

**Site Management Plan
for the Hempstead Intersection Street
Former Manufactured Gas Plant Site
Villages of Hempstead & Garden City
Nassau County, New York**



Prepared for:

National Grid

175 East Old Country Road
Hicksville, New York 11801

Prepared by:

URS Corporation - New York

257 West Genesee Street, Suite 400
Buffalo, New York 14202-2657

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FEBRUARY 2017

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HEMPSTEAD INTERSECTION STREET FORMER MGP SITE**

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List of Acronyms

AES	Atlantic Environmental Services, Inc.
ASP	Analytical Services Protocol
bgs	below ground surface
BOD	Basis of Design
BTEX	benzene, toluene, ethylbenzene, and xylenes
C/D	construction and demolition (debris)
CAMP	Community Air Monitoring Plan
CFR	code of federal regulations
cm/sec	centimeters per second
DER	Division of Environmental Remediation
D&BC	Dvirka & Bartilucci Consulting Engineers
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DUSR	data usability summary report
ECL	Environmental Conservation Law
ECs	Engineering Controls
EWP	Excavation Work Plan
FER	Final Engineering Report
ft/ft	foot per foot
FS/RAP	Feasibility Study/Remedial Action Plan
HASP	Health and Safety Plan
ICs	Institutional Controls
IRM	interim remedial measure
ISS	in-situ solidification
lbs	pounds
LILCO	Long Island Lighting Company
LIRR	Long Island Railroad
mg/kg	milligram per kilogram
MGP	manufactured gas plant
NAD	North American Datum
NAPL	non-aqueous phase liquid
NAVD	North American Vertical Datum
NRC	National Response Center
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PDI	pre-design investigation
POB	Professional Office Building
PS&S	Paulus, Sokolowski and Sartor
PVC	poly-vinyl chloride
QA/QC	Quality Assurance/Quality Control

QAPP Quality Assurance Project Plan
List of Acronyms

RI	remedial investigation
ROD	Record of Decision
ROW	Right-of-Way
SCGs	standards, criteria and guidance
SCOs	soil clean-up objectives
SMP	Site Management Plan
SVI	soil vapor intrusion
SW	solid waste
TAL	target analyte list
TCL	target compound list
UCS	unconfined compression strength
ug/L	micrograms per liter
URS	URS Corporation
USEPA	United States Environmental Protection Agency

CERTIFICATION STATEMENT

I Mark Lang certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Mark Lang

P.E.

OCT 10 2016

DATE



1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 Introduction

This document is a required element of the remedial program for the National Grid Hempstead Intersection Street Former Manufactured Gas Plant Site. The Site was remediated in accordance with the Order on Consent Index #D1-0001-98-11 with New York State Department of Environmental Conservation (NYSDEC).

1.1.1 General

National Grid's corporate predecessor, KeySpan Corporation, entered into an Order on Consent with the NYSDEC to remediate the Site, which is located in the Villages of Hempstead and Garden City, in the Town of Hempstead, Nassau County, New York. This Order on Consent required the investigation and remediation of manufactured gas plant (MGP) related residuals at the Site and surrounding areas. The term "Site" as described in this Plan, shall be understood to refer to all areas that were subjected to soil remediation via excavation removal/backfill and in-situ solidification (ISS), as follows:

- The Hempstead Intersection Street Former Manufactured Gas Plant area within the confines of the National Grid property, also referred to herein as the "plant site";
- The Village of Garden City municipal property that is adjacent to and west of the National Grid property;
- The parking lot of the Plaza 230 Professional Office Building (POB) that is south of the National Grid property;
- Intersection Street that is between the National Grid property and the POB parking lot;
- The Long Island Railroad (LIRR) Right-of-Way (ROW) that is adjacent to and east of the National Grid property; and
- Oswego Oil Storage Terminal that is just north of Intersection Street and east of the National Grid property.

Off-Site Remedial Features include the oxygenation systems that address groundwater remediation through oxygen delivery to the subsurface. Additionally, monitoring wells are considered to be off-site features. A map showing the Site location and boundaries of the Site is provided as Figure 1. The boundaries of the Site are more fully described in the metes and bounds Site description that will accompany the Environmental Easement (Appendix A).

This Site Management Plan (SMP) was prepared by URS Corporation (URS), on behalf of National Grid, in accordance with the requirements in NYSDEC DER-10 “Technical Guidance for Site Investigation and Remediation,” dated May 2010 (NYSDEC 2010a), and the guidelines provided by NYSDEC. This SMP identifies the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the Site.

After completion of the remedial work described in the August 2011 Basis of Design Report for In-Situ Solidification (URS 2011), some MGP-related residuals were left in the subsurface at this Site. This SMP was prepared to help manage MGP-related residuals at the Site in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or any successor agency managing environmental issues in New York State.

1.1.2 Purpose

As contemplated by the NYSDEC-approved Remedial Action Work Plan, the Site has MGP-residuals remaining after the completion of the remedial actions. ECs have been incorporated into the Site remedy to control exposure to remaining impacts during the use of the Site to ensure protection of public health and the environment. An Environmental Easement will be recorded with the Nassau County Clerk for the National Grid-owned property, to supplement this SMP and all ECs and ICs placed on the plant Site. For the MGP-related residuals within the off-Site areas, compliance with this SMP and all ECs and ICs for the off-Site areas will be addressed via access agreements. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the grantor of the

Environmental Easement(s) or Access Agreement for the MGP-related residuals. This SMP has been approved by the NYSDEC, and compliance with this SMP is required by the access agreements and/or the grantor of the Environmental Easement and the grantor's successors and assigns for the Site. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining impacts at the Site after completion of the Remedial Action, including: (1) implementation and management of all ECs and ICs; (2) implementation of Site and off-Site media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results and submittal of Periodic Review Reports to the NYSDEC; and (5) defining criteria for termination of treatment system operations. This SMP also describes which party (property owner, National Grid, or NYSDEC) is responsible for each of these requirements. This SMP does not address the allocation of costs for any additional work or costs necessitated by development of the Site; that is a private matter to be worked out as necessary between National Grid and the developer/property owner.

To address these needs, this SMP includes four plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site and off-Site monitoring; (3) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to the NYSDEC; and (4) an Operation and Maintenance Plan for operation of the oxygen delivery systems.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to the NYSDEC.

It is important to note the following:

- This SMP details the Site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion;

- The SMP also details specific implementation procedures for the off-Site areas that are recommended by the NYSDEC. This SMP may be implemented on the off-Site areas via access agreements executed between National Grid and owner(s) of the properties comprising the off-Site areas;
- Noncompliance with this SMP is also a violation of ECL, 6 NYCRR Part 375 and the Order on Consent (Index # D1-0001-98-11) for the Site, and thereby subject to applicable penalties; and
- At the time this SMP was prepared, the SMP and all Site documents related to remedial investigation and remedial action are maintained at the NYSDEC Central Office in Albany, New York, and the NYSDEC - Region 1 Office in Stony Brook, New York and at public repositories at the Garden City Public Library (60 Seventh St. Garden City, NY 11530) and the Hempstead Public Library (115 Nichols Ct. Hempstead, NY 11550).

1.1.3 Revisions

Any proposed revisions to this plan shall be made in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the Site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

1.2.1 Site Location and Description

The Site is located in the Villages of Hempstead and Garden City, in the Town of Hempstead, Nassau County, New York and encompasses multiple properties including that owned by National Grid, as described previously. The majority of the approximately 8-acre Site is located within the Village of Garden City. The remainder is in the Village of Hempstead. Residences and commercial businesses are located around National Grid's former MGP portion

of the Site. The former MGP portion of the Site is bordered to the north by Second Street, east by a LIRR inactive railroad ROW, south by Intersection Street, and west by a municipal property owned by the Village of Garden City. Other surrounding areas, some portions of which are included in the Site, include a Professional Office Building to the southwest, the POB parking lot to the south, and an active oil storage terminal (Oswego Oil) to the southeast. An active National Grid natural gas regulator station is located within the northwestern portion of the Site as shown on Figure 2. Figures 3 and 4 show where remedial activities have been implemented.

1.2.2 Site History

The Nassau and Suffolk Lighting Company operated the manufactured gas plant starting in the early 1900s. The facility originally produced coal gas but was converted to a carbureted water gas process sometime after 1910. The Long Island Lighting Company (LILCO) acquired an ownership share of the plant site in the early 1930s. Following the arrival of natural gas, the plant site served as a peak/emergency facility to ensure gas supply until all MGP operations ceased in the mid-1950s. The plant was demolished shortly afterward. In 1998, the property was acquired by KeySpan Corporation when LILCO merged with Brooklyn Union Gas. The property was then acquired by National Grid in 2008, during the acquisition of KeySpan.

Since demolition of the plant in the 1950s, the majority of the plant site has been inactive with the exception of the active National Grid natural gas regulator station in the northwestern portion of the plant site. Prior to the remediation work, the plant site was undeveloped and secured by a perimeter fence.

Following initial site investigations in the 1990s, a Remedial Investigation was performed in the 2000s, and a Feasibility Study was completed in 2008. A Voluntary Cleanup Program Decision Document describing the selected remedy was issued by NYSDEC in 2008.

1.2.3 Geologic Conditions

1.2.3.1 Topography

The plant site and surrounding area are generally flat with an approximate elevation of 63 to 71 feet North American Vertical Datum (NAVD) 88 datum, with the ground surface gently sloping to the west, northwest, and southwest. The plant site is predominantly covered with crushed stone and secured with a perimeter fence. Areas surrounding the plant site are generally covered with asphalt, concrete, or topsoil and grass. Some grass, shrubs and trees provide a buffer across the northern and western fence lines of the plant site. Other than gas piping in the regulator station and plant site security fences, there are no permanent aboveground structures on the plant site.

1.2.3.2 Pre-Remediation Stratigraphy

The four primary geologic units present at the Site, in descending order from ground surface down through the subsurface are: fill/topsoil, glacial outwash, upper Magothy, and lower Magothy formations.

Fill/Topsoil

The fill/topsoil unit was present in the northern and northwestern portions of the Site. Fill was present over much of the remainder of the Site and was highly variable in composition, consisting of brown to black sands, silts and gravels with varying amounts of concrete, brick, coal, bluestone, clinker, vesicular slag and wood. The unit was not continuous throughout the Site and ranged in thickness from approximately 0.5 to 16 feet where present. A thin surface layer of gravel was spread throughout much of the Site. In some areas, concrete foundations from the former MGP structures were present beneath the gravel.

Glacial Sediments

Glacial sediments beneath the Site consist of three primary units: glacial outwash, the upper Magothy Formation, and the lower Magothy Formation, as described below.

Glacial Outwash

The uppermost glacial deposit beneath the Site is a relatively porous glacial outwash deposit consisting of yellow to light brown, fine to coarse sand with varying amounts of gravel. These sediments underlie the fill/topsoil and range in thickness from 60 to 70 feet within the Site to more than 95 feet south of the Site. Intermittent zones and lenses of silty sand and silt are present in the glacial unit and appear to limit the vertical movement of groundwater and non-aqueous phase liquid (NAPL).

Upper Magothy Formation

Underlying the glacial outwash sediments is the upper subunit of the Magothy Formation, which is characterized by a sequence of sand, silt, and clay layers. Its thickness ranges between 50 and 110 feet at the Site.

Lower Magothy Formation

The lower subunit of the Magothy Formation, which is found at approximately 120 feet below ground surface (bgs) and below, is characterized by a low permeability silty fine sand and stiff clay. Due to the high clay content of the lower subunit, it acts as an effective confining layer limiting the vertical migration of groundwater and NAPL.

1.2.3.3 Post-Remediation Stratigraphy

The fill/topsoil and glacial outwash geologic units at the site have been modified by remediation. In the remediated areas where the ISS monolith is located, backfill is present from the top of the monolith to the surface elevations presented on Figure 5. The bottom of the monolith is presented on Figure 6. Cross-sections indicating monolith elevations are presented in figures in the Final Engineering Report (FER).

1.2.3.4 Groundwater Flow

In general, hydraulic conductivities of the Upper Glacial aquifer and the upper subunit of the Magothy Formation were estimated to be approximately 1×10^{-1} centimeter per second (cm/sec) and 1×10^{-2} cm/sec to 5×10^{-2} cm/sec, respectively (McClymonds and Franke, 1972).

Prior to remediation by ISS across the Site area, the water table occurred within the glacial outwash sediments (Upper Glacial aquifer) at depths ranging from approximately 25 to 30 feet bgs. Groundwater flow within the glacial outwash was in a south-southwesterly direction, with a hydraulic gradient of approximately 0.001 foot/foot (ft/ft).

ISS at the Site generated a solidified monolith with a hydraulic conductivity less than 1×10^{-6} cm/sec. The monolith is therefore relatively impermeable to groundwater flow. Groundwater flow conditions are generally in a southerly direction at an average gradient of approximately 0.005-0.006 ft/ft for the shallow water bearing zones and approximately 0.002 ft/ft for intermediate and deep water bearing zones.

1.3 Summary of Previous Investigation Findings

Previous investigations conducted at the Site were performed to identify the presence of MGP impacts, determined the presence and extent of off-Site MGP impacts, characterized the hydrogeology of the area, and established interim remedial measures (IRM) boundaries. The findings of the previous investigations can be found in the following documents and are summarized below:

- Preliminary Investigation for Site of Former Hempstead Gas Plant, December 1990, AES;
- Weston, R.F., Final Field Investigation Report – Hempstead Gas Plant, October, 1992a;
- DBC, Remedial Investigation Report, March, 2003; and
- PS&S, Final Remedial Investigation Report, November, 2006.

There are two areas of known contamination adjacent to the Site not related to the former MGP site. An adjacent oil storage terminal (Oswego Oil) that has had some petroleum releases is located immediately east of the plant site beyond the inactive LIRR ROW. Petroleum storage and distribution activities are conducted at this location. The Mollineaux Brothers Fuel Company operated a fuel loading and storage facility immediately southeast of the plant site that is now inactive. Historical documentation indicates that a petroleum release occurred at the Mollineaux facility.

A remedial investigation (RI) report prepared in 2006 (PS&S, 2006) described MGP site-related impacts to soil and groundwater. Pre-Design Investigation (PDI) activities were performed by URS in 2008 and 2009 that focused on collecting data to support the design for the ISS remediation and groundwater remediation systems.

The impacted materials included coal tar and related constituents that are expected to be found at a former MGP site. The MGP impacts ranged from dissolved-phase contamination in the groundwater; to an immiscible fluid that is denser than water (dense non-aqueous phase liquid [DNAPL]); and tar-coated soils.

The typical MGP-related chemical constituents are principally benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) that are found in the soil, groundwater, and NAPL. The RI and PDI results indicated that the majority of MGP impacts and/or DNAPL were located in two intervals beneath the plant site, shallow soils in the upper 8 feet at locations near the former MGP structures or operations, and near the water table interface at approximately 24 to 34 feet bgs.

DNAPL extended approximately 450 feet south of the plant site beneath the POB parking lot. During Fourth Quarter 2012 sampling (prior to ISS treatment), DNAPL was observed in 13 of the existing wells within the POB parking lot.

Site-related impacts have migrated south from the site with the flow of groundwater. The extent of a dissolved-phase BTEX and PAH plume prior to remediation was approximately 600 feet wide by approximately 3,000 feet long as indicated on Figure 7. As presented on Figure 8 and in the June 2016 Quarterly Groundwater Sampling, NAPL Monitoring, and Groundwater Treatment Performance Report, the downgradient boundary of the plume, as defined by total BTEX or PAH concentrations greater than 100 microgram per liter (ug/L), has been reduced in size and currently extends approximately 400 feet south of the plant site boundary. The concentrations of BTEX and PAHs decrease significantly further from the Site. Oxygenation treatment systems No. 1 and No. 2 are providing dissolved oxygen to augment biodegradation of dissolved phase MGP compounds in groundwater and thus are reducing the size of the plume.

Based on the RI, there were no current or potential exposure pathways through which individuals on or near the site could be exposed to potentially hazardous materials related to the former MGP Site. The MGP contaminants have not adversely impacted drinking water supplies in the community. The previous investigations have determined that the site is located outside of the groundwater capture zones for adjacent water supply wells operated by the Village of Garden City and water supply wells operated by the Village of Hempstead at Clinton Street. In addition, soil vapor intrusion testing did not identify volatile organic compounds related to the MGP plant site in nearby buildings or in soil vapor monitoring points located in the vicinity of the dissolved phase groundwater plume.

1.4 Summary of Remedial Actions

Prior to the remedial actions, four IRMs were conducted in accordance with the NYSDEC-approved IRM Work Plans. The IRMs that have been implemented at the Site are summarized below.

1. 1999-2000: Underground piping associated with historic MGP operations was located, cut, drained, and plugged to limit the potential for any off-Site migration of MGP-related constituents.
2. 2008: Shallow MGP-source material was excavated from the plant site and NAPL from groundwater was recovered. The excavation took place in areas where no future remediation would be necessary and to support future Site-wide remediation activities by providing clean areas for support facilities, vehicle parking, and the staging of equipment and materials.
3. 2007-2011: Thirty-one product recovery wells were installed to recover DNAPL present on and downgradient of the plant site.
4. 2010 – 2011: Two groundwater oxygenation systems were installed downgradient of the plant site. These systems deliver oxygen to the groundwater plume to allow naturally occurring bacteria to consume and eliminate dissolved phase hydrocarbons originating from the plant site.

The remedial actions were performed from 2011 to 2014 and completed in accordance with the 2007 Decision Document and the NYSDEC-approved Basis of Design Report (BOD) dated August 2011 (URS 2011). The following is a summary of the Remedial Actions performed at the Site as part of the ISS remedial action.

- Excavated remnants of MGP structures and shallow targeted MGP source material from the MGP plant site. Clean shallow soil that was excavated was stockpiled and the used as backfilled.
- Solidified targeted MGP source material beneath the former MGP plant site, the Village of Garden City municipal property, and the adjacent Oswego Oil Storage Terminal property using deep soil mixing. The targeted source material included soil: saturated with NAPL with a thickness of at least 6 inches; concentrations of PAHs greater than 1,000 mg/kg, or concentrations of BTEX were greater than 50 mg/kg.
- Construction and maintenance of a soil cover system using at least 4 feet of clean backfill. This includes covering solidified material with 4 or more feet of backfill.
- Construction of a soil-crete retaining wall around the POB parking lot (constructed in portions of Wendell Street, Intersection Street, and adjacent to the LIRR ROW) and solidification deeper targeted MGP source material located inside the wall.
- Installation of an oxygen delivery system to treat groundwater downgradient of areas where solidification could not take place due to accessibility limitations such as: under the POB, near utilities, and drainage/sewer lines.
- Execution and recording of an Environmental Easement and access agreements to restrict land use and prevent future exposure to any contamination remaining at National Grid plant site.
- Development and implementation of a Site Management Plan for long-term management of MGP-related residuals as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance, and (4) reporting.

1.4.1 Removal of Contaminated Materials from the Site

Implementation of the IRMs and Remedial Actions resulted in the removal of several different types of waste: concrete and debris, spoils from soil mixing, soils impacted with MGP-related residuals, waste water generated during construction, and NAPL.

During the 2008 IRM, A total of 4,432 cubic yards of MGP source material and construction/demolition debris was taken off-Site for treatment and disposal. A total of 9,493 gallons of liquid was also taken off-Site for treatment and disposal (URS, 2009c).

Soil, concrete, holder foundations and former MGP piping were excavated during the remedial activities including A total of 50,267 tons of such material were sent to Bay Shore Soil Management, a permitted waste disposal facility located in Keasbey, New Jersey, for thermal treatment.

The solidification process generated solidification spoils that required off-Site disposal. Approximately 17,409 tons of spoils were transported off-Site to Bay Shore Soil Management, for thermal treatment.

Some excavated soil was determined to be suitable for reuse as described below. Suitability was determined by visual and olfactory evaluation by the Engineer and the NYSDEC had a representative on-site during the work. These soils came from the following areas:

- Certain areas on the plant site (location and depth varied, and were determined on a case-by-case basis by visual and olfactory inspection);
- Soil from the POB parking lot area and the adjacent Wendell and Intersection Streets;

This reusable excavated material was used as backfill according to the following placement location guidelines:

- Materials excavated from the plant site property was reused as backfill only within the National Grid's former MGP plant site property limits;

- Materials excavated from outside the former MGP plant site property were reused anywhere within project construction limits as backfill;
- The reused soil was not used within 2 vertical feet of final cover surface. Within that 2-foot zone, clean imported material was used as backfill for all excavations including final surface cover.

The type and quantity of backfill imported from off-Site sources included: general fill (44,183 tons), topsoil (520 cubic yards), and select stone fill (5,199 tons). All material met restricted residential criteria in accordance with the project work plan.

1.4.2 On-Site and Off-Site Treatment Systems

1.4.2.1 NAPL Recovery Wells

Approximately 745 gallons of NAPL was recovered between April 2007 and July 2011 when recovery was temporarily suspended during ISS operations. All but one of the recovery wells were decommissioned as part of the ISS work. Currently the one remaining recovery well is gauged on a monthly basis and NAPL is manually removed from the well periodically. Since ISS has been completed, approximately 43 gallons of NAPL has been recovered from this well.

1.4.2.2 ISS

ISS is a remedial action that mixes grout into the subsurface soil to the target depth. ISS was performed by mixing grout with in-situ soil via 6- or 8-foot diameter augers. The grout consisted of cement, slag, bentonite and water. The ISS was performed within the former MGP site property, areas in the POB parking lot, Village of Garden City municipal property, Intersection Street, Wendell Street, LIRR ROW, and Oswego Oil property.

The top of the ISS monolith was designed and constructed so that subsurface precipitation infiltration would slowly drain to the outer perimeter of the monolith as shown by the grading contours on Figure 5. Within the POB parking lot portion of the ISS area, the top of the ISS monolith is approximately at 4 feet below final grade along the “soil-crete” retaining

wall and about 13 to 17 feet below final grade within that perimeter soil-crete wall. Five vertical drains (8-inch diameter with 5-feet of screen into native soil below the ISS monolith) were installed to prevent water accumulation on the monolith surface within the POB area.

1.4.2.3 Oxygen Delivery

The downgradient groundwater plume is being remediated by oxygenation systems. System No. 1 was brought on line in April 2011 and is located immediately south of the Site and runs generally east-west from Hilton Ave to the west to Sealy Ave to the east, in a neighborhood that includes residential and light commercial spaces, as well as a portion of the LIRR ROW. System No. 2 was brought on line in October 2010 and is located in a primarily residential neighborhood about 500 feet to the south of System No. 1, running from Mirschel Park to the east to Kensington Court to the west. Two additional oxygenation systems may be installed immediately south of the solidified monolith, depending on the results of ongoing monitoring of the dissolved phase groundwater plume.

The primary objective of the off-Site groundwater oxygenation treatment systems is to increase the level of dissolved oxygen (DO) in the groundwater to provide a means for reduction of the groundwater plume via aerobic bioremediation. As contaminated groundwater flows through the treatment areas, the increased DO levels in the groundwater provide support for biodegradation. This aerobic bioremediation, in conjunction with ISS which solidified the contaminant source, accelerates the rate at which the dissolved contaminant mass is oxidized and lead to decreased contaminant concentrations in the entire plume.

1.4.3 MGP-Related Residuals

1.4.3.1 Soil

Remediation (excavation and ISS) was performed within the delineated limits of MGP source material, as approved by the NYSDEC. As indicated on Figure 9, ISS was not extended

under buildings or under the overhead electric lines areas along the LIRR ROW. Figure 9 also shows the limited areas where ISS did not solidify soils to the full extent of the source area; specifically, that figure shows areas where untreated source material was located at depths that were too deep to reach. These deep areas are located below the solidified monolith.

ISS treatment met the Site-specific performance criteria throughout the vast majority of the target ISS zone as determined by laboratory testing performed during the duration of the ISS work. Both unconfined compression strength (UCS) and hydraulic conductivity were measured and the results of these tests are in the FER.

Within the former MGP plant site property and the POB parking lot, excavations were backfilled both with clean off-Site material meeting restricted residential criteria in accordance with the project work plan and unimpacted (no visual evidence of contamination or odors) on-Site excavated soil. The on-Site unimpacted material was used as backfill up to 2 feet below final grade; the remaining 2 feet to grade was then backfilled with clean off-Site backfill meeting unrestricted use criteria. Outside the former MGP plant site property all excavations above the top of ISS were backfilled exclusively with clean off-Site backfill meeting restricted residential criteria.

1.4.3.2 Groundwater

Groundwater contamination above the NYSDEC Class GA Groundwater Criteria is present throughout the Site. Groundwater contamination as of June 2016 is shown on Figure 8. As presented in the 2015 Annual Groundwater Sampling, NAPL Monitoring, and Groundwater Treatment Performance Report (URS 2016), the downgradient boundary of the plume has been reduced in size and currently extends approximately 400 feet south of the plant site boundary. The concentrations of BTEX and PAHs decrease significantly further from the Site.

1.4.4 Engineering and Institutional Controls

Since MGP-related residuals are present at the Site and off-Site areas, the following ECs and ICs have been implemented:

- A cover system consisting of one of the following: asphalt pavement, concrete sidewalks, concrete slabs, select stone (gravel), or topsoil. Including cover material thickness and clean off site soil immediately underlying the cover, a minimum of two feet of clean material covers all work areas;
- Continued collection of NAPL from one passive DNAPL recovery well (HIMW-21) located next to the parking lot; and
- Groundwater oxygenation treatment systems.

A series of ICs are required to implement, maintain and monitor these ECs. The Environmental Easement for the plant site requires compliance with these ICs and access agreements for the off-Site areas recommend compliance with these ICs, to ensure that the following are achieved:

- All ECs are operated and maintained as specified in this SMP;
- All ECs on the Site and off-Site areas are inspected and certified at a frequency and in a manner defined in this SMP;
- Groundwater and other environmental monitoring are performed as defined in this SMP;
- Data and information pertinent to management of the Site and off-Site areas will be reported at the frequency and in a manner defined in this SMP; and
- Site and off-Site area environmental monitoring including but not limited to, groundwater monitoring wells and oxygen injection points, must be maintained to ensure continued functioning in the manner specified in this SMP.

In addition, the Environmental Easement and access agreements provide the mechanism for implementing the SMP at the Site and off-Site areas. The restrictions are detailed in Section 2 of this SMP.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved March 2008 Final Decision Document (NYSDEC 2008) and the NYSDEC-approved 2011 BOD (URS 2011).

Since solidified material and remaining impacted soil and groundwater exists beneath the Site, ECs and ICs exist to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the Site and off-Site areas. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

The purpose of this EC/IC Plan is to provide the following:

- A description of all EC/ICs on the Site;
- The basic implementation and intended role of each implemented EC/IC;
- A description of the key components of the ICs created as stated in the Environmental Easement/access agreement;
- A description of the features to be evaluated during each periodic inspection and compliance certification period;
- A description of plans and requirements to be followed for implementation of EC/ICs, such as the implementation of the EWP for the safe handling of MGP-related

residuals that may be disturbed during maintenance or redevelopment work on the Site; and

- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the Site remedy, as determined by the NYSDEC.

2.2 Engineering Controls

2.2.1 Engineering Control Systems

Contact with MGP-related residuals in soil and solidified material at the Site is prevented by multiple cover systems across the Site. Locations of the various cover systems are provided on Figure 10; cover details are provided on Figures 11 and 12. The cover systems, exclusive of any underlying fill that was described earlier in Section 1.4.4, are comprised of asphalt pavement, concrete sidewalks, concrete slabs, select stone (gravel), or vegetated topsoil.

The EWP that appears in Appendix B outlines the requirements to be implemented in the event a cover system is breached, penetrated or temporarily removed, and any underlying MGP-related residuals within soil or the ISS monolith is disturbed. Requirements for the inspection and maintenance of the cover systems are provided in the Monitoring Plan included in Section 3.0 of this SMP.

DNAPL is gauged and manually collected periodically from one well in the off-site area. The collected DNAPL is transferred to a collection drum stored on-Site, and properly disposed of off-Site.

Remediation of the dissolved phase groundwater plume is addressed through the continued operation of the oxygenation treatment systems. Oxygen delivery is comprised of systems that deliver oxygen to the groundwater at rates determined to be sufficient to maintain aerobic conditions in the aquifer. Aerobic conditions allow naturally occurring bacteria to oxidize contaminants to water and carbon dioxide. Systems are inspected on a monthly basis. During each monthly inspection, repairs and routine operation and maintenance activities are

performed and the dissolved oxygen levels are measured in monitoring wells installed adjacent to the delivery points in order to confirm that aerobic conditions are present.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 ISS

ISS was considered completed when the performance criteria of hydraulic conductivity $\leq 1 \times 10^{-6}$ cm/sec at 28 days; and UCS at 28 days ≥ 50 psi and $<1,000$ psi were met. Solidified soil at this Site has a minimum 4-foot thick soil cover and is below the frost line. Solidified material at the Site is a permanent control and the quality and integrity of the solidified material will be protected by the cover soils.

2.2.2.2 Cover Systems

The cover systems provide another control mechanism and the quality and integrity of the systems will be inspected at defined, regular intervals.

2.2.2.3 Oxygen Delivery

Groundwater monitoring activities to assess the effectiveness of the Oxygenation Systems will continue, as determined by the NYSDEC, until groundwater concentrations are reduced sufficiently to satisfy NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue the oxygen delivery is granted by the NYSDEC.

2.2.2.4 NAPL Recovery

DNAPL gauging and recovery will continue until DNAPL is no longer present in the well and permission to discontinue is granted in writing by the NYSDEC.

2.3 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to MGP-related residuals by controlling disturbances of the subsurface contamination; and (3) limit the use and development of the Site to restricted residential use, as indicated in the Environmental Easement unless other future uses are approved by the NYSDEC. These ICs are as follows:

- Compliance with the Environmental Easement by the Grantor and the Grantor's successors and assigns with all elements of this SMP;
- Compliance with the Access Agreement;
- All ECs must be operated and maintained as specified in this SMP by National Grid;
- All ECs must be inspected and certified by National Grid or a contractor of National Grid at a frequency and in a manner defined in the SMP;
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP; and
- Data and information pertinent to Site management must be reported by National Grid at the frequency and in a manner defined in this SMP.

ICs may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of ICs in the form of Site restrictions. Adherence to these ICs is required by the Environmental Easement on the National Grid plant site. Site restrictions that apply to the Site are as follows:

- Use of the National Grid plant site property within the Site will be for restricted residential use. Any specific future development must comply with local laws and regulations.
- Use of groundwater underlying the Site property is prohibited without treatment to ensure it is safe for the intended use.
- All future activities on the property that will disturb contaminated and/or solidified material must not be conducted unless they are conducted in accordance with this SMP and accompanying EWP.
- Implementation of a Health and Safety Plan (HASP) and EWP prior to any ground intrusive activity including utility work, boring completion, monitoring well installation, and excavation; with the exception of normal landscaping (to a maximum of 24 inches below ground surface or top of the groundwater table, whichever is shallower).
- The potential for vapor intrusion must be evaluated for any new buildings proposed on the plant site, and any potential impacts that are identified must be monitored or mitigated.
- Written notification at least 60 days in advance for changes in use at the Site must be submitted to NYSDEC as per Part 375 and DER-10.
- Vegetable gardens and farming on the former MGP property are prohibited.
- National Grid will submit to NYSDEC a written statement that certifies that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment

or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

This SMP requires various actions that will be required by the property owner(s), National Grid, and the NYSDEC. Table 1 includes a list of items that will trigger the various actions, identifies the parties responsible for implementing these actions, and provides a brief description of these actions.

2.3.1 Excavation Work Plan

Other than within the areas of identified on Figure 9 as not being treated by solidification, the National Grid former MGP plant site portion of the overall remediation has been remediated for restricted residential use. An Environmental Easement for the National Grid property will be provided in the Final FER. Any future intrusive work (e.g., through drilling, trenching, excavation) that will penetrate, encounter or disturb the cover systems, or encounter or disturb solidified material and/or MGP-related residuals including any modifications or repairs to the existing cover systems, will be performed in compliance with the EWP that is attached as Appendix B to this SMP. Should the monolith be breached, removed monolith material will be disposed off-Site as contaminated material, and provisions will be made to avoid ponding on the breached monolith surface. Adherence to these ICs on the National Grid plant site is required by the Environmental Easement and will be implemented under this Site Management Plan.

Any work conducted pursuant to the EWP must also be conducted in accordance with a HASP and Community Air Monitoring Plan (CAMP) prepared for the Site, in accordance with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5.0). The attached HASP and

CAMP (Appendix C) shall be considered the most up-to-date examples for a HASP and CAMP that a remedial Contractor shall utilize and modify to create documents they will develop and implement.

The affected property owner(s) and the contractor performing the excavation work are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, the identification of any buried utilities within the excavation area and for structures that may be affected by excavations (such as building foundations and footings), and control of runoff from open excavations onto solidified material and/or MGP-related residuals. In addition, the property owner(s) will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the ECs described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

Prior to the construction of any new enclosed structures on the Site, a soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. The design of a new building foundation will also be considered in this type of evaluation. Alternatively, an SVI mitigation system can be installed as an element of the building foundation without first conducting an investigation. The mitigation system would potentially include a vapor barrier and passive sub-slab venting system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan would be developed and submitted to the NYSDEC and New York State Department of Health (NYSDOH) for approval. This work plan would be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York.” Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary SVI sampling data will be forwarded to the NYSDEC and NYSDOH by National Grid for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action. Validated indoor air data will also be transmitted to the property owner(s) within 30 days of validation. If any indoor air test results exceed New York State Department of Health guidelines, relevant New York State Department of Health fact sheets will be provided to all tenants and occupants of the properties within 15 days of receipt of validated data.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the subsequent Periodic Review Report (see Section 5.0).

2.4 Inspections and Notifications

2.4.1 Inspections

Inspections of all remedial components at the Site and all ECs present at Site areas will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive Site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement/Access Agreement;
- Achievement of remedial performance criteria for groundwater;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the ECs.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3.0). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5.0).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site by a qualified environmental professional will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the Site or off-Site areas. If there are observed issues they will be documented.

2.4.2 Notifications

The following notifications will be submitted by the property owner(s) to National Grid and the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the Order on Consent, 6 NYCRR Part 375, and/or ECL.
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.
- Notice within 48 hours of any damage or defect to the foundations or structures that reduces or has the potential to reduce the effectiveness of other ECs and likewise any action to be taken to mitigate the damage or defect.
- Notice within 48 hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to National Grid and the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

- National Grid will review and provide comments as appropriate on all planned ground-intrusive activities proposed on properties located within the limits of the areas covered by SMP. National Grid must have a full-time representative on-Site per the Order on Consent during any ground-intrusive work activities and document compliance with this SMP.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, National Grid and the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the SMP, Access Agreement, and all approved work plans and reports.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the property Owner or Owner's representative(s) should contact the appropriate party from the contact list as provided in Table 2. For emergencies, appropriate emergency response personnel should be contacted. These emergency contact lists must be maintained in an easily accessible location at the site.

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Hempstead Intersection Street Former MGP Site

Nearest Hospital Name: Winthrop University Hospital

Hospital Location: 259 First Street, Mineola, New York 11501

Hospital Telephone: 516-663-0333

Directions to Hospital:

- From the Site, head east to North Franklin Street.
- Turn left on North Franklin Street toward 2nd Street.
- Travel 1.6 miles and continue onto Mineola Boulevard.
- Continue 0.2 miles.
- Turn left onto 1st Street.
- Continue 0.03 miles.
- The hospital is located on the left.

Total Distance: 2.1 miles

Total Estimated Time: 7 minutes

A map depicting the route to the hospital is provided as Figure 13.

2.5.3 Response Procedures

As appropriate, the Fire Department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list can be found in Table 2. The list will also be posted prominently at the plant site and made readily available to all personnel at all times.

2.5.4 Spill Response Plan and Notification

Spill response will be handled similarly to other emergencies, with calls to NYSDEC and National Grid's project manager.

3.0 MONITORING PLAN

3.1 Introduction

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, including all ECs and all affected site media. ECs at the Site include soil backfill, various cover systems, and the ISS monolith. Since the ISS monolith is at least 4 feet below ground surface and is overlain by the soil backfill and cover, monitoring of the cover will be sufficient for monitoring the ISS monolith. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for the following:

- Sampling and analysis of groundwater;
- Assessing compliance with applicable NYSDEC Class GA groundwater standards, criteria and guidance, particularly ambient groundwater standards;
- Monitoring oxygen concentration near the oxygenation treatment systems;
- Assessing achievement of the remedial performance criteria;
- Evaluating Site and off-Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on the following:

- Cover inspection and Site-wide inspection and evaluation;
- Groundwater sampling locations, protocol, and frequency;

- Analytical groundwater sampling program requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures;
- Reporting requirements; and
- Annual site-wide inspection and periodic certification.

Quarterly and annual monitoring of the performance of the remedy on-Site and off-Site will be conducted for the first 5 years following the completion of the ISS. The frequency thereafter will be determined in coordination with the NYSDEC. Following the inspection, the integrity of the cover systems and ISS monolith will be evaluated, and recommendations provided for any needed maintenance and/or additional remediation (i.e., cover repairs, surface drainage modifications). Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 3 and outlined in detail in Sections 3.2 and 3.3 below.

3.2 Cover System Monitoring

The Cover System Engineering Control will be inspected annually by a NYS licensed professional engineer or qualified environmental professional to confirm that the cover systems are intact, remain unchanged, and continue to be protective of human health and the environment. The inspection will be completed by an individual who is familiar with the cover systems and the Site and off-Site area. The annual inspections will be documented on the Annual Inspection and Certification Checklist provided in Appendix D. The form provides a checklist to document if there are any changes since the previous year's inspection and that the EC continues to operate as intended. A survey of the cover will be completed if changes in the cover occur during the year or if changes are noted in the annual inspection. The survey will be completed by the New York State licensed surveyor and referenced NAVD 88 vertical datum to an accuracy of $0.01 \pm$ foot and referenced to North American Datum (NAD 83).

If an emergency, such as a natural disaster or unforeseen failure of ECs occurs, an inspection of the affected property will be conducted by a qualified environmental professional within fifteen business days of the event to verify the effectiveness of the cover.

3.2.1 Monitoring Schedule

As provided in Table 3, the inspection frequency for the cover systems will be on an annual basis. Inspection will consist of a visual observation of the cover systems to ensure they remain in place and have not been disturbed. Disturbances can include non-backfilled excavations, stone/gravel cover that has been rutted to beneath the stone thickness, areas which do not show a uniform stand of vegetative cover, areas which appear to be ponding and/or eroding, and deteriorating paved surfaces. In addition, the inspection of the former plant site area will also include visual observation of the stone/gravel cover system runoff drainage contours to ensure nothing is impeding the system and it has not been disturbed.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections may take place when a suspected failure of the cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

3.2.2 Repair Schedule

Details of the cover systems are provided on Figures 11 and 12. If after the completion of the inspections of the cover systems a deficiency is noted, it shall be repaired by the affected property site owner in a timely manner, integrating appropriate engineering evaluation as necessary. Repair of the cover system will consist of repair and/or replacement in kind of what the original cover system consisted of, including one or more of the following:

- Removal of damaged cover material;

- Placement of a clean off-site fill, or re-placement of disturbed on-site fill if the fill meets original specifications, to disturbed depth below grade;
- Placement of clean cover material satisfying restricted residential soil cleanup objectives or unrestricted soil cleanup objectives per Appendix B, such as stone/gravel, 6 inches of topsoil, asphalt, concrete, etc. to design final grade; and
- For topsoil areas, seeding and/or the placement of sod in restored area, watering and mowing of restored areas to ensure a uniform stand of vegetation is produced.

All repairs completed will be verified by the qualified environmental professional as part of their inspection of the ECs (see Section 5.0).

As necessary, due to ponding and/or eroding of the cover, an evaluation of surface water drainage may be conducted. Recommendations of the evaluation will be presented to the NYSDEC for potential site regrading/cover modification.

3.3 Groundwater Monitoring

Groundwater monitoring is being performed quarterly to assess the effectiveness of the ISS, the DNAPL recovery, and the oxygenation treatment systems on groundwater plume contaminant concentrations. A network of monitoring wells, shown in Figure 3, has been installed to monitor upgradient, side gradient, and downgradient groundwater conditions at the Site. The well construction details are included in Table 4. The current groundwater monitoring schedule is presented in Table 5.

The sampling frequency may be modified with the approval of the NYSDEC. The SMP will be appended to reflect changes in sampling plans approved by the NYSDEC. Deliverables for the groundwater monitoring program are specified below.

3.3.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater sampling log presented in Appendix D. Other observations (e.g., well integrity,

etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network. Each sample will be collected utilizing low flow groundwater sampling collection methods provided in the Field Sampling and Analytical Plan (Appendix E). Each groundwater sample will be analyzed for BTEX by USEPA Method SW8260B and PAHs by USEPA Method SW8270C by a NYSDOH environmental laboratory approval program - certified laboratory. The groundwater samples will also be collected, handled, and analyzed according to the example Quality Assurance Project Plan (Appendix F).

3.3.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures". Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.4 **Oxygen Delivery System**

The monitoring points for each system are monitored for DO levels once per month and reported to the NYSDEC on a quarterly basis. Dissolved oxygen is measured using a probe inserted into each monitoring point, and the reading recorded upon stabilization.

Repairs and/or replacement of oxygen delivery wells in the delivery well network will be performed based on assessments of structural integrity and overall performance. The NYSDEC will be notified prior to any repair - or decommissioning of delivery wells for the purpose of replacement - and the repair, decommissioning and replacement processes will be documented in the appropriate subsequent periodic report. Delivery well decommissioning without replacement will be done only with the prior approval of NYSDEC. Delivery well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures". Oxygen delivery wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available and appropriate location, unless otherwise approved by the NYSDEC.

3.5 NAPL Recovery

Prior to each DNAPL collection effort, the depth of DNAPL is first gauged using a weighted cotton string. The depth of DNAPL is determined by the length of DNAPL staining on the string, and will be reported to NYSDEC in quarterly reports along with the DNAPL thickness and the amount of DNAPL collected.

Repairs and/or replacement of NAPL recovery wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. The NYSDEC will be notified prior to any repair or decommissioning of NAPL recovery wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures". Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available and appropriate location, unless otherwise approved by the NYSDEC

3.6 Site and Off-Site Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect the ECs or groundwater monitoring wells. During these inspections, an inspection form will be completed (Appendix D). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site and off-Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- The Site and off-Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site and off-Site records are up to date.

3.7 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of the QAPP prepared for the Site during the investigative phase of the project. Main components of the QAPP include the following:

- Quality Assurance/Quality Control Objectives for Data Measurement;
- Sampling Program:
 - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.

- Sample holding times will be in accordance with the NYSDEC Analytical Services Protocol (ASP) requirements.
- Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
 - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
 - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures;
- Internal QC and checks; and
- Quality Assurance performance and system audits.

3.8 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file at a central location. All forms, and other relevant reporting formats used during the monitoring/inspection events will be (1) subject to approval by NYSDEC, and, (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP. Data will be reported in hard copy or digital format as determined by NYSDEC.

A quarterly report will be prepared subsequent to each sampling event. All monitoring results will be reported to NYSDEC in the quarterly reports and referenced in the Periodic Review Report. The quarterly report will include, at a minimum, the following:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Monitoring wells sampled;
- Groundwater levels and flow direction;
- Potentiometric surface map(s) of groundwater levels measured;
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all groundwater samples (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater flow conditions or groundwater quality conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 3.

4.0 OPERATION AND MAINTENANCE PLAN

Maintenance for the Oxygenation Treatment Systems will be performed in accordance with the requirements of the Operation and Maintenance Manuals provided by Construction Contractor (Operation & Maintenance Manual System #1, May 2011 and Operation & Maintenance Manual System #2, October, 2010). These manuals describe the ongoing requirements needed for operation of these systems and are held by the contractor responsible for the operation and maintenance of the systems. The monthly inspection and maintenance Forms are included in Appendix D. All reports and forms will be made available to the NYSDEC upon request.

5.0 SITE MANAGEMENT REPORTING PLAN

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in the Monitoring Plan section of this SMP. At a minimum, a Site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection/Monitoring Forms

All inspections and monitoring events will be recorded on the forms which are contained in Appendix D. Additionally, those provisions include a general Site-wide inspection form that will be completed during the Site-wide inspection. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the Site and off-Site areas during the reporting period will be provided in electronic format and included in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the EC/IC certification to confirm that the following are achieved:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Operation and maintenance activities are being conducted properly;

- EC repair activities are being conducted properly; and,
- The Site remedy continues to be protective of public health and the environment and is performing as designed.

5.2 Certification of Engineering and Institutional Controls

Information on the EC/ICs can be found in the Engineering and Institutional Control Plan portion of the SMP. Inspection of the EC/ICs will occur at a frequency described in Section 3 Monitoring Plan. After the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional and engineering control identified for the Site, I certify that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The ECs/ICs employed at this Site are still in place and unchanged from the date the control was put in place, or last approved by the Department; Nothing has occurred that would impair the ability of the controls to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any SMP for this control;
- Access to the Site will continue to be provided to the Department NYSDEC and NYSDOH to evaluate the remedy, including access to evaluate the continued maintenance of such controls;
- Site use is compliant with the Environmental Easement/Access Agreements;

- The EC systems are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Site remedial program;
- The information presented is accurate and complete; and
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name] of [business address], am certifying as [Owner or Owner’s Designated Site Representative]: [I have been authorized and designated by all site owners to sign this certification] for the site.

The signed certification will be included in the Periodic Review Report described below.

5.3 Periodic Review Report

A Periodic Review Report will be submitted to the NYSDEC every year, beginning 18 months after the Certificate of Completion is issued. The Periodic Review Report will be prepared in accordance with the New York State Department of Environmental Conservation DER-10 “Technical Guidance for Site Investigation and Remediation” requirements. The frequency of submittal of the Periodic Review Report may be modified with the approval of the NYSDEC. This report will include the following:

- Identification of all ECs/ICs required by the Remedial Design/Remedial Action Work Plan for the Site and off-Site areas;
- An assessment of the effectiveness of all ECs/ICs for the Site and off-Site areas;
- A Site evaluation, which includes the following:
 - The compliance of the remedy with the requirements of the Site-specific Decision Document;

- The condition of all ECs, including identification of any needed repairs or modifications;
 - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan;
 - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
 - The overall performance and effectiveness of the remedy.
- An evaluation of the Engineering and Institutional Control Plan and the Monitoring Plan for adequacy in meeting remedial goals;
 - Results of the required annual Site and off-Site area inspections and severe condition inspections, if any;
 - A compilation of all deliverables generated during the reporting period, as specified in Section 2 Engineering Controls/Institutional Controls Plan and the Section 3 Monitoring Plan; and
 - Certification of the ECs/ICs.

A single Periodic Review Report will be prepared for the Site and off-Site areas.

Groundwater Monitoring Reports will continue to be submitted to the NYSDEC on a quarterly basis. The report will be prepared in accordance with NYSDEC DER-10 and will include the following:

- Data summary tables and graphical representations of groundwater contaminants of concern which includes a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends; and
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.

The Periodic Review and the Groundwater Monitoring Reports will be submitted, in hard-copy format, to the NYSDEC - Region 1 Office, and in electronic format to NYSDEC Central Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 Corrective Measures Plan

If any component of the remedy is found to be compromised, or if the periodic certification cannot be provided due to an issue with an institutional or engineering control, a Corrective Measures Plan will be submitted to the NYSDEC for approval. This Plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Plan until it is approved by the NYSDEC.

6.0 References

- Atlantic Environmental Services, Inc., 1990. Preliminary Investigation for Site of Former Hempstead Gas Plant, December.
- Dvirka & Bartilucci Consulting Engineers, 2003. Remedial Investigation Report, March.
- Fenley & Nicol Environmental, Inc., 2010. Operation & Maintenance Manual System #2 – Off-site Groundwater Treatment Systems Installation, October.
- Fenley & Nicol Environmental, Inc., 2011. Operation & Maintenance Manual System #1 – Revision #1 – Off-site Groundwater Treatment Systems Installation, May.
- Grosser, P.W., 1995. Containment Fate Report – Hempstead Gas Plant, May.
- H2M, 2006. Village of Garden City and Village of Hempstead Clinton Street Water Supply Wells; Capture Zone Analysis Reports, November.
- New York State Department of Environmental Conservation (NYSDEC), 2008. Final Decision Document, March.
- NYSDEC, 2010a. NYSDEC DER-10 “Technical Guidance for Site Investigation and Remediation,” May.
- NYSDEC, 2010b. Draft DER-10 Technical Guidance for Site Investigation and Remediation. December.
- PS&S, 2006. Final Remedial Investigation Report, November.
- URS, 2007. IRM Remedial Action Work Plan.
- URS, 2008a. Feasibility Study/Remedial Action Plan (FS/RAP).
- URS, 2008b. Pre-Design Investigation Work Plan for In-Situ Solidification and Off-Site Groundwater Treatment.
- URS, 2009c. IRM Excavation Completion Report – Interim Remedial Measures for the Hempstead Intersection Street Former MGP Site, Villages of Hempstead and Garden City, Nassau County, New York, May.
- URS, 2010. Pre-Design Investigation Report for In-Situ Solidification and Off-Site Groundwater Treatment, Hempstead Intersection Street Former Manufactured Gas Plant Site, Draft, February.

URS, 2011, Basis of Design Report for In-Situ Solidification, Hempstead Intersection Street
Former Manufactured Gas Plant Site, August.

URS, 2016, 2015 Annual Groundwater Sampling and NAPL Monitoring/Recovery Report,
August.

Weston, R.F., 1992a. Final Field Investigation Report – Hempstead Gas Plant, October.

Weston, R.F., 1992b. Final Baseline Risk Assessment Report LILCO – Hempstead Gas Plant,
July.

Weston, R.F., 1993. Remedial Alternatives and Feasibility Analysis, November.

TABLES

Table 1
Matrix of Responsibilities
Hempstead Intersection Street Former MGP Site

Responsible Party →	NYSDEC	National Grid	Property Owner	Action		
				NYSDEC	National Grid	Property Owner
Trigger ↓						
Access Agreement (AA)		x	x		AA will be executed between the Property Owner and National Grid for SMP implementation including maintaining engineering controls, following restrictions and institutional controls, annual inspection and groundwater monitoring (as needed).	AA will be executed between the Property Owner and National Grid for SMP implementation including maintaining engineering controls, following restrictions and institutional controls, annual inspection and groundwater monitoring.
Annual Report		x			Report will be completed by National Grid and Submitted to NYSDEC. Report will include results of GW Monitoring.	
Emergency Response	x	x	x	Review and Comment, as necessary.	National Grid will notify NYSDEC of any event and associated changes within 15 days. National Grid will review emergency activities, conduct maintenance or repair (if necessary) and submit update to NYSDEC with Annual Inspection Report.	Property Owner or Lessee have to provide details of emergency work to National Grid and NYSDEC within 48 hours of emergency.
Environmental Easement (National Grid Property Only)	x	x		EE will be executed between the Property Owner (National Grid) and the NYSDEC.	EE will be executed between National Grid (Property Owner) and the NYSDEC.	
Future Property Development	x	x	x	Review and Comment, as necessary.	National Grid to review and decide if oversight is required upon notification by the Property Owner. If new building, decision on indoor air sampling will be evaluated. Following development, National Grid to update SMP and submit to NYSDEC with Annual Inspection Report.	Property Owner has to provide at a minimum 60 business days notice to National Grid and NYSDEC. Restrictions on type of development activities should be followed.
Ground Intrusion Work		x	x	Review and Comment, as necessary.	National Grid will notify DEC of any event and associated changes within 15 days of notification by the Property Owner. National Grid to review and decide if oversight is required. Following development, National Grid to update SMP and submit to NYSDEC with Annual Inspection Report.	Property Owner has to provide at a minimum 15 business days notice to National Grid and NYSDEC. All ground intrusive activities shall be pursuant to the SMP.
Groundwater Use			x			Removed groundwater shall be managed pursuant to the SMP.
HASP Development		x	x		National Grid will aid in the development of task-specific HASP.	Develop a Site specific HASP for any subsurface work deeper than 4 feet below ground surface or top of groundwater table whichever is shallower.
Inspections		x	x		Annual Site-wide inspection of Engineering Controls and Institutional Controls.	Annual Site-wide inspection of Engineering Controls and Institutional Controls.
Interviews		x	x		National Grid to discuss annually with the Property Owner and Lessee.	National Grid to discuss annually with the Property Owner and Lessee.
Survey for Environmental Easement		x			National Grid will perform a Metes and Bounds (or similar) Survey to include in the SMP and EE.	
Monitoring		x	x		Monitoring will be completed by National Grid quarterly, semi-annually, or annually or as needed. Indoor air monitoring will be completed for any building modification or new buildings.	Property Owner shall provide National Grid with access to monitoring locations.
Property Ownership Change		x	x		National Grid to notify NYSDEC of any event and associated changes within 15 days of notification by the Property Owner. National Grid will submit update to NYSDEC with Annual Inspection Report.	Property Owner shall provide at a minimum 60 days notice to National Grid and NYSDEC.
Property Use Change	x	x	x	Review and Comment, as necessary.	National Grid will notify NYSDEC of any event and associated changes within 15 days of notification by the Property Owner. National Grid to review and confer with NYSDEC if SMP revision and/or additional ECs/ICs are required. Following use change, National Grid to update SMP and submit to NYSDEC with Annual Inspection Report.	Property Owner has to provide at a minimum 60 days notice to National Grid and NYSDEC.
SMP Requirements		x	x		Follow the SMP for any ground intrusive work that will disturb cover system.	Follow the SMP for any ground intrusive work that will disturb cover system.

Table 2

**Emergency Contact and Other Numbers
Hempstead Intersection Street Former MGP Site**

Agency	Phone Number*	Address
Medical, Fire, and Police:	911	
Hospital: Winthrop University Hospital	(516) 663-0333	259 First Street Mineola, NY 11501
One Call Center:	(800) 962-7962	
Region 2 EPA Hotline	(800) 424-8802	
Poison Control Center:	(800) 292-6678	
National Response Center for Oil/Chemical Spills	(800) 424-8802	
NYSDEC Spills Hotline	(800) 457-7362	
NYSDEC Project Manager: John Spellman	(518) 402-9686	625 Broadway Albany, NY 12233-7014
NYSDOH Project Manager: Jaquelyn Nealon	(800) 458-1158 ext 27880	547 River Street Room 300 Troy, NY 12180-2216
National Grid Project Manager: Patrick Van Rossem	(516) 545-2578	175 East Old Country Road Hicksville, NY 11801

**Table 3
Monitoring Programs Schedule
Hempstead Intersection Street Former MGP Site**

Monitoring/Inspection	Frequency*	Analysis	Reporting Frequency
Cover System: Former MGP Area and LIRR ROW	Annually	none	Annually
Cover System: Village of Garden City Property	Annually	none	Annually
Cover System: Active oil storage terminal Area	Annually	none	Annually
Cover System: Restored Roadway Areas	Annually	none	Annually
Cover System: POB Parking Lot	Annually	none	Annually
Groundwater Monitoring	Quarterly	Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by USEPA Method 8260C and polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270D	Quarterly/Annually
Groundwater level measurements and Potentiometric surface map(s)	Quarterly	N/A	Quarterly/Annually
DNAPL Depth Gauging	Monthly	Depth	Quarterly/ Annually
Treatment System Monitoring	Monthly	Dissolved Oxygen	Quarterly/Annually

*The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.

Table 4
Monitoring Well Construction Details
Hempstead Intersection Street Former MGP Site

Well ID	Date Installed	Top of Riser	Well Depth	Depth to Water (6/2014)	Depth to top of Screen bgs	Length of Screen	Aquifer Screened (S, I, or D)	Location of MW (up, side, or downgradient)
		[ft amsl]	[ft]	[ft]	[ft]	[ft]		
HIMW-003S	9/7/2000	65.00	34.50	17.59	23	10	S	side
HIMW-003I	9/7/2000	64.94	85.15	17.92	80.5	10	I	side
HIMW-003D	9/7/2000	65.26	142.71	18.67	133	10	D	side
HIMW-004S	9/22/2000	72.74	41.61	25.94	30	10	S	side
HIMW-004I	9/22/2000	72.78	90.51	26.10	80	10	I	side
HIMW-004D	9/22/2000	72.65	177.0	26.81	167	10	D	side
HIMW-005S	9/11/2000	67.19	38.92	20.26	27	10	S	side
HIMW-005I	9/11/2000	67.22	90.65	20.49	80	10	I	side
HIMW-005D	9/11/2000	67.22	136.3	21.21	130	10	D	side
HIMW-008S	11/13/2000	65.04	36.95	18.51	25	10	S	down
HIMW-008I	11/13/2000	65.14	75.01	18.69	63	10	I	down
HIMW-008D	11/13/2000	64.93	114.61	18.51	102	10	D	down
HIMW-009S	11/1/2000	70.03	39.61	23.03	28	10	S	side
HIMW-009I	11/1/2000	69.93	80.44	23.00	70	10	I	side
HIMW-009D	11/1/2000	69.96	122.86	23.12	113	10	D	side
HIMW-010S	9/20/2000	71.60	39.21	23.67	28	10	S	side
HIMW-010I	9/20/2000	71.47	89.72	23.49	80.5	10	I	side
HIMW-011S	10/24/2000	71.62	40.21	24.07	28	10	S	side
HIMW-011I	10/24/2000	71.43	93.25	23.94	80	10	I	side
HIMW-011D	10/24/2000	71.39	122.30	24.95	109	10	D	side
HIMW-012S	1/2/2001	61.58	33.20	16.21	22	10	S	down
HIMW-012I	1/2/2001	61.59	74.55	16.09	63	10	I	down
HIMW-012D	1/2/2001	61.82	128.16	18.69	117	10	D	down
HIMW-013S	12/21/2000	72.83	48.70	29.31	38	10	S	down
HIMW-013I	12/21/2000	72.60	81.63	29.08	70	10	I	down
HIMW-013D	12/21/2000	72.53	122.03	29.08	110	10	D	down
HIMW-014I	12/10/2001	71.71	95.88	28.15	85	10	I	down
HIMW-014D	12/10/2001	71.59	151.95	31.72	140	10	D	down
HIMW-015I	12/20/2001	64.18	92.69	23.91	80	10	I	down
HIMW-015D	12/20/2001	63.96	152.36	26.50	141.5	10	D	down
HIMW-017S	11/16/2003	grnd 66.4	37.00	NA	25	10	S	down
HIMW-020S	1/27/2009	70.43	36.83	24.39	25	10	S	down
HIMW-020I	1/26/2009	70.30	74.89	24.25	63	10	I	down
HIMW-021	NA	NA	45.3	18.74	25	10	S	down
HIMW-022	5/3/2011	74.07	64.4	29.29	54	10	I	down
HIMW-023	4/29/2011	74.41	75.48	29.46	66	10	I	down
HIMW-024	4/28/2011	59.83	54.93	14.98	44.6	10	NA	down
HIMW-025	4/28/2011	62.75	52.25	16.40	42	10	NA	down
HIMW-26I	3/26/2014	NA	84.85	22.21	65	20	I	side
HIMW-26D	3/26/2014	NA	137.49	22.34	115	20	D	side
HIMW-27S	3/21/2014	NA	41.57	23.26	20	20	S	side
HIMW-27I	3/21/2014	NA	70.31	22.69	50	20	I	side
HIMW-28S	3/20/2014	NA	41.39	23.63	20	20	S	side
HIMW-28I	3/20/2014	NA	71.61	23.30	50	20	I	side
PZ-02	NA	72.96	35.45	24.79	26	10	S	up
PZ-03	NA	64.58	29.89	16.73	20	10	S	up
OSMW-02	2/28/2008	71.59	45.05	24.27	10	30	S	side
OSMW-03	2/29/2008	71.39	44.68	24.06	9	30	S	side

Notes: NA - not available
S - shallow zone of aquifer
I - intermediate zone of aquifer
D - deep zone of aquifer
Q - quarter
amsl - above mean sea level
grnd - ground surface elev.
bgs - below ground surface

Table 5

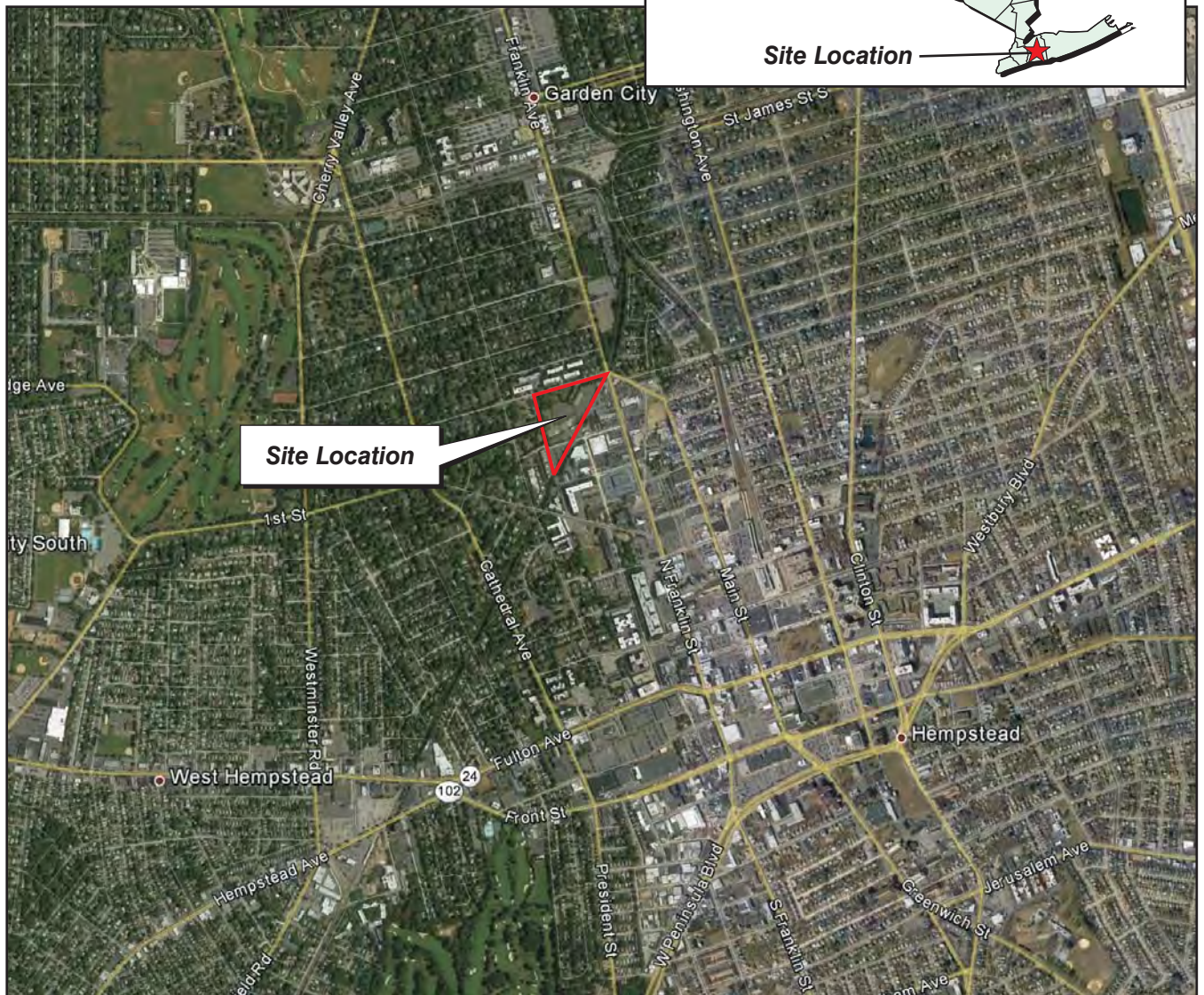
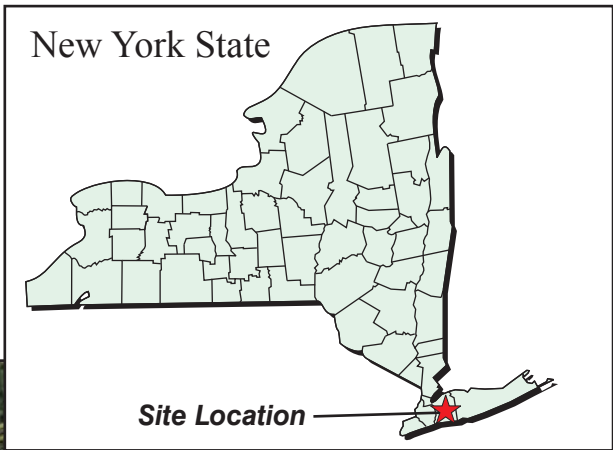
Water Level Measurements, NAPL Thickness Measurements, and Water Quality Sampling
Hempstead Intersection Street Former MGP Site

Well ID	First Quarter ^(1,2)			Second Quarter ^(1,2)			Third Quarter ^(1,2)			Fourth Quarter ^(1,2)		
	Water Level	NAPL Thickness	Water Quality	Water Level	NAPL Thickness	Water Quality	Water Level	NAPL Thickness	Water Quality	Water Level	NAPL Thickness	Water Quality
HIMW-003S	X	X	X	X	X		X	X	X	X	X	
HIMW-003I	X	X	X	X	X		X	X	X	X	X	
HIMW-003D	X	X	X	X	X		X	X	X	X	X	
HIMW-004S	X	X		X	X		X	X		X	X	X
HIMW-004I	X	X		X	X		X	X		X	X	X
HIMW-004D	X	X		X	X		X	X		X	X	
HIMW-005S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-005I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-005D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-009S	X	X		X	X		X	X		X	X	
HIMW-009I	X	X		X	X		X	X		X	X	
HIMW-009D	X	X		X	X		X	X		X	X	
HIMW-010S	X	X		X	X		X	X		X	X	X
HIMW-010I	X	X		X	X		X	X		X	X	X
HIMW-011S	X	X		X	X		X	X		X	X	X
HIMW-011I	X	X					X	X		X	X	X
HIMW-011D	X	X		X	X		X	X		X	X	X
HIMW-012S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-012I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-012D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-013S	X	X	X	X	X		X	X	X	X	X	
HIMW-013I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-013D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-014I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-014D	X	X	X	X	X		X	X	X	X	X	
HIMW-015I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-015D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-020S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-020I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-21	X	X		X	X		X	X		X	X	
HIMW-22	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-23	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-24	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-25	X	X	X	X	X	X	X	X	X	X	X	X
PZ-02							X	X		X	X	
PZ-03							X	X		X	X	
OSMW-02							X	X		X	X	X
OSMW-03							X	X		X	X	X

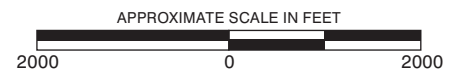
Notes:

- (1) Field marked with "X" indicates that the activity was performed.
- (2) Blank field indicates that the activity was not performed.

FIGURES



Source: Google Earth Pro - © 2012 Google



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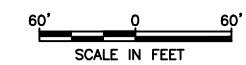
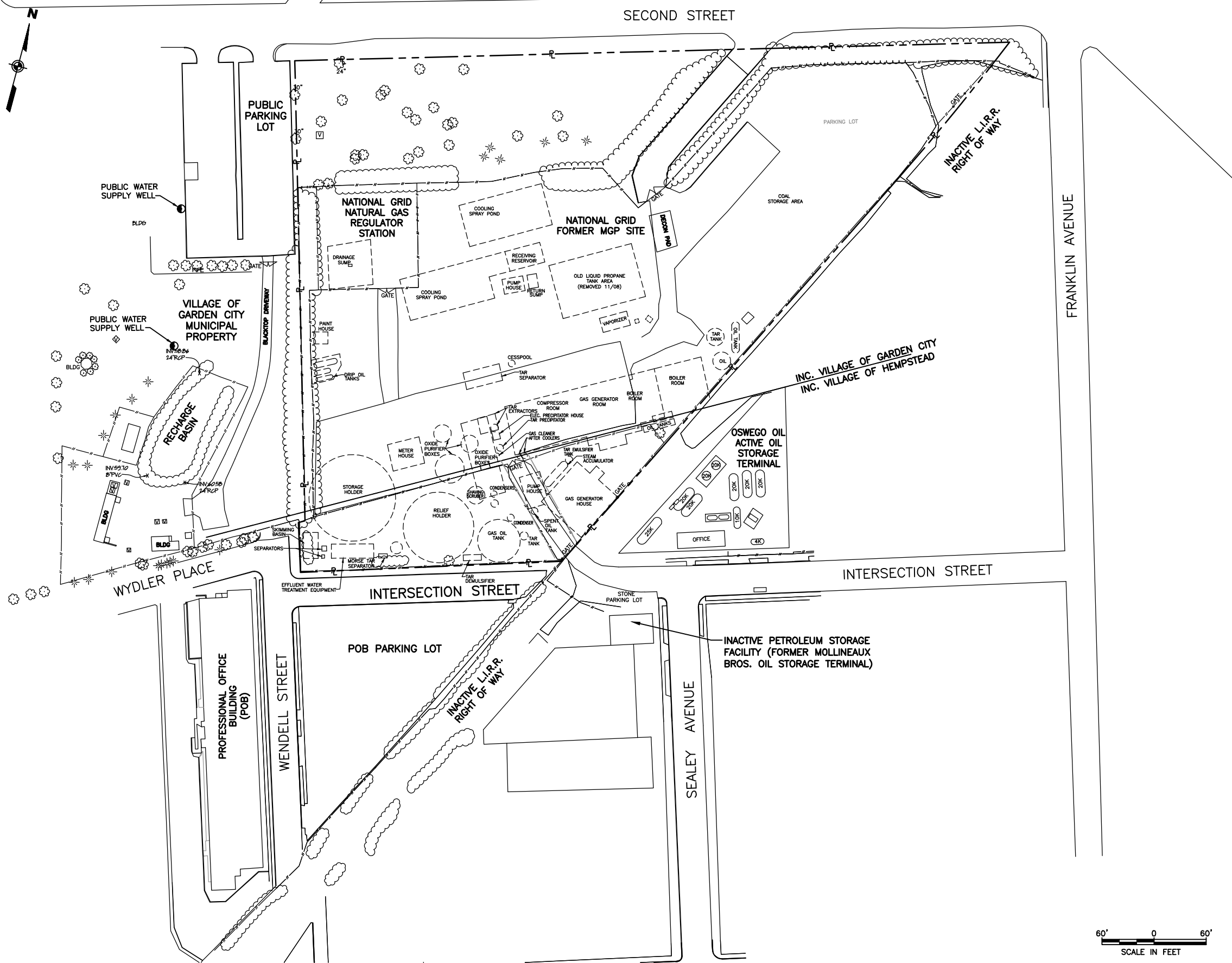
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
SITE LOCATION MAP

FIGURE 1

NOTES:

1. LOCATIONS SHOWN FOR FORMER MGP FEATURES WERE TAKEN FROM FINAL REMEDIAL INVESTIGATION REPORT DATED NOVEMBER 2006 BY PAULUS, SOKOLOWSKI AND SARTOR ENGINEERING, P.C. REFERENCE RI FIGURE 1-4. BASE MAP AND FORMER MGP SITE FEATURES IN RI WAS PREPARED BY DVIRKA AND BARTOLUCCI CONSULTING ENGINEERS, A DIVISION OF WILLIAM F COSULICHI ASSOCIATES, P.C.

LEGEND	
	FENCE
	FORMER MGP SITE BOUNDARY AND APPROXIMATE PROPERTY LINE
	APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
	LOCATION OF EXISTING STRUCTURE
	DECIDUOUS TREE
	CONIFER TREE
	APPROXIMATE TREE LINE



J:\Projects\1175065\00000\CAD\DRAWING\TASK2\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 2.dwg, PAPER, 1:2, 1/19/15 -1-RAL

URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

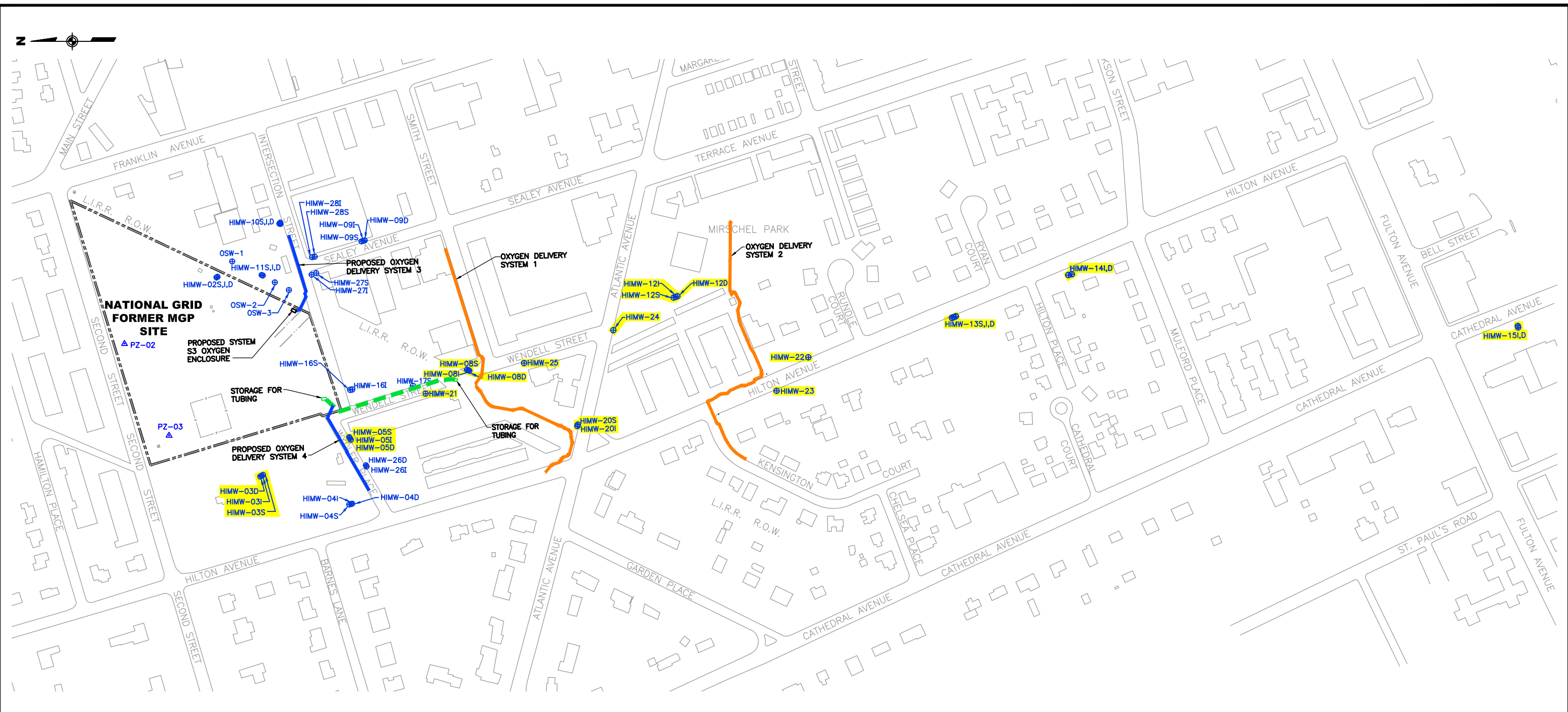
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

PRE-CONSTRUCTION SITE PLAN

DATE: JUNE 2015

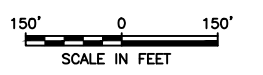
FIGURE 2

J:\Projects\11175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\ISS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 3.dwg 5/28/15 - 1 RAL



- LEGEND:**
- HIMW-13 ⊕ MONITORING WELL
 - PZ-03 ▲ PIEZOMETER
 - MONITORING WELL TO BE SAMPLED AS PART OF MONITORING PLAN
 - EXISTING HOUSE OR BUILDING
 - NATIONAL GRID PROPERTY BOUNDARY
 - EXISTING OXYGEN DELIVERY SYSTEM
 - POTENTIAL FUTURE OXYGEN DELIVERY SYSTEM
 - OXYGEN DELIVERY TUBING FOR OXYGEN DELIVERY SYSTEM 4

THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

**GROUNDWATER MONITORING WELL
LOCATIONS AND OXYGEN DELIVERY SYSTEMS**

DATE: JUNE 2015

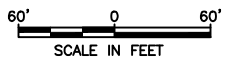
FIGURE 3

\\Projects\1175065\00000\CAD\DRAWING\TASK2\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 4.dwg, PAPER, 1:2, 1/19/15 -1-BAL



- LEGEND:**
- EXISTING PROPERTY LINE
 - POST-EXCAVATION CONTOURS, DATED 9/17/13
 - PRE-CONSTRUCTION GROUND SURFACE CONTOUR
 - EXISTING SANITARY MANHOLE
 - EXISTING STORM MANHOLE
 - EXISTING MANHOLE (UNKNOWN)
 - EXISTING MONITORING WELL
 - EXCAVATION AND ISS AREAS
 - IRM EXCAVATION AREAS. SOURCE: FIGURE 2-2 FROM THE IRM CONSTRUCTION COMPLETION REPORT, DATED MARCH 31, 2009.
 - LIMIT OF MGP SOURCE MATERIAL ISS TREATMENT

THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

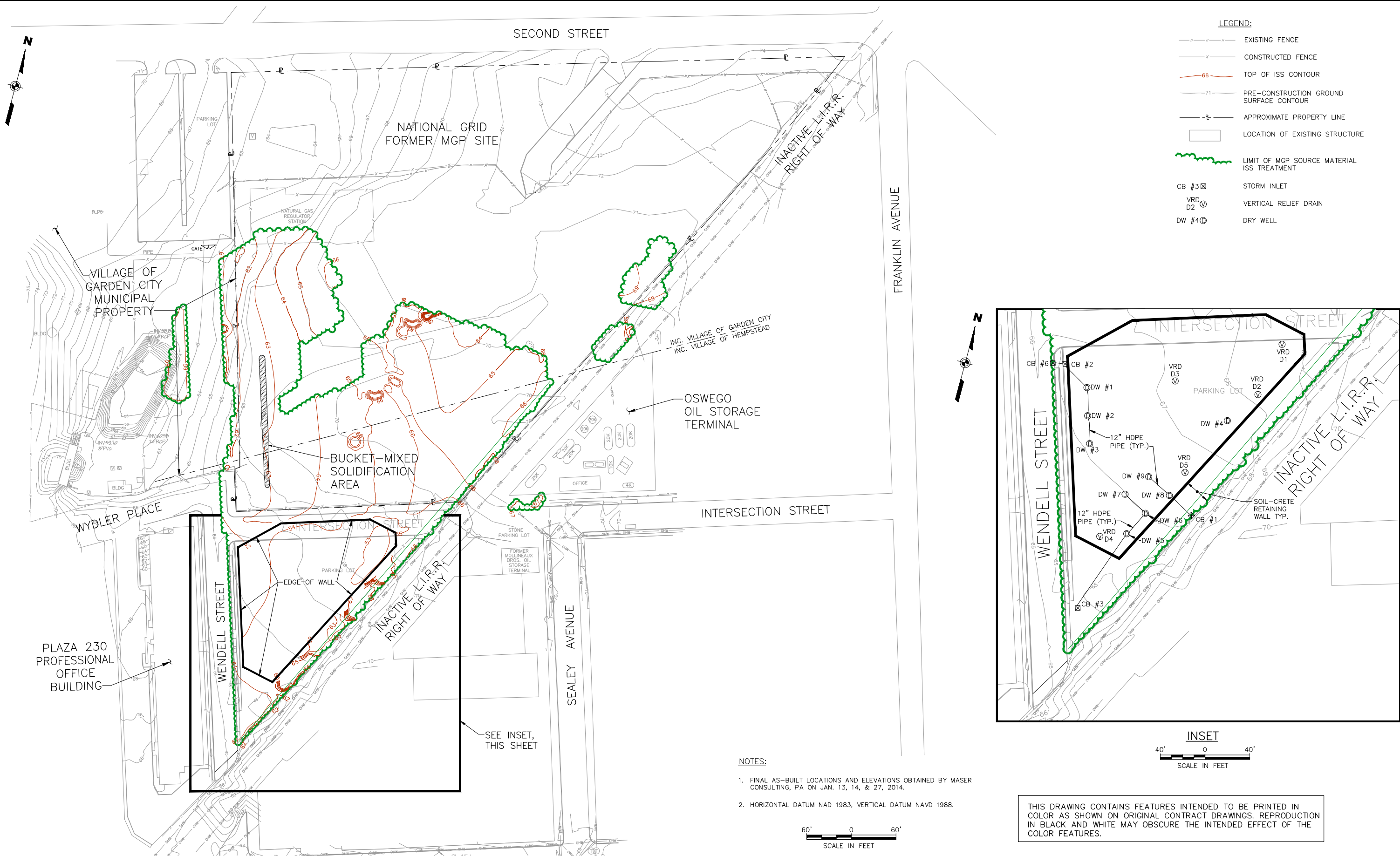
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

EXCAVATION AND ISS AREAS

DATE: JUNE 2015

FIGURE 4

J:\Projects\1175065\00000\CAD\DRAWING\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 5.dwg, FIGURE 5, 1:2, 5/28/15 -1-RAL



LEGEND:

	EXISTING FENCE
	CONSTRUCTED FENCE
	TOP OF ISS CONTOUR
	PRE-CONSTRUCTION GROUND SURFACE CONTOUR
	APPROXIMATE PROPERTY LINE
	LOCATION OF EXISTING STRUCTURE
	LIMIT OF MGP SOURCE MATERIAL ISS TREATMENT
	CB #3 STORM INLET
	VRD D2 VERTICAL RELIEF DRAIN
	DW #4 DRY WELL



INSET
 40' 0 40'
 SCALE IN FEET

- NOTES:**
1. FINAL AS-BUILT LOCATIONS AND ELEVATIONS OBTAINED BY MASER CONSULTING, PA ON JAN. 13, 14, & 27, 2014.
 2. HORIZONTAL DATUM NAD 1983, VERTICAL DATUM NAVD 1988.

60' 0 60'
 SCALE IN FEET

THIS DRAWING CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR AS SHOWN ON ORIGINAL CONTRACT DRAWINGS. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.

URS Corporation

NATIONAL GRID
 HEMPSTEAD INTERSECTION STREET
 FORMER MGP SITE
 HEMPSTEAD/GARDEN CITY, NY

IN-SITU SOLIDIFICATION
 SITE MANAGEMENT PLAN

ELEVATION OF TOP OF ISS MONOLITH

DATE: JUNE 2015

FIGURE 5

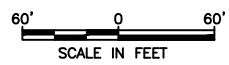
\\Projects\1175065\00000\CAD\DRAWING\TASK2\HEMPSTEAD\ISS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 6.dwg, FIG. 6, 1:2, 5/28/15 -1-RAL



- LEGEND:**
- EXISTING FENCE
 - x- CONSTRUCTED FENCE
 - 35- BOTTOM OF ISS CONTOUR
 - 71- PRE-CONSTRUCTION GROUND SURFACE CONTOUR
 - E- APPROXIMATE PROPERTY LINE
 - LOCATION OF EXISTING STRUCTURE
 - LIMIT OF MGP SOURCE MATERIAL ISS TREATMENT

- NOTES:**
1. FINAL AS-BUILT LOCATIONS AND ELEVATIONS OBTAINED BY MASER CONSULTING, PA ON JAN. 13, 14, & 27, 2014.
 2. HORIZONTAL DATUM NAD 1983, VERTICAL DATUM NAVD 1988.

THIS DRAWING CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR AS SHOWN ON ORIGINAL CONTRACT DRAWINGS. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

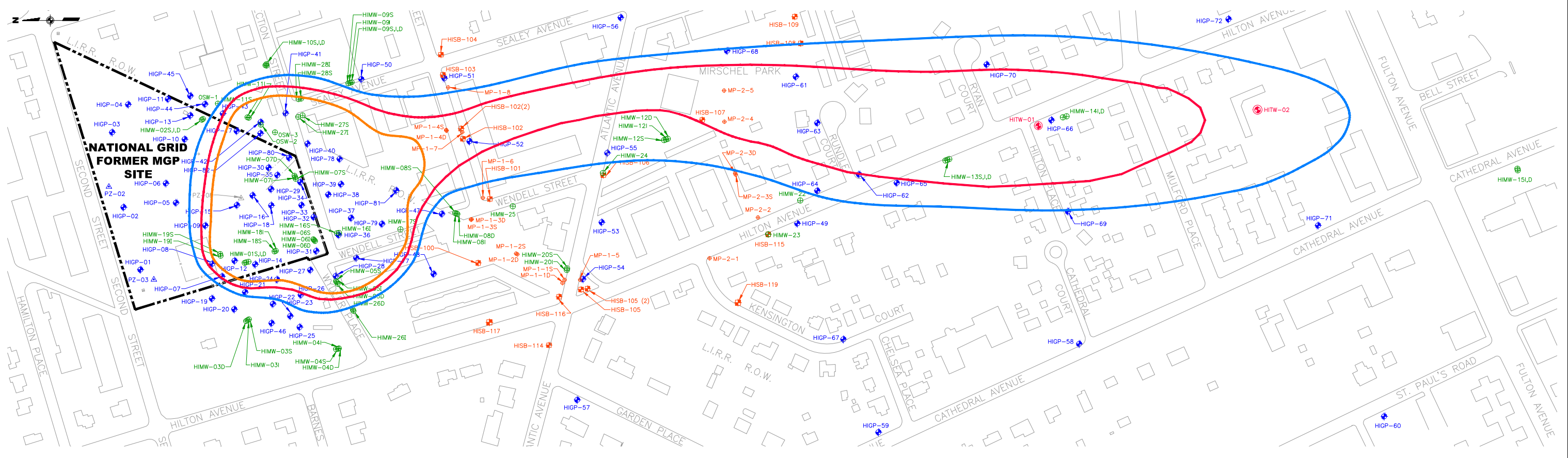
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

BOTTOM OF ISS CONTOUR MAP

DATE: JUNE 2015

FIGURE 6

J:\Projects\1175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\ISS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 7.dwg 5/28/15 - 1.ELB

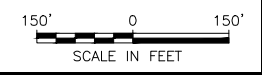


**NATIONAL GRID
FORMER MGP
SITE**

- LEGEND:**
- HITW-02 (red circle with cross) TEMPORARY GROUNDWATER MONITORING WELL (TAKEN FROM RI REPORT, 2006)
 - HIGP-53 (blue circle with cross) TEMPORARY GROUNDWATER SAMPLE LOCATION (TAKEN FROM RI REPORT, 2006)
 - MP-2-1 (orange circle with cross) OXYGEN SYSTEM MONITORING WELL
 - HIMW-13 (green circle with cross) MONITORING WELL
 - PZ-02 (blue triangle) PIEZOMETER
 - PZ-08 (grey triangle) ABANDONED PIEZOMETER
 - HISB-114 (red square with cross) TEMPORARY GROUNDWATER SAMPLE LOCATION (URS, 2008-2009)
 - ND NOT DETECTED
 - (white rectangle) EXISTING HOUSE OR BUILDING
 - (dashed line) NATIONAL GRID PROPERTY BOUNDARY
- BTEX/PAH ISOCONCENTRATION LINE (PPB):**
- 50 (blue line)
 - 100 (red line)
 - 1,000 (orange line)
- APRIL 4 THROUGH 17, 2007

* SOME LOCATIONS ON SITE AND ADJACENT TO SITE ARE NOT SHOWN FOR FIGURE CLARITY.

THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

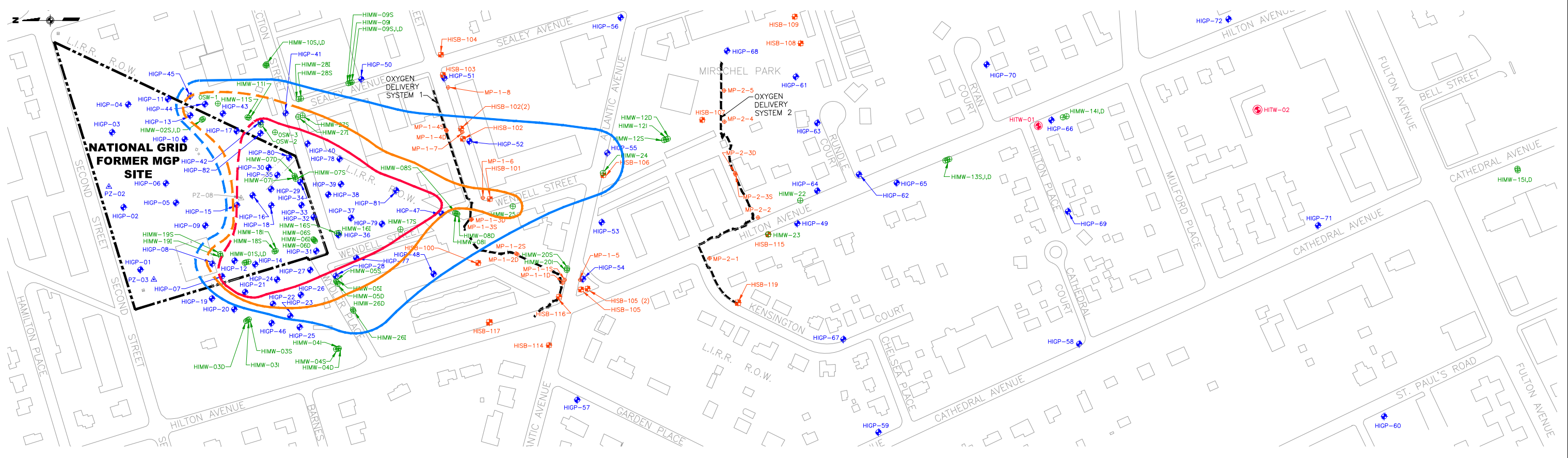
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

GROUNDWATER CONTAMINANT PLUME
PRIOR TO REMEDIATION

DATE: JUNE 2015

FIGURE 7

J:\Projects\1175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 8.dwg 5/28/15 - 1 .JVS



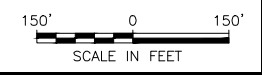
**NATIONAL GRID
FORMER MGP
SITE**

LEGEND:

HITW-02	TEMPORARY GROUNDWATER MONITORING WELL (TAKEN FROM RI REPORT, 2006)		NATIONAL GRID PROPERTY BOUNDARY
HIGP-53	TEMPORARY GROUNDWATER SAMPLE LOCATION (TAKEN FROM RI REPORT, 2006)		ESTIMATED EXTENT OF GROUNDWATER PLUME AS DEFINED BY TOTAL BTEX OR TOTAL PAH CONCENTRATIONS EQUAL TO OR GREATER THAN 5,000 ug/L
MP-2-1	OXYGEN SYSTEM MONITORING WELL		ESTIMATED EXTENT OF GROUNDWATER PLUME AS DEFINED BY TOTAL BTEX OR TOTAL PAH CONCENTRATIONS EQUAL TO OR GREATER THAN 1,000 ug/L
HIMW-13	MONITORING WELL		ESTIMATED EXTENT OF GROUNDWATER PLUME AS DEFINED BY TOTAL BTEX OR TOTAL PAH CONCENTRATIONS EQUAL TO OR GREATER THAN 100 ug/L
PZ-02	PIEZOMETER		ESTIMATED EXTENT OF GROUNDWATER PLUME AS DEFINED BY TOTAL BTEX OR TOTAL PAH CONCENTRATIONS. DASHED LINES REPRESENT CONTAMINATION CONCENTRATIONS THAT ARE LIKELY INFLUENCED BY THIRD PARTY SOURCES.
PZ-08	ABANDONED PIEZOMETER		
HISB-114	TEMPORARY GROUNDWATER SAMPLE LOCATION (URS, 2008-2009)		OXYGEN DELIVERY SYSTEM
ND	NOT DETECTED		

* SOME LOCATIONS ON SITE AND ADJACENT TO SITE ARE NOT SHOWN FOR FIGURE CLARITY.

THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

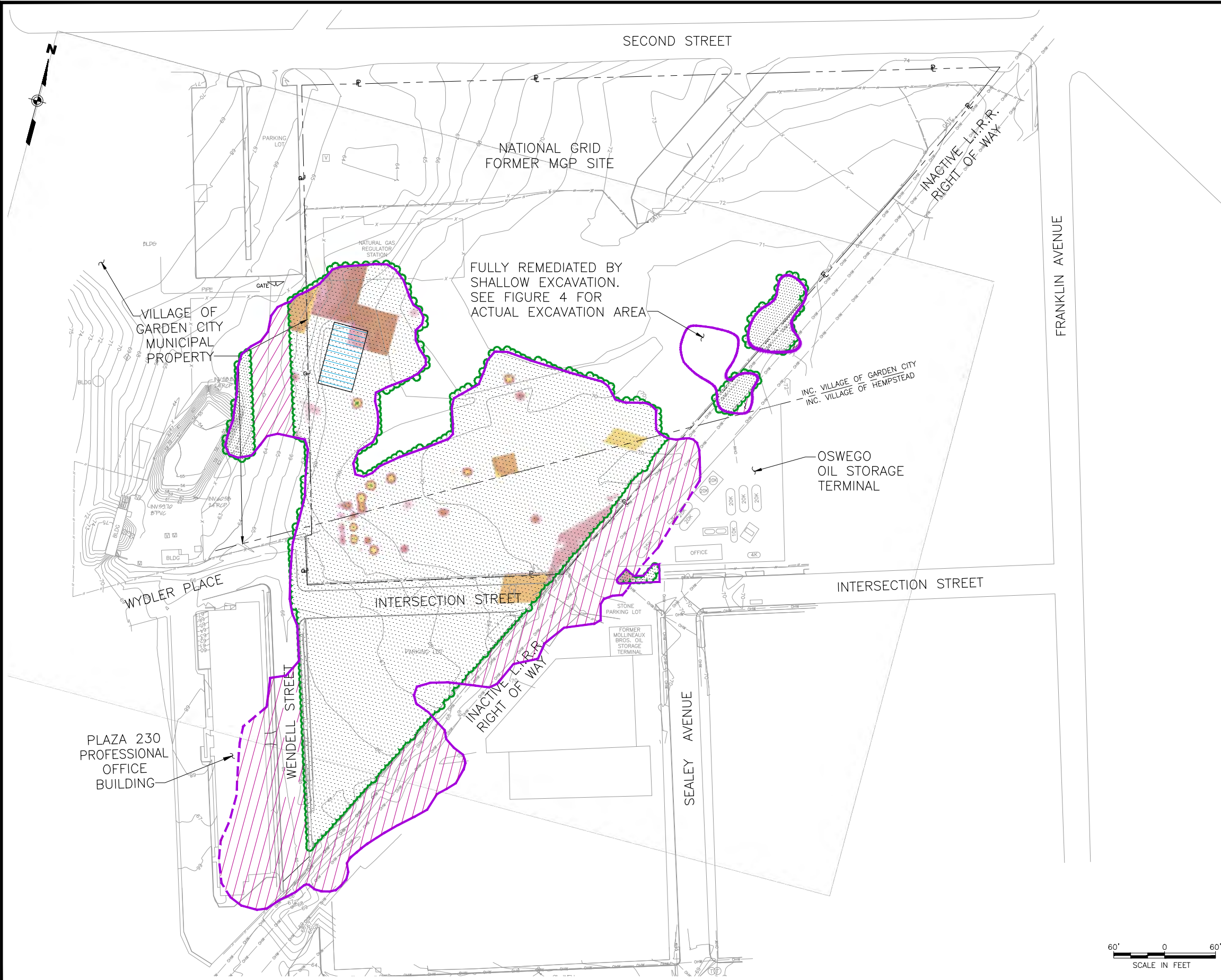
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

GROUNDWATER CONTAMINANT PLUME
JUNE 2014

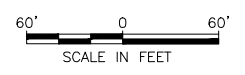
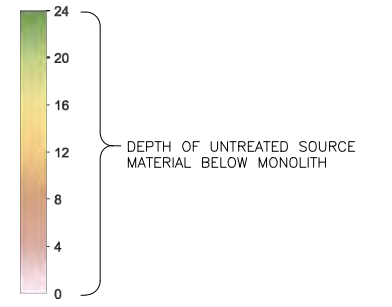
DATE: JUNE 2015

FIGURE 8

U:\Projects\1175065\0000\CAD\Draft\Task2\HEMPSTEAD\ISS SITE MANAGEMENT PLAN\SEPT 2015 REVISIONS\FIGURE 9.dwg, FIGURE 9, 1:2, 9/9/15 -1-RAL



- LEGEND:**
- EXISTING FENCE
 - CONSTRUCTED FENCE
 - SOLIDIFIED CONTAMINATED MATERIAL
 - REMAINING MGP SOURCE MATERIAL NOT TREATED BY SOLIDIFICATION
 - DEEP POCKET SOURCE MATERIAL NOT TREATED BY SOLIDIFICATION AT ELEVATIONS 2 TO 10 FEET AMSL (EXISTING GRADE APPROX. ELEV. 68)
 - PRE-CONSTRUCTION GROUND SURFACE CONTOUR
 - APPROXIMATE PROPERTY LINE
 - LOCATION OF EXISTING STRUCTURE
 - DELINEATED LIMIT OF MGP SOURCE MATERIAL
 - APPROXIMATE LIMITS OF MGP SOURCE MATERIAL
 - LIMIT OF MGP SOURCE MATERIAL ISS TREATMENT



THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.

URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

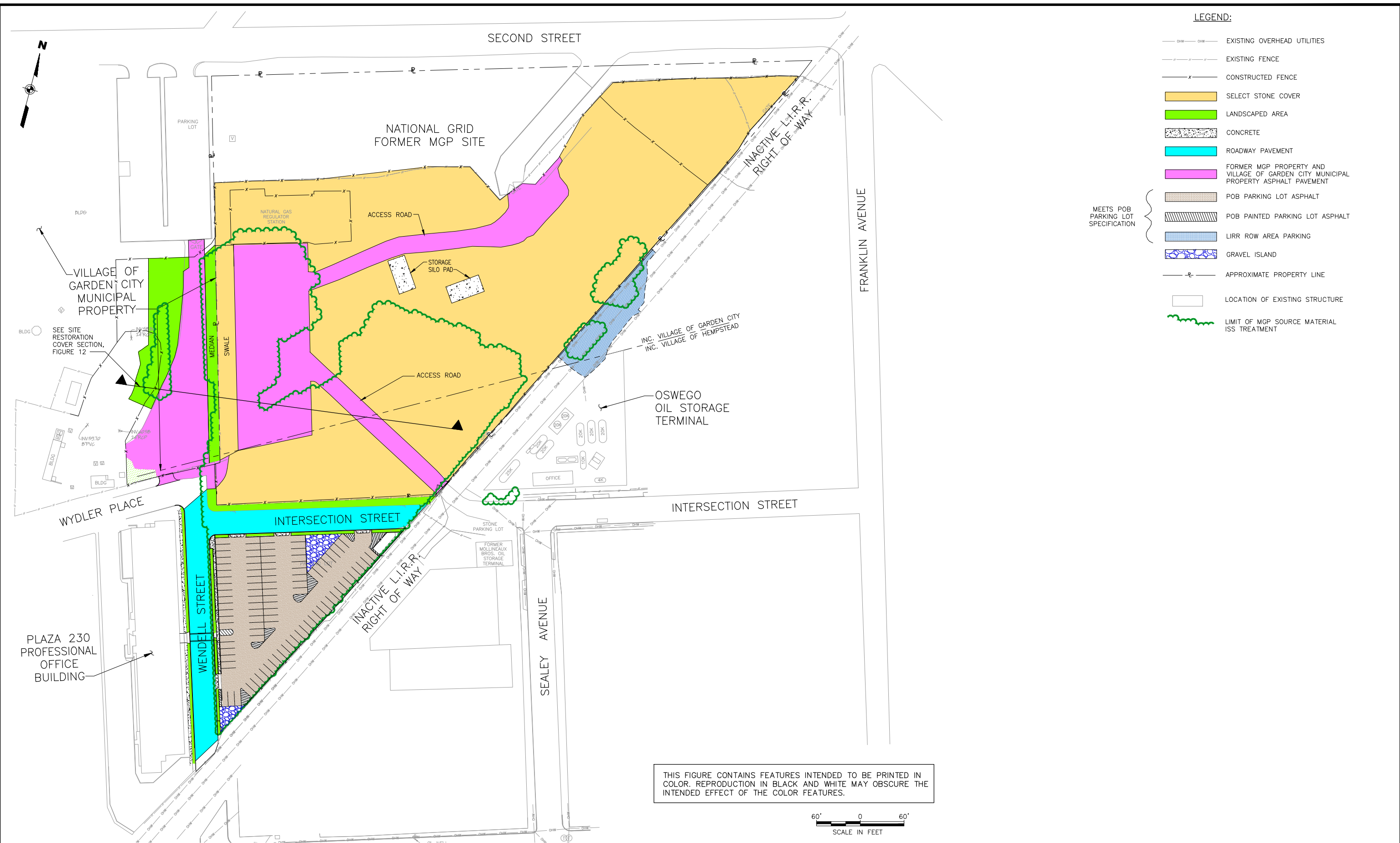
IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

LOCATIONS OF MGP SOURCE MATERIAL
NOT TREATED BY SOLIDIFICATION

DATE: JUNE 2015

FIGURE 9

\\Projects\1175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 10.dwg, FIGURE 10, 1,2, 1/19/15 -1-RAL



URS Corporation

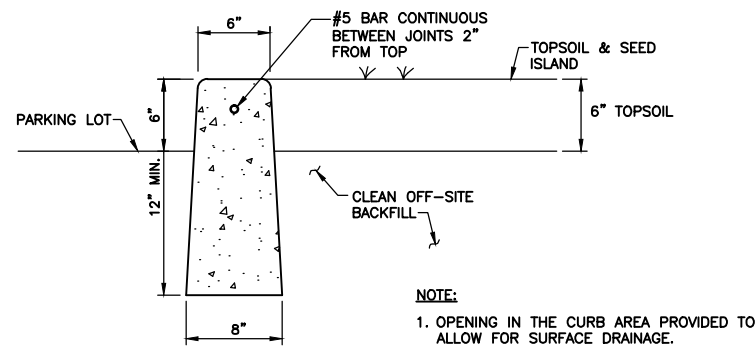
NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

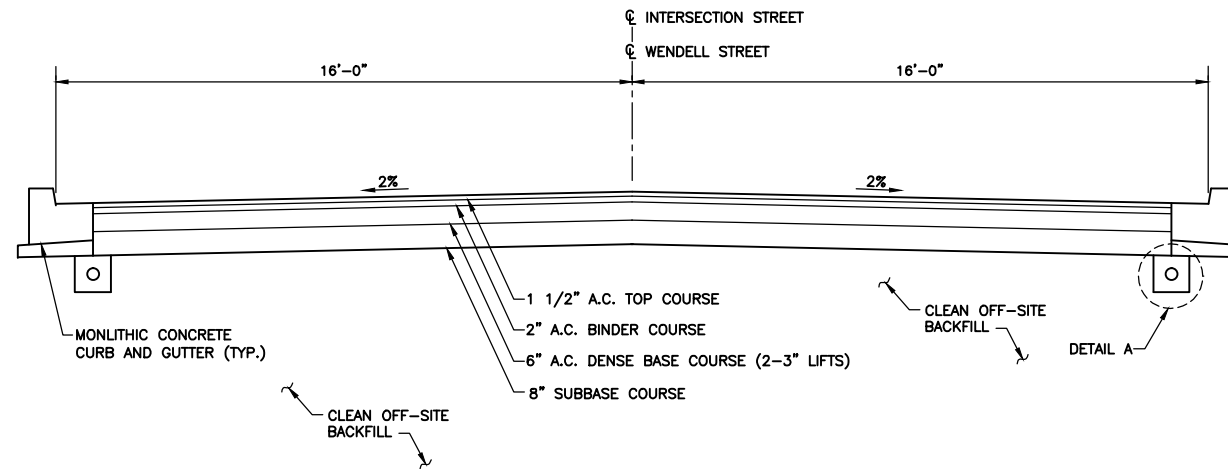
LOCATIONS OF COVER SYSTEMS

DATE: JUNE 2015

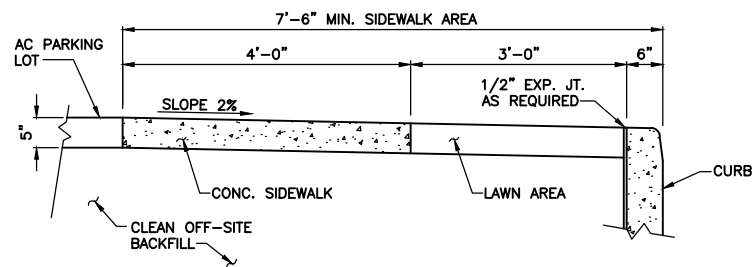
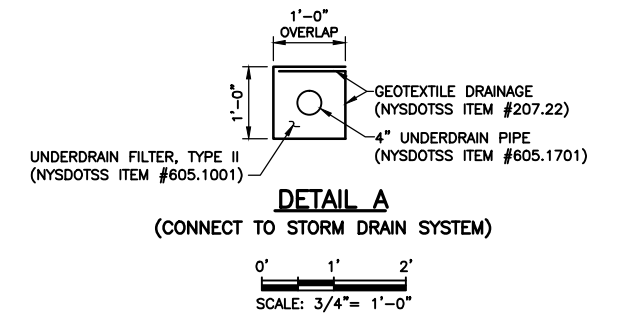
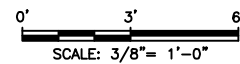
FIGURE 10



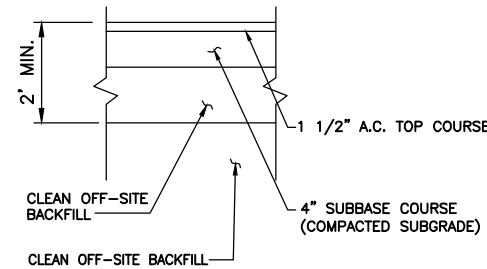
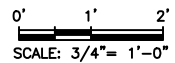
PARKING LOT CURB ISLAND
NOT TO SCALE



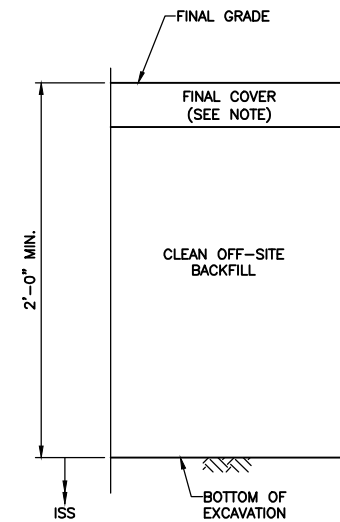
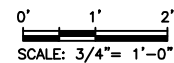
RESTORED ROADWAY AREA



CONCRETE SIDEWALK DETAIL



FORMER MGP PROPERTY AND VILLAGE OF GARDEN CITY MUNICIPAL PROPERTY PAVEMENT SECTION

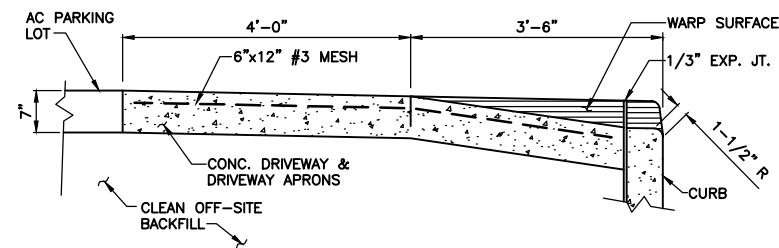


BACKFILL DETAIL OUTSIDE FORMER MGP PROPERTY

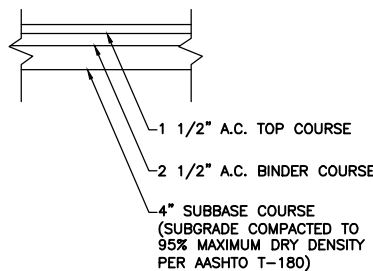
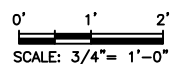
NOT TO SCALE

NOTE:

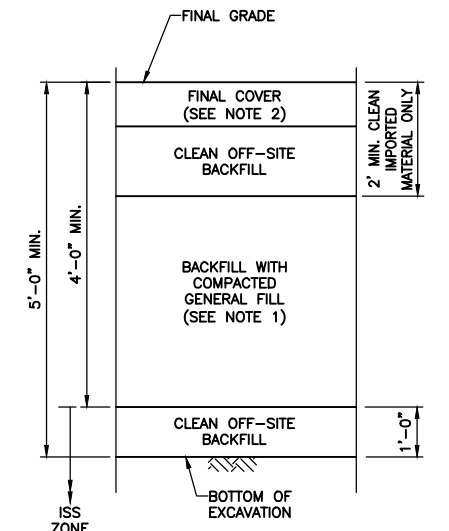
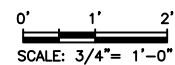
- SELECTION OF FINAL COVER MATERIAL AS SHOWN ON SITE RESTORATION COVER SECTION, FIGURE 11:
- MIN. 6" TOPSOIL, VEGETATED; OR
 - MIN 4" SELECT STONE COVER; OR
 - ASPHALT, MIN. THICKNESS AS SHOWN THIS SHEET; OR
 - 6" DECORATIVE GRAVEL AT 2 GRAVEL ISLANDS.



CONCRETE DRIVEWAY & DRIVEWAY APRONS DETAIL



OSWEGO OIL STORAGE TERMINAL AREA AND PLAZA 230 PARKING LOT PAVEMENT SECTION



BACKFILL DETAIL FORMER MGP PROPERTY

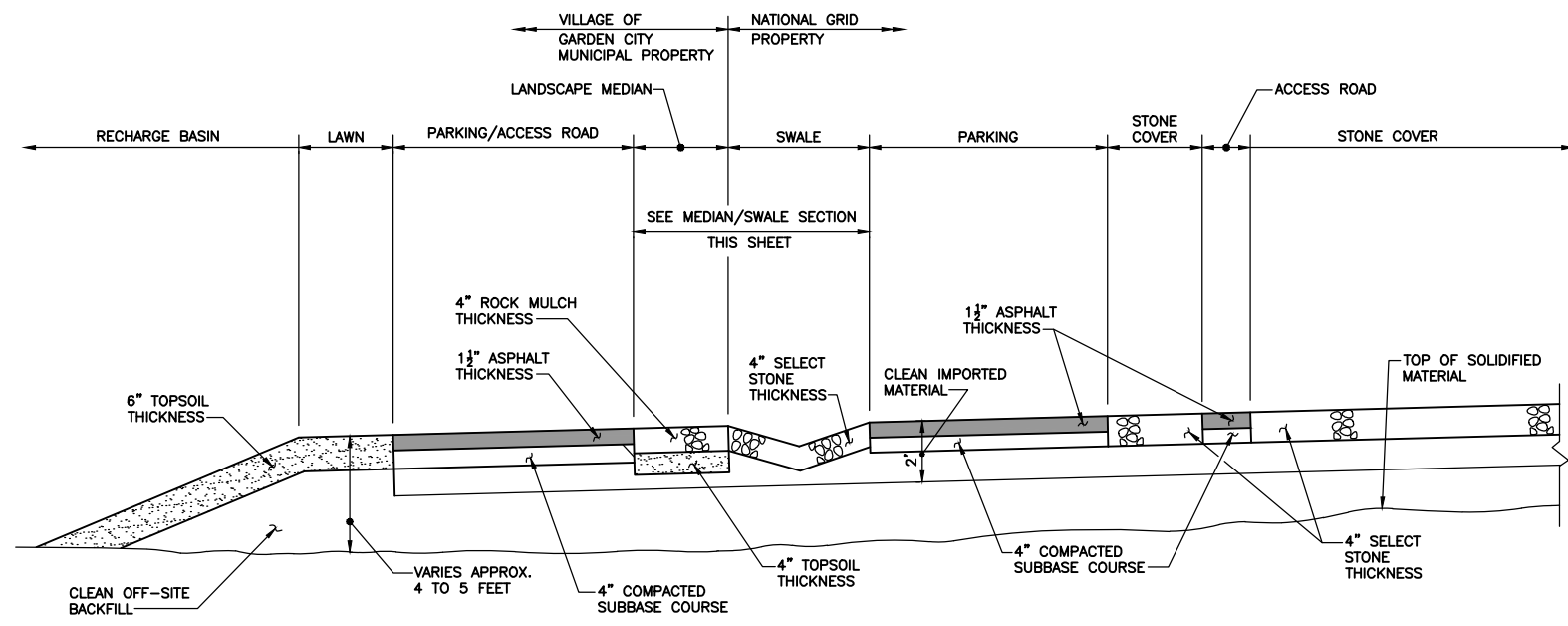
NOT TO SCALE

NOTES:

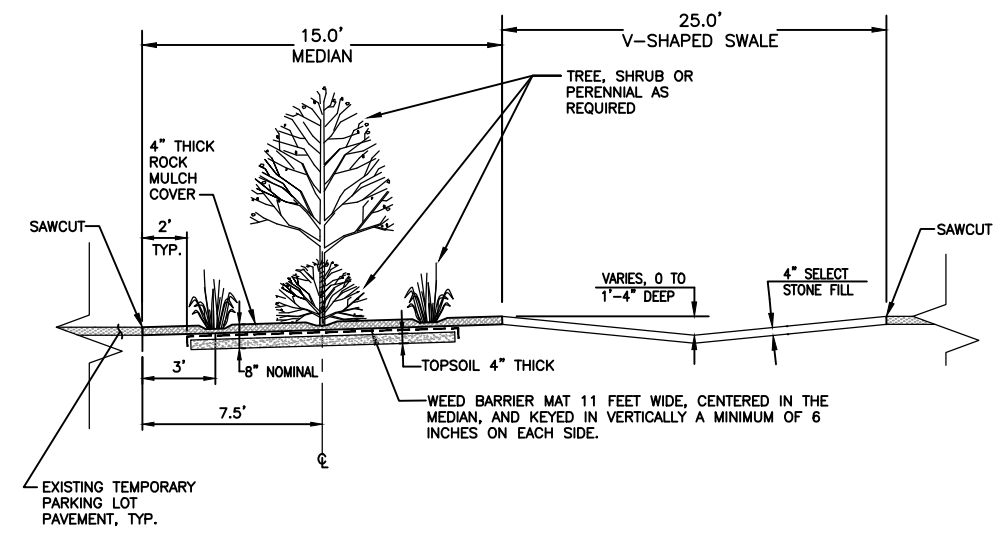
1. ON-SITE EXCAVATED SOIL WAS USED AS BACKFILL BUT NO CLOSER THAN TWO (2) FEET FROM FINAL GRADE, PROVIDED IT WAS NOT CLASSIFIED AS SOURCE MATERIAL.
2. SELECTION OF FINAL COVER MATERIAL AS SHOWN ON SITE RESTORATION COVER SECTION, FIGURE 11:
 - MIN. 6" TOPSOIL, VEGETATED; OR
 - MIN 4" SELECT STONE COVER; OR
 - ASPHALT, MIN. THICKNESS AS SHOWN THIS SHEET

J:\Projects\1175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\ISS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITAL\FIGURE 11.dwg, FIGURE 11, 12, 5/28/15 -1-RAL

J:\Projects\1175065.00000\CAD\DRAWING\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JUNE 2015 SUBMITTAL\FIGURE 12.dwg, FIGURE 12, 1:2, 5/28/15 -1-RAL



SITE RESTORATION COVER SECTION
(FROM FIGURE 10)
NOT TO SCALE



MEDIAN/SWALE SECTION
(FROM SITE RESTORATION COVER SECTION, THIS SHEET)
NOT TO SCALE

URS Corporation

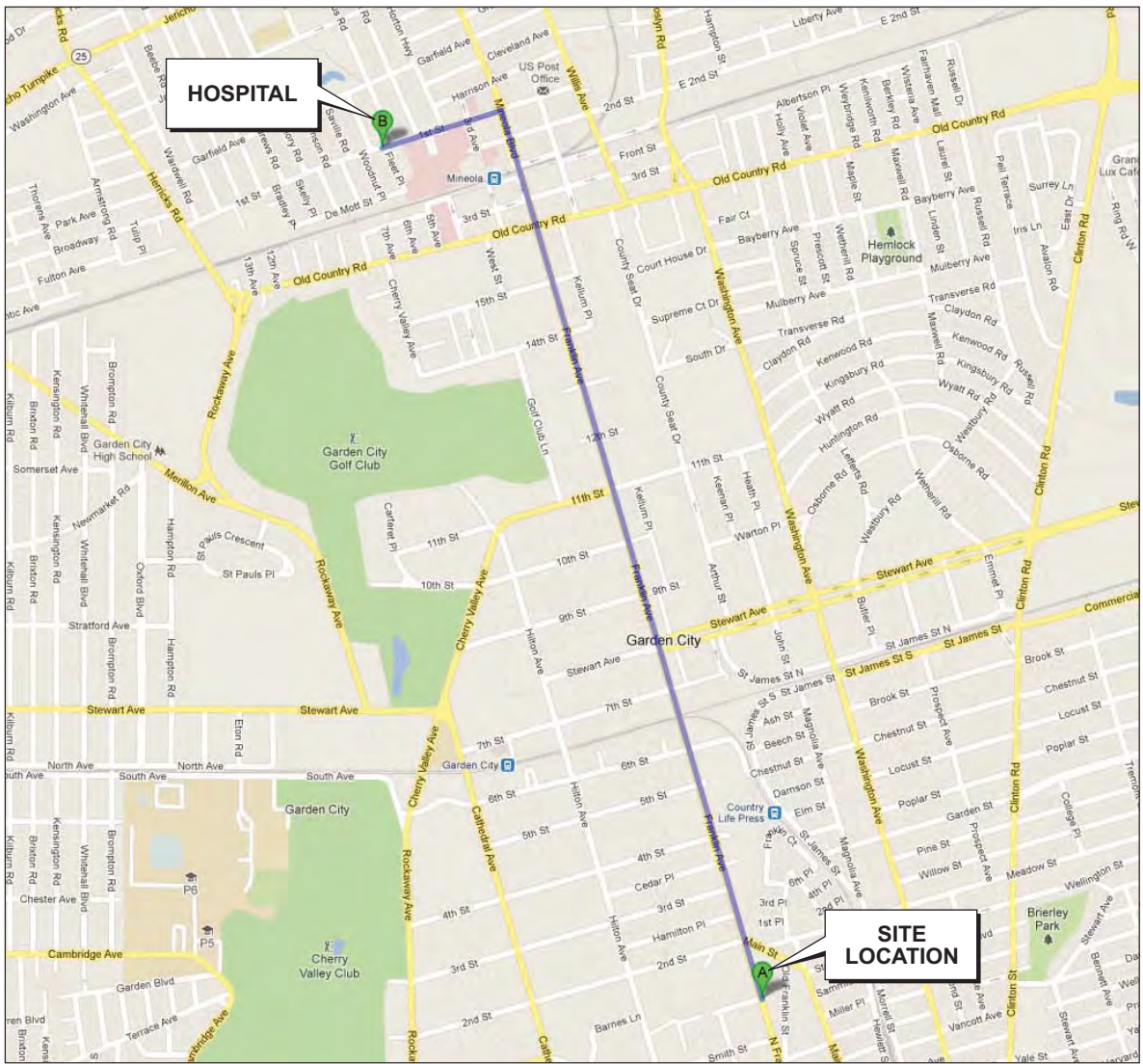
NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

TYPICAL COVER SYSTEM DETAILS
(SHEET 2 OF 2)

DATE: JUNE 2015

FIGURE 12



Map Data: © 2012 Google



1. Head north on North Franklin Street toward 2nd Street. Go 1.6 miles.
2. Continue onto Mineola Boulevard. Go 0.2 miles.
3. Turn left onto 1st Street. Go 0.3 miles. Destination will be on the left.

Estimated Travel Time: 7 Minutes
 Estimated Travel Distance: 2.1 Miles

Winthrop University Hospital
 259 1st Street
 Mineola, NY 11501
 Phone: (516) 663-0333

AG20841A-11176098-110414-GCM



**HEMPSTEAD INTERSECTION STREET
 FORMER MGP SITE
 HOSPITAL ROUTE MAP**

APPENDIX A

**ENVIRONMENTAL EASEMENT,
SURVEY, METES AND BOUNDS**

BARCLAY DAMON^{LLP}

Courtney M. Merriman
Partner

July 1, 2016

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Bureau of Remediation
Office of General Counsel, 14th Floor
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1500



Re: Hempstead Intersection Street MGP - Environmental Easement
Address: Sec. 34, Blk. 174, Lots 1, 208A & 209A, Village of Garden City, NY
Sec. 34, Blk. 174, Lots 208B & 209B, Village of Hempstead, NY
Owner: KeySpan Gas East Corporation
Site No.: 1-30-086

Dear Ladies and Gentlemen:

Enclosed please find the following documentation pertaining to the above-referenced matter:

1. Photocopy of the filing receipt from the Nassau County Clerk for the filing of the Environmental Easement;
2. Proof of mailing of the municipality notification letter to the Mayor of the Village of Hempstead;
3. Proof of mailing of the municipality notification letter to the Superintendent of the Building Department of the Village of Hempstead;
4. Proof of mailing of the municipality notification letter to the Mayor of the Village of Garden City;
5. Proof of mailing of the municipality notification letter to the Building Department of the Village of Garden City.

Bureau of Remediation
July 1, 2016
Page 2

I trust this satisfies the final requirements related to the Environmental Easement at this location. Should you require any further information, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in black ink that reads "Courtney M. Merriman". The signature is written in a cursive style with a long, sweeping tail on the final letter.

Courtney M. Merriman

CMM:jml
Enclosures

cc: Bradford Burns, Esq.

Nassau County
 Maureen O'Connell
 County Clerk
 Mineola, NY 11501



Instrument Number: 2016- 00054222

As

D06 - AGREEMENT

Recorded On: June 02, 2016

Parties: KEYSpan GAS EAST CORP

TO PEOPLE OF THE STATE OF NEW YORK

Recorded By: ALL STATE ABST

Billable Pages: 9

Num Of Pages: 10

Comment:

**** Examined and Charged as Follows: ****

D06 - AGREEMENT	90.00	Blocks - Deeds - \$300	300.00	Tax Affidavit TP 584	5.00
Recording Charge:	395.00				
	Amount	Consideration Amount	RS#/CS#		
Tax-Transfer	0.00	0.00	RE 21350	Basic	0.00 Spec ASST 0.00
HEMPSTEAD				Local NY CITY	0.00 Spec ADDL SONYMA 0.00
				Additional MTA	0.00 Transfer 0.00
Tax Charge:	0.00				

Property Description:

Line	Section	Block	Lot	Unit	Town Name
1	34	174	1		HEMPSTEAD
2	34	174	208A		HEMPSTEAD
3	34	174	208B		HEMPSTEAD
4	34	174	209A		HEMPSTEAD
5	34	174	209B		HEMPSTEAD

**** THIS PAGE IS PART OF THE INSTRUMENT ****

I hereby certify that the within and foregoing was recorded in the Clerk's Office For: Nassau County, NY

File Information:

Document Number: 2016- 00054222
 Receipt Number: 281695
 Recorded Date/Time: June 02, 2016 02:19:09P
 Book-Vol/Pg: Bk-D VI-13368 Pg-705
 Cashier / Station: 0 SDS / NCCL-HBFD1

Record and Return To:

BARCLAY DAMON LLP
 ONE PARK PL
 300 SOUTH STATE ST
 SYRACUSE NY 13202



Maureen O'Connell

County Clerk Maureen O'Connell

BARCLAY DAMON ^{LLP}

Courtney M. Merriman
Partner

June 21, 2016

VIA CERTIFIED MAIL

Honorable Nicholas P. Episcopia
Village of Garden City
Village Hall
341 Stewart Avenue
Garden City, NY 11530

Re: Hempstead Intersection Street MGP - Environmental Easement
Address: Sec. 34, Blk. 174, Lots 1, 208A & 209A, Village of Garden City, New York
Sec. 34, Blk. 174, Lots 208B & 209B, Village of Hempstead, New York
Owner: KeySpan Gas East Corporation
Site No.: 1-30-086

Dear Mayor Episcopia:

Attached please find a copy of an environmental easement granted to the New York State Department of Environmental Conservation ("Department")

on May 2, 2016,
by KeySpan Gas East Corporation
for property at : Sec. 34, Blk. 174, Lots 1, 208A & 209A, Village of Garden City, New York
Sec. 34, Blk. 174, Lots 208B & 209B, Village of Hempstead, New York
Tax Map No. 34-174-1
DEC Site No: 1-30-086

This Environmental Easement restricts future use of the above-referenced property to restricted residential, commercial or industrial use. Any on-site activity must be done in accordance with the Environmental Easement and the Site Management Plan which is incorporated into the Environmental Easement. Department approval is also required prior to any groundwater use.

Article 71, Section 71-3607 of the New York State Environmental Conservation Law requires that:

June 21, 2016

Page 2

1. Whenever the department is granted an environmental easement, it shall provide each affected local government with a copy of such easement and shall also provide a copy of any documents modifying or terminating such environmental easement.
2. Whenever an affected local government receives an application for a building permit or any other application affecting land use or development of land that is subject to an environmental easement and that may relate to or impact such easement, the affected local government shall notify the department and refer such application to the department. The department shall evaluate whether the application is consistent with the environmental easement and shall notify the affected local government of its determination in a timely fashion, considering the time frame for the local government's review of the application. The affected local government shall not approve the application until it receives approval from the department.

An electronic version of every environmental easement that has been accepted by the Department is available to the public at: <http://www.dec.ny.gov/chemical/36045.html>. Please forward this notice to your building and/or planning departments, as applicable, to ensure your compliance with these provisions of New York State Environmental Conservation Law. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Very truly yours,



Courtney M. Merriman

CMM/jml
Attachment

cc: Andrew Frame, Building Inspector (w/attachment)

CERTIFIED MAIL



7015 0640 0003 3483 2165
7015 0640 0003 3483 2165

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Postmark
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JML
3073024

Total Postage and Fees

Sent to
Hon. Nicholas P. Episcopia
Village of Garden City, Village Hall
341 Stewart Avenue
Garden City, NY 11530

PS Form 3800, April 2015 PSN 7550-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Hon. Nicholas P. Episcopia
Village of Garden City, Village
Hall
341 Stewart Avenue
Garden City, NY 11530

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent
- B. Received by (Printed Name) _____
- C. Date of Delivery _____
- D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below.

#3073024



9590 9403 0673 5196 5957 22

2. Article Number (Transfer from service label)

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3. Service Type
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 - Certified Mail®
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 - Mail Restricted Delivery
 - Priority Mail Express®
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 - Return Receipt for Merchandise
 - Signature Confirmation™
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FROM: **BARCLAY DAMON^{LLP}**
ONE PARK PLACE
300 SOUTH STATE STREET
SYRACUSE, NEW YORK 13202

5MM 3073024

TO:
Hon. Nicholas P. Episcopia
Village of Garden City
Village Hall

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- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage

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Total Postage and Fees

\$



Sent To

Hon. Nicholas P. Episcopia
 Village of Garden City, Village Hall
 341 Stewart Avenue
 Garden City, NY 11530

PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

5912 ERHE E000 0490 5102

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hon. Nicholas P. Episcopia
 Village of Garden City, Village Hall
 341 Stewart Avenue
 Garden City, NY 11530



9590 9403 0673 5196 5357 22

2. Article Number (Transfer from service label)

7015 0640 0003 3483 2165

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

- Agent
- Addressee

B. Received By (Printed Name)

C. Date of Delivery

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

#3073024

3. Service Type

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- Adult Signature Restricted Delivery
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- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- Mail Restricted Delivery
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- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
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PS Form 3811, April 2015 PSN 7530-02-000-9053

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Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$ _____
- Return Receipt (electronic) \$ _____
- Certified Mail Restricted Delivery \$ _____
- Adult Signature Required \$ _____
- Adult Signature Restricted Delivery \$ _____

Postmark
Here

Total Postage and Fees \$ _____

JML
3073024

Sent To
Andrew Frame, Building Inspector
Building Dept., Village Hall
352 Stewart Avenue, 2nd Floor
Garden City, NY 11530

PS Form 3800, April 2015 PSN 7510-02-000-9047 See Reverse for Instructions

FROM: BARCLAY DAMON^{LLP}

ONE PARK PLACE
300 SOUTH STATE STREET
SYRACUSE, NEW YORK 13202

3073024

CMM

TO:

Andrew Frame, Building Inspector
Building Department
Village Hall
352 Stewart Avenue, 2nd Floor

SENDER: COMPLETE THIS SECTION

1 Complete items 1-7 and 13
 2 Print your home and address on the reverse so that we can return the card to you
 3 Attach the card to the back of the envelope or on the front if space permits
 4 Article weight: _____
 5 Article frame, Building Inspector
 Building Dept., Village Hall
 352 Stewart Avenue, 2nd Floor
 Garden City, NY 11530



9590 9409 0673 5196 5357 39

Article Number (transfer from service label)
7015 0640 0003 3483 1724

COMPLETE THIS SECTION ON DELIVERY

6 Signature _____
 7 Date of Delivery _____
 8 I have received the contents of this envelope. YES _____ NO _____
 9 If YES, please indicate location: _____
 10 I have received the contents of this envelope. YES _____ NO _____
 11 Signature ConfirmationTM Restricted Delivery

12 Signature ConfirmationTM Restricted Delivery
 13 Signature ConfirmationTM Restricted Delivery
 14 Signature ConfirmationTM Restricted Delivery
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Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$ _____

Return Receipt (electronic) \$ _____

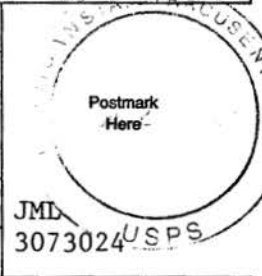
Certified Mail Restricted Delivery \$ _____

Adult Signature Required \$ _____

Adult Signature Restricted Delivery \$ _____

Postage
\$ _____

Total Postage and Fees
\$ _____



Sent To
Andrew Frame, Building Inspector
 Building Dept., Village Hall
 351 Stewart Avenue, 2nd Floor
 Garden City, NY 11530

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/>  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) _____ C. Date of Delivery _____</p>
<p>1. Article Addressed to:</p> <p>Andrew Frame, Building Inspector Building Dept., Village Hall 351 Stewart Avenue, 2nd Floor Garden City, NY 11530</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input checked="" type="checkbox"/> No</p> <p>#3073024</p>
<p>2. Article Number (Transfer from service label)</p> <p>7015 0640 0003 3483 1724</p>	<p>3. Service Type</p> <p><input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express®</p> <p><input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™</p> <p><input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery</p> <p><input type="checkbox"/> Certified Mail Restricted Delivery <input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™</p> <p><input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery</p>



Nassau County
 Maureen OConnell
 County Clerk
 Mineola, NY 11501



60 2016 00054222

Instrument Number: 2016- 00054222

As

D06 - AGREEMENT

Recorded On: June 02, 2016

Parties: KEYSpan GAS EAST CORP

TO PEOPLE OF THE STATE OF NEW YORK

Recorded By: ALL STATE ABST

Billable Pages: 9

Num Of Pages: 10

Comment:

**** Examined and Charged as Follows: ****

D06 - AGREEMENT 90.00 Blocks - Deeds - \$300 300.00 Tax Affidavit TP 584 5.00

Recording Charge: 395.00

	Amount	Consideration Amount	RS#/CS#			
Tax-Transfer	0.00	0.00	RE 21350	Basic	0.00	Spec ASST 0.00
HEMPSTEAD				Local NY CITY	0.00	Spec ADDL SONYMA 0.00
				Additional MTA	0.00	Transfer 0.00
Tax Charge:	0.00					

Property Description:

Line	Section	Block	Lot	Unit	Town Name
1	34	174	1		HEMPSTEAD
2	34	174	208A		HEMPSTEAD
3	34	174	208B		HEMPSTEAD
4	34	174	209A		HEMPSTEAD
5	34	174	209B		HEMPSTEAD

**** THIS PAGE IS PART OF THE INSTRUMENT ****

I hereby certify that the within and foregoing was recorded in the Clerk's Office For: Nassau County, NY

File Information:

Document Number: 2016- 00054222
 Receipt Number: 281695
 Recorded Date/Time: June 02, 2016 02:19:09P
 Book-Vol/Pg: Bk-D VI-13368 Pg-705
 Cashier / Station: 0 SDS / NCCL-HBFD1

Record and Return To:

BARCLAY DAMON LLP
 ONE PARK PL
 300 SOUTH STATE ST
 SYRACUSE NY 13202



Maureen O'Connell

County Clerk Maureen O'Connell

RTR
19#1
506
TP

Barclay/Damon LLP, One Park Pl - 300 South State St., Syracuse NY

13202

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 2ND day of May, 2016, between Owner(s) KeySpan Gas East Corporation d/b/a National Grid, having an office at 175 East Old Country Road, Hicksville, New York 11530, County of Nassau, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of Intersection Street in the Town of Hempstead, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 34 Block 174 Lots 1, 208A, 208B, 209A and 209B, being the same as that property conveyed to Grantor by deeds dated May 27, 1998 and August 27, 2008 and recorded in the Nassau County Clerk's Office in Liber and Page 10926/0966 and 12430/0634, respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 7.58 +/- acres, and is hereinafter more fully described in the Land Title Survey dated January 18, 2016 prepared by Kenny L. Kennon, P.L.S., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

34
174
1
208A
208B
209B
209A

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: D1-0001-98-11, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

**Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii),
Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial
as described in 6 NYCRR Part 375-1.8(g)(2)(iv)**

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

**This property is subject to an Environmental Easement held
by the New York State Department of Environmental Conservation**

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:
(i) are in-place;
(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

KeySpan Gas East Corporation d/b/a National Grid:

By: Charles Willard  

Print Name: Charles Willard

Title: Authorized Rep Date: 4/6/2016

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Onondaga)

On the 6th day of April, in the year 2016 before me, the undersigned, personally appeared Charles Willard, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(~~s~~) whose name is (~~are~~) subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument, the individual(~~s~~), or the person upon behalf of which the individual(~~s~~) acted, executed the instrument.

Gayl Lynn Franssen
Notary Public - State of New York

G
GAYL LYNN FRANSSEN
Notary Public, State of New York
No. 01FR6220451
Qualified in Onondaga County
Commission Expires Apr. 12, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

PROPERTY DESCRIPTION
&
ENVIRONMENTAL EASEMENT
SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A
VILLAGE OF GARDEN CITY
TOWN OF HEMPSTEAD
&
SECTION 34, BLOCK 174, LOTS 208B & 209B
VILLAGE OF HEMPSTEAD
TOWN OF HEMPSTEAD
NASSAU COUNTY, NEW YORK

A TRACT OF LAND BEING SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A, IN THE VILLAGE OF GARDEN CITY & SECTION 34, BLOCK 174, LOTS 208B & 209B IN THE VILLAGE OF HEMPSTEAD IN THE TOWN OF HEMPSTEAD, NASSAU COUNTY, NEW YORK AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHERLY LINE OF SECOND STREET AND THE WESTERLY LINE OF THE LONG ISLAND RAIL ROAD; THENCE,

1. ALONG SAID WESTERLY LINE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 2833.93' WITH AN ARC LENGTH OF 199.83', A CENTRAL ANGLE OF 04° 02' 24" WHOSE CHORD BEARS SOUTH 24° 15' 05" WEST 199.79'; THENCE,
2. CONTINUING ALONG SAID WESTERLY LINE SOUTH 26° 16' 17" WEST 589.92' TO THE NORTHERLY LINE OF INTERSECTION STREET; THENCE,
3. ALONG SAID NORTHERLY LINE SOUTH 72° 35' 17" WEST 301.31' TO THE EASTERLY LINE OF WENDELL STREET; THENCE,
4. ALONG SAID EASTERLY LINE NORTH 17° 24' 43" WEST 57.43'; THENCE,
5. NORTH 60° 01' 17" EAST 7.89' TO THE EASTERLY LINE OF CEDAR VALLEY AVENUE; THENCE,
6. ALONG SAID EASTERLY LINE NORTH 16° 15' 43" WEST 530.00' TO THE SOUTHERLY LINE OF THE AFOREMENTIONED SECOND STREET THENCE,
7. ALONG SAID SOUTHERLY LINE NORTH 73° 30' 17" EAST 823.33' THE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT CONTAINING 7.58 ACRES MORE OR LESS.

INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED MAY 27, 1998 FROM LONG ISLAND LIGHTING COMPANY TO MARKETSPAN GAS CORPORATION, RECORDED IN LIBER 10926 AT PAGE 966 AT THE NASSAU COUNTY CLERK'S OFFICE ON JULY 1, 1998.

ALSO INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED AUGUST 27, 2008 FROM BURNS-PEARSON REALTY CORPORATION TO KEYSpan GAS EAST CORPORATION, RECORDED IN LIBER 12430 AT PAGE 634 AT THE NASSAU COUNTY CLERK'S OFFICE ON SEPTEMBER 5, 2008.

BARCLAY DAMON^{LLP}

Courtney M. Merriman
Partner

June 21, 2016

VIA CERTIFIED MAIL

Honorable Wayne J. Hall, Sr.
Village of Hempstead
99 Nichols Ct.
Hempstead, NY 11550

Re: Hempstead Intersection Street MGP - Environmental Easement
Address: Sec. 34, Blk. 174, Lots 1, 208A & 209A, Village of Garden City, New York
Sec. 34, Blk. 174, Lots 208B & 209B, Village of Hempstead, New York
Owner: KeySpan Gas East Corporation
Site No.: 1-30-086

Dear Mayor Hall:

Attached please find a copy of an environmental easement granted to the New York State Department of Environmental Conservation ("Department")

on May 2, 2016,
by KeySpan Gas East Corporation
for property at : Sec. 34, Blk. 174, Lots 1, 208A & 209A, Village of Garden City, New York
Sec. 34, Blk. 174, Lots 208B & 209B, Village of Hempstead, New York
Tax Map No. 34-174-1
DEC Site No: 1-30-086

This Environmental Easement restricts future use of the above-referenced property to restricted residential, commercial or industrial use. Any on-site activity must be done in accordance with the Environmental Easement and the Site Management Plan which is incorporated into the Environmental Easement. Department approval is also required prior to any groundwater use.

Article 71, Section 71-3607 of the New York State Environmental Conservation Law requires that:

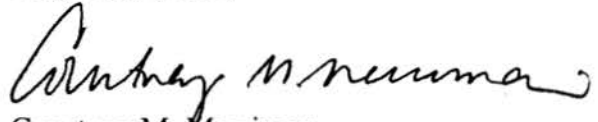
1. Whenever the department is granted an environmental easement, it shall provide each affected local government with a copy of such easement and shall

also provide a copy of any documents modifying or terminating such environmental easement.

2. Whenever an affected local government receives an application for a building permit or any other application affecting land use or development of land that is subject to an environmental easement and that may relate to or impact such easement, the affected local government shall notify the department and refer such application to the department. The department shall evaluate whether the application is consistent with the environmental easement and shall notify the affected local government of its determination in a timely fashion, considering the time frame for the local government's review of the application. The affected local government shall not approve the application until it receives approval from the department.

An electronic version of every environmental easement that has been accepted by the Department is available to the public at: <http://www.dec.ny.gov/chemical/36045.html>. Please forward this notice to your building and/or planning departments, as applicable, to ensure your compliance with these provisions of New York State Environmental Conservation Law. If you have any questions or comments regarding this matter, please do not hesitate to contact me.

Very truly yours,



Courtney M. Merriman

CMM/jml
Attachment

cc: Joe Simone, Superintendent (w/attachment)



7015 0640 0003 3483 1731
7015 0640 0003 3483 1731

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Certified Mail Fee \$	Postmark Here
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy) \$	
<input type="checkbox"/> Return Receipt (electronic) \$	
<input type="checkbox"/> Certified Mail Restricted Delivery \$	
<input type="checkbox"/> Adult Signature Required \$	
<input type="checkbox"/> Adult Signature Restricted Delivery \$	
Postage \$	JML 3073024
Total Postage and Fees \$	
Sent To Hon. Wayne J. Hall, Sr. Village of Hempstead 99 Nichols Ct. Hempstead, NY 11550	

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

FROM: BARCLAY DAMON^{LLP}

ONE PARK PLACE
300 SOUTH STATE STREET
SYRACUSE, NEW YORK 13202

3073024

CMM

TO:

Hon. Wayne J. Hall, Sr.
Village of Hempstead
99 Nichols Ct.
Hempstead, NY 11550

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Hon. Wayne J. Hall, Sr.
Village of Hempstead
99 Nichols Ct.
Hempstead, NY 11550



9590 9403 0673 5196 5357 46

2. Article Number (Transfer from service label)

7015 0640 0003 3483 1731

COMPLETE THIS SECTION ON DELIVERY

A. Signature
 [Signature] Agent
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

#3073024

3. Service Type
- Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Priority Mail Express®
 - Registered Mail™
 - Registered Mail Restricted Delivery
 - Return Receipt for Merchandise
 - Signature Confirmation™
 - Signature Confirmation Restricted Delivery

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

7015 0640 0003 3483 1731

Certified Mail Fee

\$

Extra Services & Fees (check box, add fee as appropriate)

- Return Receipt (hardcopy) \$
- Return Receipt (electronic) \$
- Certified Mail Restricted Delivery \$
- Adult Signature Required \$
- Adult Signature Restricted Delivery \$

Postage

\$

Total Postage and Fees

\$

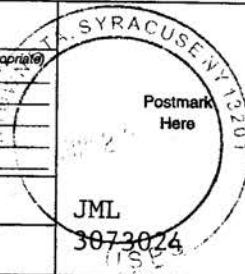
Sent To

Hon. Wayne J. Hall, Sr.

Village of Hempstead

99 Nichols Ct.

Hempstead, NY 11550



PS Form 3800, April 2015 PSN 7530-02-000-9047

See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hon. Wayne J. Hall, Sr.
 Village of Hempstead
 99 Nichols Ct.
 Hempstead, NY 11550



9590 9403 0673 5196 5357 46

2. Article Number (Transfer from service label)

7015 0640 0003 3483 1731

PS Form 3811, April 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION, ON DELIVERY

A. Signature

X

- Agent
- Addressee

B. Received by (Printed Name)

C. Date of Delivery

6/24/16

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

#3073024

3. Service Type

- Adult Signature
- Adult Signature Restricted Delivery
- Certified Mail®
- Certified Mail Restricted Delivery
- Collect on Delivery
- Collect on Delivery Restricted Delivery
- all Restricted Delivery
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt



7015 0640 0003 3483 1748
7015 0640 0003 3483 1748

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com

OFFICIAL USE

Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postmark
Here

Postage	\$
Total Postage and Fees	\$

JML
3073024

Sept To
Joe Simone, Superintendent
Street and Apt. No., or PO Box No.
202 Jackson Street
City, State, ZIP+4®
Hempstead, NY 11550

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

FROM: BARCLAY DAMON LLP

ONE PARK PLACE
300 SOUTH STATE STREET
SYRACUSE, NEW YORK 13202

3073024

CMM

TO:

Joe Simone, Superintendent
202 Jackson Street
Hempstead, NY 11550

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Joe Simone, Superintendent
202 Jackson Street
Hempstead, NY 11550



9590 9403 0673 5196 5357 53

2. Article Number (Transfer from service label)

7015 0640 0003 3483 1748

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
X Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

#3073024

3. Service Type

<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®
<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™
<input checked="" type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery
<input type="checkbox"/> Certified Mail Restricted Delivery	<input checked="" type="checkbox"/> Return Receipt for Merchandise
<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™
<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery
<input type="checkbox"/> Restricted Delivery	

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

7015 0640 0003 3483 1748

Certified Mail Fee		
\$		
Extra Services & Fees (check box, add fee as appropriate)		
<input type="checkbox"/>	Return Receipt (hardcopy) \$	
<input type="checkbox"/>	Return Receipt (electronic) \$	
<input type="checkbox"/>	Certified Mail Restricted Delivery \$	
<input type="checkbox"/>	Adult Signature Required \$	
<input type="checkbox"/>	Adult Signature Restricted Delivery \$	
Postage		
\$		
Total Postage and Fees		
\$		
Sent To Joe Simone, Superintendent Street and Apt. No., or PO Box No. 202 Jackson Street City, State, ZIP+4® Hempstead, NY 11550		
PS Form 3800, April 2015 PSN 7530-02-000-9047		See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION OF DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to: Joe Simone, Superintendent 202 Jackson Street Hempstead, NY 11550	B. Received by (Printed Name) [Signature]	C. Date of Delivery 6/24/16
	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input checked="" type="checkbox"/> No #3073024	
	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Adult Signature Restricted Delivery <input checked="" type="checkbox"/> Certified Mail® <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Restricted Delivery	
	<input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Registered Mail Restricted Delivery <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Signature Confirmation Restricted Delivery	
2. Article Number (Transfer from service label) 7015 0640 0003 3483 1748		



Nassau County
 Maureen O'Connell
 County Clerk
 Mineola, NY 11501



60 2016 00054222

Instrument Number: 2016- 00054222

As

D06 - AGREEMENT

Recorded On: June 02, 2016

Parties: KEYSpan GAS EAST CORP

TO PEOPLE OF THE STATE OF NEW YORK

Recorded By: ALL STATE ABST

Billable Pages: 9

Num Of Pages: 10

Comment:

**** Examined and Charged as Follows: ****

D06 - AGREEMENT	90.00	Blocks - Deeds - \$300	300.00	Tax Affidavit TP 584	5.00
Recording Charge:	395.00				
		Consideration			
	Amount	Amount	RS#/CS#		
Tax-Transfer	0.00	0.00	RE 21350	Basic	0.00 Spec ASST 0.00
HEMPSTEAD				Local NY CITY	0.00 Spec ADDL SONYMA 0.00
				Additional MTA	0.00 Transfer 0.00
Tax Charge:	0.00				

Property Description:

Line	Section	Block	Lot	Unit	Town Name
1	34	174	1		HEMPSTEAD
2	34	174	208A		HEMPSTEAD
3	34	174	208B		HEMPSTEAD
4	34	174	209A		HEMPSTEAD
5	34	174	209B		HEMPSTEAD

**** THIS PAGE IS PART OF THE INSTRUMENT ****

I hereby certify that the within and foregoing was recorded in the Clerk's Office For: Nassau County, NY

File Information:

Document Number: 2016- 00054222
 Receipt Number: 281695
 Recorded Date/Time: June 02, 2016 02:19:09P
 Book-Vol/Pg: Bk-D VI-13368 Pg-705
 Cashier / Station: 0 SDS / NCCL-HBFD1

Record and Return To:

BARCLAY DAMON LLP
 ONE PARK PL
 300 SOUTH STATE ST
 SYRACUSE NY 13202



Maureen O'Connell
 County Clerk Maureen O'Connell

County: Nassau Site No: 130086 Order on Consent Index : D1-0001-98-11

RTR
19#1
D06
TP

Barclay/Damon LLP, One Park Pl - 300 South State St., Syracuse NY

13202

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 2ND day of May, 2016, between Owner(s) KeySpan Gas East Corporation d/b/a National Grid, having an office at 175 East Old Country Road, Hicksville, New York 11530, County of Nassau, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of Intersection Street in the Town of Hempstead, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 34 Block 174 Lots 1, 208A, 208B, 209A and 209B, being the same as that property conveyed to Grantor by deeds dated May 27, 1998 and August 27, 2008 and recorded in the Nassau County Clerk's Office in Liber and Page 10926/0966 and 12430/0634, respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 7.58 +/- acres, and is hereinafter more fully described in the Land Title Survey dated January 18, 2016 prepared by Kenny L. Kennon, P.L.S., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

34
174
1
208A
208B
209B
209A

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: D1-0001-98-11, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

**Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii),
Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial
as described in 6 NYCRR Part 375-1.8(g)(2)(iv)**

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to: Site Number: 130086
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to: Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.


9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

KeySpan Gas East Corporation d/b/a National Grid:

By: Charles Willard 

Print Name: Charles Willard

Title: Authorized Rep. Date: 4/6/2016

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Onondaga)

On the 6th day of April, in the year 20 16 before me, the undersigned, personally appeared Charles Willard, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(~~s~~) whose name is (~~are~~) subscribed to the within instrument and acknowledged to me that he/~~she~~/~~they~~ executed the same in his/~~her~~/~~their~~ capacity(~~ies~~), and that by his/~~her~~/~~their~~ signature(~~s~~) on the instrument, the individual(~~s~~), or the person upon behalf of which the individual(~~s~~) acted, executed the instrument.

Gayl Lynn Franssen
Notary Public - State of New York

G
GAYL LYNN FRANSSEN
Notary Public, State of New York
No. 01FR6220451
Qualified in Onondaga County
Commission Expires Apr. 12, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

PROPERTY DESCRIPTION
&
ENVIRONMENTAL EASEMENT
SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A
VILLAGE OF GARDEN CITY
TOWN OF HEMPSTEAD
&
SECTION 34, BLOCK 174, LOTS 208B & 209B
VILLAGE OF HEMPSTEAD
TOWN OF HEMPSTEAD
NASSAU COUNTY, NEW YORK

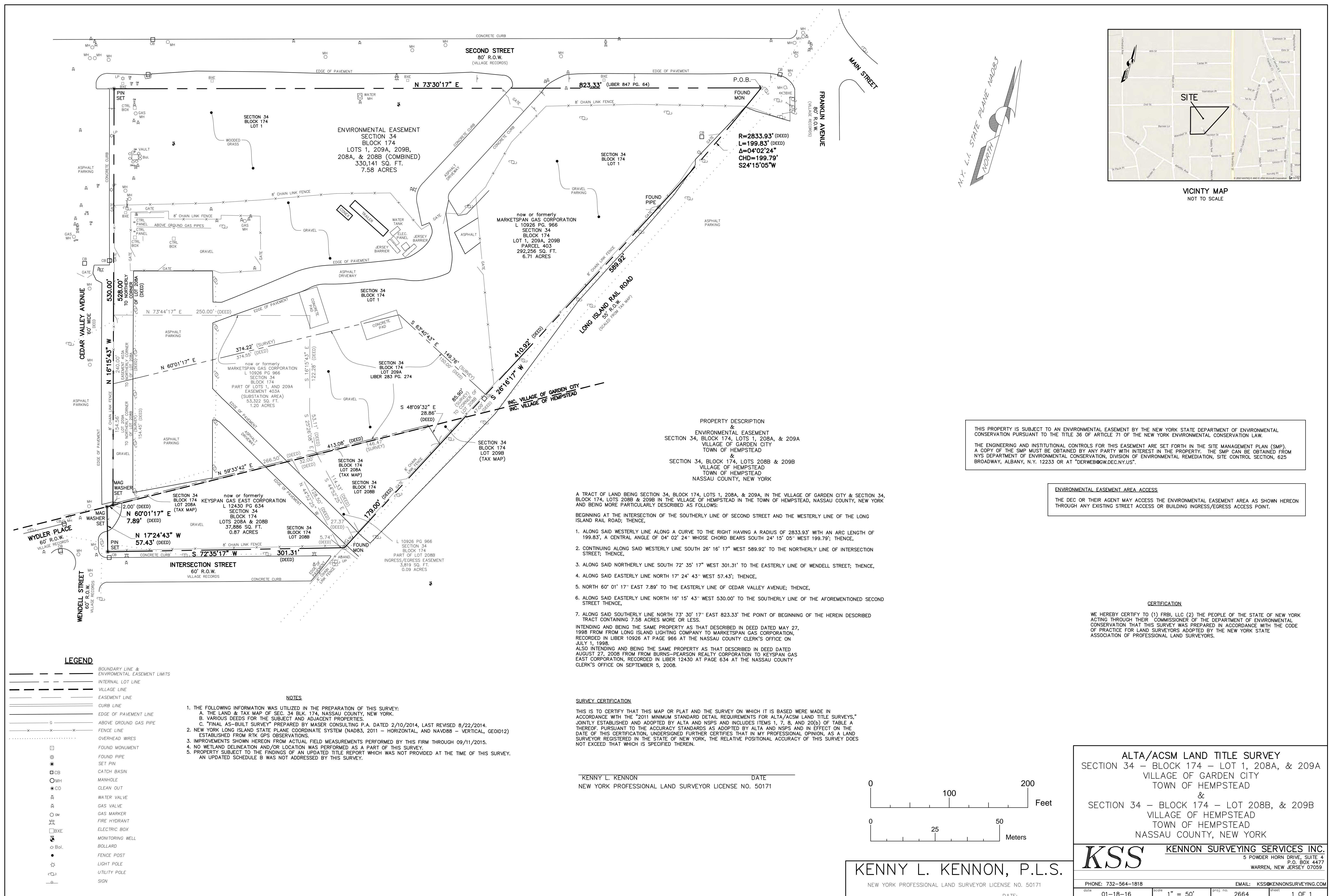
A TRACT OF LAND BEING SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A, IN THE VILLAGE OF GARDEN CITY & SECTION 34, BLOCK 174, LOTS 208B & 209B IN THE VILLAGE OF HEMPSTEAD IN THE TOWN OF HEMPSTEAD, NASSAU COUNTY, NEW YORK AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHERLY LINE OF SECOND STREET AND THE WESTERLY LINE OF THE LONG ISLAND RAIL ROAD; THENCE,

1. ALONG SAID WESTERLY LINE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 2833.93' WITH AN ARC LENGTH OF 199.83', A CENTRAL ANGLE OF 04° 02' 24" WHOSE CHORD BEARS SOUTH 24° 15' 05" WEST 199.79'; THENCE,
2. CONTINUING ALONG SAID WESTERLY LINE SOUTH 26° 16' 17" WEST 589.92' TO THE NORTHERLY LINE OF INTERSECTION STREET; THENCE,
3. ALONG SAID NORTHERLY LINE SOUTH 72° 35' 17" WEST 301.31' TO THE EASTERLY LINE OF WENDELL STREET; THENCE,
4. ALONG SAID EASTERLY LINE NORTH 17° 24' 43" WEST 57.43'; THENCE,
5. NORTH 60° 01' 17" EAST 7.89' TO THE EASTERLY LINE OF CEDAR VALLEY AVENUE; THENCE,
6. ALONG SAID EASTERLY LINE NORTH 16° 15' 43" WEST 530.00' TO THE SOUTHERLY LINE OF THE AFOREMENTIONED SECOND STREET THENCE,
7. ALONG SAID SOUTHERLY LINE NORTH 73° 30' 17" EAST 823.33' THE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT CONTAINING 7.58 ACRES MORE OR LESS.

INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED MAY 27, 1998 FROM LONG ISLAND LIGHTING COMPANY TO MARKETSPAN GAS CORPORATION, RECORDED IN LIBER 10926 AT PAGE 966 AT THE NASSAU COUNTY CLERK'S OFFICE ON JULY 1, 1998.

ALSO INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED AUGUST 27, 2008 FROM BURNS-PEARSON REALTY CORPORATION TO KEYSpan GAS EAST CORPORATION, RECORDED IN LIBER 12430 AT PAGE 634 AT THE NASSAU COUNTY CLERK'S OFFICE ON SEPTEMBER 5, 2008.



VICINITY MAP
NOT TO SCALE

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO THE TITLE 36 OF ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW.

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, N.Y. 12233 OR AT "DERWEB@GW.DEC.NY.US".

PROPERTY DESCRIPTION
&
ENVIRONMENTAL EASEMENT
SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A
VILLAGE OF GARDEN CITY
TOWN OF HEMPSTEAD
&
SECTION 34, BLOCK 174, LOTS 208B & 209B
VILLAGE OF HEMPSTEAD
TOWN OF HEMPSTEAD
NASSAU COUNTY, NEW YORK

ENVIRONMENTAL EASEMENT AREA ACCESS
THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT.

A TRACT OF LAND BEING SECTION 34, BLOCK 174, LOTS 1, 208A, & 209A, IN THE VILLAGE OF GARDEN CITY & SECTION 34, BLOCK 174, LOTS 208B & 209B IN THE VILLAGE OF HEMPSTEAD IN THE TOWN OF HEMPSTEAD, NASSAU COUNTY, NEW YORK AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

- BEGINNING AT THE INTERSECTION OF THE SOUTHERLY LINE OF SECOND STREET AND THE WESTERLY LINE OF THE LONG ISLAND RAIL ROAD; THENCE,
1. ALONG SAID WESTERLY LINE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 2833.93' WITH AN ARC LENGTH OF 199.83', A CENTRAL ANGLE OF 04° 02' 24" WHOSE CHORD BEARS SOUTH 24° 15' 05" WEST 199.79'; THENCE,
 2. CONTINUING ALONG SAID WESTERLY LINE SOUTH 26° 16' 17" WEST 589.92' TO THE NORTHERLY LINE OF INTERSECTION STREET; THENCE,
 3. ALONG SAID NORTHERLY LINE SOUTH 72° 35' 17" WEST 301.31' TO THE EASTERLY LINE OF WENDELL STREET; THENCE,
 4. ALONG SAID EASTERLY LINE NORTH 17° 24' 43" WEST 57.43'; THENCE,
 5. NORTH 60° 01' 17" EAST 7.89' TO THE EASTERLY LINE OF CEDAR VALLEY AVENUE; THENCE,
 6. ALONG SAID EASTERLY LINE NORTH 16° 15' 43" WEST 530.00' TO THE SOUTHERLY LINE OF THE AFOREMENTIONED SECOND STREET THENCE,
 7. ALONG SAID SOUTHERLY LINE NORTH 73° 30' 17" EAST 823.33' THE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT CONTAINING 7.58 ACRES MORE OR LESS.

INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED MAY 27, 1998 FROM FROM LONG ISLAND LIGHTING COMPANY TO MARKETSPAN GAS CORPORATION, RECORDED IN LIBER 10926 AT PAGE 966 AT THE NASSAU COUNTY CLERK'S OFFICE ON JULY 1, 1998.

ALSO INTENDING AND BEING THE SAME PROPERTY AS THAT DESCRIBED IN DEED DATED AUGUST 27, 2008 FROM FROM BURNS-PEARSON REALTY CORPORATION TO KEYSpan GAS EAST CORPORATION, RECORDED IN LIBER 12430 AT PAGE 634 AT THE NASSAU COUNTY CLERK'S OFFICE ON SEPTEMBER 5, 2008.

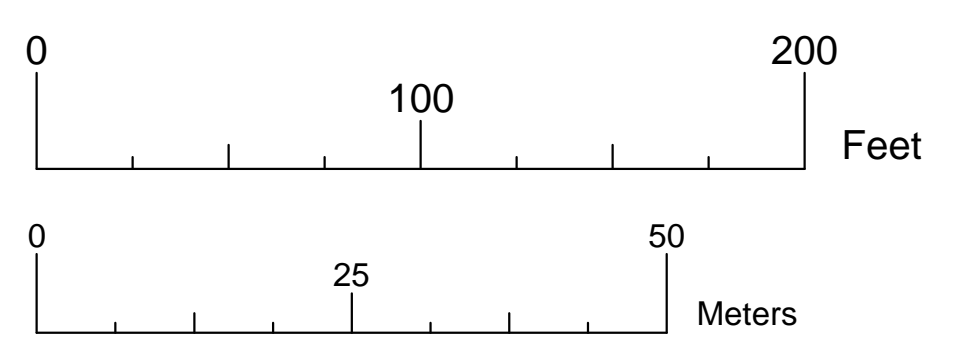
CERTIFICATION
WE HEREBY CERTIFY TO (1) FRBL, LLC (2) THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH THEIR COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

- LEGEND**
- BOUNDARY LINE & ENVIRONMENTAL EASEMENT LIMITS
 - INTERNAL LOT LINE
 - VILLAGE LINE
 - EASEMENT LINE
 - CURB LINE
 - EDGE OF PAVEMENT LINE
 - ABOVE GROUND GAS PIPE
 - FENCE LINE
 - OVERHEAD WIRES
 - FOUND MONUMENT
 - FOUND PIPE
 - SET PIN
 - CB CATCH BASIN
 - MH MANHOLE
 - CO CLEAN OUT
 - W VALVE WATER VALVE
 - G VALVE GAS VALVE
 - M GAS MARKER
 - F FIRE HYDRANT
 - BXE ELECTRIC BOX
 - MW MONITORING WELL
 - Bol BOLLARD
 - F FENCE POST
 - L LIGHT POLE
 - U UTILITY POLE
 - S SIGN

- NOTES**
1. THE FOLLOWING INFORMATION WAS UTILIZED IN THE PREPARATION OF THIS SURVEY:
A. THE LAND & TAX MAP OF SEC. 34 BLK. 174, NASSAU COUNTY, NEW YORK.
B. VARIOUS DEEDS FOR THE SUBJECT AND ADJACENT PROPERTIES.
C. "FINAL AS-BUILT SURVEY" PREPARED BY MASER CONSULTING P.A. DATED 2/10/2014, LAST REVISED 8/22/2014.
 2. NEW YORK LONG ISLAND STATE PLANE COORDINATE SYSTEM (NAD83, 2011 - HORIZONTAL, AND NAVD88 - VERTICAL, GEOID12) ESTABLISHED FROM RTK GPS OBSERVATIONS.
 3. IMPROVEMENTS SHOWN HEREON FROM ACTUAL FIELD MEASUREMENTS PERFORMED BY THIS FIRM THROUGH 09/11/2015.
 4. NO WETLAND DELINEATION AND/OR LOCATION WAS PERFORMED AS A PART OF THIS SURVEY.
 5. PROPERTY SUBJECT TO THE FINDINGS OF AN UPDATED TITLE REPORT WHICH WAS NOT PROVIDED AT THE TIME OF THIS SURVEY. AN UPDATED SCHEDULE B WAS NOT ADDRESSED BY THIS SURVEY.

SURVEY CERTIFICATION
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 1, 7, 8, AND 20(b) OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF NEW YORK, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

KENNY L. KENNON DATE
NEW YORK PROFESSIONAL LAND SURVEYOR LICENSE NO. 50171



KENNY L. KENNON, P.L.S.
NEW YORK PROFESSIONAL LAND SURVEYOR LICENSE NO. 50171

ALTA/ACSM LAND TITLE SURVEY
SECTION 34 - BLOCK 174 - LOT 1, 208A, & 209A
VILLAGE OF GARDEN CITY
TOWN OF HEMPSTEAD
&
SECTION 34 - BLOCK 174 - LOT 208B, & 209B
VILLAGE OF HEMPSTEAD
TOWN OF HEMPSTEAD
NASSAU COUNTY, NEW YORK

KSS KENNON SURVEYING SERVICES INC.
5 POWDER HORN DRIVE, SUITE 4
P.O. BOX 4477
WARREN, NEW JERSEY 07059

PHONE: 732-564-1818 EMAIL: KSS@KENNONSURVEYING.COM
DATE: 01-18-16 SCALE: 1" = 50' PROJ. NO.: 2664 SHEET: 1 OF 1

APPENDIX B

EXCAVATION WORK PLAN

APPENDIX B

EXCAVATION WORK PLAN

**HEMPSTEAD INTERSECTION STREET FORMER
MANUFACTURED GAS PLANT SITE
VILLAGES OF GARDEN CITY AND HEMPSTEAD, LONG
ISLAND, NEW YORK**

Prepared for:

**National Grid
One Metrotech Center
Brooklyn, New York 11201**

Prepared by:

**URS Corporation
257 West Genesee Street
Suite 400
Buffalo, New York 14203**

November 2016

URS CORPORATION

**APPENDIX B
EXCAVATION WORK PLAN**

1.0 NOTIFICATION

At least 15 days prior to the start of any excavation into known or potential MGP-related residuals, the site owner or their representative will notify National Grid and the New York State Department of Environmental Conservation (NYSDEC). [Under emergency circumstances (e.g. work required to prevent loss of life or property; restoration of electrical and/or natural gas service) work may be conducted with no prior notification to the NYSDEC; the NYSDEC will be notified as soon as possible thereafter.] As of the time that this document was finalized, the notifications will be made to:

Mr. John Spellman, P.E.
NYSDEC – Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7013

Mr. Patrick Van Rossem
National Grid
175 East Old Country Road
Hicksville, NY 11801

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed onsite, estimated volumes of contaminated soil to be excavated and any work that may impact the engineering controls (i.e., cover system, ISS material).
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;

URS CORPORATION

**APPENDIX B
EXCAVATION WORK PLAN**

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the example HASP provided in Appendix C will be followed;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill for excavations into known or potential MGP-related residuals, along with the required chemical testing results to meet 6 NYCRR Part 375 Table 375-6.8(b) restricted-residential use (subsurface below 2 feet of ground surface) or Table 375-6.8(b) residential (within 2 feet of ground surface).

In the event that work is performed near any existing natural gas pipelines, the following will be followed:

- The contractor shall ensure that the identification of all active utilities and gas lines has been performed and marked out in the field, and National Grid has been notified and has reviewed the planned intrusive work near gas lines;
- Any work to be performed near the gas pipeline will be in the presence of a National Grid gas line representative.
- If there is a need to remove a gas pipeline as part of the work, National Grid will need to be consulted so that an appropriate plan can be developed for that.
- The contractor is responsible for protecting the structural integrity of gas pipelines in and around their work areas.
- For any planned construction work that will occur within 25 feet of gas pipelines, the contractor will need to work with National Grid to establish the safe protocol for working near the gas lines.
- National Grid may require that the contractor place survey points on the pipe crown and monitor the pipe behavior during construction and throughout the duration of pipe exposure.

**APPENDIX B
EXCAVATION WORK PLAN**

2.0 SOIL SCREENING METHODS

Visual, olfactory, and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potential MGP-related residuals. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the Certificate of Completion.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be reused in the excavation, and material that can be used as cover soil.

3.0 STOCKPILE METHODS

Soil stockpiles will have a berm and/or silt fence placed around them. Hay bales will be used as needed near catch basins and other discharge points.

When not in use, stockpiles will be kept covered with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and available for inspection by NYSDEC. Stockpiled material not being re-used will be scheduled for transportation to the appropriate disposal facility in a timely manner.

4.0 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material known or potential MGP-related residuals.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

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**APPENDIX B
EXCAVATION WORK PLAN**

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

The qualified environmental professional will be responsible for ensuring that all outbound trucks are clean before leaving the site until the activities performed under this section are complete. Locations where vehicles enter or exit the site shall be inspected daily for any indication of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clear of materials derived from the site during intrusive excavation activities. Cleaning of the street will be performed as needed to maintain a clean condition with respect to site-derived materials.

5.0 MATERIALS TRANSPORT OFF-SITE

Transport of contaminated materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be securely covered. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes will be approved prior to use. All trucks loaded with site materials will exit the vicinity of the site using only the approved truck routes which will take into account: (a) limiting transport through residential area and near sensitive sites; (b) use of city mapped truck routes; (c) prohibit off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will minimize stopping and idling outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials.

URS CORPORATION

**APPENDIX B
EXCAVATION WORK PLAN**

Queuing of trucks will be performed on-site in order to minimize off-site disturbance.

6.0 MATERIALS DISPOSAL OFF-SITE

All excavated ISS monolith material and soil will be treated as contaminated and regulated material unless demonstrated through analysis to be an unregulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of materials from this site is proposed for unregulated off-site disposal (i.e., clean soil removed for development purposes), appropriate planning and testing will be performed based on the scope of the planned work.

Off-site disposal locations for excavated materials will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous fill and contaminated materials taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

7.0 MATERIALS REUSE ON-SITE

Excavated materials may be re-used on-site below a depth of 2 feet if determined to meet DER-10 re-use criteria for restricted residential use.

**APPENDIX B
EXCAVATION WORK PLAN**

8.0 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Contaminated dewatering fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

9.0 COVER SYSTEM AND ISS MONOLITH RESTORATION

After the completion of soil/gravel removal and any other invasive activities, the cover system will be properly restored. If the type of cover system changes from that which exists (i.e., a soil/gravel cover is replaced by concrete or asphalt), this will be documented in the annual report. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the SMP.

Should the monolith be encountered (e.g., through drilling, trenching, excavation), provisions will be made to avoid water accumulation on the encountered monolith surface.

10.0 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import to the site will be in accordance with relevant requirements and the approved remediation work plan.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR Part 375 Table 375-6.8(b) for residential use criteria when used within 2 feet of ground surface or to restricted residential use criteria in the subsurface.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

Trucks entering the site with imported materials will be securely covered. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust emissions.

**APPENDIX B
EXCAVATION WORK PLAN**

11.0 STORMWATER POLLUTION PREVENTION

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of Site redevelopment are not anticipated to require coverage under the general State Pollutant Discharge Elimination System (SPDES) Permit or preparation of a Storm Water Pollution Prevention Plan (SWPPP). However, best management practices, such as the placement of silt fencing and hay bales at the perimeter of soil stockpiles and/or the use of polyethylene liners and covers, will be implemented during small-scale soil disturbance that have the potential to encounter MGP-related residuals.

Where barriers and hay bale are installed they will be checked regularly at a minimum of every 7 days and after every storm event. Results of inspections will be recorded in a logbook and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired quickly with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

**APPENDIX B
EXCAVATION WORK PLAN**

12.0 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. The objectives during any emergency shall be to protect human health and safety and then the environment. A qualified environmental professional will determine the best course of action for dealing with the emergency and possible follow-up requirements that may result from implementing those actions (e.g., erosion of cover due to severe weather conditions, injury to site inspection workers, discovery of an unknown source of contamination during future excavation activities that may require remediation).

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (Target Compound List [TCL] volatiles and semi-volatiles, Target Analyte List metals, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes.

Identification of unknown or unexpected contaminated media identified during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. These findings will also be included in the periodic reports prepared pursuant to Section 5 of the SMP.

13.0 COMMUNITY AIR MONITORING PLAN

Community Air Monitoring will be consistent with the guidance provided in the NYSDOH Generic Community Air Monitoring Plan obtained in Appendix 1A of DER-10. An example CAMP is provided in Appendix C. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

**APPENDIX B
EXCAVATION WORK PLAN**

14.0 ODOR, VAPOR, AND DUST CONTROL PLAN

This odor, vapor and dust control plan is capable of controlling potential emissions of odors, vapor and/or dust that may arise as a result of onsite excavation and handling activities for excavations into known or potential MGP-related residuals. Specific odor, vapor, and dust control methods are to be used as part of the Community Air Monitoring Plan for excavations into known or potential MGP-related residuals.

All necessary means will be employed to prevent onsite and off-site odors, vapors and dust. At a minimum, these measures will include: (a) limiting the excavation size and the surface area of exposed contaminated soil; (b) covering contaminated soil with polyethylene sheeting; and (c) using foams to cover exposed odorous soils. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be suspended and the source of odors will be identified and corrected. Work will resume when nuisance odors have been abated. NYSDEC and New York State Department of Health (NYSDOH) will be notified about any odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner or property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

APPENDIX D

INSTITUTIONAL AND ENGINEERING CONTROL INSPECTION FORMS

APPENDIX D

INSTITUTIONAL AND ENGINEERING CONTROL INSPECTION FORMS

**HEMPSTEAD INTERSECTION STREET FORMER
MANUFACTURED GAS PLANT SITE
VILLAGES OF GARDEN CITY AND HEMPSTEAD, LONG
ISLAND, NEW YORK**

Prepared for:

**National Grid
One Metrotech Center
Brooklyn, New York 11201**

Prepared by:

**URS Corporation
257 West Genesee Street
Suite 400
Buffalo, New York 14203**

January 2015

URS CORPORATION

**HEMPSTEAD INTERSECTION STREET FORMER MGP SITE
VILLAGES OF HEMPSTEAD AND GARDEN CITY, NASSAU COUNTY, NY
SITE-WIDE INSPECTION FORM**

GENERAL INFORMATION

Date:		Inspector:	
Weather:		Signature:	
Temperature:		Company:	
Season (circle one): Winter Spring Summer Fall			

SITE INSPECTION LOG SHEET*

Evidence of Change in Site Use	Yes No	Description of New/Additional Site Use	
Evidence of Site-Wide Disturbance(s)	Yes No	Description of Disturbance(s)	
Evidence of Site-Wide Excavation	Yes No	Description of Excavation	
Evidence of Cover System Disturbance(s)	Yes No	Description of Disturbance(s)	
Evidence of Cover System Excavation to Monolith	Yes No	Description of Excavation	
Evidence of Building Construction	Yes No	Description of Building Construction	
Comments:			

* If answering Yes, attach map showing locations and any other information as required.

APPENDIX E

FIELD SAMPLING AND ANALYSIS PLAN

**Hempstead Intersection Street
Former Manufactured Gas Plant Site
Villages of Hempstead and Garden City
Nassau County, New York**

APPENDIX E

FIELD SAMPLING AND ANALYSIS PLAN

**HEMPSTEAD INTERSECTION STREET FORMER
MANUFACTURED GAS PLANT SITE
VILLAGES OF GARDEN CITY AND HEMPSTEAD, LONG
ISLAND, NEW YORK**

Prepared for:

**National Grid
One Metrotech Center
Brooklyn, New York 11201**

Prepared by:

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257 West Genesee Street
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Buffalo, New York 14203**

January 2015

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FIELD SAMPLING AND ANALYSIS PLAN

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TABLES

Table 1	Water Level Measurements, NAPL Thickness Measurements, and Water Quality Sampling
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FIGURES

Figure	Groundwater Monitoring Well Locations
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1.0 INTRODUCTION

URS Corporation (URS) prepared this Field Sampling and Analysis Plan (FSAP) for National Grid for the Hempstead Intersection Street Former Manufactured Gas Plant (MGP) site (Site) located in the Villages of Hempstead and Garden City, in the Town of Hempstead, Nassau County, Long Island, New York. This FSAP was prepared as an appendix to the Site Management Plan (SMP) which defines the long term management of the remediated MGP Site. This FSAP provides a description of procedures to be followed during continued groundwater sampling and analysis which will be conducted post-remediation at the Site. Each sample will be collected utilizing low flow groundwater sampling collection methods. Each groundwater sample will be analyzed for BTEX by USEPA Method SW8260C and PAHs by USEPA Method SW8270D by a NYSDOH environmental laboratory approval program - certified laboratory. The groundwater samples will also be collected, handled, and analyzed according to the example Quality Assurance Project Plan (QAPP) (Appendix F of the Site Management Plan). Groundwater monitoring well locations are shown on the attached figure. A groundwater level measurement will be recorded at each sampled monitoring well. Table 1 lists, on a quarterly basis, which monitoring wells will undergo water level measurements, non-aqueous phase liquid (NAPL) thickness measurements, and water quality sampling.

2.0 GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

2.1 Water Level Monitoring Procedures

Summary: Determination of groundwater depths in monitoring wells is necessary to calculate required purge volumes prior to groundwater sampling and to make potentiometric surface maps. Water levels in monitoring wells scheduled to be sampled during the field work will be measured using an electronic interface probe/water level indicator. During each monitoring event, water levels to be used to generate potentiometric groundwater surface contour maps will be collected from all sampled monitoring wells. Water level measurement procedures are presented below.

Procedure:

- 1) Clean the water level probe and the lower portion of cable following standard decontamination procedures and test water level meter to ensure that the batteries are charged.
- 2) Lower the probe slowly into the monitoring well until the solid audible alarm indicates water.
- 3) Read the depth to the nearest hundredth of a foot from the graduated cable using the V-notch on the riser pipe as a reference.
- 3) Repeat the measurement for confirmation and record the water level.
- 4) Lower the probe slowly to the bottom of the monitoring well. Record the bottom depth of the well.
- 6) Remove the probe from the well slowly, drying the cable and probe with a clean paper towel.
- 7) Replace the well cap.
- 8) Decontaminate the water level meter if additional measurements are to be taken.

2.2 Well Purging Procedures

Well purging will be completed using the low-flow purging technique as follows:

- 1) The well cover will be carefully removed to avoid having any foreign material enter the well
- 2) Using an electronic interface probe, the water level below top of casing will be measured and will be checked for light non-aqueous phase liquid (LNAPL). The depth of the well will be measured to determine the volume of water in the well. The bottom of the well will also be checked for dense non-aqueous phase liquids (DNAPL) using the interface probe/water level indicator. The end of the probe will be decontaminated between wells. The depth to bottom of the well will be recorded from the V notch in the top of the casing.
- 3) Calibrate field instruments (e.g., pH, specific conductance, turbidity).
- 4) Start the flow rate low and maintain it between 100 and 500 ml/min, optimally 250 ml/min.
- 5) Purge the required water volume (i.e., until stabilization of pH, temperature, specific conductivity, and turbidity) using a low-flow pump (e.g., bladder pump) and dedicated high density polyethylene (HDPE) tubing. New dedicated tubing and bladder will be used for each well.
- 6) Purge the well until the water quality parameters have stabilized. Collect groundwater parameters every five minutes until the well has stabilized. The respective measurements of the parameters must fall within the stated range for three consecutive readings. If, after four hours, stability has not been achieved for the parameters listed below, the well can be sampled. The stabilization criteria are: specific conductivity - 3% full-scale range; pH - 0.10 pH unit; temperature - 0.2°C, and turbidity – 10% if greater than 1 nephelometric turbidity unit (NTU).

- 7) Purging of three well volumes is not necessary if the indicator parameters are stable. However, a minimum of thirty minutes of purging is required before sampling, even if the parameters are stable. During purging, it is permissible to by-pass the flow cell until the groundwater has cleared.
- 8) Well purging data are to be recorded on the Well Purging Log provided in Appendix D.

2.3 Groundwater Sampling Procedures

The following groundwater sampling procedures will be used for monitoring wells after purging has been conducted:

Procedures

- 1) After well purging is completed, the flow cell will be disconnected and drained and a sample will be collected into the appropriate laboratory supplied containers from the tubing from the well, without changing the purge rate.
- 2) Direct water flow toward the inside wall of the sample container to minimize volatilization. Fill volatile sample containers so no headspace (air bubbles) is present. If containers are pre-preserved, do not overfill sample containers. Note if effervescence is observed.
- 3) All sample bottles will be labeled in the field using a waterproof permanent marker.
- 4) Samples will be collected into sample bottles (containing required preservatives) and placed on ice in coolers for processing (preservation and packing) prior to shipment to the analytical laboratory. A chain-of-custody (COC) record will be initiated. The analytical laboratory will certify that the sample bottles are analyte-free prior to shipping.

- 5) Remove dedicated/disposable HDPE tubing and bladder pump. Decontaminate the bladder pump with laboratory grade soap and distilled water and rinse with distilled water before reassembling with an unused bladder.
- 5) Well sampling data are to be recorded in the field notebook and on the Well Purging Log.
- 6) Groundwater samples will be placed on ice, retrieved by the laboratory courier, and delivered to the laboratory under COC control. The volume of sample required, bottle type and required quality assurance/quality control (QA/QC) may be found in the QAPP. Samples will be received by the laboratory within a maximum of five days of collection, ideally on the day of collection.

Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. that made during sampling of groundwater are to be included in the groundwater sample collection log.

2.4 Sample Labeling

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedure: Each will have the following information placed on the laboratory supplied sample label:

- Site name
- Sample identification
- Project number
- Date/time
- Sampler's initials
- Analysis required and preservatives

Sample identification numbers will be assigned based on the well identification and will be the same for all parameters collected. For example, a groundwater sample extracted from monitoring well HIMW-005S would have the same identifier assigned, HIMW-005S.

Field duplicate samples will be assigned a unique identification alphanumeric code that specifies the date of collection, the letters DUP (for field duplicate) and an ascending number that records the number of duplicate samples collected that day. For example, the first field duplicate collected on February 22, 2015 would be assigned the following sample number using the code shown below:

DUP-MMDDYY = DUP-021515

Subsequent duplicates collected on the same day would be assigned FD-0215215-2, FD-021515-3 etc. The field duplicate IDs are “blind”, so that the laboratory cannot trace them to their parent samples. Field sampling crew will record the duplicate sample information on the appropriate Sampling Field Data Sheets and also in the field notebook.

Matrix Spike/ Matrix Spike Duplicate (MS/MSD) samples will use the same well identification name as the groundwater sample, with the acronym MS/MSD after it; for example, HIMW-005S (MS/MSD). The sample will be added to the COC with a separate time of collection than the groundwater sample.

Field Blank samples will be labeled with the letters FB (field blank) and the date of collection in the same order as for the field duplicate and added to the COC (e.g., using the same date as above, FB-021515).

Trip blanks will be labeled with the letters TB (trip blank) and the date in the same order as the field duplicate and added to the COC (e.g., for example, using the same date as above, TB-021515).

2.5 Quality Assurance/ Quality Control Sampling

QA/QC procedures are described in the Quality Assurance Procedure Plan (QAPP). QA/QC groundwater samples will be collected as follows:

- Field duplicates will be collected as one per twenty groundwater samples collected. It will be collected directly following the groundwater sample collected at the selected well for the same parameters as the groundwater sample.
- Matrix Spike/ Matrix Spike Duplicate (MS/MSD) samples will be collected as one per twenty groundwater samples collected. It will be collected directly following the groundwater sample collected at the selected well for the same parameters as the groundwater sample.
- Field Blank samples will be collected one time per event. Laboratory provided deionized water will be run through the bladder pump and collected for the same parameters as the groundwater sampling program.
- Trip Blanks will be provided by the laboratory and returned as one set of VOCs per sample pickup. They will be filled with deionized water and preservative, if preservative is used for the groundwater VOC samples.

3.0 FIELD DOCUMENTATION

Field notebooks will be used during all on-site work. A dedicated bound field notebook will provide a legal record and will be maintained by the field technician overseeing the site activities. Entries will be written with waterproof ink and will be of sufficient detail that a complete daily record of significant events, observations, and measurements is developed. At the conclusion of each day of fieldwork, entries will be signed and dated. Erroneous entries will be corrected by the field technician that made the entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing/dating the correction.

The field sampling team will maintain the daily field notebook, which will minimally include the following information:

1. Project name and location of field activity
2. Date and time of entry
3. Names and titles of field team members onsite
4. Names, titles of any site visitors, as well as date and time entering and leaving site
5. Weather information e.g., temperature, precipitation, cloud coverage, wind speed and direction, etc.
6. Purpose of field activity and detailed description of fieldwork conducted
7. Sample media to be collected
8. Sample Identification
9. Date and time of sample collection
10. Field observations and measurements (e.g., PID, water levels)
11. Sampling methods and devices
12. Purge volumes (groundwater)
13. Groundwater purge parameters e.g., pH, temperature, ORP, DO, conductivity, water levels, turbidity, etc.
14. Sample volumes, preservatives used, and analytical parameters
15. Chain of custody and shipping information.

4.0 SAMPLE SHIPPING

Summary: Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody (COC) procedures. COC procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. COC procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in this study follow the chain-of-custody guidelines outlined in NEIC Policies and Procedures, prepared by the National Enforcement Investigations Center (NEIC) of the U.S. Environmental Protection Agency Office of Enforcement.

Procedure:

- 1) A COC record is initiated at the analytical laboratory performing the sample analyses and will accompany the sample containers during preparation, delivery of the sample containers to the field, and during return shipment to the laboratory.
- 2) The COC record should be completely filled out by field personnel with all applicable/relevant information as samples are collected and packed for shipment e.g., project name and number, field technician name, sample ID, date/time of collection, matrix, requested parameters, number of sample bottles, relinquishing/receipt signatures, method of sample shipment with shipper airbill number, name of analytical laboratory, etc. Any erroneous markings will be crossed-out with a single line and initialed by the author.
- 3) The original COC accompanies the samples. It should be placed in a Ziplock bag and placed inside the cooler/box containing the samples. The sampler should retain a copy of the COC for the project records.

- 4) Groundwater samples should be placed and stored on ice in the laboratory supplied coolers.
- 5) The laboratory provides a courier to collect the samples from the site, ideally the day of collection. If that is not possible, the samples can be stored on ice in a secure storage area then shipped to the laboratory the next day, or as soon as possible. Samples should not to be held onsite for more than two days.
- 6) If the courier is not provided, samples can be shipped. Pack the coolers with the samples wrapped in bubble wrap, place ice in plastic baggies to prevent any melt from leaking out of the cooler, and make sure there is no extra room in the cooler. Place the lab address on top of sample box/cooler. Affix numbered custody seals across box lid flaps and cooler lid. Cover seals with wide, clear tape.
- 7) Ship samples via overnight carrier the same day that they are collected and must be delivered to the laboratory within 48 hours of collection.
- 8) The COC seal must be broken to open the shipping container. Breakage of the seal before receipt at the laboratory may indicate tampering. If tampering is evident, the laboratory must immediately contact the laboratory Project Manager, whom further contacts the URS Project Manager for further instructions i.e., cancel or proceed with analyses.

5.0 FIELD SAMPLING INSTRUMENTATION

URS-owned and rented field sampling equipment will require no maintenance beyond decontamination between sampling locations. Calibration procedures for electronic instruments can be found in the equipment operating manuals. Calibration and maintenance procedures for the common instrumentation that will be used during field investigations are discussed in the equipment operating manuals. A copy of the manufacturer's operating manual for each instrument will be kept with the instrument or the operator. All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions. The calibration procedures and results will be recorded in the field notebook. All changes to instrumentation will be noted in the field notebook.

The following field instruments will be used during project site work:

- 1) Particulate Monitor (TSI DustTrak aerosol monitor with PM-10 impactor and internal sampling pump) – Calibration of the monitor and a battery check will be performed daily with atmospheric zero, and again during the day if the performance of an instrument is in question. All calibration data will be recorded in the field notebook.
- 2) Multi-Parameter Meter (MultiRAE PLUS PGM-50 Monitor (10.6 eV lamp) with PID, %LEL) - Calibration of the meter and a battery check will be performed daily in accordance with manufacturer's specifications. Standards used for calibration will be National Institute of Standards and Technology (NIST) traceable. All calibration data will be recorded in the field notebook.
- 3) Turbidity Meter – The turbidity meter will be checked daily in accordance with manufacturer's specifications. All daily data will be recorded in the field notebook.
- 4) Drager Kit (benzene) or Drager CMS (or equivalent) – No calibration required.

6.0 SAMPLING EQUIPMENT DECONTAMINATION PROCEDURES

Summary: To assure that no outside contamination will be introduced into the samples/data, thereby invalidating the samples/data, the following cleaning protocols will apply for all equipment used to collect samples/data during the field investigations.

Procedures:

- 1) Thoroughly clean equipment with laboratory-grade soap and water, until all visible contamination is gone.
- 2) Rinse with water, until all visible evidence of soap is removed.
- 3) If equipment will not be used immediately, wrap in aluminum foil.

7.0 INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL

All decontamination water and purge water will be contained in a locked on-site above ground storage tank (AST).

URS will collect representative samples of the investigation-derived wastes (IDW) for proper waste characterization (as determined by the disposal facility) when the AST is near full capacity.

The IDW subcontractor will be responsible for removing IDW from the work site as needed. All waste will be disposed of at a permitted off-site disposal facility.

8.0 ANALYSIS

Each groundwater sample will be analyzed by a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory for BTEX by USEPA Method SW8260C and PAHs by USEPA Method SW8270D. URS will coordinate with the laboratory for the collection and delivery of the samples to their laboratory on the day of, or within a maximum of two days of, sample collection.

Table 1

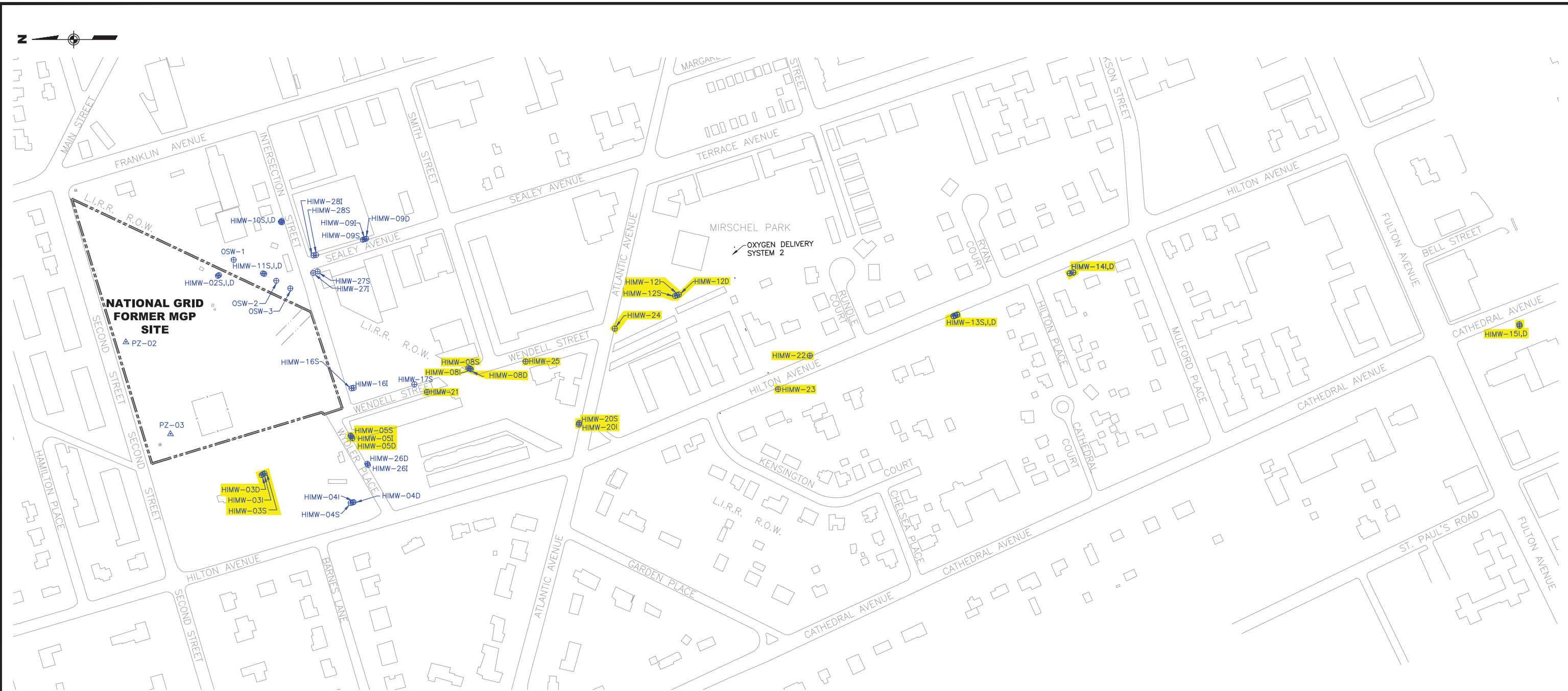
Water Level Measurements, NAPL Thickness Measurements, and Water Quality Sampling
Hempstead Intersection Street Former MGP Site

Well ID	First Quarter ^(1,2)			Second Quarter ^(1,2)			Third Quarter ^(1,2)			Fourth Quarter ^(1,2)		
	Water Level	NAPL Thickness	Water Quality ⁽³⁾	Water Level	NAPL Thickness	Water Quality ⁽³⁾	Water Level	NAPL Thickness	Water Quality ⁽³⁾	Water Level	NAPL Thickness	Water Quality ⁽³⁾
HIMW-003S	X	X	X	X	X		X	X	X	X	X	
HIMW-003I	X	X	X	X	X		X	X	X	X	X	
HIMW-003D	X	X	X	X	X		X	X	X	X	X	
HIMW-004S	X	X		X	X		X	X		X	X	X
HIMW-004I	X	X		X	X		X	X		X	X	X
HIMW-004D	X	X		X	X		X	X		X	X	
HIMW-005S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-005I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-005D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-008D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-009S	X	X		X	X		X	X		X	X	
HIMW-009I	X	X		X	X		X	X		X	X	
HIMW-009D	X	X		X	X		X	X		X	X	
HIMW-010S	X	X		X	X		X	X		X	X	X
HIMW-010I	X	X		X	X		X	X		X	X	X
HIMW-011S	X	X		X	X		X	X		X	X	X
HIMW-011I	X	X					X	X		X	X	X
HIMW-011D	X	X		X	X		X	X		X	X	X
HIMW-012S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-012I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-012D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-013S	X	X	X	X	X		X	X	X	X	X	
HIMW-013I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-013D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-014I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-014D	X	X	X	X	X		X	X	X	X	X	
HIMW-015I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-015D	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-020S	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-020I	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-21	X	X		X	X		X	X		X	X	
HIMW-22	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-23	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-24	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-25	X	X	X	X	X	X	X	X	X	X	X	X
HIMW-26I	X		X	X	X	X	X	X	X	X	X	X
HIMW-26D	X		X	X	X	X	X	X	X	X	X	X
HIMW-27S	X		X	X	X	X	X	X	X	X	X	X
HIMW-27I	X		X	X	X	X	X	X	X	X	X	X
HIMW-28S	X		X	X	X	X	X	X	X	X	X	X
HIMW-28I	X		X	X	X	X	X	X	X	X	X	X
PZ-02							X	X		X	X	
PZ-03							X	X		X	X	
OSMW-02							X	X		X	X	X
OSMW-03							X	X		X	X	X

Notes:

- (1) Field marked with "X" indicates that the activity was performed.
- (2) Blank field indicates that the activity was not performed.
- (3) Water quality sampling includes BTEX, PAHs, and field parameters.

J:\Projects\11175065.00000\CAD\DRAWING\TASK2\HEMPSTEAD\SS SITE MANAGEMENT PLAN\JANUARY 2015 SUBMITTAL\GW MW LOCATIONS.dwg 1/22/15 - 1 - RAL



- LEGEND:**
- HIMW-13⊕ MONITORING WELL
 - PZ-03 ▲ PIEZOMETER
 - MONITORING WELL TO BE SAMPLED AS PART OF MONITORING PLAN
 - EXISTING HOUSE OR BUILDING
 - NATIONAL GRID PROPERTY BOUNDARY

THIS FIGURE CONTAINS FEATURES INTENDED TO BE PRINTED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY OBSCURE THE INTENDED EFFECT OF THE COLOR FEATURES.



URS Corporation

NATIONAL GRID
HEMPSTEAD INTERSECTION STREET
FORMER MGP SITE
HEMPSTEAD/GARDEN CITY, NY

IN-SITU SOLIDIFICATION
SITE MANAGEMENT PLAN

GROUNDWATER MONITORING WELL LOCATIONS

DATE: JANUARY 2015

FIGURE

APPENDIX F

QUALITY ASSURANCE PROJECT PLAN

APPENDIX F

**HEMPSTEAD INTERSECTION STREET
FORMER MANUFACTURED GAS PLANT SITE
VILLAGES OF HEMPSTEAD AND GARDEN CITY,
NASSAU COUNTY, NEW YORK**

Prepared for:

**National Grid
175 East Old Country Road
Hicksville, NY 1801**

Prepared by:

**URS Corporation
257 West Genesee Street
Buffalo, New York 14202**

July 2008

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Table 1 (amended)	Summary of Samples to be Collected and Analytical Parameters
Table 2	Sample Container, Preservation, and Holding Time Requirements

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(Following Tables)

Attachment B-1	Laboratory Certifications
Attachment B-2	Example Chain-Of-Custody Records
Attachment B-3	Data Usability Summary Report Requirements

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared by URS Corporation (URS) for National Grid's Hempstead Intersection Street Former Manufactured Gas Plant (MGP) site (Site) located in the Villages of Hempstead and Garden City, in the Town of Hempstead, Nassau County, Long Island, New York.

The QAPP was originally prepared in November 2007 to provide an overview of quality assurance/quality control (QA/QC) procedures and programs to be adhered to during field and laboratory activities in support of an Interim Remedial Measures (IRM) investigation that focuses on the removal of the shallow contaminated soils and recoverable non-aqueous phase liquid (NAPL).

This amended QAPP includes additional QA/QC procedures to be implemented during a Pre-Design Investigation (PDI) in support of a site-wide remedy, which include in-situ solidification of soil source material and treatment of an off-site dissolved phase groundwater plume. Table 1 has been amended to identify the number of samples to be collected and the associated analytical parameters. All other aspects of the PDI will be performed in accordance with the procedures and programs as presented in the original QAPP and included herein.

2.0 PROJECT/SITE DESCRIPTION

A complete description of the project and site is provided in the PDI Work Plans. A summary of the samples to be collected and the analytical parameters is provided in Table 1 (Amended for the PDI).

3.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The Project QA Officer will ensure that all project deliverables undergo a thorough QA review by senior staff members who are qualified and experienced in appropriate disciplines.

The Project Manager will be responsible for technical and financial management of the project, and for overall coordination and review of component work activities. The Project Manager will serve as the initial and primary contact with the client throughout the project and will be responsible for successful implementation of the field QA/QC activities. The Project Manager may delegate a portion of the tasks required for successful implementation of the work plans to a qualified individual who will be on site during the investigation (e.g., the Onsite Geologist). This person will work under the direction of the Project Manager and will be responsible for implementing applicable QC procedures in the field and verifying that all other field personnel adhere to these procedures and perform all activities as described in the project work plans.

The Project Chemist is responsible for verifying that the analytical laboratory(ies) adheres to the QA/QC requirements specified in this QAPP. The Project Chemist will be the point of contact for the Laboratory Project Manager and will be in continual contact with the Laboratory Project Manager to verify that all efforts are being made to perform sample analyses in a manner such that the resulting data will be of sufficient quality for its intended purpose.

The laboratory providing standard analytical testing services in support of this investigation is H2M. They hold applicable New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certifications for the analyses to be performed. Copies of the applicable ELAP certifications for H2M is provided in Attachment B-1. H2M maintains its own QA/QC program and employs the required staff to implement this program. Vanderbilt University will perform non-standard geochemical testing to support the groundwater modeling and leaching assessment. META Environmental, Inc. will perform environmental forensic analysis on NAPL saturated soil using fingerprinting methods that utilize gas chromatography/flame ionization detection (GC/FID) and gas chromatography/mass spectrometry (GC/MS) techniques. Results of the

forensic analysis will be used to determine if detected hydrocarbons are representative of pyrogenic and/or petrogenic substances. The QA Officer is responsible for verifying that all sample analyses are performed in accordance the analytical methods, laboratory QA/QC procedures, this QAPP, and other applicable regulations.

4.0 PROJECT QUALITY OBJECTIVES

4.1 Background

Project quality objectives (PQOs), such as those described in the *Uniform Federal Policy for Quality Assurance Project Plans* (USEPA, 2005), define the type, quantity, and quality of data that are needed to answer specific environmental questions and support proper environmental decisions. More specifically, the PQOs:

- Define the environmental problem;
- Identify target analytes/contaminants of concern and concentration levels;
- Establish the analytical techniques to be used (field-screening, on-site, and/or off-site);
- Establish the appropriate sampling techniques to be used;
- Establish project sampling/analytical measurement performance criteria (where applicable) for precision, accuracy/bias, representativeness, comparability, completeness, and sensitivity; and
- Determine the number of samples needed for each analytical group/matrix/concentration level.

4.2 Environmental Problem

The objective of the PDI is to better delineate areas warranting remediation, determining the depths and locations of buried MGP structures, and obtaining soil and groundwater samples for laboratory analytical, geotechnical, and bench-scale treatability studies. A summary of the samples to be collected is presented in Table 1 (Amended).

4.3 Sampling Techniques

Sampling techniques to be used during this investigation are described in the Sampling and Analysis Plan. Sample container, preservation, and holding time requirements for the collected samples are identified in Table 2.

4.4 Target Analytes/Contaminants and Analytical Methods

Target analytes and analytical methods are listed in Table 1.

4.5 Measurement Performance Criteria

The data quality indicators of precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) will be measured from data collected from offsite chemical analyses performed by the laboratory.

4.5.1 Precision

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in the field and/or laboratory handling procedures. Precision is evaluated using analyses of matrix spike/matrix spike duplicate/matrix duplicate (MS/MSD/MD) and field duplicate (FD) samples. These provide a measure not only of sampling and analytical precision, but also of analytical precision based on the reproducibility of the analytical results. Relative percent difference (RPD) is used to evaluate precision. RPD criteria for all analyses being performed as part of this work assignment will be performed in accordance with the methods listed in Table 1, where applicable.

4.5.2 Accuracy

Accuracy measures the analytical bias of a measurement system. Sources of measurement error may include the sampling process, field contamination, sample preservation and handling, sample matrix, and sample preparation and analysis techniques. Sampling accuracy may be assessed by evaluating the results of equipment rinsate blanks and trip blanks. These data help to assess the potential contamination contribution from various outside sources.

The laboratory objective for accuracy is to equal or exceed the accuracy demonstrated for the applied analytical methods on samples of the same matrix. Accuracy can be estimated based on the recovery of spiked analytes in the MS/MSD and laboratory control samples (LCS) or matrix spike blanks (MSB). MS/MSD analyses, which will give an indication of matrix effects that may be affecting target compound identification and quantitation, are also a good gauge of method efficiency. Acceptable ranges of recovery for

all analyses being performed will be performed in accordance with the methods listed in Table 1, where applicable.

4.5.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represents the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter that is most concerned with the proper design of the sampling program or subsampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigation objectives. The sampling procedures, as described in PDI Work Plan, have been selected with the goal of obtaining representative samples for the media of concern.

4.5.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. An objective for this program is to produce data with the greatest possible degree of comparability. This goal is achieved using standard techniques to collect and analyze representative samples, and reporting analytical results in appropriate units. Complete field documentation using standardized data collection forms will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representativeness, completeness, and sensitivity) because only when precision and accuracy are known can data sets be compared with confidence. For data sets to be comparable, it is imperative that the analytical methods and procedures be explicitly followed.

4.5.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that were expected to be obtained under normal conditions. To meet project needs, it is important that appropriate QC procedures be maintained to verify that valid data are obtained. For the data generated, a goal of 90% is required for completeness (or usability) of the analytical data. If this goal is not met, then the client and URS project personnel will determine whether the deviations may cause the

data to be rejected and what, if any, further actions need to be taken. Completeness of the analytical data obtained for the samples collected during this investigation will be evaluated during the validation process, and will be discussed in the Data Usability Summary Report (DUSR), which will be prepared in accordance with *Draft DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B*, (NYSDEC December 2002).

4.5.6 Sensitivity

Sensitivity, as it pertains to analytical methods/instrumentation, is defined as the lowest concentration that can be distinguished from background noise. Sensitivity is measured by method detection limit (MDL) determinations, which are performed by laboratories for each analyte and matrix following procedures specified in 40 CFR Part 136, Appendix B. The MDL is the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. The laboratory will be required to update MDLs for the parameters to be analyzed as part of this work assignment, as required by the analytical method.

5.0 SAMPLING LOCATIONS AND PROCEDURES

Proposed sampling locations and sampling procedures are discussed in the Sampling and Analysis Plan.

6.0 SAMPLE CUSTODY AND HOLDING TIMES

Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody (COC) procedures. Chain-of-custody procedures are essential for presenting sample analytical results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used in this work assignment will follow the COC guidelines of National Enforcement Investigations Center (NEIC) Policies and Procedures, prepared by the NEIC of the USEPA Office of Enforcement.

6.1 Custody Definitions

- Chain-of-Custody Officer - The employee responsible for oversight of all COC activities is the Onsite Geologist (or his/her designee).
- Under Custody - A sample is "Under Custody" if:
 - It is in one's possession, or
 - It is in one's view, after being in one's possession, or
 - It was in one's possession and one placed it under lock, or
 - It is in a designated secure area.

6.2 Responsibilities

The Onsite Geologist will be responsible for monitoring all COC activities and for collecting legally admissible COC documentation for the permanent project file, and will perform to following tasks:

- Review sample labels or tags, closure tapes, and COC records.
- Ensure that field sampling personnel are properly trained in the methodologies for carrying out COC activities and the proper use of all COC and record documents.
- Monitor the implementation of COC procedures.
- Submit copies of the completed COC records to the Project Chemist.

6.3 Chain-of-Custody

Chain-of-custody is initiated in the laboratory when the empty sample containers are shipped for use in the field. When the empty containers are received from the laboratory, they will be checked for any breach of custody including, but not limited to, incomplete COC records, broken COC seals, or any evidence of tampering. Filled sample containers will be returned to the laboratory using appropriate COC procedures. Upon receipt of the samples, the laboratory sample custodian will check for any breach of custody. The Laboratory Project Manager will notify the URS Project Chemist immediately if there are any problems with the COC documentation. Examples of COC records (i.e., for multi-media and air samples) are provided in Attachment B-2.

6.4 Sample Containers and Holding Times

Sample container and preservation requirements and analytical holding times for the analytical methods being used for this work assignment are listed in Table 2. All holding times begin with the validated time of sample receipt (VTSR) at the laboratory.

7.0 ANALYTICAL PROCEDURES

The specific analytical methods to be used for the analysis of samples collected during this work assignment are identified in Table 1. Quality control criteria to be followed by each laboratory when performing the analyses will be performed in accordance with the methods listed in Table 1.

8.0 CALIBRATION PROCEDURES AND FREQUENCY

In order to obtain a high level of precision and accuracy during sample processing and analysis procedures, laboratory and field instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

8.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered:

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions will be obtained from sources traceable to National Institute of Standards and Technology (NIST), or other reliable commercial sources to ensure the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished as per the methods referenced in Table 1. All standards and standard solutions are to be formally documented (i.e., in a bound logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparer's name, method of preparation, expiration date, and any other pertinent information. All standard solutions will be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory will continually monitor the quality of the standards and reagents through well-documented procedures.

Balances - The analytical balances will be calibrated and maintained in accordance with manufacture specifications. Calibration is conducted with two American Society of Testing Materials (ASTM) Class 1 weights that bracket the expected balance use range. The laboratory will check the accuracy of the balances daily and properly document results in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory will be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is

upheld. Appropriate acceptance ranges ($4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for refrigerators) will be clearly posted on each unit in service.

Water Supply System – Laboratories performing water/solid/waste sample analyses must maintain a sufficient supply of analyte-free water for all project needs. The grade of the water must be of the highest quality in order to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses, and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis by the laboratory.

Sample Containers - All sample containers supplied by the laboratories will meet the requirements of the analytical methods identified in Table 1 and/or the requirements specified in the NYSDEC Analytical Services Protocol (most current), whichever is more stringent. Pre-cleaned sample containers may be purchased by the laboratory and provided for sample collection as long as the containers meet the requirements of each analytical method identified in Table 1 and/or the NYSDEC Analytical Services Protocol (most current), whichever is more stringent. Documentation of sample cleaning procedures and/or certifications provided by vendors will be maintained by the laboratories.

8.2 Laboratory Instruments

Calibration of laboratory instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet the project-required quantitation limits for each analytical method. Each instrument for organic analysis will be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s) and/or the specific requirements of the work assignment. Calibration of laboratory instruments will be performed according to the analytical methods specified in Table 1.

Calibration of an instrument must be performed prior to the analysis of any samples (initial calibration) and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still properly calibrated. If the contract laboratory cannot meet the method-required calibration requirements, corrective action shall be taken as discussed in Section 11.0. All corrective action procedures taken by the contract laboratory

are to be documented, summarized within the report case narrative, and submitted with the analytical results.

8.3 Field Instruments

Various types of portable instruments may be used in the field during this work assignment, which may include one or more of the following: multi-purpose meters capable of measuring pH, conductivity, dissolved oxygen, oxidation/reduction (redox) potential, and/or temperature; photoionization detectors (PID) and/or flame ionization detectors (FID) used to monitor organic vapors; dust monitors to measure concentrations of particulates; multi-gas meters and analyte-specific devices (e.g., Drager tubes/chips) for health and safety purposes; and helium detectors used for leak-checking during soil vapor sample collection. Other instruments may also be used as needed based on the requirements of the work assignment. The calibration and maintenance of field instrumentation will be performed according the manufacturer's requirements or as otherwise documented by the Onsite Geologist.

9.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect that sample matrix may have on data being generated. Two types of internal checks are performed - batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the laboratory will be determined by the analytical methods listed in Table 1 and the specific requirements of this work assignment. Acceptable criteria and/or target ranges for these QC samples will be performed in accordance with the methods listed in Table 1.

QC results that vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers to the analytical data, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples, including any project-specific QC samples, will be analyzed as discussed below.

9.1 Batch QC

Method Blanks - A method blank is defined as laboratory demonstrated analyte-free water, solid, or humidified ultra pure zero air that is carried through the entire analytical procedure. The method blank is used to determine the level of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch or as required by the analytical methods listed in Table 1. Concentrations of all analytes in the method blanks should be below the method quantitation limits. The Laboratory Project Manager will contact the URS Project Chemist to determine the appropriate course of action if analyte concentrations in any blank are greater than the quantitation limit.

Laboratory Control Samples (LCS) – An LCS, or matrix spike blank (MSB), is an aliquot of laboratory demonstrated analyte-free water, solid, or humidified ultra pure zero air spiked (fortified) with all, or a representative group, of the analytes being analyzed. The LCS (or MSB) recoveries and RPD are a measure of precision and accuracy that are used to verify that the analysis being performed is in control. LCS (or MSB) analyses shall be performed for each matrix as required by the methods listed in Table 1. Acceptance criteria

for LCS (or MSB) analyses will be performed in accordance with the methods listed in Table 1.

9.2 Matrix-Specific QC

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples – MS/MSD samples consist of an aliquot of a sample that is spiked (fortified) with known concentrations of specific compounds as stipulated by the methodology. The MS/MSD samples are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery (%R) for each analyte and the RPD between the concentrations of each analyte in the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs samples will be collected and analyzed at the frequency specified in Table 1. Acceptance criteria for MS/MSD analyses will be performed in accordance with the methods listed in Table 1. In those instances where no MS/MSD sample will be collected, the laboratory will provide results for batch MS/MSD analyses.

Matrix Duplicates (MD) - The matrix duplicate (MD) is a second aliquot of a sample that is prepared and analyzed in a manner identical to that used for the parent sample. Collection of matrix duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. A matrix duplicate will be performed instead of the matrix spike duplicate for metals, cyanide, and sulfide analyses only. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of soil samples, the analytical results are not always reproducible.

9.3 Additional QC

Additional QC samples that may be collected as part of this work assignment are described in this section. The specific number and type of QC samples to be collected are listed in Table 1.

Equipment/Rinsate Blanks – An equipment or rinsate blank is used to indicate potential contamination from sample instruments used to collect and transfer samples, and also serves as a measure of potential contamination from ambient sources during sample

collection. When collecting solid or water samples, the equipment blank is a sample of laboratory demonstrated analyte-free water passed over and/or through cleaned sampling equipment. The water must originate from one common source within the laboratory and must be the same water used by the laboratory when performing the analyses (i.e., for method blanks). Equipment blanks will be collected, transported, and analyzed in the same manner as the samples acquired that day. Equipment blanks typically are not needed when dedicated and/or disposable sampling equipment is used.

Trip Blanks - Trip blanks are only required when collecting aqueous samples for volatile organic or dissolved gas analyses. They are not required for non-aqueous matrices or for analysis of any other parameters. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte-free water. Trip blanks accompany the empty sample containers that are shipped from the laboratory into the field, and then back to the laboratory along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the laboratory with the same set of containers they accompanied to the field.

10.0 CALCULATION OF DATA QUALITY INDICATORS

10.1 Precision

Precision is evaluated using results from field or matrix duplicate, MS/MSD, and/or LCS/LCSD (MSB/MSBD) analyses. The RPD between the concentrations detected in the above-listed sample pairs is calculated using the following formula:

$$RPD = \left| \frac{(X_1 - X_2)}{[(X_1 + X_2) / 2]} \right| \times 100\%$$

where:

X_1 = Measured value of sample, MS, or LCS (MSB)

X_2 = Measured value of field (or matrix) duplicate, MSD, or LCSD (MSBD)

RPD criteria for this work assignment shall be consistent with the analytical methods listed in Table 1.

10.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. Analytical accuracy is expressed as the percent recovery (%R) of a compound or analyte that has been added to the environmental sample or laboratory demonstrated analyte-free matrix at known concentrations before analysis. Accuracy will be determined from MS, MSD, LCS (MSB) samples as well as from surrogate compounds that are added to samples prior to extraction and analysis (typically used for organic fractions only). Accuracy is calculated using the following formula:

$$\%R = \frac{(X_s - X_u)}{K} \times 100\%$$

where:

X_s - Measured value of the spike sample

X_u - Measured value of the unspiked sample

K - Known amount of spike in the sample

Accuracy criteria for this work assignment shall be consistent with the analytical methods listed in Table 1.

10.3 Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$\% \text{ Completeness} = \frac{(N - X_n)}{N} \times 100\%$$

where:

N - Number of valid measurements expected to be obtained

X_n - Number of invalid measurements

11.0 CORRECTIVE ACTIONS

The Onsite Geologist will discuss with and receive approval from the URS Project Manager or National Grid prior to taking any corrective actions in the field that may need to be implemented in order to meet project objectives. The Onsite Geologist will document any corrective actions taken in the Field Log Book.

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

11.1 Incoming Samples

The laboratory shall document problems noted during sample receipt. The Laboratory Project Manager will contact the URS Project Chemist as soon as possible if any problems are encountered. All corrective actions shall be documented thoroughly.

11.2 Sample Holding Times

If any sample extractions and/or analyses exceed method holding time requirements, the Laboratory Project Manager will contact the Engineer's Project Chemist immediately for problem resolution. All corrective actions shall be documented thoroughly.

11.3 Instrument Calibration

Sample analysis shall not be allowed until all laboratory instrumentation is properly calibrated in accordance with method requirements. If any initial/continuing calibration standards fail to meet the required criteria, recalibration must be performed and, if necessary, all samples going back to the previous acceptable continuing calibration standard must be reanalyzed.

11.4 Quantitation Limits

The laboratory must make every attempt to meet all quantitation limits as specified for each method listed in Table 1. Sample-specific quantitation limits may be affected by any dilution that is needed because of elevated analyte concentrations, moisture content (soil/solids), and/or matrix interferences. If difficulties arise in achieving the required quantitation limits due to a particular sample matrix, the Laboratory Project Manager will contact the URS Project Chemist for problem resolution. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory shall report results from both the initial analyses and secondary dilution analyses. Dilution should only be used to bring target analytes within the linear range of calibration. If samples are analyzed at a dilution with no target analytes detected, the Laboratory Project Manager shall contact the Engineer's Project Chemist so that appropriate corrective actions can be initiated.

11.5 Method QC

All QC samples, including blanks, matrix spikes, matrix spike duplicates, matrix duplicates, surrogate recoveries, laboratory control samples, and other method-specified QC samples, shall meet the method-specific acceptance criteria. Failure to these criteria will result in the possible qualification of all affected data. When the criteria are not met, the affected sample(s) should be reanalyzed within the required holding times to verify the presence or absence of matrix effects. It should be noted that reanalysis is not always required. The Laboratory Project Manager shall contact the Engineer's Project Chemist to discuss possible corrective actions should unusually difficult sample matrices be encountered. The laboratory shall follow the requirements of the analytical methods and any instructions provided by the Project Chemist when determining if samples require reanalysis. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria as defined by the data validation guidelines identified in Section 12.2, or as otherwise identified for the work assignment.

11.6 Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review, calculation and/or reporting errors exist, the laboratory will

be requested to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

12.0 DATA REDUCTION, VALIDATION, AND USABILITY

NYSDEC ASP Category B deliverable requirements (or equivalent) will be required for documentation and reporting of all data. Where applicable, the standard NYSDEC Data Package Summary Forms should be completed by the analytical laboratories and included in the deliverable data packages.

12.1 Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either graphic or printed tabular form. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Results for aqueous samples will be reported in concentration units of micrograms per liter ($\mu\text{g/L}$) or milligrams per liter (mg/L). Results for solid and NAPL samples will be reported in concentration units of micrograms per kilogram ($\mu\text{g/kg}$) or milligrams per kilogram (mg/kg) and adjusted for moisture content.

Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or other reliable commercial sources. Data reduction will be performed by individuals experienced with a particular analysis and knowledgeable of requirements.

12.2 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use.

Data validation will be performed by a qualified URS chemist. All analytical samples collected will receive a data review including a review of holding times, completeness of all required deliverables, review of QC results (blanks, instrument tunings, calibration standards, calibration verifications, surrogates recoveries, spike recoveries, replicate analyses, and laboratory controls) to determine if the data are within the protocol-required limits and specifications, a determination that all samples were analyzed using established and agreed upon analytical protocols, an evaluation of the raw data to confirm the results provided in the data summary sheets, and a review of laboratory data qualifiers.

The methods referenced in Table 1 as well as the general guidelines presented in the following USEPA Region II documents will be used to aide the chemist during the data review.

- Validating Volatile Organic Compounds by SW-846 Method 8260B, HW-24, Revision 1, June 1999;
- Validating Semivolatile Organic Compounds by SW-846 Method 8270C, HW-22, Revision 2, June 2001;
- Validating PCB Compounds by SW-846 Method 8082, HW-23B, Revision 1.0, May 2002;
- Evaluation of Metals Data for the CLP Program, SOP HW-2, Revision 13, September 2005; and
- TCLP Data Validation, SOP HW-7, Revision 3, 1994.

12.3 Data Usability

A DUSR will be submitted to National Grid and will describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations, and quality control problems will be identified and their effect on the data will be discussed. The DUSR will also include recommendations on resampling/reanalysis. A copy of the DUSR requirements is provided in Attachment B-3.

13.0 PREVENTIVE MAINTENANCE

The laboratory is responsible for maintaining its analytical equipment. Preventive maintenance is provided on a regular basis to minimize down-time and the potential interruption of analytical work. Instruments are maintained in accordance with the manufacturer's recommendations. If instruments require maintenance, only trained laboratory personnel or manufacturer-authorized service specialists are permitted to do the work. Maintenance activities will be documented and kept in permanent logs. These logs are available for inspection by auditing personnel.

Maintenance of field instrumentation will be performed as needed by the vendor and/or URS personnel according to the manufacturer's requirements.

14.0 PERFORMANCE AND SYSTEMS AUDITS

Audits are evaluations of laboratory QA/QC procedures, and are performed before or shortly after systems are operational, and on an ongoing basis thereafter. Problems detected during these audits shall be reviewed by the Laboratory QA Manager and other laboratory management personnel, and corrective action shall be instituted as necessary.

14.1 Performance Audits

Performance audits are conducted by introducing control samples into the data measurement, reduction, and reporting processes. These control samples may include performance evaluation samples, or field samples spiked with known amounts of analytes. In addition to conducting internal reviews and performance audits as part of its established quality assurance program, the laboratory is required to take part in regularly-scheduled performance audits/evaluations from state and federal agencies. They are typically conducted as part of the certification process and to evaluate laboratory performance and analytical measurement systems. Acceptable performance on evaluation samples and audits is required for certification and accreditation. The laboratory shall use the information provided from these audits to monitor and assess the quality of its performance, and to take appropriate corrective actions as needed.

14.2 Systems Audits

Systems audits are thorough, on-site qualitative audits of facilities, equipment, instrumentation, personnel, training procedures, record keeping, data review/management, and reporting aspects of a system. They provide a qualitative measure of the data produced by one section of, or the entire, measurement process. The audits are performed against a set of requirements, which may include laboratory standard operating procedures, a quality assurance project plan or work plan, a standard method, and/or a project statement of work. The primary objective of the systems audits is to verify that all procedures are being performed according to the requirements specified above. Systems audits are performed internally by the Laboratory QA Manager, and also by external parties such as state and federal regulatory agencies and private-sector clients. Typically, state and federal agencies perform systems audits in conjunction with performance audits/evaluations during the

laboratory certification process. As part of its QA program, the Laboratory QA Manager shall also conduct periodic checks and audits of the analytical, data reduction, and reporting systems. The purpose of these is to verify that the systems are operating properly, and that personnel are adhering to established procedures and documenting the required information. These checks and audits assist in determining or detecting where problems are occurring.

REFERENCES

- NYSDEC. 2002. Draft DER-10 Technical Guidance for Site Investigation and Remediation. December.
- NYSDEC. 2000. Analytical Services Protocol. June (or most current).
- USEPA. 2005. Evaluation of Metals Data for the CLP Program, SOP HW-2, Revision 13. September.
- USEPA. 2005. Uniform Federal Policy for Quality Assurance Project Plans; Evaluating, Assessing, and Documenting Environmental Data Collection and Use Programs, Final, Version 1. March. EPA-505-B-04-900A.
- USEPA. 2002. Validating PCB Compounds by SW-846 Method 8082, HW-23B, Revision 1.0. May.
- USEPA. 2001. Validating Semivolatile Organic Compounds by SW-846 Method 8270, HW-22, Revision 2. June.
- USEPA. 1999. Validating Volatile Organic Compounds by SW-846 Method 8260B, HW-24, Revision 1. Region II. June.
- USEPA. 1993. TCLP Data Validation, SOP HW-7, Revision 3. March.
- USEPA. National Enforcement Investigations Center (NEIC) Office of Enforcement. NEIC Policies and Procedures. Washington.

TABLES

TABLE 1
SUMMARY OF SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS
HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURED GAS PLANT SITE
NATIONAL GRID

Parameter	Analytical Method ²	Estimated Number of Samples	Field QC Samples				Total No. of Samples	Samples Shipped To	Lab Analysis By
			Field Duplicates/Replicates	MS/MSD/M D	Rinsate Blanks	Trip Blanks			
I. ISS Delineation Soil Samples									
BTEX	EPA 8260B	varies	0	≥ 10%	0	0	varies	H2M	H2M
PAHs	EPA 8270C	varies	0	≥ 10%	0	0	varies	H2M	H2M
II. Geotechnical Soil Samples									
USCS Classification	ASTM D2487	2	0	0	0	0	2	URS Geolab	URS Geolab
Particle Size Analysis	ASTM D422	2	0	0	0	0	2	URS Geolab	URS Geolab
III. ISCO Screening Evaluation									
Groundwater									
Total Alkalinity	EPA 310.1	1	0	0	0	0	1	H2M	H2M
Total Iron	EPA 6010B	1	0	1	0	0	2	H2M	H2M
Bench-scale treatment test ³	ISOTech, LLC (or equal)	2	0	0	0	0	2	ISOTech	ISOTech
Soil									
Bench-scale treatment test ⁴	ISOTech, LLC (or equal)	2	0	0	0	0	2	ISOTech	ISOTech
IV. Aquifer Geochemistry									
Groundwater									
pH	EPA 9045	4	1	0	0	0	5	H2M	H2M
Specific Conductance	EPA 9050A	4	1	0	0	0	5	H2M	H2M
Total Alkalinity	EPA 310.1	4	0	0	0	0	4	H2M	H2M
BTEX	EPA 8260B	4	0	1	0	1	6	H2M	H2M
PAHs	EPA 8270C	4	0	1	0	0	5	H2M	H2M
Anions	EPA 300.0	4	0	0	0	0	4	Vanderbilt U	Vanderbilt U
TAL Metals (Cations)	EPA 6010B/7471A	4	0	1	0	0	5	Vanderbilt U	Vanderbilt U
DOC/DIC	Shimadzu TOC 5000	4	0	0	0	0	4	Vanderbilt U	Vanderbilt U
Soil									
Particle Size Analysis	ASTM D422	1	0	0	0	0	1	URS Geolab	URS Geolab
Moisture Content	ASTM D2216	1	0	0	0	0	1	URS Geolab	URS Geolab
BTEX	EPA 8260B	1	0	1	0	0	2	H2M	H2M
PAHs	EPA 8270C	1	0	1	0	0	2	H2M	H2M
Total Organic & Inorganic Carbon	Shimadzu TOC 5000	1	0	0	0	0	1	Vanderbilt U	Vanderbilt U
pH	EPA 9045	1	0	0	0	0	1	H2M	H2M
pH Equilibrium Test Leachates									
(Soil Samples Shipped to Vanderbilt University)									
pH	EPA 9045	12	0	0	0	0	12	Vanderbilt U	H2M
Specific Conductance	EPA 9050A	12	0	0	0	0	12	Vanderbilt U	H2M
Total Alkalinity	EPA 310.1	12	0	0	0	0	12	Vanderbilt U	H2M
BTEX	EPA 8260B	12	0	0	0	0	12	Vanderbilt U	H2M
PAHs	EPA 8270C	12	0	0	0	0	12	Vanderbilt U	H2M
Anions	EPA 300.0	12	0	0	0	0	12	Vanderbilt U	Vanderbilt U
TAL Metals (Cations)	EPA 6010B/7471A	12	0	0	0	0	12	Vanderbilt U	Vanderbilt U
DOC/DIC	Shimadzu TOC 5000	12	0	0	0	0	12	Vanderbilt U	Vanderbilt U

TABLE 1
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HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURED GAS PLANT SITE
NATIONAL GRID

Parameter	Analytical Method ²	Estimated Number of Samples	Field QC Samples				Total No. of Samples	Samples Shipped To	Lab Analysis By
			Field Duplicates/Replicates	MS/MSD/MD	Rinsate Blanks	Trip Blanks			
V. Solidification Testing Samples (Soil from Split Spoons)									
Moisture Content	ASTM D2216	8	0	0	0	0	8	URS Geolab	URS Geolab
Composite Auger Flight Soil Samples									
Moisture Content	ASTM D2216	4	0	0	0	0	4	Remedius	Remedius
Unit Weight	ASTM D2937	4	0	0	0	0	4	Remedius	Remedius
Atterberg Limits	ASTM D4318	4	0	0	0	0	4	Remedius	Remedius
Particle Size	ASTM D422	4	0	0	0	0	4	Remedius	Remedius
USCS Classification	ASTM D2487	4	0	0	0	0	4	Remedius	Remedius
BTEX	EPA 8260B	4	0	0	0	0	4	Remedius	H2M
PAHs	EPA 8270C	4	0	0	0	0	4	Remedius	H2M
Total Hydrocarbons/Oil & Grease	EPA 9071B	4	0	0	0	0	4	Remedius	H2M
pH	EPA 9045	4	0	0	0	0	4	Remedius	H2M
Solidified Soil Specimens (Solidified Soil Samples Created by Remedius)									
Moisture Content	ASTM D2216	varies	0	0	0	0	varies		Remedius
Unconfined Compressive Strength	ASTM D2216	varies	0	0	0	0	varies		Remedius
Hydraulic Conductivity	ASTM D5084	varies	0	0	0	0	varies		Remedius
BTEX	EPA 8260B	6	1	0	0	0	7	Vanderbilt U	H2M
PAHs	EPA 8270C	6	1	0	0	0	7	Vanderbilt U	H2M
Total Organic & Inorganic Carbon	Shimadzu TOC 5000	6	1	0	0	0	7	Vanderbilt U	Vanderbilt U
Grout Mixes (Grout Mixes Created by Remedius)									
Slump	ASTM C143	5	0	0	0	0	5		Remedius
Moisture Content	ASTM D2216	5	0	0	0	0	5		Remedius
Density	ASTM D2937	5	0	0	0	0	5		Remedius
Solidified Soil Leaching Tests (Solidified Soil Samples Created by Remedius)									
Tank Leach Test	MT03.1	6	1	0	0	0	varies	Vanderbilt U	Vanderbilt U
pH	EPA 9045	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
Specific Conductance	EPA 9050A	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
Total Alkalinity	EPA 310.1	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
BTEX	EPA 8260B	varies	0	0	0	0	varies	Vanderbilt U	H2M
PAHs	EPA 8270C	varies	0	0	0	0	varies	Vanderbilt U	H2M
Anions	EPA 300.0	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
TAL Metals (Cations)	EPA 6010B/7471A	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
DOC/DIC	Shimadzu TOC 5000	varies	0	0	0	0	varies	Vanderbilt U	Vanderbilt U
VI. NAPL Saturated Soil Samples									
Fuel Forensic Analysis	8100 (mod.)/8270C (mod.)	2	0	0	0	0	2	H2M	META Env.

TABLE 1
SUMMARY OF SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS
HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURED GAS PLANT SITE
NATIONAL GRID

Parameter	Analytical Method ²	Estimated Number of Samples	Field QC Samples				Total No. of Samples	Samples Shipped To	Lab Analysis By
			Field Duplicates/Replicates	MS/MSD/MD	Rinsate Blanks	Trip Blanks			
VII. Groundwater Treatment System Samples									
Soil									
BTEX	EPA 8260B	30	0	3	0	0	33	H2M	H2M
PAHs	EPA 8270C	30	0	3	0	0	33	H2M	H2M
TOC	EPA 9060 (mod.)	30	0	0	0	0	30	H2M	H2M
Particle Size	ASTM D422	9	0	0	0	0	9	URS	URS
Groundwater									
BTEX	EPA 8260B	15	2	2	1	1	21	H2M	H2M
PAHs	EPA 8270C	15	2	2	1	0	20	H2M	H2M
DO	EPA 360.1	15	2	0	0	0	17	Field Measurement	Field Measurement
pH	EPA 9045	15	2	0	0	0	17	Field Measurement	Field Measurement
Specific Conductance	EPA 9050A	15	2	0	0	0	17	Field Measurement	Field Measurement
Alkalinity	EPA 310.1	15	2	0	0	0	17	H2M	H2M
ORP	Low-Flow Cell, Electrode	15	2	0	0	0	17	H2M	H2M
Ferrous Iron	Colorimetric	15	2	0	0	0	17	Field Measurement	Field Measurement
Nitrate-Nitrogen	EPA 352.1	15	2	0	0	0	17	H2M	H2M
Nitrite-Nitrogen	EPA 354.1	15	2	0	0	0	17	H2M	H2M
Phosphate (ortho)	EPA 365	15	2	0	0	0	17	H2M	H2M

Notes:

1. NYSDEC Analytical Services Protocol (ASP), July 2005 Edition.
2. ASTM Methods as listed in "Annual Book of ASTM Standards, Vol. 04.08 Soil and Rock; Dimension Stone; Geosynthetics (most recent edition)
3. Approximately 10 - 20 L required.
4. Approximately 10 lbs required

MS/MSD/MD - Matrix spike/matrix spike duplicate/matrix duplicate
NAPL - Non-Aqueous Phase Liquid

**TABLE 2
SAMPLE CONTAINER, PRESERVATION, AND HOLDING TIME REQUIREMENTS
HEMPSTEAD INTERSECTION STREET FORMER MANUFACTURING GAS PLANT SITE
NATIONAL GRID**

Analytical Method/Parameter	Container Size/Type*	Number of Containers to Be Collected	Preservation	Maximum Holding Time (from VTSR)
Groundwater Samples				
BTEX	40 mL glass vial	3	HCl to pH<2, 4 °C	Analysis: 10 days (7 days if not preserved to pH<2)
PAHs	1L amber glass	2	4 °C	Extraction: 5 days Analysis: 40 days
Anions	100 mL plastic	1	None	Analysis: 28 days
TAL Metals (Cations)	1L plastic	1	HNO ₃ pH < 2	Analysis: 180 days
Total Alkalinity	100 mL plastic	1	4 °C	Analysis: 14 days
DOC/DIC	200 mL amber glass	1	4 °C	Analysis: 28 days
Dissolved Oxygen	Low-Flow Cell	1	None	Analyze immediately
Specific Conductance	100 mL plastic	1	4 °C	Analysis: 28 days
Oxidation Reduction Potential	Low-Flow Cell	1	None	Analyze immediately
pH	60 mL plastic	4	None	Analyze immediately
Ferrous Iron	10 - 25 mL glass	2	None	Analyze immediately
Nitrate-Nitrogen	100 mL glass	1	4 °C	Analysis: 48 hours
Nitrite-Nitrogen	50 mL glass	1	4 °C	Analysis: 48 hours
Phosphate (ortho)	50 mL plastic	1	Filter, 4° C	Analysis: 48 hours
Soil Samples				
BTEX	2 oz. glass jar	2	4 °C	Analysis: 7 days
PAHs	4 oz. glass jar	1	4 °C	Extraction: 5 days Analysis: 40 days
TAL Metals (Cations)	4 oz. glass jar	1	4 °C	Analysis: 180 days
Total Hydrocarbons/Oil & Grease	2 oz. glass jar	1	4 °C	Extraction: 5 days Analysis: 40 days
TOC/TIC	4 oz. glass jar	1	4 °C	Analysis: 28 days
pH	25 mL plastic	1	None	Analyze immediately
NAPL Saturated Soil Samples				
Environmental Forensic Analysis	40 mL glass vial	2	4 °C	Extraction: 5 days Analysis: 40 days

*Number and size of containers may vary based on laboratory sample volume requirements. Refer to PDI Workplan for specific volume requirements.

VTSR - Validated time of sample receipt

ATTACHMENT B-1

LABORATORY CERTIFICATIONS

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008
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D. W. Methylcarbamate Pesticides

3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1

Disinfection By-products

Bromochloroacetic acid	EPA 552.2
Dibromoacetic acid	EPA 552.2
Dichloroacetic acid	EPA 552.2
Monobromoacetic acid	EPA 552.2
Monochloroacetic acid	EPA 552.2
Trichloroacetic acid	EPA 552.2

Drinking Water Bacteriology

Coliform, Total / E. coli (Qualitative)	Colilert
	Colisure
	Readycult Coliforms 100 P/A Test
	SM 18-20 9221D
	SM 18-20 9223B (97) (Colilert)
Standard Plate Count	SM 18 9215B

Drinking Water Chlorinated Acids

2,4,5-TP (Silvex)	EPA 515.1
2,4-D	EPA 515.1
Dalapon	EPA 515.1
Dicamba	EPA 515.1

Drinking Water Chlorinated Acids

Dinoseb	EPA 515.1
Pentachlorophenol	EPA 515.1
	EPA 525.2
Picloram	EPA 515.1

Drinking Water Metals I

Arsenic, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 200.8 Rev. 5.4
	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

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Drinking Water Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4

Drinking Water Miscellaneous

Hexachlorocyclopentadiene	EPA 505 EPA 525.2
Methyl tert-butyl ether	EPA 502.2/ SEE ITEM 198.5 EPA 524.2
Odor	EPA 140.1
Organic Carbon, Total	EPA 415.1
Perchlorate	EPA 314.0
Propachlor	EPA 525.2
Surfactant (MBAS)	EPA 425.1
Temperature	EPA 170.1
UV 254	SM 19-20 5910B

Drinking Water Metals III

Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Drinking Water Non-Metals

Alkalinity	EPA 310.1 SM 18-20 2320B (97)
Calcium Hardness	EPA 200.7 Rev. 4.4
Chloride	EPA 300.0 Rev. 2.1 EPA 325.2
Color	EPA 110.2 SM 18-20 2120B (01)
Corrosivity	SM 18-19 2330
Cyanide, Free	SM 18-20 4500-CN E (99)
Cyanide, Total	EPA 335.2 SM 18-20 4500-CN E (99)
Fluoride, Total	EPA 300.0 Rev. 2.1 EPA 340.2 SM 18-20 4500-F C (97)
Hydrogen Ion (pH)	EPA 150.1
Nitrate (as N)	EPA 300.0 Rev. 2.1

Drinking Water Miscellaneous

Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Butachlor	EPA 525.2
Di (2-ethylhexyl) adipate	EPA 525.2
Diquat	EPA 549.2
Endothall	EPA 548.1
Glyphosate	EPA 547
Hexachlorobenzene	EPA 505 EPA 525.2

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Drinking Water Non-Metals

Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 300.0 Rev. 2.1
	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	EPA 300.0 Rev. 2.1
	EPA 365.1 Rev. 2.0
	EPA 365.2
	SM 18-20 4500-P E
Silica, Dissolved	EPA 200.7 Rev. 4.4
Solids, Total Dissolved	EPA 160.1
	SM 18-20 2540C (97)
Specific Conductance	EPA 120.1 Rev. 1982
	SM 18-20 2510B (97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
	EPA 375.4
	SM 18-20 4500-SO4 E

Drinking Water Organohalide Pesticides

Dieldrin	EPA 508.1
	EPA 525.2
Endrin	EPA 505
	EPA 508.1
	EPA 525.2
Heptachlor	EPA 505
	EPA 508.1
	EPA 525.2
Heptachlor epoxide	EPA 505
	EPA 508.1
	EPA 525.2
Lindane	EPA 505
	EPA 508.1
	EPA 525.2
Methoxychlor	EPA 505
	EPA 508.1
	EPA 525.2

Drinking Water Organohalide Pesticides

Alachlor	EPA 505
	EPA 508.1
	EPA 525.2
Aldrin	EPA 505
	EPA 508.1
	EPA 525.2
Atrazine	EPA 505
	EPA 525.2
Chlordane Total	EPA 505
	EPA 508.1
	EPA 525.2
Dieldrin	EPA 505

Metolachlor	EPA 525.2
Metribuzin	EPA 525.2
Simazine	EPA 505
	EPA 525.2
Toxaphene	EPA 505
	EPA 508.1
	EPA 525.2

Drinking Water Trihalomethanes

Bromodichloromethane	EPA 502.2
	EPA 524.2
Bromoform	EPA 502.2

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Drinking Water Trihalomethanes

Bromoform	EPA 524.2
Chloroform	EPA 502.2
	EPA 524.2
Dibromochloromethane	EPA 502.2
	EPA 524.2
Total Trihalomethanes	EPA 502.2
	EPA 524.2

Microextractibles

1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1

Polychlorinated Biphenyls

PCB Screen	EPA 505
	EPA 508.1
	EPA 525.2
PCB, Total (as decachlorobiphenyl)	EPA 508A

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,2-Dichlorobenzene	EPA 502.2
	EPA 524.2
1,3,5-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,3-Dichlorobenzene	EPA 502.2

Volatile Aromatics

1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 502.2
	EPA 524.2
2-Chlorotoluene	EPA 502.2
	EPA 524.2
4-Chlorotoluene	EPA 502.2
	EPA 524.2
Benzene	EPA 502.2
	EPA 524.2
Bromobenzene	EPA 502.2
	EPA 524.2
Chlorobenzene	EPA 502.2
	EPA 524.2
Ethyl benzene	EPA 502.2
	EPA 524.2
Hexachlorobutadiene	EPA 502.2
	EPA 524.2
Isopropylbenzene	EPA 502.2
	EPA 524.2
n-Butylbenzene	EPA 502.2
	EPA 524.2
n-Propylbenzene	EPA 502.2
	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 502.2
	EPA 524.2
sec-Butylbenzene	EPA 502.2
	EPA 524.2
Styrene	EPA 502.2
	EPA 524.2

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Volatile Aromatics

tert-Butylbenzene	EPA 502.2
	EPA 524.2
Toluene	EPA 502.2
	EPA 524.2
Total Xylenes	EPA 502.2
	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,1-Trichloroethane	EPA 502.2
	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,2-Trichloroethane	EPA 502.2
	EPA 524.2
1,1-Dichloroethane	EPA 502.2
	EPA 524.2
1,1-Dichloroethene	EPA 502.2
	EPA 524.2
1,1-Dichloropropene	EPA 502.2
	EPA 524.2
1,2,3-Trichloropropane	EPA 502.2
	EPA 524.2
1,2-Dichloroethane	EPA 502.2
	EPA 524.2
1,2-Dichloropropane	EPA 502.2
	EPA 524.2
1,3-Dichloropropane	EPA 502.2

Volatile Halocarbons

1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 502.2
	EPA 524.2
Bromochloromethane	EPA 502.2
	EPA 524.2
Bromomethane	EPA 502.2
	EPA 524.2
Carbon tetrachloride	EPA 502.2
	EPA 524.2
Chloroethane	EPA 502.2
	EPA 524.2
Chloromethane	EPA 502.2
	EPA 524.2
cis-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
cis-1,3-Dichloropropene	EPA 502.2
	EPA 524.2
Dibromomethane	EPA 502.2
	EPA 524.2
Dichlorodifluoromethane	EPA 502.2
	EPA 524.2
Methylene chloride	EPA 502.2
	EPA 524.2
Tetrachloroethene	EPA 502.2
	EPA 524.2
trans-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
trans-1,3-Dichloropropene	EPA 502.2
	EPA 524.2

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Volatile Halocarbons

Trichloroethene	EPA 502.2
	EPA 524.2
Trichlorofluoromethane	EPA 502.2
	EPA 524.2
Vinyl chloride	EPA 502.2
	EPA 524.2

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Acrylates		Amines	
Acrolein (Propenal)	EPA 624	Pyridine	EPA 625
	EPA 8260B		EPA 8260B
Acrylonitrile	EPA 624		EPA 8270C
	EPA 8260B	Bacteriology	
Ethyl methacrylate	EPA 8260B	Coliform, fecal	SM 18-20 9221E (99)
Methyl acrylonitrile	EPA 8260B	Coliform, Total	SM 18-20 9221B (99)
Methyl methacrylate	EPA 8260B	E. coli (Enumeration)	SM 18-20 9221B (99)
		Enterococci	Enterolert
Amines		Standard Plate Count	SM 18 9215B
1,4-Phenylenediamine	EPA 8270C	Benzidines	
1-Naphthylamine	EPA 8270C	3,3' -Dichlorobenzidine	EPA 625
2-Naphthylamine	EPA 8270C		EPA 8270C
2-Nitroaniline	EPA 8270C	3,3'-Dimethylbenzidine	EPA 8270C
3-Nitroaniline	EPA 8270C	Benzidine	EPA 625
4-Chloroaniline	EPA 8270C		EPA 8270C
4-Nitroaniline	EPA 8270C	Chlorinated Hydrocarbon Pesticides	
5-Nitro-o-toluidine	EPA 8270C	4,4'-DDD	EPA 608
Aniline	EPA 8270C		EPA 8081A
Carbazole	EPA 8270C	4,4'-DDE	EPA 608
Diphenylamine	EPA 8270C		EPA 8081A
Methapyriline	EPA 8270C	4,4'-DDT	EPA 608
Pronamide	EPA 8270C		
Propionitrile	EPA 8260B		

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Chlorinated Hydrocarbon Pesticides

4,4'-DDT	EPA 8081A
Aldrin	EPA 608
	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A
Chlordane Total	EPA 608
	EPA 8081A
Chlorobenzilate	EPA 8270C
delta-BHC	EPA 608
	EPA 8081A
Diallate	EPA 8270C
Dichloran	SM 18-20 6630B
Dieldrin	EPA 608
	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608
	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A

Chlorinated Hydrocarbon Pesticides

Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608
	EPA 8081A
Isodrin	EPA 8081A
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 8081A
Mirex	SM 18-20 6630B
PCNB	EPA 8270C
Strobane	SM 18-20 6630C
Toxaphene	EPA 608
	EPA 8081A
Trifluralin	SM 18-20 6630B
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260B

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Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 625
	EPA 8121
	EPA 8270C
1-Chloronaphthalene	EPA 8270C
2-Chloronaphthalene	EPA 625
	EPA 8121
	EPA 8270C
Hexachlorobenzene	EPA 625
	EPA 8121
	EPA 8270C
Hexachlorobutadiene	EPA 625
	EPA 8121
	EPA 8270C
Hexachlorocyclopentadiene	EPA 625
	EPA 8121
	EPA 8270C
Hexachloroethane	EPA 625
	EPA 8121
	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 1978, p.115
	EPA 8151A
	SM 18-20 6640B
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270C

Demand

Biochemical Oxygen Demand	EPA 405.1
Carbonaceous BOD	SM 18-20 5210B (01)
Chemical Oxygen Demand	EPA 410.4 Rev. 2.0

Fuel Oxygenates

Ethanol	EPA 8260B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
t-Butyl alcohol	EPA 8015 B
	EPA 8260B

Haloethers

4-Bromophenylphenyl ether	EPA 625
	EPA 8270C

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN J. MOLLOY
H2M LABS INC
575 BROAD HOLLOW ROAD
MELVILLE, NY 11747

NY Lab Id No: 10478
EPA Lab Code: NY00026

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National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:*

Haloethers		Mineral	
4-Chlorophenylphenyl ether	EPA 625	Sulfate (as SO4)	EPA 300.0 Rev. 2.1
	EPA 8270C		EPA 375.4
Bis (2-chloroisopropyl) ether	EPA 625	Nitroaromatics and Isophorone	
	EPA 8270C	1,3,5-Trinitrobenzene	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 625	1,3-Dinitrobenzene	EPA 8270C
	EPA 8270C	1,4-Naphthoquinone	EPA 8270C
Bis(2-chloroethyl)ether	EPA 625	2,4-Dinitrotoluene	EPA 625
	EPA 8270C		EPA 8270C
Microextractables		2,6-Dinitrotoluene	EPA 625
1,2-Dibromo-3-chloropropane	EPA 8011		EPA 8270C
1,2-Dibromoethane	EPA 8011	Isophorone	EPA 625
			EPA 8270C
Mineral		Nitrobenzene	EPA 625
Acidity	EPA 305.1		EPA 8270C
Alkalinity	EPA 310.1	Nitrosoamines	
Calcium Hardness	EPA 200.7 Rev. 4.4	N-Nitrosodiethylamine	EPA 8270C
Chloride	EPA 300.0 Rev. 2.1	N-Nitrosodimethylamine	EPA 625
	EPA 325.2		EPA 8270C
Fluoride, Total	EPA 300.0 Rev. 2.1	N-Nitrosodi-n-butylamine	EPA 8270C
	EPA 340.2	N-Nitrosodi-n-propylamine	EPA 625
Hardness, Total	EPA 130.2		EPA 8270C
	EPA 200.7 Rev. 4.4	N-Nitrosodiphenylamine	EPA 625
	SM 18-20 2340C (97)		

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Nitrosoamines

N-Nitrosodiphenylamine	EPA 8270C
N-nitrosopiperidine	EPA 8270C
N-Nitrosopyrrolidine	EPA 8270C

Nutrient

Ammonia (as N)	EPA 350.1 Rev. 2.0
Kjeldahl Nitrogen, Total	EPA 351.1 Rev. 1978
	EPA 351.2 Rev. 2.0
Nitrate (as N)	EPA 300.0 Rev. 2.1
	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 300.0 Rev. 2.1
	EPA 353.2 Rev. 2.0
	EPA 354.1
Orthophosphate (as P)	EPA 300.0 Rev. 2.1
	EPA 365.1 Rev. 2.0
	EPA 365.2
Phosphorus, Total	EPA 365.1 Rev. 2.0 EPA 365.2

Organophosphate Pesticides

Atrazine	EPA 8141A
Azinphos methyl	EPA 8141A
Demeton-O	EPA 8141A
Demeton-S	EPA 8141A

Organophosphate Pesticides

Diazinon	EPA 8141A
Dimethoate	EPA 8141A EPA 8270C
Disulfoton	EPA 8141A
	EPA 8270C
Famphur	EPA 8141A
Malathion	EPA 8141A
Parathion ethyl	EPA 8141A
Parathion methyl	EPA 8141A
Phorate	EPA 8270C

Phthalate Esters

Benzyl butyl phthalate	EPA 625
	EPA 8270C
	EPA 625
Bis(2-ethylhexyl) phthalate	EPA 8270C
	EPA 625
	EPA 8270C
Diethyl phthalate	EPA 625
	EPA 8270C
Dimethyl phthalate	EPA 625
Di-n-butyl phthalate	EPA 8270C
	EPA 625
Di-n-octyl phthalate	EPA 8270C
	EPA 625

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Phthalate Esters

Di-n-octyl phthalate EPA 8270C

Polychlorinated Biphenyls

PCB-1016 EPA 608
EPA 8082
PCB-1221 EPA 608
EPA 8082
PCB-1232 EPA 608
EPA 8082
PCB-1242 EPA 608
EPA 8082
PCB-1248 EPA 608
EPA 8082
PCB-1254 EPA 608
EPA 8082
PCB-1260 EPA 608
EPA 8082

Polynuclear Aromatics

Acenaphthylene EPA 8270C
Anthracene EPA 625
EPA 8270C
Benzo(a)anthracene EPA 625
EPA 8270C
Benzo(a)pyrene EPA 625
EPA 8270C
Benzo(b)fluoranthene EPA 625
EPA 8270C
Benzo(ghi)perylene EPA 625
EPA 8270C
Benzo(k)fluoranthene EPA 625
EPA 8270C
Chrysene EPA 625
EPA 8270C
Dibenzo(a,h)anthracene EPA 625
EPA 8270C
Fluoranthene EPA 625
EPA 8270C
Fluorene EPA 625
EPA 8270C
Indeno(1,2,3-cd)pyrene EPA 625
EPA 8270C

Polynuclear Aromatics

3-Methylcholanthrene EPA 8270C
7,12-Dimethylbenzyl (a) anthracene EPA 8270C
Acenaphthene EPA 625
EPA 8270C
Acenaphthylene EPA 625

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Polynuclear Aromatics

Naphthalene	EPA 625
	EPA 8270C
Phenanthrene	EPA 625
	EPA 8270C
Pyrene	EPA 625
	EPA 8270C

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270C
2,4,5-Trichlorophenol	EPA 625
	EPA 8270C
2,4,6-Trichlorophenol	EPA 625
	EPA 8270C
2,4-Dichlorophenol	EPA 625
	EPA 8270C
2,4-Dimethylphenol	EPA 625
	EPA 8270C
2,4-Dinitrophenol	EPA 625
	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 625
	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 625

Priority Pollutant Phenols

2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 625
	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 625
	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 625
	EPA 8270C
Cresols, Total	EPA 625
	EPA 8270C
Pentachlorophenol	EPA 625
	EPA 8270C
Phenol	EPA 625
	EPA 8270C

Purgeable Aromatics

1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B

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Purgeable Aromatics

1,2-Dichlorobenzene	EPA 8260B
	EPA 8270C
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,4-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 601
	EPA 602
	EPA 624

Purgeable Aromatics

Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624

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Purgeable Halocarbons

1,1,2,2-Tetrachloroethane	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Halocarbons

1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624

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Purgeable Halocarbons

Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624
	EPA 8021B

Purgeable Halocarbons

Dibromochloromethane	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Trichloroethene	EPA 601
	EPA 624

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Purgeable Halocarbons

Trichloroethene	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8015 B
	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8015 B
	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8015 B
	EPA 8260B

Purgeable Organics

Methyl iodide	EPA 8260B
o-Toluidine	EPA 8270C
Vinyl acetate	EPA 8260B

Residue

Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2

Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Isosafrole	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C
p-Dimethylaminoazobenzene	EPA 8270C
Phenacetin	EPA 8270C
Safrole	EPA 8270C

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Volatile Chlorinated Organics		Wastewater Metals I	
Benzyl chloride	EPA 8260B	Lead, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B
Wastewater Metals I			EPA 6020
Barium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020	Magnesium, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Cadmium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020	Manganese, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020
Calcium, Total	EPA 200.7 Rev. 4.4 EPA 6010B	Nickel, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020
Chromium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020	Potassium, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Copper, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020	Silver, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020 EPA 7760A
Iron, Total	EPA 200.7 Rev. 4.4 EPA 6010B	Sodium, Total	EPA 200.7 Rev. 4.4 EPA 6010B

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Wastewater Metals I

Strontium, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Wastewater Metals II

Aluminum, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Antimony, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Arsenic, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Beryllium, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Chromium VI
EPA 7196A

Wastewater Metals II

Chromium VI
SM 18-19 3500-Cr D

Mercury, Total
EPA 200.8 Rev. 5.4
EPA 245.1 Rev. 3.0
EPA 6020
EPA 7470A

Selenium, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Vanadium, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Zinc, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Wastewater Metals III

Cobalt, Total
EPA 200.7 Rev. 4.4
EPA 200.8 Rev. 5.4
EPA 6010B
EPA 6020

Serial No.: 33959

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NEW YORK STATE DEPARTMENT OF HEALTH
 WADSWORTH CENTER
 RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008
 Issued April 01, 2007
 Revised June 21, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN J. MOLLOY
 H2M LABS INC
 575 BROAD HOLLOW ROAD
 MELVILLE, NY 11747

NY Lab Id No: 10478
 EPA Lab Code: NY00026

*is hereby APPROVED as an Environmental Laboratory in conformance with the
 National Environmental Laboratory Accreditation Conference Standards for the category
 ENVIRONMENTAL ANALYSES NON POTABLE WATER
 All approved analytes are listed below:*

Wastewater Metals III

Molybdenum, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020
Thallium, Total	EPA 200.7 Rev. 4.4 EPA 200.8 Rev. 5.4 EPA 6010B EPA 6020
Tin, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Titanium, Total	EPA 200.7 Rev. 4.4 EPA 6010B

Wastewater Miscellaneous

Hydrogen Ion (pH)	EPA 150.1 EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A EPA 413.1 EPA 9070
Organic Carbon, Total	EPA 415.1
Phenols	EPA 420.1 Rev. 1978 EPA 9065
Silica, Dissolved	EPA 200.7 Rev. 4.4 EPA 6010B
Specific Conductance	EPA 120.1 Rev. 1982
Sulfide (as S)	EPA 376.1 EPA 9034
Surfactant (MBAS)	EPA 425.1
Temperature	EPA 170.1
Total Recoverable Petroleum Hydrocarb	EPA 1664A

Wastewater Miscellaneous

Boron, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Bromide	EPA 300.0 Rev. 2.1 EPA 320.1
Color	EPA 110.2 SM 18-20 2120B (01)
Corrosivity	SM 18-19 2330
Cyanide, Total	EPA 335.2 EPA 9014

Sample Preparation Methods

EPA 9030B	EPA 9010B	EPA 3010A	EPA 3005A
EPA 3510C	EPA 3520C	EPA 5030B	

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008
Issued April 01, 2007
Revised July 06, 2007

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:*

Acrylates

Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B

Amines

1,2-Diphenylhydrazine	EPA 8270C
1,4-Phenylenediamine	EPA 8270C
1-Naphthylamine	EPA 8270C
2-Naphthylamine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
5-Nitro-o-toluidine	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C

Benzidines

3,3'-Dichlorobenzidine	EPA 8270C
3,3'-Dimethylbenzidine	EPA 8270C
Benzidine	EPA 8270C

Characteristic Testing

Corrosivity	EPA 1110
	EPA 9040B

Characteristic Testing

Corrosivity	EPA 9045C
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270C
delta-BHC	EPA 8081A
Diallate	EPA 8270C
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Pentachloronitrobenzene	EPA 8270C

Serial No.: 34058

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
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Expires 12:01 AM April 01, 2008
Issued April 01, 2007
Revised July 06, 2007

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:*

Chlorinated Hydrocarbon Pesticides

Toxaphene EPA 8081A

Chlorinated Hydrocarbons

1,2,4,5-Tetrachlorobenzene EPA 8270C
1,2,4-Trichlorobenzene EPA 8121
EPA 8270C
1-Chloronaphthalene EPA 8270C
2-Chloronaphthalene EPA 8121
EPA 8270C
Hexachlorobenzene EPA 8121
EPA 8270C
Hexachlorobutadiene EPA 8121
EPA 8270C
Hexachlorocyclopentadiene EPA 8121
EPA 8270C
Hexachloroethane EPA 8121
EPA 8270C
Hexachloropropene EPA 8270C
Pentachlorobenzene EPA 8270C

Chlorophenoxy Acid Pesticides

2,4,5-T EPA 8151A
2,4,5-TP (Silvex) EPA 8151A
2,4-D EPA 8151A
Dicamba EPA 8151A

Haloethers

4-Bromophenylphenyl ether EPA 8270C
4-Chlorophenylphenyl ether EPA 8270C
Bis (2-chloroisopropyl) ether EPA 8270C

Haloethers

Bis(2-chloroethoxy)methane EPA 8270C
Bis(2-chloroethyl)ether EPA 8270C

Metals I

Barium, Total EPA 6010B
EPA 6020
Cadmium, Total EPA 6010B
EPA 6020
Calcium, Total EPA 6010B
Chromium, Total EPA 6010B
EPA 6020
Copper, Total EPA 6010B
EPA 6020
Iron, Total EPA 6010B
Lead, Total EPA 6010B
EPA 6020
Magnesium, Total EPA 6010B
Manganese, Total EPA 6010B
EPA 6020
Nickel, Total EPA 6010B
EPA 6020
Potassium, Total EPA 6010B
Silver, Total EPA 6010B
EPA 6020
EPA 7760A
Sodium, Total EPA 6010B
Strontium, Total EPA 6010B

Metals II

Aluminum, Total EPA 6010B

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Metals II

Aluminum, Total	EPA 6020
Antimony, Total	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 6010B
	EPA 6020
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 6010B
	EPA 6020
Zinc, Total	EPA 6010B
	EPA 6020

Metals III

Cobalt, Total	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 6010B
	EPA 6020
Silica, Dissolved	EPA 6010B
Thallium, Total	EPA 6010B
	EPA 6020
Tin, Total	EPA 6010B

Minerals

Bromide	EPA 9056
Chloride	EPA 9056
	EPA 9250

Minerals

Fluoride, Total	EPA 9056
	EPA 9214
Sulfate (as SO4)	EPA 9038

Miscellaneous

Boron, Total	EPA 6010B
Cyanide, Total	EPA 9014
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Lead in Dust Wipes	EPA 6010B
Lead in Paint	EPA 6010B
Phenols	EPA 9065
Sulfide (as S)	EPA 9034

Nitroaromatics and Isophorone

1,4-Naphthoquinone	EPA 8270C
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
Isophorone	EPA 8270C
	OLM 4.2 BNA
Nitrobenzene	EPA 8270C
Pyridine	EPA 8270C

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
N-nitrosomethylethylamine	EPA 8270C

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 ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
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Nitrosoamines

N-nitrosopiperidine EPA 8270C
 N-Nitrosopyrrolidine EPA 8270C

Nutrients

Nitrate (as N) EPA 9056
 Nitrite (as N) EPA 9056
 Orthophosphate (as P) EPA 9056

Organophosphate Pesticides

Azinphos methyl EPA 8141A
 Demeton-O EPA 8141A
 Demeton-S EPA 8141A
 Diazinon EPA 8141A
 Dimethoate EPA 8141A
 EPA 8270C
 Dioxathion EPA 8141A
 Disulfoton EPA 8141A
 EPA 8270C
 Famphur EPA 8141A
 Malathion EPA 8141A
 Parathion ethyl EPA 8141A
 Parathion methyl EPA 8141A
 Phorate EPA 8141A
 EPA 8270C
 Thionazin EPA 8141A
 EPA 8270C

Phthalate Esters

Benzyl butyl phthalate EPA 8270C
 Bis(2-ethylhexyl) phthalate EPA 8270C

Phthalate Esters

Diethyl phthalate EPA 8270C
 Dimethyl phthalate EPA 8270C
 Di-n-butyl phthalate EPA 8270C
 Di-n-octyl phthalate EPA 8270C

Polychlorinated Biphenyls

PCB-1016 EPA 8082
 PCB-1221 EPA 8082
 PCB-1232 EPA 8082
 PCB-1242 EPA 8082
 PCB-1248 EPA 8082
 PCB-1254 EPA 8082
 PCB-1260 EPA 8082

Polynuclear Aromatic Hydrocarbons

3-Methylcholanthrene EPA 8270C
 7,12-Dimethylbenzyl (a) anthracene EPA 8270C
 Acenaphthene EPA 8270C
 Acenaphthylene EPA 8270C
 Anthracene EPA 8270C
 Benzo(a)anthracene EPA 8270C
 Benzo(a)pyrene EPA 8270C
 Benzo(b)fluoranthene EPA 8270C
 Benzo(ghi)perylene EPA 8270C
 Benzo(k)fluoranthene EPA 8270C
 OLM 4.2 BNA
 Chrysene EPA 8270C
 Dibenzo(a,h)anthracene EPA 8270C
 Fluoranthene EPA 8270C
 Fluorene EPA 8270C

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Polynuclear Aromatic Hydrocarbons

Indeno(1,2,3-cd)pyrene	EPA 8270C
Naphthalene	EPA 8260B
	EPA 8270C
Phenanthrene	EPA 8270C
Pyrene	EPA 8270C

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270C
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA 8260B
1,2-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270C

Purgeable Aromatics

1,3,5-Trimethylbenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270C
1,4-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270C
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8260B
n-Butylbenzene	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B
sec-Butylbenzene	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
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Purgeable Halocarbons		Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B	Bromoform	EPA 8260B
1,1,1-Trichloroethane	EPA 8021B	Bromomethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8021B	Carbon tetrachloride	EPA 8021B
	EPA 8260B		EPA 8260B
1,1,2-Trichloroethane	EPA 8021B	Chloroethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,1-Dichloroethane	EPA 8021B	Chloroform	EPA 8021B
	EPA 8260B		EPA 8260B
1,1-Dichloroethene	EPA 8021B	Chloromethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,1-Dichloropropene	EPA 8260B	cis-1,2-Dichloroethene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B	cis-1,3-Dichloropropene	EPA 8021B
1,2-Dibromo-3-chloropropane	EPA 8260B		EPA 8260B
1,2-Dibromoethane	EPA 8260B		OLM 4.2 Volatiles
1,2-Dichloroethane	EPA 8021B	Dibromochloromethane	EPA 8021B
	EPA 8260B		EPA 8260B
1,2-Dichloropropane	EPA 8021B	Dibromomethane	EPA 8260B
	EPA 8260B	Dichlorodifluoromethane	EPA 8021B
1,3-Dichloropropane	EPA 8260B		EPA 8260B
2,2-Dichloropropane	EPA 8260B	Methylene chloride	EPA 8021B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B		EPA 8260B
2-Chloroethylvinyl ether	EPA 8021B	Tetrachloroethene	EPA 8021B
	EPA 8260B		EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B	trans-1,2-Dichloroethene	EPA 8260B
Bromochloromethane	EPA 8260B	trans-1,3-Dichloropropene	EPA 8021B
Bromodichloromethane	EPA 8021B		EPA 8260B
	EPA 8260B	Trichloroethene	EPA 8021B
Bromoform	EPA 8021B		EPA 8260B

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
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Purgeable Halocarbons

Trichlorofluoromethane	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 8021B
	EPA 8260B

Purgeable Organics

1,4-Dioxane	EPA 8015 B
	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8015 B
	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8015 B
	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8015 B
	EPA 8260B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
o-Toluidine	EPA 8270C
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B

Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C

Semi-Volatile Organics

Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Isosafrole	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C
Phenacetin	EPA 8270C
Safrole	EPA 8270C

Volatile Chlorinated Organics

Benzyl chloride	EPA 8260B
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Sample Preparation Methods

EPA 1311
EPA 3005A
EPA 3010A
EPA 3050B
EPA 3060A
EPA 3545
EPA 3550B
EPA 3585
EPA 5030B
EPA 5035
EPA 9010B
EPA 9030B

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ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:*

Acrylates		Purgeable Halocarbons	
Acrylonitrile	EPA TO-15	1,1,2,2-Tetrachloroethane	EPA TO-15
Metals I		1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-15
Lead, Total	EPA 200.7 Rev. 4.4	1,1-Dichloroethane	EPA TO-15
Metals II		1,1-Dichloroethene	EPA TO-15
Mercury, Total	EPA 245.1 Rev. 3.0	1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-15
Priority Pollutant Phenols		1,2-Dichloroethane	EPA TO-15
2-Chlorophenol	EPA 625	1,2-Dichloropropane	EPA TO-15
Pentachlorophenol	EPA 625	Bromoform	EPA TO-15
Phenol	EPA 625	Carbon tetrachloride	EPA TO-15
Purgeable Aromatics		Chloroform	EPA TO-15
1,2,4-Trimethylbenzene	EPA TO-15	Dichlorodifluoromethane	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15	Methylene chloride	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15	Tetrachloroethene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15	Trichlorofluoromethane	EPA TO-15
Benzene	EPA TO-15	Vinyl chloride	EPA TO-15
Chlorobenzene	EPA TO-15	Volatile Chlorinated Organics	
Ethyl benzene	EPA TO-15	Benzyl chloride	EPA TO-15
Toluene	EPA TO-15	Volatile Organics	
Total Xylenes	EPA TO-15	1,3-Butadiene	EPA TO-15

Serial No.: 33471

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008
Issued April 01, 2007
Revised April 17, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN J. MOLLOY
H2M LABS INC
575 BROAD HOLLOW ROAD
MELVILLE, NY 11747

NY Lab Id No: 10478
EPA Lab Code: NY00026

*is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:*

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Hexachloroethane	EPA TO-15

Purgeable Aromatics

1,3-Dichlorobenzene	EPA TO-17
Benzene	EPA TO-1
	EPA TO-2
Ethyl benzene	EPA TO-1
Isopropylbenzene	EPA TO-17
Styrene	EPA TO-15
	EPA TO-17
	EPA TO-17
Toluene	EPA TO-1
	EPA TO-2
Total Xylenes	EPA TO-1

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-15
	EPA TO-17
1,1,2-Trichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-2
1,2-Dichloroethane	EPA TO-1
	EPA TO-2
1,2-Dichloropropane	EPA TO-1

Purgeable Halocarbons

Bromoform	EPA TO-17
Bromomethane	EPA TO-15
Carbon tetrachloride	EPA TO-1
	EPA TO-2
Chloroethane	EPA TO-15
Chloroform	EPA TO-1
	EPA TO-2
Chloromethane	EPA TO-15
	EPA TO-17
cis-1,2-Dichloroethene	EPA TO-15
	EPA TO-17
cis-1,3-Dichloropropene	EPA TO-15
	EPA TO-17
Methylene chloride	EPA TO-2
Tetrachloroethene	EPA TO-1
trans-1,2-Dichloroethene	EPA TO-15
	EPA TO-17
	EPA TO-17
trans-1,3-Dichloropropene	EPA TO-15
	EPA TO-17
Trichloroethene	EPA TO-15
Vinyl bromide	EPA TO-15
	EPA TO-17
	EPA TO-2
Vinyl chloride	EPA TO-2

Serial No.: 33472

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
RICHARD F. DAINES, M.D.



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Revised April 17, 2007

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575 BROAD HOLLOW ROAD
MELVILLE, NY 11747

NY Lab Id No: 10478
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ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:*

Volatile Organics

1,4-Dioxane	EPA TO-17
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
	EPA TO-17
4-Methyl-2-Pentanone	EPA TO-15
	EPA TO-17
Carbon Disulfide	EPA TO-17
Hexane	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
	EPA TO-17
Vinyl acetate	EPA TO-15
	EPA TO-17

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
RICHARD F. DAINES, M.D.



Expires 12:01 AM April 01, 2008
Issued April 20, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. JOHN J. MOLLOY
H2M LABS INC
575 BROAD HOLLOW ROAD
MELVILLE, NY 11747

NY Lab Id No: 10478
EPA Lab Code: NY00026

*is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:*

CLP PCB/Pesticides
CLP Semi-Volatile Organics
CLP Volatile Organics
CLP Inorganics

Serial No.: 33548

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ATTACHMENT B-2

EXAMPLE CHAIN-OF-CUSTODY RECORDS

AIR SAMPLE CHAIN OF CUSTODY RECORD

URS CORPORATION
77 GOODELL STREET
BUFFALO, NY 14203
PHONE: 716-856-5636

URS CONTACT: _____

PROJECT NUMBER		SITE NAME				SAMPLE INFORMATION							LAB _____																																																																																																																																																																																											
SAMPLERS (PRINT/SIGNATURE)						CANISTER ID	FLOW CONTROLLER ID	INITIAL PRESSURE/ VACUUM (" Hg)	FINAL PRESSURE/ VACUUM (" Hg)	PRESSURE/VACUUM UPON LAB RECEIPT (" Hg)	REQUIRED ANALYSIS			SHIPPING CONTAINER _____ of _____ PAGE _____ of _____																																																																																																																																																																																										
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ATTACHMENT B-3

DATA USABILITY SUMMARY REPORT

REQUIREMENTS

Guidance for the Development of Data Usability Summary Reports

Background:

The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data without the costly and time consuming process of third party data validation. The primary objective of a DUSR is to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

The DUSR and the data deliverables package will be reviewed by the DER Quality Assurance Unit. If data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later date on the same data package used for the development of the DUSR.

Personnel Requirements:

The Environmental Scientist preparing the DUSR must hold a Bachelors Degree in a relevant natural or physical science or field of engineering and must submit a resume to the Division's Quality Assurance Unit documenting experience in environmental sampling, analysis and data review.

Preparation of a DUSR:

The DUSR is developed by reviewing and evaluating the analytical data package. During the course of this review the following questions must be asked and answered:

1. Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?
2. Have all holding times been met?
3. Do all the QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
4. Have all of the data been generated using established and agreed upon analytical protocols?
5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
6. Have the correct data qualifiers been used?

Evaluation of NYSDEC ASP Matrix Spike Blank (MSB) data - If the MSB recovery is less than the ASP criteria, the positive results should be qualified as J, estimated biased low. If the MSB recovery is less than the ASP criteria, but greater than 10%, the nondetects should be qualified J, biased low. If the MSB recovery is less than 10%, the nondetect data must be rejected.

Any Quality Control exceedances must be numerically specified in the DUSR and the corresponding QC summary sheet from the data package should be attached to the DUSR. All data that would be rejected by the EPA Region 2 Data Validation Guidelines must also be rejected in the DUSR.

Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed. The DUSR shall also include recommendations on resampling/reanalysis. All data qualifications must be documented following the NYSDEC ASP '95 Rev. guidelines.