



# **Second Semiannual Monitoring (SA2) Report (July – December 2016)**

## **Site Management Plan Monitoring**

**Former Clifton Manufactured Gas Plant  
Staten Island, New York  
NYSDEC Site No.: 2-43-023  
Order on Consent Index #: D2-0001-98-04**

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**December 2017**



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**December 2017**

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## List of Acronyms

AWQSGV	Ambient Water Quality Standards and Guidance Values
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CAMP	Community Air Monitoring Program
COD	Chemical Oxygen Demand
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
GC/MS	Gas Chromatograph/Mass Spectrometry
IC	Institutional Control
ICP	Inductively Coupled Plasma
LCS	Laboratory Control Standard
MGP	Manufactured Gas Plant
MNA	Monitored Natural Attenuation
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NTU	Nephelometric Turbidity Unit
NYSDEC	New York State Department of Environmental Conservation
ORP	Oxidation Reduction Potential
PAH	Polycyclic Aromatic Hydrocarbon
Report	2016 Second Semiannual Monitoring (SA2) Report
SA	Semi-Annual
Site	Former Clifton Manufactured Gas Plant located in Staten Island, New York
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
USEPA	United States Environmental Protection Agency
WWTP	Waste Water Treatment Plant

## Measurements and Units

bgs	Below Ground Surface
ft	Feet
in	Inch
µg/L	Micrograms per Liter
ND	Not Detected

## 1.0 Introduction

This Second Semiannual (SA2) Monitoring Report (Report) (July – December 2016) has been prepared by AECOM, on behalf of National Grid, to evaluate the on-going performance and effectiveness of the engineering and institutional controls at the Former Clifton Manufactured Gas Plant (the Site, Figure 1), located in Staten Island, New York. This Report summarizes and documents the results of monitoring activities completed at the Site from July through December 2016. Activities were completed in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved Site Management Plan (AECOM, 2016d; SMP). This is the second Semiannual Monitoring Report since the SMP was finalized in January 2016. Interim monitoring activities were completed from 2014 through 2015, and were reported upon separately.

The Site was remediated in accordance with the NYSDEC Records of Decision (NYSDEC, 2004 and NYSDEC, 2006) and, as documented in the SMP. Manufactured Gas Plant (MGP)-related residuals remaining in Site soils and groundwater are being managed in accordance with the SMP. The SMP provides details of institutional controls (ICs) and engineering controls (ECs) that restrict exposure to the MGP-related residuals. The SMP will include Environmental Easements (currently pending finalization), when they are executed in accordance with New York State Environmental Conservation Law (ECL) Article 71, Title 36.

This Report includes details on the following activities completed at the Site during the reporting period:

- Dense Non-Aqueous Phase Liquid (DNAPL) gauging and recovery;
- Groundwater monitoring;
- Depressurization pump and treat system operation and maintenance, and State Pollutant Discharge Elimination System (SPDES) permit equivalent-required sampling; and
- Details of ground-intrusive activities within the SMP limits.

## 2.0 Background

The Site is located in Staten Island, New York. The Site, as defined in the SMP, includes all or portions of 25 Willow Avenue and 40 Willow Avenue (Figure 2). The off-Site areas, as defined in the SMP, include all or portions of One Edgewater Street, 89 Willow Avenue, 53 Lynhurst Avenue, properties east of 25 Willow Avenue (Block 2822, Lots 21, 22, 23, 24, and 26), and New York City rights-of-way along Willow Avenue, Bay Street, and Edgewater Street (Figure 2).

The SMP, approved by the NYSDEC in January 2016, concludes the remedy implementation at the Site. The SMP outlines a number of ECs/ ICs required to manage the remaining MGP-related impacts at the Site. In particular, these ECs include:

- Subsurface vertical DNAPL barrier walls;
- A subsurface vertical containment cell;
- A containment cell depressurization system;
- Soil cover systems;
- Composite cover systems;
- Passive DNAPL collection systems; and
- Monitored natural attenuation (MNA).

ICs place restrictions on certain Site activities and require periodic monitoring to evaluate the performance and effectiveness of the Site remedy for reducing and mitigating remaining impacts at the Site and off-Site areas.

An interim monitoring program of similar scope was in place for approximately two years, from 2014 through 2015, prior to approval of the SMP.

## 3.0 Monitoring Activities

### 3.1 Containment Cell Depressurization System

A depressurization pump and treatment system (system) was installed in 2015 and 2016 on the 40 Willow Avenue property to maintain the integrity of the containment cell that was constructed on a portion of the 40 Willow Avenue property. The system removes groundwater from the containment cell so that pressure does not build up within it and potentially cause a failure. The system is comprised of a groundwater extraction pump, wastewater treatment plant (WWTP), and discharge to New York Harbor via a storm sewer line under a SPDES permit equivalent. The Containment Pad Depressurization System – Final Construction Completion Report (AECOM, 2016a) provides details of the construction of the system. Start-up of the system, and routine operation, began in January 2016.

The system operated as intended throughout the period of this Report. The only exception was a period of approximately 11 days in December 2016 when the system was offline due to an alarm condition caused by a faulty relay, beginning on December 10, 2016. The system was repaired and resumed normal operations on December 21, 2016.

As required by the SPDES permit equivalent, effluent from the system was sampled on a monthly basis during the monitoring period. Effluent sample results for July through December 2016 are summarized in Table 1. A Data Usability Summary Report (DUSR) is included as Appendix A.1. Monthly effluent sample results demonstrate that the system has been operating in accordance with the terms of the SPDES permit equivalent during the period of this Report.

### 3.2 DNAPL Collection System

The Site DNAPL collection system is being monitored and DNAPL recovery is occurring in accordance with the SMP. Previous Interim Status and Semiannual Reports (AECOM, 2014b, AECOM, 2015b, AECOM, 2015c, AECOM, 2016b, and AECOM 2016c) described in detail the initial testing and results, and gauging and removal program that has been implemented to date.

#### 3.2.1 DNAPL Recovery Well Network

There are 26 passive DNAPL recovery wells at the Site for gauging of DNAPL levels, if any, and recovery of DNAPL, if present. Well construction details are summarized in Table 2, and details including construction logs and development logs are provided in the Construction Completion Report (AECOM, 2014a) and SMP (AECOM, 2016d). Three DNAPL recovery wells were installed in 2009 within the containment cell on the 40 Willow Avenue property and twenty-three DNAPL recovery wells were installed in 2013 adjacent to the vertical subsurface DNAPL barrier wall (slurry wall) along Willow Avenue and Bay Street. The DNAPL recovery well network along Willow Avenue, including the containment cell, and along Bay Street is shown in Figures 3 and 4, respectively.

#### 3.2.2 O&M DNAPL Gauging

As called for in the SMP, the DNAPL recovery wells are gauged on a bi-weekly, monthly, quarterly or annual basis to check for the presence of DNAPL. The recovery wells are gauged using a weighted stainless steel measuring tape as well as an Oil/Water Interface probe. Observations of blebs and sheens on the interface probe measuring tape are noted but not used to calculate DNAPL thickness. Observations from the weighted measuring tape are used to determine DNAPL thickness because the wire of the Oil/Water Interface probe can become thickly coated with DNAPL and not sink fully, providing inaccurate data. The results from the gauging events during the period of this Report are included in Table 3.

### 3.2.3 O&M DNAPL Removal and Disposal

As called for in the SMP and Record of Decision, DNAPL is removed from wells where present and removable. Since completion of a Baildown Test (AECOM, 2014b), DNAPL accumulated within the recovery wells has been removed as appropriate to the rate of DNAPL accumulation in each recovery well. Following gauging, recoverable DNAPL is removed from the wells. DNAPL is removed using the AECOM air lift™ (compressed air vacuum), peristaltic pumps or steel bailers as appropriate, based on the rate of accumulation and viscosity of the DNAPL at each recovery well. DNAPL removed from the recovery wells is containerized in 55-gallon drums, which are staged on-site in drum containment sheds until transported for off-site disposal.

The volume of DNAPL and water (fluid mixture) recovered from each recovery well between January 2010 and December 2016, and for each recovery event in 2016 is provided in Table 4. In summary, through the end of December 2016, the following cumulative volumes have been removed from ten (10) recovery wells:

- RW-201I – 512 gallons since 2010, 85 gallons from July through December 2016;
- RW-205D – 354 gallons since 2010, 16 gallons from July through December 2016;
- RW-206IA – 15 gallons since 2010, 15 gallons from July through December 2016;
- RW-206IB – 94 gallons since 2010, 8 gallons from July through December 2016;
- RW-207I – 186 gallons since 2010, 53 gallons from July through December 2016;
- RW-208I – 1,168 gallons since 2010, 167 gallons from July through December 2016;
- RW-209S – 83 gallons since 2010, 40 gallons from July through December 2016;
- RW-211I – 89 gallons since 2010, 13 gallons from July through December 2016;
- NRW-02I – 58 gallons since 2010, none from July through December 2016; and
- NRW-03D – 32 gallons since 2010, none from July through December 2016.

Disposal of the recovered DNAPL and water mixture stored onsite occurred on a regular basis. Manifests for DNAPL/water mixture disposal are included in Appendix B.

In accordance with the requirements of the SMP and revisions to the recovery well monitoring program approved as part of the Fourth Semi-Annual Interim Monitoring Report, National Grid will continue DNAPL recovery efforts according to the following schedule:

- RW-208I on a bi-weekly basis;
- RW-201I and RW-205D on a monthly basis;
- RW-206IB, RW-207I, RW-209S, and RW-211I on a quarterly basis; and
- The remaining eighteen (18) recovery wells on an annual basis (if DNAPL is present).

### 3.3 Cover System Monitoring

As described in the SMP, there are two cover systems installed at the Site and off-Site areas (Figure 5):

- A soil cover system comprised of a minimum of 24-inches of clean fill placed over the Site (25 Willow Avenue) and off-Site areas (89 Willow Avenue); and

- A composite cover system comprised of a minimum of 6-inches of concrete cap, concrete foundations, soil, and/or asphalt placed on the Site (40 Willow Avenue) and off-Site areas (One Edgewater Street, 89 Willow Avenue, 53 Lyndhurst Avenue, properties east of 25 Willow Avenue, and New York City rights-of-way).

Portions of the caps were disturbed during the period of this Report as a result of three specific events, as summarized below:

- Edgewater Plaza borings – In preparation for a proposed redevelopment plan for the existing surface parking lot in front of One Edgewater Street, the property owner conducted a geotechnical investigation in July and August 2016. A total of 32 geotechnical borings were installed to depths of 51 to 101 feet below ground surface. Oversight services were provided throughout the geotechnical boring program for purposes of identifying and segregating DNAPL-impacted soils that were removed from the borehole by auger advancement and sampling of the soils with split-spoon samplers. Impacted soils were segregated for management and disposal by National Grid. Boring logs are included as Appendix C, and a photo log depicting selected representative sampling intervals is included as Appendix D. A Community Air Monitoring Program (CAMP) was also implemented for the duration of the geotechnical investigation. CAMP logs are included as Appendix E. A total of seven 55-gallon drums were filled with impacted soil and subsequently disposed of. Disposal manifests are included in Appendix B.
- Willow Avenue Emergency Sewer Repair – Emergency repairs to a short (approximately 40-foot long) section of a sewer line in the sidewalk of Willow Avenue were completed over two days in December 2016. Oversight was provided during excavation for purposes of identifying and segregating DNAPL-impacted soils that were excavated for management and disposal by National Grid. A limited quantity of impacted soil, approximately one-quarter of a 55-gallon drum, was identified and segregated for further management. Disposal will be reported upon following receipt of manifests.
- 40 Willow Avenue Fence Repair – As the result of an automobile accident on Bay Street on August 3, 2016, two vehicles collided with and damaged the fence at the 40 Willow Avenue parcel. Repairs to fence required excavation of existing pole foundations and replacement in kind. Oversight was provided during the fence repair process to identify and segregate DNAPL-impacted soil; however, no impacted soils were identified due to the shallow depth of the excavation, and all excavations were backfilled and the Site restored to its prior condition.

### **3.4 DNAPL Barrier Monitoring**

There has been no activity or event on-site that is known to have impacted the subsurface remedial infrastructure (vertical barrier walls and the containment cell) from July through December 2016.

### **3.5 2016 Annual Groundwater Monitoring Event**

The groundwater monitoring well network includes 13 wells, as shown on Figure 6. As described in the SMP and Post-Remediation Groundwater Monitoring Work Plan (AECOM, 2015a), the monitoring well network will initially be monitored annually for a period of three years and biannually thereafter. Groundwater monitoring may be discontinued in monitoring wells if concentrations decrease below NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGV) for two consecutive sampling events, and approved by the NYSDEC. The sampling frequency may also be modified with the approval of the NYSDEC. The Site Management Plan will be modified to reflect changes in sampling plans approved by the NYSDEC. The first annual groundwater sampling event was conducted in December 2016, as described below.

### 3.5.1 Well Gauging and Redevelopment

Prior to the annual groundwater monitoring program, the condition of the thirteen site monitoring wells included in the annual groundwater monitoring program was inspected by pre-sampling gauging event to measure groundwater and total well depths on December 1, 2016. These inspections indicated that a limited number of wells required redevelopment in order to remove fine-grained sediment and fluid residue from the wells and the sand packs to maximize well efficiency prior to sampling. It was also determined that the surface manholes for three wells required repair before sampling - RW-22 was sealed shut and could not be accessed, and RW-25 and RW-26 were damaged at the ground surface but accessible for gauging.

On December 5, 2016 the manholes for RW-22, RW-25 and RW-26 were replaced, and four wells (RW-22, RW-23, RW-25, and RW-26) were redeveloped using a surge-and-pump method. The surging action was used to actively agitate the water column by forcing water back and forth through the well screens and sand packs. Following surging, the wells were pumped with a submersible pump. Wells were developed until turbidity readings were below 50 nephelometric turbidity units (NTUs) or a minimum of 10 well volumes was removed. Well development equipment was decontaminated between locations, in accordance with field procedures in the Remedial Design Work Plan (ENSR, 2008). Well development water was stored in 55-gallon drums, staged on Site, and later disposed. Well development logs are provided in Appendix F.

### 3.5.2 Monitoring Well Sampling

AECOM performed the annual groundwater sampling event on December 21 and 22, 2016, in accordance with the SMP. During this event, samples were collected from RW-200I, RW-200S, RW-202I, RW-202S, RW-203I, RW-203S, RW-204I, RW-210I, RW-22, RW-23, RW-25, and RW-26. Although included in the monitoring network, RW-210S was not sampled due to the presence of DNAPL in the well at the time of the sampling event.

Each well was purged using low-flow sampling techniques specified in the United States Environmental Protection Agency (USEPA) Region 1 guidance document, "Low-Stress (low flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells" (USEPA, 2010). Wells were purged at a low flow rate using a Pine Peri-Pump peristaltic pump. During purging, water quality data (temperature, specific conductance, pH, dissolved oxygen (DO), oxidation/reduction potential (ORP), and turbidity) were recorded approximately every five minutes. These parameters were measured with a multi-parameter water quality meter attached to a continuous flow-through cell which was connected to the pump discharge tubing. Once field parameters stabilized, groundwater samples were collected. All equipment used for groundwater monitoring was calibrated to ensure accuracy and precision. Low Flow Groundwater Sample Collection Records from the 2016 annual sampling event are included in Appendix F.

All samples were packed in coolers with ice following collection, and sent by courier under proper chain of custody to Test America Laboratories, Inc., in Edison, New Jersey. The samples were analyzed for the following parameters:

- Organic Compounds
  - Benzene, toluene, ethylbenzene and total xylenes (BTEX) by USEPA SW-846 Method 8260C, and
  - Polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270D, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Hexachlorobenzene and Indeno(1,2,3-cd)pyrene

were determined using gas chromatograph/mass spectrometry (GC/MS) in selected ion monitoring (SIM) mode.

- MNA Parameters:
  - Methane by RSK-175,
  - Total and Dissolved Arsenic and Nickel by USEPA Method 6020A,
  - Total, Bicarbonate, Carbonate and Hydroxide Alkalinity by Standard Method SM 2320B,
  - Ammonia by USEPA Method 350.1,
  - Nitrate and Nitrite as N by Standard Method 4500 NO3 F,
  - Sulfate by ASTM Method D516-90, 02,
  - Sulfide by Standard Method 4500 S2 F,
  - Free Carbon Dioxide by Standard Method SM 4500 CO2 D,
  - Chemical Oxygen Demand (COD) by Standard Method SM 5220D, and
  - Ferrous Iron by Standard Method SM 3500 E D.

### 3.5.3 Groundwater Flow

Using groundwater elevation gauging data from the December 1, 2016 gauging event, the groundwater flow direction was determined to be slightly north of east, towards Upper New York Bay. This data consisted of the groundwater elevations measured at RW-200I, RW-202I, RW-203I, RW-204I, RW-23, RW-25, and RW-26. As described above, the well cover for RW-22 was damaged and could not be opened at the time of the gauging event. Barrier walls along Bay Street and Willow Avenue constrict the groundwater flow emanating from the 25 Willow Avenue property, so wells RW-200S, RW-202S, RW-203S, RW-210S, and RW-210I were not used for determining groundwater flow conditions. An illustration of groundwater flow contours can be found on Figure 6.

### 3.5.4 Data Usability Summary Report (DUSR)

Data validation was performed on two data packages from TestAmerica Laboratories, Inc. of Edison, New Jersey for the analysis of aqueous recovery samples collected at the Site on December 21-22, 2016. Data quality for the organic analyses was evaluated by reviewing the following parameters: holding times, GC/MS tuning and performance standards, internal standards, initial and continuing calibrations, matrix spike/matrix spike duplicates (MS/MSD), surrogate recoveries, laboratory control standards (LCSs), laboratory blanks, laboratory and field duplicates, compound identification, and compound quantitation. Inorganic data quality was evaluated by reviewing the following parameters: holding times, matrix spikes, initial calibrations, continuing calibration verification standard recoveries, contract required detection limit standard recoveries, laboratory control samples, inductively-coupled plasma (ICP) interference check sample recoveries, ICP serial dilution results, field and laboratory duplicates, laboratory blanks, and analyte quantitation. Five non-detect ferrous iron and seven non-detect free carbon dioxide results were rejected because the 24-hour holding times were grossly exceeded. All other data were determined to be useable for the purpose of assessing the presence, or absence, and quantitative concentrations of the compounds and analytes in the groundwater. The qualifications used to determine the usability of these samples is presented in Appendix A.2. The completeness of this data set was 97.4%, within the 90-100% acceptable range.

### 3.5.5 Groundwater Monitoring Analytical Results

A summary of organic compounds (BTEX and PAHs) data, compared to NYSDEC AWQSGVs, is presented in Table 5. The AWQSGVs include statutory standards for BTEX compounds; no standards exist for PAHs, and data is compared to relevant guidance values. Analytical results for MNA parameters is presented for comparison purposes only, and are not compared to any regulatory standards or guidance values. Analytical results are also depicted on site maps in Figures 7 and 8. Results are summarized below for groupings of site wells, downgradient wells, and up/sidegradient wells as described in the SMP.

### 3.5.6 Site Wells

Wells RW-202S and RW-202I are located within the Site behind the barrier wall, adjacent to Bay Street, and are considered to function as Site wells in the SMP. With regard to BTEX compounds, all constituent concentrations were below the AWQSGVs at RW-202I, and all constituents exceeded AWQSGVs at RW-202S. Exceedances of the AWQSGVs at RW-202S are summarized as follows, by constituent:

- Benzene (AWQSGV standard of 1 microgram per liter [ $\mu\text{g/L}$ ]): 1.3  $\mu\text{g/L}$ .
- Ethylbenzene (AWQSGV standard of 5  $\mu\text{g/L}$ ): 14  $\mu\text{g/L}$ .
- m/p-Xylenes (AWQSGV standard of 5  $\mu\text{g/L}$ ): 13  $\mu\text{g/L}$ .
- o-Xylene (AWQSGV standard of 5  $\mu\text{g/L}$ ): 8.7  $\mu\text{g/L}$ .
- Total Xylenes (AWQSGV standard of 5  $\mu\text{g/L}$ ): 21.7  $\mu\text{g/L}$ .
- Toluene (AWQSGV standard of 5  $\mu\text{g/L}$ ): 7.9  $\mu\text{g/L}$ .

Both Site wells had PAH constituents in exceedance of an AWQSGV:

- Benzo(a)anthracene (AWQSGV guidance of 0.002  $\mu\text{g/L}$ ): RW-202I (0.072  $\mu\text{g/L}$ ).
- Benzo(a)pyrene (AWQSGV guidance not detected [ND]): RW-202I (0.027  $\mu\text{g/L}$ ).
- Benzo(b)fluoranthene (AWQSGV guidance of 0.002  $\mu\text{g/L}$ ): RW-202S (0.023  $\mu\text{g/L}$ ), and RW-202I (0.027  $\mu\text{g/L}$ ).
- Chrysene (AWQSGV guidance of 0.002  $\mu\text{g/L}$ ): RW-202S (0.037  $\mu\text{g/L}$ ), and RW-202I (0.079  $\mu\text{g/L}$ ).
- Naphthalene (AWQSGV guidance of 10  $\mu\text{g/L}$ ): RW-202S (41  $\mu\text{g/L}$ ).

MNA values for the Site Wells are summarized in Table 5.

### 3.5.7 Downgradient Wells

Wells RW-203S and RW-203I are located outside of the barrier wall just off-Site within the Bay Street right-of-way, and are considered downgradient wells in the SMP. RW-22, RW-23, RW-25, and RW-26 are all located on the One Edgewater Plaza property, and are likewise considered downgradient wells in the SMP. BTEX constituents did not exceed AWQSGVs at any of the Edgewater Plaza downgradient wells, but exceeded AWQSGVs at RW-203S and RW-203I:

- Benzene (AWQSGV standard of 1  $\mu\text{g/L}$ ): RW-203S (88  $\mu\text{g/L}$ ), and RW-203I (74  $\mu\text{g/L}$ ).
- Ethylbenzene (AWQSGV standard of 5  $\mu\text{g/L}$ ): RW-203S (740  $\mu\text{g/L}$ ), and RW-203I (680  $\mu\text{g/L}$ ).
- m/p-Xylenes (AWQSGV standard of 5  $\mu\text{g/L}$ ): RW-203S (99  $\mu\text{g/L}$ ), and RW-203I (460  $\mu\text{g/L}$ ).
- o-Xylene (AWQSGV standard of 5  $\mu\text{g/L}$ ): RW-203S (190  $\mu\text{g/L}$ ), and RW-203I (430  $\mu\text{g/L}$ ).
- Total Xylenes (AWQSGV standard of 5  $\mu\text{g/L}$ ): RW-203S (289  $\mu\text{g/L}$ ), and RW-203I (890  $\mu\text{g/L}$ ).
- Toluene (AWQSGV standard of 5  $\mu\text{g/L}$ ): RW-203S (28  $\mu\text{g/L}$ ), and RW-203I (270  $\mu\text{g/L}$ ).

With regard to PAH constituents, RW-26 had no exceedances of the AWQSGVs, minor exceedances at RW-22, RW-23, and RW-25 and exceedances at RW-203S and RW-203I, summarized as follows:

- Acenaphthene (AWQSGV guidance of 20 µg/L): RW-203S (120 µg/L), and RW-203I (96 µg/L).
- Benzo(a)anthracene (AWQSGV guidance of 0.002 µg/L): RW-22 (0.16 µg/L), RW-23 (0.17 µg/L), and RW-25 (0.041 µg/L).
- Benzo(a)pyrene (AWQSGV guidance ND): RW-22 (0.48 µg/L), and RW-25 (0.030 µg/L).
- Benzo(b)fluoranthene (AWQSGV guidance of 0.002 µg/L): RW-22 (0.47 µg/L), RW-23 (0.027 µg/L), and RW-25 (0.040 µg/L).
- Benzo(k)fluoranthene (AWQSGV guidance of 0.002 µg/L): RW-22 (0.14 µg/L).
- Chrysene (AWQSGV guidance of 0.002 µg/L): RW-22 (0.24 µg/L), RW-23 (0.11 µg/L), and RW-25 (0.038 µg/L).
- Fluorine (AWQSGV guidance of 50 µg/L): RW-203I (55 µg/L).
- Indeno(1,2,3-cd)pyrene (AWQSGV guidance of 0.002 µg/L): RW-22 (0.40 µg/L).
- Naphthalene (AWQSGV guidance of 10 µg/L): RW-203S (2,800 µg/L), and RW-203I (2,300 µg/L).

### 3.5.8 Upgradient and Sidegradient Wells

Wells RW-200S and RW-200I (located on-Site at the north end of the barrier wall along Bay Street), and RW-204I (located along Willow Avenue, near the Bay Street end of the barrier wall) are considered sidegradient wells in the SMP. Wells RW-210S and RW-210I (located at the opposite end of the barrier wall from RW-204I) are considered upgradient wells in the SMP. Monitoring well RW-210S was not sampled during the 2016 groundwater monitoring sampling event due to the presence of trace NAPL in the well. There were no BTEX exceedances at RW-200I and RW-204I. RW-200S and RW-210I (and duplicate sample RW-210DUP) had constituent concentrations in exceedance of AWQSGVs for all BTEX compounds:

- Benzene (AWQSGV standard of 1 µg/L): RW-200S (280 µg/L), RW-210I (1,100 µg/L), and RW-210DUP (1,100 µg/L).
- Ethylbenzene (AWQSGV standard of 5 µg/L): RW-200S (800 µg/L), RW-210I (470 µg/L), and RW-210DUP (470 µg/L).
- m/p-Xylenes (AWQSGV standard of 5 µg/L): RW-200S (270 µg/L), RW-210I (37 µg/L), and RW-210DUP (37 µg/L).
- o-Xylene (AWQSGV standard of 5 µg/L): RW-200S (320 µg/L), RW-210I (97 µg/L), and RW-210DUP (97 µg/L).
- Total Xylenes (AWQSGV standard of 5 µg/L): RW-200S (590 µg/L), RW-210I (134 µg/L), and RW-210DUP (134 µg/L).
- Toluene (AWQSGV standard of 5 µg/L): RW-200S (330 µg/L), RW-210I (6.1 µg/L), and RW-210DUP (5.9 µg/L).

With regard to PAH constituents, RW-200S, RW-200I, RW-204I and RW-210I (as well as its duplicate sample RW-210DUP) had PAH impacts in exceedance of NYSDEC AWQSGVs, summarized as follows:

- Acenaphthene (AWQSGV guidance of 20 µg/L): RW-210I (63 µg/L), and RW-210DUP (65 µg/L).
- Benzo(a)anthracene (AWQSGV guidance of 0.002 µg/L): RW-200S (0.25 µg/L), RW-200I (0.037 µg/L), RW-204I (0.13 µg/L), RW-210I (0.065 µg/L), and RW-210DUP (0.068 µg/L).
- Benzo(a)pyrene (AWQSGV guidance ND): RW-200I (0.10 µg/L), RW-204I (0.057 µg/L), RW-210I (0.030 µg/L), and RW-210DUP (0.032 µg/L).
- Benzo(b)fluoranthene (AWQSGV guidance of 0.002 µg/L): RW-200S (0.094 µg/L), RW-200I (0.090 µg/L), RW-204I (0.067 µg/L), RW-210I (0.038 µg/L), and RW-210DUP (0.037 µg/L).

- Benzo(k)fluoranthene (AWQSGV guidance of 0.002 µg/L): RW-200I (0.034 µg/L), and RW-204I (0.020 µg/L).
- Chrysene (AWQSGV guidance of 0.002 µg/L): RW-200S (0.21 µg/L), RW-200I (0.059 µg/L), RW-204I (0.097 µg/L), RW-210I (0.063 µg/L), and RW-210IDUP (0.071 µg/L).
- Indeno(1,2,3-cd)pyrene (AWQSGV guidance of 0.002 µg/L): RW-200I (0.050 µg/L), and RW-204I (0.027 µg/L).
- Naphthalene (AWQSGV guidance of 10 µg/L): RW-200S (3,000 µg/L), and RW-203I (2,300 µg/L).

## 4.0 Conclusions and Findings

### 4.1 Summary of Activities

National Grid has conducted Site management activities in accordance with the SMP since it was approved in January 2016. As previously described, Site management activities occurring during the period July through December 2016 included:

- DNAPL gauging and recovery, including recovery of 397 gallons of DNAPL/water fluid mixture from July through December 2016 and a total of 2,592 gallons removed since 2010;
- Groundwater monitoring;
- Depressurization pump and treat system operation and maintenance, and SPDES permit equivalent-required sampling; and
- Oversight of and management of impacted soils excavated as a result of intrusive activities.

### 4.2 Extent of Impacts to Groundwater

As described in Table 5 and Figures 6 through 8, the groundwater monitoring program identified detectable concentrations of BTEX and PAH compounds. BTEX detections in exceedance of the NYSDEC AWQSGVs for BTEX were limited to the Site wells and wells immediately adjacent to the Site, and were not detected above standards in the four downgradient wells at One Edgewater Plaza. PAHs were detected in exceedance of the NYSDEC AWQSGVs at the Site wells, upgradient/sidegradient wells and three of four downgradient wells.

## 5.0 Future Activities

In accordance with the SMP, the 2017 monitoring will include:

- Annual groundwater monitoring,
- On-going DNAPL gauging and recovery,
- On-going SPDES permit-required sampling,
- Site-wide cover system inspection, and intrusion oversight, and
- Semi-annual reporting and Periodic Review Report.

## 6.0 References

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## Tables

**Table 1  
Containment Pad Depressurization System  
SPDES Equivalent Monitoring Results  
National Grid Former Clifton MGP Site  
Staten Island, New York**

Sample ID	SPDES Permit Equivalent					WWTP-072216		WWTP-09012016		WWTP-09302016		WWTP-102116		WWTP-111816		WWTP-123016		
	Date Sampled	Discharge Limitations			Minimum Monitoring Requirements <sup>1,2</sup>		7/22/2016		9/1/2016		9/30/2016		10/21/2016		11/18/2016		12/30/2016	
		Parameter	Monthly Avg.	Daily Max	Units	Measurement Frequency	Sample Type	4601174491		4601194981		4601211721		4601224141		4601241031		4601261841
pH																		
pH			6.5 - 8.5				7.81	J	7.9	J	8.4	J	8.1	J	8.3	J	8.1	J
<b>Total Suspended Solids</b>																		
Total Suspended Solids	Monitor		20	mg/L	Continuous	Meter	1.8		1.2		1.4		1.5		2.7		2.7	
<b>BTEX</b>																		
Benzene	Monitor	5	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	
Ethylbenzene	Monitor	5	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	
m/p-Xylenes	Monitor	10	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	
o-Xylene	Monitor	5	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	
Toluene	Monitor	5	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	
Xylenes (total)	Monitor	5	µg/l	Monthly	Grab	< 2	U	< 2	U	< 2	U	< 2	U	< 2	U	< 2	U	
<b>SVOCs</b>																		
Acenaphthene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	UJ	< 10	U	< 10	U	< 10	U	
Acenaphthylene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Anthracene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Benzo(a)anthracene	Monitor	10	µg/l	Monthly	Grab	< 0.05	U	< 0.052	U	< 0.052	U	< 0.052	U	< 0.05	U	< 0.052	U	
Benzo(a)pyrene	Monitor	0.09	µg/l	Monthly	Grab	< 0.05	U	< 0.052	U	< 0.052	U	< 0.052	U	< 0.05	U	< 0.052	U	
Benzo(b)fluoranthene	Monitor	10	µg/l	Monthly	Grab	< 0.05	U	< 0.052	U	< 0.052	U	< 0.052	U	< 0.05	U	< 0.052	U	
Benzo(ghi)perylene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Chrysene	Monitor	10	µg/l	Monthly	Grab	< 2	U	< 2.1	U	< 2.1	U	< 2.1	U	< 2	UJ	< 2.1	U	
Fluoranthene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Fluorene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Hexachlorobenzene	Monitor		µg/l	Monthly	Grab	< 0.02	U	< 0.021	U	<b>0.017</b>		< 0.021	U	< 0.02	U	< 0.021	U	
Indeno(1,2,3-cd)pyrene	Monitor	10	µg/l	Monthly	Grab	< 1	U	< 1	U	< 1	U	<b>1.1</b>		< 0.05	U	< 0.052	U	
Naphthalene	Monitor	50	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Phenanthrene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
Pyrene	Monitor	10	µg/l	Monthly	Grab	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	< 10	U	
<b>Metals</b>																		
Arsenic	Monitor	10	µg/l	Monthly	24 hr comp	< 2	U	< 2	U	< 2	U	< 2	U	< 2	U	< 2	U	
Nickel	Monitor	80	µg/l	Monthly	24 hr comp	<b>1.9</b>		<b>2</b>		<b>1.4</b>		< 4	U	<b>1.8</b>		< 4	U	
<b>Cyanide</b>																		
Cyanide, Total	Monitor	Monitor	mg/l	Monthly	Grab	< 0.01	U	< 0.01	U	< 0.01	U	< 0.01	U	< 0.01	U	< 0.01	U	
Available Cyanide	Monitor	0.01	mg/l	Monthly	Grab	< 0.002	U	< 0.002	UJ	< 0.002	U	< 0.002	U			< 0.004	U	
<b>Turbidity</b>																		
Turbidity		No increase that will cause a substantial visible contrast to Natural Conditions		NTU	Monthly	Visual	<b>2.38</b>		<b>1.26</b>		<b>2.15</b>		<b>3.49</b>		<b>4.79</b>		<b>9.21</b>	

**Notes:**

Qualifiers

**Bold indicates compound was detected**

J - The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

U - The material was analyzed for, but not detected above the level of the reported sample quantitation limit.

UJ - The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.

Gray-shaded values exceed a discharge limitation.

<sup>1</sup> Monitor these parameters daily for 7 consecutive days. If the sampling results for all parameters comply with the limits, the monitoring frequency becomes MONTHLY. If monthly sampling results do not comply with the limit for any parameter, the monitoring frequency becomes DAILY again until the sampling results for all parameters comply with the limits. Thereafter the monitoring frequency changes to MONTHLY.

<sup>2</sup> The system was not operational for 11 days in December due to repair and maintenance.

**Table 2**  
**DNAPL Recovery Well Construction Details**  
**National Grid Former Clifton MGP Site**  
**Staten Island, New York**

DNAPL Recovery Well I.D.	Ground Surface Elevation <sup>1</sup>	Top of Vault Elevation	Top of Riser Pipe Elevation	Depth of Well (feet bgs)	Screen Interval (feet bgs)	Top of Screen (feet bgs)	Bottom of Screen (feet bgs)	Diameter (inches)	Top of Screen Elevation	Bottom of Screen Elevation	Protective Casing	Riser Type	Screen Type	Screen Slotted size/diameter (inches)	Sump Type	Sump Length (feet)
RW-200S	9.2	9.57	NM	23	10.0 - 20.0	10	20	4.0	-0.8	-10.8	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-200I	9.2	9.58	NM	37	24.0 - 34.0	24	34	4.0	-14.8	-24.8	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-201S	9.2	9.57	8.77	29	14.0 - 24.0	14	24	6.0	-4.8	-14.8	Flush-Mount	PVC	Wire Wrap SS	0.02/6.0	SS	5.0
RW-201I	8.9	9.37	8.6	37.5	22.5-32.5	23	33	6.0	-13.6	-23.6	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-202S	9.85	9.94	9.64	25	10.0 - 20.0	10	20	6.0	-0.2	-10.2	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-202I	9.85	9.85	9.48	42	27.0 - 37.0	27	37	6.0	-17.2	-27.2	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-203S	9.3	9.16	8.67	27	14.0 - 24.0	14	24	4.0	-4.7	-14.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-203I	9.3	9.14	8.54	37	24.0 - 34.0	24	34	4.0	-14.7	-24.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-204I	9.12	9.35	8.6	43	30.0 - 40.0	30	40	4.0	-20.9	-30.9	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-205D	8.75	8.82	8.18	77	64.0 - 74.0	64	74	4.0	-55.3	-65.3	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206S	8.6	9.02	8.26	28	15.0 - 25.0	15	25	4.0	-6.4	-16.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206IA	8.6	9.05	8.15	48	35.0 - 45.0	35	45	4.0	-26.4	-36.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-206IB	8.55	9.13	7.63	58	45.0 - 55.0	45	55	4.0	-36.5	-46.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-207S	8.5	8.8	8.15	23	10.0 - 20.0	10	20	4.0	-1.5	-11.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-207I	8.5	8.77	8.23	33	20.0 - 30.0	20	30	4.0	-11.5	-21.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-208S	8.27	8.53	7.81	23	10.0 - 20.0	10	20	4.0	-1.7	-11.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-208I	8.27	8.52	7.23	42	29.0 - 39.0	29	39	4.0	-20.7	-30.7	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-209S	8	8.48	7.63	30	15.0 - 25.0	15	25	6.0	-7.0	-17.0	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-209I	8	8.28	7.69	40	25.0 - 35.0	25	35	6.0	-17.0	-27.0	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	5.0
RW-210S	7.6	7.85	7.3	28	15.0 - 25.0	15	25	4.0	-7.4	-17.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-210I	7.6	7.93	7.32	38	25.0 - 35.0	25	35	4.0	-17.4	-27.4	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-211S	8.5	8.74	7.15	29	6.0 - 26.0	6	26	4.0	2.5	-17.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
RW-211I	8.5	8.76	7.23	43	30.0 - 40.0	30	40	4.0	-21.5	-31.5	Flush-Mount	PVC	Wire Wrap SS	0.02/4.0	SS	3.0
NRW-01S <sup>2</sup>	14.18	15.28	14.86	19	9.0 - 19.0	9	19	4.0	5.2	-4.8	Flush-Mount	SS	SS	0.02/4.0	--	--
NRW-02I <sup>2</sup>	14.27	--	--	49	34.0 - 44.0	34	44	4.0	-19.7	-29.7	Stick Up	SS	SS	0.02/4.0	SS	5.0
NRW-03D <sup>2</sup>	14.28	--	--	84	69.0 - 79.0	69	79	4.0	-54.7	-64.7	Stick Up	SS	SS	0.02/4.0	SS	5.0

**Notes:**

1 - Derived from the nearest surface elevation from final as-built survey

2 - Containment Pad Surface

NM - Not measured

ft bgs - feet below ground surface

DNAPL - Dense Non-Aqueous Phase Liquid

MGP - Manufactured Gas Plant

SS - stainless steel

RW-200S = Shallow recovery wells

RW-200I = Intermediate recovery wells

RW-205D = Deep recovery wells

**Table 3**  
**DNAPL Thickness During Gauging Events**  
**National Grid Former Clifton MGP Site**  
**Staten Island, New York**



Parcel	Bay Street	Willow Avenue							Containment Cell		
Well ID	RW-201I	RW-205D	RW-206IA	RW-206IB	RW-207I	RW-208I	RW-209S	RW-211I	NRW-01S	NRW-02I	NRW-03D
Date	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet
1/11/2016	3.00	3.40	NM	0.00	0.00	6.30	4.30	2.40	0.00	0.00	0.00
2/3/2016	2.97	0.80	NM	1.20	1.90	10.00	4.10	1.10	0.00	0.00	0.00
2/18/2016	0.00	2.23	NM	0.00	2.30	5.50	4.29	1.30	0.00	0.00	4.40
3/3/2016	3.05	1.60	NM	1.40	2.10	6.20	4.30	1.00	0.00	0.00	0.00
3/18/2016	0.00	2.10	NM	1.80	2.20	5.70	4.30	1.20	0.10	0.00	0.00
4/4/2016	4.01	2.42	NM	1.20	3.00	7.50	4.90	0.70	NM	NM	NM
4/26/2016	1.10	0.10	NM	1.20	3.20	5.30	4.95	0.90	NM	NM	NM
5/16/2016	2.70	2.70	NM	2.60	1.30	4.00	7.00	2.00	0.00	0.00	7.00
6/2/2016	0.90	0.80	NM	0.40	1.50	5.11	7.10	0.30	NM	0.00	NM
6/17/2016	3.10	1.20	NM	0.90	1.50	10.78	7.50	1.00	0.00	0.00	0.00
7/5/2016	2.60	0.00	NM	0.90	2.40	7.70	6.98	1.50	0.00	0.00	0.00
7/21/2016	2.90	3.10	3.50	0.00	3.80	10.70	5.70	0.30	NM	NM	NM
7/27/2016	NM	NM	3.90	NM	NM	NM	NM	NM	NM	NM	NM
7/30/2016	NM	3.95	NM	NM	NM	NM	5.45	NM	NM	NM	NM
8/11/2016	0.00	0.00	0.00	1.50	3.00	7.98	0.10	0.40	NM	NM	NM
8/31/2016	4.80	0.00	0.00	1.90	0.70	9.00	NM	2.00	0.00	0.50	6.10
9/22/2016	2.40	1.00	0.00	0.50	1.80	8.00	NM	0.60	NM	NM	NM
10/5/2016	1.70	2.10	0.00	0.10	1.20	8.95	0.60	1.00	0.00	0.50	6.00
10/21/2016	4.00	0.00	0.20	0.00	2.70	8.00	0.70	0.70	0.00	0.00	7.00
11/4/2016	1.50	1.30	0.60	0.00	1.50	10.20	1.00	1.40	0.00	0.00	7.00
11/18/2016	2.80	1.50	0.60	0.00	2.60	10.20	1.20	1.60	NM	NM	NM
12/2/2016	1.60	1.70	0.60	0.00	0.90	10.45	1.22	0.20	NM	NM	NM
12/16/2016 <sup>1</sup>	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/28/2016	7.00	0.00	1.20	0.00	5.50	7.00	1.30	0.90	NM	0.00	7.30
<b>Min Thickness (ft)</b>	0.00	0.00	0.00	0.00	0.00	4.00	0.10	0.20	0.00	0.00	0.00
<b>Max Thickness (ft)</b>	7.00	3.95	3.90	2.60	5.50	10.78	7.50	2.40	0.10	0.50	7.30
<b>Avg Thickness (ft)</b>	2.48	1.45	0.96	0.74	2.15	7.84	3.85	1.07	0.01	0.07	3.45

**Notes:**

ft - feet

DNAPL - Dense Nonaqueous Phase Liquid

NM - Not Measured / Not Accessible

Only recovery wells with measurable DNAPL thickness have been included.

DNAPL was gauged using a weighted steel tape and using interface probe. The thickness listed in this table is based on weighted steel tape measurement.

<sup>1</sup> - Due to frozen groundwater in vaults, measurements could not be completed.

**Table 4**  
**Summary of DNAPL Removal**  
**National Grid Former Clifton MGP Site**  
**Staten Island, New York**



Parcel	Bay Street	Willow Avenue							Containment Cell			Event
Well ID	RW-201I	RW-205D	RW-206IA	RW-206IB	RW-207I	RW-208I	RW-209S	RW-211I	NRW-01S	NRW-02I	NRW-03D	Volume
Date	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons
Data prior to 2016 not shown for clarity												
1/11/2016	10	15	NM	--	--	24	--	10	--	--	--	59
2/3/2016	15	--	NM	--	--	15	--	--	--	--	--	30
2/18/2016	--	10	NM	--	--	15	--	--	--	--	--	25
3/3/2016	4	--	NM	--	4	7	--	--	--	--	--	15
3/18/2016	--	--	NM	--	--	12	--	--	--	--	--	12
4/4/2016	9	8	NM	--	12	11	--	--	--	--	--	40
4/26/2016	--	--	NM	--	9	12	--	--	--	--	--	21
5/17/2016	13	33	NM	14	--	12	--	8	--	--	--	80
6/2/2016	--	--	NM	--	--	15	--	--	--	--	--	15
6/17/2016	15	--	NM	--	--	20	--	--	--	--	--	35
7/5/2016	15	--	NM	--	--	25	--	--	--	--	--	40
7/21/2016	11	--	--	--	10	--	4	--	--	--	--	26
7/27/2016	--	--	15	--	--	--	--	--	--	--	--	15
7/29/2016	--	6	--	--	--	--	36	--	--	--	--	42
8/11/2016	--	--	--	--	8	15	--	--	--	--	--	23
8/31/2016	15	--	--	8	--	15	--	5	--	--	--	42
9/22/2016	14	--	--	--	9	8	--	--	--	--	--	31
10/5/2016	--	10	--	--	--	15	--	--	--	--	--	25
10/21/2016	9	--	--	--	6	15	--	--	--	--	--	30
11/4/2016	--	--	--	--	--	20	--	--	--	--	--	20
11/18/2016	10	--	--	--	8	15	--	8	--	--	--	41
12/2/2016	--	--	--	--	--	25	--	--	--	--	--	25
12/16/2016	--	NM	--	--	NM	NM	NM	--	--	--	--	--
12/28/2016	11	--	--	--	12	15	--	--	--	--	--	37
<b>Total Recovered, 2016</b>	126	67	15	22	79	271	40	21	0	0	0	640
<b>Total Recoverd To Date</b>	512	354	15	94	186	1168	83	89	0	58	32	2,592
<b>Percent of Total</b>	20%	14%	1%	4%	7%	45%	3%	3%	0%	2%	1%	100%

**Note:**

NI - Well not installed at time of event

NM - Not Measured / Not Accessible

-- DNAPL was not pumped as the DNAPL level was below the screen

Volumes recorded consist of DNAPL and water mixture

\* AECOM Air Lift systems were installed on 4/17/2014

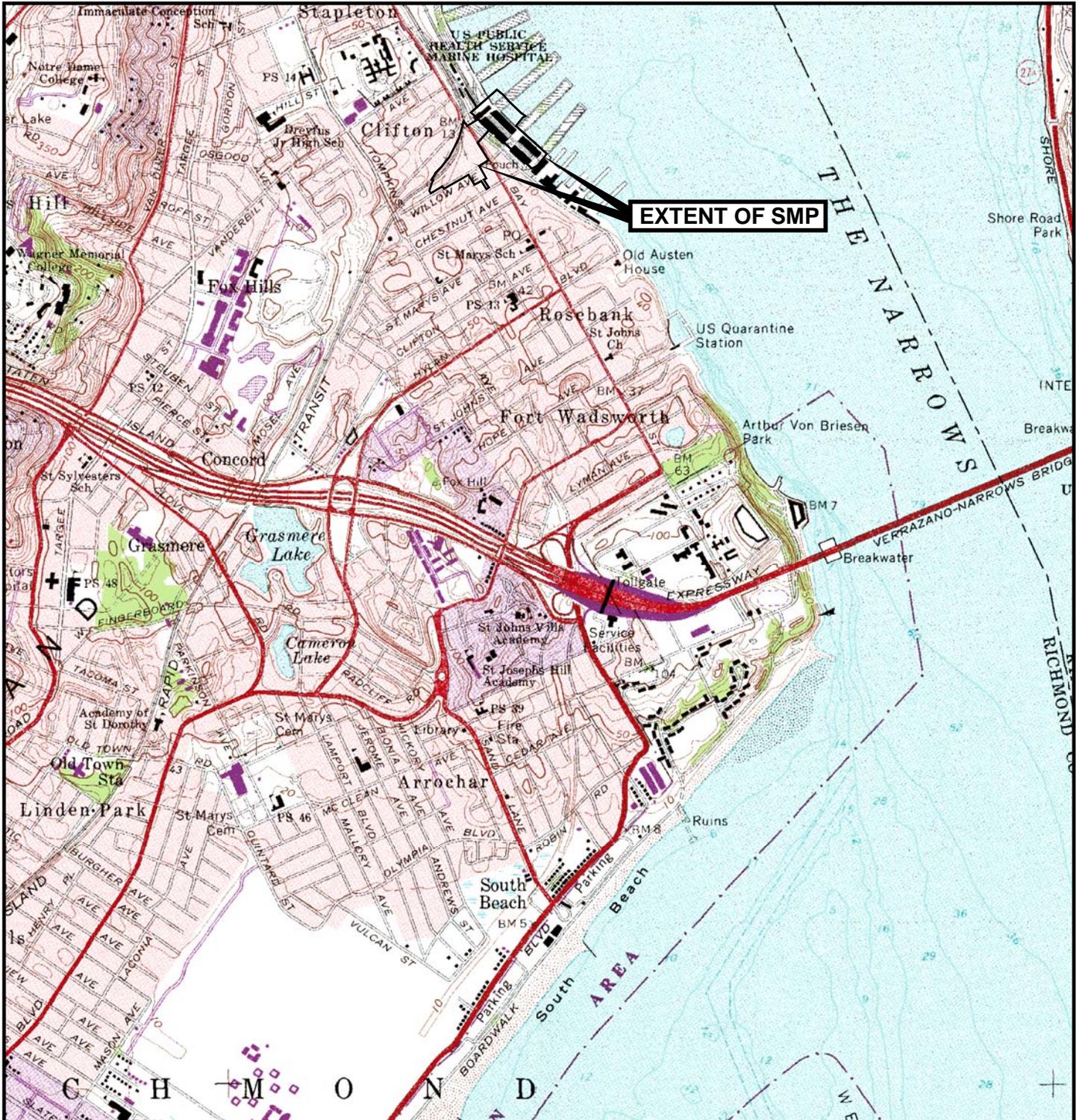
**Table 5**  
**Groundwater Monitoring Analytical Data**  
**December 2016**  
**National Grid Former Clifton MGP Site**  
**Staten Island, New York**

Location Sample Date Sample ID SDG	CAS #	WG NYSDEC GUIDANCE	RW-2001 12/21/2016 RW2001_460-125858-2 4601258581	RW-200S 12/21/2016 RW200S_460-125858-1 4601258581	RW-202I 12/21/2016 RW202I_460-125858-4 4601258581	RW-202S 12/21/2016 RW202S_460-125858-3 4601258581	RW-203I 12/22/2016 RW-203I_460-125929-6 4601259291	RW-203S 12/22/2016 RW-203S_460-125929-5 4601259291	RW204I 12/21/2016 RW204I_460-125858-5 4601258581	RW-210I 12/21/2016 DUP-1_460-125858-7 4601258581	RW-210I 12/21/2016 RW-210I_460-125858-6 4601258581	RW-22 12/22/2016 RW-22_460-125929-1 4601259291	RW-23 12/22/2016 RW-23_460-125929-2 4601259291	RW-25 12/22/2016 RW-25_460-125929-3 4601259291	RW-26 12/22/2016 RW-26_460-125929-4 4601259291
<b>VOC (ug/L)</b>															
Benzene	71-43-2	1	< 1.0 U	280	< 1.0 U	1.3	74	88	0.26 J	1100	1100	0.13 J	< 1.0 U	0.27 J	< 1.0 U
Ethylbenzene	100-41-4	5	< 1.0 U	800	< 1.0 U	14	680	740	0.48 J	470	470	0.42 J	< 1.0 U	0.62 J	< 1.0 U
m,p-Xylenes	1330-20-7-M,P	5	< 1.0 U	270	< 1.0 U	13	460	99	0.91 J	37	37	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	95-47-6	5	< 1.0 U	320	< 1.0 U	8.7	430	190	0.63 J	97	97	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	108-88-3	5	< 1.0 U	330	< 1.0 U	7.9	270	28	0.87 J	5.9	6.1	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total Xylenes		5	< 1.0 U	590	< 1.0 U	21.7	890	289	1.54	134	134	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
<b>PAH (ug/L)</b>															
2-Methylnaphthalene	91-57-6	NL	< 10 U	170 J	< 10 U	3.4 J	390	200	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Acenaphthene	83-32-9	20	< 10 U	< 210 U	< 10 U	< 10 U	96 J	120 J	< 2.9 J	65	63	< 10 U	< 10 U	< 10 U	< 10 U
Acenaphthylene	208-96-8	NL	< 10 U	100 J	< 10 U	1.7 J	100 J	< 200 U	1.3 J	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Anthracene	120-12-7	50	< 10 U	< 210 U	< 10 U	< 10 U	< 200 U	< 200 U	< 10 U	0.78 J	1.2 J	< 10 U	< 10 U	< 10 U	< 10 U
Benzo(a)anthracene	56-55-3	0.002	0.037 J	0.25 J	0.072 J	< 0.051 U	< 0.5 U	< 0.5 U	0.13	0.068	0.065	0.16	0.17	0.041 J	< 0.050 U
Benzo(a)pyrene	50-32-8	ND	0.10	< 0.26 U	0.027 J	< 0.051 U	< 0.5 U	< 0.5 U	0.057	0.032 J	0.030 J	0.48	< 0.05 U	0.030 J	< 0.050 U
Benzo(b)fluoranthene	205-99-2	0.002	0.090	0.094 J	0.027 J	0.023 J	< 0.5 U	< 0.5 U	0.067	0.037 J	0.038 J	0.47	0.027 J	0.040 J	< 0.050 U
Benzo(ghi)perylene	191-24-2	NL	< 10 U	< 210 U	< 10 U	< 10 U	< 200 U	< 200 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Benzo(k)fluoranthene	207-08-9	0.002	0.034 J	< 0.26 U	< 0.050 U	< 0.051 U	< 0.50 U	< 0.50 U	0.020 J	< 0.052 U	< 0.052 U	0.14	< 0.050 U	< 0.052 U	< 0.050 U
Chrysene	218-01-9	0.002	0.059	0.21 J	0.079 J	0.037 J	< 0.50 U	< 0.50 U	0.097	0.071	0.063	0.24	0.11	0.038 J	< 0.050 U
Dibenz(a,h)anthracene	53-70-3	NL	< 1.0 U	< 21 U	< 1.0 U	< 1.0 U	< 20 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Fluoranthene	206-44-0	50	< 10 U	< 210 U	< 10 U	< 10 U	< 200 U	< 200 U	2.0 J	< 10 U	< 10 U	< 10 U	4.8 J	< 10 U	< 10 U
Fluorene	86-73-7	50	< 10 U	< 210 U	< 10 U	< 10 U	55 J	48 J	2.1 J	21	21	< 10 U	< 10 U	< 10 U	< 10 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002	0.050	< 0.26 U	< 0.050 U	< 0.051 U	< 0.5 U	< 0.5 U	0.027 J	< 0.052 U	< 0.052 U	0.40	< 0.05 U	< 0.052 U	< 0.050 U
Naphthalene	91-20-3	10	< 10 U	3000	< 10 U	41	2300	2800	< 10 U	< 10 U	< 10 U	1.6 J	< 10 U	2.9 J	< 10 U
Phenanthrene	85-01-8	50	< 10 U	< 210 U	< 10 U	< 10 U	35 J	35 J	< 10 U	11	11	< 10 U	0.75 J	< 10 U	< 10 U
Pyrene	129-00-0	50	< 10 U	< 210 U	< 10 U	< 10 U	< 200 U	< 200 U	2.3 J	< 10 U	< 10 U	< 10 U	4.7 J	< 10 U	< 10 U
<b>MNA (ug/L)</b>															
Methane	74-82-8	NL	< 4.0 U	4.2	24	210	15	150	18 J	780	770	150	260	< 4.0 U	250
Total Iron	7439-89-6	NL	< 120 U	< 120 U	< 120 U	< 120 U	102 J	1300	< 120 U	805	877	4040	1670	2690	20100
Total Manganese	7439-96-5	NL	< 8.0 U	27.7	< 8.0 U	< 8.0 U	2.5 J	347	11.4	346	349	48.9	3650	991	3250
Dissolved Iron	7439-89-6	NL	< 120 U	< 120 U	< 120 U	< 120 U	< 120 U	< 120 U	< 120 U	< 120 U	< 120 U				
Dissolved Manganese	7439-96-5	NL	< 8.0 U	12.3	< 8.0 U	< 8.0 U	< 8.0 U	331	6.6 J	352	356	48.5	3770	22.0	2200
<b>MNA (mg/L)</b>															
Carbon Dioxide, Free	CO2_FREE	NL	R	R	R	R	< 5.0 UJ	< 5.0 UJ	R	R	R	49.9 J	28.2 J	15.3 J	32.9 J
Chemical Oxygen Demand (COD)	COD	NL	12.1	26.2	< 10 U	16.1	22.2	34.3	14.1	< 10 U	10.1	350	24.5	52.4	42.3
Ferrous Iron	C-FE+2	NL	R	0.031 J	< 0.10 U	< 0.10 U	< 0.10 U	< 0.10 U	R	0.24 J	R	R	0.32 J	R	1.2 J
Nitrate as N	14797-55-8	NL	< 0.10 U	< 0.10 U	0.29	< 0.10 U	< 0.10 U	< 0.10 U	0.11	1.6	< 0.10 U				
Nitrite as N	14797-65-0	NL	0.020 J	0.041 J	0.033 J	0.039 J	0.038 J	0.028 J	0.030 J	0.03 J	< 0.10 U	0.039 J	0.025 J	0.037 J	0.026 J
Sulfate	14808-79-8	NL	34.5	27.8	41.1	45.1	11.3	1.9 J	81.2	< 5.0 U	< 5.0 U	910	38.9	119	7.3
Total Sulfide	18496-25-8	NL	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U				
Ammonia Nitrogen	7664-41-7	NL	0.079 J	< 0.10 U	1.0	6.8	0.60	1.4	0.11	2.8	2.6	< 0.10 U	1.8	< 0.10 U	3.7
Alkalinity, Total (As CaCO3)	ALK	NL	27.8	96.8	166	184	99.3	200	98.1	227	231	227	421	238	254
Bicarbonate Alkalinity as CaCO3	ALKB	NL	16.1	73.5	< 5.0 U	49.5	82.2	200	91.0	227	231	227	421	238	254
Carbonate Alkalinity as CaCO3	ALKC	NL	11.7	23.3	29.6	135	17.1	< 5.0 U	7.1	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
Hydroxide Alkalinity	ALKH	NL	< 5.0 U	< 5.0 U	136	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U

Notes:  
ug/L = micrograms per liter; mg/L = milligrams per liter (ppm)  
**Bold value = Reported concentration greater than the detection limit**  
**Gray Highlighted values exceed NYSDEC Groundwater Standard**  
**Green Highlighted values exceed NYSDEC Groundwater Guidance Value**  
NL = Not listed  
ND = Not detected  
U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.  
J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.  
UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte

## Figures

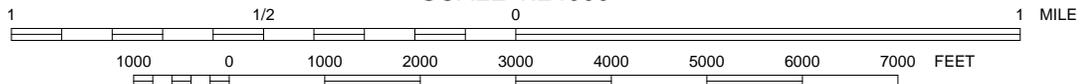
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 THE NARROWS QUADRANGLE  
 NEW YORK - NEW JERSEY  
 7.5 MINUTE SERIES (TOPOGRAPHY)

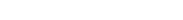
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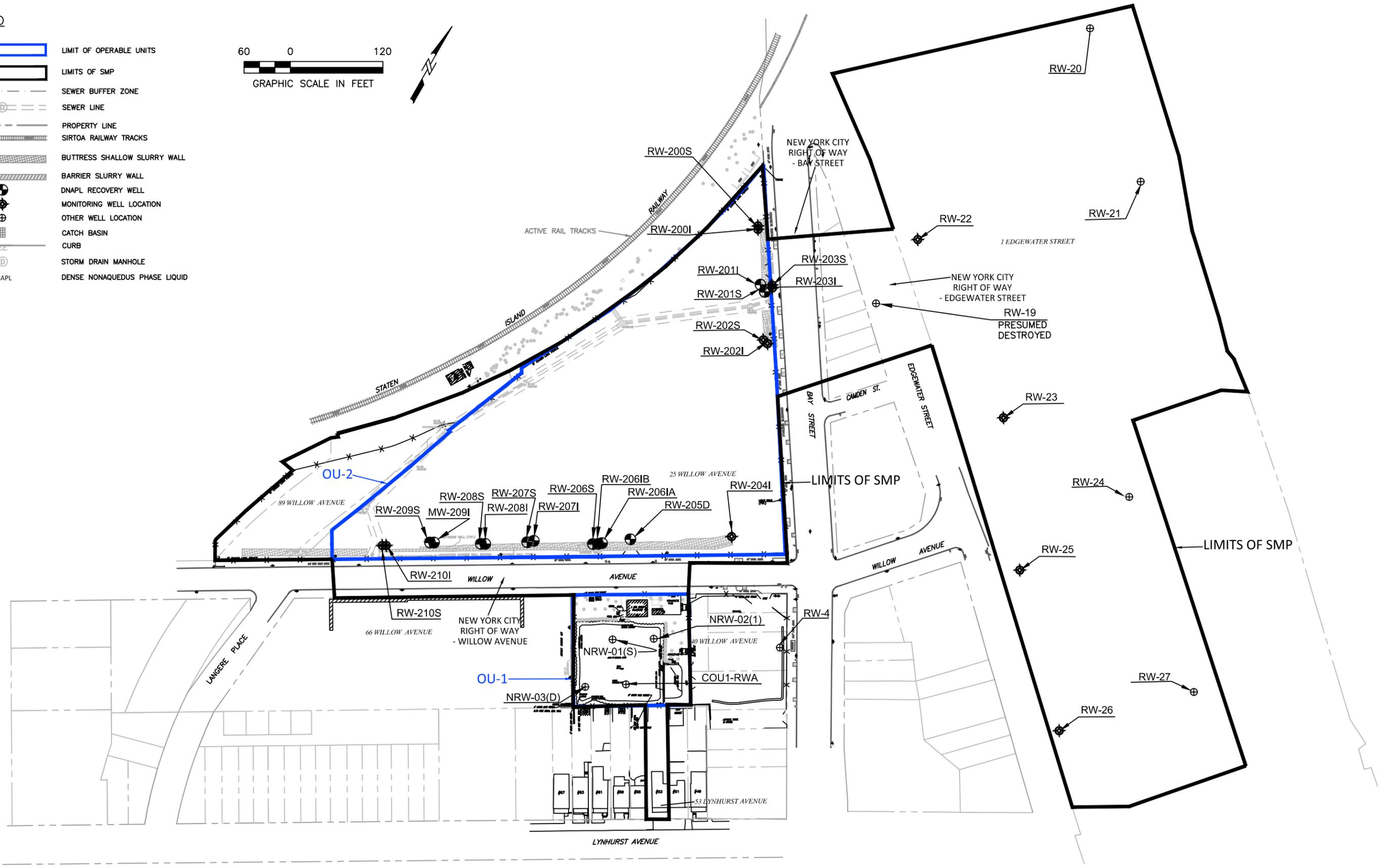
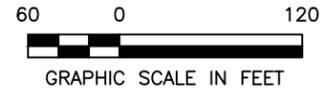
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NATIONAL GRID		<b>SITE LOCATION MAP</b>
FORMER CLIFTON MANUFACTURED GAS PLANT SEMIANNUAL MONITORING REPORT		
DATE: 07/25/14	DRWN: RCW	JOB NO.: 60137363-540
		<b>FIGURE 1</b>

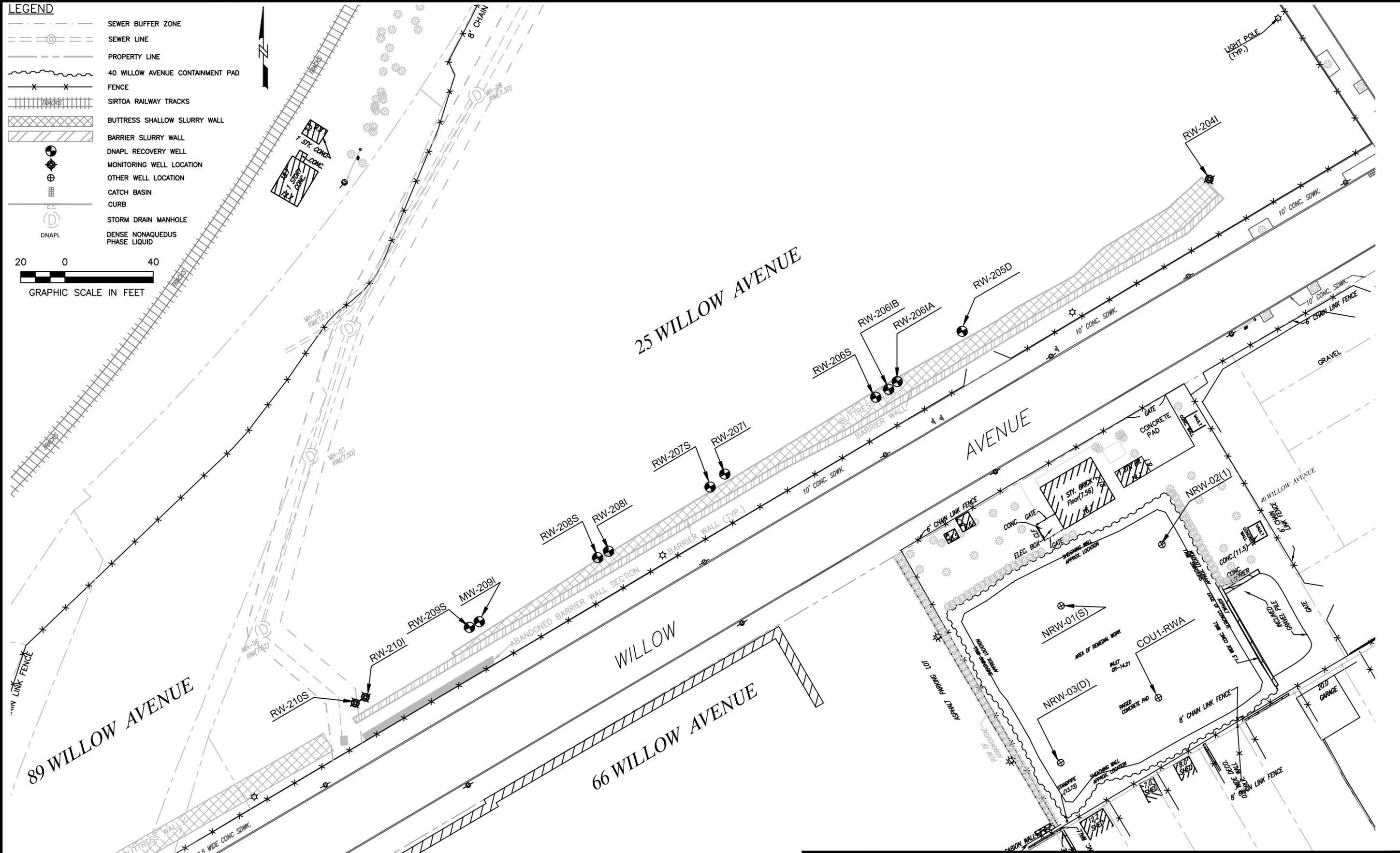
**LEGEND**

-  LIMIT OF OPERABLE UNITS
-  LIMITS OF SMP
-  SEWER BUFFER ZONE
-  SEWER LINE
-  PROPERTY LINE
-  SIRTOA RAILWAY TRACKS
-  BUTTRESS SHALLOW SLURRY WALL
-  BARRIER SLURRY WALL
-  DNAPL RECOVERY WELL
-  MONITORING WELL LOCATION
-  OTHER WELL LOCATION
-  CATCH BASIN
-  CURB
-  STORM DRAIN MANHOLE
-  DNAPL
-  DENSE NONAQUEOUS PHASE LIQUID



<p>NATIONAL GRID FORMER CLIFTON MANUFACTURED GAS PLANT ANNUAL STATUS REPORT</p>		<p>SITE LAYOUT</p>
DATE: 10/16/2017	DRWN: RCW/jk	JOB NO.: 60137363-620
		<p>FIGURE 2</p>

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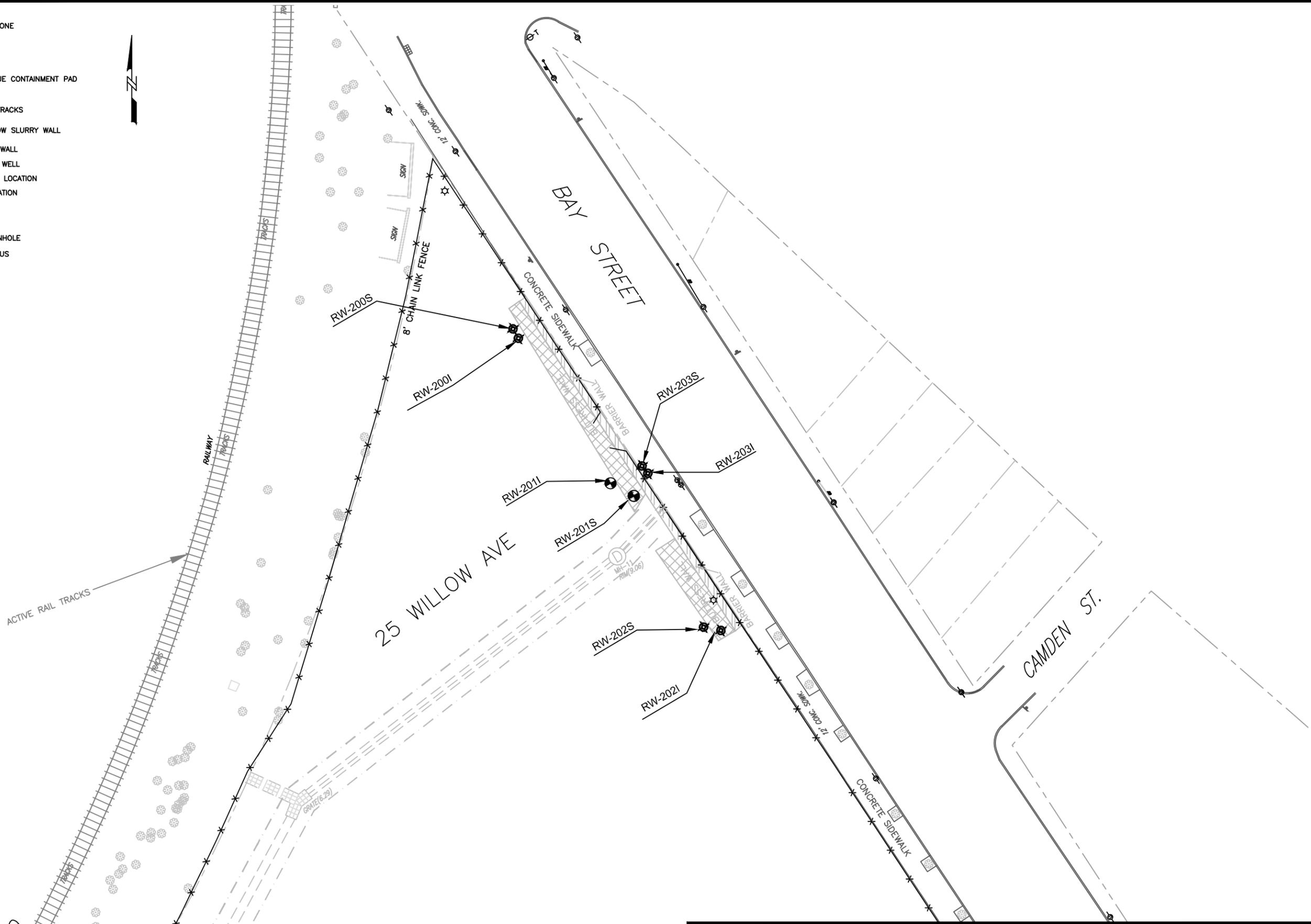
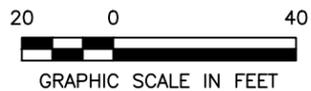
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NATIONAL GRID FORMER CLIFTON MANUFACTURED GAS PLANT ANNUAL STATUS REPORT		DNAPL RECOVERY WELL LOCATIONS ALONG WILLOW AVENUE	
DATE: 10/24/2017	DRWN: XW/jk	JOB NO.: 60137363-620	FIGURE 3

**LEGEND**

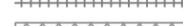
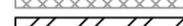
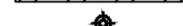
-  SEWER BUFFER ZONE
-  SEWER LINE
-  PROPERTY LINE
-  40 WILLOW AVENUE CONTAINMENT PAD
-  FENCE
-  SIRTOA RAILWAY TRACKS
-  BUTTRESS SHALLOW SLURRY WALL
-  BARRIER SLURRY WALL
-  DNAPL RECOVERY WELL
-  MONITORING WELL LOCATION
-  OTHER WELL LOCATION
-  CATCH BASIN
-  CURB
-  STORM DRAIN MANHOLE
-  DENSE NONAQUEOUS PHASE LIQUID

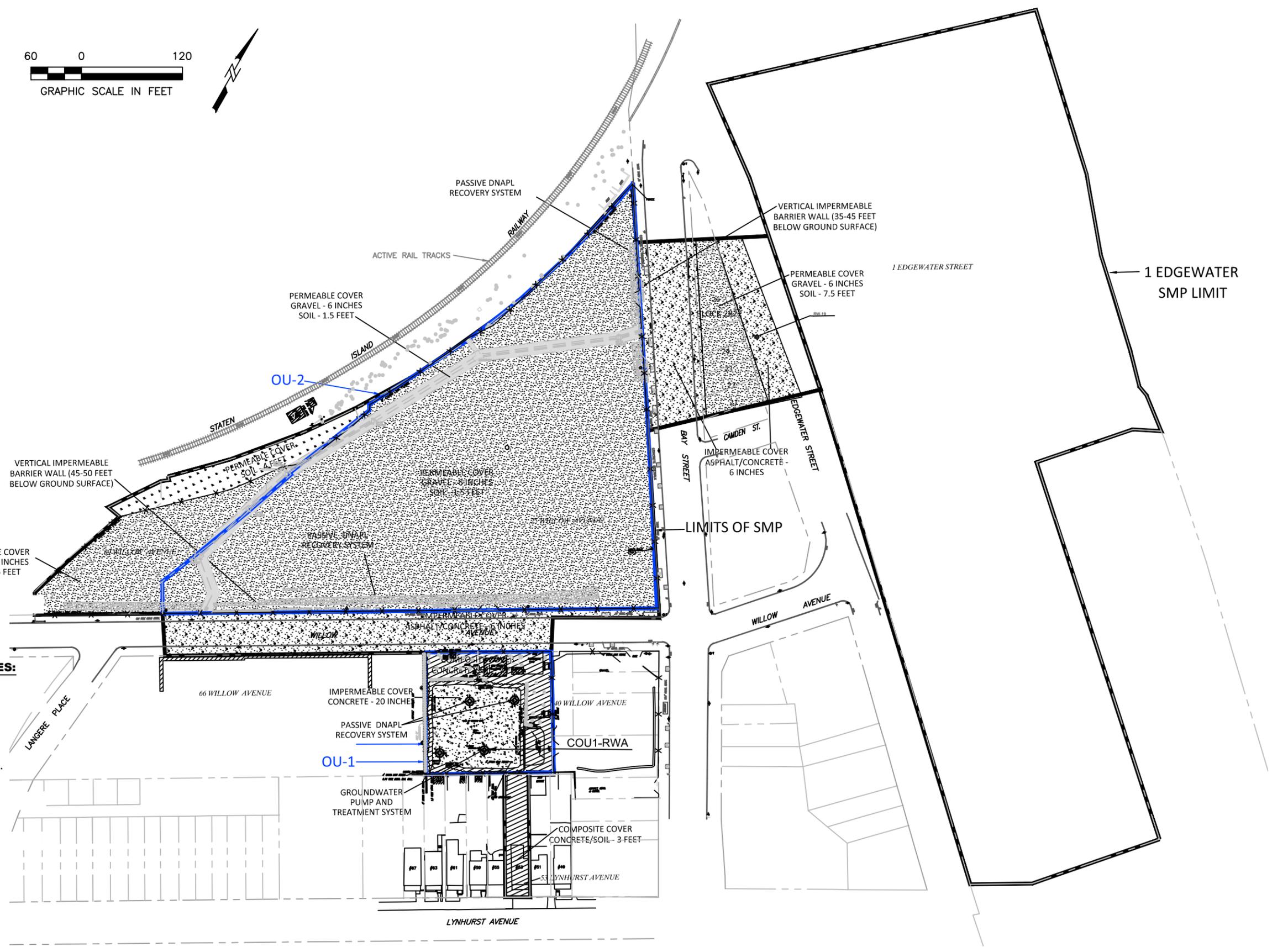
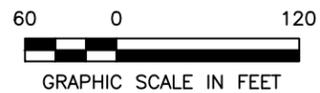


<p>NATIONAL GRID FORMER CLIFTON MANUFACTURED GAS PLANT ANNUAL STATUS REPORT</p>		<p>DNAPL RECOVERY WELL LOCATIONS ALONG BAY STREET</p>	
DATE: 10/24/2017	DRWN: XW/jk	JOB NO.: 60137363-620	FIGURE 4

File: A:\Project\National\_Grid\Clifton\_Manufactured\_Gas\_Plant\Annual\_Status\_Report\Drawings\Drawings\2017-10-24.dwg Layout: Epl User: jwanch11 PlotDate: Oct 24, 2017 - 8:15am Jwanch11

**LEGEND**

-  LIMIT OF OPERABLE UNIT (OU)
-  LIMITS OF SITE MANAGEMENT PLAN (SMP)
-  PERMEABLE COVER, GRAVEL/SOIL
-  IMPERMEABLE COVER, ASPHALT/CONCRETE
-  PERMEABLE COVER, SOIL
-  COMPOSITE CONCRETE/SOIL
-  IMPERMEABLE COVER, CONCRETE
-  SEWER BUFFER ZONE
-  PROPERTY LINE
-  FENCE
-  SIRTOA RAILWAY TRACKS
-  BUTTRESS SHALLOW SLURRY WALL
-  BARRIER SLURRY WALL
-  MONITORING WELL
-  CATCH BASIN
-  CURB
-  STORM DRAIN MANHOLE
-  DNAPL



**ENGINEERING CONTROL**

**CITY OF NEW RIGHT OF WAY AREAS:**

1. 6-INCH ASPHALT/CONCRETE COVER.
2. DNAPL RECOVERY SYSTEM.

**BLOCK 2822 LOTS 20-24 AND 25 PROPERTIES:**

1. 8-FOOT GRAVEL/SOIL COVER.

**40 WILLOW AVENUE PROPERTY**

1. 20-INCH CONCRETE COVER.
2. 2-FOOT CONCRETE/SOIL COVER.
3. DNAPL RECOVERY SYSTEM.
4. GROUNDWATER PUMP AND TREATMENT SYSTEM.
5. 125-FOOT CONTAINMENT CELL.

**53 LYNHURST AVENUE PROPERTY:**

1. 3-FOOT CONCRETE/SOIL COVER.

**25 WILLOW AVENUE PROPERTY:**

1. 2-FOOT GRAVEL/SOIL COVER.
2. 30-50-FOOT VERTICAL BARRIER WALL.
3. DNAPL RECOVERY SYSTEM.

**89 WILLOW AVENUE PROPERTY:**

1. 2-FOOT GRAVEL/SOIL COVER.
1. 4-FOOT SOIL COVER.



NATIONAL GRID  
FORMER CLIFTON MANUFACTURED GAS PLANT  
ANNUAL STATUS REPORT

ENGINEERING CONTROL LOCATIONS

DATE: 10/23/2017

DRWN: XW/jk

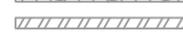
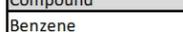
JOB NO.: 60137363-620

FIGURE 5

File: A:\Project\National Grid\Clifton\GIS\2017-10-23.dwg Layer: EFG User: jwarkit PlotDate: Oct 24, 2017 - 10:11am jwark



**LEGEND**

-  LIMITS OF SMP
-  SEWER BUFFER ZONE
-  SEWER LINE
-  PROPERTY LINE
-  BUTTRISS SHALLOW SLURRY WALL
-  BARRIER SLURRY WALL
-  MONITORING WELL LOCATION
-  OTHER WELL LOCATION
-  CATCH BASIN
-  CURB
-  STORM DRAIN MANHOLE
-  DNAPL
-  DENSE NONAQUEOUS PHASE LIQUID

Standards & Guidance Values	
Compound	AWQS (ug/L)
Benzene	1
Ethylbenzene	5
m/p-Xylenes	5
o-Xylene	5
Toluene	5
Compound	AWQGV (ug/L)
Acenaphthene	20
Benzo(a)anthracene	0.002
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	0.002
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Fluorene	50
Indeno(1,2,3-cd)pyrene	0.002
Naphthalene	10

Notes:  
 AWQS = NYSDEC Ambient Water Quality Standard  
 AWQGV = NYSDEC Ambient Water Quality Guidance Value  
 ft bgs = Feet below ground surface  
 ug/L = micrograms per liter; mg/L = milligrams per liter (ppm)  
**Bold value = Reported concentration greater than the detection limit**  
**Green Highlighted values exceed NYSDEC Groundwater Standards**  
**Gray Highlighted values exceed NYSDEC Groundwater Guidance Values**  
 NL = Not listed  
 ND = Not detected  
 U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.  
 J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

Location	RW-200S	RW-200I
Sample Date	12/21/2016	12/21/2016
Screened Interval (ft bgs)	10-20	24-34
<b>BTEX (ug/L)</b>		
Benzene	280	ND
Ethylbenzene	800	ND
m/p-Xylenes	270	ND
o-Xylene	320	ND
Toluene	330	ND
Total Xylenes	590	ND
<b>PAH (ug/L)</b>		
Acenaphthene	ND	ND
Benzo(a)anthracene	0.25 J	0.037 J
Benzo(a)pyrene	ND	0.10
Benzo(b)fluoranthene	0.094 J	0.090
Benzo(k)fluoranthene	ND	0.034 J
Chrysene	0.21 J	0.059
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	0.050
Naphthalene	3000	ND

Location	RW-203S	RW-203I
Sample Date	12/22/2016	12/22/2016
Screened Interval (ft bgs)	14-24	24-34
<b>BTEX (ug/L)</b>		
Benzene	88	74
Ethylbenzene	740	680
m/p-Xylenes	99	460
o-Xylene	190	430
Toluene	28	270
Total Xylenes	289	890
<b>PAH (ug/L)</b>		
Acenaphthene	120 J	96 J
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Chrysene	ND	ND
Fluorene	48 J	55 J
Indeno(1,2,3-cd)pyrene	ND	ND
Naphthalene	2800	2300

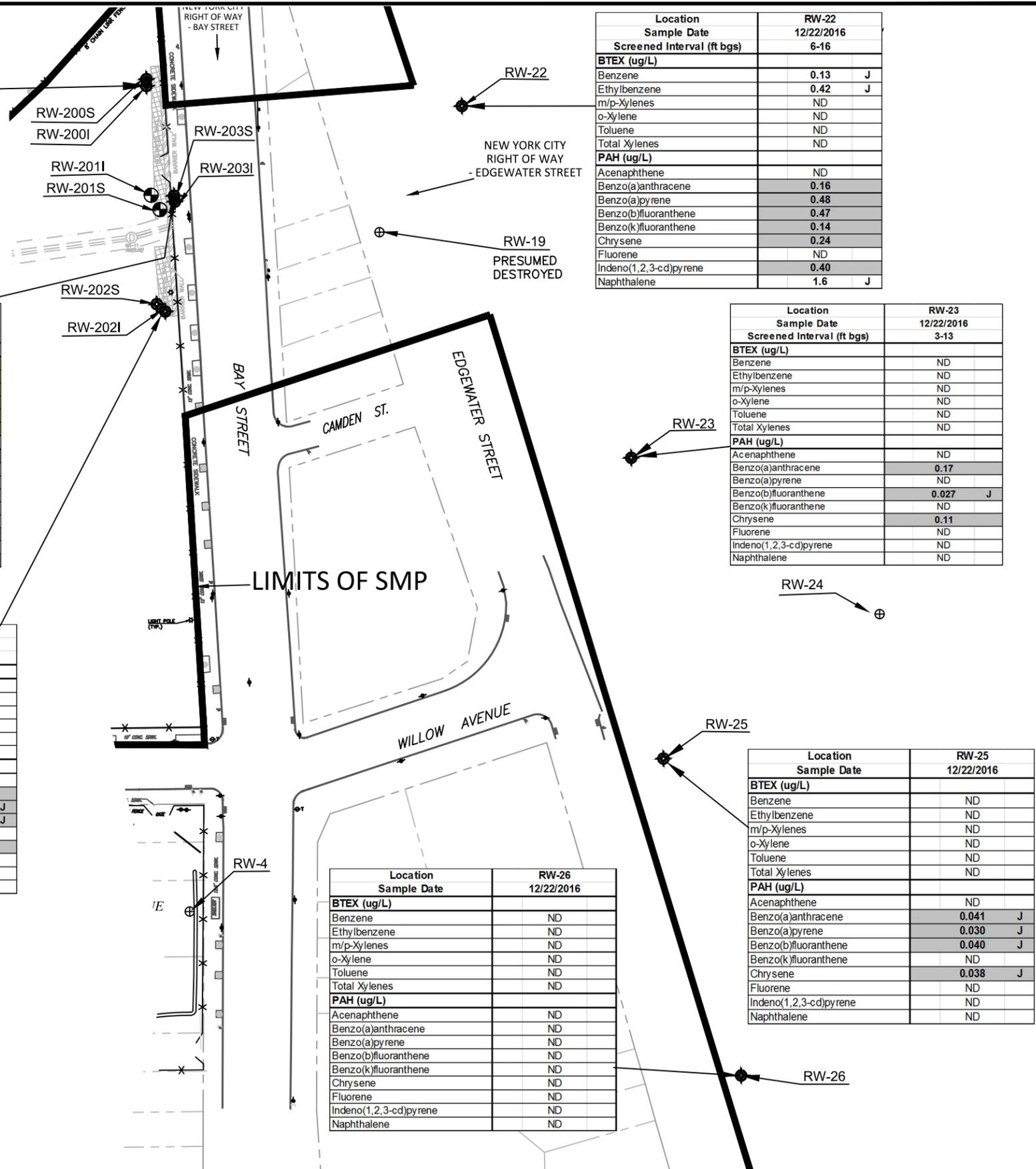
Location	RW-202S	RW-202I
Sample Date	12/21/2016	12/21/2016
Screened Interval (ft bgs)	10-20	27-37
<b>BTEX (ug/L)</b>		
Benzene	1.3	ND
Ethylbenzene	14	ND
m/p-Xylenes	13	ND
o-Xylene	8.7	ND
Toluene	7.9	ND
Total Xylenes	21.7	ND
<b>PAH (ug/L)</b>		
Acenaphthene	ND	ND
Benzo(a)anthracene	ND	0.072
Benzo(a)pyrene	ND	0.027 J
Benzo(b)fluoranthene	0.023 J	0.027 J
Benzo(k)fluoranthene	ND	0.050
Chrysene	0.037 J	0.079
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Naphthalene	41	ND

Location	RW-26
Sample Date	12/22/2016
<b>BTEX (ug/L)</b>	
Benzene	ND
Ethylbenzene	ND
m/p-Xylenes	ND
o-Xylene	ND
Toluene	ND
Total Xylenes	ND
<b>PAH (ug/L)</b>	
Acenaphthene	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND

Location	RW-22
Sample Date	12/22/2016
Screened Interval (ft bgs)	6-16
<b>BTEX (ug/L)</b>	
Benzene	0.13 J
Ethylbenzene	0.42 J
m/p-Xylenes	ND
o-Xylene	ND
Toluene	ND
Total Xylenes	ND
<b>PAH (ug/L)</b>	
Acenaphthene	ND
Benzo(a)anthracene	0.16
Benzo(a)pyrene	0.48
Benzo(b)fluoranthene	0.47
Benzo(k)fluoranthene	0.14
Chrysene	0.24
Fluorene	ND
Indeno(1,2,3-cd)pyrene	0.40
Naphthalene	1.6 J

Location	RW-23
Sample Date	12/22/2016
Screened Interval (ft bgs)	3-13
<b>BTEX (ug/L)</b>	
Benzene	ND
Ethylbenzene	ND
m/p-Xylenes	ND
o-Xylene	ND
Toluene	ND
Total Xylenes	ND
<b>PAH (ug/L)</b>	
Acenaphthene	ND
Benzo(a)anthracene	0.17
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	0.027 J
Benzo(k)fluoranthene	ND
Chrysene	0.11
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND

Location	RW-25
Sample Date	12/22/2016
<b>BTEX (ug/L)</b>	
Benzene	ND
Ethylbenzene	ND
m/p-Xylenes	ND
o-Xylene	ND
Toluene	ND
Total Xylenes	ND
<b>PAH (ug/L)</b>	
Acenaphthene	ND
Benzo(a)anthracene	0.041 J
Benzo(a)pyrene	0.030 J
Benzo(b)fluoranthene	0.040 J
Benzo(k)fluoranthene	ND
Chrysene	0.038 J
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND

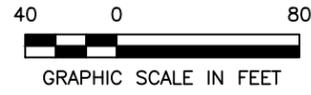


File: \\Project\National Grid\Clifton\60137363\Drawings\2016\2016-10-27.dwg    Layout: EPT    User: janc311    PlotDate: Oct 27, 2017    1:13pm    JobNo:



**LEGEND**

- LIMITS OF SMP
- SEWER BUFFER ZONE
- SEWER LINE
- PROPERTY LINE
- BUTTRESS SHALLOW SLURRY WALL
- BARRIER SLURRY WALL
- DNAPL RECOVERY WELL
- MONITORING WELL LOCATION
- OTHER WELL LOCATION
- CATCH BASIN
- CURB
- STORM DRAIN MANHOLE
- DNAPL

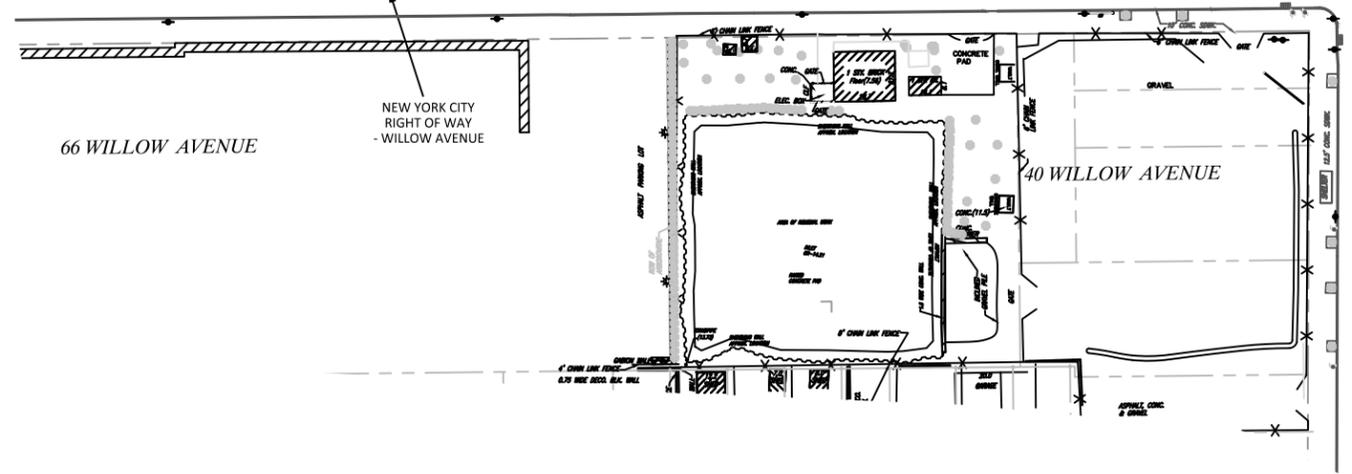
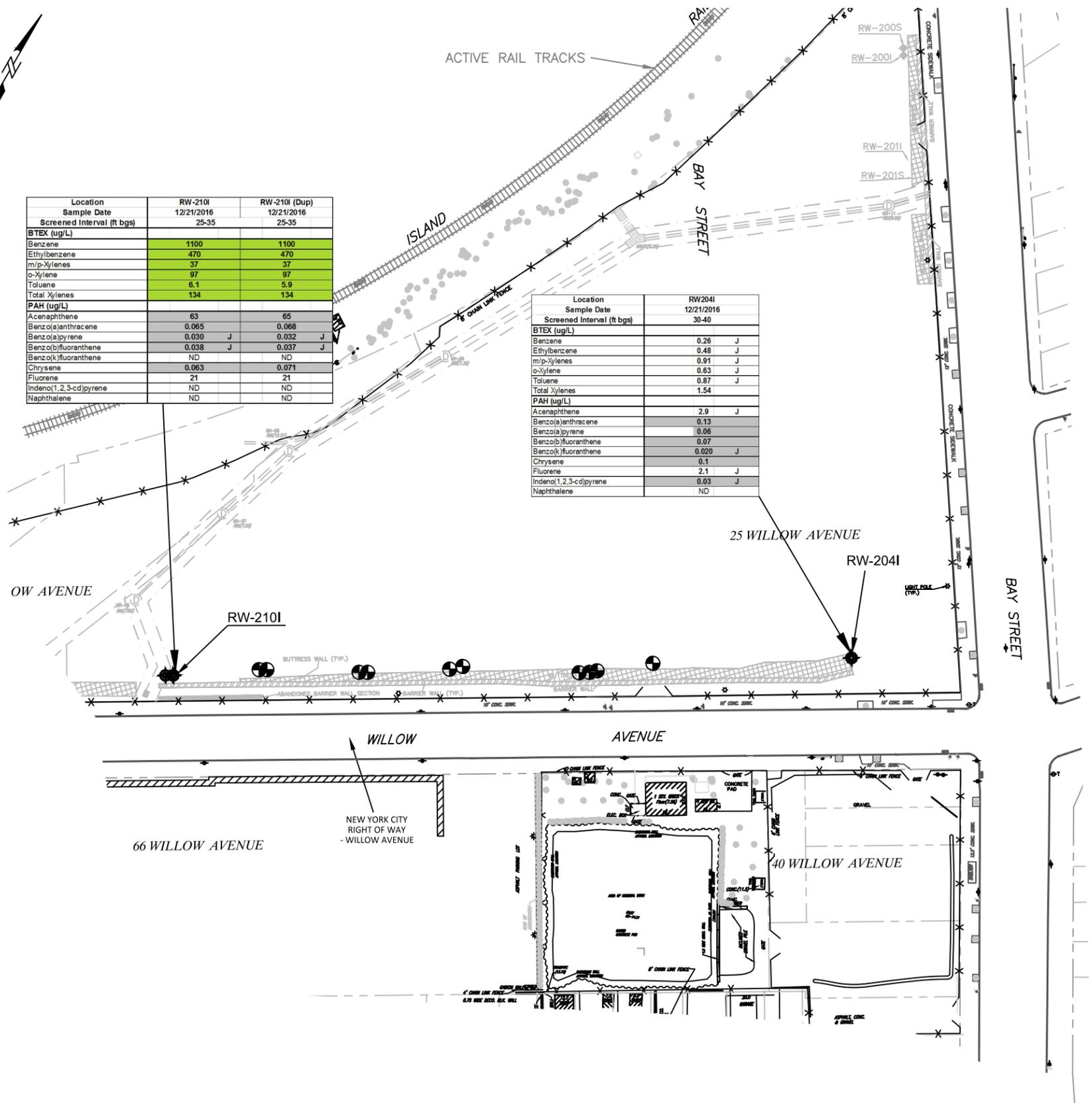


Standards & Guidance Values	
Compound	AWQS (ug/L)
Benzene	1
Ethylbenzene	5
m/p-Xylenes	5
o-Xylene	5
Toluene	5
Compound	AWQGV (ug/L)
Acenaphthene	20
Benzo(a)anthracene	0.002
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	0.002
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Fluorene	50
Indeno(1,2,3-cd)pyrene	0.002
Naphthalene	10

Notes:  
 AWQS = NYSDEC Ambient Water Quality Standard  
 AWQGV = NYSDEC Ambient Water Quality Guidance Value  
 ft bgs = Feet below ground surface  
 ug/L = micrograms per liter  
 mg/L = milligrams per liter (ppm)  
**Bold value = Reported concentration greater than the detection limit**  
**Green Highlighted values exceed NYSDEC Groundwater Standards**  
**Gray Highlighted values exceed NYSDEC Groundwater Guidance Values**  
 NL = Not listed  
 ND = Not detected  
 U = Nondetected result. The analyte was analyzed for, but was not detected above the reported sample quantitation limit.  
 J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

Location	RW-210I	RW-210I (Dup)
Sample Date	12/21/2016	12/21/2016
Screened Interval (ft bgs)	25-35	25-35
<b>BTEX (ug/L)</b>		
Benzene	1100	1100
Ethylbenzene	470	470
m/p-Xylenes	37	37
o-Xylene	97	97
Toluene	6.1	5.9
Total Xylenes	134	134
<b>PAH (ug/L)</b>		
Acenaphthene	63	65
Benzo(a)anthracene	0.065	0.068
Benzo(a)pyrene	0.030 J	0.032 J
Benzo(b)fluoranthene	0.038 J	0.037 J
Benzo(k)fluoranthene	ND	ND
Chrysene	0.063	0.071
Fluorene	21	21
Indeno(1,2,3-cd)pyrene	ND	ND
Naphthalene	ND	ND

Location	RW204I
Sample Date	12/21/2016
Screened Interval (ft bgs)	30-40
<b>BTEX (ug/L)</b>	
Benzene	0.26 J
Ethylbenzene	0.48 J
m/p-Xylenes	0.91 J
o-Xylene	0.63 J
Toluene	0.87 J
Total Xylenes	1.54
<b>PAH (ug/L)</b>	
Acenaphthene	2.9 J
Benzo(a)anthracene	0.13
Benzo(a)pyrene	0.06
Benzo(b)fluoranthene	0.07
Benzo(k)fluoranthene	0.020 J
Chrysene	0.1
Fluorene	2.1 J
Indeno(1,2,3-cd)pyrene	0.03 J
Naphthalene	ND



## **Appendix A**

### **Data Usability Summary and Analytical Reports (on CD Only)**



Prepared for:  
National Grid  
Brooklyn, NY

Prepared by:  
AECOM  
Pittsburgh, PA  
60137363-540  
February 2017

February 9, 2017

## Data Usability Summary Report

National Grid/Clifton Former MGP  
Site

Recovery Well Sampling Events

TestAmerica-Edison Laboratory

December 2016

Final



Prepared for:  
National Grid  
Brooklyn, NY

Prepared by:  
AECOM  
Pittsburgh, PA  
60137363-540  
February 2017

# Data Usability Summary Report

## National Grid/Clifton Former MGP Site

## Recovery Well Sampling Events TestAmerica-Edison Laboratory December 2016

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- Appendix A Glossary of Data Qualifier Codes
- Appendix B Data Qualification Summaries
- Appendix C Support Documentation

# Executive Summary

## Overview

Data validation was performed by Gregory A. Malzone of AECOM Pittsburgh on two data packages from TestAmerica Laboratories, Inc., 777 New Durham Road, Edison, NJ 08817 (TAL-Edison) for the analysis of aqueous recovery well samples collected on December 21-22, 2016 at the Clifton Former manufactured gas plant (MGP) site.

The following analytical methods were requested on the chain-of-custody (CoC) records:

- Volatile Organic Compounds: Benzene, Ethylbenzene, Toluene and Total Xylenes (BTEX) by USEPA Method 8260C,
- Polycyclic Aromatic Hydrocarbons (PAHs) by USEPA Method 8270D, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Hexachlorobenzene and Indeno(1,2,3-cd)pyrene were determined using GC/MS in Selected Ion Monitoring (SIM) Mode,
- Methane by RSK-175,
- Total and Dissolved Arsenic and Nickel by USEPA Method 6020A,
- Total, Bicarbonate, Carbonate and Hydroxide Alkalinity by Standard Method SM 2320B,
- Ammonia by USEPA Method 350.1,
- Nitrate and Nitrite as N by Standard Method 4500 NO3 F,
- Sulfate by ASTM Method D516-90, 02,
- Sulfide by Standard Method 4500 S2 F,
- Free Carbon Dioxide by Standard Method SM 4500 CO2 D,
- Chemical Oxygen Demand (COD) by Standard Method SM 5220D, and
- Ferrous Iron by Standard Method SM 3500 E D.

The data were evaluated for conformance to method specifications and qualifiers were applied using the USEPA Region II SOPs and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-013-001, August 2014, as they apply to the analytical methods employed.

Field duplicate relative percent difference (RPD) review and applicable control limits were taken from the *USEPA Region I, New England Data Validation Functional Guidelines for Evaluating Environmental Analyses*, December 1996.

The methane samples were analyzed at TestAmerica-Buffalo. The ferrous iron samples were analyzed at TestAmerica-Pensacola. The COD analyses for samples RW-22 and RW-23 were performed at ALS-Rochester, NY. TAL-Edison logged in the samples and reported the results under sample delivery groups (SDGs): 460-125858-1 and 460-125929-1. Table 1 below provides a sample submittal list with the field IDs cross-referenced with the TestAmerica-Edison IDs

**Table 1 - Sample Submittals  
National Grid / Clifton Recovery Well Samples**

Field ID	TestAmerica ID	Matrix	Date Sampled
RW-200S	460-125858-1	Groundwater	12/21/2016
RW-200I	460-125858-2	Groundwater	12/21/2016
RW-202S	460-125858-3	Groundwater	12/21/2016
RW-202I	460-125858-4	Groundwater	12/21/2016
RW-204I	460-125858-5	Groundwater	12/21/2016
RW-204I MS	460-125858-5MS	Groundwater (QC)	12/21/2016
RW-204I MSD	460-125858-5MSD	Groundwater (QC)	12/21/2016
RW-204I DUP	460-125858-5DUP	Groundwater (QC)	12/21/2016
RW-210I	460-125858-6	Groundwater	12/21/2016
Dup-1	460-125858-7	Groundwater	12/21/2016
Trip Blank	460-125858-8	Aqueous (QC)	12/21/2016
RW-22	460-125929-1	Groundwater	12/22/2016
RW-23	460-125929-2	Groundwater	12/22/2016
RW-25	460-125929-3	Groundwater	12/22/2016
RW-26	460-125929-4	Groundwater	12/22/2016
RW-203S	460-125929-5	Groundwater	12/22/2016
RW-203I	460-125929-6	Groundwater	12/22/2016
TRIP BLANK	460-125929-7	Aqueous (QC)	12/22/2016

## Summary

Data quality for the organic analyses was evaluated by reviewing the following parameters: holding times, GC/MS tuning and performance standards, internal standards, initial and continuing calibrations, matrix spike/matrix spike duplicates (MS/MSD), surrogate recoveries, laboratory control standards (LCs), laboratory blanks, laboratory and field duplicates, compound identification, and compound quantitation.

Inorganic data quality was evaluated by reviewing the following parameters: holding times, matrix spikes, initial calibrations, continuing calibration verification standard recoveries, contract required detection limit standard recoveries, laboratory control samples, ICP interference check sample recoveries, ICP serial dilution results, field and laboratory duplicates, laboratory blanks, and analyte quantitation.

Five non-detect ferrous iron and seven non-detect free carbon dioxide results were rejected because the 24-hour holding times were grossly exceeded. All other data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds and analytes in the media tested (i.e. groundwater) with the qualifications described below. Completeness of 97.4% was achieved for this data set. This is within the goal of 90-100% and is acceptable.

A glossary of data qualifier definitions is included in Appendix A of this report. The data qualifier summaries are attached as Appendix B of this report. Each noncompliance with specific data usability criteria that required data qualification is discussed below. Support documentation for data qualifications was included in Appendix C of this report. Specific page references for the supporting documentation in the laboratory reports were provided in each item header.

## **1.0 Volatile Organic Compounds**

### **460-125858-1**

No data quality issues were noted. No data qualifications were required.

### **460-125929-1**

No data quality issues were noted. No data qualifications were required.

## 2.0 Semivolatile Organic Compounds

### 460-125858-1

Laboratory Control Samples: The full scan LCS (460-411654/2-A) recovery (and the RW204I MSD) for benzo(a)anthracene was greater than the upper quality control limit. Samples RW-200I, RW-202S, RW-202I, RW-204I, RW-210I and Dup-1 were affected. Benzo(g,h,i)perylene was reported from the SIM analysis where the LCS recoveries were acceptable. No data qualifications were required.

### 460-125929-1

Surrogate Recoveries: The 2-fluorobiphenyl surrogate recovery for sample RW-25 was greater than the upper quality control limit. The *USEPA National Functional Guidelines* permit one nonconforming surrogate recovery per fraction (base/neutral or acid), provided the recovery is greater than 10%. No data qualification was required in response to the high method bias.

### 3.0 Methane

#### 460-125858-1

Matrix Spike Recoveries (pp. 733-734): Sample RW-204I was designated in the field to be processed as the quality control sample, that is, as the MS/MSD. The RW-204I MS/MSD recoveries for methane were greater than the upper advisory limits. The methane result for sample RW-204I was positive and was qualified "J," as an estimated concentration, because of high bias attributable to matrix effects and/or sample heterogeneity.

#### 460-125929-1

No data quality issues were noted. No data qualifications were required.

## **4.0 Total and Dissolved Metals**

### **460-125858-1**

No data quality issues were noted. No data qualifications were required.

### **460-125929-1**

No data quality issues were noted. No data qualifications were required.

## 5.0 General Chemistry

### 460-125858-1

Blank Contamination: The continuing calibration blank analyzed on 12/28/16 at 16:26 had a ferrous iron concentration estimated to be 0.0448 J mg/L. Samples RW-200I, RW-202S, RW-202I, RW-204I, RW-210I and Dup-1 were affected. The positive ferrous iron results for samples RW-202S and RW-202I were qualified "U," as undetected at the reporting limit, because of laboratory contamination.

Holding Times: All free carbon dioxide analyses were performed two days beyond the USEPA method 24-hour holding time. Free carbon dioxide samples must be analyzed immediately upon sample collection, that is, as field tests. The free carbon dioxide results for associated samples RW-200S, RW-200I, RW-202S, RW-202I, RW-204I, RW-210I and Dup-1 were non-detect and were qualified "R," as rejected, because the 24-hour holding time was grossly exceeded.

All ferrous iron analyses were performed 6-7 days beyond the USEPA method 24-hour holding time. Ferrous iron samples must be analyzed immediately upon sample collection, that is, as field tests. The positive and non-detect ferrous iron results for associated samples RW-200S, RW-200I, RW-202S, RW-202I, RW-204I, RW-210I and Dup-1 were qualified "J/R," as estimated concentrations and rejected, respectively, because the 24-hour holding time was grossly exceeded. The ferrous iron results negated due to blank contamination were not rejected.

### 460-125929-1

Blank Contamination: The continuing calibration blank analyzed on 12/28/16 at 16:26 had a ferrous iron concentration estimated to be 0.0448 J mg/L. Samples RW-22, RW-23, RW-25, RW-26, RW-203S and RW-203I were affected. The positive ferrous iron results for samples RW-203S and RW-203I were qualified "U," as undetected at the reporting limit, because of laboratory contamination.

Holding Times: All free carbon dioxide analyses were performed up to one day beyond the USEPA method 24-hour holding time. Free carbon dioxide samples must be analyzed immediately upon sample collection, that is, as field tests. The positive and non-detect free carbon dioxide results for associated samples RW-22, RW-23, RW-25, RW-26, RW-203S and RW-203I were qualified "J/UJ," as estimates, because the 24-hour holding time was exceeded.

All ferrous iron analyses were performed 5-6 days beyond the USEPA method 24-hour holding time. Ferrous iron samples must be analyzed immediately upon sample collection, that is, as field tests. The positive and non-detect ferrous iron results for associated samples RW-22, RW-23, RW-25, RW-26, RW-203S and RW-203I were qualified "J/R," as estimated concentrations and rejected, respectively, because the 24-hour holding time was grossly exceeded. The ferrous iron results negated due to blank contamination were not rejected.

## 6.0 Field Duplicate Precision

A field duplicate sample was collected for sample RW-210I. Field duplicate results were evaluated using the following criteria.

**Organics:** The RPD must be  $\leq 30\%$  for groundwaters for results greater than or equal to two times the reporting limit. If one of the results is non-detect or less than two times the reporting limit, and the duplicate is greater than two times the reporting limit, the difference between the parent and field duplicate results must be less than or equal to two times the reporting limit.

Action applies only to the affected analyte in the organic duplicate sample pair.

**Inorganics:** The RPD must be  $\leq 30\%$  for groundwaters for results greater than or equal to five times the reporting limit. For results less than five times the reporting limit, the difference between the parent and field duplicate results must be less than or equal to two times the reporting limit for groundwaters.

Action applies to the affected analyte in all inorganic samples of the same matrix prepared and analyzed by the same method.

The RPDs and differences were calculated for those parameters for which there were positive results. All field duplicate results were within the acceptance criteria except ferrous iron. All positive and non-detect ferrous iron results were qualified "J/UJ," as estimates, because of field sampling/laboratory imprecision and/or sample heterogeneity.

The following notations are used in the field precision table.

RPD: Relative percent difference

NC: RPD could not be calculated

$\mu\text{g/L}$ : micrograms per liter (ppb) and  $\text{mg/L}$ : milligrams per liter (ppm)

Quals: Qualifications required.

$\leq \pm 2\text{RL}$ : The difference between the parent and field duplicate results was less than two times the reporting limit for low-level results. Variation of this magnitude is acceptable.

$> \pm 2\text{RL}$ : The difference between the parent and field duplicate results was greater than two times the reporting limit for low-level results. Data qualification was required.

**Table 2 – Field Duplicate Precision  
National Grid / Clifton Recovery Well Samples**

Parameter	Units	RW-210I	Dup-1	RPD (%)	Quals
Benzene	µg/L	1100	1100	0	None
Ethylbenzene	µg/L	470	470	0	None
Toluene	µg/L	6.1	5.9	3.3	None
m-Xylene & p-Xylene	µg/L	37	37	0	None
o-Xylene	µg/L	97	97	0	None
Acenaphthene	µg/L	63	65	3.1	None
Anthracene	µg/L	1.2 J	0.78 J	42	≤±2RL, None
Fluorene	µg/L	21	21	0	None
Phenanthrene	µg/L	11	11	0	None
Benzo[a]anthracene	µg/L	0.065	0.068	4.5	None
Benzo[a]pyrene	µg/L	0.030 J	0.032 J	6.5	None
Benzo[b]fluoranthene	µg/L	0.038 J	0.037 J	2.7	None
Chrysene	µg/L	0.063	0.071	12	None
Methane	µg/L	770	780	1.3	None
Iron	µg/L	877	805	8.6	None
Manganese	µg/L	349	346	0.86	None
Ammonia	mg/L	2.6	2.8	7.4	None
Bicarbonate Alkalinity	mg/L	231	227	1.7	None
Alkalinity	mg/L	231	227	1.7	None
Nitrite	mg/L	0.10 U	0.030 J	NC	≤±2RL, None
<b>Ferrous Iron</b>	<b>mg/L</b>	<b>0.10 U</b>	<b>0.24</b>	<b>NC</b>	<b>&gt;±2RL, J</b>
Chemical Oxygen Demand	mg/L	10.1	10.0 U	NC	≤±2RL, None
Manganese, Dissolved	µg/L	356	352	1.1	None

## 7.0 Notes

Positive organic and inorganic results less than the reporting limit, but greater than the method detection limit (MDL) were qualified "J," as estimated concentrations, due to increased uncertainty near the detection limit. The "J" qualifiers were maintained in the data validation.

Matrix spike and matrix spike duplicates, laboratory duplicates, and ICP serial dilutions that were performed on non-project samples were not evaluated because matrix similarity to project samples could not be assumed.

## **Appendix A**

### **Glossary of Data Qualifier Codes**

## Glossary of Data Qualifier Codes

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, likely to be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
- J- The result is an estimated quantity, likely to be biased low. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.
- N (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ (Organics) The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

AECOM

## **Appendix B**

### **Data Qualification Summaries**

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: RW200S**

**Lab Sample ID: 460-125858-1**

Date Collected: 12/21/16 10:00

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	280		5.0	0.45	ug/L			12/30/16 14:12	5
Ethylbenzene	800		5.0	1.5	ug/L			12/30/16 14:12	5
m-Xylene & p-Xylene	270		5.0	1.4	ug/L			12/30/16 14:12	5
o-Xylene	320		5.0	1.6	ug/L			12/30/16 14:12	5
Toluene	330		5.0	1.3	ug/L			12/30/16 14:12	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		74 - 132		12/30/16 14:12	5
4-Bromofluorobenzene	91		77 - 124		12/30/16 14:12	5
Dibromofluoromethane (Surr)	98		72 - 131		12/30/16 14:12	5
Toluene-d8 (Surr)	102		80 - 120		12/30/16 14:12	5

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.25	J	0.26	0.19	ug/L		12/23/16 12:00	12/30/16 11:35	5
Benzo[a]pyrene	0.13	U	0.26	0.13	ug/L		12/23/16 12:00	12/30/16 11:35	5
Benzo[b]fluoranthene	0.094	J	0.26	0.062	ug/L		12/23/16 12:00	12/30/16 11:35	5
Hexachlorobenzene	0.047	U	0.10	0.047	ug/L		12/23/16 12:00	12/30/16 11:35	5
Indeno[1,2,3-cd]pyrene	0.14	U	0.26	0.14	ug/L		12/23/16 12:00	12/30/16 11:35	5

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	18	U	210	18	ug/L		12/23/16 12:00	12/29/16 11:35	20
Acenaphthylene	100	J	210	13	ug/L		12/23/16 12:00	12/29/16 11:35	20
Anthracene	12	U	210	12	ug/L		12/23/16 12:00	12/29/16 11:35	20
Benzo[g,h,i]perylene	16	U	210	16	ug/L		12/23/16 12:00	12/29/16 11:35	20
Fluoranthene	15	U	210	15	ug/L		12/23/16 12:00	12/29/16 11:35	20
Fluorene	17	U	210	17	ug/L		12/23/16 12:00	12/29/16 11:35	20
Naphthalene	3000		210	17	ug/L		12/23/16 12:00	12/29/16 11:35	20
Phenanthrene	13	U	210	13	ug/L		12/23/16 12:00	12/29/16 11:35	20
Pyrene	17	U	210	17	ug/L		12/23/16 12:00	12/29/16 11:35	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	40		26 - 139	12/23/16 12:00	12/29/16 11:35	20
2-Fluorobiphenyl	85		45 - 107	12/23/16 12:00	12/29/16 11:35	20
2-Fluorophenol (Surr)	49		25 - 58	12/23/16 12:00	12/29/16 11:35	20
Nitrobenzene-d5 (Surr)	89		51 - 108	12/23/16 12:00	12/29/16 11:35	20
Phenol-d5 (Surr)	18		14 - 39	12/23/16 12:00	12/29/16 11:35	20
Terphenyl-d14 (Surr)	101		40 - 148	12/23/16 12:00	12/29/16 11:35	20

**Client Sample ID: RW200I**

**Lab Sample ID: 460-125858-2**

Date Collected: 12/21/16 10:30

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/30/16 12:22	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/30/16 12:22	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/30/16 12:22	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/30/16 12:22	1

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: RW2001**

**Lab Sample ID: 460-125858-2**

Date Collected: 12/21/16 10:30

Matrix: Water

Date Received: 12/21/16 17:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	U	1.0	0.25	ug/L			12/30/16 12:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		74 - 132					12/30/16 12:22	1
4-Bromofluorobenzene	88		77 - 124					12/30/16 12:22	1
Dibromofluoromethane (Surr)	100		72 - 131					12/30/16 12:22	1
Toluene-d8 (Surr)	102		80 - 120					12/30/16 12:22	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	J	0.050	0.037	ug/L		12/23/16 12:00	12/29/16 19:09	1
Benzo[a]pyrene	0.10		0.050	0.026	ug/L		12/23/16 12:00	12/29/16 19:09	1
Benzo[b]fluoranthene	0.090		0.050	0.012	ug/L		12/23/16 12:00	12/29/16 19:09	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		12/23/16 12:00	12/29/16 19:09	1
Indeno[1,2,3-cd]pyrene	0.050		0.050	0.027	ug/L		12/23/16 12:00	12/29/16 19:09	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.88	U	10	0.88	ug/L		12/23/16 12:00	12/28/16 04:09	1
Acenaphthylene	0.65	U	10	0.65	ug/L		12/23/16 12:00	12/28/16 04:09	1
Anthracene	0.57	U	10	0.57	ug/L		12/23/16 12:00	12/28/16 04:09	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		12/23/16 12:00	12/28/16 04:09	1
Fluoranthene	0.72	U	10	0.72	ug/L		12/23/16 12:00	12/28/16 04:09	1
Fluorene	0.80	U	10	0.80	ug/L		12/23/16 12:00	12/28/16 04:09	1
Naphthalene	0.80	U	10	0.80	ug/L		12/23/16 12:00	12/28/16 04:09	1
Phenanthrene	0.65	U	10	0.65	ug/L		12/23/16 12:00	12/28/16 04:09	1
Pyrene	0.83	U	10	0.83	ug/L		12/23/16 12:00	12/28/16 04:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	93		26 - 139				12/23/16 12:00	12/28/16 04:09	1
2-Fluorobiphenyl	72		45 - 107				12/23/16 12:00	12/28/16 04:09	1
2-Fluorophenol (Surr)	23	X	25 - 58				12/23/16 12:00	12/28/16 04:09	1
Nitrobenzene-d5 (Surr)	73		51 - 108				12/23/16 12:00	12/28/16 04:09	1
Phenol-d5 (Surr)	24		14 - 39				12/23/16 12:00	12/28/16 04:09	1
Terphenyl-d14 (Surr)	112		40 - 148				12/23/16 12:00	12/28/16 04:09	1

**Client Sample ID: RW202S**

**Lab Sample ID: 460-125858-3**

Date Collected: 12/21/16 11:45

Matrix: Water

Date Received: 12/21/16 17:00

Method: 8260C - Volatile Organic Compounds by GC/MS									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		1.0	0.090	ug/L			12/30/16 12:44	1
Ethylbenzene	14		1.0	0.30	ug/L			12/30/16 12:44	1
m-Xylene & p-Xylene	13		1.0	0.28	ug/L			12/30/16 12:44	1
o-Xylene	8.7		1.0	0.32	ug/L			12/30/16 12:44	1
Toluene	7.9		1.0	0.25	ug/L			12/30/16 12:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		74 - 132					12/30/16 12:44	1
4-Bromofluorobenzene	91		77 - 124					12/30/16 12:44	1

TestAmerica Edison

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# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: RW202S**

**Lab Sample ID: 460-125858-3**

Date Collected: 12/21/16 11:45

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	100		72 - 131		12/30/16 12:44	1
Toluene-d8 (Surr)	103		80 - 120		12/30/16 12:44	1

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.038	U	0.051	0.038	ug/L		12/23/16 12:00	12/29/16 19:34	1
Benzo[a]pyrene	0.026	U	0.051	0.026	ug/L		12/23/16 12:00	12/29/16 19:34	1
Benzo[b]fluoranthene	0.023	J	0.051	0.012	ug/L		12/23/16 12:00	12/29/16 19:34	1
Hexachlorobenzene	0.0091	U	0.020	0.0091	ug/L		12/23/16 12:00	12/29/16 19:34	1
Indeno[1,2,3-cd]pyrene	0.027	U	0.051	0.027	ug/L		12/23/16 12:00	12/29/16 19:34	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.89	U	10	0.89	ug/L		12/23/16 12:00	12/28/16 04:30	1
Acenaphthylene	1.7	J	10	0.66	ug/L		12/23/16 12:00	12/28/16 04:30	1
Anthracene	0.58	U	10	0.58	ug/L		12/23/16 12:00	12/28/16 04:30	1
Benzo[g,h,i]perylene	0.76	U	10	0.76	ug/L		12/23/16 12:00	12/28/16 04:30	1
Fluoranthene	0.73	U	10	0.73	ug/L		12/23/16 12:00	12/28/16 04:30	1
Fluorene	0.81	U	10	0.81	ug/L		12/23/16 12:00	12/28/16 04:30	1
Naphthalene	41		10	0.81	ug/L		12/23/16 12:00	12/28/16 04:30	1
Phenanthrene	0.66	U	10	0.66	ug/L		12/23/16 12:00	12/28/16 04:30	1
Pyrene	0.84	U	10	0.84	ug/L		12/23/16 12:00	12/28/16 04:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	112		26 - 139	12/23/16 12:00	12/28/16 04:30	1
2-Fluorobiphenyl	95		45 - 107	12/23/16 12:00	12/28/16 04:30	1
2-Fluorophenol (Surr)	33		25 - 58	12/23/16 12:00	12/28/16 04:30	1
Nitrobenzene-d5 (Surr)	94		51 - 108	12/23/16 12:00	12/28/16 04:30	1
Phenol-d5 (Surr)	33		14 - 39	12/23/16 12:00	12/28/16 04:30	1
Terphenyl-d14 (Surr)	117		40 - 148	12/23/16 12:00	12/28/16 04:30	1

**Client Sample ID: RW202I**

**Lab Sample ID: 460-125858-4**

Date Collected: 12/21/16 11:30

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/30/16 13:06	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/30/16 13:06	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/30/16 13:06	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/30/16 13:06	1
Toluene	0.25	U	1.0	0.25	ug/L			12/30/16 13:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		74 - 132		12/30/16 13:06	1
4-Bromofluorobenzene	88		77 - 124		12/30/16 13:06	1
Dibromofluoromethane (Surr)	100		72 - 131		12/30/16 13:06	1
Toluene-d8 (Surr)	102		80 - 120		12/30/16 13:06	1

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: RW202I**

**Lab Sample ID: 460-125858-4**

Date Collected: 12/21/16 11:30

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.072		0.050	0.037	ug/L		12/23/16 12:00	12/29/16 19:58	1
Benzo[a]pyrene	0.027	J	0.050	0.026	ug/L		12/23/16 12:00	12/29/16 19:58	1
Benzo[b]fluoranthene	0.027	J	0.050	0.012	ug/L		12/23/16 12:00	12/29/16 19:58	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		12/23/16 12:00	12/29/16 19:58	1
Indeno[1,2,3-cd]pyrene	0.027	U	0.050	0.027	ug/L		12/23/16 12:00	12/29/16 19:58	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.88	U	10	0.88	ug/L		12/23/16 12:00	12/28/16 10:03	1
Acenaphthylene	0.65	U	10	0.65	ug/L		12/23/16 12:00	12/28/16 10:03	1
Anthracene	0.57	U	10	0.57	ug/L		12/23/16 12:00	12/28/16 10:03	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		12/23/16 12:00	12/28/16 10:03	1
Fluoranthene	0.72	U	10	0.72	ug/L		12/23/16 12:00	12/28/16 10:03	1
Fluorene	0.80	U	10	0.80	ug/L		12/23/16 12:00	12/28/16 10:03	1
Naphthalene	0.80	U	10	0.80	ug/L		12/23/16 12:00	12/28/16 10:03	1
Phenanthrene	0.65	U	10	0.65	ug/L		12/23/16 12:00	12/28/16 10:03	1
Pyrene	0.83	U	10	0.83	ug/L		12/23/16 12:00	12/28/16 10:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	95		26 - 139	12/23/16 12:00	12/28/16 10:03	1
2-Fluorobiphenyl	87		45 - 107	12/23/16 12:00	12/28/16 10:03	1
2-Fluorophenol (Surr)	28		25 - 58	12/23/16 12:00	12/28/16 10:03	1
Nitrobenzene-d5 (Surr)	83		51 - 108	12/23/16 12:00	12/28/16 10:03	1
Phenol-d5 (Surr)	29		14 - 39	12/23/16 12:00	12/28/16 10:03	1
Terphenyl-d14 (Surr)	124		40 - 148	12/23/16 12:00	12/28/16 10:03	1

**Client Sample ID: RW204I**

**Lab Sample ID: 460-125858-5**

Date Collected: 12/21/16 14:00

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.26	J	1.0	0.090	ug/L			12/30/16 11:59	1
Ethylbenzene	0.48	J	1.0	0.30	ug/L			12/30/16 11:59	1
m-Xylene & p-Xylene	0.91	J	1.0	0.28	ug/L			12/30/16 11:59	1
o-Xylene	0.63	J	1.0	0.32	ug/L			12/30/16 11:59	1
Toluene	0.87	J	1.0	0.25	ug/L			12/30/16 11:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		74 - 132		12/30/16 11:59	1
4-Bromofluorobenzene	89		77 - 124		12/30/16 11:59	1
Dibromofluoromethane (Surr)	101		72 - 131		12/30/16 11:59	1
Toluene-d8 (Surr)	102		80 - 120		12/30/16 11:59	1

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.13		0.050	0.037	ug/L		12/23/16 12:00	12/29/16 18:19	1
Benzo[a]pyrene	0.057		0.050	0.026	ug/L		12/23/16 12:00	12/29/16 18:19	1
Benzo[b]fluoranthene	0.067		0.050	0.012	ug/L		12/23/16 12:00	12/29/16 18:19	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		12/23/16 12:00	12/29/16 18:19	1
Indeno[1,2,3-cd]pyrene	0.027	J	0.050	0.027	ug/L		12/23/16 12:00	12/29/16 18:19	1

TestAmerica Edison



# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

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## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	2.9	J	10	0.88	ug/L		12/23/16 12:00	12/28/16 03:27	1
Acenaphthylene	1.3	J	10	0.65	ug/L		12/23/16 12:00	12/28/16 03:27	1
Anthracene	0.57	U	10	0.57	ug/L		12/23/16 12:00	12/28/16 03:27	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		12/23/16 12:00	12/28/16 03:27	1
Fluoranthene	2.0	J	10	0.72	ug/L		12/23/16 12:00	12/28/16 03:27	1
Fluorene	2.1	J	10	0.80	ug/L		12/23/16 12:00	12/28/16 03:27	1
Naphthalene	0.80	U	10	0.80	ug/L		12/23/16 12:00	12/28/16 03:27	1
Phenanthrene	0.65	U	10	0.65	ug/L		12/23/16 12:00	12/28/16 03:27	1
Pyrene	2.3	J	10	0.83	ug/L		12/23/16 12:00	12/28/16 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	100		26 - 139				12/23/16 12:00	12/28/16 03:27	1
2-Fluorobiphenyl	91		45 - 107				12/23/16 12:00	12/28/16 03:27	1
2-Fluorophenol (Surr)	32		25 - 58				12/23/16 12:00	12/28/16 03:27	1
Nitrobenzene-d5 (Surr)	88		51 - 108				12/23/16 12:00	12/28/16 03:27	1
Phenol-d5 (Surr)	32		14 - 39				12/23/16 12:00	12/28/16 03:27	1
Terphenyl-d14 (Surr)	131		40 - 148				12/23/16 12:00	12/28/16 03:27	1

Client Sample ID: RW-210I

Lab Sample ID: 460-125858-6

Date Collected: 12/21/16 13:00

Matrix: Water

Date Received: 12/21/16 17:00

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1100		5.0	0.45	ug/L			12/30/16 13:29	5
Ethylbenzene	470		5.0	1.5	ug/L			12/30/16 13:29	5
m-Xylene & p-Xylene	37		5.0	1.4	ug/L			12/30/16 13:29	5
o-Xylene	97		5.0	1.6	ug/L			12/30/16 13:29	5
Toluene	6.1		5.0	1.3	ug/L			12/30/16 13:29	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		74 - 132					12/30/16 13:29	5
4-Bromofluorobenzene	90		77 - 124					12/30/16 13:29	5
Dibromofluoromethane (Surr)	98		72 - 131					12/30/16 13:29	5
Toluene-d8 (Surr)	103		80 - 120					12/30/16 13:29	5

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.065		0.052	0.038	ug/L		12/23/16 12:00	12/30/16 12:50	1
Benzo[a]pyrene	0.030	J	0.052	0.027	ug/L		12/23/16 12:00	12/30/16 12:50	1
Benzo[b]fluoranthene	0.038	J	0.052	0.012	ug/L		12/23/16 12:00	12/30/16 12:50	1
Hexachlorobenzene	0.0093	U	0.021	0.0093	ug/L		12/23/16 12:00	12/30/16 12:50	1
Indeno[1,2,3-cd]pyrene	0.028	U	0.052	0.028	ug/L		12/23/16 12:00	12/30/16 12:50	1

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	63		10	0.91	ug/L		12/23/16 12:00	12/28/16 10:25	1
Acenaphthylene	0.67	U	10	0.67	ug/L		12/23/16 12:00	12/28/16 10:25	1
Anthracene	1.2	J	10	0.59	ug/L		12/23/16 12:00	12/28/16 10:25	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		12/23/16 12:00	12/28/16 10:25	1
Fluoranthene	0.75	U	10	0.75	ug/L		12/23/16 12:00	12/28/16 10:25	1
Fluorene	21		10	0.83	ug/L		12/23/16 12:00	12/28/16 10:25	1
Naphthalene	0.83	U	10	0.83	ug/L		12/23/16 12:00	12/28/16 10:25	1
Phenanthrene	11		10	0.67	ug/L		12/23/16 12:00	12/28/16 10:25	1

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: RW-210I**

**Lab Sample ID: 460-125858-6**

Date Collected: 12/21/16 13:00

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	0.86	U	10	0.86	ug/L		12/23/16 12:00	12/28/16 10:25	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol (Surr)	104		26 - 139				12/23/16 12:00	12/28/16 10:25	1
2-Fluorobiphenyl	94		45 - 107				12/23/16 12:00	12/28/16 10:25	1
2-Fluorophenol (Surr)	32		25 - 58				12/23/16 12:00	12/28/16 10:25	1
Nitrobenzene-d5 (Surr)	95		51 - 108				12/23/16 12:00	12/28/16 10:25	1
Phenol-d5 (Surr)	29		14 - 39				12/23/16 12:00	12/28/16 10:25	1
Terphenyl-d14 (Surr)	120		40 - 148				12/23/16 12:00	12/28/16 10:25	1

**Client Sample ID: Dup-1**

**Lab Sample ID: 460-125858-7**

Date Collected: 12/21/16 00:00

Matrix: Water

Date Received: 12/21/16 17:00

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1100		5.0	0.45	ug/L			12/30/16 13:51	5
Ethylbenzene	470		5.0	1.5	ug/L			12/30/16 13:51	5
m-Xylene & p-Xylene	37		5.0	1.4	ug/L			12/30/16 13:51	5
o-Xylene	97		5.0	1.6	ug/L			12/30/16 13:51	5
Toluene	5.9		5.0	1.3	ug/L			12/30/16 13:51	5
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	107		74 - 132				12/30/16 13:51	12/30/16 13:51	5
4-Bromofluorobenzene	91		77 - 124				12/30/16 13:51	12/30/16 13:51	5
Dibromofluoromethane (Surr)	97		72 - 131				12/30/16 13:51	12/30/16 13:51	5
Toluene-d8 (Surr)	102		80 - 120				12/30/16 13:51	12/30/16 13:51	5

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.068		0.052	0.039	ug/L		12/23/16 12:00	12/30/16 13:15	1
Benzo[a]pyrene	0.032	J	0.052	0.027	ug/L		12/23/16 12:00	12/30/16 13:15	1
Benzo[b]fluoranthene	0.037	J	0.052	0.013	ug/L		12/23/16 12:00	12/30/16 13:15	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		12/23/16 12:00	12/30/16 13:15	1
Indeno[1,2,3-cd]pyrene	0.028	U	0.052	0.028	ug/L		12/23/16 12:00	12/30/16 13:15	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	65		10	0.92	ug/L		12/23/16 12:00	12/28/16 11:50	1
Acenaphthylene	0.68	U	10	0.68	ug/L		12/23/16 12:00	12/28/16 11:50	1
Anthracene	0.78	J	10	0.59	ug/L		12/23/16 12:00	12/28/16 11:50	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		12/23/16 12:00	12/28/16 11:50	1
Fluoranthene	0.75	U	10	0.75	ug/L		12/23/16 12:00	12/28/16 11:50	1
Fluorene	21		10	0.83	ug/L		12/23/16 12:00	12/28/16 11:50	1
Naphthalene	0.83	U	10	0.83	ug/L		12/23/16 12:00	12/28/16 11:50	1
Phenanthrene	11		10	0.68	ug/L		12/23/16 12:00	12/28/16 11:50	1
Pyrene	0.86	U	10	0.86	ug/L		12/23/16 12:00	12/28/16 11:50	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol (Surr)	101		26 - 139				12/23/16 12:00	12/28/16 11:50	1
2-Fluorobiphenyl	94		45 - 107				12/23/16 12:00	12/28/16 11:50	1

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
 Project/Site: National Grid - Former Clifton MGP

TestAmerica Job ID: 460-125858-1

**Client Sample ID: Dup-1**

Date Collected: 12/21/16 00:00

Date Received: 12/21/16 17:00

**Lab Sample ID: 460-125858-7**

Matrix: Water

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	29		25 - 58	12/23/16 12:00	12/28/16 11:50	1
Nitrobenzene-d5 (Surr)	89		51 - 108	12/23/16 12:00	12/28/16 11:50	1
Phenol-d5 (Surr)	27		14 - 39	12/23/16 12:00	12/28/16 11:50	1
Terphenyl-d14 (Surr)	122		40 - 148	12/23/16 12:00	12/28/16 11:50	1

**Client Sample ID: Trip Blank**

Date Collected: 12/21/16 00:00

Date Received: 12/21/16 17:00

**Lab Sample ID: 460-125858-8**

Matrix: Water

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/30/16 11:38	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/30/16 11:38	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/30/16 11:38	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/30/16 11:38	1
Toluene	0.25	U	1.0	0.25	ug/L			12/30/16 11:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		74 - 132		12/30/16 11:38	1
4-Bromofluorobenzene	89		77 - 124		12/30/16 11:38	1
Dibromofluoromethane (Surr)	102		72 - 131		12/30/16 11:38	1
Toluene-d8 (Surr)	102		80 - 120		12/30/16 11:38	1

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# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

**Client Sample ID: RW-22**

**Lab Sample ID: 460-125929-1**

Date Collected: 12/22/16 10:10

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.13	J	1.0	0.090	ug/L			12/29/16 19:27	1
Ethylbenzene	0.42	J	1.0	0.30	ug/L			12/29/16 19:27	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/29/16 19:27	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/29/16 19:27	1
Toluene	0.25	U	1.0	0.25	ug/L			12/29/16 19:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		74 - 132		12/29/16 19:27	1
4-Bromofluorobenzene	96		77 - 124		12/29/16 19:27	1
Dibromofluoromethane (Surr)	91		72 - 131		12/29/16 19:27	1
Toluene-d8 (Surr)	93		80 - 120		12/29/16 19:27	1

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.16		0.050	0.037	ug/L		12/23/16 08:52	12/31/16 05:48	1
Benzo[a]pyrene	0.48		0.050	0.026	ug/L		12/23/16 08:52	12/31/16 05:48	1
Benzo[b]fluoranthene	0.47		0.050	0.012	ug/L		12/23/16 08:52	12/31/16 05:48	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		12/23/16 08:52	12/31/16 05:48	1
Indeno[1,2,3-cd]pyrene	0.40		0.050	0.027	ug/L		12/23/16 08:52	12/31/16 05:48	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.88	U	10	0.88	ug/L		12/23/16 08:52	12/27/16 11:29	1
Acenaphthylene	0.65	U	10	0.65	ug/L		12/23/16 08:52	12/27/16 11:29	1
Anthracene	0.57	U	10	0.57	ug/L		12/23/16 08:52	12/27/16 11:29	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		12/23/16 08:52	12/27/16 11:29	1
Fluoranthene	0.72	U	10	0.72	ug/L		12/23/16 08:52	12/27/16 11:29	1
Fluorene	0.80	U	10	0.80	ug/L		12/23/16 08:52	12/27/16 11:29	1
Naphthalene	1.6	J	10	0.80	ug/L		12/23/16 08:52	12/27/16 11:29	1
Phenanthrene	0.65	U	10	0.65	ug/L		12/23/16 08:52	12/27/16 11:29	1
Pyrene	0.83	U	10	0.83	ug/L		12/23/16 08:52	12/27/16 11:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	106		26 - 139	12/23/16 08:52	12/27/16 11:29	1
2-Fluorobiphenyl	103		45 - 107	12/23/16 08:52	12/27/16 11:29	1
2-Fluorophenol (Surr)	35		25 - 58	12/23/16 08:52	12/27/16 11:29	1
Nitrobenzene-d5 (Surr)	94		51 - 108	12/23/16 08:52	12/27/16 11:29	1
Phenol-d5 (Surr)	42	X	14 - 39	12/23/16 08:52	12/27/16 11:29	1
Terphenyl-d14 (Surr)	119		40 - 148	12/23/16 08:52	12/27/16 11:29	1

**Client Sample ID: RW-23**

**Lab Sample ID: 460-125929-2**

Date Collected: 12/22/16 10:20

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/29/16 19:53	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/29/16 19:53	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/29/16 19:53	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/29/16 19:53	1

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# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

**Client Sample ID: RW-23**

**Lab Sample ID: 460-125929-2**

Date Collected: 12/22/16 10:20

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.25	U	1.0	0.25	ug/L			12/29/16 19:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	89		74 - 132					12/29/16 19:53	1
4-Bromofluorobenzene	96		77 - 124					12/29/16 19:53	1
Dibromofluoromethane (Surr)	90		72 - 131					12/29/16 19:53	1
Toluene-d8 (Surr)	93		80 - 120					12/29/16 19:53	1

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.17		0.050	0.037	ug/L		12/23/16 08:52	12/31/16 06:13	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L		12/23/16 08:52	12/31/16 06:13	1
Benzo[b]fluoranthene	0.027	J	0.050	0.012	ug/L		12/23/16 08:52	12/31/16 06:13	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L		12/23/16 08:52	12/31/16 06:13	1
Indeno[1,2,3-cd]pyrene	0.027	U	0.050	0.027	ug/L		12/23/16 08:52	12/31/16 06:13	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.88	U	10	0.88	ug/L		12/23/16 08:52	12/27/16 11:50	1
Acenaphthylene	0.65	U	10	0.65	ug/L		12/23/16 08:52	12/27/16 11:50	1
Anthracene	0.57	U	10	0.57	ug/L		12/23/16 08:52	12/27/16 11:50	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L		12/23/16 08:52	12/27/16 11:50	1
Fluoranthene	4.8	J	10	0.72	ug/L		12/23/16 08:52	12/27/16 11:50	1
Fluorene	0.80	U	10	0.80	ug/L		12/23/16 08:52	12/27/16 11:50	1
Naphthalene	0.80	U	10	0.80	ug/L		12/23/16 08:52	12/27/16 11:50	1
Phenanthrene	0.75	J	10	0.65	ug/L		12/23/16 08:52	12/27/16 11:50	1
Pyrene	4.7	J	10	0.83	ug/L		12/23/16 08:52	12/27/16 11:50	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol (Surr)	115		26 - 139				12/23/16 08:52	12/27/16 11:50	1
2-Fluorobiphenyl	106		45 - 107				12/23/16 08:52	12/27/16 11:50	1
2-Fluorophenol (Surr)	38		25 - 58				12/23/16 08:52	12/27/16 11:50	1
Nitrobenzene-d5 (Surr)	92		51 - 108				12/23/16 08:52	12/27/16 11:50	1
Phenol-d5 (Surr)	40	X	14 - 39				12/23/16 08:52	12/27/16 11:50	1
Terphenyl-d14 (Surr)	129		40 - 148				12/23/16 08:52	12/27/16 11:50	1

**Client Sample ID: RW-25**

**Lab Sample ID: 460-125929-3**

Date Collected: 12/22/16 09:00

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.27	J	1.0	0.090	ug/L			12/29/16 20:20	1
Ethylbenzene	0.62	J	1.0	0.30	ug/L			12/29/16 20:20	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/29/16 20:20	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/29/16 20:20	1
Toluene	0.25	U	1.0	0.25	ug/L			12/29/16 20:20	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	90		74 - 132					12/29/16 20:20	1
4-Bromofluorobenzene	96		77 - 124					12/29/16 20:20	1

TestAmerica Edison



# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

**Client Sample ID: RW-25**

**Lab Sample ID: 460-125929-3**

Date Collected: 12/22/16 09:00

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	91		72 - 131		12/29/16 20:20	1
Toluene-d8 (Surr)	93		80 - 120		12/29/16 20:20	1

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.041	J	0.052	0.039	ug/L		12/23/16 08:52	12/31/16 06:37	1
Benzo[a]pyrene	0.030	J	0.052	0.027	ug/L		12/23/16 08:52	12/31/16 06:37	1
Benzo[b]fluoranthene	0.040	J	0.052	0.013	ug/L		12/23/16 08:52	12/31/16 06:37	1
Hexachlorobenzene	0.0094	U	0.021	0.0094	ug/L		12/23/16 08:52	12/31/16 06:37	1
Indeno[1,2,3-cd]pyrene	0.028	U	0.052	0.028	ug/L		12/23/16 08:52	12/31/16 06:37	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.92	U	10	0.92	ug/L		12/23/16 08:52	12/28/16 16:28	1
Acenaphthylene	0.68	U	10	0.68	ug/L		12/23/16 08:52	12/28/16 16:28	1
Anthracene	0.59	U	10	0.59	ug/L		12/23/16 08:52	12/28/16 16:28	1
Benzo[g,h,i]perylene	0.78	U	10	0.78	ug/L		12/23/16 08:52	12/28/16 16:28	1
Fluoranthene	0.75	U	10	0.75	ug/L		12/23/16 08:52	12/28/16 16:28	1
Fluorene	0.83	U	10	0.83	ug/L		12/23/16 08:52	12/28/16 16:28	1
Naphthalene	2.9	J	10	0.83	ug/L		12/23/16 08:52	12/28/16 16:28	1
Phenanthrene	0.68	U	10	0.68	ug/L		12/23/16 08:52	12/28/16 16:28	1
Pyrene	0.86	U	10	0.86	ug/L		12/23/16 08:52	12/28/16 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	118		26 - 139	12/23/16 08:52	12/28/16 16:28	1
2-Fluorobiphenyl	112	X	45 - 107	12/23/16 08:52	12/28/16 16:28	1
2-Fluorophenol (Surr)	33		25 - 58	12/23/16 08:52	12/28/16 16:28	1
Nitrobenzene-d5 (Surr)	101		51 - 108	12/23/16 08:52	12/28/16 16:28	1
Phenol-d5 (Surr)	32		14 - 39	12/23/16 08:52	12/28/16 16:28	1
Terphenyl-d14 (Surr)	142		40 - 148	12/23/16 08:52	12/28/16 16:28	1

**Client Sample ID: RW-26**

**Lab Sample ID: 460-125929-4**

Date Collected: 12/22/16 09:10

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/29/16 20:46	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/29/16 20:46	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/29/16 20:46	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/29/16 20:46	1
Toluene	0.25	U	1.0	0.25	ug/L			12/29/16 20:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		74 - 132		12/29/16 20:46	1
4-Bromofluorobenzene	95		77 - 124		12/29/16 20:46	1
Dibromofluoromethane (Surr)	90		72 - 131		12/29/16 20:46	1
Toluene-d8 (Surr)	93		80 - 120		12/29/16 20:46	1

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

**Client Sample ID: RW-26**

**Lab Sample ID: 460-125929-4**

Date Collected: 12/22/16 09:10

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.037	U	0.050	0.037	ug/L	-	12/23/16 08:52	12/31/16 07:02	1
Benzo[a]pyrene	0.026	U	0.050	0.026	ug/L	-	12/23/16 08:52	12/31/16 07:02	1
Benzo[b]fluoranthene	0.012	U	0.050	0.012	ug/L	-	12/23/16 08:52	12/31/16 07:02	1
Hexachlorobenzene	0.0090	U	0.020	0.0090	ug/L	-	12/23/16 08:52	12/31/16 07:02	1
Indeno[1,2,3-cd]pyrene	0.027	U	0.050	0.027	ug/L	-	12/23/16 08:52	12/31/16 07:02	1

**Method: 8270D - Semivolatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.88	U	10	0.88	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Acenaphthylene	0.65	U	10	0.65	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Anthracene	0.57	U	10	0.57	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Benzo[g,h,i]perylene	0.75	U	10	0.75	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Fluoranthene	0.72	U	10	0.72	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Fluorene	0.80	U	10	0.80	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Naphthalene	0.80	U	10	0.80	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Phenanthrene	0.65	U	10	0.65	ug/L	-	12/23/16 08:52	12/28/16 16:50	1
Pyrene	0.83	U	10	0.83	ug/L	-	12/23/16 08:52	12/28/16 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	108		26 - 139	12/23/16 08:52	12/28/16 16:50	1
2-Fluorobiphenyl	101		45 - 107	12/23/16 08:52	12/28/16 16:50	1
2-Fluorophenol (Surr)	30		25 - 58	12/23/16 08:52	12/28/16 16:50	1
Nitrobenzene-d5 (Surr)	91		51 - 108	12/23/16 08:52	12/28/16 16:50	1
Phenol-d5 (Surr)	32		14 - 39	12/23/16 08:52	12/28/16 16:50	1
Terphenyl-d14 (Surr)	135		40 - 148	12/23/16 08:52	12/28/16 16:50	1

**Client Sample ID: RW-203S**

**Lab Sample ID: 460-125929-5**

Date Collected: 12/22/16 11:30

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	88		5.0	0.45	ug/L	-		12/29/16 21:13	5
Ethylbenzene	740		5.0	1.5	ug/L	-		12/29/16 21:13	5
m-Xylene & p-Xylene	99		5.0	1.4	ug/L	-		12/29/16 21:13	5
o-Xylene	190		5.0	1.6	ug/L	-		12/29/16 21:13	5
Toluene	28		5.0	1.3	ug/L	-		12/29/16 21:13	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		74 - 132		12/29/16 21:13	5
4-Bromofluorobenzene	99		77 - 124		12/29/16 21:13	5
Dibromofluoromethane (Surr)	90		72 - 131		12/29/16 21:13	5
Toluene-d8 (Surr)	93		80 - 120		12/29/16 21:13	5

**Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.37	U	0.50	0.37	ug/L	-	12/23/16 08:52	12/31/16 07:27	10
Benzo[a]pyrene	0.26	U	0.50	0.26	ug/L	-	12/23/16 08:52	12/31/16 07:27	10
Benzo[b]fluoranthene	0.12	U	0.50	0.12	ug/L	-	12/23/16 08:52	12/31/16 07:27	10
Hexachlorobenzene	0.090	U	0.20	0.090	ug/L	-	12/23/16 08:52	12/31/16 07:27	10
Indeno[1,2,3-cd]pyrene	0.27	U	0.50	0.27	ug/L	-	12/23/16 08:52	12/31/16 07:27	10

TestAmerica Edison

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# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

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## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	120	J	200	18	ug/L		12/23/16 08:52	12/29/16 11:57	20
Acenaphthylene	13	U	200	13	ug/L		12/23/16 08:52	12/29/16 11:57	20
Anthracene	11	U	200	11	ug/L		12/23/16 08:52	12/29/16 11:57	20
Benzo[g,h,i]perylene	15	U	200	15	ug/L		12/23/16 08:52	12/29/16 11:57	20
Fluoranthene	14	U	200	14	ug/L		12/23/16 08:52	12/29/16 11:57	20
Fluorene	48	J	200	16	ug/L		12/23/16 08:52	12/29/16 11:57	20
Naphthalene	2800		200	16	ug/L		12/23/16 08:52	12/29/16 11:57	20
Phenanthrene	35	J	200	13	ug/L		12/23/16 08:52	12/29/16 11:57	20
Pyrene	17	U	200	17	ug/L		12/23/16 08:52	12/29/16 11:57	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	51		26 - 139	12/23/16 08:52	12/29/16 11:57	20
2-Fluorobiphenyl	96		45 - 107	12/23/16 08:52	12/29/16 11:57	20
2-Fluorophenol (Surr)	46		25 - 58	12/23/16 08:52	12/29/16 11:57	20
Nitrobenzene-d5 (Surr)	84		51 - 108	12/23/16 08:52	12/29/16 11:57	20
Phenol-d5 (Surr)	19		14 - 39	12/23/16 08:52	12/29/16 11:57	20
Terphenyl-d14 (Surr)	102		40 - 148	12/23/16 08:52	12/29/16 11:57	20

Client Sample ID: RW-203I

Lab Sample ID: 460-125929-6

Date Collected: 12/22/16 11:20

Matrix: Water

Date Received: 12/22/16 15:10

## Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	74		5.0	0.45	ug/L			12/29/16 21:39	5
Ethylbenzene	680		5.0	1.5	ug/L			12/29/16 21:39	5
m-Xylene & p-Xylene	460		5.0	1.4	ug/L			12/29/16 21:39	5
o-Xylene	430		5.0	1.6	ug/L			12/29/16 21:39	5
Toluene	270		5.0	1.3	ug/L			12/29/16 21:39	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		74 - 132		12/29/16 21:39	5
4-Bromofluorobenzene	98		77 - 124		12/29/16 21:39	5
Dibromofluoromethane (Surr)	90		72 - 131		12/29/16 21:39	5
Toluene-d8 (Surr)	92		80 - 120		12/29/16 21:39	5

## Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	0.37	U	0.50	0.37	ug/L		12/23/16 08:52	12/31/16 07:51	10
Benzo[a]pyrene	0.26	U	0.50	0.26	ug/L		12/23/16 08:52	12/31/16 07:51	10
Benzo[b]fluoranthene	0.12	U	0.50	0.12	ug/L		12/23/16 08:52	12/31/16 07:51	10
Hexachlorobenzene	0.090	U	0.20	0.090	ug/L		12/23/16 08:52	12/31/16 07:51	10
Indeno[1,2,3-cd]pyrene	0.27	U	0.50	0.27	ug/L		12/23/16 08:52	12/31/16 07:51	10

## Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	96	J	200	18	ug/L		12/23/16 08:52	12/29/16 12:39	20
Acenaphthylene	100	J	200	13	ug/L		12/23/16 08:52	12/29/16 12:39	20
Anthracene	11	U	200	11	ug/L		12/23/16 08:52	12/29/16 12:39	20
Benzo[g,h,i]perylene	15	U	200	15	ug/L		12/23/16 08:52	12/29/16 12:39	20
Fluoranthene	14	U	200	14	ug/L		12/23/16 08:52	12/29/16 12:39	20
Fluorene	55	J	200	16	ug/L		12/23/16 08:52	12/29/16 12:39	20
Naphthalene	2300		200	16	ug/L		12/23/16 08:52	12/29/16 12:39	20
Phenanthrene	35	J	200	13	ug/L		12/23/16 08:52	12/29/16 12:39	20

TestAmerica Edison

# Client Sample Results

Client: AECOM, Inc.  
Project/Site: Clifton MGP-National Grid

TestAmerica Job ID: 460-125929-1

**Client Sample ID: RW-203I**

**Lab Sample ID: 460-125929-6**

Date Collected: 12/22/16 11:20

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	17	U	200	17	ug/L		12/23/16 08:52	12/29/16 12:39	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
2,4,6-Tribromophenol (Surr)	42		26 - 139				12/23/16 08:52	12/29/16 12:39	20
2-Fluorobiphenyl	81		45 - 107				12/23/16 08:52	12/29/16 12:39	20
2-Fluorophenol (Surr)	49		25 - 58				12/23/16 08:52	12/29/16 12:39	20
Nitrobenzene-d5 (Surr)	74		51 - 108				12/23/16 08:52	12/29/16 12:39	20
Phenol-d5 (Surr)	18		14 - 39				12/23/16 08:52	12/29/16 12:39	20
Terphenyl-d14 (Surr)	106		40 - 148				12/23/16 08:52	12/29/16 12:39	20

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 460-125929-7**

Date Collected: 12/22/16 00:00

Matrix: Water

Date Received: 12/22/16 15:10

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.090	U	1.0	0.090	ug/L			12/29/16 19:00	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			12/29/16 19:00	1
m-Xylene & p-Xylene	0.28	U	1.0	0.28	ug/L			12/29/16 19:00	1
o-Xylene	0.32	U	1.0	0.32	ug/L			12/29/16 19:00	1
Toluene	0.25	U	1.0	0.25	ug/L			12/29/16 19:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	88		74 - 132					12/29/16 19:00	1
4-Bromofluorobenzene	95		77 - 124					12/29/16 19:00	1
Dibromofluoromethane (Surr)	89		72 - 131					12/29/16 19:00	1
Toluene-d8 (Surr)	93		80 - 120					12/29/16 19:00	1

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW200S Lab Sample ID: 460-125858-1  
 Matrix: Water Lab File ID: 21\_95130.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 10:00  
 Sample wt/vol: 17(mL) Date Analyzed: 12/27/2016 12:42  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53(mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	4.2		4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW200I Lab Sample ID: 460-125858-2  
 Matrix: Water Lab File ID: 21\_95125.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 10:30  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 11:15  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	1.0	U	4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW202S Lab Sample ID: 460-125858-3  
 Matrix: Water Lab File ID: 21\_95131.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 11:45  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 13:09  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 20  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	210		80	20

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW202I Lab Sample ID: 460-125858-4  
 Matrix: Water Lab File ID: 21\_95127.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 11:30  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 11:50  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	24		4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW204I Lab Sample ID: 460-125858-5  
 Matrix: Water Lab File ID: 21\_95121.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 14:00  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 09:36  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	18	<del>P</del> J	4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-210I Lab Sample ID: 460-125858-6  
 Matrix: Water Lab File ID: 21\_95128.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 13:00  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 12:07  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 10  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	770		40	10

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: Dup-1 Lab Sample ID: 460-125858-7  
 Matrix: Water Lab File ID: 21\_95129.D  
 Analysis Method: RSK-175 Date Collected: 12/21/2016 00:00  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/27/2016 12:25  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 10  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338015 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	780		40	10

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-22 Lab Sample ID: 460-125929-1  
 Matrix: Water Lab File ID: 21\_95140.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 10:10  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/28/2016 13:21  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	150		4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-23 Lab Sample ID: 460-125929-2  
 Matrix: Water Lab File ID: 21\_95147.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 10:20  
 Sample wt/vol: 17(mL) Date Analyzed: 12/28/2016 15:24  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 20  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53(mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	260		80	20

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-25 Lab Sample ID: 460-125929-3  
 Matrix: Water Lab File ID: 21\_95142.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 09:00  
 Sample wt/vol: 17(mL) Date Analyzed: 12/28/2016 13:56  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53(mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	1.0	U	4.0	1.0

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-26 Lab Sample ID: 460-125929-4  
 Matrix: Water Lab File ID: 21\_95148.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 09:10  
 Sample wt/vol: 17 (mL) Date Analyzed: 12/28/2016 15:41  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 20  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	250		80	20

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-203S Lab Sample ID: 460-125929-5  
 Matrix: Water Lab File ID: 21\_95144.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 11:30  
 Sample wt/vol: 17(mL) Date Analyzed: 12/28/2016 14:31  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 20  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53(mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	150		80	20

FORM I  
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 460-125929-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: RW-203I Lab Sample ID: 460-125929-6  
 Matrix: Water Lab File ID: 21\_95149.D  
 Analysis Method: RSK-175 Date Collected: 12/22/2016 11:20  
 Sample wt/vol: 17(mL) Date Analyzed: 12/28/2016 15:59  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Alumina ID: 0.53(mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 338155 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
74-82-8	Methane	15		4.0	1.0

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS

Client Sample ID: RW200S

Lab Sample ID: 460-125858-1

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese	27.7	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW200S

Lab Sample ID: 460-125858-1

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	12.3	8.0	2.5	ug/L			2	6020A

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS

Client Sample ID: RW200I

Lab Sample ID: 460-125858-2

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.:

Matrix: Water

Date Sampled: 12/21/2016 10:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese	2.5	8.0	2.5	ug/L	U		2	6020A



1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW202S

Lab Sample ID: 460-125858-3

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:45

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese	2.5	8.0	2.5	ug/L	U		2	6020A

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS - DISSOLVED

Client Sample ID: RW202S

Lab Sample ID: 460-125858-3

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.:

Matrix: Water

Date Sampled: 12/21/2016 11:45

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	2.5	8.0	2.5	ug/L	U		2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW202I

Lab Sample ID: 460-125858-4

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese	2.5	8.0	2.5	ug/L	U		2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW202I

Lab Sample ID: 460-125858-4

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	2.5	8.0	2.5	ug/L	U		2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW204I

Lab Sample ID: 460-125858-5

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 14:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese	11.4	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW204I Lab Sample ID: 460-125858-5  
 Lab Name: TestAmerica Edison Job No.: 460-125858-1  
 SDG ID.: \_\_\_\_\_  
 Matrix: Water Date Sampled: 12/21/2016 14:00  
 Reporting Basis: WET Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	6.6	8.0	2.5	ug/L	J		2	6020A

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS

Client Sample ID: RW-210I

Lab Sample ID: 460-125858-6

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 13:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	877	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	349	8.0	2.5	ug/L			2	6020A

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS - DISSOLVED

Client Sample ID: RW-210I

Lab Sample ID: 460-125858-6

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 13:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	356	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: Dup-1

Lab Sample ID: 460-125858-7

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 00:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	805	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	346	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: Dup-1

Lab Sample ID: 460-125858-7

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 00:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	352	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW-22

Lab Sample ID: 460-125929-1

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	4040	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	48.9	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW-22

Lab Sample ID: 460-125929-1

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	48.5	8.0	2.5	ug/L			2	6020A



1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW-23 Lab Sample ID: 460-125929-2  
 Lab Name: TestAmerica Edison Job No.: 460-125929-1  
 SDG ID.: \_\_\_\_\_  
 Matrix: Water Date Sampled: 12/22/2016 10:20  
 Reporting Basis: WET Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	3770	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW-25

Lab Sample ID: 460-125929-3

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:00

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	2690	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	991	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW-25

Lab Sample ID: 460-125929-3

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:00

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	22.0	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW-26

Lab Sample ID: 460-125929-4

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	20100	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	3250	8.0	2.5	ug/L			2	6020A



1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW-203S

Lab Sample ID: 460-125929-5

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:30

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	1300	120	42.4	ug/L			2	6020A
7439-96-5	Manganese	347	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW-2038

Lab Sample ID: 460-125929-5

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:30

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	331	8.0	2.5	ug/L			2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: RW-203I

Lab Sample ID: 460-125929-6

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:20

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron	102	120	42.4	ug/L	J		2	6020A
7439-96-5	Manganese	2.5	8.0	2.5	ug/L	J		2	6020A

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS - DISSOLVED

Client Sample ID: RW-203I Lab Sample ID: 460-125929-6  
 Lab Name: TestAmerica Edison Job No.: 460-125929-1  
 SDG ID.: \_\_\_\_\_  
 Matrix: Water Date Sampled: 12/22/2016 11:20  
 Reporting Basis: WET Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7439-89-6	Iron, Dissolved	42.4	120	42.4	ug/L	U		2	6020A
7439-96-5	Manganese, Dissolved	2.5	8.0	2.5	ug/L	U		2	6020A

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW200S

Lab Sample ID: 460-125858-1

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method	
7664-41-7	Ammonia	0.072	0.10	0.072	mg/L	U		1	350.1	
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F	
14797-65-0	Nitrite as N	0.041	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F	
	Chemical Oxygen Demand	26.2	10.0	8.2	mg/L			1	SM 5220D	
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F	
14808-79-8	Sulfate	27.8	5.0	1.4	mg/L			1	D516-90, 02	
	Bicarbonate Alkalinity as CaCO3	73.5	5.0	5.0	mg/L			1	SM 2320B	
	Carbonate Alkalinity as CaCO3	23.3	5.0	5.0	mg/L			1	SM 2320B	
	Alkalinity	96.8	5.0	5.0	mg/L			1	SM 2320B	
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>R</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW200I

Lab Sample ID: 460-125858-2

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	0.079	0.10	0.072	mg/L	J		1	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.020	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	12.1	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	34.5	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	16.1	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	11.7	5.0	5.0	mg/L			1	SM 2320B
	Alkalinity	27.8	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW202S

Lab Sample ID: 460-125858-3

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:45

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	6.8	0.50	0.36	mg/L			5	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.039	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	16.1	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	45.1	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	49.5	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	135	5.0	5.0	mg/L			1	SM 2320B
	Alkalinity	184	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del> <b>R</b>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW202I

Lab Sample ID: 460-125858-4

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method	
7664-41-7	Ammonia	1.0	0.10	0.072	mg/L			1	350.1	
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F	
14797-65-0	Nitrite as N	0.033	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F	
	Chemical Oxygen Demand	8.2	10.0	8.2	mg/L	U		1	SM 5220D	
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F	
14808-79-8	Sulfate	41.1	10.0	2.7	mg/L			2	D516-90, 02	
	Bicarbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	Carbonate Alkalinity as CaCO3	29.6	5.0	5.0	mg/L			1	SM 2320B	
	Alkalinity	166	5.0	5.0	mg/L			1	SM 2320B	
	Hydroxide Alkalinity	136	5.0	5.0	mg/L			1	SM 2320B	
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>R</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW204I

Lab Sample ID: 460-125858-5

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 14:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method	
7664-41-7	Ammonia	0.11	0.10	0.072	mg/L			1	350.1	
14797-55-8	Nitrate as N	0.29	0.10	0.010	mg/L			1	SM 4500 NO3 F	
14797-65-0	Nitrite as N	0.030	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F	
	Chemical Oxygen Demand	14.1	10.0	8.2	mg/L		FI	1	SM 5220D	
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F	
14808-79-8	Sulfate	81.2	25.0	6.8	mg/L			5	D516-90, 02	
	Bicarbonate Alkalinity as CaCO3	91.0	5.0	5.0	mg/L			1	SM 2320B	
	Carbonate Alkalinity as CaCO3	7.1	5.0	5.0	mg/L			1	SM 2320B	
	Alkalinity	98.1	5.0	5.0	mg/L			1	SM 2320B	
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>R</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-210I

Lab Sample ID: 460-125858-6

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 13:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method	
7664-41-7	Ammonia	2.6	0.10	0.072	mg/L			1	350.1	
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F	
14797-65-0	Nitrite as N	0.0030	0.10	0.0030	mg/L	U		1	SM 4500 NO3 F	
	Chemical Oxygen Demand	10.1	10.0	8.2	mg/L			1	SM 5220D	
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F	
14808-79-8	Sulfate	1.4	5.0	1.4	mg/L	U		1	D516-90, 02	
	Bicarbonate Alkalinity as CaCO3	231	5.0	5.0	mg/L			1	SM 2320B	
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	Alkalinity	231	5.0	5.0	mg/L			1	SM 2320B	
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>R</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: Dup-1

Lab Sample ID: 460-125858-7

Lab Name: TestAmerica Edison

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 00:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method	
7664-41-7	Ammonia	2.8	0.10	0.072	mg/L			1	350.1	
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F	
14797-65-0	Nitrite as N	0.030	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F	
	Chemical Oxygen Demand	8.2	10.0	8.2	mg/L	U		1	SM 5220D	
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F	
14808-79-8	Sulfate	1.4	5.0	1.4	mg/L	U		1	D516-90, 02	
	Bicarbonate Alkalinity as CaCO3	227	5.0	5.0	mg/L			1	SM 2320B	
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	Alkalinity	227	5.0	5.0	mg/L			1	SM 2320B	
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B	
	<del>Carbon Dioxide, Free</del>	<del>5.0</del>	<del>5.0</del>	<del>5.0</del>	<del>mg/L</del>	<del>U</del>	<del>R</del>	<del>HF</del>	<del>1</del>	<del>SM 4500 CO2 D</del>

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW200S

Lab Sample ID: 460-125858-1

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	0.031	0.10	0.022	mg/L	J	<del>HP</del>	1	SM3500_F E D

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW200I

Lab Sample ID: 460-125858-2

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 10:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
<del>15438-31-0</del>	<del>Ferrous Iron</del>	<del>0.022</del>	<del>0.10</del>	<del>0.022</del>	<del>mg/L</del>	<del>U</del> <i>R</i>	<del>HF</del>	<del>1</del>	<del>SM3500_F ED</del>

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW202S

Lab Sample ID: 460-125858-3

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:45

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	0.104 <del>0.061</del>	0.10	0.022	mg/L	<del>5</del>	<del>HP</del>	1	SM3500_F E D

*ccb*

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW202I

Lab Sample ID: 460-125858-4

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 11:30

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	0.104 <del>0.033</del>	0.10	0.022	mg/L	<del>5</del>	<del>HF</del>	1	SM3500_F E D

*ccb*

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW204I

Lab Sample ID: 460-125858-5

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 14:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
<del>15438-31-0</del>	<del>Ferrous Iron</del>	<del>0.022</del>	<del>0.10</del>	<del>0.022</del>	<del>mg/L</del>	<del>U</del> <b>R</b>	<del>HF</del>	<del>1</del>	<del>SM3500_F ED</del>

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-210I

Lab Sample ID: 460-125858-6

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 13:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
<del>15438 31 0</del>	<del>Ferrous Iron</del>	<del>0.022</del>	<del>0.10</del>	<del>0.022</del>	<del>mg/L</del>	<del>U</del> <b>R</b>	<del>HF</del>	<del>1</del>	<del>SM3500_F ED</del>

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: Dup-1

Lab Sample ID: 460-125858-7

Lab Name: TestAmerica Pensacola

Job No.: 460-125858-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/21/2016 00:00

Reporting Basis: WET

Date Received: 12/21/2016 17:00

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	0.24	0.10	0.022	mg/L		<del>HP</del> J	1	SM3500_F E D

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-22

Lab Sample ID: 460-125929-1

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	0.072	0.10	0.072	mg/L	U		1	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.039	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	910	125	34.0	mg/L			25	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	227	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	227	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	49.9	5.0	5.0	mg/L		HP J	1	SM 4500 CO2 D

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Test America, Incorporated  
**Project:** 460-125929-1  
**Sample Matrix:** Water  
**Sample Name:** RW-22  
**Lab Code:** R1700132-001

**Service Request:** R1700132  
**Date Collected:** 12/22/16 10:10  
**Date Received:** 01/05/17 09:30

**Basis:** NA

Inorganic Parameters

<u>Analyte Name</u>	<u>Analysis Method</u>	<u>Result</u>	<u>Units</u>	<u>MRL</u>	<u>Dil.</u>	<u>Date Analyzed</u>	<u>Q</u>
Chemical Oxygen Demand, Total	410.4	350	mg/L	5.0	1	01/09/17 12:39	

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-23

Lab Sample ID: 460-125929-2

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:20

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	1.8	0.10	0.072	mg/L			1	350.1
14797-55-8	Nitrate as N	0.11	0.10	0.010	mg/L			1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.025	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	38.9	10.0	2.7	mg/L			2	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	421	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	421	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	28.2	5.0	5.0	mg/L		## J	1	SM 4500 CO2 D

ALS Group USA, Corp.  
dba ALS Environmental

Analytical Report

**Client:** Test America, Incorporated  
**Project:** 460-125929-1  
**Sample Matrix:** Water  
**Sample Name:** RW-23  
**Lab Code:** R1700132-002

**Service Request:** R1700132  
**Date Collected:** 12/22/16 10:20  
**Date Received:** 01/05/17 09:30

**Basis:** NA

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Chemical Oxygen Demand, Total	410.4	24.5	mg/L	5.0	1	01/09/17 12:39	

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-25

Lab Sample ID: 460-125929-3

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:00

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	0.072	0.10	0.072	mg/L	U		1	350.1
14797-55-8	Nitrate as N	1.6	0.10	0.010	mg/L			1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.037	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	52.4	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	119	25.0	6.8	mg/L			5	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	238	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	238	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	15.3	5.0	5.0	mg/L		HF J	1	SM 4500 CO2 D

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-26

Lab Sample ID: 460-125929-4

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	3.7	0.10	0.072	mg/L			1	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.026	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	42.3	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	7.3	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	254	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	254	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	32.9	5.0	5.0	mg/L		HP J	1	SM 4500 CO2 D

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-203S

Lab Sample ID: 460-125929-5

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:30

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	1.4	0.10	0.072	mg/L			1	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.028	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	34.3	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	1.9	5.0	1.4	mg/L	J		1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	200	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Alkalinity	200	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	5.0	5.0	5.0	mg/L	<del>U</del>	<del>HF</del>	1	SM 4500 CO2 D

1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: RW-203I

Lab Sample ID: 460-125929-6

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:20

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7664-41-7	Ammonia	0.60	0.10	0.072	mg/L			1	350.1
14797-55-8	Nitrate as N	0.010	0.10	0.010	mg/L	U		1	SM 4500 NO3 F
14797-65-0	Nitrite as N	0.038	0.10	0.0030	mg/L	J		1	SM 4500 NO3 F
	Chemical Oxygen Demand	22.2	10.0	8.2	mg/L			1	SM 5220D
18496-25-8	Sulfide	0.58	1.0	0.58	mg/L	U		1	SM 4500 S2 F
14808-79-8	Sulfate	11.3	5.0	1.4	mg/L			1	D516-90, 02
	Bicarbonate Alkalinity as CaCO3	82.2	5.0	5.0	mg/L			1	SM 2320B
	Carbonate Alkalinity as CaCO3	17.1	5.0	5.0	mg/L			1	SM 2320B
	Alkalinity	99.3	5.0	5.0	mg/L			1	SM 2320B
	Hydroxide Alkalinity	5.0	5.0	5.0	mg/L	U		1	SM 2320B
	Carbon Dioxide, Free	5.0	5.0	5.0	mg/L	UJ	HF	1	SM 4500 CO2 D

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-22

Lab Sample ID: 460-125929-1

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
<del>15438 31 0</del>	<del>Ferrous Iron</del>	<del>0.022</del>	<del>0.10</del>	<del>0.022</del>	<del>mg/L</del>	<del>U</del> <b>R</b>	<del>HF</del>	<del>1</del>	<del>SM3500_F ED</del>

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-23

Lab Sample ID: 460-125929-2

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 10:20

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	0.32	0.10	0.022	mg/L		<del>HT</del> J	1	SM3500_F E D

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-25

Lab Sample ID: 460-125929-3

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:00

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
<del>15438 31 0</del>	<del>Ferrous Iron</del>	<del>0.022</del>	<del>0.10</del>	<del>0.022</del>	<del>mg/L</del>	<del>U</del> <i>R</i>	<del>HF</del> <i>J</i>	<del>1</del>	<del>SM3500_F ED</del>

*GAM 02/24/17*

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-26

Lab Sample ID: 460-125929-4

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 09:10

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	1.2	0.10	0.022	mg/L		<del>HP</del> J	1	SM3500_F E D

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-203S

Lab Sample ID: 460-125929-5

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:30

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	<u>0.10u</u> <del>0.096</del>	0.10	0.022	mg/L	<del>5</del>	<del>HF</del>	1	SM3500_F E D

*ccb*

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: RW-203I

Lab Sample ID: 460-125929-6

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/22/2016 11:20

Reporting Basis: WET

Date Received: 12/22/2016 15:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
15438-31-0	Ferrous Iron	<i>0.10u</i> <del>0.042</del>	0.10	0.022	mg/L	<del>J</del>	<del>HP</del>	1	SM3500_F E D

*ccb*

AECOM

## **Appendix C**

### **Support Documentation**

## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-125858-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-125858-1	RW200S	Water	12/21/2016 1000	12/21/2016 1700
460-125858-2	RW200I	Water	12/21/2016 1030	12/21/2016 1700
460-125858-3	RW202S	Water	12/21/2016 1145	12/21/2016 1700
460-125858-4	RW202I	Water	12/21/2016 1130	12/21/2016 1700
460-125858-5	RW204I	Water	12/21/2016 1400	12/21/2016 1700
460-125858-5MS	RW204I	Water	12/21/2016 1415	12/21/2016 1700
460-125858-5MSD	RW204I	Water	12/21/2016 1430	12/21/2016 1700
460-125858-5DU	RW204I	Water	12/21/2016 1430	12/21/2016 1700
460-125858-6	RW-210I	Water	12/21/2016 1300	12/21/2016 1700
460-125858-7	Dup-1	Water	12/21/2016 0000	12/21/2016 1700
460-125858-8	Trip Blank	Water	12/21/2016 0000	12/21/2016 1700



Job Number:

122868

TestAmerica Edison  
Receipt Temperature and pH Log

Number of Coolers:	RAW	CONDENSATE	REGULATED	COOLER TEMPERATURES
3	Cooler #1: 6.6 C	Cooler #2: 6.6 C	Cooler #3: 6.6 C	Cooler #4: 6.6 C
	Cooler #5: 6.6 C	Cooler #6: 6.6 C	Cooler #7: 6.6 C	Cooler #8: 6.6 C
	Cooler #9: 6.6 C	Cooler #10: 6.6 C	Cooler #11: 6.6 C	Cooler #12: 6.6 C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other
1	<2	<2		<2					79						
2	<2	<2		<2					79						
3	<2	<2		<2					79						
4	<2	<2		<2					79						
5	<2	<2		<2					79						
6	<2	<2		<2					79						
7	<2	<2		<2					79						

If pH adjustments are required record the information below:

Sample No(s), adjusted: \_\_\_\_\_  
 Preservative Name/Conc: \_\_\_\_\_  
 Lot # of Preservative(s): \_\_\_\_\_

Volume of Preservative used (ml): \_\_\_\_\_  
 Expiration Date: \_\_\_\_\_

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.  
 \* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:                     

Date: 12/21/15



**TestAmerica Edison**  
 777 New Durham Road  
 Edison, NJ 08817  
 Phone (732) 549-3900 Fax (732) 549-3679

## Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING



<b>Client Information (Sub Contract Lab)</b>		Lab PM: DeGraw, Kristin B	Carrier Tracking No(s):																																																																																																														
Client Contact: Shipping/Receiving		E-Mail: kristin.degraw@testamerica.com	State of Origin: New York																																																																																																														
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York																																																																																																															
Address: 10 Hazelwood Drive, Amherst, NY, 14228-2298		COC No: 460-47410.1																																																																																																															
Phone: 716-691-2600 (Tel) 716-691-7991 (Fax)		Page: Page 1 of 1																																																																																																															
Email:		Job #: 460-125858-1																																																																																																															
Project Name: National Grid - Former Clifton MGP		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SZO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDTA Z - other (specify) Other:																																																																																																															
Site: AECOM - Former Clifton MGP		Analysis Requested																																																																																																															
Due Date Requested: 12/28/2016	TAT Requested (days):	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (Water, Sewage, Stormwater, Other)</th> <th>Preservation Code</th> <th>Field Filled Sample (Yes or No)</th> <th>Form MSD (Yes or No)</th> <th>Risk (1-5)</th> <th>Total Number of Containers</th> <th>Special Instructions/Note</th> </tr> </thead> <tbody> <tr> <td>RW200S (460-125858-1)</td> <td>12/21/16</td> <td>10:00 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW200I (460-125858-2)</td> <td>12/21/16</td> <td>10:30 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW202S (460-125858-3)</td> <td>12/21/16</td> <td>11:45 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW202I (460-125858-4)</td> <td>12/21/16</td> <td>11:30 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW204I (460-125858-5)</td> <td>12/21/16</td> <td>14:00 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW204I (460-125858-5MS)</td> <td>12/21/16</td> <td>14:15 Eastern</td> <td>MS</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW204I (460-125858-5MSD)</td> <td>12/21/16</td> <td>14:30 Eastern</td> <td>MSD</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>RW-210I (460-125858-6)</td> <td>12/21/16</td> <td>13:00 Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> <tr> <td>Dup-1 (460-125858-7)</td> <td>12/21/16</td> <td>Eastern</td> <td>Water</td> <td>Water</td> <td></td> <td>X</td> <td>X</td> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table>		Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sewage, Stormwater, Other)	Preservation Code	Field Filled Sample (Yes or No)	Form MSD (Yes or No)	Risk (1-5)	Total Number of Containers	Special Instructions/Note	RW200S (460-125858-1)	12/21/16	10:00 Eastern	Water	Water		X	X	1	1		RW200I (460-125858-2)	12/21/16	10:30 Eastern	Water	Water		X	X	1	1		RW202S (460-125858-3)	12/21/16	11:45 Eastern	Water	Water		X	X	1	1		RW202I (460-125858-4)	12/21/16	11:30 Eastern	Water	Water		X	X	1	1		RW204I (460-125858-5)	12/21/16	14:00 Eastern	Water	Water		X	X	1	1		RW204I (460-125858-5MS)	12/21/16	14:15 Eastern	MS	Water		X	X	1	1		RW204I (460-125858-5MSD)	12/21/16	14:30 Eastern	MSD	Water		X	X	1	1		RW-210I (460-125858-6)	12/21/16	13:00 Eastern	Water	Water		X	X	1	1		Dup-1 (460-125858-7)	12/21/16	Eastern	Water	Water		X	X	1	1	
Sample ID	Sample Date			Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sewage, Stormwater, Other)	Preservation Code	Field Filled Sample (Yes or No)	Form MSD (Yes or No)	Risk (1-5)	Total Number of Containers	Special Instructions/Note																																																																																																					
RW200S (460-125858-1)	12/21/16			10:00 Eastern	Water	Water		X	X	1	1																																																																																																						
RW200I (460-125858-2)	12/21/16			10:30 Eastern	Water	Water		X	X	1	1																																																																																																						
RW202S (460-125858-3)	12/21/16			11:45 Eastern	Water	Water		X	X	1	1																																																																																																						
RW202I (460-125858-4)	12/21/16			11:30 Eastern	Water	Water		X	X	1	1																																																																																																						
RW204I (460-125858-5)	12/21/16			14:00 Eastern	Water	Water		X	X	1	1																																																																																																						
RW204I (460-125858-5MS)	12/21/16			14:15 Eastern	MS	Water		X	X	1	1																																																																																																						
RW204I (460-125858-5MSD)	12/21/16			14:30 Eastern	MSD	Water		X	X	1	1																																																																																																						
RW-210I (460-125858-6)	12/21/16			13:00 Eastern	Water	Water		X	X	1	1																																																																																																						
Dup-1 (460-125858-7)	12/21/16	Eastern	Water	Water		X	X	1	1																																																																																																								
Sample Identification - Client ID (Lab ID)		Special Instructions/Note:																																																																																																															
Primary Deliverable Rank: 1		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																															
Empty Kit Requisitioned by:		Special Instructions/QC Requirements:																																																																																																															
Relinquished by: [Signature]		Received by: [Signature]																																																																																																															
Relinquished by: [Signature]		Received by: [Signature]																																																																																																															
Relinquished by: [Signature]		Received by: [Signature]																																																																																																															
Custody Seal No.: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: 3.2 #1																																																																																																															

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-125858-1

**Login Number: 125858**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Meyers, Gary**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	2.6/3.6/1.1 ° C IR #8
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-125858-1

**Login Number: 125858**

**List Number: 2**

**Creator: Conway, Curtis R**

**List Source: TestAmerica Buffalo**

**List Creation: 12/23/16 02:30 PM**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-125858-1

**Login Number: 125858**

**List Number: 3**

**Creator: Johnson, Jeremy N**

**List Source: TestAmerica Pensacola**

**List Creation: 12/24/16 11:08 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C IR6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-125929-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-125929-1	RW-22	Water	12/22/2016 1010	12/22/2016 1510
460-125929-2	RW-23	Water	12/22/2016 1020	12/22/2016 1510
460-125929-3	RW-25	Water	12/22/2016 0900	12/22/2016 1510
460-125929-4	RW-26	Water	12/22/2016 0910	12/22/2016 1510
460-125929-5	RW-203S	Water	12/22/2016 1130	12/22/2016 1510
460-125929-6	RW-203I	Water	12/22/2016 1120	12/22/2016 1510
460-125929-7TB	TRIP BLANK	Water	12/22/2016 0000	12/22/2016 1510



TestAmerica Edison  
Receipt Temperature and pH Log

Job Number: 125919

Number of Coolers: 2      IF CURT: 4

**Cooler Temperatures**

Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7	Cooler #8	Cooler #9
27	27		24	25				
4	4		10	10				
10	10		10	10				
10	10		10	10				

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals (pH<2)	Hardness (pH<2)	Peat (pH 5-9)	EPH or OAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other
1	VL	VL		VL					>9						
2	VL	VL		VL					>9						
3	VL	VL		VL					>9						
4	VL	VL		VL					>9						
5	VL	VL		VL					>9						
6	VL	VL		VL					>9						

If pH adjustments are required record the information below:

Sample No(s), adjusted: \_\_\_\_\_  
 Preservative Name/Conc: \_\_\_\_\_

Volume of Preservative used (ml): \_\_\_\_\_

Lot # of Preservative(s): \_\_\_\_\_

Expiration Date: \_\_\_\_\_

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.  
 \* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials: KC

Date: 12/22/16

**TestAmerica Edison**  
777 New Durham Road  
Edison, NJ 08817  
Phone (732) 549-3900 Fax (732) 549-3879

**Chain of Custody Record**

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Lab PM: DeGraw, Kristin B	Carrier Tracking No(s): 460-47419-1							
Client Contact: Shipping/Receiving		E-Mail: kristin.degraw@testamericainc.com	Page: Page 1 of 1							
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York	Job #: 460-125929-1							
Address: 3355 McLemore Drive, Petisacola, FL 32514		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 X - EDTA L - EDA Other:								
City: Petisacola, State: FL, Zip: 32514		Analysis Requested:								
Phone: 850-474-1001(Tel) 850-478-2871(Fax)		Total Number of Containers: 1								
Email:		Special Instructions/Notes:								
Project #: 46018542		Special Instructions/Notes:								
Site: AECOM - Former Clifton MGP		Special Instructions/Notes:								
Due Date Requested: 12/23/2016		Special Instructions/Notes:								
TAI Requested (days):		Special Instructions/Notes:								
PO #:		Special Instructions/Notes:								
WO #:		Special Instructions/Notes:								
Sample Date		Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Seawater, Groundwater, etc.)	Preservation Code	Field Filled Sample (Yes or No)	3500 Fe, D/Iron, Ferrus	Analysis Requested	Total Number of Containers	Special Instructions/Notes
12/22/16	10:10 Eastern	Water		Water		X	X		1	
12/22/16	10:20 Eastern	Water		Water		X	X		1	
12/22/16	08:00 Eastern	Water		Water		X	X		1	
12/22/16	09:10 Eastern	Water		Water		X	X		1	
12/22/16	11:30 Eastern	Water		Water		X	X		1	
12/22/16	11:20 Eastern	Water		Water		X	X		1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 1

Empty Kit Reinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Reinquished by: \_\_\_\_\_ Date/Time: 12/27/16 1800 Company: JBA Company

Reinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Reinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_

Δ Yes Δ No Cooler Temperature(s) °C and Other Remarks: 1.6°C IRG

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:

Received by: \_\_\_\_\_ Date/Time: 12/28/16 9 13 Company: TA Company

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

TestAmerica Edison  
 777 New Durham Road  
 Edison, NJ 08817  
 Phone (732) 549-3900 Fax (732) 549-3679

### Chain of Custody Record



**Client Information (Sub Contract Lab)**  
 Client Contact: DeGraw, Kristin B  
 Shipping/Receiving: kristin.degraw@testamericainc.com  
 Company: TestAmerica Laboratories, Inc.  
 Address: 10 Hazelwood Drive, Amherst, NY 14228-2298  
 Phone: 716-691-2600 (Tel) 716-691-7991 (Fax)  
 Email: [Redacted]  
 Project Name: Clifton MGP-National Grid  
 SWS: AECOM - Former Clifton MGP

**Analysis Requested**  
 Due Date Requested: 12/29/2016  
 TAT Requested (days): [Blank]  
 PO #: [Blank]  
 WO #: [Blank]  
 Project #: 48018542  
 SSW#: [Blank]

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (W=Water, S=Soil, O=Other)	Preservation Code (1=10% NaOH, 2=10% HCl, 3=10% HNO3, 4=10% H2SO4, 5=10% H3PO4, 6=10% H2O2, 7=10% H2O, 8=10% H2O2, 9=10% H2O2, 10=10% H2O2)	Filter Number (if applicable)	Total Number of Containers	Special Instructions/Note:
RW-22 (460-125929-1)	12/22/16	10:10 Eastern	Water	Water			3	
RW-23 (460-125929-2)	12/22/16	10:20 Eastern	Water	Water			3	
RW-25 (460-125929-3)	12/22/16	09:00 Eastern	Water	Water			3	
RW-26 (460-125929-4)	12/22/16	09:10 Eastern	Water	Water			3	
RW-203S (460-125929-5)	12/22/16	11:30 Eastern	Water	Water			3	
RW-203I (460-125929-6)	12/22/16	11:20 Eastern	Water	Water			3	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) [Blank]  
 Primary Deliverable Rank: 1  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

**Empty Kit Relinquished by:** [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Date/Time: 12/29/16 1800  
 Date/Time: [Blank]  
 Date/Time: [Blank]  
 Date/Time: [Blank]  
 Received by: [Signature]  
 Received by: [Signature]  
 Received by: [Signature]  
 Date/Time: 12-28-18 0915  
 Date/Time: [Blank]  
 Date/Time: [Blank]  
 Date/Time: [Blank]  
 Cooler Temperature(s) °C and Other Remarks: 3.3 #1  
 Custody Seal No.: [Blank]  
 Δ Yes Δ No

**Client:** Test America, Incorporated  
**Project:** 460-125929-1

**Service Request:**R1700132

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1700132-001	RW-22	12/22/2016	1010
R1700132-002	RW-23	12/22/2016	1020

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Lab PM: DeGraw, Kristin B		Carrier Tracking No(s):	
Client Contact: Shipping/Receiving		E-Mail: kristin.degraw@testamericainc.com		State of Origin: New York	
Company: ALS Laboratory Group		Accreditations Required (See note): NELAP - New York		COC No: 460-47451-1	
Address: 1565 Jefferson Road, Bldg 300, Suite 360		Due Date Requested: 1/13/2017		Page: Page 1 of 1	
City: Rochester		TAT Requested (days):		Job #: 460-125929-1	
State Zip: NY, 14623		PO #:		Preservation Codes:	
Phone: 585-872-7470(Tel)		WO #:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - Nit-HSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project Name: Clifton MGP-National Grid		Project #: 46018542		M - Hexane N - None O - AaNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylsulfate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Site: AECOM - Former Clifton MGP		SSOW#:		Other:	
<b>Sample Identification - Client ID (Lab ID)</b>					
Sample ID	Sample Date	Sample Time	Sample Type (C-Comp, G-grab)	Matrix (W-water, S-solid, O-organic, BT-Tissue, A-Ab)	Analysis Requested
RW-22 (460-125929-1)	12/22/16	10:10 Eastern	Water	Water	
RW-23 (460-125929-2)	12/22/16	10:20 Eastern	Water	Water	
<div style="display: flex; justify-content: space-between;"> <span>SUB (COD 410) COD 4104</span> <span>R1700132</span> </div> <div style="display: flex; justify-content: space-between;"> <span>Test America, Inc. 460-125929</span> <span>5</span> </div>					
Special Instructions/Note:					
*include a calculated COD note					
*include a calculated COD note					
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analysis &amp; accreditation compliance upon our subcontracted laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return it a signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>					
<b>Possible Hazard Identification</b>					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify)					
Primary Deliverable Rank: 1					
Date: 1/16/17					
Time: 1800					
Company: ALS					
Received by: [Signature]					
Date/Time: 1/17/17 0830					
Company: ALS					
Received by: [Signature]					
Date/Time:					
Company:					
Received by:					
Date/Time:					
Company:					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Custody Seal No.:					



# Cooler Receipt and Preservation Check Form

R1700132

5

Test America, Inc.  
480-1426929



Project/Client \_\_\_\_\_ Folder Number R17-132

Cooler received on 1/5 by: TS

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
2	Custody papers properly completed (ink, signed)?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
3	Did all bottles arrive in good condition (unbroken)?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>NA</u>
6	Where did the bottles originate?	ALS/ROC <u>CLIENT</u>
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: 1/5 Time: 0935 ID: IR#7 IR#8 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>1.6</u>							
Correction Factor (°C)	<u>0</u>							
Corrected Temp (°C)	<u>1.6</u>							
Within 0-6°C?	<u>0</u> N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted \_\_\_\_\_ Poorly Packed \_\_\_\_\_ Same Day Rule \_\_\_\_\_  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval \_\_\_\_\_ Client aware at drop-off \_\_\_\_\_ Client notified by: \_\_\_\_\_

All samples held in storage location: Room by TS on 1/5 at 0935  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

Cooler Breakdown: Date: 1/5/17 Time: 1307 by: slw

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Were 5035 vials acceptable (no extra labels, not leaking)? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>	✓		<u>client label</u>					
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK  
No=Samples were preserved at The lab as listed  
PM OK to Adjust:

\*\*Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: client  
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Full scan

FORM III  
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-125858-1

SDG No.: \_\_\_\_\_

Matrix: Water Level: Low Lab File ID: M236856.D

Lab ID: LCS 460-411654/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,1'-Biphenyl	80.0	72.4	90	54-108	
1,2,4,5-Tetrachlorobenzene	80.0	74.3	93	46-105	
2,2'-oxybis[1-chloropropane]	80.0	79.2	99	50-108	
2,3,4,6-Tetrachlorophenol	80.0	91.1	114	57-122	
2,4,5-Trichlorophenol	80.0	84.9	106	59-117	
2,4,6-Trichlorophenol	80.0	84.8	106	62-120	
2,4-Dichlorophenol	80.0	65.3	82	62-102	
2,4-Dimethylphenol	80.0	64.3	80	61-95	
2,4-Dinitrophenol	160	131	82	45-125	
2,4-Dinitrotoluene	80.0	91.9	115	70-123	
2,6-Dinitrotoluene	80.0	104	130	68-121	*
2-Chloronaphthalene	80.0	65.6	82	54-105	
2-Chlorophenol	80.0	56.2	70	54-92	
2-Methylnaphthalene	80.0	52.9	66	47-104	
2-Methylphenol	80.0	55.5	69	43-80	
2-Nitroaniline	80.0	93.0	116	46-124	
2-Nitrophenol	80.0	62.3	78	58-109	
3,3'-Dichlorobenzidine	80.0	96.7	121	68-123	
3-Nitroaniline	80.0	68.7	86	60-117	
4,6-Dinitro-2-methylphenol	160	136	85	59-132	
4-Bromophenyl phenyl ether	80.0	77.0	96	57-126	
4-Chloro-3-methylphenol	80.0	61.3	77	58-98	
4-Chloroaniline	80.0	59.8	75	51-108	
4-Chlorophenyl phenyl ether	80.0	91.4	114	60-114	
4-Methylphenol	80.0	47.4	59	34-78	
4-Nitroaniline	80.0	75.7	95	48-135	
4-Nitrophenol	160	54.8	34	11-47	
Acenaphthene	80.0	78.7	98	58-107	
Acenaphthylene	80.0	77.0	96	61-106	
Acetophenone	80.0	72.6	91	54-115	
Anthracene	80.0	73.6	92	70-118	
Benzo[a]anthracene	80.0	99.5	124	73-119	*
Benzo[a]pyrene	80.0	88.0	110	76-125	
Benzo[b]fluoranthene	80.0	86.4	108	78-123	
Benzo[g,h,i]perylene	80.0	93.5	117	63-133	
Benzo[k]fluoranthene	80.0	95.6	119	71-126	
Bis(2-chloroethoxy)methane	80.0	73.3	92	67-104	
Bis(2-chloroethyl)ether	80.0	62.0	77	63-106	
Bis(2-ethylhexyl) phthalate	80.0	86.0	107	63-135	
Butyl benzyl phthalate	80.0	87.7	110	66-129	
Carbazole	80.0	71.0	89	68-121	
Chrysene	80.0	95.0	119	73-121	

# Column to be used to flag recovery and RPD values

FORM III  
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica EdisonJob No.: 460-125858-1

SDG No.: \_\_\_\_\_

Matrix: WaterLevel: LowLab File ID: M236858.DLab ID: 460-125858-5 MSClient ID: RW204I MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,1'-Biphenyl	80.3	0.63 U	60.8	76	54-108	
1,2,4,5-Tetrachlorobenzene	80.3	0.43 U	66.8	83	46-105	
2,2'-oxybis[1-chloropropane]	80.3	0.93 U	84.1	105	50-108	
2,3,4,6-Tetrachlorophenol	80.3	0.69 U	79.1	99	57-122	
2,4,5-Trichlorophenol	80.3	0.49 U	69.3	86	59-117	
2,4,6-Trichlorophenol	80.3	0.53 U	74.8	93	62-120	
2,4-Dichlorophenol	80.3	0.63 U	61.2	76	62-102	
2,4-Dimethylphenol	80.3	0.91 U	56.4	70	61-95	
2,4-Dinitrophenol	161	2.4 U	130	81	45-125	
2,4-Dinitrotoluene	80.3	1.0 U	84.2	105	70-123	
2,6-Dinitrotoluene	80.3	0.88 U	84.6	105	68-121	
2-Chloronaphthalene	80.3	0.61 U	58.0	72	54-105	
2-Chlorophenol	80.3	0.74 U	55.9	70	54-92	
2-Methylnaphthalene	80.3	0.88 U	51.6	64	47-104	
2-Methylphenol	80.3	1.3 U	46.9	58	43-80	
2-Nitroaniline	80.3	0.65 U	81.5	101	46-124	
2-Nitrophenol	80.3	0.59 U	59.6	74	58-109	
3,3'-Dichlorobenzidine	80.3	1.0 U	90.2	112	68-123	
3-Nitroaniline	80.3	0.82 U	66.7	83	60-117	
4,6-Dinitro-2-methylphenol	161	2.0 U	138	86	59-132	
4-Bromophenyl phenyl ether	80.3	1.0 U	80.0	100	57-126	
4-Chloro-3-methylphenol	80.3	0.76 U	56.2	70	58-98	
4-Chloroaniline	80.3	0.73 U	57.2	71	51-108	
4-Chlorophenyl phenyl ether	80.3	0.96 U	81.3	101	60-114	
4-Methylphenol	80.3	0.87 U	50.8	63	34-78	
4-Nitroaniline	80.3	0.48 U	60.1	75	48-135	
4-Nitrophenol	161	4.7 U	47.5	30	11-47	
Acenaphthene	80.3	2.9 J	72.1	86	58-107	
Acenaphthylene	80.3	1.3 J	65.9	80	61-106	
Acetophenone	80.3	1.0 U	68.7	85	54-115	
Anthracene	80.3	0.57 U	76.0	95	70-118	
Atrazine	161	0.77 U	185	115	38-146	
Benzaldehyde	161	0.86 U	119	74	46-111	
Benzo[a]anthracene	80.3	0.55 U	98.6	123	73-119	F1
Benzo[a]pyrene	80.3	0.16 U	83.4	104	76-125	
Benzo[b]fluoranthene	80.3	0.44 U	77.6	97	78-123	
Benzo[g,h,i]perylene	80.3	0.75 U	90.8	113	63-133	
Benzo[k]fluoranthene	80.3	0.18 U	76.8	96	71-126	
Bis(2-chloroethoxy)methane	80.3	0.69 U	66.4	83	67-104	
Bis(2-chloroethyl)ether	80.3	0.12 U	57.3	71	63-106	
Bis(2-ethylhexyl) phthalate	80.3	0.72 U	83.2	104	63-135	
Butyl benzyl phthalate	80.3	0.60 U	86.9	108	66-129	

# Column to be used to flag recovery and RPD values

FORM III 8270D

Full Scan

FORM III  
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: M236859.D  
 Lab ID: 460-125858-5 MSD Client ID: RW204I MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,1'-Biphenyl	80.3	60.9	76	0	30	54-108	
1,2,4,5-Tetrachlorobenzene	80.3	67.7	84	1	30	46-105	
2,2'-oxybis[1-chloropropane]	80.3	72.2	90	15	30	50-108	
2,3,4,6-Tetrachlorophenol	80.3	75.5	94	5	30	57-122	
2,4,5-Trichlorophenol	80.3	69.3	86	0	30	59-117	
2,4,6-Trichlorophenol	80.3	69.3	86	8	30	62-120	
2,4-Dichlorophenol	80.3	60.6	75	1	30	62-102	
2,4-Dimethylphenol	80.3	56.7	71	1	30	61-95	
2,4-Dinitrophenol	161	119	74	9	30	45-125	
2,4-Dinitrotoluene	80.3	82.1	102	3	30	70-123	
2,6-Dinitrotoluene	80.3	77.6	97	9	30	68-121	
2-Chloronaphthalene	80.3	60.2	75	4	30	54-105	
2-Chlorophenol	80.3	54.5	68	3	30	54-92	
2-Methylnaphthalene	80.3	50.6	63	2	30	47-104	
2-Methylphenol	80.3	41.8	52	12	30	43-80	
2-Nitroaniline	80.3	79.8	99	2	30	46-124	
2-Nitrophenol	80.3	58.9	73	1	30	58-109	
3,3'-Dichlorobenzidine	80.3	86.5	108	4	30	68-123	
3-Nitroaniline	80.3	55.6	69	18	30	60-117	
4,6-Dinitro-2-methylphenol	161	132	82	4	30	59-132	
4-Bromophenyl phenyl ether	80.3	74.0	92	8	30	57-126	
4-Chloro-3-methylphenol	80.3	54.0	67	4	30	58-98	
4-Chloroaniline	80.3	57.1	71	0	30	51-108	
4-Chlorophenyl phenyl ether	80.3	79.4	99	2	30	60-114	
4-Methylphenol	80.3	38.5	48	28	30	34-78	
4-Nitroaniline	80.3	61.0	76	1	30	48-135	
4-Nitrophenol	161	46.0	29	3	30	11-47	
Acenaphthene	80.3	70.5	84	2	30	58-107	
Acenaphthylene	80.3	67.9	83	3	30	61-106	
Acetophenone	80.3	65.1	81	5	30	54-115	
Anthracene	80.3	69.5	87	9	30	70-118	
Atrazine	161	172	107	7	30	38-146	
Benzaldehyde	161	106	66	11	30	46-111	
Benzo[a]anthracene	80.3	90.3	112	9	30	73-119	
Benzo[a]pyrene	80.3	76.0	95	9	30	76-125	
Benzo[b]fluoranthene	80.3	83.6	104	7	30	78-123	
Benzo[g,h,i]perylene	80.3	89.1	111	2	30	63-133	
Benzo[k]fluoranthene	80.3	73.1	91	5	30	71-126	
Bis(2-chloroethoxy)methane	80.3	68.4	85	3	30	67-104	
Bis(2-chloroethyl)ether	80.3	53.4	67	7	30	63-106	
Bis(2-ethylhexyl) phthalate	80.3	79.2	99	5	30	63-135	
Butyl benzyl phthalate	80.3	79.7	99	9	30	66-129	

# Column to be used to flag recovery and RPD values

FORM II  
GC/MS SEMI VOA SURROGATE RECOVERY

Full scan

Lab Name: TestAmerica Edison

Job No.: 460-125929-1

SDG No.: \_\_\_\_\_

Matrix: Water

Level: Low

GC Column (1): Rtxi-5Sil M ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	NBZ #	FBP #	TBP #	TPHL #
RW-22	460-125929-1	35	42 X	94	103	106	119
RW-23	460-125929-2	38	40 X	92	106	115	129
RW-25	460-125929-3	33	32	101	112 X	118	142
RW-26	460-125929-4	30	32	91	101	108	135
RW-203S	460-125929-5	46	19	84	96	51	102
RW-203I DL	460-125929-6 DL	49	18	74	81	42	106
	MB 460-411604/1-A	30	33	85	87	94	104
	LCS 460-411604/2-A	33	29	89	100	100	89
	LCS 460-411604/3-A	36	38	92	94	97	118
	460-125896-E-4-A MS	41	33	77	109 X	64	100
	460-125896-E-4-B MSD	47	28	89	95	85	121

↑  
No organic acids were reported. 9AM 03/03/17

QC LIMITS

2FP = 2-Fluorophenol (Surr)  
PHL = Phenol-d5 (Surr)  
NBZ = Nitrobenzene-d5 (Surr)  
FBP = 2-Fluorobiphenyl  
TBP = 2,4,6-Tribromophenol (Surr)  
TPHL = Terphenyl-d14 (Surr)

25-58  
14-39  
51-108  
45-107  
26-139  
40-148

# Column to be used to flag recovery values

FORM II 8270D

Full scan

FORM II  
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-125858-1

SDG No.: \_\_\_\_\_

Matrix: Water Level: Low

GC Column (1): Rtxi-5Sil M ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	NBZ #	FBP #	TBP #	TPHL #
RW200S DL	460-125858-1 DL	49	18	89	85	40	101
RW200I	460-125858-2	23 X	24	73	72	93	112
RW202S	460-125858-3	33	33	94	95	112	117
RW202I	460-125858-4	28	29	83	87	95	124
RW204I	460-125858-5	32	32	88	91	100	131
RW-210I	460-125858-6	32	29	95	94	104	120
Dup-1	460-125858-7	29	27	89	94	101	122
	MB 460-411654/1-A	33	28	88	90	88	125
	LCS 460-411654/2-A	35	32	92	103	116	128
	LCS 460-411654/3-A	33	34	97	90	97	131
RW204I MS	460-125858-5 MS	32	29	87	84	101	114
RW204I MSD	460-125858-5 MSD	30	27	89	88	102	110

No organic acids were reported. GMM 05/03/17

QC LIMITS

- 2FP = 2-Fluorophenol (Surr) 25-58
- PHL = Phenol-d5 (Surr) 14-39
- NBZ = Nitrobenzene-d5 (Surr) 51-108
- FBP = 2-Fluorobiphenyl 45-107
- TBP = 2,4,6-Tribromophenol (Surr) 26-139
- TPHL = Terphenyl-d14 (Surr) 40-148

# Column to be used to flag recovery values

FORM III  
GC VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 21\_95122.D  
 Lab ID: 460-125858-5 MS Client ID: RW204I MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Methane	7.77	18	57.0	500	38-150	F1

# Column to be used to flag recovery and RPD values

FORM III  
GC VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 21\_95123.D  
 Lab ID: 460-125858-5 MSD Client ID: RW204I MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Methane	7.77	84.8	857	39	50	38-150	F1

# Column to be used to flag recovery and RPD values

3-IN  
INSTRUMENT BLANKS  
METALS

Lab Name: TestAmerica Edison Job No.: 460-125929-1

SDG No.: \_\_\_\_\_

Concentration Units: ug/L

Analyte	RL	ICB 460-412098/8 12/27/2016 22:15		CCB 460-412098/26 12/27/2016 22:58		CCB 460-412098/38 12/27/2016 23:26		CCB 460-412098/90 12/28/2016 01:29	
		Found	C	Found	C	Found	C	Found	C
<b>Iron</b>	60.0	21.2	U	21.2	U	21.2	U	21.2	U
<b>Manganese</b>	4.0	1.2	U	1.45	J	1.61	J	1.2	U

*No project samples were associated with these ccbs.*

*LAM a/24/17*

Italicized analytes were not requested for this sequence.

ICAL Date: 4-28-16

Ferrous Iron: SM3500Fe B - 1997, -2011

Aquakem v. 7.2AQ1

Results from time period:

Wed Dec 28 16:14:47 2016

Wed Dec 28 17:37:30 2016

Sample Id	Sa Test short	Te Result	Result	Result date	Acc Error	Te Dil	Ma Response	Blank resp	Blank init	Main abs.	Conc.
417/CCV FE+2	C	Ferrous Ir P	0.96898 mg/l	16:14:47 MA		2 0	0.11	0.00084	0.00084	0.11084	1
CCB FE+2	C	Ferrous Ir P	-0.02025 mg/l	16:14:48 MA		2 0	0.00027	0.00025	0.00025	0.00052	0
747/MRL	S	Ferrous Ir P	0.07447 mg/l	16:14:49 MA		2 0 0	0.01078	0.00014	0.00014	0.01091	
747/MDLS	S	Ferrous Ir P	0.07423 mg/l	16:14:50 MA		2 0 0	0.01075	0.00011	0.00011	0.01086	
417/ICV	S	Ferrous Ir P	0.4627 mg/l	16:14:51 MA		2 0 0	0.05384	0.00029	0.00029	0.05413	
ICB	S	Ferrous Ir P	-0.02303 mg/l	16:14:52 MA		1 2 0 0	-0.00004	0.00001	0.00001	-0.00003	
MB	S	Ferrous Ir P	-0.02412 mg/l	16:14:53 MA	1:21	2 0 0	-0.00016	-0.00004	-0.00004	-0.0002	
417/LCS	S	Ferrous Ir P	0.46446 mg/l	16:14:54 MA		2 0 0	0.05403	0.00021	0.00021	0.05424	
460-125858-h-5	S	Ferrous Ir P	-0.07666 mg/l	16:14:55 MA		2 0 4	0.00082	0.00011	0.00011	0.00092	
417/460125858H5 MS	S	Ferrous Ir P	2.42624 mg/l	16:14:56 MA		2 0 4	0.05634	0.00034	0.00034	0.05668	
460125858H5 MSD	S	Ferrous Ir P	2.63748 mg/l	16:14:57 MA		2 0 4	0.06103	0.00052	0.00052	0.06154	
460-125858-h-1	S	Ferrous Ir P	-0.01185 mg/l	16:14:58 MA		2 0 4	0.00225	0.00024	0.00024	0.00249	
417/CCV FE+2	C	Ferrous Ir P	0.97688 mg/l	16:21:50 MA		2 0	0.11087	0.0008	0.0008	0.11167	1
CCB FE+2	C	Ferrous Ir P	-0.02155 mg/l	16:21:51 MA		2 0	0.00013	0.00017	0.00017	0.0003	0
460-125858-h-2	S	Ferrous Ir P	0.00091 mg/l	16:21:52 MA		2 0 4	0.00254	0.00027	0.00027	0.00281	
460-125858-h-3	S	Ferrous Ir P	0.70024 mg/l	16:21:53 MA		2 0 4	0.01805	0.00052	0.00052	0.01857	
460-125858-h-4	S	Ferrous Ir P	-0.00251 mg/l	16:21:54 MA		2 0 4	0.00246	0.00027	0.00027	0.00273	
460-125858-h-6	S	Ferrous Ir P	-0.0377 mg/l	16:21:55 MA		2 0 4	0.00168	0.0001	0.0001	0.00178	
460-125858-h-7	S	Ferrous Ir P	0.96939 mg/l	16:21:56 MA		2 0 4	0.02402	0.00013	0.00013	0.02415	
460-125929-l-1	S	Ferrous Ir P	0.8688 mg/l	16:21:57 MA		2 0 4	0.02179	0.00014	0.00014	0.02193	
460-125929-l-2	S	Ferrous Ir P	-0.04391 mg/l	16:21:58 MA		2 0 4	0.00154	0.00006	0.00006	0.00161	
460-125929-l-3	S	Ferrous Ir P	0.00329 mg/l	16:21:59 MA		2 0 4	0.00259	0.00051	0.00051	0.0031	
460-125929-l-4	S	Ferrous Ir P	1.17406 mg/l	16:22:00 MA		2 0 4	0.02856	0.00036	0.00036	0.02892	
460125929L4 DU	S	Ferrous Ir P	1.15994 mg/l	16:22:01 MA		2 0 4	0.02825	0.00008	0.00008	0.02832	
417/CCV FE+2	C	Ferrous Ir P	1.04202 mg/l	16:26:09 MA		2 0	0.1181	0.00063	0.00063	0.11873	1
CCB FE+2	C	Ferrous Ir P	0.04475 mg/l	16:26:10 MA		2 0	0.00748	0.00002	0.00002	0.00751	0
460-125929-l-5	S	Ferrous Ir P	-0.02449 mg/l	16:26:11 MA		2 0 4	0.00197	0.00052	0.00052	0.00249	
460-125929-l-6	S	Ferrous Ir P	-0.00393 mg/l	16:26:12 MA		2 0 4	0.00243	0.00062	0.00062	0.00305	
417/CCV FE+2	C	Ferrous Ir P	0.98397 mg/l	16:28:09 MA		2 0	0.11166	0.0005	0.0005	0.11216	1
CCB FE+2	C	Ferrous Ir P	-0.02452 mg/l	16:28:10 MA	1:21	2 0	-0.0002	-0.00011	-0.00011	-0.00031	0
417/CCV FE+2	C	Ferrous Ir P	0.98441 mg/l	16:54:29 MA		2 0	0.11171	0.00094	0.00094	0.11264	1
CCB FE+2	C	Ferrous Ir P	0.02214 mg/l	16:54:24 MA		2 0	0.00095	0.00045	0.00045	0.0004	0

JT 12-29-16

2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Pensacola Job No.: 460-125858-1  
 SDG No.: \_\_\_\_\_  
 Analyst: JAT Batch Start Date: 12/28/2016  
 Reporting Units: mg/L Analytical Batch No.: 336768

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	16:14	Ferrous Iron	0.969	1.00	97	90-110		Fe CCVH-W_00016
2	CCB	16:14	Ferrous Iron	0.020				U	
5	ICV	16:14	Ferrous Iron	0.463	0.500	93	90-110		Fe ICV-W_00016
6	ICB	16:14	Ferrous Iron	0.020				U	
13	CCV	16:21	Ferrous Iron	0.977	1.00	98	90-110		Fe CCVH-W_00016
14	CCB	16:21	Ferrous Iron	0.020				U	
25	CCV	16:26	Ferrous Iron	1.04	1.00	104	90-110		Fe CCVH-W_00016
26	CCB	16:26	Ferrous Iron	0.0448				J	
54	CCV	17:28	Ferrous Iron	0.980	1.00	98	90-110		Fe CCVH-W_00016
55	CCB	17:28	Ferrous Iron	0.020				U ✓	
66	CCV	17:34	Ferrous Iron	0.974	1.00	97	90-110		Fe CCVH-W_00016
67	CCB	17:35	Ferrous Iron	0.020				U	
75	CCV	17:37	Ferrous Iron	0.999	1.00	100	90-110		Fe CCVH-W_00016
76	CCB	17:37	Ferrous Iron	0.020				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

2-IN  
 CALIBRATION QUALITY CONTROL  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Pensacola

Job No.: 460-125929-1

SDG No.: \_\_\_\_\_

Analyst: JAT

Batch Start Date: 12/28/2016

Reporting Units: mg/L

Analytical Batch No.: 336768

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	16:14	Ferrous Iron	0.969	1.00	97	90-110		Fe CCVH-W_00016
2	CCB	16:14	Ferrous Iron	0.020				U	
5	ICV	16:14	Ferrous Iron	0.463	0.500	93	90-110		Fe ICV-W_00016
6	ICB	16:14	Ferrous Iron	0.020				U	
13	CCV	16:21	Ferrous Iron	0.977	1.00	98	90-110		Fe CCVH-W_00016
14	CCB	16:21	Ferrous Iron	0.020				U	
25	CCV	16:26	Ferrous Iron	1.04	1.00	104	90-110		Fe CCVH-W_00016
26	CCB	16:26	Ferrous Iron	0.0448				J	
29	CCV	16:28	Ferrous Iron	0.984	1.00	98	90-110		Fe CCVH-W_00016
30	CCB	16:28	Ferrous Iron	0.020				U	
54	CCV	17:28	Ferrous Iron	0.980	1.00	98	90-110		Fe CCVH-W_00016
55	CCB	17:28	Ferrous Iron	0.020				U	
66	CCV	17:34	Ferrous Iron	0.974	1.00	97	90-110		Fe CCVH-W_00016
67	CCB	17:35	Ferrous Iron	0.020				U	✓
75	CCV	17:37	Ferrous Iron	0.999	1.00	100	90-110		Fe CCVH-W_00016
76	CCB	17:37	Ferrous Iron	0.020				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.



Prepared for:  
National Grid  
Brooklyn, NY

Prepared by:  
AECOM  
Pittsburgh, PA  
60137363-600  
February 2017

Data Usability Summary Report  
National Grid/Clifton Former MGP  
Site  
WWTP Water Sampling Events  
July-December 2016  
Final



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Brooklyn, NY

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60137363-600  
February 2017

# Data Usability Summary Report National Grid/Clifton Former MGP Site WWTP Water Sampling Event July-December 2016 Final

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Reviewed By  
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Atlanta, GA 30309

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- Appendix A Glossary of Data Qualifier Codes
- Appendix B Data Qualification Summaries

# Executive Summary

## Overview

A data assessment was performed by Gregory A. Malzone of AECOM Pittsburgh on six data packages from TestAmerica Laboratories, Inc., 777 New Durham Road, Edison, NJ 08817 (TAL-Edison) for the analysis of a waste water treatment plant samples collected on July 22, 2016, September 1, 2016, September 30, 2016, October 21, 2016, November 18, 2016, and December 30, 2016 at the Clifton Site.

The following analytical methods were requested on the chain-of-custody (CoC) record:

- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by USEPA Method 8260C,
- Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270D, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene and Hexachlorobenzene were determined using GC/MS in Selected Ion Monitoring (SIM) Mode,
- Total Arsenic and Nickel by USEPA Method 6020A, ICP/MS,
- Total Cyanide by USEPA Method 335.4,
- Available Cyanide by USEPA Method OIA-1677,
- Total Suspended Solids (TSS) by Standard Method 2540D,
- Turbidity by USEPA Method 180.1, and
- pH by Standard Method 4500-H+ B.

The sample for available cyanide (OIA-1677) analysis was subcontracted to the TestAmerica Laboratories, Inc., Pittsburgh facility.

The data were evaluated for conformance to method specifications and qualifiers were applied using the USEPA Region II SOPs and the validation criteria set forth in the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2008, with additional reference to *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA 540/R-99-008, May 1999 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*, USEPA-540-R-10-011, January 2010, with additional reference to *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540-R-04-004, October 2004, as they applied to the analytical methods employed.

Table 1 below provides a sample submittal list with the field ID cross-referenced with the laboratory ID.

**Table 1 - Sample Submittals - National Grid / Clifton WWTP Samples**

Field ID	TestAmerica ID	Matrix	Date Sampled
WWTP-072216	460-117449-1	Aqueous	07/22/2016
WWTP-09012016	460-119498-1	Aqueous	09/01/2016
WWTP-09302016	460-121172-1	Aqueous	09/30/2016
WWTP-102116	460-122414-1	Aqueous	10/21/2016
WWTP-111816	460-124103-1	Aqueous	11/18/2016
WWTP-123016	460-126184-1	Aqueous	12/30/2016

## Summary

Data quality for the organic analyses was evaluated by reviewing the following parameters: holding times, surrogate recoveries, laboratory control standards (LCSs), laboratory blanks, laboratory duplicates, and reporting limits.

Inorganic data quality was evaluated by reviewing the following parameters: holding times, matrix spikes, laboratory control samples, laboratory duplicates, laboratory blanks, and reporting limits.

All data have been determined to be useable for the purpose of assessing the presence/absence and quantitative concentrations of the compounds and analytes in the media tested (i.e. water) with the qualifications described below. Completeness of 100% was achieved for this data set. This is within the goal of 90-100% and is acceptable.

A glossary of data qualifier definitions is included in Appendix A of this report. The data qualifier summaries are attached as Appendix B of this report. Each noncompliance with specific data usability criteria is discussed below.

## **1.0 Volatile Organic Compounds**

**July 22, September 1, September 30, October 21, November 18, December 30, 2016 Samples**

No data quality issues were noted. No data qualifications were required.

## 2.0 Semivolatile Organic Compounds

### July 22, 2016 Sample

Calibrations: The continuing calibration percent difference for benz(a,h)anthracene was greater than the upper method specification limit of 20% on 07/27/16 at 05:45 on instrument CBNAMS6. Benz(a,h)anthracene was not detected in associated sample WWTP-072216. No data qualification was required in response to the high instrument bias.

### September 1, 2016 Sample

No data quality issues were noted. No data qualifications were required.

### September 30, 2016 Sample.

Calibrations: The continuing calibration percent drift for acenaphthene was less than the lower method specification limit of -20% on 10/05/16 at 04:35 on instrument CBNAMS6. The acenaphthene result for associated sample WWTP-09302016 was non-detect and was qualified "UJ," as an estimate, because of low instrument bias.

### October 21, 2016 Sample

Calibrations: The SIM continuing calibration percent difference for hexachlorobenzene was greater than the upper method specification limit of 20% on 10/25/16 at 08:24 on instrument CBNAMS9. The hexachlorobenzene result for associated sample WWTP-102116 was non-detect and did not require qualification in response to the high instrument bias.

### November 18, 2016 Sample

Laboratory Control Sample Recoveries: The LCSD (460-405375/3-A) recovery for chrysene was less than the lower quality control limit, but greater than 10%. The chrysene result for associated sample WWTP-111816 was non-detect and was qualified "UJ," as an estimate, because of low method bias.

### December 30, 2016 Sample

Laboratory Control Sample Recoveries: The LCS (460-412909/2-A) recoveries for acenaphthylene and pyrene were greater than the upper quality control limits. The acenaphthylene and pyrene results for associated sample WWTP-123016 were non-detect and did not require qualification in response to the high method bias.

### **3.0 Total Metals**

**July 22, September 1, September 30, October 21, November 18 and December 30, 2016 Samples**

No data quality issues were noted. No data qualifications were required.

## 4.0 Total and Available Cyanide

### July 22, 2016 Sample

No data quality issues were noted. No data qualifications were required.

### September 1, 2016 Sample

Sample Receipt Temperature: The WWTP-09012016 sample for available cyanide was shipped to TestAmerica-Pittsburgh for analysis. The sample was shipped overnight and was received the next day at 9.5° C on ice. The chemical preservation of the sample was verified and the sample was placed in cold storage upon receipt at TestAmerica-Pittsburgh prior to analysis on 09/08/16. The available cyanide result for sample WWTP-09012016 was non-detect and was qualified "UJ," as an estimate, biased low because the sample receipt temperature was greater than 6° C.

### September 30, 2016 Sample

Blank Contamination: Total cyanide was detected in the method blank 460-395123/1-A, and the continuing calibration blanks, analyzed on 10/05/16, at concentrations estimated to be less than the reporting limits. The total cyanide result for sample WWTP-09302016 was less than the reporting limit and was qualified "U," as undetected at the reporting limit, because of laboratory contamination.

Matrix Spike Recovery: The WWTP-09302016 MS recovery for total cyanide was less than the laboratory lower default limit of 90%, at 87%, but was within the data validation acceptance limits of 75-125%. No data qualification was required.

### October 21, 2016 Sample

Blank Contamination: Total cyanide was detected in the method blank 460-399863/1-A, analyzed on 10/27/16, at a concentration estimated to be less than the reporting limit. The total cyanide result for sample WWTP-102116 was non-detect and did not require qualification.

Available cyanide was detected in the continuing calibration blanks, analyzed on 10/25/16 at 15:08, at a concentration estimated to be less than the reporting limit. The available cyanide result for sample WWTP-102116 was non-detect and did not require qualification.

Matrix Spike Recovery: The WWTP-102116 MS/MSD recoveries for total cyanide were less than the laboratory lower default limit of 90%, at 75% and 80%, but were within the data validation acceptance limits of 75-125%. No data qualification was required.

### November 18, 2016 Sample

No data quality issues were noted. No data qualifications were required.

### December 30, 2016 Sample

No data quality issues were noted. No data qualifications were required.

## 5.0 General Chemistry

### July 22 Sample

Holding Time: Sample WWTP-072216 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-072216 was qualified "J," as an estimate, because the holding time was exceeded.

### September 1, 2016 Sample

Holding Time: Sample WWTP-09012016 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-09012016 was qualified "J," as an estimate, because the holding time was exceeded.

### September 30, 2016 Sample

Holding Time: Sample WWTP-09302016 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-09302016 was qualified "J," as an estimate, because the holding time was exceeded.

### October 21, 2016 Sample

Holding Time: Sample WWTP-102116 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-102116 was qualified "J," as an estimate, because the holding time was exceeded.

### November 18, 2016 Sample

Holding Time: Sample WWTP-111816 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-111816 was qualified "J," as an estimate, because the holding time was exceeded.

### December 30, 2016 Sample

No data quality issues were noted. No data qualifications were required.

Holding Time: Sample WWTP-123016 was analyzed within the method-specified holding times for all analyses except for the pH analysis. pH must be analyzed immediately upon sample collection, that is, as a field test. The pH result for sample WWTP-123016 was qualified "J," as an estimate, because the holding time was exceeded.

## 6.0 Notes

Positive organic and inorganic results less than the reporting limit, but greater than the method detection limit (MDL) were qualified "J," as estimated concentrations, due to increased uncertainty near the detection limit. The "J" qualifiers were maintained in the data validation.

Matrix spike and matrix spike duplicates and laboratory duplicates that were performed on non-project samples were not evaluated because matrix similarity to project samples could not be assumed.

## **Appendix A**

### **Glossary of Data Qualifier Codes**

## Glossary of Data Qualifier Codes

- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximated and may be inaccurate or imprecise.
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria. The presence or absence of the analyte cannot be verified.
- N (Organics) The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
- NJ (Organics) The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

AECOM

## **Appendix B**

### **Data Qualification Summaries**

## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-117449-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-117449-1	WWTP-072216	Water	07/22/2016 1010	07/22/2016 1350

## CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

Name (for report and invoice): Robert Forstner  
 Company: AECOM  
 Address: 125 Broad Street, 16th Fl  
 City: NY State: NY  
 Phone: 212-377-8721 Fax: 212-377-8721

Samplers Name (Printed): Brian Tate  
 P.O. #: 60137363-600  
 State (Location of site): NJ NY:  Other:   
 Regulatory Program: NYSDEC  SPDES

Site/Project Identification: Ng Long/Guid Fair Clinton MSA

Sample Identification	Date	Analysis Turnaround Time			ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)		LAB USE ONLY Project No:
		Standard	Flush Charges Authorized For:	No. of	Time	Matrix	
<u>WWTP-072216</u>	<u>7-22-16</u>	<input type="checkbox"/>	<input type="checkbox"/> 2 Week <input type="checkbox"/> 1 Week <input checked="" type="checkbox"/> Other <u>3 Day</u>	<u>1677 Available</u>	<u>6W</u>	<u>1D</u>	<u>117449</u>
				<u>3514</u>			
				<u>82700 PPH</u>			
				<u>25400 TSS</u>			
				<u>PM4500</u>			
				<u>82600 PPEY</u>			
				<u>80204 + Nitrite</u>			

Job No: 117449  
 Sample Numbers: 1

Preservation Used:  1 = CR  2 = HCl  3 = H<sub>2</sub>SO<sub>4</sub>  4 = HNO<sub>3</sub>  5 = NaOH  
 6 = Other \_\_\_\_\_, 7 = Other \_\_\_\_\_  
 Soil: \_\_\_\_\_ Water: \_\_\_\_\_

**SHORT HOLD**

Special Instructions: \_\_\_\_\_

Relinquished by: MR Company: AECOM Date / Time: 7/22/16 1350 Received by: Clay Acerno Company: TA

Relinquished by:  Company: \_\_\_\_\_ Date / Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date / Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date / Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date / Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_

Water Metals Filtered (Yes/No)? \_\_\_\_\_

460-117449 Chain of Custody

Laboratory Certifications: New Jersey (12028), New York (14222), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578) # 7 2.7C





## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-117449-1

**Login Number: 117449**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Lysy, Susan**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7°C IR#7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-117449-1

**Login Number: 117449**  
**List Number: 2**  
**Creator: Watson, Debbie**

**List Source: TestAmerica Pittsburgh**  
**List Creation: 07/23/16 02:51 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-117449-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-072216 Lab Sample ID: 460-117449-1  
 Matrix: Water Lab File ID: 012969.D  
 Analysis Method: 8260C Date Collected: 07/22/2016 10:10  
 Sample wt/vol: 5(mL) Date Analyzed: 07/26/2016 13:55  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: DB-624 ID: 0.18 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 381065 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	108		70-137
460-00-4	4-Bromofluorobenzene	96		70-131
1868-53-7	Dibromofluoromethane (Surr)	105		72-136
2037-26-5	Toluene-d8 (Surr)	100		74-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-117449-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-072216 Lab Sample ID: 460-117449-1  
 Matrix: Water Lab File ID: M230473.D  
 Analysis Method: 8270D Date Collected: 07/22/2016 10:10  
 Extract. Method: 3510C Date Extracted: 07/23/2016 15:29  
 Sample wt/vol: 250(mL) Date Analyzed: 07/27/2016 16:15  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 381273 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.88	U	10	0.88
208-96-8	Acenaphthylene	0.65	U	10	0.65
120-12-7	Anthracene	0.57	U	10	0.57
191-24-2	Benzo[g,h,i]perylene	0.75	U	10	0.75
218-01-9	Chrysene	0.67	U	2.0	0.67
206-44-0	Fluoranthene	0.72	U	10	0.72
86-73-7	Fluorene	0.80	U	10	0.80
193-39-5	Indeno[1,2,3-cd]pyrene	0.21	U	1.0	0.21
91-20-3	Naphthalene	0.80	U	10	0.80
85-01-8	Phenanthrene	0.65	U	10	0.65
129-00-0	Pyrene	0.83	U	10	0.83

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	84		63-113
4165-60-0	Nitrobenzene-d5 (Surr)	83		62-120
1718-51-0	Terphenyl-d14 (Surr)	112		57-125

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-117449-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-072216 Lab Sample ID: 460-117449-1  
 Matrix: Water Lab File ID: h178802.D  
 Analysis Method: 8270D SIM Date Collected: 07/22/2016 10:10  
 Extract. Method: 3510C Date Extracted: 07/23/2016 15:29  
 Sample wt/vol: 250(mL) Date Analyzed: 07/25/2016 07:21  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 380825 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.037	U	0.050	0.037
50-32-8	Benzo[a]pyrene	0.026	U	0.050	0.026
205-99-2	Benzo[b]fluoranthene	0.012	U	0.050	0.012
118-74-1	Hexachlorobenzene	0.0090	U	0.020	0.0090

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: WWTP-072216

Lab Sample ID: 460-117449-1

Lab Name: TestAmerica Edison

Job No.: 460-117449-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 07/22/2016 10:10

Reporting Basis: WET

Date Received: 07/22/2016 13:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	0.71	2.0	0.71	ug/L	U		2	6020A
7440-02-0	Nickel	1.9	4.0	1.6	ug/L	J		2	6020A

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-072216

Lab Sample ID: 460-117449-1

Lab Name: TestAmerica Edison

Job No.: 460-117449-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 07/22/2016 10:10

Reporting Basis: WET

Date Received: 07/22/2016 13:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	0.0040	0.010	0.0040	mg/L	U		1	335.4
	Turbidity	2.38	0.500	0.125	NTU			1	180.1
	Total Suspended Solids	1.8	1.0	1.0	mg/L			1	SM 2540D
	pH	7.81			SU	J	<del>HP</del>	1	SM 4500 H+ B

HT.

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-072216

Lab Sample ID: 460-117449-1

Lab Name: TestAmerica Pittsburgh

Job No.: 460-117449-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 07/22/2016 10:10

Reporting Basis: WET

Date Received: 07/22/2016 13:50

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Cyanide, Available	0.0011	0.0020	0.0011	mg/L	U		1	OIA-1677

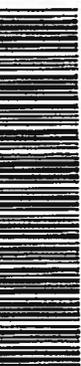
## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-119498-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-119498-1	WWTP-09012016	Water	09/01/2016 1000	09/01/2016 1418

# TestAmerica



777 New Durham Road  
Edison, New Jersey 08817  
Phone: (732) 549-3900 Fax: (732) 549-3679

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CHAIN C

460-119498 Chain of Custody

EST

Page 1 of 1

Name (for report and invoice) **Robert Forstner** Samples Name (Printed) **Brian Tate** Site/Project Identification **National Grid Poma Clinton MSB**

Company **AELcom** P.O. # **60137763-600** State (Location of site): NJ:  NY:  Other:

Address **125 Broad Street** Analyze Turnaround Time  Standard  Rush Charges Authorized For:  1 Week  2 Week  3 day

City **New York** State **NY** No. of Containers **1677 Available CN**

Phone **212 377 8721** Fax **212 377 8721** Other **3 day**

Sample Identification **W WTP-091012016** Date **09/11/16** Time **0900** Matrix **GW** Cont. **10**

ANALYSIS REQUESTED (ENTER % BELOW TO INDICATE REQUEST)

ANALYSIS REQUESTED (ENTER % BELOW TO INDICATE REQUEST)	1	2	3	4	5	6	7
3354 Total CN	X	X	X	X	X	X	X
8270D PP P4H + SIM	X	X	X	X	X	X	X
2540D TSS	X	X	X	X	X	X	X
P4 4500 Turbidity 180l	X	X	X	X	X	X	X
8260C BTEX	X	X	X	X	X	X	X
6020A Arsenic + Nickel	X	X	X	X	X	X	X
Soil:							
Water:	1	1	2	1	1	5	1

Preservation Used: 1 = IOE, 2 = HCl, 3 = H<sub>2</sub>SO<sub>4</sub>, 4 = HNO<sub>3</sub>, 5 = NaOH, 6 = Other, 7 = Other

Special Instructions **Water Metals Filtered (Yes/No)?**

Relinquished by **Mr. [Signature]** Company **AELcom** Date / Time **9-16-16 14:13** Received by **[Signature]** Company **TA Edison**

Relinquished by **[Signature]** Company **[Signature]** Date / Time **[Signature]** Received by **[Signature]** Company **[Signature]**

Relinquished by **[Signature]** Company **[Signature]** Date / Time **[Signature]** Received by **[Signature]** Company **[Signature]**

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

#17 3.52

**SHORT HOLD**

LAB USE ONLY  
Project No:

11949g



TestAmerica Edison  
 777 New Durham Road  
 Edison, NJ 08817  
 Phone (732) 549-3900 Fax (732) 549-3879

Chain of Custody Record

TestAmerica  
 LABORATORY SERVICES, A. S. T. N.

Client Information (Sub Contract Lab)  
 Company: TestAmerica Laboratories, Inc  
 Address: 301 Alpha Drive, RIDC Park, Pittsburgh, PA, 15238  
 Phone: 412-963-7058(Tel) 412-963-2468(Fax)  
 Email: [Redacted]  
 Project Name: National Grid - Clifton Former MGP  
 Site: AECOM - Former Clifton MGP

Client Contact: Kristin Degraw, Kristin B  
 E-Mail: kristin.degraw@testamericainc.com  
 Lab PM: DeGraw, Kristin B  
 Job #: 480-119498-1  
 Page 1 of 1  
 Analysis Requested: [Blank]  
 Due Date Requested: 9/7/2016  
 TAT Requested (days): [Blank]  
 FO #: [Blank]  
 WO #: [Blank]  
 Project #: 46018542  
 SSOW#: [Blank]

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organics, B=biological, T=tissue, A=air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1577 Cyanide Available (Flow Injection)	Total Number of Containers	Special Instructions/Note:
WWTP-09012016 (460-119498-1)	9/1/16	10.00 Eastern	Water	Water		X	X	X	1	

Possible Hazard Identification: Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)  
 Primary Deliverable Rank: 1  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Special Instructions/QC Requirements: [Blank]  
 Empty Kit Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Relinquished by: [Signature]  
 Custody Seals Intact: 1 Yes 1 No  
 Custody Seal No: [Blank]  
 Date: 9/2/16 18:00  
 Date/Time: 9/2/16 18:00  
 Date/Time: 9.30  
 Date/Time: [Blank]  
 Company: [Signature]  
 Company: [Signature]  
 Company: [Signature]  
 Method of Shipment: [Blank]  
 Received by: [Signature]  
 Received by: [Signature]  
 Received by: [Signature]  
 Cooler Temperature(s) °C and Other Remarks: [Blank]

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-119498-1

**Login Number: 119498**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Rivera, Kenneth**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.5°C, IR #7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-119498-1

**Login Number: 119498**  
**List Number: 2**  
**Creator: Skowronek, Elyse N**

**List Source: TestAmerica Pittsburgh**  
**List Creation: 09/06/16 08:31 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	9.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-119498-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-09012016 Lab Sample ID: 460-119498-1  
 Matrix: Water Lab File ID: J45216.D  
 Analysis Method: 8260C Date Collected: 09/01/2016 10:00  
 Sample wt/vol: 5(mL) Date Analyzed: 09/06/2016 16:02  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Rtx-624 ID: 0.25 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 388791 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	98		74-132
460-00-4	4-Bromofluorobenzene	98		77-124
1868-53-7	Dibromofluoromethane (Surr)	96		72-131
2037-26-5	Toluene-d8 (Surr)	98		80-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-119498-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-09012016 Lab Sample ID: 460-119498-1  
 Matrix: Water Lab File ID: M232278.D  
 Analysis Method: 8270D Date Collected: 09/01/2016 10:00  
 Extract. Method: 3510C Date Extracted: 09/02/2016 09:20  
 Sample wt/vol: 240(mL) Date Analyzed: 09/06/2016 09:40  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 388720 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	U	10	0.92
208-96-8	Acenaphthylene	0.68	U	10	0.68
120-12-7	Anthracene	0.59	U	10	0.59
191-24-2	Benzo[g,h,i]perylene	0.78	U	10	0.78
218-01-9	Chrysene	0.70	U	2.1	0.70
206-44-0	Fluoranthene	0.75	U	10	0.75
86-73-7	Fluorene	0.83	U	10	0.83
193-39-5	Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22
91-20-3	Naphthalene	0.83	U	10	0.83
85-01-8	Phenanthrene	0.68	U	10	0.68
129-00-0	Pyrene	0.86	U	10	0.86

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	56		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	60		51-108
1718-51-0	Terphenyl-d14 (Surr)	68		40-148

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-119498-1  
SDG No.: \_\_\_\_\_  
Client Sample ID: WWTP-09012016 Lab Sample ID: 460-119498-1  
Matrix: Water Lab File ID: U29288.D  
Analysis Method: 8270D SIM Date Collected: 09/01/2016 10:00  
Extract. Method: 3510C Date Extracted: 09/02/2016 09:20  
Sample wt/vol: 240(mL) Date Analyzed: 09/04/2016 16:17  
Con. Extract Vol.: 2(mL) Dilution Factor: 1  
Injection Volume: 5(uL) Level: (low/med) Low  
% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
Analysis Batch No.: 388366 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.039	U	0.052	0.039
50-32-8	Benzo[a]pyrene	0.027	U	0.052	0.027
205-99-2	Benzo[b]fluoranthene	0.013	U	0.052	0.013
118-74-1	Hexachlorobenzene	0.0094	U	0.021	0.0094

1A-IN  
INORGANIC ANALYSIS DATA SHEET  
METALS

Client Sample ID: WWTP-09012016

Lab Sample ID: 460-119498-1

Lab Name: TestAmerica Edison

Job No.: 460-119498-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 09/01/2016 10:00

Reporting Basis: WET

Date Received: 09/01/2016 14:18

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	U		2	6020A
7440-02-0	Nickel	2.0	4.0	1.4	ug/L	J		2	6020A

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-09012016

Lab Sample ID: 460-119498-1

Lab Name: TestAmerica Edison

Job No.: 460-119498-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 09/01/2016 10:00

Reporting Basis: WET

Date Received: 09/01/2016 14:18

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U		1	335.4
	Turbidity	1.26	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	1.2	1.0	1.0	mg/L			1	SM 2540D
	pH	7.9			SU		#J	1	SM 4500 H+ B

HT.



## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-121172-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Client Matrix</u>	<u>Date/Time Sampled</u>	<u>Date/Time Received</u>
460-121172-1	WWTP-09302016	Water	09/30/2016 1015	09/30/2016 1210

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 1

777 New Durham Road  
Edison, New Jersey 08817  
Phone: (732) 549-3900 Fax: (732) 549-3679

Name (for report and invoice) <b>Roberts Foresters</b>		Sample Name (Printed) <b>Box 7 T&amp;H</b>		Site/Project Identification <b>National Grid - Former Clinton MGP</b>	
Company <b>TECOM</b>		P.O.# <b>60137363-600</b>		State (Location of site): NJ: <input type="checkbox"/> NY: <input checked="" type="checkbox"/> Other: <input type="checkbox"/>	
Address <b>125 Broad Street 6th fl</b>		City <b>New York</b>		Regulatory Program:	
Phone: <b>212 377-8721</b> Fax: <b>8721</b>		Analyst Turnaround Time Standard <input type="checkbox"/> Rush Charges Authorized For: 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> Other <input checked="" type="checkbox"/> <b>3 days</b>		ANALYSIS REQUESTED (ENTER "RUSH" TO INDICATE REQUEST)	
Sample Identification <b>WWTP-09302016</b>		Date <b>9/30/16</b>	Time <b>1015</b>	Matrix <b>SW</b>	No. of Cont. <b>10</b>
Preservation Used: <input type="checkbox"/> ICE, <input checked="" type="checkbox"/> HCl, <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> , <input checked="" type="checkbox"/> HNO <sub>3</sub> , <input checked="" type="checkbox"/> NaOH 6 = Other _____, 7 = Other _____		Soil:		Water:	
		1		1	
SHORT HOLD		1677 Available		CN	
		3354		Total CN	
450-121-172 Chain of Custody 		82700		PP PAH + SEM	
		2540		TSS	
Water Metals Filtered (Yes/No)?		PH 4.500		Turbidity (NTU)	
		82600		BTEX	
LAB USE ONLY Project No: Job No: <b>12172</b> Sample Numbers: <b>-1</b>		6020A		Arsenic + Nickel	

### Special Instructions

Relinquished by <i>[Signature]</i>	Company <b>TECOM</b>	Date / Time <b>9/30/16 1210</b>	Received by <i>[Signature]</i>	Company <b>Edison</b>	Water Metals Filtered (Yes/No)? <b>Client</b>
Relinquished by	Company	Date / Time	Received by	Company	
Relinquished by	Company	Date / Time	Received by	Company	
Relinquished by	Company	Date / Time	Received by	Company	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132),  
Massachusetts (M-NJ312), North Carolina (No. 578) TAL-0016 (0715)

TestAmerica Edison  
Receipt Temperature and pH Log

Job Number:

121192

Number of Coolers:

4

R/Gun #

7

COOLER TEMPERATURES			COOLER TEMPERATURES			COOLER TEMPERATURES			COOLER TEMPERATURES		
Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7	Cooler #8	Cooler #9	Cooler #10	Cooler #11	Cooler #12
1	2	3	4	5	6	7	8	9	10	11	12
°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C	°C

Ammonia COD Nitrate Nitrite Metals Hardness Pest EPH or GAW Phenols Sulfide TKN TOC Total Cyanide Total Phos Other Other

TALS Sample Number	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH 5-9)	(pH<2)	(pH<2)	(pH<2)	(pH<2)										
<u>1</u>				<u>2</u>												<u>&gt;12</u>				

If pH adjustments are required record the information below:

Sample No(s), adjusted: NA  
 Preservative Name/Conc.: NA  
 Lot # of Preservative(s): NA  
 Volume of Preservative used (ml): NA  
 Expiration Date: NA

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials: KA  
 Date: 7/30/11



## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-121172-1

**Login Number: 121172**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Lysy, Susan**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8°C IR#7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-121172-1

**Login Number: 121172**

**List Number: 2**

**Creator: Kovitch, Christina M**

**List Source: TestAmerica Pittsburgh**

**List Creation: 10/04/16 09:52 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-121172-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-09302016 Lab Sample ID: 460-121172-1  
 Matrix: Water Lab File ID: A27801.D  
 Analysis Method: 8260C Date Collected: 09/30/2016 10:15  
 Sample wt/vol: 5 (mL) Date Analyzed: 10/05/2016 11:48  
 Soil Aliquot Vol.: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Rtx-624 ID: 0.25 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 394998 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		74-132
460-00-4	4-Bromofluorobenzene	96		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131
2037-26-5	Toluene-d8 (Surr)	102		80-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-121172-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-09302016 Lab Sample ID: 460-121172-1  
 Matrix: Water Lab File ID: M233825.D  
 Analysis Method: 8270D Date Collected: 09/30/2016 10:15  
 Extract. Method: 3510C Date Extracted: 10/03/2016 10:37  
 Sample wt/vol: 240 (mL) Date Analyzed: 10/05/2016 08:41  
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1  
 Injection Volume: 5 (uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 394980 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	UJ	10	0.92
208-96-8	Acenaphthylene	0.68	U	10	0.68
120-12-7	Anthracene	0.59	U	10	0.59
191-24-2	Benzo[g,h,i]perylene	0.78	U	10	0.78
218-01-9	Chrysene	0.70	U	2.1	0.70
206-44-0	Fluoranthene	0.75	U	10	0.75
86-73-7	Fluorene	0.83	U	10	0.83
193-39-5	Indeno[1,2,3-cd]pyrene	0.22	U	1.0	0.22
91-20-3	Naphthalene	0.83	U	10	0.83
85-01-8	Phenanthrene	0.68	U	10	0.68
129-00-0	Pyrene	0.86	U	10	0.86

REAL

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	83		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	69		51-108
1718-51-0	Terphenyl-d14 (Surr)	84		40-148

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-121172-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-09302016 Lab Sample ID: 460-121172-1  
 Matrix: Water Lab File ID: h1790150.D  
 Analysis Method: 8270D SIM Date Collected: 09/30/2016 10:15  
 Extract. Method: 3510C Date Extracted: 10/03/2016 10:37  
 Sample wt/vol: 240(mL) Date Analyzed: 10/05/2016 08:16  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 394977 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.039	U	0.052	0.039
50-32-8	Benzo[a]pyrene	0.027	U	0.052	0.027
205-99-2	Benzo[b]fluoranthene	0.013	U	0.052	0.013
118-74-1	Hexachlorobenzene	0.017	J	0.021	0.0094



1B-IN  
INORGANIC ANALYSIS DATA SHEET  
GENERAL CHEMISTRY

Client Sample ID: WWTP-09302016

Lab Sample ID: 460-121172-1

Lab Name: TestAmerica Edison

Job No.: 460-121172-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 09/30/2016 10:15

Reporting Basis: WET

Date Received: 09/30/2016 12:10

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	<del>0.0056</del> 0.0104	0.010	0.0020	mg/L	<del>J</del>	<del>HT</del>	1	335.4
	Turbidity	2.15	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	1.4	1.0	1.0	mg/L			1	SM 2540D
	pH	8.4			SU	J	<del>HT</del>	1	SM 4500 H+ B

MB

HT



## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-122414-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-122414-1	WWTP-102116	Water	10/21/2016 1415	10/21/2016 1558

## CHAIN OF CUSTODY / ANALYSIS REQUEST

Page      of     

THE LEADER IN ENVIRONMENTAL TESTING

Name (for report and invoice) <b>Robert Forstner</b>		Samplers Name (Printed) <b>Brian Tate</b>		Site/Project Identification <b>Nuclear Grid Former Clinton MGP</b>																	
Company <b>AECOM</b>		P.O.# <b>60137363-600</b>		State (Location of site): NJ: <input type="checkbox"/> NY: <input checked="" type="checkbox"/> Other: <input type="checkbox"/>																	
Address <b>125 Broad Street, 16th Fl</b>		Analysis Turnaround Time Standard <input type="checkbox"/> Rush Charges Authorized For: 2 Week <input type="checkbox"/> 1 Week <input type="checkbox"/> Other <input checked="" type="checkbox"/> <b>3 days</b>		Regulatory Program: <b>NYSDDEC 3003</b> DKQP: <input type="checkbox"/>																	
City <b>New York</b>		Date <b>10/21/16</b>		ANALYSIS REQUESTED (ENTER % BELOW TO INDICATE REQUEST)																	
State <b>NY</b>		Time <b>6W</b>		<table border="1"> <tr> <td>PH 4900</td> <td>X</td> </tr> <tr> <td>2540P TSS</td> <td>X</td> </tr> <tr> <td>8270P</td> <td>X</td> </tr> <tr> <td>PP PAH = 51M</td> <td>X</td> </tr> <tr> <td>33514</td> <td>X</td> </tr> <tr> <td>10101 CN</td> <td>X</td> </tr> <tr> <td>Acn: 1654 CN</td> <td>X</td> </tr> <tr> <td>1877</td> <td>X</td> </tr> </table>		PH 4900	X	2540P TSS	X	8270P	X	PP PAH = 51M	X	33514	X	10101 CN	X	Acn: 1654 CN	X	1877	X
PH 4900	X																				
2540P TSS	X																				
8270P	X																				
PP PAH = 51M	X																				
33514	X																				
10101 CN	X																				
Acn: 1654 CN	X																				
1877	X																				
Phone <b>212 377-8721</b>		Matrix <b>GW</b>		LAB USE ONLY Project No: <b>172414</b>																	
Fax <b>212 377-8721</b>		No. of Cont. <b>10</b>		Job No: <b>172414</b>																	
Sample Identification <b>WWTR-102116</b>		Date <b>10/21/16</b>		Sample Numbers <b>1</b>																	
<b>SHORT HOLD</b>																					
																					
460-122414 Chain of Custody																					
Preservation Used: <input checked="" type="checkbox"/> 1 = ICE, <input checked="" type="checkbox"/> 2 = HCl, <input checked="" type="checkbox"/> 3 = H <sub>2</sub> SO <sub>4</sub> , <input checked="" type="checkbox"/> 4 = HNO <sub>3</sub> , <input checked="" type="checkbox"/> 6 = NaOH		Soil:		Water:																	
6 = Other		7 = Other		1 2 1 1 3 1																	

Special Instructions	Company	Date / Time	Received by	Water Metals Filtered (Yes/No)?
Relinquished by <b>Tim</b>	<b>AECOM</b>	<b>10/21/16 15:58</b>	<b>Anthony T. Edison</b>	Company
Relinquished by	Company	Date / Time	Received by	Company
2)	Company	Date / Time	Received by	Company
3)	Company	Date / Time	Received by	Company
Relinquished by	Company	Date / Time	Received by	Company
4)	Company	Date / Time	Received by	Company

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132), Massachusetts (M-NJ312), North Carolina (No. 578)

TAL-0016 (0715)

**6.1°C I#177**  
**1558**  
**10/21/16**



## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-122414-1

Login Number: 122414

List Source: TestAmerica Edison

List Number: 1

Creator: Wisnewski, Kelly R

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1°C, IR#7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-122414-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-102116 Lab Sample ID: 460-122414-1  
 Matrix: Water Lab File ID: A28910.D  
 Analysis Method: 8260C Date Collected: 10/21/2016 14:15  
 Sample wt/vol: 5 (mL) Date Analyzed: 10/23/2016 19:42  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Rtx-624 ID: 0.25 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 399147 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	110		74-132
460-00-4	4-Bromofluorobenzene	100		77-124
1868-53-7	Dibromofluoromethane (Surr)	113		72-131
2037-26-5	Toluene-d8 (Surr)	104		80-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-122414-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-102116 Lab Sample ID: 460-122414-1  
 Matrix: Water Lab File ID: M234625.D  
 Analysis Method: 8270D Date Collected: 10/21/2016 14:15  
 Extract. Method: 3510C Date Extracted: 10/24/2016 14:04  
 Sample wt/vol: 240(mL) Date Analyzed: 10/26/2016 11:53  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 399642 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	U	10	0.92
208-96-8	Acenaphthylene	0.68	U	10	0.68
120-12-7	Anthracene	0.59	U	10	0.59
191-24-2	Benzo[g,h,i]perylene	0.78	U	10	0.78
218-01-9	Chrysene	0.70	U	2.1	0.70
206-44-0	Fluoranthene	0.75	U	10	0.75
86-73-7	Fluorene	0.83	U	10	0.83
193-39-5	Indeno[1,2,3-cd]pyrene	1.1		1.0	0.22
91-20-3	Naphthalene	0.83	U	10	0.83
85-01-8	Phenanthrene	0.68	U	10	0.68
129-00-0	Pyrene	0.86	U	10	0.86

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	85		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	85		51-108
1718-51-0	Terphenyl-d14 (Surr)	73		40-148

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-122414-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-102116 Lab Sample ID: 460-122414-1  
 Matrix: Water Lab File ID: h17905756.D  
 Analysis Method: 8270D SIM Date Collected: 10/21/2016 14:15  
 Extract. Method: 3510C Date Extracted: 10/24/2016 14:04  
 Sample wt/vol: 240(mL) Date Analyzed: 10/25/2016 17:44  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 399198 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.039	U	0.052	0.039
50-32-8	Benzo[a]pyrene	0.027	U	0.052	0.027
205-99-2	Benzo[b]fluoranthene	0.013	U	0.052	0.013
118-74-1	Hexachlorobenzene	0.0094	U	0.021	0.0094







## SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-124103-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-124103-1	WWTP-111816	Water	11/18/2016 1300	11/18/2016 1408

1042 1738563 8719664

**TestAmerica Edison**  
 777 New Durham Road  
 Edison, NJ 08817  
 Phone (732) 549-3900 Fax (732) 549-3079

**Chain of Custody Record**

Lab PM  
 DeGraw, Kristin B  
 E-Mail  
 kristin.degraw@testamericainc.com  
 Accreditations Required (See note)  
 NELAP - New York

Client Information (Sub Contract Lab)  
 Shipping/Receiving  
 Company  
 TestAmerica Laboratories, Inc.  
 Address  
 301 Alpha Drive, RIDG Park,  
 CA  
 Pittsburgh  
 State, Zip  
 PA, 15238  
 Phone  
 412-963-7058(Tel) 412-963-2468(Fax)  
 E-mail

Due Date Requested:  
 11/23/2016  
 TAT Requested (days):  
 PO #  
 WO #  
 Project #  
 46018542  
 SSOW#

Project Name  
 National Gnd - Clifton Former MGP  
 Site  
 AECOM - Former Clifton MGP

Sample Identification - Client ID (Lab ID)  
 WWTP-111816 (460-124103-1)

Job #  
 460-124103-1

Analysis Requested

Sample Date  
 11/18/16  
 Sample Time  
 13:00 Eastern  
 Matrix  
 (W=water, S=solid, O=soil, A=air)  
 Water  
 Field Filtered Sample (Yes or No)  
 X  
 15771 (MOD) Cyanide, Available (Flow Injection)

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=soil, A=air)	Field Filtered Sample (Yes or No)	15771 (MOD) Cyanide, Available (Flow Injection)	Total Number of Containers	Special Instructions/Note:
WWTP-111816 (460-124103-1)	11/18/16	13:00 Eastern			Water	X		1	

Preservation Codes:  
 M - Hexane  
 N - None  
 O - AsH2O2  
 P - Na2O4S  
 Q - Na2SO3  
 R - Na2S2O3  
 S - H2SO4  
 T - TSP Dodecylhydro  
 U - Acetone  
 V - MCAA  
 W - pH 4.5  
 X - EDTA  
 L - EDTA  
 Other:  
 M - HCL  
 B - NaOH  
 D - Nitric Acid  
 E - NaHSO4  
 F - MeOH  
 G - Amchlor  
 H - Ascorbic Acid  
 I - Ice  
 J - DI Water  
 K - EDTA  
 L - EDTA

Possible Hazard Identification  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Received by	Date/Time	Company	Method of Shipment
<i>[Signature]</i>	11-19-16	Company	
<i>[Signature]</i>	9:30	Company	
<i>[Signature]</i>	11-30-16	Company	

Special Instructions/QC Requirements:  
 Primary Deliverable Rank: 1  
 Date: \_\_\_\_\_  
 Custody Seal No  
 A Yes A No

Page 32 of 33  
 Page 2 of 3





Lancaster Laboratories  
Environmental

## Sample Administration Receipt Documentation Log

Doc Log ID: 169311  
Group Number(s): 1738 SL3

Client: Test America

### Delivery and Receipt Information

Delivery Method: Fed Ex      Arrival Timestamp: 11/30/2016 10:30  
Number of Packages: 1      Number of Projects: 8

### Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headpace $\geq$ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Joseph Huber (7831) at 14:28 on 11/30/2016

### Samples Chilled Details

Thermometer Types:    DT = Digital (Temp. Bottle)    IR = Infrared (Surface Temp)    All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	32170023	1.4	IR	Wet	Y	Loose	N

**Skowronek, Elyse**

---

**From:** Franklin, Jannel  
**Sent:** Tuesday, November 29, 2016 4:04 PM  
**To:** Pittsburgh - Sample Receiving; Ruyechan, Roseann  
**Cc:** Meidhof, Marie; Lowe, Deb; DeGraw, Kristin B.; Franklin, Jannel  
**Subject:** Please ship water sample 460-124103-1 (WWTP-111816) (client:AECOM, Inc.) for method 1677 to Eurofins Lancaster Labs in PA

Hi Sample Receiving,

Can you please ship the water sample 460-124103-1 (WWTP-111816) (client:AECOM, Inc.) for method 1677 to Eurofins Lancaster Labs in PA today for tomorrow receipt? I have added the Subcontract method to the login. The hold time is up 12-2-16 and I need Eurofins to rush this sample since we are late. Please confirm.

*Thanks,*

**JANNEL FRANKLIN**

Project Manager I/Network PM Floater Support |732.593.2551

TestAmerica

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: [Project Feedback](#)

---

**From:** Ruyechan, Roseann  
**Sent:** Tuesday, November 29, 2016 7:44 AM  
**To:** Meidhof, Marie  
**Cc:** Franklin, Jannel  
**Subject:** RE: TPS Comment Update for Job 460-124103-1 for AECOM, Inc.

Instrument is out of commission, will need to sub these out.

**Roseann S. Ruyechan**

Department Manager

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

301 Alpha Drive

Pittsburgh, PA 15238

Tel 412.963.2446

[www.testamericainc.com](http://www.testamericainc.com)

---

**From:** Meidhof, Marie  
**Sent:** Friday, November 25, 2016 9:06 AM  
**To:** Ruyechan, Roseann  
**Cc:** Franklin, Jannel  
**Subject:** RE: TPS Comment Update for Job 460-124103-1 for AECOM, Inc.

Thank you! Please keep us posted.

**MARIE MEIDHOF**

Project Manager II

TestAmerica

# Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>BMQL</b>	Below Minimum Quantitation Level	<b>mg</b>	milligram(s)
<b>C</b>	degrees Celsius	<b>mL</b>	milliliter(s)
<b>cfu</b>	colony forming units	<b>MPN</b>	Most Probable Number
<b>CP Units</b>	cobalt-chloroplatinate units	<b>N.D.</b>	none detected
<b>F</b>	degrees Fahrenheit	<b>ng</b>	nanogram(s)
<b>g</b>	gram(s)	<b>NTU</b>	nephelometric turbidity units
<b>IU</b>	International Units	<b>pg/L</b>	picogram/liter
<b>kg</b>	kilogram(s)	<b>RL</b>	Reporting Limit
<b>L</b>	liter(s)	<b>TNTC</b>	Too Numerous To Count
<b>lb.</b>	pound(s)	<b>µg</b>	microgram(s)
<b>m3</b>	cubic meter(s)	<b>µL</b>	microliter(s)
<b>meq</b>	milliequivalents	<b>umhos/cm</b>	micromhos/cm
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and  $<$  the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...
- W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.







**TestAmerica Edison**  
777 New Durham Road  
Edison, NJ 08817  
Phone (732) 549-3900 Fax (732) 549-3879

## Chain of Custody Record

**America**  
AN ENVIRONMENTAL TESTING



Page 1 of 1  
Job # 460-124103-1

Chain of Custody  
460-124103

Accreditations Required (See note)  
NELAP - New York

Lab PM DeGraw, Kristin B  
E-Mail kristin.degraw@testamerica.com

Client Information (Sub Contract Lab)  
Shipping/Receiving  
Company TestAmerica Laboratories, Inc.  
Address 301 Alpha Drive, RIDC Park,  
City Pittsburgh  
State Zp PA, 15238  
Phone 412-963-7058(Tel) 412-963-2468(Fax)  
Email

Due Date Requested: 11/23/2016  
TAT Requested (days):  
PO #  
WO #  
Project # 46018542  
SSOW#

Project Name National Gnd - Clifton Former MGP  
Site AECOM - Former Clifton MGP

Sample Identification - Client ID (Lab ID)  
WWTP-111816 (460-124103-1)

Sample Date 11/18/16  
Sample Time 13:00 Eastern  
Sample Type (C=Comp, G=grab)  
Preservation Code Water

Matrix (W=Water, S=solid, O=soil, A=air)  
Field Filtered Sample (Yes or No) X  
Perform MS/MSD (Yes or No) X  
1577 (MOD) Cyanide, Available (Flow Injection)

Analysis Requested  
Total Number of Containers 1

Special Instructions/Note:  
Special Instructions/Note:

Preservation Codes:  
A - HCL  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Amchlor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
Other:  
M - Hexane  
N - None  
O - AsNH2  
P - Na2O4S  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/method being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify)  
Primary Deliverable Rank 1

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements:  
Empty Kit Relinquished by  
Relinquished by  
Relinquished by  
Relinquished by

Date  
Date/Time 11/18/16 1800  
Date/Time  
Date/Time

Company  
Company  
Company

Received by  
Received by  
Received by

Method of Shipment  
Date/Time 11-19-16  
Date/Time 930  
Date/Time  
Cooler Temperature(s) °C and Other Remarks

Custody Seal Intact  
Custody Seal No  
Δ Yes Δ No

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-124103-1

**Login Number: 124103**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Meyers, Gary**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.7 ° C iR #7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-124103-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-111816 Lab Sample ID: 460-124103-1  
 Matrix: Water Lab File ID: J48607.D  
 Analysis Method: 8260C Date Collected: 11/18/2016 13:00  
 Sample wt/vol: 5(mL) Date Analyzed: 11/23/2016 01:29  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Rtx-624 ID: 0.25 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 405885 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	98		74-132
460-00-4	4-Bromofluorobenzene	113		77-124
1868-53-7	Dibromofluoromethane (Surr)	117		72-131
2037-26-5	Toluene-d8 (Surr)	94		80-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-124103-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-111816 Lab Sample ID: 460-124103-1  
 Matrix: Water Lab File ID: M235605.D  
 Analysis Method: 8270D Date Collected: 11/18/2016 13:00  
 Extract. Method: 3510C Date Extracted: 11/19/2016 18:10  
 Sample wt/vol: 250 (mL) Date Analyzed: 11/23/2016 13:08  
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1  
 Injection Volume: 5 (uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 405959 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.88	U	10	0.88
208-96-8	Acenaphthylene	0.65	U	10	0.65
120-12-7	Anthracene	0.57	U	10	0.57
191-24-2	Benzo[g,h,i]perylene	0.75	U	10	0.75
218-01-9	Chrysene	0.67	UJ	2.0	0.67
206-44-0	Fluoranthene	0.72	U	10	0.72
86-73-7	Fluorene	0.80	U	10	0.80
91-20-3	Naphthalene	0.80	U	10	0.80
85-01-8	Phenanthrene	0.65	U	10	0.65
129-00-0	Pyrene	0.83	U	10	0.83

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	73		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	74		51-108
1718-51-0	Terphenyl-d14 (Surr)	68		40-148

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-124103-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-111816 Lab Sample ID: 460-124103-1  
 Matrix: Water Lab File ID: h17906452.D  
 Analysis Method: 8270D SIM Date Collected: 11/18/2016 13:00  
 Extract. Method: 3510C Date Extracted: 11/19/2016 18:10  
 Sample wt/vol: 250 (mL) Date Analyzed: 11/23/2016 11:29  
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1  
 Injection Volume: 5 (uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 405993 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.037	U	0.050	0.037
50-32-8	Benzo[a]pyrene	0.026	U	0.050	0.026
205-99-2	Benzo[b]fluoranthene	0.012	U	0.050	0.012
118-74-1	Hexachlorobenzene	0.0090	U	0.020	0.0090
193-39-5	Indeno[1,2,3-cd]pyrene	0.027	U	0.050	0.027



1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-111816

Lab Sample ID: 460-124103-1

Lab Name: TestAmerica Edison

Job No.: 460-124103-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 11/18/2016 13:00

Reporting Basis: WET

Date Received: 11/18/2016 14:08

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U		1	335.4
	Turbidity	4.79	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	2.7	1.0	1.0	mg/L			1	SM 2540D
	pH	8.3			SU		<del>HF</del> J	1	SM 4500 H+ B

h



Lancaster Laboratories  
Environmental

# Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: WWTP-111816 (460-124103-1) Water  
National Grid - Clifton Former MGP

LL Sample # WW 8719664  
LL Group # 1738563  
Account # 01042

Project Name: 460-124103-1

Collected: 11/18/2016 13:00

TestAmerica Edison

Submitted: 11/30/2016 10:30

777 New Durham Road

Reported: 12/02/2016 16:58

Edison NJ 08817

SDG#: TAE01-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
12999	Wet Chemistry Available CN	OIA-1677-09 n.a.	mg/l 0.0029 J	mg/l 0.0020	1

### Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12999	Available CN	OIA-1677-09	1	16337999101A	12/02/2016 00:07	Joseph E McKenzie	1

# SAMPLE SUMMARY

Client: AECOM, Inc.

Job Number: 460-126184-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
460-126184-1	WWTP-123016	Water	12/30/2016 1045	12/30/2016 1145







## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-126184-1

**Login Number: 126184**

**List Source: TestAmerica Edison**

**List Number: 1**

**Creator: Lysy, Susan**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.1°C IR#8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Login Sample Receipt Checklist

Client: AECOM, Inc.

Job Number: 460-126184-1

**Login Number: 126184**  
**List Number: 2**  
**Creator: Watson, Debbie**

**List Source: TestAmerica Pittsburgh**  
**List Creation: 01/04/17 12:10 PM**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FORM I  
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-126184-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-123016 Lab Sample ID: 460-126184-1  
 Matrix: Water Lab File ID: A32721.D  
 Analysis Method: 8260C Date Collected: 12/30/2016 10:45  
 Sample wt/vol: 5(mL) Date Analyzed: 01/04/2017 16:12  
 Soil Aliquot Vol: \_\_\_\_\_ Dilution Factor: 1  
 Soil Extract Vol.: \_\_\_\_\_ GC Column: Rtx-624 ID: 0.25 (mm)  
 % Moisture: \_\_\_\_\_ Level: (low/med) Low  
 Analysis Batch No.: 413053 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.090	U	1.0	0.090
100-41-4	Ethylbenzene	0.30	U	1.0	0.30
179601-23-1	m-Xylene & p-Xylene	0.28	U	1.0	0.28
95-47-6	o-Xylene	0.32	U	1.0	0.32
108-88-3	Toluene	0.25	U	1.0	0.25
1330-20-7	Xylenes, Total	0.28	U	2.0	0.28

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	111		74-132
460-00-4	4-Bromofluorobenzene	88		77-124
1868-53-7	Dibromofluoromethane (Surr)	99		72-131
2037-26-5	Toluene-d8 (Surr)	103		80-120

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-126184-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-123016 Lab Sample ID: 460-126184-1  
 Matrix: Water Lab File ID: M237061.D  
 Analysis Method: 8270D Date Collected: 12/30/2016 10:45  
 Extract. Method: 3510C Date Extracted: 01/03/2017 09:05  
 Sample wt/vol: 240 (mL) Date Analyzed: 01/04/2017 04:07  
 Con. Extract Vol.: 2 (mL) Dilution Factor: 1  
 Injection Volume: 5 (uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 413023 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	0.92	U	10	0.92
208-96-8	Acenaphthylene	0.68	U /	10	0.68
120-12-7	Anthracene	0.59	U	10	0.59
191-24-2	Benzo[g,h,i]perylene	0.78	U	10	0.78
218-01-9	Chrysene	0.70	U	2.1	0.70
206-44-0	Fluoranthene	0.75	U	10	0.75
86-73-7	Fluorene	0.83	U	10	0.83
91-20-3	Naphthalene	0.83	U	10	0.83
85-01-8	Phenanthrene	0.68	U	10	0.68
129-00-0	Pyrene	0.86	U /	10	0.86

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	99		45-107
4165-60-0	Nitrobenzene-d5 (Surr)	90		51-108
1718-51-0	Terphenyl-di4 (Surr)	129		40-148

FORM I  
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Edison Job No.: 460-126184-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: WWTP-123016 Lab Sample ID: 460-126184-1  
 Matrix: Water Lab File ID: h17907661.D  
 Analysis Method: 8270D SIM Date Collected: 12/30/2016 10:45  
 Extract. Method: 3510C Date Extracted: 01/03/2017 09:05  
 Sample wt/vol: 240(mL) Date Analyzed: 01/05/2017 00:57  
 Con. Extract Vol.: 2(mL) Dilution Factor: 1  
 Injection Volume: 5(uL) Level: (low/med) Low  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 413171 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
56-55-3	Benzo[a]anthracene	0.039	U	0.052	0.039
50-32-8	Benzo[a]pyrene	0.027	U	0.052	0.027
205-99-2	Benzo[b]fluoranthene	0.013	U	0.052	0.013
118-74-1	Hexachlorobenzene	0.0094	U	0.021	0.0094
193-39-5	Indeno[1,2,3-cd]pyrene	0.028	U	0.052	0.028

1A-IN  
 INORGANIC ANALYSIS DATA SHEET  
 METALS

Client Sample ID: WWTP-123016

Lab Sample ID: 460-126184-1

Lab Name: TestAmerica Edison

Job No.: 460-126184-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/30/2016 10:45

Reporting Basis: WET

Date Received: 12/30/2016 11:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
7440-38-2	Arsenic	0.64	2.0	0.64	ug/L	U		2	6020A
7440-02-0	Nickel	1.4	4.0	1.4	ug/L	U		2	6020A

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-123016

Lab Sample ID: 460-126184-1

Lab Name: TestAmerica Edison

Job No.: 460-126184-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/30/2016 10:45

Reporting Basis: WET

Date Received: 12/30/2016 11:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	0.0020	0.010	0.0020	mg/L	U		1	335.4
	Turbidity	9.21	0.500	0.160	NTU			1	180.1
	Total Suspended Solids	2.7	1.0	1.0	mg/L			1	SM 2540D
	pH	8.1			SU		HP J	1	SM 4500 H+ B

HT

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: WWTP-123016

Lab Sample ID: 460-126184-1

Lab Name: TestAmerica Pittsburgh

Job No.: 460-126184-1

SDG ID.: \_\_\_\_\_

Matrix: Water

Date Sampled: 12/30/2016 10:45

Reporting Basis: WET

Date Received: 12/30/2016 11:45

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Cyanide, Available	0.00072	0.0040	0.00072	mg/L	U		2	OIA-1677

# **Appendix B**

## **Waste Manifests**

# NON-HAZARDOUS WASTE MANIFEST

Please type or print.

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.  N/A	Manifest Doc No.  1 4 3 0 8 5	2. Page 1 of  1
3. Generator's Name and Mailing Attn: Katherine Vater Brooklyn Union Gas D/B/A National Grid NY One Metrotech Center Brooklyn, NY 11201		A. Generator's Site Address (if different) Clifton MGP site - 25 Willow Ave. Staten Island, NY 10305		
4. Generator's Telephone Number ( 718 ) 963-5480 <i>K. Vater</i>		B. State Transporter's ID 2A-531		
5. Transporter 1 (Company Name) William J. Lauer Corp.	6. US EPA ID Number NYR000157644	C. Transporter 1 Telephone ( 718 ) 981-8500		
7. Transporter 2 (Company Name)	8. US EPA ID Number	D. State Transporter's ID		
9. Designated Facility Name and Site Address Bayshore Recycling 75 Crow's Mill Road Keasby, NJ 08832		E. Transporter 2 Telephone ( )		
10. US EPA ID Number NJ1225001522		F. State Facility ID		
		G. Facility Telephone ( 718 ) 981-4600		
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)		12. Containers Number	13. Total Quantity	14. Unit Wt/Vol
a. NON RCRA NON DOT SOLIDS		0 0 3	DM	2100
b. <del>NON RCRA NON DOT SOLIDS</del> <i>sm</i>		<del>0 0 6</del>	<del>DM</del>	<del>sm</del>
c.				
d.				
H. Waste No.				
		EPA		
		STATE		
		EPA		
		STATE		
		EPA		
		STATE		
I. Additional Description for Materials listed Above		J. Handling Codes for Wastes Listed Above		
55 - asphalt		a		
<del>55 - gravel</del> <i>sm</i>		d		
15. Special Handling Instructions and Additional Information 24 Hour Emergency Telephone # 877 319-0800 <i>3311CLD-70</i>		Tr/TL # - WM-1 <i>3311CLD-71</i> <i>578083</i>		
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations				
Printed/Typed Name <i>AGENT FOR EMILLER NATIONAL GRID NY</i>		Signature <i>[Signature]</i>		Mo Day Year 10/11/16
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name <i>DOMINGO ARQUEZADA</i>		Signature <i>[Signature]</i>		Mo Day Year 10/11/16
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name		Signature		Mo Day Year
19. Discrepancy Indication Space				
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19				
Printed/Typed Name <i>[Signature]</i>		Signature <i>[Signature]</i>		Mo Day Year 10/11/16

ORIGINAL - RETURN TO GENERATOR



**NON-HAZARDOUS WASTE MANIFEST**

1. Generator ID Number  
~~NY100117494~~ N/A

2. Page 1 of 1

3. Emergency Response Phone  
 2032386745

4. Waste Tracking Number  
 1106694

5. Generator's Name and Mailing Address  
 BROOKLYN UNION GAS D/B/A NATL GRID NY  
 ONE METRO CENTER  
 BROOKLYN, NY 11201  
 Generator's Phone: 789635453  
 AT K WATER

Generator's Site Address (if different than mailing address)  
 CLIFTON MFG SITE  
 40 WILLOW AVE  
 STATEN ISLAND, NY 10305

6. Transporter 1 Company Name  
 TRADEBE TRANSPORTATION, LLC

U.S. EPA ID Number  
 CTD021816889

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address  
 TRADEBE T&R OF BRIDGEPORT, LLC  
 50 CROSS STREET  
 BRIDGEPORT, CT 06610  
 Facility's Phone: (203)334-1666

U.S. EPA ID Number  
 CTD002593887

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Other
	No.	Type			
1. NON DOT / NON RCRA REGULATED MATERIAL - LIQUID ON APL	4	DM	50 GAL	G	CR02 H41
2. NON DOT / NON RCRA REGULATED SOLIDS	2	DM	100 LBS		
3.					
4.					

13. Special Handling Instructions and Additional Information  
 DOT ERG N/A 1000117494 SO: 1106694

bx 55

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offor's Printed/Typed Name  
 Agent For  
 G Miller NATIOM GRID NY

Signature

Month Day Year  
 01 11 16

INT'L

15. International Shipments  
 Import to U.S.  
 Export from U.S.

Port of entry/exit:  
 Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name  
 John R Graham

Signature

Month Day Year  
 01 11 16

Transporter 2 Printed/Typed Name

Signature

DISCREPANCY

17. Discrepancy

17a. Discrepancy Indication Space  
 Quantity  Type  Residue  Partial Rejection  Full Rejection

DESIGNATED FACILITY

17b. Alternate Facility (or Generator)

Manifest Reference Number:

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17a

Printed/Typed Name  
 Deborah Luquette

Signature

Month Day Year  
 01 11 16

DESIGNATED FACILITY TO GENERATOR



NON-HAZARDOUS WASTE MANIFEST  
 1. Generator ID Number: **68223 N/A**  
 2. Hazard ID: **1**  
 3. Emergency Response Phone: **2032386745**  
 4. Waste Tracking Number: **1109455**

5. Generator's Name and Mailing Address: **BROOKLYN UNION GAS D/B/A NATL GRID NY ONE METRO CENTER BROOKLYN, NY 11201**  
 Generator's Site Address (if different than mailing address): **CLIFTON MGP SITE 25 WILLOW AVE STATEN ISLAND, NY 10305**  
 Generator's Phone: **K VATER 718-963-5480**

6. Transporter 1 Company Name: **TRADEBE TRANSPORTATION, LLC**  
 U.S. EPA ID Number: **CTD021816889**

7. Transporter 2 Company Name: \_\_\_\_\_  
 U.S. EPA ID Number: \_\_\_\_\_

8. Designated Facility Name and Site Address: **TRADEBE T&R OF BRIDGEPORT, LLC 50 CROSS STREET BRIDGEPORT, CT 06610**  
 U.S. EPA ID Number: **CTD002593887**  
 Facility's Phone: **(203)334-1666**

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Other
	No.	Type			
1. NON DOT / NON RCRA REGULATED MATERIAL		DM		G	CR02
2. NON DOT / NON RCRA REGULATED MATERIAL	2X4		220		HULL
3.	1X2	DM	150	P	CR05 HULL
4.					

13. Special Handling Instructions and Additional Information:  
**001) ERG P02241-4023NI SO: 1109455**  
**002) ERG P07 2814 002 NY**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator/Officer's Printed/Typed Name: **KENTON RATIONM BRID NY**  
 Signature: \_\_\_\_\_  
 Month Day Year: **01/11/16**

15. International Shipments:  Import to U.S.  Export from U.S.  
 Port of entry/exit: \_\_\_\_\_  
 Date leaving U.S.: \_\_\_\_\_

16. Transporter Acknowledgment of Receipt of Materials  
 Transporter 1 Printed/Typed Name: **John P Graham**  
 Signature: \_\_\_\_\_  
 Month Day Year: **01/11/16**

17. Discrepancy  
 17a. Discrepancy Indication Space:  Quantity  Type  Residue  Partial Rejection  Full Rejection

17b. Alternate Facility (or Generator) \_\_\_\_\_  
 Manifest Reference Number: \_\_\_\_\_  
 U.S. EPA ID Number: \_\_\_\_\_

17c. Signature of Alternate Facility (or Generator) \_\_\_\_\_  
 Month Day Year: \_\_\_\_\_

18. Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in item 17a  
 Printed/Typed Name: **Debrah Duquette**  
 Signature: \_\_\_\_\_  
 Month Day Year: **01/11/16**

DESIGNATED FACILITY TO GENERATOR

# Certificate of Disposal

This is to certify that materials from Boston Water Gas <sup>both</sup> ~~off~~ non-hazardous waste manifest number 1108155 were received at Tradebe Treatment and Recycling of Bridgeport LLC. The materials were treated at our facility at 50 Cross Street, Bridgeport Connecticut. The petroleum and/or solid phase were blended with other materials and burned for its thermal value. The aqueous phase was treated by ultrafiltration, chemical precipitation and carbon absorption.

If you have any questions or would like to visit our facility, please feel free to contact us at (203) 238-6745. Thank you for choosing Tradebe Treatment and Recycling of Bridgeport LLC for your treatment and recovery needs.

1-19-2016

Date

Ronnie Hazard

Ronnie Hazard  
Facility Manager

# Acknowledgment of Recycling

Bayshore Recycling Corp hereby acknowledges

*The Recycling*

Of 0.74 tons of

Asphalt

(Received on 01/11/16)

From the Clifton MGP Site Staten Island, NY



Bayshore Recycling Corp.

January 19, 2016

AIR: Facility ID Number 19031; Permit BOP130001

CLASS B: Facility ID Number 132397; Permit CBG110004

Keasbey, New Jersey



**TRADEBE**  
Environmental Services™

### Driver's Worksheet

Order Number: 1109455

Manifest Number:

Start Date: 01/11/2016	End Date: 01/11/2016	Sales Office: 4000	Robert Cleary / Kerry Bujak
Customer Number: 1100025003	Customer: Environmental Strategies & App	Site location: CLIFTON MGP SITE 25 WILLOW AVE STATEN ISLAND NY 10305	Site Contact Name: Phone Number:
Appointment Time: 07:00:00	Hours of Operation:	Site Sample Needed:	

**Job Description**

1 of 2 pickups for Clifton MGP. Pickup in conjunction with 42 Willow Ave. Site contact is Ed Miller 516.399.7495  
*NO DELIVERIES NOTED*

**Labor**

Item	Description	Employee Name	Employee ID	Start Time	End Time
0010	Pre-Trip	John Geary			
0020	Travel (Customer)			445	715
0030	Loading (Customer)			715	800
0040	Travel (Facility)				
0050	Unloading (Facility)				
0060	Post-Trip				

**Transportation**

Item	Description	Unit Number	Odometer Start	Odometer End
0010	Tractor	522		
0020	Trailer			

**Equipment / Material**

Item	Description	UoM	Quantity

Comments:

G.X 55

Signature:

AGENT FOR NATIONAL GRID NY

*[Signature]*  
Customer Signature/Date

Contract# / PO#: *[Signature]*  
Tradebe Signature/Date 1/11/16

Signature verifies hours worked and authorizes demurrage charges to be billed when applicable according to your quote on contract.

# NON-HAZARDOUS WASTE MANIFEST

Please type or print

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <i>9-2</i> <b>N/A</b>	Manifest Doc. No. <b>1 4 3 0 8 5</b>	2. Page 1 of <b>1</b>
3. Generator's Name and Mailing Address <b>Brooklyn Union Gas D/B/A National Grid</b> Attn: Katherine Vater One Metrotech Center Brooklyn, NY 11201		A. Generator's Site Address (if different) <b>Clifton MGP site - 25 Willow Ave. Staten Island, NY 10305</b>		
4. Generator's Telephone Number <b>(718) 963-5480</b>		B. State Transporter's ID <b>2A-531</b>		
5. Transporter 1 (Company Name) <b>William J. Lauer Corp.</b>	6. US EPA ID Number <b>NYR000157644</b>	C. Transporter 1 Telephone <b>(718) 981-8500</b>		
7. Transporter 2 (Company Name)	8. US EPA ID Number	D. State Transporter's ID		
9. Designated Facility Name and Site Address <b>Bayshore Recycling 75 Crow's Mill Road Keasby, NJ 08832</b>		E. Transporter 2 Telephone ( )		
10. US EPA ID Number <b>NJ1225001522</b>		F. State Facility ID		
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)		12. Containers Number Type	13. Total Quantity	14. Unit Wt / Vol
a. <b>NON RCRA NON DOT SOLIDS</b>		<b>0 0 3</b> DM	<b>2100</b>	<b>P</b>
b. <del>NON RCRA NON DOT SOLIDS</del> <i>gm</i>		<del>0-0-6</del> DM <i>gm</i>	<del>2100</del>	<del>P</del> <i>gm</i>
c.				
d.				
I. Additional Description for Materials Listed Above		J. Handling Codes for Wastes Listed Above		
a. <b>55 - asphalt</b>		a.		
b. <del>55 - gravel</del> <i>gm</i>		b.		
15. Special Handling Instructions and Additional Information <b>24 Hour Emergency Telephone # 877 319-0800</b> <b>Tr/TI # - WM-1</b> <b>3311 CLD-71</b> <b>578083</b>				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name <b>Agent For EMILLER NATIONAL GRID NY</b>		Signature <i>[Signature]</i>		Mo. Day Year <b>10/11/16</b>
Printed/Typed Name <b>DOMINGOQUEZADA</b>		Signature <i>[Signature]</i>		Mo. Day Year <b>10/11/16</b>
19. Discrepancy Indication Space				
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.				
Printed/Typed Name <i>[Signature]</i>		Signature <i>[Signature]</i>		Mo. Day Year <b>10/11/16</b>

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

**Clean Water of New York, Inc.**  
Daily Time Sheet

Date:		Employee Name: Last, First	Signature:
01-11-16		QUEZADA, DOMINGO	<i>[Signature]</i>
Clean Water	Time In	06:00	
	Truck Pre-Trip Inspection	06:15	
	Time of Departure	07:00 (ENVIRONMENTAL STRATEGIES APP)	
Job Site #1	JOB Number	143085	
	Customer/Generator/Address	BROOKLYN UNION GAS CO. - STATEN ISLAND, N.Y.	
	Product	SOIL	
	Quantity (gallons or drums)	3 DRUM FULL	
	Truck/Tractor	WMI	
	Time of Arrival	07:24	
	Time of Departure	08:00	
	JOB NUMBER		
	Customer/Generator/Address	BAYSHORE RECYCLING - KENNY, N.J.	
	Product	OILY DEBRIS	
	Quantity (gallons or drums)	4 DRUM	
	Truck/Tractor	WMI	
	Time of Arrival	11:40	
	Time of Departure	13:30	
Clean Water	Time of Arrival	13:48 OFFLOAD 7 DRUM	
	Truck Post-Trip Inspection	14:45	
	Time Out	15:00 LOAD 44 FULL DRUM LUCAS LANE	
	Total Daily Hours	9 HRS	



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number NYD980532071	2. Page 1 of 7	3. Emergency Response Phone 8448733723	4. Manifest Tracking Number <b>016491632 JJK</b>		
5. Generator's Name and Mailing Address BROOKLYN UTILITIES CO D/B/A NATL GRID NY ONE METROTECH STR AT KUTZNER BROOKLYN NY 11201 Generator's Phone: 718 963 5470				Generator's Site Address (if different than mailing address) CLIFTON HEIGHTS 25 WILLOW AVE STATEN ISLAND NY 10306			
6. Transporter 1 Company Name TRAFFIC TRANSPORTATION, LLC					U.S. EPA ID Number GT0021816899		
7. Transporter 2 Company Name					U.S. EPA ID Number		
8. Designated Facility Name and Site Address NEALITE, LLC 625 SARATOGA STREET COMOES NY 12047 Facility's Phone: (518) 385-4401					U.S. EPA ID Number NYL0030469325		
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt/Vol.	13. Waste Codes	
		No.	Type				
X	UN1592 WASTE FLAMMABLE LIQUIDS, H.O.S. (1) <del>HAZ</del> BENZENE (N) 3 II NAFL	011	DM	550	g	D001	D018
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information: 1-2-18-453  11 x 55							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name AGENT FOR NATION E. Miller ORIO NY					Signature 		Month Day Year 10 11 16
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Ray L. Andate					Signature 		Month Day Year 10 11 16
Transporter 2 Printed/Typed Name					Signature		Month Day Year
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
18b. Alternate Facility (or Generator)					Manifest Reference Number:		
Facility's Phone:					U.S. EPA ID Number		
18c. Signature of Alternate Facility (or Generator)							Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. A2410		2.		3.		4.	
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a							
Printed/Typed Name Kenna Brumby					Signature 		Month Day Year 10 17 16

GENERATOR

INTL

TRANSPORTER

DESIGNATED FACILITY



Weight Sheet

10/17/2016

Sales Order : 1308460

Drum Number	Manifest	PG/LN	Waste Stream	Pre-code	Proc Code	Bill Cd	Drum Type	Manifest Dm Type	Weight Code	Weight	LP Drum #	Note
D002079179	016491632JJK	1/1	1000130522	LF				DM				
D002079180	016491632JJK	1/1	1000130522	LF				DM				
D002079181	016491632JJK	1/1	1000130522	LF				DM				
D002079182	016491632JJK	1/1	1000130522	LF				DM				
D002079183	016491632JJK	1/1	1000130522	LF				DM				
D002079184	016491632JJK	1/1	1000130522	LF				DM				
D002079185	016491632JJK	1/1	1000130522	LF				DM				
D002079186	016491632JJK	1/1	1000130522	LF				DM				
D002079187	016491632JJK	1/1	1000130522	LF				DM				
D002079188	016491632JJK	1/1	1000130522	LF				DM				
D002079189	016491632JJK	1/1	1000130522	LF				DM				

Total Drums : 11

Filled Out Weight Sheet

Drum Weights verified with stickered weights

Totes/CYB/Skid/odd shaped weights verified by supervisor.

Load has been inspected for container integrity.

(initials)

(initials)

(initials)

(initials)



TRADEBE

### Tradebe Lab Analysis

Sample details			Batch Number
Customer	Environmental Strategies & App		<b>S002079178</b> Inbound
Generator	CLIFTON MPG SITE		
Material Code	LF		
Material Description	HAZ LIQUID COAL TAR DNAPL DRUMS		
Document Number (S.O.)	0001308460		
Registered On	10/31/2016	Validated On	10/31/2016
Route		Status	Pass
Manifest	016491632JJK	Waste profile	1000130522

Results			
Component	Method	Result	Status
BTUs	ASTM D240-87	4,430 BTU/LB (5,000-100)	E
Halogens	SW-846 9253	ND0.08 % (0-1.67)	
Specific Gravity		1.01 mg/l	
% Ash	ASTM D482 NON-NELAP	0.85 %	
PCBs, Total	ASTM D6160	ND2 MG/KG (0-2)	
Weight/Gal		8.4234 g/ml	
% Solids	ASTM D 1796-97 NON-NELAP	NA	
Compatibility	SOP#04-063 NON-NELAP	OK (OK)	
Sample Extraction	ASTM D6160	COMPLETE (COMPLETE)	
Oxidizer	SPOT TEST NON-NELAP	NEGATIVE (NEGATIVE)	
Peroxides	SPOT TEST NON-NELAP	NEGATIVE (NEGATIVE)	
Sulfur	3050B/6010C NON-NELAP	NA (0-2)	

Additional comments	S101816017
Visual Inspection	
Quality Control	

Lab Approval		Signature
Approved by		
Received by Relinquished by Analyzed by Comments		



**TRADEBE**  
Environmental Services™

### Driver's Worksheet

Order Number: 1308460

Manifest Number: 016491624.IJK

Start Date: 10/11/2016	End Date: 10/11/2016	Sales Office: 4000	Robert Cleary / Kerry Bujak
Customer Number: 1100020093	Customer: Environmental Strategies & App	Stop Sample Needed:	
Site location: CLIFTON MPQ SITE 25 WILLOW AVE STATEN ISLAND NY 10305	Site Contact Name:	Phone Number:	
Appointment Time: 07:00:00	Hours of Operation:		

**Job Description**

Ref 1308462 Onsite 7am. Remove (12) 55g drums of haz DNAPL. Site Contact: Ed Miller 516.393.7465

**Labor**

Item	Description	Employee Name	Employee ID	Start Time	End Time
0010	Pre-Trip	RM			
0020	Travel (Customer)				
0030	Loading (Customer)			9:45	10:45
0040	Travel (Facility)				
0050	Unloading (Facility)				
0060	Post-Trip				

**Transportation**

Item	Description	Unit Number	Odometer Start	Odometer End
0010	Tractor	5-71		
0020	Trailer			

**Equipment / Material**

Item	Description	UoM	Quantity
			11

**Comments:**

**Signature:**

ALBERT FEL  
NATIONAL GLIO NY  
10-11-16

Customer Signature/Date

Contract# / PO# :

Tradebe Signature/Date

Signatures verifies hours waiting and authorizes demurrage charges to be billed when applicable according to your quote or contract.

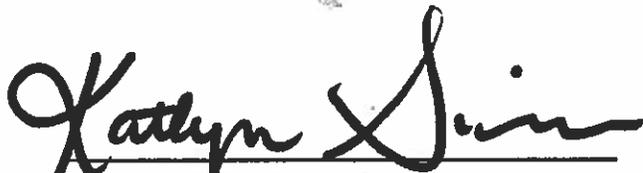
# NORLITE CORPORATION

## *CERTIFICATE OF DESTRUCTION*

*NYD 080 469 935*

This document certifies that Norlite has accepted custody of the waste stream and shipment referenced below. This waste stream has been managed under our custody utilizing Federal and New York State approved RCRA Thermal Treatment Technology.

**GENERATOR: Environmental Strategies & App**  
**MANIFEST: 016491632JJK**  
**APPROVAL CODE: 1000130522**

  
**Katlyn Surin**

1/4/17  
**Date Issued**

# NON-HAZARDOUS WASTE MANIFEST

Please type or print.

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.  N/A	Manifest Doc. No.  149830	2. Page 1 of  1
3. Generator's Name and Mailing Attn: Katherine Vater Brooklyn Union Gas D/B/A National Grid One Metrotech Center Brooklyn, NY 11201		A. Generator's Site Address (if different) Clifton MGP site - 25 Willow Ave. Staten Island, NY 10305		
4. Generator's Telephone Number ( 718 ) 963-5480		6. US EPA ID Number N Y R 0 0 0 1 5 7 6 4 4	B. State Transporter's ID 2A-531	
5. Transporter 1 (Company Name) William J. Lauer Corp.		C. Transporter 1 Telephone ( 718 ) 981-8500		
7. Transporter 2 (Company Name)		D. State Transporter's ID		
9. Designated Facility Name and Site Address Bayshore Recycling 75 Crow's Mill Road Keasby, NJ 08832		E. Transporter 2 Telephone ( )		
10. US EPA ID Number N J 1 2 2 5 0 0 1 5 2 2		F. State Facility ID		
11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)		G. Facility Telephone ( 718 ) 981-4600		
GENERATOR	a. NON RCRA NON DOT SOLIDS	12. Containers Number 007	13. Total Quantity 3500	14. Unit Wt / Vol P
	b.			H. Waste No. EPA
	c.			STATE
	d.			EPA
				STATE
I. Additional Description for Materials listed Above 2716-1579 - 55 - soil		J. Handling Codes for Wastes Listed Above		
a.	c.	a.	c.	
b.	d.	b.	d.	
15. Special Handling Instructions and Additional Information 24 Hour Emergency Telephone # 877 319-0800 Tr/TL # - WM-1 IN - 0700 AM Out - 0812 AM				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name K. Miller ALBERT PER NATIONAL GRID NY		Signature <i>[Signature]</i>		Mo. Day Year 11/22/16
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials			
	Printed/Typed Name Gabriel Velazquez		Signature <i>[Signature]</i>	
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed/Typed Name		Signature		Mo. Day Year
FACILITY	19. Discrepancy Indication Space			
	20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.			
Printed/Typed Name Richard Hernandez		Signature <i>[Signature]</i>		Mo. Day Year 11/22/16

ORIGINAL - RETURN TO GENERATOR

Bayshore Recycling Corp.  
75 Crows Mill Rd  
PO Box 290  
Keasbey, NJ 08832

Facility ID: 132397

Ticket: 761312  
Date: 12/20/2016  
Time: 10:49:31 - 11:13:35

Customer: EGA/BSH0022  
495 UNION AVE  
SUITE 10  
MIDDLESEX, NJ 08846-  
Truck: 67625PA

Scale  
Gross: 31400 lb In Scale 2  
Tare: 28100 lb Out Scale 5  
Net: 3300 lb

Carrier: WJ LAUER CORP

CUYD: 20 License: 67625PA  
Truck Type: TANDEN

Profile: 2716-1579/EDGEWATER PLAZA MHP SITE  
Generator: EDGEWATER PLAZA MHP SITE  
Comment:

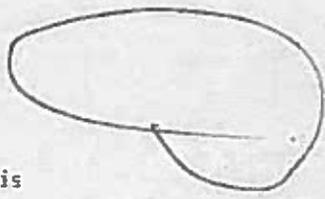
Manifest: 149830  
Remaining: 0.00 TN

Origin	Materials & Services	Quantity	Unit
Staten Island	ID27 NHCT DRUM	7.00	Units

THE ABOVE IS CORRECT AND NON-HAZARDOUS TO THE BEST OF MY KNOWLEDGE

Driver: \_\_\_\_\_

Weighmaster: Dennis



# Acknowledgment of Treatment and Recycling

Bayshore Soil Management, LLC hereby acknowledges

## *The Thermal Treatment*

Of 1.65 Tons of

Coal Tar Contaminated Soil  
(Received on 12/20/16)

From the **Edgewater Plaza MGP site, Staten Island, NY**



**December 21, 2016**

AIR: Facility ID Number 18437; Permit PCP100001

CLASS B: Facility ID Number 132397; Permit CBG110004

Keasbey, New Jersey

---

**Bayshore Soil Management, LLC.**

Certificate Number 2716-1579-122016



### Service Dispatch Ticket

DATE:	1/11/2016
ORDER NO.:	0002087990

#### SERVICE DETAILS:

#### SERVICE LOCATION:

Environmental Strategies  
 25 Willow Ave  
 Staten Island, NY 10305-1814  
 (732) 469-8888  
 Acct No: 033652-0004

Billed To: Environmental Strategies

Requested By: matt

PO#:

Time Window:

Service: Misc

1 RO - Miscellaneous Service

Directions: BAY ST

Driver: JADiaz

Truck: 122

Route: 116

Instructions: must removed opentop\*\* behind gate\*\*\* 7-10  
 am Don 718-496-8321 or 10am-2pm Jen  
 914-539-0261

#### Terms & Conditions

Do not load over top. Driver is not responsible for spillage if container is over filled. Customer is responsible for overweight charges. No dumping of hazardous, toxic or infectious wastes. Customer assumes all responsibility for any damages resulting from container or truck. All required permits are customer's responsibility. Roll-off rental fees are for 7 days. An additional fee will be charged for all roll-off containers kept after these 7 days. The lessee will be charged \$175.00 (per attempt) if for any reason the container cannot be delivered or removed at the specific time or location. Call 24 hours in advance for containers to be removed. Contaminated recyclable loads will be charged as trash.

Container/Dropped:	
Container/Picked Up:	
Start Time:	
End Time:	

Customer Signature: \_\_\_\_\_

www.pine-environmental.com • 800-301-9666

CUSTOMER RECEIPT:

Date: 1/11/2016

Order No: 0002087990

Acct#: 033652-0004

Name: Environmental Strategies

Address: 25 Willow Ave  
Staten Island, NY 10305-1814

PO#:

Service: 1 Misc

Terms & Conditions

Do not load over top. Driver is not responsible for spillage if container is over filled. Customer is responsible for overweight charges. No dumping of hazardous, toxic or infectious wastes. Customer assumes all responsibility for any damages resulting from container or truck. All required permits are customer's responsibility. Roll-off rental fees are for 7 days. An additional fee will be charged for all roll-off containers kept after these 7 days. The lessee will be charged \$175.00 (per attempt) if for any reason the container cannot be delivered or removed at the specific time or location. Call 24 hours in advance for containers to be removed. Contaminated recyclable loads will be charged as trash.

For Service or Pick-Up Call (973) 623-7600

BIC # 1181 Teaneck, NJ 07666

BIC # 1181

www.actioncarting.com



## **Appendix C**

### **Boring Logs and Map, Oversight of Third Party Geotechnical Investigation (One Edgewater Street)**

No.	Revisions	Date
01	Issued for client review	3.11.16
02	Issued for client review	3.22.16
03	Issued for client review	3.31.16
04	Boring location	5.19.16

DOB Examiner stamp: \_\_\_\_\_

DOB Approval: \_\_\_\_\_

B-Scan job sticker: \_\_\_\_\_

The architect shall not have control or charge of and shall not be responsible for construction means, methods, deviations, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work, for the acts or omissions of the contractor, subcontractors or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents. Always use dimensions as shown. Drawings are not to be scaled.



**rampulla associates architects, llp.**

185 3rd Street Staten Island, New York 10308  
718 987-8310 fax 718 987-8586 www.rampulla.net

structural engineer: \_\_\_\_\_

project title:

**PROPOSED**

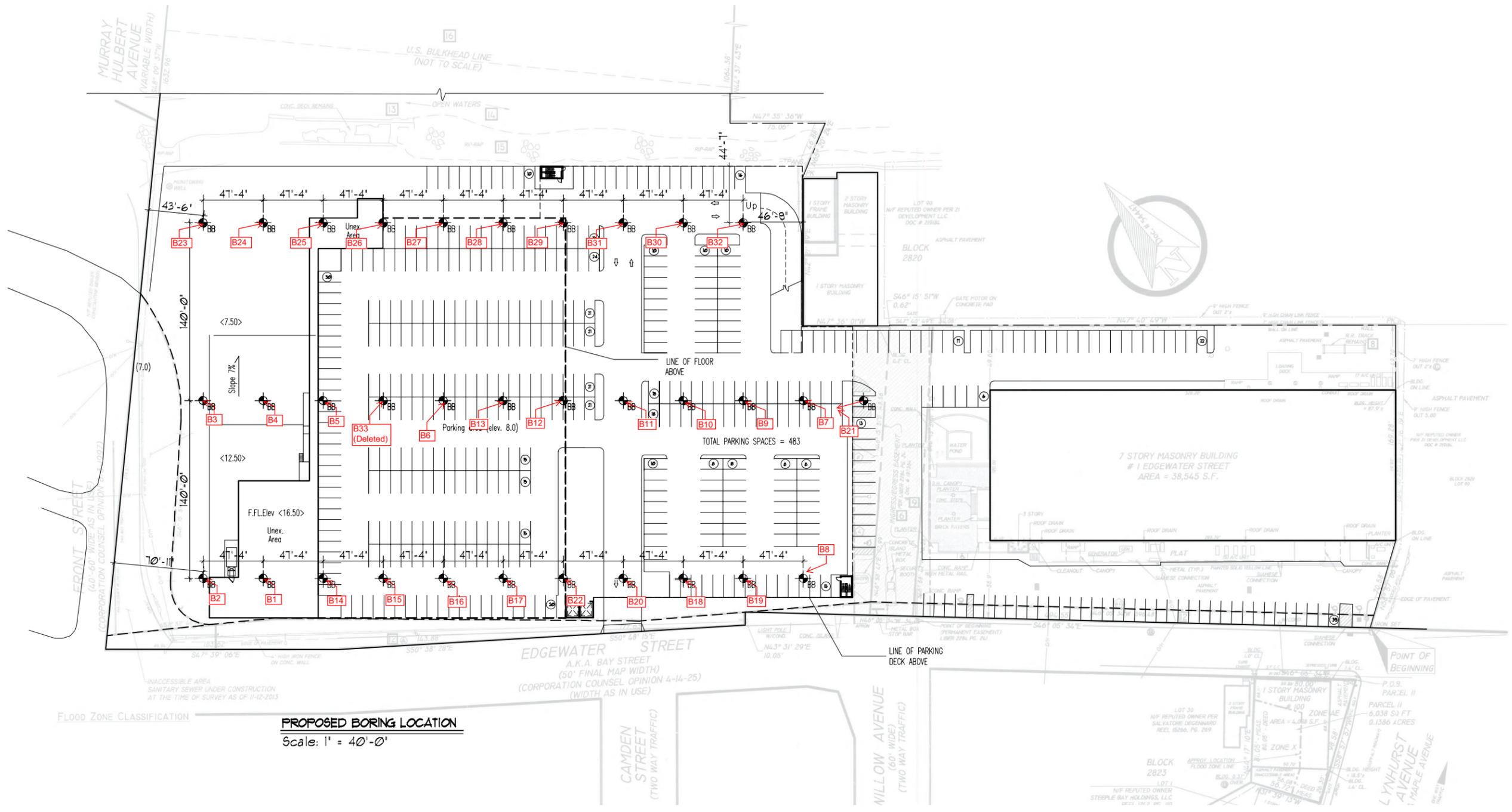
**1 EDGEWATER STREET**  
**STATEN ISLAND, NY**

drawing title:

**SITE PLAN FOR BUILDING BORING LOCATION**

seal & signature: \_\_\_\_\_

date: 03/04/15  
project #: ZA  
drawing by: \_\_\_\_\_  
chk by: JO  
dwg #: **A-001.00**  
file #: 1 of 1



**PROPOSED BORING LOCATION**  
Scale: 1" = 40'-0"

- SITE LEGEND**
- Property Line
  - < > Proposed grade
  - ( ) Existing grade
  - ∞ Exist. Contour to be removed
  - ∞ Existing contour to remain
  - Proposed contour
  - Proposed curb wall
  - ▨ Proposed retaining wall
  - Proposed 4' high chain link at top of proposed curb
  - Easement area
  - Existing tree to remain
  - ⊙ Proposed parking tree
  - ⊙ Proposed shrubs
  - ⊙ Building boring

**Building boring**  
Two exploratory borings for built over areas greater than 150 square feet but less than 5,000 square feet and at least one additional boring for each additional 2,500 square feet or part thereof of built over areas up to 20,000 square feet. At least one boring for each additional 5,000 square feet, or part thereof, of built over areas in excess of 20,000 square feet.

Total boring required as per Building Code = 33 borings.

**PARKING CALCULATIONS**

Existing building parking spaces base on existing floor area, Additional research required for accurate parking spaces requirements. Existing building footprint = 38,545 sf. Total of 7 stories 38,545 x 7 = 269,815 sf. FRC-C in use Group 6 1 per 600 sf. 269,815 / 600 = (449.69) 450 parking spaces required.

Proposed parking spaces at ground floor = 483

Proposed Food Store parking for food store 1 per 200 sf. 10,414 / 200 = 352 parking spaces required

Proposed parking spaces at first parking deck level — 175  
Upper parking deck level — 211  
Total parking spaces provided — 392

total parking spaces provided 392, 352 therefore Ok

**ZONING CALCULATIONS**

LOT AREA = 796,638 SF.

Existing 1 story Building = 269,815 sf.

New building Commercial use Food store 68,000 sf.

Total new floor area 337,815 sf.

Max F.A.R. = 2.0

Total F.A.R. = 337,815 / 796,638 = .42 < 2.0 Therefore Ok

**ZONING DATA**

BLOCK	2820
LOT	95
ZONING	M2-1
MAP	21-d
LOT AREA	796,638 sf.

**SPECIAL DISTRICTS**

Natural area	Outside
South Richmond Hillside	Inside
Fire district	Outside
Wetlands	Inside
Flood hazard	Outside
Park street	Inside
Arterial street	Outside

33' N of fence line  
84' E of fence line



Client: N. Grid	BORING ID: B1
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton - Edgewater	Monitoring Well Screen: NA
Boring Location: Edgewater Plaza parking lot	Monitoring Well Sump: NA
Drilling Method: HSA	Depth of Boring: 51' bgs
Sample Type(s): Grab - Geotech	Water Level: ~ 6' bgs
Boring Diameter: 6"	
Logged By: J. Phillips	Ground Elevation: NA
Drilling Contractor: BQ Apple	Date Started/Pre-Cleared: 7/26/16
	Date Finished: 7/26/16

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.0			0-2 - Asphalt & fill, no visual / ol factory impacts
		0.0			Fill 2-4 - fill, black, dry, no vloi 4-6 - same as above (SAA) 6-8 - SAA, wet 8-10 - SAA, slight sheen @ 8' slight tar-like odor
		0.0			
		0.0			
		11.6			
10		15.0			10-12 - SAA, slight sheen, slight tar-like odor @ 12' Brown silty sand.
		NA			Fill 12-14' - NA 14-16' - Fill, black, wet, slight sheen, slight tar-like odor.
		16.7			
16		NA			19-21 - Black fill, wet, no vloi
		0.0			
19		NA			24-25' - fine sand, wet, dark brown, slight sheen, slight tar-like odor 25-26' - silty clay <sup>SP</sup> clayey silt, brown, stiff, wet, no odor.
		4.1			
21		NA			
24		4.1			
26					

NOTES:  
vloi - visual / ol factory impacts  
SAA - same as above



Client: National Grid  
Project Number: 100137363  
Site Location: Clifton - Edgewater  
Boring Location: Edgewater  
Drilling Method: HSA/SS  
Sample Type(s): Geotech Grab

BORING ID: B-1  
Sheet: 2 of 2  
Monitoring Well Screen: NA  
Monitoring Well Sump:

Logged By: J. Phillips  
Drilling Contractor: Big Apple Logging

Ground Elevation: NA  
Date Started Pre-Cleared: 7/26/16  
Date Finished: 7/26/16

Depth of Boring: 51' bgs  
Water Level: ~6 bgs

Depth (feet)	Recovery (feet)	PTD (ppm)	Lab Sample ID	USCS	Geologic Description
26		NA			
29		0.4		SM	29-31 - silt with sand lenses, brown, wet, loose, no odor.
31					
34		0.0		ML	34-36' - silt, few large gravel, brown, stiff, wet, NO V/OT.
36					
39		0.0		ML	39-41' - SAA.
41					
44		0.0		ML	44-46' - SAA.
46					
49		0.0		ML	49-51' - SAA.
51					End of Boring 51' bgs

NOTES:

30' N of curb  
35' E of fence

**AECOM**

Client: National Grid  
 Project Number: 60137363  
 Site Location: Clifton - Edgewater  
 Boring Location: Edgewater Plaza  
 Drilling Method: Split Spoon / HSA  
 Sample Type(s): Grab - geotech  
 Boring Diameter: 6"  
 BORING ID: B-2  
 Sheet: 1 of 2  
 Monitoring Well Screen: NA  
 Depth of Boring: 31' bgs  
 Water Level: ~8' bgs

Logged By: J. Phillips  
 Drilling Contractor: Big Apple Testing  
 Ground Elevation: NA  
 Date Started Pre-Cleared: 7/27/16  
 Date Finished: 7/27/16

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0-2		4.1		Fill	0-2 - Layers of fill material, some brown, some black, sand, silt, gravel, dry, no V/OI. Concrete 1-2'
2-4		0.0			2-4 - Concrete 2-3' bgs, sand & silt w/ gravel, brown, dry, no V/OI.
4-6		0.6			4-6 - SAA.
6-8		5.1			6-8 - fill - sand, silty gravel, loose, dk brown, dry, no V/OI.
8-10		139*			8-10 - SAA, wet. * driller used wd-40 on split spoon which caused high pid reading.
10-12		25.9			10-12 - <del>S</del> Sandy fill material w/ gravel, black, slight sheen, slight <del>Ac</del> -like odor, wet. Naphtha
12-14		NA			12-14 - NA
14-16		1.9			14-16' - fill, black, gravelly, wet, no odor, no visual.
16-19		NA			
19-21		0.9			19-19.5' - fine sand, wet, dk brown, no V/OI 19.5-21' - sandy silt, little gravel, stuffy brown, wet, no V/OI.

NOTES: V/OI - visual / ol factory impacts.



Client: N. Grid  
Project Number: 60137363  
Site Location: Clifton  
Boring Location: 1 Edgewater Plaza  
Drilling Method: Split Spoon / HSA  
Sample Type(s): grab - geotech

BORING ID: B-2  
Sheet: 2 of 2  
Monitoring Well Screen: NA  
Monitoring Well Sump: NA

Logged By: J. Phillips  
Drilling Contractor: Big Apple

Ground Elevation: N/A  
Date Started/Pre-Cleared: 7/27/16  
Date Finished: 7/27/16

Depth of Boring: 31' bgs  
Water Level: -8.4 bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
21		NA			
24		0.6			24-26' - sandy silt w/gravel, stiff, wet, brown, NO V/I.
26		NA			
29		0.1			29-31 - m-f sand little silt, loose, wet, brown NO V/I.
31					End of boring 31' bgs

NOTES:

13 ft S of fence  
39 ft E of fence



Client: National Grid		BORING ID: B-3
Project Number: 60137363		
Site Location: Clinton		Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza		Monitoring Well Screen: NA
Drilling Method: Split Spoon / HSA		Monitoring Well Sump: NA
Sample Type(s): carb - Geotech		Boring Diameter: 6"
Logged By: J. Phillips		Date Started Pre-Cleared: 7/27/16
Drilling Contractor: Big Apple		Date Finished: 7/27/16
Ground Elevation: NA		Depth of Boring: 51' bgs
		Water Level: ~8 ft bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.1			0-2 - Asphalt & concrete
2		0.1			2-4 - Black fill material, clinker, dry, NO V/OI
4		1.3			4-6 - SAA, concrete layer @ ~5' bgs, NO V/OI.
6		0.9			6-8 - SAA, NO V/OI
8		0.0			8-10 - large gravel & silt, wet, NO V/OI.
10		0.1			10-12 - Clinker, wet, no V/OI
12		NA			12-14' - NA
14		1.9			14-16' - f. sand, little silt, <del>little</del> trace organics, black, wet, slight <del>tar</del> -like odor
16		NA			16-19' - NA
19		0.3			19-20' - SAA (14-16)
21		NA			20-21' - peat, NO V/OI
24		0.6			21-24' - NA
26		NA			24-26' - f. sand, black, wet, slight <sup>very</sup> Naphtha <del>tar</del> -like odor. silt @ 26', 2-3 slight <del>tar</del> areas of slight <del>tar</del> odor.
29		0.3			26-29 - NA
31		NA			29-30' - f. sand, little fine gravel, black, wet, slight <sup>Naphtha</sup> <del>tar</del> -like odor.
34		0.0			30-31' - silty sand, brown, wet, no V/OI.
36		NA			34-36 - wet sand, silt, & gravel,
39		NA			36-39' - NA

NOTES: V/OI - visual / ol factory impacts.



Client: N. Grid	BORING ID: B-3
Project Number: 60137363	Sheet: 2 of 2
Site Location: Clifton -	Monitoring Well Screen: NA
Boring Location: 1 Edgewater Plaza	Monitoring Well Sump: NA
Drilling Method: Split Spoon / HSA	Depth of Boring: ~8 ft bgs
Sample Type(s): Grab - geotech	Water Level: ~8 ft bgs
Logged By: J. Phillips	Ground Elevation:
Drilling Contractor: Sig Apple	Date Started/Pre-Cleared: 7/27/16
	Date Finished: 7/27/16

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
39		0.7			39-39.5' - sand, loose, wet N V/OI.
41		NA			39.5-41 - silty clay, brown, wet, stiff, no V/OI.
					41-44 - NA
44		0.0			44-46 - soft, some sand & gravel, brown, <del>stiff</del> no V/OI.
46		NA			46-49' - NA
49		0.0			49-51' - SAA (44-46').
51					End of boring 51' bgs.

NOTES:

87' E of Fence  
12.5' S of fence



Client: National Grid		BORING ID: B-4
Project Number: 60137363		
Site Location: Clifton		Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza		Monitoring Well Screen: NA
Drilling Method: Split Spoon / HSA		Monitoring Well Sump: NA
Sample Type(s): grab - gas/teeh		Boring Diameter: 6"
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 7/28/16
Drilling Contractor: Big Apple		Date Finished: 7/28/16
		Depth of Boring: 51' bgs
		Water Level: ~6' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		8.7*			0-2' - Asphalt, concrete, fill (clinker) black, dry, No V/OI. Note pid reading due to the use of WB-40, JP tells them again no WB-40 on spoons.
2		1.9		Fill	2-4' - fill - black clinker, black sand & gravel, No V/OI
4		2.2			4-6' - FILL, SAA
6		1.0		Mud	6-8' - SAA, wet
8		0.4			8-10 - SAA
10		0.4			10-12 - SAA
12		NA			12-14 - NA
14		8.7			14-16 - f. sand, trace organics, trace c-sand, black wet, slight naphthalene-like odor, slight sheen 14-15'
16		NA			
19		9.3			19-20 - SAA, slight naphtha-like odor & sheen
21		0.4			20-21 - Organic clay, gray, fibrous, organic odor, No visual impact
24		NA			
26		6.3			24-25 - f. sand & silt, moderate sheen, moderate naphthalene-like odor. 25-26 - SAA (20-21)
29					
31		3.1			29-30' - soft silt, black, sheen, slight naphtha-like odor. 30-31' - silt, stiff, brown, No V/OI.
34		0.0			34-36 - sandy silt, brown, wet, No V/OI.
36					
39		0.0			39-41 - silt, clay & some sand, brown, No V/OI

NOTES:

V/OI - Visual/Olfactory Impact



14' S of fence dividing parking lot  
135' E of front St fence line -



Client: National Grid	BORING ID: B-5
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton	Monitoring Well Screen: NA
Boring Location: Edgewater Plaza	Monitoring Well Sump: NA
Drilling Method: Split Spoon / HSA	Boring Diameter: 6"
Sample Type(s): grab-geotech	Date Started/Pre-Cleared: 7/28/16
Logged By: Jessica Phillips	Date Finished: 7/28/16
Drilling Contractor: Big Apple	Ground Elevation: N/A
	Depth of Boring: 51' bgs
	Water Level: n/a bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.0			0-2' - Asphalt, concrete & fill (clinker), black dry, No V/I
2		0.0			2-4' - fill-clinker SAA.
4		0.0			4-6' - SAA
6		0.0			6-8' - Black fine sand, gravel, clinker, wet, No V/I
8		NR			8-10' - No recovery
10		17.1			10-12' - silt, soft, black, wet, slight NLO.
12		NA			12-14' - NA
14		23.4			14-16' - SAA, some sand, moderate NLO & sheen.
16					16-19 - NA
19		0.7			19-21 - soft silt, black, very slight NLO, wet
21					21-24 - NA
24		8.3			24-26' - f. sand, blackish gray, wet, slight NLO & moderate sheen.
26		NA			26-29 - NA
29					29-31 - silt, brown, no V/I
31		NA			31-34 - NA
34		0.1			34-36' - brown silt & gravel, no V/I.
36		NA			36-39' - NA
39		0.0			39-41' - silt, brown, stiff, wet, no V/I.
41					

NOTES:

V/I - visual / ol factory impacts.  
SAA - same as above

Naphthalene-like odor - NLO



230' E of Rent St. parcel line  
19' S of dividing line (line)



Client: National Grid		BORING ID: B-6
Project Number: 60137363		
Site Location: Clifton		Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza		Monitoring Well Screen: NA
Drilling Method: Split Spoon / HSA		Boring Diameter: 6"
Sample Type(s): grab-geotech		Monitoring Well Sump: NA
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 7/29/16
Drilling Contractor: Big Apple		Date Finished: 7/29/16
		Depth of Boring: 57' bgs
		Water Level: 26' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		50.1			0-2' - Asphalt, concrete, fill (clinker & f. sand & gravel) dry, no odor, no visual impacts.
2		30.5			2-4' - fill, clinker, sand, gravel, black, no V/OI.
4		13.1		Fill	4-6' - SAA, brown sand & silt @ 6' bgs, no V/OI.
6		0.9			6-8' wet, sand & silt, black, no V/OI.
8		0.1			8-10' - SAA.
10		37.9			Fill
12		NA		12-14' - NA	
14		6.9		14-16' - SAA (10-12') wood in core & well.	
16		NA			
19		35.4			19-20' - silt, sand, gravel, wood (fill) wet, dark gray, moderate-heavy sheen, moderate NLO.
21		NA			20-21' - Organic layer (peat) w/ trace organics, organic odor, no visual impacts.
24		10.5			21-24' - NA
26					24-26' - wood, little clay, no V/OI.
29		1.8			29-31' - Organic clay, brown & gray trace plant fibers, organic odor no V/OI.
31		NA			31-34' - NA
34		8.0			34-36' - SAA (29-31) silty sand & gravel @ 36' bgs (brown)
36		NA			
39					

NOTES: HSA - Hollow stem Auger NA - Not applicable  
 SAA - same as above V/OI - Visual / ol factory Impacts.  
 NLO - Naphthalene like odor



lot from Edgewater Plaza  
23.9 N to fence



Client: National bnd	BORING ID: B-7
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton	Monitoring Well Screen: N/A
Boring Location: Edgewater Plaza	Monitoring Well Sump: N/A
Drilling Method: HSA 1 split spoon	Boring Diameter: 6"
Sample Type(s): grab - geotech	Date Started/Pre-Cleared: 7/31/16
Logged By: Sara Meissner	Date Finished: 7/31/16
Drilling Contractor: Big Apple	Ground Elevation: N/A
	Depth of Boring: ~6 fbg

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	U.S.C.S	Geologic Description
0		0.0			0-2' Asphalt, concrete, fill fine to coarse sand, dry, no odor, no visual inverts
		0.0			2-4' - light brown f to c sand and silt, some gravel.
		0.2	FILL		4-6' - Black sandy silt, no VI.
		4.1			6-8' SFA, some gravel, no VI, wet.
		3.2			8-10' SFA, some silt & clay. Black no VI, wet.
10		0.0			10-12' No recovery / re-do. Brown f to c sand, some gravel, silt, wet.
	*	37.9	FILL		12-14' NA
					14-16' Black, sandy silt, sheer & few shels, odor, wet.
					- Native -
20		2.1			19-21' grey, f to c sandy silty clay, little gravel, no odor.
		3.7			24-26' Red - brown organic peat (layers) wood, some gray brown f - coarse, no odor, wet.
30		3.7			29-31' Grey f silty sand, some grey clay. Trace plant roots, organic odor. No VI.
		0.2			34-36' Brown m to c sand, some gravel, some silt. No VI, no odor.
40		0.4			39-41' SFA NO VI, no odor.

NOTES:



<b>AECOM</b>	Client:	National bond		BORING ID:	B-8
	Project Number:	60133363			
	Site Location:	Clifton		Sheet:	1 of 2
	Boring Location:	Edgewater Plaza		Monitoring Well Screen:	
	Drilling Method:	HSA / Split spoon		Monitoring Well Sump:	N/A
Sample Type(s):	grab - geotech	Boring Diameter:	6"	Depth of Boring:	51
Logged By:	Sara Meissner	Ground Elevation:	N/A	Date Started/Pre-Cleared:	7/31/16
Drilling Contractor:	Big Apple			Date Finished:	7/31/16
				Water Level:	~ 6 fbg

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	U.S.C.S	Geologic Description
0		0.0			0-2' Asphalt black fill f to c sand, concrete, dry, no odor no visual impacts.
		4.1			2-4' SAA, no VI.
		0.4			4-6' SAA, no VI.
		3.3			6-8' Brown f to c sand, some gravel. NO VI.
		2.1			8-10' Red brick (1/3), light brown f to c sand (1/3) dark brown f to c sand, gravel (1/3)
10	*	38.2			10-12' Black/gray silty sand, odor, black VI.
					12-14' NA
		2.0			14-16' Black/gray f to c sand, some silt & gravel, wet, no odors or VI.
					- Native -
20		0.7			19-21' grey f to c sandy, some silt & gravel, no odor, no VI.
		0.3			24-26' Brown-grey m to c sand, some silt & gravel, <del>odor</del> . No odor, no VI.
30		0.1			29-31' SAA, no odor, no VI.
		0.7			34-36' Brown f to c sand, some silt, some gravel, no odor, no VI.
40		0.2			39-41' SAA, no odor, no VI.

NOTES:



20.2' N to fence  
80.1' E to curb divides  
parking spaces from  
Edgewater Plaza (A)



Client:		BORING ID: B-9	
Project Number: National Grid - 60137363		Sheet: 1 of 2	
Site Location: Clifton		Monitoring Well Screen: N/A	
Boring Location: Edgewater Plaza		Monitoring Well Sump: N/A	
Drilling Method: HSA / Split Spoon		Depth of Boring: 51'	
Sample Type(s): grab / grabtech		Water Level: ~6-8'	
Boring Diameter: 6"		Date Started Pre-Cleared: 7/31/16	
Logged By: Sara Meissner		Ground Elevation: N/A	
Drilling Contractor: Big Apple		Date Finished:	

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		3.3			0-2' Asphalt concrete, light brown f to c sand, bones, dry, no odor, no VI
		2.8			2-4' SAA, no odor no VI.
		7.5		Fill	4-6' Grey-black fine to c sand some silt, clay, gravel, coal chunks. Dry, no odor
		8.1			6-8' SAA, wet, slight odor. no VI
					8-10' NO recovery-
10	*	28.9		Fill	10-12' Black f to c sand some silt & gravel. wood pieces, coal chunks. odor, VI. wet.
		6.2			14-16' SAA, no odor, organic smell. wet.
				-	- Native -
20		3.4			19-21' Black silty fine sand, some wood, organic odor, no VI.
		2.6			24-26' Grey to light brown f to c sand some silty clay & gravel. no odor, no VI
30		1.3			29-31' Grey-black f to c sand, some silt & gravel, no odor no VI.
		0.3			34-36' Grey f to c sand, some silt & gravel. no odor no VI.
40		0.7			39-41' SAA, no odor, no VI

NOTES:



27.1 N to fence  
 124.4' E to curb dividing  
 parking spaces from  
 Edgewater Plaza (A)



Client:	National bid	BORING ID:	B-10
Project Number:	60137363	Sheet:	1 of 2
Site Location:	Clifton	Monitoring Well Screen:	N/A
Boring Location:	Edgewater Plaza	Monitoring Well Sump:	N/A
Drilling Method:	HSA Split Spoon	Boring Diameter:	6"
Sample Type(s):	grab - Geotech	Date Started/Pre-Cleared:	7/31/16
Logged By:	Sara Meissner/JP	Date Finished:	8/1/16
Drilling Contractor:	Big Apple	Ground Elevation:	N/A
		Depth of Boring:	51'
		Water Level:	~6' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.4			0-2' Asphalt, brown f to c sand, some orth gravel, concrete, dry, no odor, no VI.
		1.1			2-4' SAA, no odor, no VI.
		2.8		FILL	4-6' grey f to c sand, some silt & gravel. no odor, moist. no VI.
		1.0			6-8' SAA, wet.
		* 10.5			8-10' Black silty clay, some f to c sand, slight petro odor, VI.
10		2.4		FILL	10-12' Black silty clay. no odor no VI.
		1.4			14-16' SAA, no odor, no VI.
				- Native -	
20		* 39.6			19-21' Black fine silty SAND, some gravel, strong odor, VI. oily sheen.
		1.8			24-26' Brown med to c sand some silt & gravel, no odor, no VI.
30		0.1			29-31' - SAA 29-29.5', brown, stiff silt, no V/OI <sup>29.5-31</sup>
		0.1			34-36' - Silt, brown, no V/OI.
40		0.3			39-41' - SAA (34-36)

NOTES: V/OI - Visual / ol factory impacts.



Client:	National Grid	BORING ID:	B-10
Project Number:	60123363	Sheet:	2 of 2
Site Location:	Clifton	Monitoring Well Screen:	N/A
Boring Location:	Edgewater Plaza	Monitoring Well Sump:	N/A
Drilling Method:	N/A - Split Spoon	Depth of Boring:	51'
Sample Type(s):	brgs - G20-TEC	Boring Diameter:	6"
Logged By:	Sara Meissner/JP	Date Started/Pre-Cleared:	7/31/16
Drilling Contractor:	Big Apple	Ground Elevation:	N/A
		Date Finished:	8/1/16
		Water Level:	~ 6' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	U.S.C.S	Geologic Description
40					
41		see above			41-44' - NA
44		NA			44-46 - silt, some gravel, brown, no v.l.o.f
46		0.0			46-49 - NA
49		NA			49-51 - SAA (44-46).
51		0.0			End of boring 51' bgs.
60					

NOTES:

171' W of curb (east side of lot)  
26' S of fence adjoining lot.



Client: National Grid	BORING ID: B-11	
Project Number: 60137363		
Site Location: Clifton	Sheet: 1 of 2	
Boring Location: Edgewater Plaza	Monitoring Well Screen: NA	
Drilling Method: HSA / split spoon	Monitoring Well Sump: NA	
Sample Type(s): Grab-geotech	Boring Diameter: 6"	Depth of Boring: 51' 5"
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 8/1/16
Drilling Contractor: Big Apple	Date Finished: 8/1/16	Water Level: ~4' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.3			0-2- concrete & asphalt, sand, silt, gravel, brown, no V/O I
2		0.1			2-4- sand, silt, gravel, no V/O I, very little recovery.
4		0.3			4-6' - SAA, wet.
6		0.1			6-8' - m-f sand, little silt, wet, brown, no V/O I.
8		0.0			8-10' - SAA (6-8)
10		0.0			10-12' - silt & sand, brown, wet, few bands of black staining, very slight NLO.
12		NA			12-14' - NA
14		0.5			14-16' - f. sand to c. sand & gravel, wet, slight NLO, no visual impacts.
16		NA			
19		0.1			19-20.5' - f. sand, little m. sand, brown, wet, no visual impacts, slight NLO, peat @ 20.5'-21', organic odor.
21		NA			21-24' - NA
24		0.1			24-26' - silt & sand, no V/O I.
26		NA			
29		0.0			29-31' - brown silt, little gravel, no V/O I.
31		NA			31-34' - NA
34		0.0			34-36' - SAA (29-31')
36		NA			36-39' - NA
39		0.0			39-41' - SAA
41					

NOTES:  
SAA - same as above  
V/O I - visual / ol factory impacts  
NLO - naphthalene-like odor.



20' S of dividing fence  
224' W of curb



Client: National Grid	BORING ID: B-12
Project Number: G0137363	
Site Location: Clifton	Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza	Monitoring Well Screen: NA
Drilling Method: HSA Split Spoon	Monitoring Well Sump: NA
Sample Type(s): Grab-geotech	Boring Diameter: 6"
Logged By: Jessica Phillips	Ground Elevation: NA
Drilling Contractor: Big Apple	Date Started Pre-Cleared: 8/2/16
	Date Finished: 8/2/16
	Depth of Boring: 51' bgs
	Water Level: 16" bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		119			0-2 - Asphalt, concrete, fill (sand, gravel, clinker) dry, no odor (high pid reading). No visual.
2		209			2-3.5' - Sand, gravel, clinker, dry, no odor (high pid)
4		NA			3.5-4' - dk brown, silty clay, no odor.
6		5.7			4-6' - No recovery
8		NA			6-8 - SAA (3.5-4), wet.
10		2.0			8-10 - No recovery.
12		NA			10-12 - soft silty clay, dk brown, wet, no odor. No visual.
14		8.6			12-14 - NA
16		NA			14-16' - sandy silt, little gravel, light gray wet, slight NLO, slight sheen @ 15.5'
19		2.1			19-21' - Peat, organic odor.
21		NA			21-24' - NA
24		0.8			24-26' - SAA (19-21) silt @ 26' bgs, no V/OI.
26		NA			
29		0.4			29-31 - silty sand, brown, wet, no V/OI.
31		NA			31-34 - NA
34		0.2			34-36' - SAA (29-31)
36		NA			36-39' - NA
39		0.2			39-41 - SAA (29-31)
41					

NOTES: HSA - Hollow stem auger V/OI - Visual / d factory impacts.  
NA - not applicable.



24' S of driveway fence  
273' W of curb



Client: National Grid	BORING ID: B-13
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton	Monitoring Well Screen: NA
Boring Location: 1 Edgewater Plaza	Monitoring Well Sump: NA
Drilling Method: HSA 155	Boring Diameter: 6"
Sample Type(s): Grab-geotech	Date Started/Pre-Cleared: 8/2/16
Logged By: Jessica Phillips	Date Finished: NA
Drilling Contractor: Big Apple	Ground Elevation: NA
	Depth of Boring: 46' bags
	Water Level: no bags

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0					0-2' - Asphalt, concrete & fill, dry no VLOI. (high p/b same as B-12)
2		187/0.1			
4		201/0.1			2-4' - Fill - sand, gravel, clinker, dry, no VLOI. (high p/b)
6		487/0.1			4-6' - SAA (2-4)
8		9999/NA			6-8' - sand layer, clay & peat, gray, organic odor, no visual impacts, wet.
10		NA			8-10' - No recovery
12		0.1			10-12' - silty clay, dk brown, wet, no VLOI.
14		NA			12-14' - NA
16		0.1			14-16' - SAA (10-12)
19		NA			
21		2.1			19-21' - f. sand, dk brown, slight NLO & moderate skew.
24		NA			21-24' - <del>SAA</del> NA
26		6.1			24-26' - SAA (19-21)
29		NA			26-29' - NA
31		3.2			29-31' - Peat (29-30) <sup>no VLOI</sup> sandy silt, brown, no VLOI @ 30-31'
34		NA			31-34' - NA
36		0.0			34-36' - silt, stiff, brown, no VLOI.
39		NA			36-39' - NA
41		0.0			39-41' - SAA (31-36).

NOTES: HSA 155 - Hollowstem auger / split spoon. Remeasured headspace from geotech sample jars (that is the # to the right of high #'s).

VLOI - visual / ol factory / impacts.

\* Recalibrated pid; <sup>because</sup> readings were so high. (bump test showed pid was off)



29' S of curb  
132' E of fence



Client: National Grid	BORING ID: B-14	
Project Number: 60137363		
Site Location: Clifton		
Boring Location: Edgewater Plaza	Sheet: 1 of 2	
Drilling Method: HSA/SS	Monitoring Well Screen: NA	
Sample Type(s): grab-geotech	Boring Diameter: 6"	Monitoring Well Sump: NA
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 8/3/16
Drilling Contractor: Big Apple	Date Finished: 8/3/16	Depth of Boring: 51' bgs
		Water Level: 29' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0					0-2' - Asphalt, concrete, fill (i.sand, silt & clinker) dry, no V/OI.
2		0.7			
4		0.2			2-4' - f-c sand & silt, brown, dry, no V/OI.
6		0.2			4-6' - sand & silt, stiff, brown, moist, no V/OI.
8		0.4			6-8' - SAA, crushed <sup>concrete</sup> rubble, no V/OI.
10		0.6			8-9' - SAA (4-6)
12		11.7			9-10' - fill - sand, gravel, clinker, black, wet, no V/OI.
14		NA			10-12' - fill - concrete (crushed) sand, clinker, wet, moderate NLO. No visual impacts
16		0.6			12-14' - <sup>NA</sup> Silty sand, gravel, brown, wet, no V/OI.
18		NA			14-16'
20		NA			16-19' - NA
22		4.7			19-21' - soft silt, sand & gravel, brown, wet, <del>slight</del> slight NLO, no visual impacts.
24		NA			21-24' - NA
26		2.1			24-26' - SAA (19-21).
28		NA			26-29' - NA
30		2.1			29-31' - stiff silt, brown, no V/OI.
32		NA			31-34' - NA
34		1.2			34-36' - soft silt & sand & fine gravel, brown, wet, no V/OI.
36		NA			36-39' - NA
38		0.4			39-41' - SAA (34-36)

NOTES: HSA/SS - Hollow Stem Auger / Split Spool    NLO - naphthalene-like odor.  
 NA - Not applicable  
 V/OI - visual/olfactory impacts.



Client: National Grid  
 Project Number: 60137363  
 Site Location: Clifton  
 Boring Location: 1 Edgewater Plaza  
 Drilling Method: HSA/SS  
 Sample Type(s): grab-gedtech

BORING ID: B-14  
 Sheet: 2 of 2  
 Monitoring Well Screen: NA  
 Monitoring Well Sump: NA

Logged By: Jessica Phillips  
 Drilling Contractor: Big Apple

Ground Elevation: NA  
 Date Started Pre-Cleared: 8/3/16  
 Date Finished: 8/3/16

Depth of Boring: 51' bgs  
 Water Level: ~ 9' bgs

41  
44  
46  
49  
51

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
		NA			41-44' - NA
		0.5			44-46' - silt, soft, wet, brown, no v/o I.
		NA			46-49' - NA
					49-51' - stiff silt, little sand, brown, wet, no v/o I.
					End of boring 51' bgs.

NOTES:

28' N of curb  
181' E of fence



Client: National Grid	BORING ID: B-15
Project Number: 60137363	
Site Location: Clifton	Sheet: 1 of 2
Boring Location: Edgewater Plaza	Monitoring Well Screen: NA
Drilling Method: HSA/SS	Monitoring Well Sump: NA
Sample Type(s): Geotech-grab	Boring Diameter: 6"
Logged By: Jessica Phillips	Ground Elevation: NA
Drilling Contractor: Big Apple Testing	Date Started Pre-Cleared: 8/3/16
	Date Finished: NA
	Depth of Boring: NA
	Water Level: ~8' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.3			0-2' - Asphalt & concrete, NO VLOI
2		0.2			2-4' - concrete, fill (clinker, sand & gravel), silt, brown, moist, NO VLOI.
4		0.3			4-6' - sand & silt & gravel, brown, NO VLOI.
6		0.2			6-8' - SAA (4-6)
8		0.3			8-10' - clinker, sand, gravel, loose, brown, wet, NO VLOI.
10		1.4			10-12' - sand, silt, gravel, wet, brown, NO VLOI.
12		NA			12-14' - NA
14		0.3			14-15' - peat, organic odor, no VLOI.
16		NA			15-16' - sand/silt, stiff, dk brown, wet, NO VLOI.
19		0.3			16-19' - NA
21		0.3			19-21' - soft sand & silt, brown, wet, no VLOI.
24		NA			21-24' - NA
26		0.3			24-26' - stiff silt, little sand & gravel, brown, no VLOI
29		NA			26-29' - NA
31		0.1			29-31' - SAA (24-26)
34		NA			31-34' - NA
36		0.2			34-36' - SAA (24-26).
39		NA			36-39' - NA
41		0.2			39-41' - soft silt & gravel, brown, no VLOI.

NOTES: HSA/SS - Hollow Stem Auger / Split spoon  
 NA - Not applicable  
 VLOI - Visual / ol factery impacts.



7.5' away from  
a monitoring well

29' N of curb  
226' E of front St Area



Client: National Grid	BORING ID: B-1b
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton	Monitoring Well Screen: NA
Boring Location: 1 Edgewater Plaza	Monitoring Well Sump: NA
Drilling Method: HSA-SS	Boring Diameter: 6"
Sample Type(s): grab-geotech	Date Started/Pre-Cleared: 8/5/16
Logged By: Jessica Phillips	Date Finished: 8/5/16
Drilling Contractor: Big Apple	Ground Elevation: NA
	Depth of Boring: 51' bgs
	Water Level: ~8' bgs.

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		4.7			0-2' - Asphalt, concrete, fill (black sand, gravel & clinker) dry. Wood & gasoline-like odor at 2' bgs.
2		1.3			2-4' - fill-clinker, sand, gravel, dry, black no V/OI.
4		3.6			4-6' - silt & sand & large gravel, dry, brown, no V/OI.
6		2.4			6-8' - SAA, some coarse wet sand @ 8' bgs
8		NA			8-10' - No recovery
10		NA			10-12' - No recovery.
12		NA			12-14' - NA
14		0.0			14-16' - f-c sand & subrounded gravel, black, wet, no V/OI.
16		NA			16-19' - NA
19		1.4			19-21' - gray, wet, f-c sand, no V/OI.
21		NA			21-24' - NA
24		0.0			24-26' - SAA @ 24', stiff silt, sand & gravel, brown, wet, no V/OI. (24.5-26)
26		NA			26-29 - NA
29		0.0			29-30 - SAA (19-21)
31		NA			30-31' - SAA (24.5-26)
34		0.0			31-34 - NA
36		NA			34-36' - f-m sand, gray, wet, no V/OI.
39		0.0			36-39' - NA
41					39-41 - stiff silt, little sand, little gravel, brown, wet, no V/OI.

NOTES: HSA/SS - Hollow Stem Auger / split spoon  
 NA - not applicable.  
 V/OI - Visual/Oil factory Impacts.



29' N of curb  
274' E of front fence line



Client: National Grid	BORING ID: B-17
Project Number: 60137363	
Site Location: Clifton	Sheet: 1 of 2
Boring Location: Edgewater Plaza	Monitoring Well Screen: NA
Drilling Method: HSA/SS	Monitoring Well Sump: NA
Sample Type(s): grab geotech	Boring Diameter: 6"
Logged By: Jessica Phillips	Date Started Pre-Cleared: 8/5/16
Drilling Contractor: Big Apple	Date Finished: 8/5/16
Ground Elevation: NA	Depth of Boring: 51' bgs
	Water Level: ~6' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.0			0-2' - Asphalt, concrete, fill (sand, gravel, clinker) black dry, no V/OI.
2		0.0			2-4' - fill - clinker, sand, silt, dry, brown/black, no V/OI.
4		6.8			4-6' - SAA, wet
6		0.0			6-8' - SAA (2-4')
8		0.0			8-10' - SAA (2-4')
10		0.5			10-12' - f-c sand & clinker, wet, dk brown, no V/OI.
12		NA			12-14' - NA
14		2.9			14-16' - Fibrous peat, organic odor, no visual impacts.
16		NA			16-19' - NA
19		0.3			19-20.5' - Peat saa (14-16)
21		NA			20.5-21' - stiff silt, brown, no V/OI. 21-24' - NA
24		0.8			24-26' - silt, peat & sand, no V/OI.
26		NA			26-29' - NA
29		0.0			29-31' - clayey silt, stiff, low plastic, brown, wet, no V/OI.
31		NA			31-34' - NA.
34		0.9			34-36' - soft sandy silt, brown, wet, no V/OI.
36		NA			36-39' - NA
39		0.0			39-41' - stiff silt, little coarse gravel, brown, no V/OI.
41					

NOTES: HSA/SS - Hollow stem auger / split spoon  
 NA - Not applicable  
 SAA - Same as above.  
 V/OI - Visual / ol factory impacts.



981 west of entry curb  
25' North of fence curb



Client: National Grid	BORING ID: B-18
Project Number: 60137363	
Site Location: Clifton	Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza	Monitoring Well Screen: NA
Drilling Method: HSP/SS	Monitoring Well Sump: NA
Sample Type(s): grab-geotech	Boring Diameter: 6"
Logged By: Jessica Phillips	Ground Elevation: NA
Drilling Contractor: Big Apple	Date Started Pre-Cleared: 8/7/16
	Date Finished: 8/7/16
	Depth of Boring: 51' bgs
	Water Level: ~8' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.3			0-2' - Asphalt concrete fill (black sand & gravel, little clinker) dry, no VLOI.
2		6.7			2-4' - fill SAA,
4		NA			4-6' - No recovery, piece of cobble in show
6		3.9			6-8' - silty sand & gravel, brown, moist, no VLOI.
8		1.4			8-10' - sand, silt, gravel, wet, dk brown, no VLOI.
10		0.9			10-12' - <del>SS</del> (S-10).
12		NA			12-14' - NA
14		0.3			14-16' - sand, silt, brown, wet, stiff, no VLOI.
16		NA			16-19' - NA
19		0.4			19-21' - m-f sand, brown, wet, no VLOI.
21		NA			21-24' - NA
24		0.4			24-26' - loose sand, silt & gravel, wet, brown, no VLOI.
26		NA			26-29' - NA
<del>27</del>		NA			
29		NA			29-31' - sandy silt, some gravel, stiff, brown, wet, no VLOI.
31		NA			31-34' - NA
34		0.6			34-36' - SAA 29-31.
36		NA			
39		0.3			39-41' - Reddish brown silt, little sand, stiff, wet, no VLOI.
41					

NOTES:



52' West of entry curb  
24' North of fence curb



Client: National Grid		BORING ID: B-19	
Project Number: 60137363		Sheet: 1 of 2	
Site Location: Clifton		Monitoring Well Screen: N/A	
Boring Location: 1 Edgewater Plaza		Monitoring Well Sump: N/A	
Drilling Method: HSA 9.55		Boring Diameter: 6"	
Sample Type(s): grab geotech		Date Started/Pre-Cleared: 8/7/16	
Logged By: Jessica Phillips		Ground Elevation: N/A	
Drilling Contractor: Big Apple		Date Finished: N/A	
		Depth of Boring: 51' bgs	
		Water Level: ~8' bgs	

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	U.S.C.S.	Geologic Description
0		2.3			0-2' - Asphalt, concrete, fill- sand, gravel, clinker, black, dry, no VLOI.
2		0.5			2-4' - fill, & saa.
4		0.5			4-6' - fill, saa, wet @ 5' bgs
6		1.0			6-8' - sand, silt, gravel, clinker, wood, <del>wet</del> moist, black, JP
8		0.3			8-10' - SAA 6-8', wet.
10		0.4			10-12' - sand, silt, gravel, dk brown, wet, no VLOI.
12		NA			12-14' - NA.
14		0.2			14-16' - sand & silt, brown, wet, no VLOI.
16		NA			16-19' - NA
19		0.2			19'-21' - low recovery, silt & sand, wet, brown, no VLOI
21		NA			21-24' - NA.
24		0.3			24-26' - f-c sand, silt, wet, brown, no VLOI.
26		NA			26-29' - Na
29		0.2			29-31' - sandy silt, wet, brown, no VLOI.
31		NA			31-34' - NA
34		0.2			34-36' - c-f sand, loose, wet, brown, no VLOI.
36		NA			
39		0.2			39-40.5' - f-m sand, loose, wet, brown, no VLOI.
41					40.5-41' - stiff silt, brown, wet, no VLOI.

NOTES:



150' West of entry curb  
26' North of fence curb



Client: N. Grid	BORING ID: B-20
Project Number: 60137363	
Site Location: Clifton	
Boring Location: 1 Edgewater	Sheet: 1 of 2
Drilling Method: HSA CSS	Monitoring Well Screen: NA
Sample Type(s): Grabs - geotech	Boring Diameter: 6" / Monitoring Well Sump: NA
Logged By: Jesse Phillips	Ground Elevation: NA
Drilling Contractor: Big Apple	Date Started Pre-Cleared: 8/7/16
	Date Finished: 8/7/16
	Depth of Boring: 51' bgs
	Water Level: ~7' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.4			0-2 - Asphalt, concrete, fill - black sand, gravel, clinker, dry, no V/OI.
2		0.4			2-4 - fill, black sand & gravel pieces, dry, no V/OI.
4		0.4			4-6 - SAA, silty layer, brown, no V/OI.
6		0.5			6-8' - SAA (4-6), wet ~7' bgs
8		1.2			8-10' - sand, silt, gravel, clinker, wet, black, no V/OI.
10		0.4			10-12' - SAA (8-10).
12		NA			
14		0.4			14-16' - SAA (8-10).
16		NA			
19		0.0			19-20' - f-m sand, wet, brown, loose, no V/OI.
21		NA			20-21' - silt, stiff, brown, wet, no V/OI. 21-24' - NA
24		0.3			24-26' - SAA (19-21).
26		NA			26-29' - NA
29		0.1			29-31' - SAA (19-21).
31		NA			31-34' - NA
34		0.2			34-36' - reddish brown silt, stiff, no V/OI.
36		NA			36-39' - NA
39		0.4			39-41' - soft sand & gravel, wet, brown, no V/OI.
41					

NOTES:



20' S of dividing fence  
15' west of curb



Client: National Grid		BORING ID: B-21
Project Number: G0137363		
Site Location: Clifton		Sheet: 1 of 2
Boring Location: 1 Edgewater Plaza		Monitoring Well Screen: NA
Drilling Method: HSA/ISS		Monitoring Well Sump:
Sample Type(s): grab - geotech		Boring Diameter: 6"
Logged By: Jessica Phillips		Date Started Pre-Cleared: 8/7/16
Drilling Contractor: Big Apple		Date Finished: 8/7/16
Ground Elevation: NA	Depth of Boring: 51' bgs	Water Level: 46' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.3			0-2' - Asphalt concrete, sand, gravel, brick, clinker, black dry, no V/OI.
2		0.3			2-4' - Black sand & clinker, dry, no V/OI.
4		0.2			4-6' - SAA (2-4)
6		0.5			6-8' - SAA, wet.
8		0.2			8-10' - silt, soft, brown, wet, no V/OI
10		0.2			8-9' - SAA (6-8)
12		NA			10-12' - sandy silt, brown, wet, no V/OI.
14		0.2			12-14' - NA
16		NA			14-15' - saa (10-12)
19		0.4			15-16' - f sand, loose, wet, gray, no V/OI.
21		NA			16-19' - NA
24		0.3			19-20' - saa (15-16)
26		NA			20-21' - silt, brown, wet, no V/OI.
29		0.3			21-24' - NA
31		NA			24-26' - dk brown, fine sand, loose, wet, no V/OI.
34		0.8			26-29' - NA
36		NA			29-30.5' - saa (24-26)
39		0.3			30.5-31' - saa (20-21)
41		0.3			31-34' - NA
					34-36' - f.m sand, little c. sand, little silt, brown, wet, no V/OI.
					36-39' - NA
					39-41' - SAA (34-36)

NOTES:



196' W of entry curb  
27' N of fence curb



Client: National Grid	BORING ID: B-22
Project Number: 60137363	
Site Location: Clifton	
Boring Location: Edgewater Plaza	Sheet: 1 of 3
Drilling Method: HSA/RSS	Monitoring Well Screen: NA
Sample Type(s): grab-geotech	Boring Diameter: 6"
Logged By: Jessica Phillips	Date Started Pre-Cleared: 8/8/16
Drilling Contractor: Big Apple Testing	Date Finished: 8/8/16
Ground Elevation: NA	Depth of Boring: 101' bgs
	Water Level: ~8' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		0.0			0-2' - Asphalt, concrete, fill - sand, gravel, clinker, black, dry, no V/OT.
2		0.0			2-4' - fill - sand, gravel, clinker, black, dry, no V/OT.
4		0.0			4-6' - SAA (2-4) moist
6		0.1			6-8' - SAA (2-4) wet @ ~8' bgs
8		0.0			8-10' - SAA (2-4).
10		NA			10-12' - no recovery.
12		NA			12-14' - NA
14		0.0			14-16' - sand, gravel, clinker, loose, wet, dk brown, no V/OT.
16		NA			16-19' - NA
19		0.0			19-20' - sand layer followed by peat layer, no V/OT.
21		NA			20-21' - silt, sand gravel, gray & black bands, no V/OT. 21-24' - NA
24		0.0			24-26' - f-m sand, trace c. sand, wet, brown, no V/OT.
26		NA			26-29' - NA
29		0.0			29-31' - silt, soft, brown, wet, no V/OT.
31		NA			31-34' - NA
34		0.0			34-36' - SAA (29-31') <del>fill</del> trace gravel.
36		NA			36-39' - NA
39		0.2			39-41' - reddish brown silt, no V/OT.
41					

NOTES:



Client: National Grid  
 Project Number: 60137363  
 Site Location: Clifton  
 Boring Location: 1 Edgewater Plaza  
 Drilling Method: HSP/SS  
 Sample Type(s): grab-geotech  
 Boring Diameter: 6"  
 Logged By: Jessica Phillips  
 Drilling Contractor: Big Apple  
 Ground Elevation: N/A  
 Date Started Pre-Cleared: 8/8/16  
 Date Finished: 8/8/16  
 BORING ID: B-22  
 Sheet: 2 of 3  
 Monitoring Well Screen: NA  
 Monitoring Well Sump: NA  
 Depth of Boring: 01' bgs  
 Water Level: ~ 8' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
41		NA			41-44' - NA
44		0.0			44-46' - soft sandy silt w/ gravel, wet, brown, no V/OI.
46		NA			46-48' - NA
49		0.0			49-51' - SAA (44-46) stiff 50-51'
51		NA			51-54' - NA
54		0.0			54-56' - SAA (44-46) stiff
56		NA			56-59' - NA
59		0.0			59-61' - stiff silt, little sand, little gravel, wet, brown, no V/OI.
61		NA			61-64' - NA
64		0.0			64-66' - SAA (59-61)
66		NA			
69		0.0			69-70' - f. sand, little silt, wet, brown, no V/OI. 70-71' - SAA (59-61)
71		NA			71-74' - NA
74		0.0			74-76' - stiff silt, little gravel, wet, brown, no V/OI.
76		NA			76-79' - NA
79		0.0			79-81' - SAA (74-76)

NOTES:



Client: National Grid  
Project Number: 60137363  
Site Location: Clinton  
Boring Location: 1 Edgewater Plaza  
Drilling Method: HSA-PSS  
Sample Type(s): grab-geotech  
Boring Diameter: 6"  
BORING ID: B-22  
Sheet: 3 of 3  
Monitoring Well Screen: N/A  
Monitoring Well Sump: N/A

Logged By: Jessica Phillips  
Drilling Contractor: Big Apple  
Ground Elevation: NA  
Date Started Pre-Cleared: 8/8/16  
Date Finished: 8/8/16  
Depth of Boring: 101' bgs  
Water Level: ~ 8' bgs

81  
84  
86  
89  
91  
94  
96  
99  
101

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
		NA			81-84' - NA
		0.0			84-86' - SMA (74-76)
		NA			86-89' - NA
		NA			89-91' - No recovery.
		NA			91-94' - NA
		0.0			94-96' - SMA (74-76)
		NA			96-99' - NA
		0.0			99-101' - SMA (74-76)
					End of boring 101' bgs

NOTES:

SOLE of front st fence  
26' S of fence



Client: National Grid	BORING ID: B-23	
Project Number: 60137363		
Site Location: Clifton	Sheet: 1 of 2	
Boring Location: 1 Edgewater Plaza	Monitoring Well Screen: NA	
Drilling Method: HSA-955	Monitoring Well Sump: NA	
Sample Type(s): grab-gastech	Boring Diameter: 6"	
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 8/9/16
Drilling Contractor: Big Apple	Date Finished: 8/9/16	Depth of Boring: 51' bgs
		Water Level: 26' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0		NA			0-2' - concrete (augered through, no <sup>split</sup> spoon)
2		5.6			2-4' - concrete powder
4		3.0			4-6' - SAA(2-4) driller says void space after concrete.
6		0.3			6-8' - powdered concrete followed by fill, clinker, sand, gravel, black, wet, no VLOI.
8		0.2			8-10' - clinker, sand, gravel, black, wet, no VLOI.
10		0.2			10-12' - very little recovery, just a little sand in spoon.
12		NA			12-14' - NA
14		0.2			14-16' - SAA(8-10)
16		NA			16-19' - NA
19		0.2			19-21' - SAA(8-10)
21		NA			21-24' - NA
24		2.6			24-26' - clinker, silt, sand, gravel, dk gray, loose, wet, slight NLO, slight sheer.
26		NA			26-29' - NA
29		1.4			29-30' - SAA(24-26).
31		NA			30-31' - f. sand, wet, loose, gray, organic odor, no visual impacts.
34		1.7			31-34' - NA
36		NA			34-35' - SAA(30-31)
39		0.2			35-36' - stiff silt, little gravel, brown, no VLOI.
41					36-39' - NA
					39-41' - silt, sand, gravel, <sup>0.5'</sup> loose to stiff, <sup>0.4'</sup> brown, no VLOI.

NOTES:



98' E of front st fence  
31' S of fence

<b>AECOM</b>	Client: National Grid	BORING ID: B-24
	Project Number: 60137363	
	Site Location: Clifton	Sheet: 1 of 2
	Boring Location: 1 Edgewater Plaza	Monitoring Well Screen: NA
	Drilling Method: HSA/SS	Monitoring Well Sump: NA
Sample Type(s): grab-geotech	Boring Diameter: 6"	Depth of Boring: 51' bgs
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 8/9/16
Drilling Contractor: Big Apple	Date Finished: 8/9/16	Water Level: ~6' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0					
2		0.2			0-2' - Asphalt, concrete, fill - dry, black, clinker & sand & gravel, no V/O.I.
4		0.1			2-4' - fill - clinker, sand, gravel, black, no V/O.I.
6		0.2			4-6' - SAA(2-4)
8		0.0			6-8' - SAA(2-4), wet.
10		0.1			8-10' - SAA(6-8).
12		1.0			10-12' - black, soft silt, slight NLO, no visual impacts, little gravel & clinker, wet.
14		NA			12-14' - NA
16		0.9			14-16' - SAA(10-12)
19		NA			
21		0.1			19-21' - SAA(10-12)
24		NA			21-24' - NA
27		0.1			24-26' - sand, gravel, clinker, loose, wet, dk gray, no V/O.I.
29		NA			26-29' - NA
31		0.1			29-30' - SAA(24-26)
34		NA			30-31' - stiff brown silt, gravel, wet, no V/O.I.
36		1.4			31-34' - NA
39		NA			34-36' - SAA(30-31).
41		0.0			36-39' - NA
					39-41' - SAA(30-31) driller thinks he is on cobble/boulder.

NOTES:



31' S of fence  
126' E of tree



Client: National Grid	BORING ID: B-25
Project Number: 60137363	Sheet: 1 of 2
Site Location: Clifton	Monitoring Well Screen: NA
Boring Location: 1 Edgewater Plaza	Monitoring Well Sump: NA
Drilling Method: HSA 0/SS	Boring Diameter: 6"
Sample Type(s): grab-geotech	Date Started/Pre-Cleared: 8/9/16
Logged By: Jessica Phillips	Date Finished: 8/10/16
Drilling Contractor: Big Apple	Ground Elevation: NA
	Depth of Boring: 51' bgs
	Water Level: ~6' bgs

0  
2  
4  
6  
8  
10  
12  
14  
16  
19  
21  
24  
26  
29  
31  
34  
36  
39  
41

fill  
tapped

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
0-2'		NA			concrete.
2-3.5'		0.9			clinker, sand, gravel, black, dry, no V/OI.
3.5-4'		0.0			clean f. sand brown, dry, no V/OI. +
4-5'		0.2			brown sand, silt, gravel, loose, dry, no V/OI.
5-6'		0.0			clean f. sand, brown, moist, <sup>low</sup> no V/OI. wet @ 6' bgs.
6-7'		0.2			SAA (4-5), wet.
7-8'		0.0			SAA (5-6), wet.
8-10'		1.9			SAA (5-6) wet.
10-12'		1.9			Black, soft, silty clay, wet, no V/OI.
12-14'		NA			NA
14-16'		60.1			SAA (10-12), strong NLO, light sheen, few blebs.
16-19'		NA			NA
19-21'		3.9			Black soft clay, wet, <del>strong</del> moderate NLO, no V/OI.
21-24'		NA			NA
24-26'		8.6			SAA (19-21).
26-29'		NA			NA
29-31'		5.6			fine grading to coarse sand & gravel, black, wet, moderate NLO, sheen @ 30' bgs. Peat layer starting at 30.5'.
31-34'		NA			NA
34-36'		0.9			sandy silt with gravel, brown, wet, no V/OI.
36-39'		NA			NA
39-41'		0.2			SAA (34-36).

NOTES: JP observed clean sand & informs driller this is not native (possible utility).





321 S of fence.  
181' E of fence



Client: National Grid	BORING ID: B-26	
Project Number: 60137363		
Site Location: Clifton	Sheet: 1 of 2	
Boring Location: 1 Edgewater Plaza	Monitoring Well Screen: NA	
Drilling Method: HSA/SS	Monitoring Well Sump: NA	
Sample Type(s): grab geotech	Boring Diameter: 6" <sup>64</sup>	Depth of Boring: 51' bgs
Logged By: Jessica Phillips	Ground Elevation: NA	Date Started/Pre-Cleared: 8/10/16
Drilling Contractor: Big Apple	Date Finished: 8/10/16	Water Level: ~8' bgs

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	U.S.C.S	Geologic Description
0		0.0			0-1' - concrete
2		0.0			1-2' - Clinker, gravel, sand, black, dry, no v/oi of concrete.
4		0.0			2-4' - Clinker, gravel, c-f sand, black to brown, dry, no v/oi.
6		0.0			4-6' - Clinker, sand, gravel, concrete, silt, black to brown, dry, no v/oi.
8		0.0			6-8' - SAA (4-6) wet @ 8' bgs
10		0.0			8-10' - SAA (4-6) wet.
12		NA*			10-12' - SAA (8-10)
14		NA			12-14' - NA
16		NA*			14-15' - SAA (8-10)
					15-16' - soft silt, black, slight NLO, no visual impacts.
					16-19' - NA
19		NA*			19-21' - sand & silt, dark gray to black, wet, soft, moderate NLO, light shear.
21		NA			21-24' - NA
24		9.6			24-26' - f-m sand, gray, wet, moderate NLO, no visual impacts. Some silt, shear in silt from 24-25'.
26		NA			26-29' - NA
29		95.7			29-31' - f-m sand, little silt, dk gray, wet, strong NLO, shear. Peat @ 31' bgs.
31		NA			31-34' - NA
34		45.9			34-35' - f-m sand, dark gray sand, loose, wet, moderate NLO. 35-36' - silt, brown, stiff, no v/oi.
36		NA			36-39' - NA
39		0.0			39-41' - soft silt, little gravel, brown, wet, no v/oi.
41					

NOTES: \*no pid readings due to heavy rain



Client: National Grid  
Project Number: 60137363  
Site Location: Clifton  
Boring Location: 1 Edgewater Plaza  
Drilling Method: HSA/SS  
Sample Type(s): gral geotech

BORING ID: B-26  
Sheet: 2 of 2  
Monitoring Well Screen: NA  
Monitoring Well Sump: NA

Logged By: Jessica Phillips  
Drilling Contractor: Big Apple

Ground Elevation: NA  
Date Started Pre-Cleared: 8/10/16  
Date Finished: 8/10/16

Depth of Boring: 51' bgs  
Water Level: ~8' bgs

41  
44  
46  
49  
51

Depth (feet)	Recovery (feet)	PID (ppm)	Lab Sample ID	USCS	Geologic Description
		NA			41-44' - NA
		0.0			44-45' - f. sand, gray, loose, wet, slight NLO, no visual 45-46' - stiff silt, brown, wet, no vlot.
		NA			46-49' - NA
		0.0			49-51' - SAA (44-46), no odor.
					End of boring 51' bgs

NOTES:

Client	National Grid	Boring ID:	B-27
Project Number:	60137363		
Site:	Clifton		
Project Manager: R. Fester		Logged By: J. Phillips	Date Started: 8/10/16
Drilling Co.: Big Apple		Driller: OZZY	Date Finished: 8/11/16
			Water Level: N/A

Sheet:	1 of 3
Drilling Method:	HSA/SS
Ground Elev.:	N/A
Depth of Boring:	51' 5.5"

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
0					2.4		0-6" - concrete 6"-2' - clinker, gravel, sand, dry, black, no vlot.
2					2.9		2-4' - SAA (6"-2')
4					3.1		4-6' - SAA (6"-2')
6					0.3		6-8' - clinker, sand, silt, gravel, brick debris, moist, no vlot
8					NA		8-10' - No recovery
10					0.7		10-12' - Black silty clay, soft, no vlot; wet.
12					NA		12-14' NA
14					0.3		14-16' - SAA (16-12')
16					NA		16-19' NA
19					8.1		19-21' - SAA (10-12) slight NLO.
21					NA		21-24' - NA
24							



330' E of fence  
40' S of fence

Client		National Grid		Boring ID:			
Project Number:		60137263		B-28			
Site:		Clinton		Sheet: 1 of 2			
Project Manager:		R. Forstner		Drilling Method: HSA/LSS			
Drilling Co.:		Big Apple		Ground Elev.: NA			
Logged By:		J. Phillips		Date Started: 8/11/16			
Driller:		DZEE		Date Finished:			
Depth of Boring:				Water Level: ~4" bgs			
Depth	Elevation	Lab Sample ID	Recovery	Moisture	PID	USCS	Classification of Material
feet	feet		feet		ppm		
0					6.0		0-4" - concrete 4"-1' - fill, clinker, sand, gravel, black, wet, no vlot. 1-2' - silt & f.c sand, soft, brown, wet, no vlot
2					5.1		2-4' - brown sand & silt & gray silty clay, soft, wet, no vlot.
4					6.9		4-6' - SAA (2-4)
6					5.4		6-8' - soft silt, sand, gravel, gray, wet, no vlot.
8					3.7		8-8.5' - f-m sand, brown, wet, no vlot. 8.5-10' - soft silty clay, dk gray, wet, no vlot
10					3.4		10-12' - SAA (8-10')
12					NA		12-14' - NA
14					2.7		14-16' - soft, silt & sand, dk brown - black, wet, no vlot.
16					NA		16-19' - NA
19					273		19-21' - SAA (14-16) moderate NLO & skew.
21					NA		21-24' - NA
24							

note first spoon was wet. Probably not water level, water most likely came from rain water & cracks in the cement. unable to determine true water level here.

Client	National Grid	Boring ID:	B-28
Project Number:	60137363		
Site:	Clifton		
		Sheet:	2 of 2
		Drilling Method:	HSA/SS
		Ground Elev.:	NA
Project Manager:	R. Forster	Logged By:	J Phillips
Drilling Co.:	Big Apple	Driller:	OTW
Date Started:	8/11/16	Depth of Boring:	
Date Finished:		Water Level:	N4"

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
24					4.0		24-25' - SAA (19-21). 25-26' - f. sand, gray, wet, slight NLOI & patchy shear.
26					NA		26-29' - NA
29					3.6		29-30' - SAA (25-26) 30-31' - peat, fibrous, brown, organic odor, no visual impacts
31					NA		31-34' - NA
34					0.5		<del>39-40'</del> - peat, brown, few fibers, organic odor no visual impacts. <del>40-41'</del> - sandy silt w/ gravel, brown, wet, no VLOI.
36					NA		36-39' - NA
39					0.3		39-41' - black silt, sand, clay, gravel, soft, no VLOI.
41					NA		41-44' - NA
44					0.8		44-45' - f-m sand, loose, wet, brown, no VLOI. 45-46' - sandy silt, brown, no VLOI.
46					NA		46-49' - NA
49					0.6		49-51' - loose sand, silt & gravel, brown, wet, no VLOI
51							

End of boring 51' bgs

(in its own parking lot) 7' from curb (to east) 45' S from fence.

Client: National Grid  
 Project Number: 60137363  
 Site: Clifton

Boring ID: B-29

Sheet: 1 of 2  
 Drilling Method: HSA/SS  
 Ground Elev.: NA

Project Manager: R. Forster  
 Logged By: J. Phillips  
 Date Started: 8/11/14  
 Drilling Co.: Big Apple  
 Driller: O'Flynn  
 Date Finished: 8/12/14  
 Depth of Boring: 51' bgs  
 Water Level: ~ 8' bgs

Depth	Elevation	Lab Sample ID	Recovery	Moisture	PID	USCS	Classification of Material
feet	feet		feet		ppm		
0					0.0		0-2' - Asphalt, concrete, sand & gravel, brown, dry, no VLOI
2					0.0		2-4' - Brown & black sand, large gravel, chunky, dry, no VLOI.
4					NA		4-6' - No recovery
6					NA		6-8' - No recovery
8					3.5		8-10' - sand & soft silt, dk brown, wet, no VLOI.
10					1.5		10-12' - soft silt, dk brown, wet, no VLOI. f. sand, wet, dk gray, no VLOI @ 12'
12					NA		12-14' - NA
14					2.5		14-16' - soft silt, dark brown, wet, no VLOI.
16					NA		16-19' - NA
19					23.5		19-21' - soft silt, dark brown to black, wood debris, wet, mod NLO.
21					NA		21-24' - NA
24							

Client	National Grid	Boring ID:	B-29
Project Number:	60137363		
Site:	Clifton		
		Sheet:	2 of 2
		Drilling Method:	HSA/SS
		Ground Elev.:	NA
Project Manager:	R. Fustner	Logged By:	J. Phillips
Drilling Co.:	Big Apple	Driller:	Ozey
Date Started:	8/11/16	Date Finished:	8/12/16
Depth of Boring:	51' bgs	Water Level:	~8' bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
24					13.3		24-26' - SAA (19-21) slight NLO, slight sheen, few blebs, <del>no</del>
26					NA		26-29' - NA
29					0.0		29-30' bgs - f-c sand, gray, wet, loose no VLOI. 30-31' - Peat, organic odor no visual defects
31					NA		31-34' - NA
34					0.0		34-36' - SAA (29-30)
36					NA		36-39' - NA
39					0.0		39-41' - f-m sand, loose, gray, wet, no VLOI.
41					NA		41-44' - NA
44					0.0		44-46' - SAA (39-41).
46					NA		46-49' - NA
49					0.0		49-51' - f-c sand & gravel, wet, no VLOI.

End of boring 51' bgs

7 ft west of well  
42' south of fence

Client	National Grid	Boring ID:	B-30
Project Number:	60137363	Sheet:	1 of 2
Site:	Clifton	Drilling Method:	HSA/SS
		Ground Elev.:	NA

Project Manager:	R. Forstner	Logged By:	J. Phillips	Date Started:	8/12/16	Depth of Boring:	51' bags
Drilling Co.:	Big Apple	Driller:	Reggie	Date Finished:	8/12/16	Water Level:	~4' bags

Depth	Elevation	Lab Sample ID	Recovery	Moisture	PID	USCS	Classification of Material
feet	feet		feet		ppm		
0					0.0		0-2' - Asphalt, concrete & fill (clinker, sand & gravel) dry, no V/OI
2					0.0		2-4' - brown sand & silt & black clinker, dry, no V/OI.
4					0.0		4-6' - dk brown soft silt, gravel, sand, wet, no V/OI.
6					0.0		6-8' - silty clay, brown, no V/OI, wet.
8					0.0		8-10 - sand, silt & gravel, dk brown, no V/OI.
10					0.0		10-12' - SAA (8-10).
12					NA		12-14' - NA
14					0.0		14-16' - soft, sand, silt, gravel, brown, wet, no V/OI.
16					NA		16-19' - NA
19					0.0		19-21' - SAA (14-16)
21					NA		21-24' - NA
24							

Client	National Grid	Boring ID:	B-30
Project Number:	60137363		
Site:	Clifton		
		Sheet:	2 of 2
		Drilling Method:	HSA/SS
		Ground Elev.:	NA
Project Manager:	R. Forster	Logged By:	J. Phillips
Drilling Co.:	Big Apple	Driller:	Reggie
		Date Started:	8/12/16
		Date Finished:	8/12/16
		Depth of Boring:	51' bgs
		Water Level:	~4' bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
24					3.3		24-26' - dk brown sand, gravel, little silt, wet, slight NLO, patchy sheer.
26					NA		26-29' - NA
29					0.2		29-31' - sand & silt, little gravel, stiff @ 31, no vlot.
31					NA		31-34' - NA
34					0.0		34-36 - SAA (29-31).
36					NA		36-39' - NA.
39					0.0		39-41 - loose, wet, sand & silt, brown, no vlot
41					NA		NA
44					0.0		44-46' - sand, silt & gravel, brown, wet, no vlot
46					NA		46-49' - NA
49					0.0		49-51' - SAA (44-46)
51							

End of boring 51' bgs.

4' Soft fence

Client: National Grid		Project Number: 60137363		Site: Clifton		Boring ID: B-31	
Project Manager: R. Foster		Logged By: J. Phillips		Date Started: 8/10/16		Sheet: 1 of 2	
Drilling Co.: Big Apple		Driller: OZZY		Date Finished: 8/12/16		Drilling Method: HSA/SS	
						Ground Elev.: NA	
						Depth of Boring: 5' bgs	
						Water Level: ~3' bgs	
Depth	Elevation	Lab Sample ID	Recovery	Moisture	PID	USCS	Classification of Material
feet	feet		feet		ppm		
0					0.0		0-2' - Asphalt, concrete, brown sand & gravel, dry, no VLOI.
2					0.0		2-4' - Sand & silt, soft silt @ 3-4' brown, no VLOI, wet @ 3' bgs
4					0.0		4-6' - SAND & silt, brown, wet, no VLOI.
6					0.0		6-8' - sand followed by silt, dk brown, wet, no VLOI.
8					0.0		8-10 - very little recovery, wet, brown sand & gravel
10					2.0		10-12' - SAA (6-8) very slight NLO.
12					NA		12-14' - NA
14					2.7		14-16 - soft silt, dk brown, wet, slight NLO, no visual impacts. more sandy @ 16'
16					NA		16-19' - NA
19					1.8		19-21 - sand, silt, soft, black, trace gravel, trace wood, wet, slight crease-like abry no visual.
21					NA		21-24' - NA
24							

Client	National Grid	Boring ID:	B-31
Project Number:	00137363		
Site:	Clifton		
		Sheet:	2 of 2
		Drilling Method:	NSA/SS
		Ground Elev.:	NA

Project Manager:	R. Forster	Logged By:	J. Phillips	Date Started:	8/12/16	Depth of Boring:	51' bgs
Drilling Co.:	Big Apple	Driller:	OZZ	Date Finished:	8/12/16	Water Level:	~3' bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
24					1.0		24-26' - Soft silty clay, wood debris, wet, black, slight crease-like odor, no visible impacts.
26					NA		26-29' - NA
29					0.0		29-31' - Gray f-c graded sand, loose, wet, no V/I.
31					NA		31-34' - NA
34					0.0		34-36' - Sand, silt & gravel, brown, wet, stiff, no V/I.
36					NA		36-39' - NA
39					0.0		39-41' - SAA (34-36).
41					NA		41-44' - NA
44					0.0		44-46 f-c sand & gravel, wet, loose, brown, no V/I. - more silty @ 46'.
46					NA		46-49' - NA
49					0.0		49-51' - silt, gravel & c. sand, brown, wet, stiff, no V/I.

End of boring 51' bgs.

Client	National Grid	Boring ID:	B-32
Project Number:	60137363		
Site:	Clifton		
		Sheet:	1 of 4
		Drilling Method:	HSA/SS
		Ground Elev.:	NA

Project Manager:	R. Fustner	Logged By:	J. Phillips	Date Started:	8/15/16	Depth of Boring:	91' bgs
Drilling Co.:	Big Apple	Driller:	OZEY	Date Finished:	8/15/16	Water Level:	no bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
0					0.0		0-6" - concrete 6"-2' - sand & gravel, followed by silty sand, wet @ 2' bgs, no VLOI.
2					0.5		2-4' - low recovery - f-m sand & gravel, brown, moist, no VLOI.
4					0.0		4-6' - SAA(2-4).
6					2.1		6-8' - soft silty clay, black, wet, very slight NLO.
8					5.4		8-10' - silty sand, dk brown, wet, very slight NLO.
10					3.3		10-12' - soft, silty clay, black, wet, slight NLO followed by silty sand, no VLOI. (11-12')
12					NA		12-14' - NA
14					1.2		14-16' - silty sand, trace wood, black, wet, slight creosote-like odor. no usual impacts.
16					NA		16-19' - NA
19					0.0		19-21' - black sand, silt & gravel, wet, no VLOI.
21					NA		21-24' - NA
24							

Client	National Grid	Boring ID:	B-32
Project Number:	60137363		
Site:	Clifton		

Sheet: 2 of 4  
 Drilling Method: HSA/SS  
 Ground Elev.: NA

Project Manager: R. Forster  
 Drilling Co.: Big Apple  
 Logged By: J. Phillips  
 Driller: OTTY  
 Date Started: 8/15/16  
 Date Finished: 8/15/16  
 Depth of Boring: 91' bgs  
 Water Level: ~6' bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
24					0.0		24-26' - soft, wet, sand, silt & gravel, black, no VLOI.
26					NA		26-29' - NA
29					0.0		29' - 31' - f. sand, stiff, wood, dk brown, wet, no VLOI.
31					NA		31-34' - NA
34					0.0		34-36' - sand, silt & gravel, brown, wet, no VLOI.
36					NA		36-39' - NA
39					0.0		39-41' - f-m sand & silt, little gravel, wet, brown, no VLOI.
41					NA		41-44' - NA
44					0.0		44-46' - SAA(39-41).
46					NA		46-49' - NA
49					0.0		49-51' - SAA(39-41).
51							

Client	National Grid	Boring ID:	B-32
Project Number:	60137363		
Site:	Clifton		
		Sheet:	3 of 4
		Drilling Method:	HSA/SS
		Ground Elev.:	NA
		Depth of Boring:	91' bgs
		Water Level:	~6' bgs

Project Manager:	R. Forstner	Logged By:	J. Phillips	Date Started:	8/5/16	Depth of Boring:	91' bgs
Drilling Co.:	Big Apple	Driller:	OTZ	Date Finished:	8/15/16	Water Level:	~6' bgs

Depth feet	Elevation feet	Lab Sample ID	Recovery feet	Moisture	PID ppm	USCS	Classification of Material
51					NA		51-54' - NA
54					0.0		54-56' - silty, little sand & gravel, brown, wet, No vlot.
56					NA		56-59' - NA
59					0.0		59-61' - SAA, reddish brown.
61					NA		61-64' - NA
64					0.0		64-66' - SAA (59-61).
66					NA		66-69' - NA
69					0.0		69-71' - silt, little gravel, reddish brown, no vlot.
71					NA		71-74' - NA
74					0.0		74-76' - SAA, brown.
76					NA		76-79' - NA

44' south of road  
21' west of curb next to building.

Client: National Grid		Boring ID: B-32	
Project Number: 60137363		Sheet: 4 of 4	
Site: Clinton		Drilling Method: HSA/SS	
		Ground Elev.: NA	
Project Manager: R. Forster		Logged By: J. Phillips	
Drilling Co.: Big Apple		Driller: Oze	
		Date Started: 8/15/16	
		Date Finished: 8/15/16	
		Depth of Boring: 91' bgs	
		Water Level: ~6' bgs	

Depth	Elevation	Lab Sample ID	Recovery	Moisture	PID	USCS	Classification of Material
feet	feet		feet		ppm		
79					0.0		79-81' - SAA (69-71).
81					NA		81-84' - NA
84					0.0		84-86' - brown, wet, silt & gravel, no V.I.
86					NA		86-89' - NA
89							89-91' - silt & gravel, brown, wet, no V.I.
91					<del>NA</del>		End of boring @ 91' bgs due to refusal. driller believes there is a cobble @ 91'.
<del>94</del>					<del>NA</del>		
<del>96</del>					<del>NA</del>		
<del>99</del>							
101							

## **Appendix D**

### **Photo Logs of Edgewater Borings**



Boring B-1  
Date: 7/26/16  
Depth: 10'-12'  
Notes: Slight sheen and tar-like odor  
at 12'



Boring B-4  
Date: 7/28/16  
Depth: 14' - 16'  
Notes: Boring exhibits trace organics  
with a slight naphthalene odor and a  
slight sheen.



Boring B-4  
Date: 7/28/16  
Depth: 24' – 26'  
Notes: Moderate sheen, and moderate naphthalene odor.



Boring B-6  
Date: 7/29/16  
Depth: 10' – 12'  
Notes: Moderate to strong naphthalene odor. This boring also exhibits a sheen and blebs throughout.



Boring B-19  
Date: 8/7/16  
Depth: 10' – 12'  
Notes: No impacts



Boring B-23  
Date: 8/9/16  
Depth: 24' – 26'  
Notes: Slight naphthalene odor with a slight sheen.



Boring B-25  
Date: 8/9/16  
Depth: 14' – 16'  
Notes: Strong naphthalene odor with a slight sheen and a few blebs.



Boring B-25  
Date: 8/10/16  
Depth: 29' – 31'  
Notes: Moderate naphthalene odor with sheen.



Boring B-27  
Date: 8/11/16  
Depth: 29' – 31'  
Notes: Moderate naphthalene odor  
with patchy sheen.



Boring B-28  
Date: 8/11/16  
Depth: 19' – 21'  
Notes: Moderate naphthalene odor  
with sheen.



Boring B-5  
Date: 7/28/16  
Depth: 24' – 26'  
Notes: Slight naphthalene odor with moderate sheen.



Boring B-14  
Date: 8/3/16  
Depth: 10' – 12'  
Notes: Moderate naphthalene odor with very slight sheen.



Boring B-12  
Date: 8/2/16  
Depth: 14' – 16'  
Notes: Slight naphthalene odor with slight sheen at 15.5'.



Boring B-13  
Date: 8/2/16  
Depth: 19' – 21'  
Notes: Slight naphthalene odor with moderate sheen.

## **Appendix E**

### **CAMP Data, Oversight of Third Party Geotechnical Investigation (One Edgewater Street)**



Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: 1 Ebeewater  
 Date: 7/26/16  
 Field Personnel: Jessica Phillips

Project: Cliffon  
 Project Number: 00137363  
 Weather: Hot & humid  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
1015	0.0	0.018	0.0	0.0	0.024	NA	working on drill rig
1030	0.1	0.015	0.0	0.0	0.021		"
1055	0.4	0.014	0.0	0.0	0.019		Drilling B1
1110	18.4*	0.016	0.0	0.0	0.018		* drilling B1 - JP recalled opening pad noting noise to cause it to be high
1125	3.7	0.010	0.0	0.0	0.020		Drilling B-1
1140							No drilling.
1325	3.8	0.012	0.0	0.0	0.020		Resume drilling B-1
1340	1.7*	0.009	0.0	0.0	0.017		Drilling B-1
1400	0.5	0.009	0.0	0.0	0.013		removed moisture filter from p. 2 already sawent down
1415	0.6	0.009	0.2	0.0	0.012		"
1450	0.8	0.010	0.0	0.0	0.009		"
1505	0.2	0.010	0.0	0.0	0.010		"
1520	0.0	0.010	0.0	0.0	0.014		"
1535	0.0	0.010	0.0	0.0	0.010		Break before pulling - appears setting up to break
1600	0.2	0.010	0.0	0.0	0.011		mixing cement
1620	0.3	0.010	0.0	0.0	0.015		Pulling augers
1630	0.9	0.009	0.0	0.0	0.011		
1705	1.0	0.010	0.0	0.0	0.008		

Other than the humidity

\* removed moisture filter from p. 2 already sawent down

water break



Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
Location: 1 Edgewater Plaza  
Date: 7/27/16  
Field Personnel: J. Phillips

Project: Clifton  
Project Number: 60137363  
Weather: Hot, hazy, humid  
Ambient Noise: NA

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
755	0.0	0.026	0.0	0.0	0.029	NA	Setting up on B-2
825	0.0	0.017	0.0	0.0	0.020		Drilling B-2
840	0.3	0.019	0.0	0.0	0.023		"
855	0.2	0.016	0.3	0.0	0.020		"
910	0.7	0.020	0.0	0.0	0.022		"
1000	0.6	0.010	0.0	0.0	0.014		"
1015	1.3	0.010	0.0	0.0	0.013		"
1030	0.7	0.014	0.0	0.0	0.013		"
1045	0.2	0.040	0.0	0.0	0.011		Pulling augers from B-2
1125	3.0	0.000	0.0	0.0	0.005		concrete plug at B-2
1140	0.6	0.009	0.0	0.0	0.007		Drilling B-3
1155	0.9	0.009	0.0	0.0	0.004		"
1210	0.7	0.009	0.0	0.0	0.005		"
1225	0.9	0.010	0.0	0.0	0.004		"
1345	0.0	0.012	0.0	0.0	0.012		"
1405	0.0	0.013	0.4	0.0	0.019		"
1425	0.0	0.013	0.0	0.0	0.013		"
1500	0.1	0.032	0.0	0.0	0.064		"
1575	0.0	0.012	0.0	0.0	0.015		Preparing to graft B-3
1535	0.0	0.011	0.0	0.0	0.015		grafting B-3 location.
1550	1.0	0.011	0.0	0.0	0.015		Pulling augers

Break L





Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: Edgewater Plaza  
 Date: 7/29/16  
 Field Personnel: Jessica Phillips

Project: Clifton - Edgewater  
 Project Number: 60187863  
 Weather: 75°F, cloudy, windy  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
1045	0.0	0.033	0.0	0.1	0.044	N/A	Drilling B-6
1100	0.0	0.029	0.8	0.0	0.039		"
1115	0.0	0.022	0.0	0.0	0.030		"
1130	0.0	0.023	0.3	0.0	0.030		"
1150	0.0	0.024	0.2	0.0	0.036		"
1200	0.0	0.024	0.6	0.0	0.037		"
1330	0.0	0.024	0.2	0.0	0.022		"
1350	0.0	0.025	0.1	0.0	0.019		"
1405	0.0	0.026	0.0	0.0	0.017		"
1420	0.0	0.026	0.0	0.0	0.010		finished advancing B-6 location
1505	2.5*	0.027	0.0	0.0	-0.013		filling augers prepping grout.
1518	0.8	0.027	0.0	0.0	-0.006	mixing grout	
1540	0.2	0.025	0.0	0.0	-0.016	forming and setting grout lines	
1600	0.0	0.024	0.0	0.0	-0.030	groutney B-6 location	

> Lunch

> break

\* Sun of humidity have increased



Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: 1 Edgewater Plaza  
 Date: 01/11/16  
 Field Personnel: Jessica Phillips

Project: Clifton - Edgewater  
 Project Number: 60137363  
 Weather: 70°F, cloudy, light wind, humid  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0820	5.1 <sup>+</sup>	0.018	0.0	0.0	0.025	N/A	setting up to graut B-9 location
0845	1.5	0.015	0.0	0.0	0.062		Mixing graut
900	0.3	0.015	0.0	0.0	0.023		graunting & pulling augers @ B-9
930	0.9	0.023	0.3	0.0	0.033		Drilling B-10 location
945	1.4	0.020	0.1	0.0	0.030		Drilling B-10
1020	0.6	0.015	0.1	0.0	0.018		"
1035	0.5	0.013	0.1	0.0	0.015		Preparing to graut B-10 location
1050	1.4	0.014	0.1	0.0	0.010		graunting & pulling augers @ B-10
1105	1.5	0.015	0.0	0.0	0.010		"
1210	1.2	0.017	0.0	0.0	0.007		Drilling B-11
1225	0.6	0.016	0.2	0.0	0.003		"
1240	0.3	0.016	0.0	0.0	0.004		"
1255	0.3	0.016	0.0	0.0	0.016		"
1315	0.4	0.014	0.0	0.0	0.024		"
1330	0.0	0.012	0.0	0.0	0.043		"
1440	0.0	0.013	0.0	0.0	0.014		"
1455	0.3	0.013	0.0	0.0	0.011		"
1515	0.2	0.012	0.0	0.0	-0.031		"
1530	0.0	0.012	0.0	0.0	-0.001		pulling augers & backfilling.
1550	0.0	0.010	0.0	0.0	-0.028		"

> break to fueling

> break

> break

<sup>1</sup> - Downwind PID has regularly been affected by high humidity. re-zero PID.



Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: 1 Edgewater Plaza  
 Date: 6/2/16  
 Field Personnel: Jessica Phillips

Project: Clifton  
 Project Number: 60137363  
 Weather: 75 F sun & clouds, light wind  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
810	1.6	0.010	0.0	0.0	0.012	N/A	Drilling B-12 location
825	1.6	0.008	1.0	0.4	0.006		"
840	2.1	0.012	1.1	0.2	0.008		"
855	2.1	0.009	0.5	0.2	0.007		"
910	2.1	0.011	0.3	0.1	0.007		"
925	1.3	0.009	0.1	0.1	0.009		"
940	0.2	0.009	0.3	0.1	0.008		"
1000	1.3	0.009	0.6	0.0	0.011		"
1035	1.6	0.013	0.0	0.0	0.016		Pulling augers & greutting
1050	1.5	0.011	0.0	0.0	0.018		greutting B-12
1105	0.9	0.012	0.0	0.0	0.018		"
1145	0.6	0.011	0.0	0.0	0.027		Drilling B-13 location
1220	0.2	0.010	0.0	0.0	0.015		"
1245	0.4	0.011	0.0	0.0	0.004		"
1300	0.0	0.011	0.0	0.1	0.004		"
1420	1.6	0.010	0.0	0.0	0.027		Mixing cement
1435	1.7	0.011	0.0	0.0	0.027		greutting B-13
1450	1.8	0.009		0.0	0.027		"

Upwind pid seems to be sensitive to humidity. also noticed dW dust-trak tend to read low compare to upwind dust-trak

finishing greutting & more locations

> Lunch

@ 945 - re-termed dW dust, it was reading negative



Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
Location: 1 Edgewater Plaza  
Date: 8/3/16  
Field Personnel: Jessica Phillips

Project: Clifton  
Project Number: 60137363  
Weather: B, F, Sunny, humid, light wind  
Ambient Noise: NA

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
850	0.0	0.015	0.3	0.1	0.041	NA	Drilling B-14 location
905	0.0	0.013	0.3	0.0	0.049		"
920	0.0	0.013	0.2	0.0	0.032		"
935	0.0	0.008	0.3	0.0	0.034		"
950	0.0	0.008	0.2	0.0	0.022		"
1005	0.0	0.008	1.3*	0.0	0.019		" ASP/422 WB-40
1020	0.0	0.008	0.8	0.0	0.019		"
1040	0.0	0.007	0.3	0.0	0.014		"
1055	0.0	0.008	0.6	0.0	0.005		"
1210	0.0	0.009	0.3	0.1	0.017		pulling augers
1225	0.0	0.008	0.3	0.1	0.029		Drilling B-15 location
1250	0.0	0.007	0.2	0.1	0.008		"
1305	0.0	0.007	0.5	0.1	0.006		"
1400	0.0	0.007	0.3	0.1	0.001		"
1420	0.0	0.005	0.3	0.0	FE-ZERO DUSTING		"
1530	0.0	0.007	0.1	0.0	0.014		pulling first auger, getting ready to graut
1545	0.0	0.006	0.0	0.0	0.015		mixing graut
1600	0.0	0.007	0.2	0.0	0.038		grautting & pulling augers

> break

↓







Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: Edgewater Plaza  
 Date: 8/16  
 Field Personnel: Jessica Phillips

Project: Clifton  
 Project Number: 60137363  
 Weather: ~75°F, mostly sunny, light wind  
 Ambient Noise: NA

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
830	0.0	0.011	0.0	0.0	0.034	NA	Drilling B-22
845	0.0	0.011	0.2	0.0	0.032		"
900	0.0	0.010	0.0	0.0	0.021		"
915	0.0	0.009	0.0	0.0	0.023		"
1000	0.0	0.009	0.0	0.0	0.011		"
1015	0.0	0.009	0.0	0.0	0.006		"
1030	0.0	0.009	0.0	0.0	0.014		"
1045	0.0	0.010	0.0	0.0	0.004		"
1140	0.0	0.008	0.0	0.0	0.035		"
1155	0.3	0.008	0.0	0.0	0.010		"
1205	0.7	0.008	0.0	0.0	fire-feed dust track		"
1220	0.8	0.009	0.0	0.0	0.026		"
1235	1.6	0.008	0.0	0.0	0.016		"
1250	0.0	0.009	0.0	0.0	0.018		"
1400	0.0	0.010	0.0	0.0	0.007		"
1415	0.0	0.007	0.0	0.0	0.012		Drilling augers
1430	0.0	0.018	0.0	0.0	0.013		grouting B-22 location
1445	0.0	0.026	0.0	0.0	0.057		"
1500	0.0	0.008	0.0	0.0	0.024		Cleaning up around B-22

> Break

> Break

↓

**Community Air Monitoring Plan / Noise Field Log**

Client: National Grid  
 Location: Edgewater Plaza  
 Date: 8/9/16  
 Field Personnel: Jessica Phillips

Project: Clifton  
 Project Number: 6037363  
 Weather: 70°F, sunny, light wind  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
840	1.6 <sup>+</sup>	0.038	0.1	0.0	0.050	NA	Drilling B-23 location
855	*re-zero upwind's	0.043	0.2	0.0	0.080		"
910	0.0	0.046	0.1	0.0	0.052		"
925	0.0	0.047	1.6 <sup>+</sup>	0.0	0.044		" sprayed wd-40
940	0.0	0.038	0.2	0.0	0.042		"
955	0.0	0.034	0.2	0.0	0.027		"
1010	0.0	0.027	0.1	0.0	0.011		"
1025	0.0	0.013	0.0	0.0	0.002		Grouting B-23 location
1040	0.0	0.011	0.1	0.0	0.006		"
1110	0.0	0.007	0.0	0.0	0.001		Drilling B-24 location
1125	0.0	0.008	0.1	0.0	0.011		"
1140	0.0	0.013	0.0	0.0	0.013		"
1155	0.0	0.011	0.1	0.0	0.030		"
1210	0.0	0.011	0.2	0.0	0.024		"
1325	0.0	0.009	0.1	0.0	0.034		Pulling augers
1340	0.0	0.010	0.0	0.0	0.035		" " " of Backfilling B-24
1400	0.0	0.010	0.0	0.0	0.025		Drilling B-25 location
1415	0.0	0.009	0.2	0.0	0.027		"
1430	0.0	0.009	0.0	0.0	0.022		"
1445	0.0	0.008	0.4	0.0	0.023		"

↑ upwind PID reading high since it was turned on. This unit acts up due to humidity.

↑ re-zero dust-trak.





Community Air Monitoring Plan / Noise Field Log

Client: National Grid  
 Location: 1 Edgewater Plaza  
 Date: Bluffville  
 Field Personnel: Jessica Phillips

Project: Clifton  
 Project Number: 60137363  
 Weather: 85 F, sun & clouds, light windy humid  
 Ambient Noise: N/A

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
955	0.0	0.014	0.1	0.0	0.019		drilling B-27 location
1010	0.2	0.014	0.1	0.0	0.016		a1
1025	0.1	0.014	0.3	0.0	0.013		pulling first 2 augers
1040	0.0	0.014	0.2	0.0	0.016		grouting B-27
1055	0.0	0.014	0.9 <sup>2</sup>	0.0	0.017		"
1130	0.5	0.018	1.5 <sup>2</sup>	0.1	0.020		drilling B-28 location
1145	0.6	0.015	1.6	0.0	0.020		"
1200	0.0	0.015	0.9	0.0	0.022		"
1400	0.9	0.019	0.0	0.1	0.024		"
1415	0.8	0.016	0.4	0.1	0.020		"
1430	0.3	0.016	0.3	0.2	0.017		"
1450	—	—	0.2	0.2	0.022		"
1505	0.0	0.016	0.3	0.3	0.020		mixing grout
1600	0.8	0.015	0.0	0.0	0.021		grouting B-28 location
1615	1.1	0.016	0.7	0.0	0.026		drilling B-29 location
1635	0.0	0.017	0.4	0.0	0.009		"
							l1

> Break

\* 1020 - use upwind pid to check headsace as WTA PID needs to be recalibrated.  
 \* 1 - WTA PID reacting to very high humidity





## **Appendix F**

### **Well Development and Groundwater Sampling Forms**



U.G. (National-Grid)  
URS CORPORATION

Site Name: LOW FLOW RATE PURGING AND SAMPLING DATA SHEET

DATE: \_\_\_\_\_ SHEET 1 OF \_\_\_\_\_  
 WEATHER: \_\_\_\_\_ FIELD PERSONNEL: SS/SM  
 MONITORING WELL NO.: RW-75 WELL PERMIT NUMBER: 501  
 PID/FID READINGS (ppm): \_\_\_\_\_ AMBIENT AIR: \_\_\_\_\_  
 PUMP INTAKE DEPTH: 16 ft from top of casing (TOC)  
 WATER ELEVATION WITH PUMP IN PLACE (Initial): 62.6 ft from TOC  
 PUMP START TIME: 8:29 of 10:00 all (7.20)  
 OPEN WELL (Initial): \_\_\_\_\_  
 WQ Meter Cert No. \_\_\_\_\_

TIME	Purging	Sampling	pH (pH units)		Specific Conductivity (mS/cm)		Redox Potential (mv)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Temperature (degrees C)	Volume of Water Removed (ml)	Pumping Rate (ml/min)	Water Elevation (ft from TOC)
			Reading	Change*	Reading	%**	Reading	Change***	Reading	%****	Reading	%****				
8:30	X		6.75	NA	4.07	NA	149	NA	2.62	NA	11.7	NA	14.98	NA	NA	62.6
8:35	X		6.75		4.02		147		2.46		11.0		14.58			8.70
8:40	X		6.76		3.96		144		2.36		7.0		14.51			
8:45	X		6.77		3.89		142		2.18		3.3		14.60			
8:50	X		6.78		3.77		140		2.10		0.0		14.65			
8:55	X		6.79		3.74		138		2.02		0.0		14.71			
9:00	X															

Sampling Equipment and Laboratory Analysis:

\* Calculate change by subtracting current reading from previous reading. When 3 consecutive readings are +/- 0.1, pH is considered stabilized  
 \*\* Calculate percent by dividing current reading by previous reading and multiplying by 100. When 3 consecutive readings are between 97 and 103 percent, specific conductivity is considered stabilized  
 \*\*\* Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 mv, redox potential is considered stabilized  
 \*\*\*\* Calculate percent by dividing current reading by previous reading and multiplying by 100. When 3 consecutive readings are between 90 and 110 percent, these parameters are considered stabilized

Site Name: 12/22/16

LOW FLOW RATE PURGING AND SAMPLING DATA SHEET

SHEET 1 OF 55 5/5/16  
 FIELD PERSONNEL:

DATE: 12/22/16  
 WEATHER: Clear  
 MONITORING WELL NO.: 2-W-2031 WELL PERMIT NUMBER: SDC  
 PID/FID READINGS (ppm): 1  
 AMBIENT AIR: 1  
 OPEN WELL (Initial): 1  
 WQ Meter Cert No. 1

PUMP INTAKE DEPTH: 2.65 ft from top of casing (TOC)  
 WATER ELEVATION WITH PUMP IN PLACE (Initial): 2.65 ft from TOC  
 PUMP START TIME: 10:53

TIME	Purging	Sampling	pH (pH units)		Specific Conductivity (mS/cm)		Redox Potential (mv)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Temperature (degrees C)	Volume of Water Removed (ml)	Pumping Rate (ml/min)	Water Elevation (ft from TOC)
			Reading	Change*	Reading	%**	Reading	Change***	Reading	%****	Reading	%****				
10:55	X		8.89	NA	0.450	NA	-70	NA	1.81	NA	12.7	NA	14.59	NA	NA	2.65
11:00	X		8.91		0.374		-88		1.51		4.1		14.63			
11:05	X		8.91		0.318		-98		1.40		4.0		14.66			
11:10	X		8.90		0.317		-105		1.39		4.1		14.70			
11:15	X		8.90		0.315		-109		1.37		4.1		14.78			
11:20	X															

Sampling Equipment and Laboratory Analysis:

\* Calculate change by subtracting current reading from previous reading. When 3 consecutive readings are +/- 0.1, pH is considered stabilized  
 \*\* Calculate percent by dividing current reading by previous reading and multiplying by 100. When 3 consecutive readings are between 97 and 103 percent, specific conductivity is considered stabilized  
 \*\*\* Calculate change by subtracting current reading from previous reading. When when 3 consecutive readings are +/- 10 mv, redox potential is considered stabilized  
 \*\*\*\* Calculate percent by dividing current reading by previous reading and multiplying by 100. When 3 consecutive readings are between 90 and 110 percent, these parameters are considered stabilized

**Low Flow Ground Water Sample Collection Record**

Client: National Grid Date: 12/21/16 Time: Start 1330 am/pm  
 Project No: 60137363 Finish 1400 am/pm  
 Site Location: Clifton MOP  
 Weather Conds: 40s Sunny Collector(s): Sara Meissner

**1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)**

- a. Total Well Length 44.28 c. Screen Length 4 " PVC Casing  
 b. Water Table Depth TOC d. Screen Interval (Intake) \_\_\_\_\_ Sump: \_\_\_\_\_  
 e. Calculated Water Column Volume \_\_\_\_\_

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Peristaltic Pump

- b. Acceptance Criteria defined (see workplan)  
 - Temperature 3% -D.O. 10%  
 - pH ±1.0 unit - ORP ± 10mV  
 - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Hanba Model US2 Serial Number \_\_\_\_\_  
Peri Pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1330	1	13.76	9.29	0.756	0.87	-64	5.6	100ml/min	—	clear
1335		13.79	9.19	0.750	1.1	-60	3.1		—	" "
1340	2	13.81	9.01	0.744	2.20	-55	2.9		—	" "
1345		13.83	8.89	0.738	2.21	-57	1.1		—	" "
1350		13.85	8.76	0.721	2.22	-50	0.0		—	" "
1355		13.92	8.55	0.719	2.24	-49	0.0		—	" "
1400	8	14.04	8.45	0.717	2.25	-49	0.0		—	" "

- d. Acceptance criteria pass/fail
- |                                     |   |                             |                              |
|-------------------------------------|---|-----------------------------|------------------------------|
| Has required volume been removed    | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| Has required turbidity been reached | <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>     |
| Have parameters stabilized          | <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>     |
- If no or N/A - Explain below.

**3. SAMPLE COLLECTION:**

Method: Low Flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
<u>RW-204 I</u>	<u>Vandus</u>	<u>16</u>	<u>Vandus</u>	<u>See Coz</u>	<u>1400</u>
<u>RW-204 I - MS</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>1415</u>
<u>RW-204 I - MSP</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>1430</u>

Comments \_\_\_\_\_

Signature \_\_\_\_\_ Date 12/21/16

Well ID: PW-210I

**AECOM**

# Low Flow Ground Water Sample Collection Record

Client: National Grid Date: 12/21/16 Time: Start 1230 am/pm  
 Project No: 60137363 Finish 1300 am/pm  
 Site Location: Clifton mbf  
 Weather Conds: 40s sunny Collector(s): Chad Small

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 38.15 c. Length of Water Column 38.45 (a-b) Casing Diameter/Material 4" PVC  
 b. Water Table Depth TOC d. Calculated System Volume (see back) \_\_\_\_\_

### 2. WELL PURGE DATA

a. Purge Method: Low Flow - Peristaltic pump

- b. Acceptance Criteria defined (see workplan)
- Temperature 3% -D.O. 10%
  - pH ±1.0 unit - ORP ± 10mV
  - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used:

Make	Model	Serial Number
<u>Hanba</u>	<u>US2</u>	
<u>Per pump</u>		

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1231	1	11.06	8.22	.001	10.23	-189	0.0	100 ml/min	—	clear
1236		12.11	7.91	.539	2.32	-198	0.0		—	" "
1241	2	12.24	7.86	.537	1.62	-201	0.0		—	" "
1246		12.23	7.85	.535	1.47	-200	0.0		—	" "
1257	6	12.09	7.89	.537	1.35	-199	0.0		—	" "
1256		11.87	7.84	.539	1.33	-189	0.0		—	" "
1307	8	11.70	7.83	.533	1.26	-187	0.10		—	" "

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

### 3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>PW-210I</u>	<u>Vanous</u>	<u>16</u>	<u>vanous</u>	<u>See Coc</u>	<u>1300</u>
<u>DUP-1</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>" "</u>	<u>—</u>

Comments \_\_\_\_\_

Signature Chad Small Date 12/21/16

Well ID: RW-2005

AECOM

# Low Flow Ground Water Sample Collection Record

Client: National Grid Date: 12/21/16 Time: Start 0923 am/pm  
 Project No: 60137363 Finish 1013 am/pm  
 Site Location: Clifton M6P  
 Weather Conds: 40s, sunny Collector(s): Chad Small

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 19.75 c. Length of Water Column 16.73 (a-b) Casing Diameter/Material 4" PVC  
 b. Water Table Depth 3.02 d. Calculated System Volume (see back) \_\_\_\_\_

### 2. WELL PURGE DATA

a. Purge Method: Low Flow - Peristaltic Pump

b. Acceptance Criteria defined (see workplan)  
 - Temperature 3% -D.O. 10%  
 - pH ±1.0 unit - ORP ± 10mV  
 - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model U52 Serial Number \_\_\_\_\_  
Peri pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0923	1	12.93	8.70	0.349	3.90	-133	0.0	100 ml/min	—	clear
0928	2	13.35	8.74	0.350	3.40	-141	0.0	↓	—	u u
0933	3	13.40	8.76	0.348	4.72	-146	0.0	↓	—	u u
0938	4	13.68	8.75	0.357	5.24	-151	0.0	↓	—	u u
0943		14.09	8.74	0.371	4.17	-156	0.0	↓	—	u u
0948	6	14.32	8.73	0.390	3.30	-158	0.0	↓	—	u u
0953	8	14.41	8.74	0.404	3.39	-160	0.0	↓	—	u u

d. Acceptance criteria pass/fail  
 Yes No N/A  
 Has required volume been removed     
 Has required turbidity been reached     
 Have parameters stabilized     
 If no or N/A - Explain below.

### 3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
RW-2005	Various	16	Various	See CAC	1000

Comments \_\_\_\_\_

Signature Chad Small Date 12/21/16

Well ID: PW-200F

**AECOM**

# Low Flow Ground Water Sample Collection Record

Client: National Grid Date: 12/21/16 Time: Start 0940 am/pm  
 Project No: 60737363 Finish 1030 am/pm  
 Site Location: Clifton Mbl  
 Weather Conds: 40s, sunny Collector(s): Sara Meisner

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 38.13 c. Length of Water Column 36.42 (a-b) Casing Diameter/Material 4" PVC  
 b. Water Table Depth 1.71 d. Calculated System Volume (see back) \_\_\_\_\_

### 2. WELL PURGE DATA

a. Purge Method: Low Flow - Pen pump

- b. Acceptance Criteria defined (see workplan)
- Temperature 3% -D.O. 10%
  - pH ±1.0 unit - ORP ± 10mV
  - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model U52 Serial Number \_\_\_\_\_  
Pen pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0945	1	13.18	8.24	0.233	4.01	130	3.0	100 ml/min	—	clear
0957	3	13.22	8.28	0.233	3.99	129	1.5	—	—	u u
0958	5	13.28	8.30	0.232	3.94	128	0.0	—	—	u u
1000	6	13.32	8.40	0.233	3.89	127	0.0	—	—	u u
1005	8	13.34	8.42	0.232	3.81	119	0.0	—	—	u u
1010	8	13.41	8.49	0.232	3.79	117	0.0	—	—	u u
1015	10	13.53	8.57	0.232	3.78	115	0.0	—	—	u u

d. Acceptance criteria pass/fail

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

### 3. SAMPLE COLLECTION: Method: Low Flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>PW-200F</u>	<u>Various</u>	<u>16</u>	<u>Various</u>	<u>See CRZ</u>	<u>1030</u>

Comments \_\_\_\_\_

Signature [Signature] Date 12/21/16

Well ID: PW-2025



# Low Flow Ground Water Sample Collection Record

Client: National bnd Date: 12/21/16 Time: Start 1100 am/pm  
 Project No: 60137363 Finish 1145 am/pm  
 Site Location: Clifton m6p  
 Weather Conds: 40s, Sunny Collector(s): Chad Small

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 25.30 c. Length of Water Column 23.45 (a-b) Casing Diameter/Material 4" PVC  
 b. Water Table Depth 1.85 d. Calculated System Volume (see back) \_\_\_\_\_

### 2. WELL PURGE DATA

a. Purge Method: Low Flow - Per Pump

b. Acceptance Criteria defined (see workplan)

- Temperature 3% -D.O. 10%
- pH ±1.0 unit - ORP ± 10mV
- Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model U52 Serial Number \_\_\_\_\_  
Per Pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
11:04	1	11.48	7.92	0.463	9.53	-98	1.5	100ml/min	—	Clear
11:09		14.16	9.47	0.607	1.79	-107	0.0		—	" "
11:14	3	14.86	9.45	0.606	1.58	-108	0.3		—	" "
11:19		15.01	9.49	0.607	1.72	-112	0.3		—	" "
11:24	5	15.05	9.48	0.607	1.34	-116	0.0		—	" "
11:29		14.93	9.39	0.609	1.35	-117	0.1		—	" "
11:34	10	14.89	9.49	0.607	1.53	-119	0.0		—	" "

d. Acceptance criteria pass/fail  
 Has required volume been removed  Yes  No  N/A  
 Has required turbidity been reached  Yes  No  N/A  
 Have parameters stabilized  Yes  No  N/A  
 If no or N/A - Explain below.

(continued on back)

### 3. SAMPLE COLLECTION: Method: Low Flow

Sample ID PW-2025 Container Type Various No. of Containers 16 Preservation Various Analysis Req. See COC Time 1145

Comments \_\_\_\_\_

Signature Chad Small Date 12/21/16

Well ID: RW-202I



# Low Flow Ground Water Sample Collection Record

Client: National Gna Date: 12/21/16 Time: Start 1100 (am/pm) Finish 1130 (am/pm)  
 Project No: 60137363  
 Site Location: Clifton Mbl  
 Weather Conds: 40g Sunny Collector(s): Sara Meissner

### 1. WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 43.40 c. Length of Water Column 42.05 (a-b) Casing Diameter/Material 4" PVC  
 b. Water Table Depth 1.35 d. Calculated System Volume (see back) \_\_\_\_\_

### 2. WELL PURGE DATA

a. Purge Method: low flow - penstatic pump

#### b. Acceptance Criteria defined (see workplan)

- Temperature 3% -D.O. 10%
- pH ±1.0 unit - ORP ± 10mV
- Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model US2 Serial Number \_\_\_\_\_  
Pen pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1100	1	13.28	10.28	0.997	3.65	-16	0.0	100 ml/min	—	clear
1105		13.22	10.36	0.989	3.21	-16	0.0	↓	—	2.4
1110	5	13.24	10.87	1.00	3.20	-44	0.0		—	2.4
1115		13.39	10.90	1.00	3.19	-45	0.0		—	2.4
1120		13.46	10.92	1.00	3.18	-45	0.0		—	2.4
1125		13.49	10.93	1.00	3.16	-46	0.0		—	2.4
1130	10	13.51	10.93	1.00	3.15	-46	0.0		—	2.4

d. Acceptance criteria pass/fail (continued on back)

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

### 3. SAMPLE COLLECTION: Method: low flow

Sample ID	Container Type	No. of Containers	Preservation	Analysis Req.	Time
<u>RW-202I</u>	<u>Various</u>	<u>16</u>	<u>Various</u>	<u>See COC</u>	<u>1130</u>

Comments \_\_\_\_\_

Signature [Signature] Date 12/21/16

**Low Flow Ground Water Sample Collection Record**

Client: National Grid Date: 12/22/16 Time: Start 1050 (am/pm) Finish 1130 (am/pm)  
 Project No: 60137363  
 Site Location: Clifton M&P  
 Weather Conds: 40s, cloudy Collector(s): Sara Meisner

**1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)**

a. Total Well Length 25.72 c. Screen Length \_\_\_\_\_ 4" PVC Casing  
 b. Water Table Depth 2.4 d. Screen Interval (Intake) \_\_\_\_\_ Sump: \_\_\_\_\_  
 e. Calculated Water Column Volume \_\_\_\_\_

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Peristaltic Pump

- b. Acceptance Criteria defined (see workplan)
- Temperature 3% -D.O. 10%
  - pH ±1.0 unit - ORP ± 10mV
  - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model US2 Serial Number \_\_\_\_\_  
Peri Pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
1050	1	13.54	7.95	0.503	0.78	-174	6.1	100ml/min	—	clear
1055		13.62	7.79	0.493	0.61	-186	6.7		—	h v
1100	2	13.66	7.80	0.487	0.59	-187	3.1		—	h v
1105		13.67	7.81	0.485	0.44	-189	2.8		—	h v
1110		13.70	7.82	0.483	0.41	-190	1.1		—	h v
1115		13.75	7.85	0.481	0.40	-191	0.0		—	h v
1120	7	13.80	7.86	0.477	0.40	-195	0.0		—	h v
1125		13.83	7.90	0.475	0.40	-201	0.0		—	h v
1130	10	13.85	7.90	0.475	0.39	-201	0.0		—	h v

d. Acceptance criteria pass/fail

Has required volume been removed	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:**

Method: Low Flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
<u>RW-2035</u>	<u>VanDui</u>	<u>16</u>	<u>VanDui</u>	<u>See Loc</u>	<u>1130</u>

Comments \_\_\_\_\_

Signature \_\_\_\_\_ Date 12/22/16

**Low Flow Ground Water Sample Collection Record**

Client: National Grid Date: 12/22/16 Time: Start 0830 am/pm  
 Project No: 60137363 Finish 0910 am/pm  
 Site Location: Clifton M6P  
 Weather Conds: 40s, cloudy Collector(s): Sara Meissner

**1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)**

a. Total Well Length 1719 c. Screen Length \_\_\_\_\_ 1.5" PVC Casing  
 b. Water Table Depth 5.92 d. Screen Interval (Intake) \_\_\_\_\_ Sump: \_\_\_\_\_  
 e. Calculated Water Column Volume \_\_\_\_\_

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Peristaltic Pump  
 b. Acceptance Criteria defined (see workplan)  
 - Temperature 3% -D.O. 10%  
 - pH ±1.0 unit - ORP ±10mV  
 - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model WT2 Serial Number \_\_\_\_\_  
Per Pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0830	1	13.18	9.16	0.989	2.28	-117	0.0	100 ml/min	—	clear
0835	2	13.20	9.17	0.987	2.91	-117	0.0	↓	—	h h
0840	3	13.24	9.17	0.981	2.90	-116	0.0	↓	—	h h
0845	4	13.24	9.11	0.988	2.77	-115	0.0	↓	—	h h
0850	5	13.30	9.13	0.981	2.71	-114	0.0	↓	—	h h
0855	6	13.31	9.15	0.977	2.69	-114	0.0	↓	—	h h
0900	8	13.40	9.18	0.975	2.66	-114	0.0	↓	—	h h

d. Acceptance criteria pass/fail (continued on back)

	Yes	No	N/A
Has required volume been removed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has required turbidity been reached	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have parameters stabilized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no or N/A - Explain below.

**3. SAMPLE COLLECTION:**

Method: Low Flow

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
<u>RW-26</u>	<u>Various</u>	<u>16</u>	<u>Various</u>	<u>See Coc</u>	<u>0910</u>

Comments \_\_\_\_\_

Signature [Signature] Date 12/22/16

**Low Flow Ground Water Sample Collection Record**

Client: National Grid Date: 12/22/16 Time: Start 0945 (am/pm)  
 Project No: 60137363 Finish 1020 (am/pm)  
 Site Location: Clifton MGP  
 Weather Conds: 40% cloudy Collector(s): Sara Meissner

**1. WELL & WATER LEVEL DATA: (measured in feet from Top of Casing unless noted)**

- a. Total Well Length 12.41 c. Screen Length \_\_\_\_\_ 1.5" PVC Casing
- b. Water Table Depth 6.24 d. Screen Interval (Intake) \_\_\_\_\_ Sump: \_\_\_\_\_
- e. Calculated Water Column Volume \_\_\_\_\_

**2. WELL PURGE DATA**

a. Purge Method: Low Flow - Peristaltic Pump

- b. Acceptance Criteria defined (see workplan)
  - Temperature 3% -D.O. 10%
  - pH ±1.0 unit - ORP ± 10mV
  - Sp. Cond. 3% - Drawdown < 0.3'

c. Field Testing Equipment used: Make Horiba Model US2 Serial Number \_\_\_\_\_  
Peri Pump

Time (24hr)	Volume Removed (Liters)	Temp. (°C)	pH	Spec. Cond. (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (ml/min)	Drawdown (feet)	Color/Odor
0945	1	13.21	8.02	0.534	0.86	-166	9.8	100ml/min	—	Clear
0950	2	13.25	8.11	0.514	0.88	-161	6.1	—	—	u u
0955	3	13.40	8.12	0.511	0.81	-160	3.2	—	—	u u
1000	4	13.41	8.13	0.509	0.80	-159	0.0	—	—	u u
1005	5	13.45	8.08	0.504	0.79	-155	0.0	—	—	u u
1010	6	13.47	8.11	0.488	0.79	-158	0.0	—	—	u L
1015	7	13.50	8.12	0.481	0.75	-157	0.0	—	—	u L

- d. Acceptance criteria pass/fail
- |                                     |   |                             |                              |
|-------------------------------------|---|-----------------------------|------------------------------|
| Has required volume been removed    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | N/A <input type="checkbox"/> |
| Has required turbidity been reached | <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>     |
| Have parameters stabilized          | <input checked="" type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/>     |
- If no or N/A - Explain below.

**3. SAMPLE COLLECTION: Method: Low Flow - Peri Pump**

Sample ID	Container Type	No.	Preservation	Analysis Req.	Time
<u>RW-23</u>	<u>Various</u>	<u>16</u>	<u>Various</u>	<u>See C0C</u>	<u>1020</u>

Comments \_\_\_\_\_

Signature [Signature] Date 12/22/16