipality shall pay fees to the County in accordance with the fee schedule set forth in Schedule "C" which is attached hereto and made a part hereof. If the Municipality hosts the Transfer Site for use by itself and other municipalities within the District, the Municipality shall be responsible for paying the County for the full quantity of waste hauled from the Transfer Site. Payment shall be made within thirty (30) days of receipt of a bill from the County, by check payable to "Refuse Disposal District No. 1 c/o Westchester County Department of Environmental Facilities". Payment shall be mailed or delivered to the Division of Solid Waste Management, Westchester County Department of Environmental Facilities, 270 North Avenue, New Rochelle, New York 10801.

5. **Reports:** No later than March 1st of each year, the Municipality shall provide a report setting forth the total tons or cubic yardage of organic yard waste collected from each participating municipality using the Transfer Site during the preceding year.

6. **Executory Clause:** This Agreement shall be deemed executory only to the extent of money duly appropriated and made available by the County for the performance of the Program.

7. **Indemnification & Defense:** The Municipality agrees:
(a) that except for the amount, if any, of damage contributed to, caused by or resulting from the negligence of the County, the Municipality shall indemnify and hold harmless the County, its officers, employees and agents from and against any and all liability, damage, claims, demands, costs, judgments, fees, attorneys' fees or loss arising directly or indirectly out of the errors, omissions or unlawful or negligent acts hereunder by the Municipality or third parties under the direction or control of the Municipality; and

(b) to provide defense for and defend, at its sole expense, such claims, demands or causes of action directly or indirectly arising out of this Agreement, as described in subsection (a.) above, and to bear all other costs and expenses related thereto.

8. **Termination:** This Agreement may be terminated at any time by mutual agreement of the parties or upon thirty (30) days written notice by one party to the other party. In the event that this Agreement is terminated prior to the expiration date set forth in Paragraph 3 above, all fees and payments owing to the County shall be immediately due and payable by the Municipality.

9. **Assignment & Subcontracting:** Any purported delegation of duties or assignment of rights under this Agreement without the prior express written consent of the County is void. The Municipality shall not subcontract any part of its work or duties under this Agreement without the written consent of the County. All subcontracts shall provide that subcontractors are subject to all terms and conditions set forth in the contract documents. All work performed by a subcontractor shall be deemed work performed by the Municipality.

10. **Compliance with Law:** In executing their respective responsibilities under this Agreement, the County and the Municipality shall comply with all applicable federal, state and local laws, rules and regulations.

11. **No Discrimination:** The County and the Municipality shall not discriminate against any person on the basis of race, creed, religion, color, gender, age, national origin, ethnicity, alienage or citizenship status, disability, marital status, sexual orientation, familial status, genetic predisposition or carrier status in the performance of this Agreement.

12. **Notices:** All notices of any nature referred to in this Agreement shall be in writing and sent by registered or certified mail postage pre-paid, to the respective addresses set forth below or to such other addresses as the respective parties hereto may designate in writing:

To the County:

Deputy Commissioner
Division of Solid Waste Management
Department of Environmental Facilities
270 North Avenue
New Rochelle, New York 10801

with a copy to:

County Attorney
Michaelian Office Building, Room 600
148 Martine Avenue
White Plains, New York 10601

To the Municipality:

____
____
____
____

or to such other addresses as either party may designate by notice.

13. **No Agency:** Nothing herein contained shall be construed to create a co-partnership between the County and the Municipality or to constitute either party as the agent of the other.

14. **Entire Agreement:** This Agreement and its attachments constitute the entire Agreement between the parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments and writings. It shall not be released, discharged, changed or modified except by an instrument in writing signed by a duly authorized representative of each of the parties.

15. **Approval by the County Attorney:** This Agreement shall not be enforceable until executed on behalf of the parties and approved by the Office of the County Attorney.

16. **Counterparts:** This Agreement may be executed simultaneously in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

17. **Governing Law:** This Agreement shall be construed and enforced in accordance with the laws of the State of New York.

IN WITNESS WHEREOF, the County and the Municipality have caused this Agreement to be executed.

THE COUNTY OF WESTCHESTER

By ________________________________
Thomas J. Lauro, P.E.
Commissioner of Environmental Facilities

THE MUNICIPALITY

By ________________________________
(Name and title)

Authorized by Act No. 203-2013 adopted by the Board of Legislators of the County of Westchester on the 16th day of December, 2013.

Approved by the Board of Acquisition and Contract of the County of Westchester on the ____ day of ____________, 2014.

Approved as to form and
manner of execution:

____
Sr. Assistant County Attorney
County of Westchester
S/Vutera/DXF/93325/Organic Waste IMA District Member 2013 3-6-14

MUNICIPALITY'S ACKNOWLEDGEMENT

STATE OF NEW YORK)
) ss.:
COUNTY OF WESTCHESTER)

On this _________ day of ___________________, 201__, before me personally came _______________________________________, to me known, and known to me to be the ____________________________ of ____, the municipal corporation described in and which executed the within instrument, who being by me duly sworn did depose and say that he/she, the said _____________________________ resides at ____ and that he/she is ________________________________ of said municipal corporation.

____
Notary Public County

CERTIFICATE OF AUTHORITY
(Municipality)

I, ____,
(Officer other than officer signing contract)
certify that I am the ____ of the
(Title)

____
(Name of Municipality)

(the "Municipality") a corporation duly organized in good standing under the

____
(Law under which organized, e.g., the New York Village Law, Town Law, General Municipal Law)

named in the foregoing agreement that ____________________________________
(Person executing agreement)

who signed said agreement on behalf of the Municipality was, at the time of execution
____of the Municipality,
(Title of such person),

that said agreement was duly signed for on behalf of said Municipality by authority of its

____
(Town Board, Village Board, City Council)

thereunto duly authorized, and that such authority is in full force and effect at the date hereof.

____
(Signature)

STATE OF NEW YORK)
ss.:
COUNTY OF WESTCHESTER)

On this ______ day of ____________, 201__, before me personally came _____________
________________________ whose signature appears above, to me known, and know to be the
_____________________________ of ____________________________________,
(title)
the municipal corporation described in and which executed the above certificate, who being by me duly sworn did depose and say that he/she, the said ___________________
resides at ____, and
that he /she is the ________________________________ of said municipal corporation.
(title)

____
Notary Public County

SCHEDULE "A"

TRANSFER SITE LOCATION AND USERS
(to be completed by the Municipality)

SITE NAME & ADDRESS:

LIST OF CURRENT USERS:

Note: The Municipality shall conduct such site-specific environmental reviews as necessary to comply with the State Environmental Quality Review Act ("SEQRA") and its implementing regulations, coordinating such review with the County as an involved agency. The Municipality shall include with this signed Agreement evidence of its compliance with SEQRA, e.g., a Negative Declaration, a Findings Statement or, in the case of a Type II action, the minutes or a Resolution of the Municipality's governing board including a statement as to its Type II classification. In the event that the Municipality and another municipality enter into an agreement to *jointly provide* the Transfer Site, that agreement shall be appended to this Agreement.

SCHEDULE "B"

YARD WASTE TRANSFER SITE
OPERATIONAL REQUIREMENTS

The Host Municipality must:
Provide a site that is at least 1/2 acre in size and provides adequate space for 110 cubic yard trailers to enter, load and leave.

Register the site with the NYS Dept. of Environmental Conservation and conduct site specific environmental reviews as necessary to comply with SEQRA; coordinate such reviews with the County Dept. of Environmental Facilities as an "involved agency".

Provide a front end loader and qualified operator (The Loader must be able to reach 13 feet, 6 inches utilizing either municipally provided ramp or extended arms.)

Make site improvements necessary for this transfer station operation (i.e., a ramp for loading the waste or a loader capable of reaching a height of 13' 6")

Staff the site with municipal personnel at all times between 7 a.m. and 3 p.m.

Operate the site in a "load and go" manner whereby staged yard waste is loaded directly into provided trailers and trailers will immediately leave the site

Be responsible for any damage incurred to transfer trailers during loading

Prohibit and eliminate plastic bags and other contaminates within the organic yard waste (All contaminants, which are any materials other than yard waste as specified herein, and brown paper leaf bags, must be removed by the Municipality prior to loading. All costs related to contaminated loads shall be the responsibility of the host municipality.)

Accept organic yard waste from other District municipalities (Other District municipalities using the site would pay a tip fee to the host municipality as mutually agreed upon, but less than the current garbage tip fee.)

Accept organic waste from landscapers (Host municipalities may charge landscapers a fee for dumping.)

Keep adequate record of volumes delivered by other municipalities (Municipalities wishing to utilize this program but not allow other District municipalities access may do so at a payment equal to the tip fee for garbage.)

Any of these requirements may be modified for individual sites upon mutual agreement of the County and the host municipality.

SCHEDULE "C"

FEES

In consideration of the services provided by the County, the Municipality shall pay the County $16.32 per ton for the period from April 1, 2013 through December 31, 2013. Effective January 1, 2014, the Municipality shall pay the County at a rate subject to an annual adjustment factor equal to the percentage change in the Consumer Price Index for all Urban Consumers for New York, New York-Northeastern New Jersey as published by the U.S. Department of Labor, Bureau of Labor Statistics ("CPI").

However, if a District host-municipality accepts organic yard waste from a non-District municipality, it shall pay to the County a rate of $50.00 per ton for such non-District waste, subject to an annual CPI adjustment, which amount represents the County's actual disposal cost plus an administrative fee. To the extent that any non-District member joins the District during the term of this IMA, that municipality shall be entitled to an automatic rate adjustment to allow for the payment of the District rate. The County shall arrange for the transport of the yard waste to composting facilities outside the County

Other District municipalities using the Transfer Site shall pay a tip fee to the host municipality as mutually agreed upon, but in no event may it be higher than the municipal tipping fee for the Resource Recovery Facility, as such fee may be adjusted from time to time. Notwithstanding the above, if the Municipality excludes other municipalities from using the Transfer Site or fails to negotiate in good faith with them for such use, the Municipality shall pay the County at the rate per ton equal to the full annual municipal tipping fee for the Resource Recovery Facility, as such fee may be adjusted from time to time.

CITY COUNCIL AGENDA

NO. 14 DEPT.: Rye Merchants Association DATE: October 22, 2014
CONTACT: Sally Wright, Vice President

AGENDA ITEM: Consideration of the Rye Merchants Association request for amendment of the Farmers Market Agreement to extend the operating season by two additional weeks.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council consider approving the request.

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☒ Other:

BACKGROUND: The Rye Merchants Association sponsors Zeltsman Associates, Inc., dba 'Down to Earth Market' to operate a Farmers Market in the City of Rye on Sundays during the months of May to December. The current agreement has a season ending date of December 7, 2014. The Rye Merchants Association is requesting that the ending date be amended to December 21, 2014 allowing two more weeks to be open.

See attached agreement.

<u>**Exhibit A**</u>

Operating Plan for the
Rye's Down to Earth Farmers Market in Rye, NY

The The Rye Chamber of Commerce, (the Sponsor") agrees to sponsor Zeltsman Associates, Inc, dba Down to Earth Market ("Down to Earth") to operate a seasonal outdoor farmers market ("the Market") on the location identified below according to the operating plan set forth in this document.

Farmers Markets serve an important purpose by providing a community with access to farm products that are locally grown and truly fresh while creating a place for friends and neighbors to meet. Additionally, farmers markets stimulate shopping at nearby stores by providing an attraction to people from outside the immediate community. The goals of this farmers market are:

- To give local residents a place where they can purchase the freshest farm products from local NY State farms and to have the opportunity to interact with the people who grow, raise, or process the food.
- To create a relaxed setting where people can greet and meet their neighbors in a traditional open-air setting.

Successful farmers markets are a partnership between the market developer and the community. Each organization has its role and responsibilities and these are outlined below:

General Conditions

Operating schedule	May 11, 2014- December 7, 2014
Season: Days & hours:	Sundays, 6:30 am - 3:30 pm inclusive of set-up and break down time. Market hours are 8:30am-2pm
Market location & setup:	The City of Rye (the "City") will make available Parking Lot 2 on Theodore Fremd Ave., behind the Purchase Street stores for the farmers market (see Exhibit B, Site Plan)
Traffic control:	Temporary barricades will be set up on market day to keep vehicles from entering the market area in the central section of the parking lot.
Storage & bathroom:	The City will permit Down to Earth to place a port-a-potty as well as a small storage shed to be used to store a tent for the Market Manager, portable signs and other manager equipment for the length of the market season. Both will be locked and secured to be used specifically by Down to Earth Markets personnel and vendors only.
Market Plan	Prior to the each market season, Down to Earth will present a plan that identifies the range of local farm goods and artisanal food products that would serve the needs of local residents. The plan will include special events and activities that Down to Earth or the host community may want to hold at the market. Down to Earth will make an effort to incorporate community input into their Market Plan, but the final decision as the contents of the plan will be made by Down to Earth.

Down to Earth Responsibilities

Vendor selections & recruiting:	Down to Earth will determine the vendor mix and target number of vendors to be recruited for the Market. We seek to recruit approximately eighteen vendors for this market. While a reasonable effort will be made to incorporate the wishes of the community, Down to Earth reserves the exclusive right to determine the vendor mix according to its best judgment

	and to decide how many and which vendors to invite into the Market. And while Down to Earth will strive to recruit a full complement of vendors, it does not guarantee its ability to do so.
Market management & administration:	Down to Earth will operate the Market according to the General Policies and Rules it has established to guide the Market's operations. Down to Earth will hire a manager to be their agent at the Market site during operating hours to make sure the General Policies and Rules are followed and the market site is kept clean and orderly.
Vending fees:	Down to Earth will, at its sole discretion, establish vending fees that it charges the market vendors. These fees will be retained by Down to Earth as compensation for running the Market.
Insurance:	Down to Earth will maintain a general business liability insurance policy naming the The Rye Chamber of Commerce and the City of Rye as an additional insured. The policy limits will be $1,000,000 per incident, $2,000,000 aggregate and will be in effect for the market season. Down to Earth will assure that all vendors selling in the Market maintain general and product liability insurance policies naming Down to Earth and The Rye Chamber of Commerce and the City of Rye as additional insured. These policies will be $1,000,000 per incident, $2,000,000 aggregate and will be in effect for the market season.
Rules governing processing and sale of food and agricultural products:	Market vendors will be responsible for securing any licenses or permits required by county, state or federal laws and complying with all health and safety regulations governing their products.
Promotion & Advertising:	Develop and implement a promotional plan. Prior to the market season, Down to Earth will prepare a promotion plan that incorporates the variety of media, signage and approaches that they consider best for this market. This plan will be implemented during the market season. Down to Earth will be responsible for designing all printed materials, advertisements, banners and signs promoting the Market. All materials will bear the logo, tag lines and color schemes in accordance with the Down to Earth identity.
Clean-up & sanitation:	At the end of each market day vendors will leave their areas broom clean and remove their own rubbish. The market manager will make sure the entire site is left as found. Down to Earth will, at its cost, provide a portable toilet and hand washing unit for vendors to use during market hours. The unit will be emptied and cleaned weekly.

Rye Chamber of Commerce and City of Rye Responsibilities

Site conditions & Maintenance:	The City will retain all responsibility for maintaining generally safe conditions of the market site such as patching broken pavement that could cause shoppers to fall. The City will provide one trash receptacle for use by the shoppers and empty it after the market closes. A pre-approved bike rack will be purchased and shipped to DPW who will in turn install the rack prior to the market season opening.

Traffic control:	N/A
Signage:	The City will permit Down to Earth to set out temorary signs at the entrance to the Market Site and one A-Frame sign on Purchase Ave. for the duration of each market day.
	The City will hang four pole banners, provided by Down to Earth, near the Market Site, at no cost to Down to Earth.
Promotion:	The Sponsor will include information about the Market in various publications, websites, event listings that it maintains as an information service for its residents and constituents.
	The Sponsor will seek permission for Down to Earth to hang posters on community bulletin boards and distribute brochures as appropriate in municipal owned buildings.

Zeltsman Associates, Inc.
d/b/a Down to Earth

By: Miriam Haas

Title: Founder

Rye Chamber of Commerce

By: ______________________________

Title: ______________________________

CITY COUNCIL AGENDA

NO. 15 DEPT.: Golf Club DATE: October 22, 2014
CONTACT: Frank J. Culross, City Manager

AGENDA ITEM: Three appointments to the Rye Golf Club Commission by the Council for a three-year term expiring January 1, 2018, and the designation of one member to the Rye Golf Club Nominating Committee.

FOR THE MEETING OF:
October 22, 2014
RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the Council approve the appointments and designate the individual elected to serve on the Rye Golf Club Commission Nominating Committee.

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND:
The following individuals were elected to serve on the Rye Golf Club Commission for three-year terms beginning on January 1, 2015:

Charlie Davies
Bob DiMaggio
Pat Geoghegan

The extension of term for Terence Caffrey to serve on the Rye Golf Club Commission Nominating Committee for one year effective January 1, 2015.

See attached voting results.

6228 Saint-Jacques St. W. Suite 200
Montreal, QC, H4B 1T6 Canada
1-800-585-9694

October 6th, 2014

Rye Golf Club

The following election results are certified by Simply Voting to have been securely processed and accurately tabulated by our independently managed service. We conducted a standard review of the Activity Log and did not find any anomaly in organizer or voter activity.

2014 RGC Commission Election

Start: 2014-09-16 09:00:00 *(Eastern Time)* **End:** 2014-10-06 17:00:00 *(Eastern Time)*

Turnout: 432 (21.1%) of 2045 electors voted in this ballot.

2014 RGC Commission

Option	Votes
Charlie Davies	263 (22.3%)
Bob DiMaggio	254 (21.6%)
Pat Geoghegan	189 (16.0%)
Angela Sposato *	181 (15.4%)
Rick Keifer *	180 (15.3%)
Allison Kelly Davis *	111 (9.4%)

VOTER SUMMARY

Total	432
Abstain	0 (0.0%)

Respectfully yours,

Bret Scofield
Elections Director
Simply Voting Inc.
bscofield@simplyvoting.com
1 (800) 585-9694 ext. 802

CERTIFIED

CITY COUNCIL AGENDA

NO. 16	DEPT.: City Manager CONTACT: Scott D. Pickup, City Manager	DATE: October 22, 2014

AGENDA ITEM: Resolution to grant permission to the Rye Free Reading Room to hold a free community event on the Village Green on Sunday, May 3, 2015 from 11:30 a.m. to 3:00 p.m.

FOR THE MEETING OF:
October 22, 2014

RYE CITY CODE,
CHAPTER
SECTION

RECOMMENDATION: That the City Council approve the resolution.

IMPACT: ☐ Environmental ☐ Fiscal ☐ Neighborhood ☐ Other:

BACKGROUND: The Rye Free Reading Room has requested use of the Village Green to hold their first Family Science Fun Fair on Sunday, May 3, 2015 from 11:30 a.m. to 3:00 p.m. The event will feature simple family science experiments, large scale demonstrations, activities, and storytimes. To allow for setup and cleanup activities, the RFRR requests permission to use the Village Green from 8:00 am to 5:00 pm.

See attached.

RYE FREE READING ROOM

October 9, 2014

Honorable Joseph Sack, Mayor
Rye City Council
City Hall
Rye, New York, 10580

Dear Mayor Sack:

The Rye Free Reading Room respectfully requests the use of the Village Green and City Hall parking lot on Sunday, May 3rd from 11:30 am to 3 pm to host the first Family Science Fun Fair. In order to allow time for setup and cleanup, we would like to request permission to use the Green and parking lot from 8 am to 5 pm.

An interactive community event, the Family Science Fun Fair features simple family science experiments, large scale demonstrations, activities, and storytimes. The Rye Free Reading Room and the Auxiliary Board host this event as a fundraiser for the library.

The Rye Free Reading Room is committed to providing a wide range of programming that enhances the lives of Rye residents, and has collaborated with the City for approval of similar requests. We are excited to continue to support community focused programs, and appreciate your consideration of this request.

Sincerely,

Chris Shoemaker
Library Director

1061 Boston Post Road • Rye, NY 10580 • ph. 914.967.0480 • fax 914.967.5522 • www.ryelibrary.org

Escape to the Library