

**SUMMARY REPORT  
OF  
SUBSURFACE INVESTIGATION**

**Ocean Bay Houses  
Former Filling Station**

**53-21 Beach Channel Drive  
Borough of Queens, New York City  
Block 15890, Lot 58**

**NYSDEC Spill Number: 03-06202**

**November 4, 2016**

**ESI File: NQ15100.41**

**Prepared By:**



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24 Davis Avenue  
Poughkeepsie, New York 12603**

**Prepared For:**

**New York City Housing Authority (NYCHA)  
23-02 49th Avenue  
Long Island City, New York 11101**

The undersigned has reviewed this Summary Report of Subsurface Investigation and certifies to the New York City Housing Authority that the information provided in this document is accurate as of the date of issuance by this office.

The undersigned is a Qualified Environmental Professional as defined by 6NYCRR Part 375-1.2 (ak) and supporting documents. The undersigned possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of the site or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified in NYSDEC guidance document DER-10.

Paul H. Ciminello

November 4, 2016



Qualified Environmental Professional

Date

Signature



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## **1.0 INTRODUCTION**

### **1.1 Purpose**

This Summary Report of Subsurface Investigation (Report) documents environmental fieldwork performed by Ecosystems Strategies, Inc. (ESI) and authorized subcontractors at and in the vicinity of a former gasoline station (located adjacent to Ocean Bay Houses) at 53-15 Beach Channel Drive, Borough of Queens, New York City, New York. Investigative and analytical work was performed to document current Site conditions and to investigate potential off-site contamination associated with New York State Department of Environmental Conservation (NYSDEC) spill number 03-06202. The specific purpose of this Report is to summarize the work performed by ESI and ESI's subcontractors to implement the Supplemental Subsurface Investigation Work Plan (SSIWP) that was prepared for the property by ESI (Appendix E), and to suggest, if appropriate, further investigative and/or remedial options regarding previously identified on-site conditions.

This Report describes all fieldwork methodologies for the work conducted by this office, includes discussions of the resulting analytical data from collected samples, and provides conclusions and recommendations drawn from the fieldwork and analytical data.

### **1.2 Limitations**

This written analysis summarizes the site characterization activities conducted on the areas specified above and is not relevant to other portions of this property or any other property. It is a representation of those portions of the property analyzed as of the respective dates of fieldwork. This Report cannot be held accountable for activities or events resulting in contamination after the dates of fieldwork.

Services summarized in this Report were performed in accordance with generally accepted practices and established NYSDEC protocols. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgment.

### **1.3 Site Location and Description**

The property is a 0.19-acre parcel that is bounded by a vacant lot to the east, commercial buildings to the south, Beach 54<sup>th</sup> Street to the west, and Beach Channel Drive to the north. The specified area on which the environmental investigation was conducted consists of the northern portion of the property, which formerly contained a filling station (hereafter referred to as the "Site"), and sidewalks surrounding the Site to the north and west. A Fieldwork Map indicating specific on and off-site characteristics is provided in Appendix A.

#### **1.4 Site Background**

The Site formerly contained a gasoline filling station (the property, however, does not appear in NYSDEC PBS database records). NYSDEC spill number 03-06202 was reported for the Site on September 11, 2003 based on “the results of soil sampling conducted during a [Phase II Environmental Site Assessment]”. A fieldwork map provided to ESI by NYSDEC personnel indicates that a subsurface investigation was conducted at the Site on September 4, 2003 by URS (likely the Phase II investigation referenced in the spill database file). Significantly elevated concentrations of volatile organic compounds (VOCs) were documented in groundwater at the northern-central and northwestern portions of the property, in the vicinity of the former filling station. The map depicts two potential source areas and an inferred groundwater contamination plume extending west from the Site.

ESI performed a subsurface investigation (SSI) at the Site in November 2015 in order to further investigate spill number 03-06202. Field evidence of petroleum contamination was noted in soils and groundwater at the central and western portions of the Site and laboratory analysis indicated the presence of elevated petroleum compounds in these areas. These findings supported the conclusion that petroleum contamination, likely associated with NYSDEC spill number 03-06202, remained in the vicinity of the former filling station. The extent of soil and groundwater contamination off-site was not investigated during the November 2015 SSI.

## 2.0 SUBSURFACE INVESTIGATION

### 2.1 Summary of Services

In order to achieve the purpose of the approved work scope and, in accordance with directives provided by the NYSDEC spill officer for the Site, the following activities were conducted by ESI:

- Extended five soil borings in sidewalks to the north, west and southwest of the Site;
- Completed all soil borings as a permanent monitoring wells; and,
- Documented the presence or absence of contamination through sampling and laboratory analysis of subsurface soil and groundwater samples for VOCs and semi-volatile organic compounds (SVOCs).

This Report is divided into individual sections that document fieldwork methodology (Section 2.2) and laboratory results (Section 2.3), and present ESI's conclusions and recommendations (Section 3.0).

### 2.2 Fieldwork Methodology

#### 2.2.1 Site Preparation Services

Prior to the initiation of fieldwork, a request for a complete utility markout of the subject property was submitted by ESI as required by New York State Department of Labor regulations. Confirmation of underground utility locations was secured and a field check of the utility markout was conducted prior to the extension of soil borings.

#### 2.2.2 Extension of Soil Borings

Five mechanized soil borings were extended in the vicinity of the Site (see Section 1.4, above) on September 15 and 16, 2016. Borings were extended in the following sidewalk locations:

- MW-05 at the east side of Beach 54<sup>th</sup> Street, at the southwestern corner of the Site.
- MW-06 at the west side of Beach 54<sup>th</sup> Street, directly west of the on-site building.
- MW-07 at the northwestern corner of the intersection of Beach Channel Drive and Beach 54<sup>th</sup> Street.
- MW-08 at the northeastern corner of the intersection of Beach Channel Drive and Beach 54<sup>th</sup> Street.
- MW-09 at the south side Beach Channel Drive, immediately north of the Site.

A Fieldwork Map indicating boring locations and associated selected site features is provided in Appendix A.

All mechanized borings were extended by personnel from Cascade Drilling, L.P. using a track-mounted Geoprobe equipped with disposable acetate sleeves (used to prevent the cross contamination of soil samples). Sampling was conducted at each boring location at five-foot intervals to a maximum depth of 15 feet below surface grade (bsg). The sampling instrument was decontaminated prior to the initiation of fieldwork and after the collection of each sample. Decontamination procedures were consistent with established NYSDEC protocols. A MiniRAE 3000 (Model PGM 7320) photo-ionization detector (PID) was utilized by ESI personnel to screen encountered material for the presence of any volatile organic vapors where appropriate. Prior to

the initiation of fieldwork, this PID was properly calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene in accordance with protocols set forth by the equipment manufacturer.

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns, or odors), and instrument indications of contamination (i.e., PID readings) was made by ESI personnel during the extension of each soil boring. ESI personnel maintained independent field logs documenting physical characteristics, PID readings, and any field indications of contamination for all encountered material at each boring location. Soil boring logs are provided as Appendix B.

Samples of soil material were collected from each of the soil borings where appropriate (see Section 2.2.5 for specifics regarding sample collection methodology) and notations were made regarding the sampled material's physical characteristics. A sufficient volume of material was collected at each sample location for the required analyses and for potential additional analyses.

Subsurface soils encountered at the Site during the extension of the soil borings generally consisted of 1 to 3 feet of variable color and texture sands with minimal solid debris inclusions (e.g. wood, concrete, etc.) overlying tan to gray, medium to fine sands with layers of peat throughout.

Saturated soils were encountered at 4 to 5 feet bsg during the extension of the soil borings.

No significant petroleum odors, and no sheens or other evidence of free-phase petroleum, were noted at any boring location. Peat layers encountered at all locations exhibited moderate to strong organic odors and returned PID readings generally between 30 to 50 ppm. Gray coloration was also observed in soils at all boring locations, generally beginning at the groundwater interface; it was not clear whether this coloration represented petroleum staining.

### **2.2.3 Monitoring Well Installation and Development**

Soil borings MW-05 through MW-09 were completed as permanent monitoring wells. The wells were constructed of 2-inch PVC casing and 0.01-inch slotted PVC well screening. The annular space between the well screen and the borehole was backfilled with clean #1 silica sand and a one-foot thick bentonite seal was poured above the sand. The annular space above the bentonite seal was then grouted with cement. The well casing was equipped with a gripper cap and was finished with a steel "drive-over" cover.

The height of each well casing was surveyed to a vertical accuracy of 0.01 foot, relative to a fixed, on-site artificial benchmark elevation of 100', for use in determining relative groundwater elevations prior to sampling activities.

Previously installed wells MW-01 through MW-04, and newly installed wells MW-05 through MW-09, were developed on September 27, 2016, in order to clear fine-grained material that might have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Prior to development, each monitoring well casing was opened and the well column was immediately screened with a PID to document the presence of any volatile organic vapors. Water removed from each monitoring well was visually inspected for indications of contamination. Development was conducted using dedicated plastic tubing and a peristaltic pump, and was considered complete when purged water no longer appeared to be turbid.

Mild to moderate gasoline odors were noted during the purging of wells MW-02, MW-03, and MW-04 and an elevated PID reading (43 ppm) was noted at the headspace of MW-02. The purged water from MW-02 was noted to have a mild sheen. Purged water from all other wells had a mild peat/organic odor and well headspace readings were below 5 ppm. Slight sheens were observed on water from all other wells except MW-06.

#### **2.2.4 Direction of Groundwater Flow**

All monitoring wells were subsequently gauged by ESI using a Keck Interface Probe accurate to a hundredth of a foot. No floating petroleum was encountered during well gauging activities. Depth to groundwater ranged from 3.34 to 5.49 feet bsg. A comparison of static groundwater elevations suggests that on-site groundwater flow is in an overall southwesterly direction. A Fieldwork Map indicating groundwater elevations is provided in Appendix A.

#### **2.2.5 Sample Collection**

All soil samples collected by ESI were obtained in a manner consistent with NYSDEC sample collection and decontamination protocols. Soil samples submitted for VOC analysis were collected using laboratory-supplied volatile organic analysis (VOA) kits and dedicated disposable soil syringes. All field personnel wore dedicated, disposable gloves, and all samples were placed into laboratory supplied containers. Soil samples were collected directly from the acetate sleeves.

A total of 10 soil samples were collected from MW-05 through MW-09 on September 15 and 16, 2016. One soil sample was collected from the top of the saturated zone and one sample was collected from an alternate interval if that area showed the most evident contamination in the boring column. QA/QC field duplicates (soil sample DUP-20160916 [duplicate of MW-07 11-13] and groundwater sample DUP-20160927 [duplicate of MW-02 20160927]) were also collected and submitted for analysis.

Sampling of all on- and off-site monitoring wells was conducted on September 27, 2016, following well development. The volume of groundwater in each well was calculated (based on well depth and depth to water measurements) and at least one purge volume of water (three times the static well volume) was removed using dedicated plastic tubing and a peristaltic pump, before groundwater samples were collected. Groundwater samples were collected into 40 ml vials (preserved with acid as appropriate for the specific analysis) and 1 liter amber jars. No groundwater samples were filtered prior to submission to the laboratory.

All soil and water samples were placed in a cooler immediately after sample collection and were maintained at cold temperatures prior to transport to the laboratory. All samples were transported via courier to York Analytical Laboratories, Inc., a New York State Department of Health-certified laboratory (ELAP Certification Number 10854) for chemical analyses. Soil samples and groundwater samples were transported on September 19, 2015 and September 28, 2016, respectively. Appropriate chain-of-custody procedures were followed.

### **2.3 Laboratory Analysis**

#### **2.3.1 Standards, Criteria and/or Guidance**

##### **Soil**

Laboratory results for organic compounds detected in soils are compared to NYSDEC Remedial Program Soil Cleanup Objectives (SCOs) for Unrestricted Use (UU) as provided in 6 NYCRR

Subpart 375, Table 375-6.8(a), and (as needed) Soil Cleanup Levels (for gasoline and fuel oil contaminated Soils) presented in NYSDEC CP-51 (Soil Cleanup Guidance, October 2010) Tables 2 through 3.

### **Groundwater**

Laboratory results for all compounds detected in water are compared to NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values (AWQS), provided in Technical and Operational Guidance Series 1.1.1.

#### **2.3.2 Laboratory Results**

All soil and groundwater samples were submitted for analysis of petroleum compounds (CP-51 list, USEPA Methods 8260/8270).

A summary of the results of the laboratory analyses conducted on soil and water samples is presented below. Data summary tables and the laboratory reports are provided in Appendices C and D, respectively, and recommendations regarding these findings are located in Section 3.0.

### **Soil**

#### **VOCs**

No VOCs were detected above SCOs. Trace levels of nine VOCs were detected in MW-09 6-8. A trace-level of toluene was detected in MW-07 11-13 and a trace-level of n-butylbenzene was detected in MW-08 10-12. No other VOCs were detected in any sample.

#### **SVOCs**

No SVOCs were detected above SCOs. Trace levels of four SVOCs were detected in MW-08 4-6 and a trace level of one SVOC was detected in MW-05 4-6. No other SVOCs were detected in any sample.

### **Groundwater**

#### **VOCs**

Elevated concentrations of seven substituted benzenes and mixed xylenes (AWQS 5 µg/L for all compounds), suggesting likely gasoline contamination, were detected in three on-site monitoring wells, with total VOC levels of 75 µg/L at MW-02, 80 µg/L at MW-03 and 809 µg/L at MW-04. Peak concentrations included 1,2,4-trimethylbenzene (590 µg/L), n-propylbenzene (140 µg/L) and isopropylbenzene (41 µg/L) in MW-04, and total xylenes (21 µg/L) in MW-02.

Trace to low-level concentrations of VOCs were detected in MW-05, MW-06 and MW-09. No VOCs were detected in on-site well MW-01 or in MW-07 and MW-08.

#### **SVOCs**

An elevated concentration of acenaphthene (23 µg/L, AWQS 20 µg/L) was detected in MW-02 (duplicate sample), which had a total SVOC level of 25.3 µg/L. No other SVOCs were detected above guidance levels.

Trace to low-level concentrations of SVOCs were detected in on-site wells MW-02, MW-03 and MW-04 and off-site wells MW-05, MW-06 and MW-09. No SVOCs were detected in on-site well MW-01 or in off-site wells MW-07 and MW-08. Wells MW-09 and MW-04 had total

concentrations of 11.8 and 5 µg/L, respectively; all remaining samples contained less than 1 µg/L total SVOCs.

### **2.3.3 Discussion**

Monitoring wells MW-01 through MW-04 were previously sampled in November 2015. Since that time, total VOC concentrations have decreased 63% in MW-02 (from 203 µg/L to 75 µg/L) and 89% in MW-03 (from 716 µg/L to 80 µg/L) but have increased 106% in MW-04 (from 392 µg/L to 809 µg/L). MW-01 continues to show an absence of petroleum impacts. A comparison of current and previous data for the on-site monitoring wells is provided in Appendix C, Table 2.

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

This office has completed the services summarized in Section 2.0 on specified portions of the Ocean Bay Houses Former Filling Station property located at 53-21 Beach Channel Drive, Borough of Queens, New York City, New York. Services included the extension of five soil borings, completion of all borings as permanent monitoring wells, and gauging and sampling of new and existing monitoring wells at the Site to further the investigation of previously identified subsurface petroleum contamination associated with NYSDEC spill number 03-06202.

Based on the services provided by this office and analytical data generated, the following conclusions and recommendations (shown in **bold**) are provided below:

1. No significant petroleum odors were noted in soils collected from off-site borings to the north, west, and southwest of the former filling station. Peat layers encountered at all locations exhibited moderate to strong organic odors and returned PID readings generally between 30 to 50 ppm; laboratory data, however, document an absence of any significant petroleum impacts in off-site soils.
2. Field evidence of petroleum contamination was noted at on-site monitoring wells MW-02, MW-03, and MW-04 during development and sampling, and laboratory analysis of groundwater samples documented the presence of elevated VOCs at all three locations and an elevated concentration of one SVOC at MW-02. No elevated VOCs or SVOCs were detected in on-site monitoring well MW-01 or in any of the five off-site wells.
3. Since the previous groundwater sampling of the on-site wells in November 2015, total VOC concentrations have decreased 63% in MW-02 (from 203 µg/L to 75 µg/L) and 89% in MW-03 (from 716 µg/L to 80 µg/L) but have increased 106% in MW-04 (from 392 µg/L to 809 µg/L). This data suggests a slight migration of impacts in a southwesterly direction (the likely direction of groundwater flow based on a survey of all on- and off-site wells). MW-01 continues to show an absence of petroleum impacts. These findings support the conclusion that petroleum contamination, likely associated with NYSDEC spill number 03-06202, persists in the vicinity of the former filling station, with the greatest impacts present west of the former pump islands. Current soil and groundwater data suggest that soil and groundwater impacts are generally contained to the Site and do not extend significantly off-site to the southwest (the likely overall direction of groundwater flow), north, or west.

**It is recommended that the Site be remediated through in-situ injection of chemical oxidants and/or oxygen release compounds. Any and all remedial work should be conducted consistent with a NYSDEC approved Work Plan.**

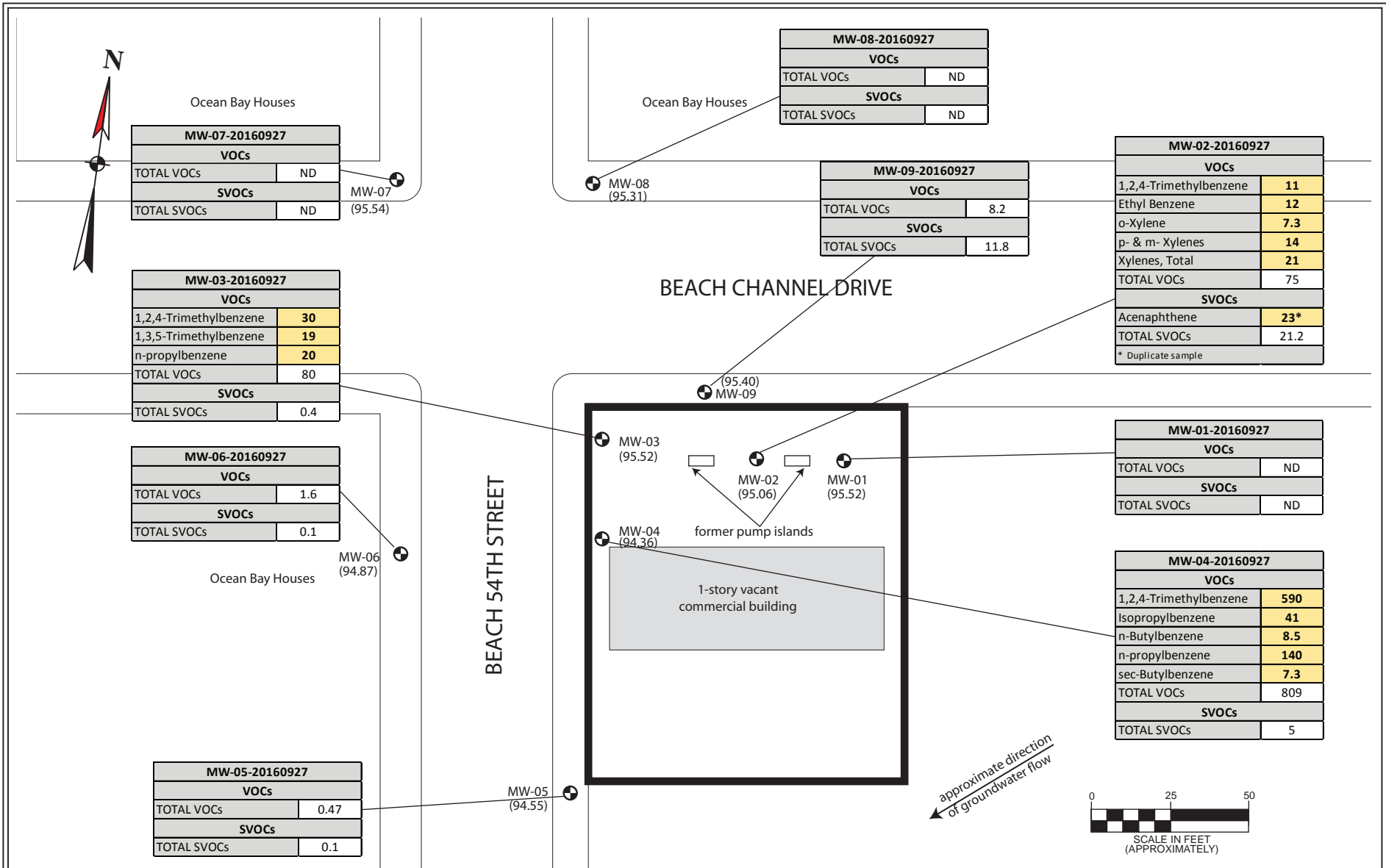


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**APPENDIX A**

***Fieldwork Map***



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

**Fieldwork Map**  
 Ocean Bay Houses  
 Former Filling Station  
 53-21 Beach Channel Drive  
 Borough of Queens, New York

Legend:

- subject property border
- monitoring well location (groundwater elevation)

<b>Concentrations above AWQS</b>	
Results in ppm	
ND = Not Detected	

ESI File: NQ15100.41  
 October 2016  
 Scale as shown  
 Appendix A



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## **APPENDIX B**

### ***Soil Boring Logs***

# Soil Boring Log

MW-05  (SHEET 1 OF 1)	Work Plan Implementation (Spill #03-06202) 53-21 Beach Channel Drive Borough of Queens New York City, New York							ESI FILE NQ15100.41
	DATE: 2016-09-15		DRILLER (RIG) Zebra (7720DT Geoprobe, 5' macro-core)		ESI STAFF: T. Goodnough			WEATHER: sunny, mid-70s F
BORING INTERVAL (RECOVERY)	SURFACE MATERIAL: CONCRETE (4")		MOISTURE	PID (PPM)	ODORS	STAINING	NAPL	SAMPLES COLLECTED
	SOIL / MATERIAL DESCRIPTION							
0 – 5' (25%)	Variable color, variable texture SAND with minimal debris (wood)  ***** Saturated at 5' *****		Dry-wet	0.0	ND	ND	ND	4-6
5 – 10' (50%)	Variable color, variable texture SAND, turning gray below ~7'		Wet	0.0	Yes	Yes	ND	4-6
	Gray to black, PEAT with SILT		Wet	20	Yes	Yes	ND	
10 – 15' (50%)	Gray, M SAND  ***** End of Boring at 15' *****		Wet	35	Yes	Yes	ND	10-12

**Notes**      **Fill Materials**  
                  Potential fill materials from 0 – 7'

**Field Evidence of Contamination**  
                  Gray color below ~7' and elevated PID readings and organic/peat odor at ~9' and ~13 – 15'

**Saturated Soils**  
                  ~5 - 15'

**Additional Notes**  
                  Hand augered to 4', Monitoring well installed - set at 12.5' bsg, screen from 2.5 – 12.5'

ND (non-detect)    PID (photoionization detector)    ppm (parts per million)    NAPL (non-aqueous phase liquid)  
 F (fine)    M (medium)    C (coarse)    P (plastic)    LP (low plastic)    NP (non-plastic)

# Soil Boring Log

MW-06  (SHEET 1 OF 1)	Work Plan Implementation (Spill #03-06202) 53-21 Beach Channel Drive Borough of Queens New York City, New York							ESI FILE NQ15100.41		
	DATE: 2016-09-16		DRILLER (RIG) Zebra (7720DT Geoprobe, 5' macro-core)					ESI STAFF: T. Goodnough		WEATHER: sunny, mid-70s F
BORING INTERVAL (RECOVERY)	SURFACE MATERIAL: CONCRETE (8")		MOISTURE	PID (PPM)	ODORS	STAINING	NAPL	SAMPLES COLLECTED		
	SOIL / MATERIAL DESCRIPTION									
0 – 5' (60%)	Tan, M-F SAND  ***** Saturated at 5' *****		Dry	0.0	ND	ND	ND	4-6		
5 – 10' (75%)	Tan, M-F SAND turning gray below ~7.5' Gray to black, PEAT with SILT		Wet Wet	0.0 6.5	ND Yes	Yes Yes	ND ND	4-6		
10 – 15' (80%)	Gray/brown, M SAND Gray to black, PEAT with SILT Gray, M SAND ***** End of Boring at 15' *****		Wet Wet Wet	0.0 30 3.7	Yes Yes Yes	Yes Yes Yes	ND ND ND	10-12		
<b>Notes</b>	<p><b>Fill Materials</b> Potential fill materials from 0 – 1'</p> <p><b>Field Evidence of Contamination</b> Gray color below ~7.5' and elevated PID readings and organic/peat odor at ~11'</p> <p><b>Saturated Soils</b> ~ 5' – 15'</p> <p><b>Additional Notes</b> Monitoring well installed - set at 13' bsg, screen from 3 - 13'</p>									

ND (non-detect) PID (photoionization detector) ppm (parts per million) NAPL (non-aqueous phase liquid)  
F (fine) M (medium) C (coarse) P (plastic) LP (low plastic) NP (non-plastic)

# Soil Boring Log

MW-07  (SHEET 1 OF 1)	Work Plan Implementation (Spill #03-06202) 53-21 Beach Channel Drive Borough of Queens New York City, New York							ESI FILE NQ15100.41		
	DATE: 2016-09-16		DRILLER (RIG) Zebra (7720DT Geoprobe, 5' macro-core)					ESI STAFF: T. Goodnough		WEATHER: sunny, mid-70s F
BORING INTERVAL (RECOVERY)	SURFACE MATERIAL: CONCRETE (6")		MOISTURE	PID (PPM)	ODORS	STAINING	NAPL	SAMPLES COLLECTED		
	SOIL / MATERIAL DESCRIPTION									
0 – 5' (33%)	Tan, variable texture SAND turning gray at ~4.75'		Dry-moist	0.0	ND	ND	ND	4-6		
	***** Saturated at 4.75' *****									
5 – 10' (75%)	Gray, M SAND		Wet	0.0-40	Yes	Yes	ND	4-6		
	Black to gray, PEAT with SILT		Wet	25	Yes	Yes	ND			
	Gray, M-F SAND		Wet	0.0	Yes	Yes	ND			
10 – 15' (100%)	Gray, M SAND		Wet	2	Yes	Yes	ND	10-12		
	Black to gray, PEAT with SILT		Wet	30	Yes	Yes	ND			
	Gray, M-F SAND		Wet	1.5	Yes	Yes	ND			
	***** End of Boring at 15' *****									
<p><b>Notes</b></p> <p><b>Fill Materials</b> Potential fill materials from 0 – 5'</p> <p><b>Field Evidence of Contamination</b> Gray color below ~4.75', organic/peat odor from 5-15', elevated PID reading at ~7' and 11'</p> <p><b>Saturated Soils</b> ~4.5 – 25'</p> <p><b>Additional Notes</b> Monitoring well installed - set at 13' bsg, screen from 3-13'</p>										

ND (non-detect) PID (photoionization detector) ppm (parts per million) NAPL (non-aqueous phase liquid)  
 F (fine) M (medium) C (coarse) P (plastic) LP (low plastic) NP (non-plastic)

# Soil Boring Log

MW-08  (SHEET 1 OF 1)	Work Plan Implementation (Spill #03-06202) 53-21 Beach Channel Drive Borough of Queens New York City, New York							ESI FILE NQ15100.41		
	DATE: 2016-09-16		DRILLER (RIG) Zebra (7720DT Geoprobe, 5' macro-core)					ESI STAFF: T. Goodnough		WEATHER: sunny, mid-70s F
BORING INTERVAL (RECOVERY)	SURFACE MATERIAL: DEBRIS (6")		MOISTURE	PID (PPM)	ODORS	STAINING	NAPL	SAMPLES COLLECTED		
	SOIL / MATERIAL DESCRIPTION									
0 – 5' (33%)	Medium brown, variable texture SAND with gravel		Dry	0.0	ND	ND	ND	4-6		
5 – 10' (33%)	Gray, M-F SAND with patches of gray to black, PEAT with SILT		Wet	0.0	Yes	Yes	ND	4-6		
10 – 15' (100%)	Gray to black, PEAT with SILT		Wet	30	Yes	Yes	ND	10-12		
	Gray, M SAND		Wet	9	Yes	Yes	ND			
	***** End of Boring at 15' *****									
<p><b>Notes</b>      <b>Fill Materials</b></p> <p>Potential fill materials from 0 – 5'</p> <p><b>Field Evidence of Contamination</b></p> <p>Gray color below ~5', organic/peat odor from 5-15', elevated PID reading at ~10-11'</p> <p><b>Saturated Soils</b></p> <p>~5 – 15'</p> <p><b>Additional Notes</b></p> <p>Monitoring well installed - set at 13' bsg, screen from 3-13'</p>										

ND (non-detect)    PID (photoionization detector)    ppm (parts per million)    NAPL (non-aqueous phase liquid)  
 F (fine)    M (medium)    C (coarse)    P (plastic)    LP (low plastic)    NP (non-plastic)

# Soil Boring Log

MW-09  (SHEET 1 OF 1)	Work Plan Implementation (Spill #03-06202) 53-21 Beach Channel Drive Borough of Queens New York City, New York							ESI FILE NQ15100.41		
	DATE: 2016-09-15		DRILLER (RIG) Zebra (7720DT Geoprobe, 5' macro-core)					ESI STAFF: T. Goodnough		WEATHER: sunny, mid-70s F
BORING INTERVAL (RECOVERY)	SURFACE MATERIAL: CONCRETE (6")		MOISTURE	PID (PPM)	ODORS	STAINING	NAPL	SAMPLES COLLECTED		
	SOIL / MATERIAL DESCRIPTION									
0 – 5' (50%)	White/tan, M SAND turning gray/black at ~4.5'		Dry-wet	0.1	ND	Yes	ND	4-6		
	***** Saturated at 4.75' *****									
5 – 10' (75%)	Gray, M SAND		Wet	0.5	ND	Yes	ND	4-6		
	Gray to black, PEAT with SILT		Wet	57	Yes	Yes	ND	6-8		
	Gray, M SAND		Wet	0.2	ND	Yes	ND			
10 – 15' (75%)	Gray, M SAND		Wet	0.2	ND	Yes	ND			
	Gray to black, PEAT with SILT		Wet	5	Yes	Yes	ND			
	Gray, M SAND turning to F SAND at ~9.5'		Wet	0.0	ND	Yes	ND			
	***** End of Boring at 15' *****									
<p><b>Notes</b>      <b>Fill Materials</b></p> <p>Potential fill materials from 0 – 1'</p> <p><b>Field Evidence of Contamination</b></p> <p>Gray color below ~4.5', elevated PID reading at ~7'; organic/peat odor from ~7-9' and ~11 - 12'</p> <p><b>Saturated Soils</b></p> <p>~4.5 - 15'</p> <p><b>Additional Notes</b></p> <p>Monitoring well installed - set at 12.5' bsg, screen from 2.5 – 12.5'</p>										

ND (non-detect)    PID (photoionization detector)    ppm (parts per million)    NAPL (non-aqueous phase liquid)  
 F (fine)    M (medium)    C (coarse)    P (plastic)    LP (low plastic)    NP (non-plastic)



**APPENDIX C**

***Data Summary Table***

Ocean Bay Houses

Table 1: Petroleum Compounds in Soils

NYSDEC Spill No. 03-06202

All data in mg/Kg (ppm)		Sample ID		MW-05 4-6		MW-05 10-12		MW-06 4-6		MW-06 10-12		MW-07 4-6	
U= Not Detected ≥ indicated value		Sample Date		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)	
Data above Soil Cleanup Levels in Bold		Dilution Factor		1		1		1		1		1	
VOCs, 8260	Cleanup Level	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trimethylbenzene	3.6	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
1,3,5-Trimethylbenzene	8.4	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Benzene	0.06	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Ethyl Benzene	1	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Isopropylbenzene	2.3	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Methyl tert-butyl ether (MTBE)	0.93	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
n-Butylbenzene	12	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
n-Propylbenzene	3.9	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Naphthalene	12	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
o-Xylene	0.26	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
p- & m- Xylenes	0.26	0.0047	U	0.0048	U	0.005	U	0.005	U	0.0046	U		
p-Isopropyltoluene	10	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
sec-Butylbenzene	11	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
tert-Butylbenzene	5.9	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Toluene	0.7	0.0024	U	0.0024	U	0.0025	U	0.0025	U	0.0023	U		
Xylenes, Total	0.26	0.0071	U	0.0073	U	0.0075	U	0.0076	U	0.0069	U		

		Sample ID		MW-05 4-6		MW-05 10-12		MW-06 4-6		MW-06 10-12		MW-07 4-6	
		Sample Date		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)	
		Dilution Factor		2		2		2		2		2	
SVOCs, 8270	Cleanup Level	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Acenaphthene	20	0.051	U	0.13	D	0.05	U	0.053	U	0.05	U		
Acenaphthylene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Anthracene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Benzo(a)anthracene	1	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Benzo(a)pyrene	1	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Benzo(b)fluoranthene	1	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Benzo(g,h,i)perylene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Benzo(k)fluoranthene	0.8	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Chrysene	1	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Dibenzo(a,h)anthracene	0.33	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Fluoranthene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Fluorene	30	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Indeno(1,2,3-cd)pyrene	0.5	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Naphthalene	12	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Phenanthrene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		
Pyrene	100	0.051	U	0.053	U	0.05	U	0.053	U	0.05	U		

Analyte Detected

Notes: Soil Cleanup Levels based on NYSDEC CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

All data in mg/Kg (ppm)		Sample ID		MW-07 11-13		MW-08 4-6		MW-08 10-12		MW-09 4-6		MW-09 6-8	
U= Not Detected ≥ indicated value		Sample Date		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)	
Data above Soil Cleanup Levels in Bold		Dilution Factor		1		1		1		1		1	
VOCs, 8260	Cleanup Level	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trimethylbenzene	3.6	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0058			
1,3,5-Trimethylbenzene	8.4	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
Benzene	0.06	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
Ethyl Benzene	1	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.026			
Isopropylbenzene	2.3	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0095			
Methyl tert-butyl ether (MTBE)	0.93	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
n-Butylbenzene	12	0.0055	U	0.0024	U	0.0053	J	0.0024	U	0.006	J		
n-Propylbenzene	3.9	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
Naphthalene	12	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.018			
o-Xylene	0.26	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0056			
p- & m- Xylenes	0.26	0.011	U	0.0047	U	0.0086	U	0.0048	U	0.024			
p-Isopropyltoluene	10	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
sec-Butylbenzene	11	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0058			
tert-Butylbenzene	5.9	0.0055	U	0.0024	U	0.0043	U	0.0024	U	0.0026	U		
Toluene	0.7	0.012		0.0024	U	0.0043	U	0.0024	U	0.0026	U		
Xylenes, Total	0.26	0.016	U	0.0071	U	0.013	U	0.0072	U	0.03			

		Sample ID		MW-07 11-13		MW-08 4-6		MW-08 10-12		MW-09 4-6		MW-09 6-8	
		Sample Date		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)		(2016-09-15)	
		Dilution Factor		2		2		2		2		2	
SVOCs, 8270	Cleanup Level	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Acenaphthene	20	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Acenaphthylene	100	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Anthracene	100	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Benzo(a)anthracene	1	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Benzo(a)pyrene	1	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Benzo(b)fluoranthene	1	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Benzo(g,h,i)perylene	100	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Benzo(k)fluoranthene	0.8	0.081	U	0.066	JD	0.085	U	0.05	U	0.053	U		
Chrysene	1	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Dibenzo(a,h)anthracene	0.33	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Fluoranthene	100	0.081	U	0.083	JD	0.085	U	0.05	U	0.053	U		
Fluorene	30	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Indeno(1,2,3-cd)pyrene	0.5	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Naphthalene	12	0.081	U	0.049	U	0.085	U	0.05	U	0.053	U		
Phenanthrene	100	0.081	U	0.061	JD	0.085	U	0.05	U	0.053	U		
Pyrene	100	0.081	U	0.085	JD	0.085	U	0.05	U	0.053	U		

Analyte Detected

Notes: Soil Cleanup Levels based on NYSDEC CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Ocean Bay Houses

Table 1: Petroleum Compounds in Soils

NYSDEC Spill No. 03-06202

All data in mg/Kg (ppm)		Sample ID	
U= Not Detected ≥ indicated value		Sample Date	
Data above Soil Cleanup Levels in <b>Bold</b>		Dilution Factor	
		<b>DUP-20160916</b>	
		(2016-09-15)	
		1	
<b>VOCs, 8260</b>	<b>Cleanup Level</b>	<i>Result</i>	<i>Qualifier</i>
1,2,4-Trimethylbenzene	3.6	0.0056	U
1,3,5-Trimethylbenzene	8.4	0.0056	U
Benzene	0.06	0.0056	U
Ethyl Benzene	1	0.0056	U
Isopropylbenzene	2.3	0.0056	U
Methyl tert-butyl ether (MTBE)	0.93	0.0056	U
n-Butylbenzene	12	0.0056	U
n-Propylbenzene	3.9	0.0056	U
Naphthalene	12	0.0056	U
o-Xylene	0.26	0.0056	U
p- & m- Xylenes	0.26	0.011	U
p-Isopropyltoluene	10	0.0056	U
sec-Butylbenzene	11	0.0056	U
tert-Butylbenzene	5.9	0.0056	U
Toluene	0.7	0.029	
Xylenes, Total	0.26	0.017	U

		Sample ID	
		Sample Date	
		Dilution Factor	
		<b>DUP-20160916</b>	
		(2016-09-15)	
		1	
<b>SVOCs, 8270</b>	<b>Cleanup Level</b>	<i>Result</i>	<i>Qualifier</i>
Acenaphthene	20	0.036	U
Acenaphthylene	100	0.036	U
Anthracene	100	0.036	U
Benzo(a)anthracene	1	0.036	U
Benzo(a)pyrene	1	0.036	U
Benzo(b)fluoranthene	1	0.036	U
Benzo(g,h,i)perylene	100	0.036	U
Benzo(k)fluoranthene	0.8	0.036	U
Chrysene	1	0.036	U
Dibenzo(a,h)anthracene	0.33	0.036	U
Fluoranthene	100	0.036	U
Fluorene	30	0.036	U
Indeno(1,2,3-cd)pyrene	0.5	0.036	U
Naphthalene	12	0.036	U
Phenanthrene	100	0.036	U
Pyrene	100	0.036	U

Analyte Detected

Notes: Soil Cleanup Levels based on NYSDEC CP-51 NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Ocean Bay Houses

Table 2: Petroleum Compounds in Groundwater

NYSDEC Spill No. 03-06202

All data in µg/L (parts per billion, ppb)													
Sample ID	Sample Date	MW-01		MW-01-20160927		MW-02		MW-02-20160927		MW-03		MW-03-20160927	
		(2015-11-18)		(2016-09-27)		(2015-11-18)		(2016-09-27)		(2015-11-18)		(2016-09-27)	
		1		1		1		1		10		1	
U= Not Detected ≥ indicated value													
Data above AWQS shown in Bold													
VOCs, 8260 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trimethylbenzene	5	0.2	U	0.2	U	12		11		310	D	30	
1,3,5-Trimethylbenzene	5	0.2	U	0.2	U	0.2	U	1.3		210	D	19	
Benzene	1	0.2	U	0.2	U	9.5		0.93		2	U	0.2	U
Ethyl Benzene	5	0.2	U	0.2	U	18		12		2	U	0.2	U
Isopropylbenzene	5	0.2	U	0.2	U	1.2		0.79		14	D	1.8	
Methyl tert-butyl ether (MTBE)	10	0.2	U	0.2	U	0.2	U	0.2	U	2	U	0.2	U
Naphthalene	10	1	U	1	U	4.2		2.4		10	U	1	U
n-Butylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	17	D	2.8	
n-Propylbenzene	5	0.2	U	0.2	U	2.2		1.9		140	D	20	
o-Xylene	5	0.2	U	0.2	U	19		7.3		2	U	0.2	U
p- & m- Xylenes	5	0.5	U	0.5	U	40		14		5	U	0.5	U
p-Isopropyltoluene	5	0.2	U	0.2	U	0.2	U	0.2	U	5.1	D	2.1	
sec-Butylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	20	D	4.1	
tert-Butylbenzene	5	0.2	U	0.2	U	0.2	U	0.2	U	2	U	0.2	U
Toluene	5	0.2	U	0.2	U	38		2		2	U	0.2	U
Xylenes, Total	5	0.6	U	0.6	U	59		21		6	U	0.6	U
TOTAL VOCs	NA	ND		ND		203		75		716		80	

Sample ID	Sample Date	MW-01		MW-01-20160927		MW-02		MW-02-20160927		MW-03		MW-03-20160927	
		(2015-11-18)		(2016-09-27)		(2015-11-18)		(2016-09-27)		(2015-11-18)		(2016-09-27)	
		1		1		1		1		1		1	
U= Not Detected ≥ indicated value													
Data above AWQS shown in Bold													
SVOCs, 8270 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Acenaphthene	20	0.15		0.05	U	8.08		19		0.16		0.11	
Acenaphthylene	NA	0.05	J	0.05	U	0.05	J	0.06		0.05	U	0.05	U
Anthracene	50	0.05	U	0.05	U	0.2		0.2		0.05	U	0.05	U
Benzo(a)anthracene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(a)pyrene	ND	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(b)fluoranthene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(g,h,i)perylene	NA	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(k)fluoranthene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Chrysene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Dibenzo(a,h)anthracene	NA	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Fluoranthene	50	0.05	U	0.05	U	0.09		0.13		0.05	U	0.05	U
Fluorene	50	0.05	U	0.05	U	0.19		0.05	U	0.13		0.09	
Indeno(1,2,3-cd)pyrene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Naphthalene	10	0.05	U	0.05	U	2.75		1.6		0.26		0.15	
Phenanthrene	50	0.05	U	0.05	U	0.23		0.19		0.08		0.05	U
Pyrene	50	0.05	U	0.05	U	0.05	U	0.06		0.05	U	0.05	U
TOTAL SVOCs	NA	0.2		ND		11.6		21.2		0.63		0.4	

Detected concentrations  
 Concentrations above AWQS

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Ocean Bay Houses

Table 2: Petroleum Compounds in Groundwater

NYSDEC Spill No. 03-06202

All data in µg/L (parts per billion, ppb)													
Sample ID	MW-04		MW-04-20160927		MW-05-20160927		MW-06-20160927		MW-07-20160927		MW-08-20160927		
	Sample Date		(2015-11-18)		(2016-09-27)		(2016-09-27)		(2016-09-27)		(2016-09-27)		
	Dilution Factor		10		25		1		1		1		1
Data above AWQS shown in Bold													
VOCs, 8260 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
1,2,4-Trimethylbenzene	5	<b>220</b>	D	<b>590</b>	D	0.47	J	0.2	U	0.2	U	0.2	U
1,3,5-Trimethylbenzene	5	<b>54</b>	D	2.7	U	0.2	U	0.2	U	0.2	U	0.2	U
Benzene	1	2	U	0.5	U	0.2	U	0.2	U	0.2	U	0.2	U
Ethyl Benzene	5	<b>9.4</b>	D	0.73	U	0.2	U	0.2	U	0.2	U	0.2	U
Isopropylbenzene	5	<b>19</b>	D	<b>41</b>	U	0.2	U	0.2	U	0.2	U	0.2	U
Methyl tert-butyl ether (MTBE)	10	2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Naphthalene	10	10	U	10	U	1	U	1	U	1	U	1	U
n-Butylbenzene	5	<b>7.5</b>	D	<b>8.5</b>	U	0.2	U	0.2	U	0.2	U	0.2	U
n-Propylbenzene	5	<b>75</b>	D	<b>140</b>	U	0.2	U	0.2	U	0.2	U	0.2	U
o-Xylene	5	2	U	0.66	U	0.2	U	0.2	U	0.2	U	0.2	U
p- & m- Xylenes	5	5	U	1.6	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Isopropyltoluene	5	2	U	2.2	U	0.2	U	1.6	U	0.2	U	0.2	U
sec-Butylbenzene	5	<b>7</b>	D	<b>7.3</b>	U	0.2	U	0.2	U	0.2	U	0.2	U
tert-Butylbenzene	5	2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Toluene	5	2	U	1.6	U	0.2	U	0.2	U	0.2	U	0.2	U
Xylenes, Total	5	<b>6</b>	U	2.2	U	0.6	U	0.6	U	0.6	U	0.6	U
TOTAL VOCs	NA			<b>392</b>		<b>809</b>		<b>0.47</b>		<b>1.6</b>		<b>ND</b>	

Sample ID	MW-04		MW-04-20160927		MW-05-20160927		MW-06-20160927		MW-07-20160927		MW-08-20160927		
	Sample Date		(2015-11-18)		(2016-09-27)		(2016-09-27)		(2016-09-27)		(2016-09-27)		
	Dilution Factor		10		1		1		1		1		
Data above AWQS shown in Bold													
SVOCs, 8270 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Acenaphthene	20	0.13	U	0.15	U	0.05	U	0.05	U	0.05	U	0.05	U
Acenaphthylene	NA	0.05	U	0.06	U	0.05	U	0.05	U	0.05	U	0.05	U
Anthracene	50	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(a)anthracene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(a)pyrene	ND	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(b)fluoranthene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(g,h,i)perylene	NA	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Benzo(k)fluoranthene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Chrysene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Dibenzo(a,h)anthracene	NA	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Fluoranthene	50	0.05	U	0.05	U	0.06	U	0.05	U	0.05	U	0.05	U
Fluorene	50	0.06	U	0.09	U	0.05	U	0.05	U	0.05	U	0.05	U
Indeno(1,2,3-cd)pyrene	0.002	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Naphthalene	10	0.9	U	4.6	U	0.05	U	0.05	U	0.05	U	0.05	U
Phenanthrene	50	0.11	U	0.11	U	0.05	U	0.07	U	0.05	U	0.05	U
Pyrene	50	0.05	U	0.05	U	0.08	U	0.05	U	0.05	U	0.05	U
TOTAL SVOCs	NA			<b>1.2</b>		<b>5.0</b>		<b>0.1</b>		<b>0.1</b>		<b>ND</b>	

Detected concentrations  
**Concentrations above AWQS**

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted

Ocean Bay Houses

Table 2: Petroleum Compounds in Groundwater

NYSDEC Spill No. 03-06202

All data in µg/L (parts per billion, ppb)		Sample ID		MW-09-20160927		DUP-20160927	
U= Not Detected ≥ indicated value		Sample Date		(2016-09-27)		(2016-09-27)	
Data above AWQS shown in <b>Bold</b>		Dilution Factor		1		1	
VOCs, 8260 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier		
1,2,4-Trimethylbenzene	5	0.2	U	<b>11</b>			
1,3,5-Trimethylbenzene	5	0.2	U	1.3			
Benzene	1	0.25	J	0.92			
Ethyl Benzene	5	0.28	J	<b>12</b>			
Isopropylbenzene	5	0.2	U	0.83			
Methyl tert-butyl ether (MTBE)	10	0.2	U	0.2	U		
Naphthalene	10	6.9		2.5			
n-Butylbenzene	5	0.2	U	0.2	U		
n-Propylbenzene	5	0.2	U	2			
o-Xylene	5	0.23	J	<b>7.2</b>			
p- & m- Xylenes	5	0.54	J	<b>14</b>			
p-Isopropyltoluene	5	0.2	U	0.2	U		
sec-Butylbenzene	5	0.2	U	0.2	U		
tert-Butylbenzene	5	0.2	U	0.2	U		
Toluene	5	0.2	U	1.9			
Xylenes, Total	5	0.77	J	<b>21</b>			
TOTAL VOCs	NA	<b>8.2</b>		<b>75</b>			
Sample ID		MW-09-20160927		DUP-20160927			
Sample Date		(2016-09-27)		(2016-09-27)			
Dilution Factor		1		1			
SVOCs, 8270 (CP-51 List)	AWQS	Result	Qualifier	Result	Qualifier		
Acenaphthene	20	5		<b>23</b>			
Acenaphthylene	NA	0.05	U	0.06			
Anthracene	50	0.12		0.19			
Benzo(a)anthracene	0.002	0.05	U	0.05	U		
Benzo(a)pyrene	ND	0.05	U	0.05	U		
Benzo(b)fluoranthene	0.002	0.05	U	0.05	U		
Benzo(g,h,i)perylene	NA	0.05	U	0.05	U		
Benzo(k)fluoranthene	0.002	0.05	U	0.05	U		
Chrysene	0.002	0.05	U	0.05	U		
Dibenzo(a,h)anthracene	NA	0.05	U	0.05	U		
Fluoranthene	50	0.13		0.13			
Fluorene	50	1.3		0.07			
Indeno(1,2,3-cd)pyrene	0.002	0.05	U	0.05	U		
Naphthalene	10	4.9		1.6			
Phenanthrene	50	0.24		0.19			
Pyrene	50	0.08		0.06			
TOTAL SVOCs	NA	<b>11.8</b>		<b>25.3</b>			

Detected concentrations  
**Concentrations above AWQS**

Notes: AWQS based on NYSDEC TOGS 1.1.1 (Class GA) NA = not available  
 Result Qualifiers: J = approximate E = estimated B = detected in blank D = diluted



Ecosystems Strategies, Inc.

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## **APPENDIX D**

### ***Laboratory Reports***



# Technical Report

prepared for:

**Ecosystems Strategies, Inc.**  
24 Davis Avenue  
Poughkeepsie NY, 12603  
**Attention: Tyler Goodnough**

Report Date: 09/26/2016  
**Client Project ID: NQ15100**  
York Project (SDG) No.: 16I0638

CT Cert. No. PH-0723

New Jersey Cert. No. CT-005



New York Cert. No. 10854

PA Cert. No. 68-04440

Report Date: 09/26/2016  
Client Project ID: NQ15100  
York Project (SDG) No.: 16I0638

**Ecosystems Strategies, Inc.**  
24 Davis Avenue  
Poughkeepsie NY, 12603  
Attention: Tyler Goodnough

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## Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on September 19, 2016 and listed below. The project was identified as your project: **NQ15100**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
16I0638-01	MW-05 4-6	Soil	09/15/2016	09/19/2016
16I0638-02	MW-05 10-12	Soil	09/15/2016	09/19/2016
16I0638-03	MW-06 4-6	Soil	09/15/2016	09/19/2016
16I0638-04	MW-06 10-12	Soil	09/15/2016	09/19/2016
16I0638-05	MW-07 4-6	Soil	09/16/2016	09/19/2016
16I0638-06	MW-07 11-13	Soil	09/16/2016	09/19/2016
16I0638-07	MW-08 4-6	Soil	09/16/2016	09/19/2016
16I0638-08	MW-08 10-12	Soil	09/16/2016	09/19/2016
16I0638-09	MW-09 4-6	Soil	09/15/2016	09/19/2016
16I0638-10	MW-09 6-8	Soil	09/16/2016	09/19/2016
16I0638-11	DUP-20160916	Soil	09/16/2016	09/19/2016

**General Notes for York Project (SDG) No.: 16I0638**

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

**Approved By:**



**Benjamin Gulizia**  
Laboratory Director

**Date:** 09/26/2016





### Sample Information

**Client Sample ID:** MW-05 4-6

**York Sample ID:** 1610638-01

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 15, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
71-43-2	Benzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/23/2016 23:31	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/23/2016 23:31	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.4	9.4	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/23/2016 23:31	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	4.7	9.4	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/23/2016 23:31	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/23/2016 23:31	SS
108-88-3	Toluene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/23/2016 23:31	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.1	14	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/23/2016 23:31	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	101 %	77-125								
2037-26-5	Surrogate: Toluene-d8	98.7 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	97.9 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR



### Sample Information

**Client Sample ID:** MW-05 4-6

**York Sample ID:** 1610638-01

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 15, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
120-12-7	Anthracene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
218-01-9	Chrysene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
206-44-0	Fluoranthene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
86-73-7	Fluorene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
91-20-3	Naphthalene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
85-01-8	Phenanthrene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
129-00-0	Pyrene	ND		ug/kg dry	51	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:04	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	49.8 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	77.8 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	65.4 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	82.2		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:35	09/26/2016 11:06	DM1



### Sample Information

**Client Sample ID:** MW-05 10-12

**York Sample ID:** 1610638-02

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 15, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
71-43-2	Benzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:02	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:02	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.4	9.7	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 00:02	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	4.8	9.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 00:02	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:02	SS
108-88-3	Toluene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:02	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.3	15	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:02	SS
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	101 %			77-125						
2037-26-5	Surrogate: Toluene-d8	98.9 %			85-120						
460-00-4	Surrogate: p-Bromofluorobenzene	98.0 %			76-130						

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	130		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR



### Sample Information

**Client Sample ID:** MW-05 10-12

**York Sample ID:** 1610638-02

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 15, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
120-12-7	Anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
218-01-9	Chrysene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
206-44-0	Fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
86-73-7	Fluorene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
91-20-3	Naphthalene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
85-01-8	Phenanthrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
129-00-0	Pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 15:35	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	32.7 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	47.8 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	48.5 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	79.4		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:35	09/26/2016 11:06	DM1



### Sample Information

**Client Sample ID:** MW-06 4-6

**York Sample ID:** 1610638-03

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 15, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
71-43-2	Benzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:33	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:33	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.5	10	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 00:33	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.0	10	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 00:33	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 00:33	SS
108-88-3	Toluene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:33	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.5	15	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 00:33	SS

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	102 %	77-125
2037-26-5	Surrogate: Toluene-d8	98.9 %	85-120
460-00-4	Surrogate: p-Bromofluorobenzene	96.4 %	76-130

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR



### Sample Information

**Client Sample ID:** MW-06 4-6

**York Sample ID:** 1610638-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 15, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
120-12-7	Anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
218-01-9	Chrysene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
206-44-0	Fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
86-73-7	Fluorene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
91-20-3	Naphthalene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
85-01-8	Phenanthrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
129-00-0	Pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 07:29	09/22/2016 16:06	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	32.4 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	46.3 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	39.6 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	83.7		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:35	09/26/2016 11:06	DM1



### Sample Information

**Client Sample ID:** MW-06 10-12

**York Sample ID:** 1610638-04

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 15, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
71-43-2	Benzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:03	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:03	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.5	10	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 01:03	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	5.0	10	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 01:03	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:03	SS
108-88-3	Toluene	ND		ug/kg dry	2.5	5.0	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:03	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.6	15	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:03	SS

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	102 %	77-125
2037-26-5	Surrogate: Toluene-d8	100 %	85-120
460-00-4	Surrogate: p-Bromofluorobenzene	97.3 %	76-130

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH



### Sample Information

**Client Sample ID:** MW-06 10-12

**York Sample ID:** 1610638-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 15, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
120-12-7	Anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
218-01-9	Chrysene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
206-44-0	Fluoranthene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
86-73-7	Fluorene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
91-20-3	Naphthalene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
85-01-8	Phenanthrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
129-00-0	Pyrene	ND		ug/kg dry	53	110	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/26/2016 14:39	KH
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	40.9 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	57.5 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	52.6 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	79.0		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:35	09/26/2016 11:06	DM1



### Sample Information

**Client Sample ID:** MW-07 4-6

**York Sample ID:** 1610638-05

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
71-43-2	Benzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:34	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:34	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.3	9.2	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 01:34	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	4.6	9.2	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 01:34	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 01:34	SS
108-88-3	Toluene	ND		ug/kg dry	2.3	4.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:34	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	6.9	14	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 01:34	SS

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	101 %	77-125
2037-26-5	Surrogate: Toluene-d8	96.8 %	85-120
460-00-4	Surrogate: p-Bromofluorobenzene	94.7 %	76-130

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR



### Sample Information

**Client Sample ID:** MW-07 4-6

**York Sample ID:** 1610638-05

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 16, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
120-12-7	Anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
218-01-9	Chrysene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
206-44-0	Fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
86-73-7	Fluorene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
91-20-3	Naphthalene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
85-01-8	Phenanthrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
129-00-0	Pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:08	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	30.4 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	46.3 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	48.1 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	83.2		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:35	09/26/2016 11:06	DM1



### Sample Information

**Client Sample ID:** MW-07 11-13

**York Sample ID:** 1610638-06

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
71-43-2	Benzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:05	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:05	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
91-20-3	Naphthalene	ND		ug/kg dry	5.5	22	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
95-47-6	o-Xylene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 02:05	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	22	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 02:05	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:05	SS
108-88-3	<b>Toluene</b>	<b>12</b>		ug/kg dry	5.5	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:05	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	16	33	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:05	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	107 %	77-125								
2037-26-5	Surrogate: Toluene-d8	99.2 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	98.2 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR



### Sample Information

**Client Sample ID:** MW-07 11-13

**York Sample ID:** 1610638-06

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
120-12-7	Anthracene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
218-01-9	Chrysene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
206-44-0	Fluoranthene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
86-73-7	Fluorene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
91-20-3	Naphthalene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
85-01-8	Phenanthrene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
129-00-0	Pyrene	ND		ug/kg dry	81	160	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 10:39	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	25.9 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	36.9 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	42.7 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	51.5		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



### Sample Information

**Client Sample ID:** MW-08 4-6

**York Sample ID:** 1610638-07

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
71-43-2	Benzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:36	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:36	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.4	9.4	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 02:36	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	4.7	9.4	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 02:36	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 02:36	SS
108-88-3	Toluene	ND		ug/kg dry	2.4	4.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:36	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.1	14	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 02:36	SS

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	104 %	77-125
2037-26-5	Surrogate: Toluene-d8	101 %	85-120
460-00-4	Surrogate: p-Bromofluorobenzene	103 %	76-130

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR



### Sample Information

**Client Sample ID:** MW-08 4-6

**York Sample ID:** 1610638-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 16, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
120-12-7	Anthracene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
207-08-9	<b>Benzo(k)fluoranthene</b>	<b>66</b>	J	ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
218-01-9	Chrysene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
206-44-0	<b>Fluoranthene</b>	<b>83</b>	J	ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
86-73-7	Fluorene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
91-20-3	Naphthalene	ND		ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
85-01-8	<b>Phenanthrene</b>	<b>61</b>	J	ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
129-00-0	<b>Pyrene</b>	<b>85</b>	J	ug/kg dry	49	98	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 11:40	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	28.5 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	45.2 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	45.1 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	<b>84.7</b>		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



### Sample Information

**Client Sample ID:** MW-08 10-12

**York Sample ID:** 1610638-08

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
108-67-8	1,3,5-Trimethylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
71-43-2	Benzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/26/2016 08:26	09/26/2016 14:19	SS
100-41-4	Ethyl Benzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/26/2016 08:26	09/26/2016 14:19	SS
98-82-8	Isopropylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
91-20-3	<b>Naphthalene</b>	<b>5.3</b>	IS-LO, J	ug/kg dry	4.3	17	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
104-51-8	n-Butylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
103-65-1	n-Propylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
95-47-6	o-Xylene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/26/2016 08:26	09/26/2016 14:19	SS
179601-23-1	p- & m- Xylenes	ND	IS-LO	ug/kg dry	8.6	17	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/26/2016 08:26	09/26/2016 14:19	SS
99-87-6	p-Isopropyltoluene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
135-98-8	sec-Butylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
98-06-6	tert-Butylbenzene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/26/2016 08:26	09/26/2016 14:19	SS
108-88-3	Toluene	ND	IS-LO	ug/kg dry	4.3	8.6	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/26/2016 08:26	09/26/2016 14:19	SS
1330-20-7	Xylenes, Total	ND	IS-LO	ug/kg dry	13	26	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/26/2016 08:26	09/26/2016 14:19	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	97.1 %	77-125								
2037-26-5	Surrogate: Toluene-d8	103 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	105 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR



### Sample Information

**Client Sample ID:** MW-08 10-12

**York Sample ID:** 1610638-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 16, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
120-12-7	Anthracene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
218-01-9	Chrysene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
206-44-0	Fluoranthene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
86-73-7	Fluorene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
91-20-3	Naphthalene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
85-01-8	Phenanthrene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
129-00-0	Pyrene	ND		ug/kg dry	85	170	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:10	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	30.3 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	43.6 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	38.2 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	49.4		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



### Sample Information

**Client Sample ID:** MW-09 4-6

**York Sample ID:** 1610638-09

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 15, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
71-43-2	Benzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 03:38	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 03:38	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
91-20-3	Naphthalene	ND		ug/kg dry	2.4	9.7	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
95-47-6	o-Xylene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 03:38	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	4.8	9.7	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 03:38	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 03:38	SS
108-88-3	Toluene	ND		ug/kg dry	2.4	4.8	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 03:38	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	7.2	14	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 03:38	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	101 %	77-125								
2037-26-5	Surrogate: Toluene-d8	99.2 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	95.9 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR



### Sample Information

**Client Sample ID:** MW-09 4-6

**York Sample ID:** 1610638-09

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 15, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
120-12-7	Anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
218-01-9	Chrysene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
206-44-0	Fluoranthene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
86-73-7	Fluorene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
91-20-3	Naphthalene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
85-01-8	Phenanthrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
129-00-0	Pyrene	ND		ug/kg dry	50	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 12:41	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	28.1 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	40.8 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	38.9 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	82.8		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



### Sample Information

**Client Sample ID:** MW-09 6-8

**York Sample ID:** 1610638-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 16, 2016 3:00 pm

09/19/2016

**Volatile Organics, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	5.8		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
71-43-2	Benzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:09	SS
100-41-4	Ethyl Benzene	26		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:09	SS
98-82-8	Isopropylbenzene	9.5		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
91-20-3	Naphthalene	6.0	J	ug/kg dry	2.6	11	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
103-65-1	n-Propylbenzene	18		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
95-47-6	o-Xylene	5.6		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 04:09	SS
179601-23-1	p- & m- Xylenes	24		ug/kg dry	5.3	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 04:09	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
135-98-8	sec-Butylbenzene	5.8		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:09	SS
108-88-3	Toluene	ND		ug/kg dry	2.6	5.3	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:09	SS
1330-20-7	Xylenes, Total	30		ug/kg dry	7.9	16	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:09	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	103 %	77-125								
2037-26-5	Surrogate: Toluene-d8	107 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	121 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR



### Sample Information

**Client Sample ID:** MW-09 6-8

**York Sample ID:** 1610638-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1610638

NQ15100

Soil

September 16, 2016 3:00 pm

09/19/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
120-12-7	Anthracene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
218-01-9	Chrysene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
206-44-0	Fluoranthene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
86-73-7	Fluorene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
91-20-3	Naphthalene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
85-01-8	Phenanthrene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
129-00-0	Pyrene	ND		ug/kg dry	53	100	2	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/22/2016 11:50	09/23/2016 13:12	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	31.4 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	40.5 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	39.7 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	79.6		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



### Sample Information

**Client Sample ID:** DUP-20160916

**York Sample ID:** 1610638-11

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Volatile Organics, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035A

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
71-43-2	Benzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:40	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:40	SS
98-82-8	Isopropylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
91-20-3	Naphthalene	ND		ug/kg dry	5.6	23	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
104-51-8	n-Butylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
103-65-1	n-Propylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
95-47-6	o-Xylene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 04:40	SS
179601-23-1	p- & m- Xylenes	ND		ug/kg dry	11	23	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854	09/23/2016 17:48	09/24/2016 04:40	SS
99-87-6	p-Isopropyltoluene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
135-98-8	sec-Butylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
98-06-6	tert-Butylbenzene	ND		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	09/23/2016 17:48	09/24/2016 04:40	SS
108-88-3	<b>Toluene</b>	<b>29</b>		ug/kg dry	5.6	11	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:40	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	17	34	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 17:48	09/24/2016 04:40	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	104 %	77-125								
2037-26-5	Surrogate: Toluene-d8	108 %	85-120								
460-00-4	Surrogate: p-Bromofluorobenzene	120 %	76-130								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR



### Sample Information

**Client Sample ID:** DUP-20160916

**York Sample ID:** 1610638-11

<u>York Project (SDG) No.</u> 1610638	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Soil	<u>Collection Date/Time</u> September 16, 2016 3:00 pm	<u>Date Received</u> 09/19/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3550C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
120-12-7	Anthracene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
218-01-9	Chrysene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
206-44-0	Fluoranthene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
86-73-7	Fluorene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
91-20-3	Naphthalene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
85-01-8	Phenanthrene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
129-00-0	Pyrene	ND		ug/kg dry	36	73	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/23/2016 11:55	09/26/2016 09:55	SR
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	75.9 %			22-108						
321-60-8	Surrogate: 2-Fluorobiphenyl	72.8 %			21-113						
1718-51-0	Surrogate: Terphenyl-d14	55.9 %			24-116						

**Total Solids**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	* % Solids	57.4		%	0.100	0.100	1	SM 2540G Certifications: CTDOH	09/26/2016 07:34	09/26/2016 10:55	DM1



## Analytical Batch Summary

**Batch ID:** BI61019      **Preparation Method:** EPA 3550C      **Prepared By:** CM

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-01	MW-05 4-6	09/22/16
16I0638-02	MW-05 10-12	09/22/16
16I0638-03	MW-06 4-6	09/22/16
BI61019-BLK1	Blank	09/22/16
BI61019-BS1	LCS	09/22/16
BI61019-BSD1	LCS Dup	09/22/16

**Batch ID:** BI61056      **Preparation Method:** EPA 3550C      **Prepared By:** MRW

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-04	MW-06 10-12	09/22/16
16I0638-05	MW-07 4-6	09/22/16
16I0638-06	MW-07 11-13	09/22/16
16I0638-07	MW-08 4-6	09/22/16
16I0638-08	MW-08 10-12	09/22/16
16I0638-09	MW-09 4-6	09/22/16
16I0638-10	MW-09 6-8	09/22/16
BI61056-BLK1	Blank	09/22/16
BI61056-BS1	LCS	09/22/16
BI61056-BSD1	LCS Dup	09/22/16

**Batch ID:** BI61123      **Preparation Method:** EPA 5035A      **Prepared By:** OW

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-01	MW-05 4-6	09/23/16
16I0638-02	MW-05 10-12	09/23/16
16I0638-03	MW-06 4-6	09/23/16
16I0638-04	MW-06 10-12	09/23/16
16I0638-05	MW-07 4-6	09/23/16
16I0638-06	MW-07 11-13	09/23/16
16I0638-07	MW-08 4-6	09/23/16
16I0638-09	MW-09 4-6	09/23/16
16I0638-10	MW-09 6-8	09/23/16
16I0638-11	DUP-20160916	09/23/16
BI61123-BLK1	Blank	09/23/16
BI61123-BS1	LCS	09/23/16
BI61123-BSD1	LCS Dup	09/23/16

**Batch ID:** BI61153      **Preparation Method:** EPA 3550C      **Prepared By:** MRW

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-11	DUP-20160916	09/23/16



**Batch ID:** BI61208

**Preparation Method:** EPA 5035A

**Prepared By:** OW

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-08	MW-08 10-12	09/26/16
BI61208-BLK1	Blank	09/26/16
BI61208-BS1	LCS	09/26/16
BI61208-BSD1	LCS Dup	09/26/16

**Batch ID:** BI61217

**Preparation Method:** % Solids Prep

**Prepared By:** DM1

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-06	MW-07 11-13	09/26/16
16I0638-07	MW-08 4-6	09/26/16
16I0638-08	MW-08 10-12	09/26/16
16I0638-09	MW-09 4-6	09/26/16
16I0638-10	MW-09 6-8	09/26/16
16I0638-11	DUP-20160916	09/26/16

**Batch ID:** BI61218

**Preparation Method:** % Solids Prep

**Prepared By:** DM1

YORK Sample ID	Client Sample ID	Preparation Date
16I0638-01	MW-05 4-6	09/26/16
16I0638-02	MW-05 10-12	09/26/16
16I0638-03	MW-06 4-6	09/26/16
16I0638-04	MW-06 10-12	09/26/16
16I0638-05	MW-07 4-6	09/26/16



**Volatile Organic Compounds by GC/MS - Quality Control Data**  
**York Analytical Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BI61123 - EPA 5035A**

**Blank (BI61123-BLK1)**

Prepared & Analyzed: 09/23/2016

1,2,4-Trimethylbenzene	ND	5.0	ug/kg wet								
1,3,5-Trimethylbenzene	ND	5.0	"								
Benzene	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl tert-butyl ether (MTBE)	ND	5.0	"								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Toluene	ND	5.0	"								
Xylenes, Total	ND	15	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	47.2		ug/L	50.0		94.3	77-125				
<i>Surrogate: Toluene-d8</i>	49.3		"	50.0		98.6	85-120				
<i>Surrogate: p-Bromofluorobenzene</i>	47.8		"	50.0		95.7	76-130				

**LCS (BI61123-BS1)**

Prepared & Analyzed: 09/23/2016

1,2,4-Trimethylbenzene	54		ug/L	50.0		107	84-125				
1,3,5-Trimethylbenzene	47		"	50.0		94.7	82-126				
Benzene	53		"	50.0		107	77-127				
Ethyl Benzene	56		"	50.0		111	84-125				
Isopropylbenzene	51		"	50.0		102	81-127				
Methyl tert-butyl ether (MTBE)	58		"	50.0		116	74-131				
Naphthalene	57		"	50.0		113	86-141				
n-Butylbenzene	52		"	50.0		104	80-130				
n-Propylbenzene	52		"	50.0		105	74-136				
o-Xylene	53		"	50.0		105	83-123				
p- & m- Xylenes	110		"	100		107	82-128				
p-Isopropyltoluene	54		"	50.0		108	85-125				
sec-Butylbenzene	50		"	50.0		99.1	83-125				
tert-Butylbenzene	52		"	50.0		104	80-127				
Toluene	54		"	50.0		108	85-121				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.7		"	50.0		97.4	77-125				
<i>Surrogate: Toluene-d8</i>	48.6		"	50.0		97.1	85-120				
<i>Surrogate: p-Bromofluorobenzene</i>	52.5		"	50.0		105	76-130				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BI61123 - EPA 5035A**

**LCS Dup (BI61123-BSD1)**

Prepared & Analyzed: 09/23/2016

1,2,4-Trimethylbenzene	52		ug/L	50.0		103	84-125		3.67	30	
1,3,5-Trimethylbenzene	46		"	50.0		91.2	82-126		3.77	30	
Benzene	52		"	50.0		103	77-127		3.38	30	
Ethyl Benzene	54		"	50.0		108	84-125		2.70	30	
Isopropylbenzene	49		"	50.0		97.5	81-127		4.08	30	
Methyl tert-butyl ether (MTBE)	57		"	50.0		113	74-131		2.49	30	
Naphthalene	55		"	50.0		109	86-141		3.51	30	
n-Butylbenzene	51		"	50.0		101	80-130		3.23	30	
n-Propylbenzene	49		"	50.0		98.9	74-136		5.58	30	
o-Xylene	51		"	50.0		102	83-123		3.18	30	
p- & m- Xylenes	100		"	100		105	82-128		2.58	30	
p-Isopropyltoluene	53		"	50.0		106	85-125		2.10	30	
sec-Butylbenzene	48		"	50.0		95.8	83-125		3.41	30	
tert-Butylbenzene	51		"	50.0		101	80-127		2.93	30	
Toluene	53		"	50.0		107	85-121		1.05	30	
Surrogate: 1,2-Dichloroethane-d4	49.7		"	50.0		99.3	77-125				
Surrogate: Toluene-d8	49.8		"	50.0		99.6	85-120				
Surrogate: p-Bromofluorobenzene	52.7		"	50.0		105	76-130				

**Batch BI61208 - EPA 5035A**

**Blank (BI61208-BLK1)**

Prepared & Analyzed: 09/26/2016

1,2,4-Trimethylbenzene	ND	5.0	ug/kg wet								
1,3,5-Trimethylbenzene	ND	5.0	"								
Benzene	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Isopropylbenzene	ND	5.0	"								
Methyl tert-butyl ether (MTBE)	ND	5.0	"								
Naphthalene	ND	10	"								
n-Butylbenzene	ND	5.0	"								
n-Propylbenzene	ND	5.0	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
p-Isopropyltoluene	ND	5.0	"								
sec-Butylbenzene	ND	5.0	"								
tert-Butylbenzene	ND	5.0	"								
Toluene	ND	5.0	"								
Xylenes, Total	ND	15	"								
Surrogate: 1,2-Dichloroethane-d4	47.6		ug/L	50.0		95.3	77-125				
Surrogate: Toluene-d8	48.2		"	50.0		96.5	85-120				
Surrogate: p-Bromofluorobenzene	47.0		"	50.0		93.9	76-130				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BI61208 - EPA 5035A**

**LCS (BI61208-BS1)**

Prepared & Analyzed: 09/26/2016

1,2,4-Trimethylbenzene	51		ug/L	50.0		101	84-125				
1,3,5-Trimethylbenzene	45		"	50.0		90.3	82-126				
Benzene	56		"	50.0		113	77-127				
Ethyl Benzene	54		"	50.0		107	84-125				
Isopropylbenzene	48		"	50.0		95.1	81-127				
Methyl tert-butyl ether (MTBE)	58		"	50.0		117	74-131				
Naphthalene	49		"	50.0		98.2	86-141				
n-Butylbenzene	53		"	50.0		107	80-130				
n-Propylbenzene	48		"	50.0		96.6	74-136				
o-Xylene	51		"	50.0		102	83-123				
p- & m- Xylenes	110		"	100		105	82-128				
p-Isopropyltoluene	51		"	50.0		102	85-125				
sec-Butylbenzene	47		"	50.0		94.0	83-125				
tert-Butylbenzene	49		"	50.0		98.5	80-127				
Toluene	52		"	50.0		103	85-121				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>51.0</i>		<i>"</i>	<i>50.0</i>		<i>102</i>	<i>77-125</i>				
<i>Surrogate: Toluene-d8</i>	<i>47.5</i>		<i>"</i>	<i>50.0</i>		<i>94.9</i>	<i>85-120</i>				
<i>Surrogate: p-Bromofluorobenzene</i>	<i>47.6</i>		<i>"</i>	<i>50.0</i>		<i>95.2</i>	<i>76-130</i>				

**LCS Dup (BI61208-BS1)**

Prepared & Analyzed: 09/26/2016

1,2,4-Trimethylbenzene	48		ug/L	50.0		96.4	84-125		4.90	30	
1,3,5-Trimethylbenzene	44		"	50.0		87.4	82-126		3.26	30	
Benzene	53		"	50.0		106	77-127		5.72	30	
Ethyl Benzene	51		"	50.0		102	84-125		4.84	30	
Isopropylbenzene	46		"	50.0		92.4	81-127		2.82	30	
Methyl tert-butyl ether (MTBE)	54		"	50.0		109	74-131		7.24	30	
Naphthalene	46		"	50.0		92.0	86-141		6.48	30	
n-Butylbenzene	50		"	50.0		99.2	80-130		7.38	30	
n-Propylbenzene	47		"	50.0		93.7	74-136		3.03	30	
o-Xylene	49		"	50.0		97.5	83-123		4.80	30	
p- & m- Xylenes	99		"	100		99.3	82-128		6.09	30	
p-Isopropyltoluene	48		"	50.0		96.5	85-125		5.37	30	
sec-Butylbenzene	45		"	50.0		90.9	83-125		3.33	30	
tert-Butylbenzene	48		"	50.0		96.7	80-127		1.80	30	
Toluene	49		"	50.0		98.9	85-121		4.45	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>49.7</i>		<i>"</i>	<i>50.0</i>		<i>99.4</i>	<i>77-125</i>				
<i>Surrogate: Toluene-d8</i>	<i>47.6</i>		<i>"</i>	<i>50.0</i>		<i>95.3</i>	<i>85-120</i>				
<i>Surrogate: p-Bromofluorobenzene</i>	<i>48.8</i>		<i>"</i>	<i>50.0</i>		<i>97.6</i>	<i>76-130</i>				



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BI61019 - EPA 3550C**

**Blank (BI61019-BLK1)**

Prepared & Analyzed: 09/22/2016

Acenaphthene	ND	42	ug/kg wet								
Acenaphthylene	ND	42	"								
Anthracene	ND	42	"								
Benzo(a)anthracene	ND	42	"								
Benzo(a)pyrene	ND	42	"								
Benzo(b)fluoranthene	ND	42	"								
Benzo(g,h,i)perylene	ND	42	"								
Benzo(k)fluoranthene	ND	42	"								
Chrysene	ND	42	"								
Dibenzo(a,h)anthracene	ND	42	"								
Fluoranthene	ND	42	"								
Fluorene	ND	42	"								
Indeno(1,2,3-cd)pyrene	ND	42	"								
Naphthalene	ND	42	"								
Phenanthrene	ND	42	"								
Pyrene	ND	42	"								

<i>Surrogate: Nitrobenzene-d5</i>	880		"	1680		52.7	22-108				
<i>Surrogate: 2-Fluorobiphenyl</i>	1000		"	1670		62.4	21-113				
<i>Surrogate: Terphenyl-d14</i>	810		"	1670		48.4	24-116				

**LCS (BI61019-BS1)**

Prepared & Analyzed: 09/22/2016

Acenaphthene	940	42	ug/kg wet	1670		56.2	17-124				
Acenaphthylene	930	42	"	1670		55.8	16-124				
Anthracene	1200	42	"	1670		70.4	24-124				
Benzo(a)anthracene	850	42	"	1670		51.2	25-134				
Benzo(a)pyrene	1400	42	"	1670		85.8	29-144				
Benzo(b)fluoranthene	1100	42	"	1670		67.9	20-151				
Benzo(g,h,i)perylene	2000	42	"	1670		121	10-153				
Benzo(k)fluoranthene	1100	42	"	1670		66.8	10-148				
Chrysene	1200	42	"	1670		69.0	24-116				
Dibenzo(a,h)anthracene	2000	42	"	1670		120	17-147				
Fluoranthene	1200	42	"	1670		74.7	36-125				
Fluorene	1100	42	"	1670		65.7	16-130				
Indeno(1,2,3-cd)pyrene	1800	42	"	1670		106	10-155				
Naphthalene	1000	42	"	1670		59.8	20-121				
Phenanthrene	1200	42	"	1670		69.2	24-123				
Pyrene	1200	42	"	1670		69.7	24-132				

<i>Surrogate: Nitrobenzene-d5</i>	1000		"	1680		60.1	22-108				
<i>Surrogate: 2-Fluorobiphenyl</i>	1100		"	1670		64.1	21-113				
<i>Surrogate: Terphenyl-d14</i>	970		"	1670		57.9	24-116				



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Limits	Flag	RPD	
		Limit								Level	Result

**Batch BI61019 - EPA 3550C**

**LCS Dup (BI61019-bsd1)**

Prepared & Analyzed: 09/22/2016

Acenaphthene	910	42	ug/kg wet	1670		54.6	17-124		2.92	30
Acenaphthylene	900	42	"	1670		54.0	16-124		3.28	30
Anthracene	1100	42	"	1670		64.9	24-124		8.04	30
Benzo(a)anthracene	790	42	"	1670		47.5	25-134		7.46	30
Benzo(a)pyrene	1300	42	"	1670		78.5	29-144		8.89	30
Benzo(b)fluoranthene	1300	42	"	1670		78.0	20-151		13.8	30
Benzo(g,h,i)perylene	1800	42	"	1670		110	10-153		9.75	30
Benzo(k)fluoranthene	1100	42	"	1670		65.3	10-148		2.27	30
Chrysene	1100	42	"	1670		63.9	24-116		7.74	30
Dibenzo(a,h)anthracene	1800	42	"	1670		108	17-147		10.3	30
Fluoranthene	1200	42	"	1670		69.1	36-125		7.87	30
Fluorene	1000	42	"	1670		62.4	16-130		5.06	30
Indeno(1,2,3-cd)pyrene	1600	42	"	1670		95.8	10-155		9.85	30
Naphthalene	990	42	"	1670		59.4	20-121		0.637	30
Phenanthrene	1100	42	"	1670		64.4	24-123		7.15	30
Pyrene	1100	42	"	1670		64.5	24-132		7.69	30
<i>Surrogate: Nitrobenzene-d5</i>	<i>960</i>		<i>"</i>	<i>1680</i>		<i>57.1</i>	<i>22-108</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1000</i>		<i>"</i>	<i>1670</i>		<i>59.9</i>	<i>21-113</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>850</i>		<i>"</i>	<i>1670</i>		<i>51.0</i>	<i>24-116</i>			

**Batch BI61056 - EPA 3550C**

**Blank (BI61056-BLK1)**

Prepared & Analyzed: 09/22/2016

Acenaphthene	ND	42	ug/kg wet							
Acenaphthylene	ND	42	"							
Anthracene	ND	42	"							
Benzo(a)anthracene	ND	42	"							
Benzo(a)pyrene	ND	42	"							
Benzo(b)fluoranthene	ND	42	"							
Benzo(g,h,i)perylene	ND	42	"							
Benzo(k)fluoranthene	ND	42	"							
Chrysene	ND	42	"							
Dibenzo(a,h)anthracene	ND	42	"							
Fluoranthene	ND	42	"							
Fluorene	ND	42	"							
Indeno(1,2,3-cd)pyrene	ND	42	"							
Naphthalene	ND	42	"							
Phenanthrene	ND	42	"							
Pyrene	ND	42	"							
<i>Surrogate: Nitrobenzene-d5</i>	<i>1200</i>		<i>"</i>	<i>1680</i>		<i>72.7</i>	<i>22-108</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1600</i>		<i>"</i>	<i>1670</i>		<i>95.2</i>	<i>21-113</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>1100</i>		<i>"</i>	<i>1670</i>		<i>67.3</i>	<i>24-116</i>			



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BI61056 - EPA 3550C

LCS (BI61056-BS1)

Prepared & Analyzed: 09/22/2016

Acenaphthene	1000	42	ug/kg wet	1670		61.6	17-124				
Acenaphthylene	1000	42	"	1670		60.6	16-124				
Anthracene	1200	42	"	1670		74.5	24-124				
Benzo(a)anthracene	890	42	"	1670		53.3	25-134				
Benzo(a)pyrene	1400	42	"	1670		85.5	29-144				
Benzo(b)fluoranthene	1000	42	"	1670		62.3	20-151				
Benzo(g,h,i)perylene	2100	42	"	1670		128	10-153				
Benzo(k)fluoranthene	1300	42	"	1670		78.6	10-148				
Chrysene	1200	42	"	1670		71.4	24-116				
Dibenzo(a,h)anthracene	2000	42	"	1670		121	17-147				
Fluoranthene	1300	42	"	1670		77.5	36-125				
Fluorene	1200	42	"	1670		69.5	16-130				
Indeno(1,2,3-cd)pyrene	1800	42	"	1670		109	10-155				
Naphthalene	1100	42	"	1670		66.6	20-121				
Phenanthrene	1200	42	"	1670		73.5	24-123				
Pyrene	1200	42	"	1670		71.0	24-132				

Surrogate: Nitrobenzene-d5

1100

"

1680

65.0

22-108

Surrogate: 2-Fluorobiphenyl

1200

"

1670

70.1

21-113

Surrogate: Terphenyl-d14

980

"

1670

58.4

24-116

LCS Dup (BI61056-BSD1)

Prepared & Analyzed: 09/22/2016

Acenaphthene	1100	42	ug/kg wet	1670		68.7	17-124		10.8	30	
Acenaphthylene	1100	42	"	1670		68.1	16-124		11.6	30	
Anthracene	1400	42	"	1670		85.4	24-124		13.6	30	
Benzo(a)anthracene	1100	42	"	1670		64.0	25-134		18.2	30	
Benzo(a)pyrene	1800	42	"	1670		107	29-144		22.2	30	
Benzo(b)fluoranthene	1100	42	"	1670		65.9	20-151		5.58	30	
Benzo(g,h,i)perylene	2600	42	"	1670		156	10-153	High Bias	19.8	30	
Benzo(k)fluoranthene	1500	42	"	1670		87.2	10-148		10.4	30	
Chrysene	1400	42	"	1670		85.8	24-116		18.3	30	
Dibenzo(a,h)anthracene	2500	42	"	1670		151	17-147	High Bias	22.2	30	
Fluoranthene	1500	42	"	1670		90.6	36-125		15.5	30	
Fluorene	1300	42	"	1670		79.7	16-130		13.7	30	
Indeno(1,2,3-cd)pyrene	2300	42	"	1670		136	10-155		22.3	30	
Naphthalene	1200	42	"	1670		73.3	20-121		9.55	30	
Phenanthrene	1400	42	"	1670		85.5	24-123		15.1	30	
Pyrene	1500	42	"	1670		87.2	24-132		20.5	30	

Surrogate: Nitrobenzene-d5

1200

"

1680

69.1

22-108

Surrogate: 2-Fluorobiphenyl

1200

"

1670

74.8

21-113

Surrogate: Terphenyl-d14

1100

"

1670

68.3

24-116



### Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
16I0638-01	MW-05 4-6	40mL Vial with Stir Bar-Cool 4° C
16I0638-02	MW-05 10-12	40mL Vial with Stir Bar-Cool 4° C
16I0638-03	MW-06 4-6	40mL Vial with Stir Bar-Cool 4° C
16I0638-04	MW-06 10-12	40mL Vial with Stir Bar-Cool 4° C
16I0638-05	MW-07 4-6	40mL Vial with Stir Bar-Cool 4° C
16I0638-06	MW-07 11-13	40mL Vial with Stir Bar-Cool 4° C
16I0638-07	MW-08 4-6	40mL Vial with Stir Bar-Cool 4° C
16I0638-08	MW-08 10-12	40mL Vial with Stir Bar-Cool 4° C
16I0638-09	MW-09 4-6	40mL Vial with Stir Bar-Cool 4° C
16I0638-10	MW-09 6-8	40mL Vial with Stir Bar-Cool 4° C
16I0638-11	DUP-20160916	40mL Vial with Stir Bar-Cool 4° C



## Notes and Definitions

QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
IS-LO	The internal std associated with this target compound did not meet acceptance criteria (area <50% CCV) at the stated dilution due to matrix effects. Sample was rerun to confirm matrix effects.
CCV-E	The value reported is ESTIMATED. The value is estimated due to its behavior during continuing calibration verification (>20% Difference for average Rf or >20% Drift for quadratic fit).

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*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias ) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.



For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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YORK ANALYTICAL LABORATORIES  
120 RESEARCH DR.  
STRATFORD, CT 06615  
(203) 325-1371  
FAX (203) 357-0166

# Field Chain-of-Custody Record

NOTE: York's Std. Terms & Conditions are listed on the back side of this document. This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions.

York Project No. WJ0638

YOUR INFORMATION		Report to:		Invoice To:		Your Project ID		Turn-Around Time		Report/Deliverable Type	
Company: <b>ESI</b>	<input checked="" type="checkbox"/> SAME	Name: <b>24 Davis Avenue</b>	<input checked="" type="checkbox"/> SAME	Name: <b>Brenda</b>	<input checked="" type="checkbox"/> RUSH-Same Day	<b>NQ15100</b>		<b>RUSH-Next Day</b>		Summary Report <input checked="" type="checkbox"/>	
Address: <b>Poughkeepsie, NY</b>		Company: <b>846-452-1658</b>		Company: <b>Address:</b>	<input checked="" type="checkbox"/> RUSH-Two Day	<b>Purchase Order #</b>		<b>RUSH-Three Day</b>		QA Report	
Phone: <b>Tyler Goodnough</b>		Address: <b>E-mail:</b>		Address: <b>E-mail:</b>	<input checked="" type="checkbox"/> RUSH-Four Day	<b>NQ15100.41</b>		<b>Standard (5-7day)</b>		CT RCP	
Contact: <b>Tyler Goodnough</b>						<b>Samples from CT_NY_NJ</b>		<b>X</b>		CT RCP DQ/DUE Pkg	
E-mail:										NY ASP A Package	
										NY ASP B Package	
										NJDEP Reduced Deliv	

**Print Clearly and Legibly. All Information must be complete. Samples will NOT be logged in and the turn-around time clock will not begin until any questions by York are resolved.**

Samples Collected/Authorized By (Signature) Tyler Goodnough  
Name (printed) Tyler Goodnough

Volatiles	Semi-Vols./Pest/CP/End	Metals	Misc. Org.	Full Lists
8260 full TICs	8270 or 625 RCKA8	TPH GRO	TPH Pol.	Pr. Pol.
624 Site Spec.	STARS list	TPH DRO	TPH Cognic	TCL Cognic
STARS list Nassau Co.	8081P-est	CT ETPH	TAL	TAL/MeCN
BTEX	BN Only	NY 310-13	CT RCP	Full TCLP
MTBE	Adts Only	TPH 1664	App. IX	Full App. IX
TCL list	PAH list	NI DEP list	Site Spec.	Part 360/Resins
TA GM list	TA GM list	Total	SELP or TCLP	Part 360/Resins
CT RCP list	TCL list	Dissolved	TCLP Pest	Part 360/Resins
Arcem. only	NI DEP list	TPH Herb	SELP or TCLP	Part 360/Resins
Halog. only	App. IX	Chlordane	App. IX	NY/DEP Spec
App. IX list	TCLP BNA	608 Pest	SELP or TCLP	NY/DEP Spec
8021B list	SELP or TCLP	608 PCB	SELP or TCLP	NY/DEP Spec

Sample Identification	Date/Time Sampled	Matrix	Analysis Requested (List above includes common analysis)	Container Description
MW-05 4-6	9/15/2016	S	CP-51 full list VOCs + SVOCs	1xVOA kit, 1x4oz jar
MW-05 10-12	9/15/2016			
MW-06 4-6	9/15/2016			
MW-06 10-12	9/15/2016			
MW-07 4-6	9/16/2016			
MW-07 11-13	9/16/2016			
MW-08 4-6	9/16/2016			
MW-08 10-12	9/16/2016			
MW-09 4-6	9/15/2016			

Comments: VOA kits frozen on date of collection

Preservation (check all applicable):  
 4°C  Frozen  HCl  MeOH  HNO<sub>3</sub>  NaOH  
 ZnAc  Ascorbic Acid  Other

Special Instructions:  
 Field Filtered  Lab to Filter

Samples Relinquished By [Signature] Date/Time 9/19/16-11:45  
 Samples Received By Cheryl Date/Time 9-19-16 11:45  
 Samples Relinquished By W. Bradley Date/Time 9/19/16 1441  
 Samples Received in LA B by W. Bradley Date/Time 9/19/16 1441

Temperature on Receipt 3.9 °C





# Technical Report

prepared for:

**Ecosystems Strategies, Inc.**  
24 Davis Avenue  
Poughkeepsie NY, 12603  
**Attention: Tyler Goodnough**

Report Date: 10/04/2016  
**Client Project ID: NQ15100**  
York Project (SDG) No.: 16I1060

CT Cert. No. PH-0723

New Jersey Cert. No. CT-005



New York Cert. No. 10854

PA Cert. No. 68-04440

Report Date: 10/04/2016  
Client Project ID: NQ15100  
York Project (SDG) No.: 16I1060

**Ecosystems Strategies, Inc.**  
24 Davis Avenue  
Poughkeepsie NY, 12603  
Attention: Tyler Goodnough

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## Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on September 28, 2016 and listed below. The project was identified as your project: **NQ15100**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
16I1060-01	MW-01-20160927	Water	09/27/2016	09/28/2016
16I1060-02	MW-02-20160927	Water	09/27/2016	09/28/2016
16I1060-03	MW-03-20160927	Water	09/27/2016	09/28/2016
16I1060-04	MW-04-20160927	Water	09/27/2016	09/28/2016
16I1060-05	MW-05-20160927	Water	09/27/2016	09/28/2016
16I1060-06	MW-06-20160927	Water	09/27/2016	09/28/2016
16I1060-07	MW-07-20160927	Water	09/27/2016	09/28/2016
16I1060-08	MW-08-20160927	Water	09/27/2016	09/28/2016
16I1060-09	MW-09-20160927	Water	09/27/2016	09/28/2016
16I1060-10	DUP-20160927	Water	09/27/2016	09/28/2016
16I1060-11	TB-20160927	Water	09/27/2016	09/28/2016

## **General Notes for York Project (SDG) No.: 16I1060**

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

**Approved By:**



**Benjamin Gulizia**  
Laboratory Director

**Date:** 10/04/2016





### Sample Information

**Client Sample ID:** MW-01-20160927

**York Sample ID:** 1611060-01

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 20:18	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 20:18	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 20:18	SS

**Surrogate Recoveries**

**Result**

**Acceptance Range**

17060-07-0	Surrogate: 1,2-Dichloroethane-d4	106 %	69-130
460-00-4	Surrogate: p-Bromofluorobenzene	92.3 %	79-122
2037-26-5	Surrogate: Toluene-d8	97.1 %	81-117

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH



**Sample Information**

**Client Sample ID:** MW-01-20160927

**York Sample ID:** 1611060-01

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
91-20-3	Naphthalene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
85-01-8	Phenanthrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 22:59	KH
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
4165-60-0	Surrogate: Nitrobenzene-d5	45.1 %	12-96								
321-60-8	Surrogate: 2-Fluorobiphenyl	45.1 %	16-84								
1718-51-0	Surrogate: Terphenyl-d14	33.9 %	15-106								

**Sample Information**

**Client Sample ID:** MW-02-20160927

**York Sample ID:** 1611060-02

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-02-20160927

**York Sample ID:** 1611060-02

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	<b>Benzene</b>	<b>0.93</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
100-41-4	<b>Ethyl Benzene</b>	<b>12</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
108-88-3	<b>Toluene</b>	<b>2.0</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
95-47-6	<b>o-Xylene</b>	<b>7.3</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 20:57	SS
179601-23-1	<b>p- &amp; m- Xylenes</b>	<b>14</b>		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 20:57	SS
98-82-8	<b>Isopropylbenzene</b>	<b>0.79</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
103-65-1	<b>n-Propylbenzene</b>	<b>1.9</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
95-63-6	<b>1,2,4-Trimethylbenzene</b>	<b>11</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
108-67-8	<b>1,3,5-Trimethylbenzene</b>	<b>1.3</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
91-20-3	<b>Naphthalene</b>	<b>2.4</b>		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
1330-20-7	<b>* Xylenes, Total</b>	<b>21</b>		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 20:57	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	103 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	96.5 %	79-122								
2037-26-5	Surrogate: Toluene-d8	94.2 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	<b>Acenaphthene</b>	<b>19</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 00:51	KH



### Sample Information

**Client Sample ID:** MW-02-20160927

**York Sample ID:** 1611060-02

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	0.060		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
120-12-7	Anthracene	0.20		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
206-44-0	Fluoranthene	0.13		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
91-20-3	Naphthalene	1.6		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
85-01-8	Phenanthrene	0.19		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
129-00-0	Pyrene	0.060		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	09/30/2016 19:51	SR
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
4165-60-0	Surrogate: Nitrobenzene-d5	60.0 %	12-96								
321-60-8	Surrogate: 2-Fluorobiphenyl	49.1 %	16-84								
1718-51-0	Surrogate: Terphenyl-d14	43.0 %	15-106								

### Sample Information

**Client Sample ID:** MW-03-20160927

**York Sample ID:** 1611060-03

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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### Sample Information

**Client Sample ID:** MW-03-20160927

**York Sample ID:** 1611060-03

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1611060

NQ15100

Water

September 27, 2016 3:00 pm

09/28/2016

**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 21:37	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 21:37	SS
98-82-8	<b>Isopropylbenzene</b>	<b>1.8</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
103-65-1	<b>n-Propylbenzene</b>	<b>20</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
99-87-6	<b>p-Isopropyltoluene</b>	<b>2.1</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
95-63-6	<b>1,2,4-Trimethylbenzene</b>	<b>30</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
108-67-8	<b>1,3,5-Trimethylbenzene</b>	<b>19</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
104-51-8	<b>n-Butylbenzene</b>	<b>2.8</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
135-98-8	<b>sec-Butylbenzene</b>	<b>4.1</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 21:37	SS
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	112 %			69-130						
460-00-4	Surrogate: p-Bromofluorobenzene	93.3 %			79-122						
2037-26-5	Surrogate: Toluene-d8	93.9 %			81-117						

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	<b>Acenaphthene</b>	<b>0.11</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR



### Sample Information

**Client Sample ID:** MW-03-20160927

**York Sample ID:** 16I1060-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
16I1060	NQ15100	Water	September 27, 2016 3:00 pm	09/28/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
86-73-7	<b>Fluorene</b>	<b>0.090</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
91-20-3	<b>Naphthalene</b>	<b>0.15</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
85-01-8	Phenanthrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:10	SR
	<b>Surrogate Recoveries</b>	<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	67.1 %			12-96						
321-60-8	Surrogate: 2-Fluorobiphenyl	56.1 %			16-84						
1718-51-0	Surrogate: Terphenyl-d14	48.6 %			15-106						

### Sample Information

**Client Sample ID:** MW-04-20160927

**York Sample ID:** 16I1060-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
16I1060	NQ15100	Water	September 27, 2016 3:00 pm	09/28/2016

**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-04-20160927

**York Sample ID:** 1611060-04

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	<b>Benzene</b>	<b>0.50</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
100-41-4	<b>Ethyl Benzene</b>	<b>0.73</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
108-88-3	<b>Toluene</b>	<b>1.6</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
95-47-6	<b>o-Xylene</b>	<b>0.66</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 22:17	SS
179601-23-1	<b>p- &amp; m- Xylenes</b>	<b>1.6</b>		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 22:17	SS
98-82-8	<b>Isopropylbenzene</b>	<b>41</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
103-65-1	<b>n-Propylbenzene</b>	<b>140</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
99-87-6	<b>p-Isopropyltoluene</b>	<b>2.2</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
95-63-6	<b>1,2,4-Trimethylbenzene</b>	<b>590</b>		ug/L	5.0	12	25	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 12:13	SS
108-67-8	<b>1,3,5-Trimethylbenzene</b>	<b>2.7</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
104-51-8	<b>n-Butylbenzene</b>	<b>8.5</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
135-98-8	<b>sec-Butylbenzene</b>	<b>7.3</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
91-20-3	<b>Naphthalene</b>	<b>10</b>		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
1330-20-7	<b>* Xylenes, Total</b>	<b>2.2</b>		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 22:17	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	115 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	89.6 %	79-122								
2037-26-5	Surrogate: Toluene-d8	95.6 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	<b>Acenaphthene</b>	<b>0.15</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR



**Sample Information**

**Client Sample ID:** MW-04-20160927

**York Sample ID:** 1611060-04

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	0.060		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
86-73-7	Fluorene	0.090		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
91-20-3	Naphthalene	4.6		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
85-01-8	Phenanthrene	0.11		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 17:41	SR
	<b>Surrogate Recoveries</b>	<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	57.3 %			12-96						
321-60-8	Surrogate: 2-Fluorobiphenyl	48.7 %			16-84						
1718-51-0	Surrogate: Terphenyl-d14	44.3 %			15-106						

**Sample Information**

**Client Sample ID:** MW-05-20160927

**York Sample ID:** 1611060-05

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-05-20160927

**York Sample ID:** 1611060-05

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 22:57	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 22:57	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
95-63-6	<b>1,2,4-Trimethylbenzene</b>	<b>0.47</b>	<b>J</b>	ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 22:57	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	102 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	100 %	79-122								
2037-26-5	Surrogate: Toluene-d8	94.3 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR



**Sample Information**

**Client Sample ID:** MW-05-20160927

**York Sample ID:** 1611060-05

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
206-44-0	<b>Fluoranthene</b>	<b>0.060</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
91-20-3	Naphthalene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
85-01-8	Phenanthrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
129-00-0	<b>Pyrene</b>	<b>0.080</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:13	SR
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
4165-60-0	Surrogate: Nitrobenzene-d5	65.2 %	12-96								
321-60-8	Surrogate: 2-Fluorobiphenyl	56.8 %	16-84								
1718-51-0	Surrogate: Terphenyl-d14	49.2 %	15-106								

**Sample Information**

**Client Sample ID:** MW-06-20160927

**York Sample ID:** 1611060-06

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-06-20160927

**York Sample ID:** 1611060-06

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 23:37	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/03/2016 23:37	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
99-87-6	<b>p-Isopropyltoluene</b>	<b>1.6</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/03/2016 23:37	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	111 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	92.5 %	79-122								
2037-26-5	Surrogate: Toluene-d8	98.1 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR



**Sample Information**

**Client Sample ID:** MW-06-20160927

**York Sample ID:** 1611060-06

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
91-20-3	Naphthalene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
85-01-8	<b>Phenanthrene</b>	<b>0.070</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 18:45	SR
	<b>Surrogate Recoveries</b>	<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	51.0 %			12-96						
321-60-8	Surrogate: 2-Fluorobiphenyl	42.1 %			16-84						
1718-51-0	Surrogate: Terphenyl-d14	34.7 %			15-106						

**Sample Information**

**Client Sample ID:** MW-07-20160927

**York Sample ID:** 1611060-07

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-07-20160927

**York Sample ID:** 1611060-07

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 00:17	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 00:17	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/04/2016 00:17	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	103 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	97.5 %	79-122								
2037-26-5	Surrogate: Toluene-d8	95.3 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR



### Sample Information

**Client Sample ID:** MW-07-20160927

**York Sample ID:** 1611060-07

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1611060

NQ15100

Water

September 27, 2016 3:00 pm

09/28/2016

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
91-20-3	Naphthalene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
85-01-8	Phenanthrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:16	SR
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
4165-60-0	Surrogate: Nitrobenzene-d5	64.4 %	12-96								
321-60-8	Surrogate: 2-Fluorobiphenyl	53.8 %	16-84								
1718-51-0	Surrogate: Terphenyl-d14	45.1 %	15-106								

### Sample Information

**Client Sample ID:** MW-08-20160927

**York Sample ID:** 1611060-08

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1611060

NQ15100

Water

September 27, 2016 3:00 pm

09/28/2016

**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
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### Sample Information

**Client Sample ID:** MW-08-20160927

**York Sample ID:** 1611060-08

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 00:56	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 00:56	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/04/2016 00:56	SS
<b>Surrogate Recoveries</b>		<b>Result</b>			<b>Acceptance Range</b>						
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	99.4 %			69-130						
460-00-4	Surrogate: p-Bromofluorobenzene	98.4 %			79-122						
2037-26-5	Surrogate: Toluene-d8	99.3 %			81-117						

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	Acenaphthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR



**Sample Information**

**Client Sample ID:** MW-08-20160927

**York Sample ID:** 1611060-08

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
120-12-7	Anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
206-44-0	Fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
86-73-7	Fluorene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
91-20-3	Naphthalene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
85-01-8	Phenanthrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
129-00-0	Pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 19:48	SR
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
4165-60-0	Surrogate: Nitrobenzene-d5	72.0 %	12-96								
321-60-8	Surrogate: 2-Fluorobiphenyl	62.7 %	16-84								
1718-51-0	Surrogate: Terphenyl-d14	52.0 %	15-106								

**Sample Information**

**Client Sample ID:** MW-09-20160927

**York Sample ID:** 1611060-09

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**



### Sample Information

**Client Sample ID:** MW-09-20160927

**York Sample ID:** 1611060-09

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	<b>Benzene</b>	<b>0.25</b>	J	ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
100-41-4	<b>Ethyl Benzene</b>	<b>0.28</b>	J	ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
95-47-6	<b>o-Xylene</b>	<b>0.23</b>	J	ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 01:35	SS
179601-23-1	<b>p- &amp; m- Xylenes</b>	<b>0.54</b>	J	ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 01:35	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
91-20-3	<b>Naphthalene</b>	<b>6.9</b>		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS
1330-20-7	<b>* Xylenes, Total</b>	<b>0.77</b>	J	ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/04/2016 01:35	SS

**Surrogate Recoveries**

	Surrogate	Result	Acceptance Range
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	101 %	69-130
460-00-4	Surrogate: p-Bromofluorobenzene	93.0 %	79-122
2037-26-5	Surrogate: Toluene-d8	95.4 %	81-117

**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	<b>Acenaphthene</b>	<b>5.0</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:20	SR
208-96-8	Acenaphthylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:20	SR



Sample Information

Client Sample ID: MW-09-20160927

York Sample ID: 1611060-09

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1611060

NQ15100

Water

September 27, 2016 3:00 pm

09/28/2016

Semi-Volatiles, CP-51 (formerly STARS) List

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

Table with columns: CAS No., Parameter, Result, Flag, Units, Reported to LOD/MDL, LOQ, Dilution, Reference Method, Date/Time Prepared, Date/Time Analyzed, Analyst. Includes rows for Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, Pyrene, and Surrogate Recoveries.

Sample Information

Client Sample ID: DUP-20160927

York Sample ID: 1611060-10

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

1611060

NQ15100

Water

September 27, 2016 3:00 pm

09/28/2016

Volatile Organics, CP-51 (STARS) Low level

Log-in Notes:

Sample Notes:



### Sample Information

**Client Sample ID:** DUP-20160927

**York Sample ID:** 1611060-10

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	<b>Benzene</b>	<b>0.92</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
100-41-4	<b>Ethyl Benzene</b>	<b>12</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
108-88-3	<b>Toluene</b>	<b>1.9</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
95-47-6	<b>o-Xylene</b>	<b>7.2</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 02:15	SS
179601-23-1	<b>p- &amp; m- Xylenes</b>	<b>14</b>		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 02:15	SS
98-82-8	<b>Isopropylbenzene</b>	<b>0.83</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
103-65-1	<b>n-Propylbenzene</b>	<b>2.0</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
95-63-6	<b>1,2,4-Trimethylbenzene</b>	<b>11</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
108-67-8	<b>1,3,5-Trimethylbenzene</b>	<b>1.3</b>		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
91-20-3	<b>Naphthalene</b>	<b>2.5</b>		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
1330-20-7	<b>* Xylenes, Total</b>	<b>21</b>		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/04/2016 02:15	SS
<b>Surrogate Recoveries</b>		<b>Result</b>	<b>Acceptance Range</b>								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	94.0 %	69-130								
460-00-4	Surrogate: p-Bromofluorobenzene	98.0 %	79-122								
2037-26-5	Surrogate: Toluene-d8	93.7 %	81-117								

**Semi-Volatiles, CP-51 (formerly STARS) List**

Log-in Notes:

Sample Notes: EXT-EM

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
83-32-9	<b>Acenaphthene</b>	<b>23</b>		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 21:52	KH



**Sample Information**

**Client Sample ID:** DUP-20160927

**York Sample ID:** 1611060-10

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Semi-Volatiles, CP-51 (formerly STARS) List**

**Log-in Notes:**

**Sample Notes: EXT-EM**

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
208-96-8	Acenaphthylene	0.060		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
120-12-7	Anthracene	0.19		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
56-55-3	Benzo(a)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
50-32-8	Benzo(a)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
205-99-2	Benzo(b)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
191-24-2	Benzo(g,h,i)perylene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
207-08-9	Benzo(k)fluoranthene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
218-01-9	Chrysene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
53-70-3	Dibenzo(a,h)anthracene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
206-44-0	Fluoranthene	0.13		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
86-73-7	Fluorene	0.070		ug/L	0.050	0.050	1	EPA 8270D Certifications: NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
91-20-3	Naphthalene	1.6		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
85-01-8	Phenanthrene	0.19		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
129-00-0	Pyrene	0.060		ug/L	0.050	0.050	1	EPA 8270D Certifications: CTDOH,NELAC-NY10854,NJDEP,PADEP	09/30/2016 12:22	10/01/2016 20:52	SR
	<b>Surrogate Recoveries</b>	<b>Result</b>			<b>Acceptance Range</b>						
4165-60-0	Surrogate: Nitrobenzene-d5	75.8 %			12-96						
321-60-8	Surrogate: 2-Fluorobiphenyl	57.7 %			16-84						
1718-51-0	Surrogate: Terphenyl-d14	41.5 %			15-106						

**Sample Information**

**Client Sample ID:** TB-20160927

**York Sample ID:** 1611060-11

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Sample Information**

**Client Sample ID:** TB-20160927

**York Sample ID:** 1611060-11

<u>York Project (SDG) No.</u> 1611060	<u>Client Project ID</u> NQ15100	<u>Matrix</u> Water	<u>Collection Date/Time</u> September 27, 2016 3:00 pm	<u>Date Received</u> 09/28/2016
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**Volatile Organics, CP-51 (STARS) Low level**

**Log-in Notes:**

**Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-43-2	Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
100-41-4	Ethyl Benzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
108-88-3	Toluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
95-47-6	o-Xylene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 02:55	SS
179601-23-1	p- & m- Xylenes	ND		ug/L	0.50	1.0	1	EPA 8260C Certifications: NELAC-NY10854	10/03/2016 17:28	10/04/2016 02:55	SS
98-82-8	Isopropylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
103-65-1	n-Propylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
99-87-6	p-Isopropyltoluene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
104-51-8	n-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
135-98-8	sec-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
98-06-6	tert-Butylbenzene	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
91-20-3	Naphthalene	ND		ug/L	1.0	2.0	1	EPA 8260C Certifications: NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.20	0.50	1	EPA 8260C Certifications: CTDOH,NELAC-NY10854,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS
1330-20-7	* Xylenes, Total	ND		ug/L	0.60	1.5	1	EPA 8260C Certifications: CTDOH,NJDEP	10/03/2016 17:28	10/04/2016 02:55	SS

	<b>Surrogate Recoveries</b>	<b>Result</b>	<b>Acceptance Range</b>
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	95.3 %	69-130
460-00-4	Surrogate: p-Bromofluorobenzene	102 %	79-122
2037-26-5	Surrogate: Toluene-d8	95.7 %	81-117



## Analytical Batch Summary

**Batch ID:** BI61535      **Preparation Method:** EPA 3510C      **Prepared By:** RDS

YORK Sample ID	Client Sample ID	Preparation Date
16I1060-01	MW-01-20160927	09/30/16
16I1060-02	MW-02-20160927	09/30/16
16I1060-03	MW-03-20160927	09/30/16
16I1060-04	MW-04-20160927	09/30/16
16I1060-05	MW-05-20160927	09/30/16
16I1060-06	MW-06-20160927	09/30/16
16I1060-07	MW-07-20160927	09/30/16
16I1060-08	MW-08-20160927	09/30/16
16I1060-09	MW-09-20160927	09/30/16
16I1060-10	DUP-20160927	09/30/16
BI61535-BLK1	Blank	09/30/16
BI61535-BLK2	Blank	09/30/16
BI61535-BS1	LCS	09/30/16
BI61535-BS2	LCS	09/30/16
BI61535-BSD1	LCS Dup	09/30/16

**Batch ID:** BJ60033      **Preparation Method:** EPA 5030B      **Prepared By:** SA

YORK Sample ID	Client Sample ID	Preparation Date
16I1060-01	MW-01-20160927	10/03/16
16I1060-02	MW-02-20160927	10/03/16
16I1060-03	MW-03-20160927	10/03/16
16I1060-04	MW-04-20160927	10/03/16
16I1060-05	MW-05-20160927	10/03/16
16I1060-06	MW-06-20160927	10/03/16
16I1060-07	MW-07-20160927	10/03/16
16I1060-08	MW-08-20160927	10/03/16
16I1060-09	MW-09-20160927	10/03/16
16I1060-10	DUP-20160927	10/03/16
16I1060-11	TB-20160927	10/03/16
BJ60033-BLK1	Blank	10/03/16
BJ60033-BS1	LCS	10/03/16
BJ60033-BSD1	LCS Dup	10/03/16

**Batch ID:** BJ60097      **Preparation Method:** EPA 5030B      **Prepared By:** SA

YORK Sample ID	Client Sample ID	Preparation Date
16I1060-04RE1	MW-04-20160927	10/03/16
BJ60097-BLK1	Blank	10/04/16
BJ60097-BS1	LCS	10/04/16
BJ60097-BSD1	LCS Dup	10/04/16



**Volatile Organic Compounds by GC/MS - Quality Control Data**  
**York Analytical Laboratories, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BJ60033 - EPA 5030B**

**Blank (BJ60033-BLK1)**

Prepared & Analyzed: 10/03/2016

Benzene	ND	0.50	ug/L								
Ethyl Benzene	ND	0.50	"								
Toluene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
Isopropylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
p-Isopropyltoluene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
n-Butylbenzene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
tert-Butylbenzene	ND	0.50	"								
Naphthalene	ND	2.0	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	9.87		"	10.0		98.7	69-130				
<i>Surrogate: p-Bromofluorobenzene</i>	9.75		"	10.0		97.5	79-122				
<i>Surrogate: Toluene-d8</i>	9.93		"	10.0		99.3	81-117				

**LCS (BJ60033-BS1)**

Prepared & Analyzed: 10/03/2016

Benzene	10		ug/L	10.0		105	85-126				
Ethyl Benzene	10		"	10.0		102	80-131				
Toluene	9.7		"	10.0		96.6	80-127				
o-Xylene	9.6		"	10.0		96.2	78-130				
p- & m- Xylenes	20		"	20.0		102	77-133				
Isopropylbenzene	9.5		"	10.0		94.8	76-140				
n-Propylbenzene	9.7		"	10.0		97.1	78-133				
p-Isopropyltoluene	9.9		"	10.0		99.0	81-136				
1,2,4-Trimethylbenzene	10		"	10.0		100	82-132				
1,3,5-Trimethylbenzene	9.7		"	10.0		97.2	80-131				
n-Butylbenzene	9.8		"	10.0		98.3	79-132				
sec-Butylbenzene	9.2		"	10.0		92.0	79-137				
tert-Butylbenzene	9.3		"	10.0		93.4	77-138				
Naphthalene	8.5		"	10.0		84.9	70-147				
Methyl tert-butyl ether (MTBE)	10		"	10.0		104	76-135				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	10.1		"	10.0		101	69-130				
<i>Surrogate: p-Bromofluorobenzene</i>	10.1		"	10.0		101	79-122				
<i>Surrogate: Toluene-d8</i>	9.82		"	10.0		98.2	81-117				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BJ60033 - EPA 5030B**

**LCS Dup (BJ60033-BSD1)**

Prepared & Analyzed: 10/03/2016

Benzene	11		ug/L	10.0		109	85-126		3.65	30	
Ethyl Benzene	10		"	10.0		102	80-131		0.785	30	
Toluene	9.9		"	10.0		99.1	80-127		2.55	30	
o-Xylene	9.7		"	10.0		96.7	78-130		0.518	30	
p- & m- Xylenes	21		"	20.0		104	77-133		2.82	30	
Isopropylbenzene	9.9		"	10.0		99.2	76-140		4.54	30	
n-Propylbenzene	10		"	10.0		101	78-133		3.94	30	
p-Isopropyltoluene	10		"	10.0		103	81-136		4.06	30	
1,2,4-Trimethylbenzene	10		"	10.0		105	82-132		4.29	30	
1,3,5-Trimethylbenzene	10		"	10.0		102	80-131		4.43	30	
n-Butylbenzene	10		"	10.0		102	79-132		3.69	30	
sec-Butylbenzene	9.5		"	10.0		94.9	79-137		3.10	30	
tert-Butylbenzene	9.7		"	10.0		97.3	77-138		4.09	30	
Naphthalene	9.2		"	10.0		92.5	70-147		8.57	30	
Methyl tert-butyl ether (MTBE)	11		"	10.0		108	76-135		4.62	30	
Surrogate: 1,2-Dichloroethane-d4	10.3		"	10.0		103	69-130				
Surrogate: p-Bromofluorobenzene	10.3		"	10.0		103	79-122				
Surrogate: Toluene-d8	9.56		"	10.0		95.6	81-117				

**Batch BJ60097 - EPA 5030B**

**Blank (BJ60097-BLK1)**

Prepared & Analyzed: 10/04/2016

Benzene	ND	0.50	ug/L								
Ethyl Benzene	ND	0.50	"								
Toluene	ND	0.50	"								
o-Xylene	ND	0.50	"								
p- & m- Xylenes	ND	1.0	"								
Isopropylbenzene	ND	0.50	"								
n-Propylbenzene	ND	0.50	"								
p-Isopropyltoluene	ND	0.50	"								
1,2,4-Trimethylbenzene	ND	0.50	"								
1,3,5-Trimethylbenzene	ND	0.50	"								
n-Butylbenzene	ND	0.50	"								
sec-Butylbenzene	ND	0.50	"								
tert-Butylbenzene	ND	0.50	"								
Naphthalene	ND	2.0	"								
Methyl tert-butyl ether (MTBE)	ND	0.50	"								
Xylenes, Total	ND	1.5	"								
Surrogate: 1,2-Dichloroethane-d4	10.0		"	10.0		100	69-130				
Surrogate: p-Bromofluorobenzene	9.51		"	10.0		95.1	79-122				
Surrogate: Toluene-d8	10.0		"	10.0		100	81-117				



Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BJ60097 - EPA 5030B

LCS (BJ60097-BS1)

Prepared & Analyzed: 10/04/2016

Benzene	10		ug/L	10.0		104	85-126				
Ethyl Benzene	10		"	10.0		102	80-131				
Toluene	9.8		"	10.0		97.5	80-127				
o-Xylene	9.5		"	10.0		95.3	78-130				
p- & m- Xylenes	20		"	20.0		102	77-133				
Isopropylbenzene	9.8		"	10.0		98.3	76-140				
n-Propylbenzene	10		"	10.0		100	78-133				
p-Isopropyltoluene	10		"	10.0		102	81-136				
1,2,4-Trimethylbenzene	10		"	10.0		103	82-132				
1,3,5-Trimethylbenzene	10		"	10.0		100	80-131				
n-Butylbenzene	10		"	10.0		101	79-132				
sec-Butylbenzene	9.5		"	10.0		94.6	79-137				
tert-Butylbenzene	9.6		"	10.0		95.9	77-138				
Naphthalene	8.8		"	10.0		87.6	70-147				
Methyl tert-butyl ether (MTBE)	10		"	10.0		101	76-135				
Surrogate: 1,2-Dichloroethane-d4	9.59		"	10.0		95.9	69-130				
Surrogate: p-Bromofluorobenzene	10.1		"	10.0		101	79-122				
Surrogate: Toluene-d8	9.52		"	10.0		95.2	81-117				

LCS Dup (BJ60097-BSD1)

Prepared & Analyzed: 10/04/2016

Benzene	11		ug/L	10.0		108	85-126		3.58	30	
Ethyl Benzene	10		"	10.0		102	80-131		0.588	30	
Toluene	9.8		"	10.0		98.4	80-127		0.919	30	
o-Xylene	9.7		"	10.0		97.2	78-130		1.97	30	
p- & m- Xylenes	21		"	20.0		103	77-133		0.826	30	
Isopropylbenzene	9.7		"	10.0		97.0	76-140		1.33	30	
n-Propylbenzene	9.9		"	10.0		99.4	78-133		1.10	30	
p-Isopropyltoluene	10		"	10.0		102	81-136		0.0985	30	
1,2,4-Trimethylbenzene	10		"	10.0		103	82-132		0.389	30	
1,3,5-Trimethylbenzene	10		"	10.0		101	80-131		0.497	30	
n-Butylbenzene	10		"	10.0		100	79-132		0.992	30	
sec-Butylbenzene	9.4		"	10.0		94.4	79-137		0.212	30	
tert-Butylbenzene	9.5		"	10.0		95.4	77-138		0.523	30	
Naphthalene	8.6		"	10.0		85.7	70-147		2.19	30	
Methyl tert-butyl ether (MTBE)	11		"	10.0		106	76-135		4.25	30	
Surrogate: 1,2-Dichloroethane-d4	9.79		"	10.0		97.9	69-130				
Surrogate: p-Bromofluorobenzene	9.99		"	10.0		99.9	79-122				
Surrogate: Toluene-d8	9.35		"	10.0		93.5	81-117				



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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**Batch BI61535 - EPA 3510C**

**Blank (BI61535-BLK1)**

Prepared & Analyzed: 09/30/2016

Acenaphthene	ND	0.050	ug/L								
Acenaphthylene	ND	0.050	"								
Anthracene	ND	0.050	"								
Benzo(a)anthracene	ND	0.050	"								
Benzo(a)pyrene	ND	0.050	"								
Benzo(b)fluoranthene	ND	0.050	"								
Benzo(g,h,i)perylene	ND	0.050	"								
Benzo(k)fluoranthene	ND	0.050	"								
Chrysene	ND	0.050	"								
Dibenzo(a,h)anthracene	ND	0.050	"								
Fluoranthene	ND	0.050	"								
Fluorene	ND	0.050	"								
Indeno(1,2,3-cd)pyrene	ND	0.050	"								
Naphthalene	ND	0.050	"								
Phenanthrene	ND	0.050	"								
Pyrene	ND	0.050	"								

Surrogate: Nitrobenzene-d5

41

"

50.3

82.3

12-96

Surrogate: 2-Fluorobiphenyl

36

"

50.0

71.6

16-84

Surrogate: Terphenyl-d14

31

"

50.2

61.1

15-106

**Blank (BI61535-BLK2)**

Prepared & Analyzed: 09/30/2016

Acenaphthene	ND	0.050	ug/L								
Acenaphthylene	ND	0.050	"								
Anthracene	ND	0.050	"								
Benzo(a)anthracene	ND	0.050	"								
Benzo(a)pyrene	ND	0.050	"								
Benzo(b)fluoranthene	ND	0.050	"								
Benzo(g,h,i)perylene	ND	0.050	"								
Benzo(k)fluoranthene	ND	0.050	"								
Chrysene	ND	0.050	"								
Dibenzo(a,h)anthracene	ND	0.050	"								
Fluoranthene	ND	0.050	"								
Fluorene	ND	0.050	"								
Indeno(1,2,3-cd)pyrene	ND	0.050	"								
Naphthalene	ND	0.050	"								
Phenanthrene	ND	0.050	"								
Pyrene	ND	0.050	"								

Surrogate: Nitrobenzene-d5

0.0

"

50.3

12-96

Surrogate: 2-Fluorobiphenyl

0.0

"

50.0

16-84

Surrogate: Terphenyl-d14

0.0

"

50.2

15-106



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Limits	Flag	RPD	Flag
		Limit			Result					Limit	

**Batch BI61535 - EPA 3510C**

**LCS (BI61535-BS1)**

Prepared & Analyzed: 09/30/2016

Acenaphthene	44	0.050	ug/L	50.0		88.0	24-114			
Acenaphthylene	40	0.050	"	50.0		79.8	26-112			
Anthracene	41	0.050	"	50.0		81.8	35-114			
Benzo(a)anthracene	45	0.050	"	50.0		89.4	38-127			
Benzo(a)pyrene	36	0.050	"	50.0		71.4	30-146			
Benzo(b)fluoranthene	36	0.050	"	50.0		71.8	36-145			
Benzo(g,h,i)perylene	29	0.050	"	50.0		57.9	10-163			
Benzo(k)fluoranthene	40	0.050	"	50.0		80.0	16-149			
Chrysene	38	0.050	"	50.0		77.0	33-120			
Dibenzo(a,h)anthracene	35	0.050	"	50.0		69.9	10-149			
Fluoranthene	40	0.050	"	50.0		80.7	33-126			
Fluorene	41	0.050	"	50.0		82.3	28-117			
Indeno(1,2,3-cd)pyrene	35	0.050	"	50.0		69.5	10-150			
Naphthalene	41	0.050	"	50.0		81.3	30-99			
Phenanthrene	42	0.050	"	50.0		84.7	31-112			
Pyrene	40	0.050	"	50.0		80.4	42-125			
<i>Surrogate: Nitrobenzene-d5</i>	<i>40</i>		<i>"</i>	<i>50.3</i>		<i>78.6</i>	<i>12-96</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>35</i>		<i>"</i>	<i>50.0</i>		<i>69.9</i>	<i>16-84</i>			
<i>Surrogate: Terphenyl-d14</i>	<i>27</i>		<i>"</i>	<i>50.2</i>		<i>54.5</i>	<i>15-106</i>			

**LCS (BI61535-BS2)**

Prepared & Analyzed: 09/30/2016

Acenaphthene	1.0	0.050	ug/L	1.00		103	24-114			
Acenaphthylene	1.0	0.050	"	1.00		102	26-112			
Anthracene	1.0	0.050	"	1.00		102	35-114			
Benzo(a)anthracene	0.88	0.050	"	1.00		88.0	38-127			
Benzo(a)pyrene	1.1	0.050	"	1.00		107	30-146			
Benzo(b)fluoranthene	0.76	0.050	"	1.00		76.0	36-145			
Benzo(g,h,i)perylene	1.1	0.050	"	1.00		109	10-163			
Benzo(k)fluoranthene	1.2	0.050	"	1.00		125	16-149			
Chrysene	1.0	0.050	"	1.00		102	33-120			
Dibenzo(a,h)anthracene	1.3	0.050	"	1.00		126	10-149			
Fluoranthene	1.1	0.050	"	1.00		106	33-126			
Fluorene	0.99	0.050	"	1.00		99.0	28-117			
Indeno(1,2,3-cd)pyrene	1.2	0.050	"	1.00		118	10-150			
Naphthalene	0.99	0.050	"	1.00		99.0	30-99			
Phenanthrene	0.88	0.050	"	1.00		88.0	31-112			
Pyrene	1.0	0.050	"	1.00		101	42-125			



Semivolatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Limits	Flag	RPD	RPD	Limit	Flag
		Limit			Result					Limit			

Batch BI61535 - EPA 3510C

LCS Dup (BI61535-BSD1)

Prepared & Analyzed: 09/30/2016

Acenaphthene	45	0.050	ug/L	50.0		90.1	24-114			2.43	20		
Acenaphthylene	41	0.050	"	50.0		82.0	26-112			2.72	20		
Anthracene	42	0.050	"	50.0		84.2	35-114			2.92	20		
Benzo(a)anthracene	46	0.050	"	50.0		91.5	38-127			2.30	20		
Benzo(a)pyrene	38	0.050	"	50.0		76.6	30-146			7.06	20		
Benzo(b)fluoranthene	36	0.050	"	50.0		71.5	36-145			0.419	20		
Benzo(g,h,i)perylene	28	0.050	"	50.0		55.5	10-163			4.09	20		
Benzo(k)fluoranthene	40	0.050	"	50.0		79.1	16-149			1.18	20		
Chrysene	41	0.050	"	50.0		81.7	33-120			5.95	20		
Dibenzo(a,h)anthracene	35	0.050	"	50.0		71.0	10-149			1.56	20		
Fluoranthene	42	0.050	"	50.0		83.7	33-126			3.65	20		
Fluorene	41	0.050	"	50.0		83.0	28-117			0.774	20		
Indeno(1,2,3-cd)pyrene	35	0.050	"	50.0		69.6	10-150			0.230	20		
Naphthalene	41	0.050	"	50.0		81.4	30-99			0.147	20		
Phenanthrene	44	0.050	"	50.0		87.9	31-112			3.78	20		
Pyrene	42	0.050	"	50.0		83.7	42-125			4.05	20		
<i>Surrogate: Nitrobenzene-d5</i>	<i>40</i>		<i>"</i>	<i>50.3</i>		<i>80.0</i>	<i>12-96</i>						
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>36</i>		<i>"</i>	<i>50.0</i>		<i>71.6</i>	<i>16-84</i>						
<i>Surrogate: Terphenyl-d14</i>	<i>28</i>		<i>"</i>	<i>50.2</i>		<i>56.2</i>	<i>15-106</i>						



### Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
16I1060-01	MW-01-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-02	MW-02-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-03	MW-03-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-04	MW-04-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-05	MW-05-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-06	MW-06-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-07	MW-07-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-08	MW-08-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-09	MW-09-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-10	DUP-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
16I1060-11	TB-20160927	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C



## Notes and Definitions

J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.
EXT-EM	The sample exhibited emulsion formation during the extraction process. This may affect surrogate recoveries.
<hr/>	
*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias ) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

# Field Chain-of-Custody Record

YORK Project No. 1060

YORK ANALYTICAL LABORATORIES  
120 RESEARCH DR.  
STRATFORD, CT 06615  
(203) 325-1371  
FAX (203) 357-0166

NOTE: York's Std. Terms & Conditions are listed on the back side of this document. This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions.

YOUR Information		Report to:		Invoice To:		Your Project ID		Turn-Around Time		Report/Deliverable Type			
Company: <u>ESI</u>	<input checked="" type="checkbox"/> SAME	Name: <u>Brenda</u>	<input checked="" type="checkbox"/> SAME	Project ID: <u>NQ15100</u>	Turn-Around: <u>RUSH-Same Day</u>	Report Type: <u>Summary Report</u>	<input checked="" type="checkbox"/> X	Company: <u>Poughkeepsie, NY</u>	Turn-Around: <u>RUSH-Next Day</u>	Report Type: <u>QA Report</u>			
Address: <u>24 Davis Avenue</u>		Company: <u></u>		Purchase Order #: <u>NQ15100.41</u>	Turn-Around: <u>RUSH-Two Day</u>	Report Type: <u>CT RCP</u>		Phone: <u>845-452-1658</u>	Turn-Around: <u>RUSH-Three Day</u>	Report Type: <u>CT RCP DQA/DUE Pkg</u>			
Contact: <u>Tyler Goodnough</u>		Address: <u></u>		Matrix Codes: <u>S - soil</u>	Turn-Around: <u>RUSH-Four Day</u>	Report Type: <u>NY ASP A Package</u>		Other: <u></u>	Turn-Around: <u>Standard (5-7day)</u>	Report Type: <u>NY ASP B Package</u>			
E-mail: <u></u>		E-mail: <u></u>		Other - specify (oil, etc) <u>WW - wastewater</u>	Turn-Around: <u></u>	Report Type: <u>NUDEP Reduced Deliv</u>		Other: <u></u>	Turn-Around: <u></u>	Report Type: <u>Excel</u>			
<p><i>Print Clearly and Legibly. All Information must be complete. Samples will NOT be logged in and the turn-around time clock will not begin until any questions by York are resolved.</i></p> <p>Signature: <u>Tyler Goodnough</u> Name (printed): <u>Tyler Goodnough</u></p>		<p>Matrix Codes: S - soil Other - specify (oil, etc) WW - wastewater GW - groundwater DW - drinking water Air-A - ambient air Air-SV - soil vapor</p>		<p>Volatiles: 8260 full 624 Site Spec. STARS list BN Only Adcs Only PAH list App. IX Site Spec. SELP or TOLP list TCLP list 524.2 502.2 Nudep list App. IX SELP or TOLP list 8021B list</p>		<p>Metals: RCRA 8 PPI3 list TAL CT15 list TAGM list Nudep list Total Dissolved SELP or TOLP TCLP Herb Chlordane 608 Pest SELP or TOLP 608 PCB</p>		<p>Misc. Org. TPH GRO TPH DRO CT ETPH NY 310-13 TPH 1664 Air TO14A Air TO15 Air STARS SELP or TOLP Air VPH Air TICs Methane Helium</p>		<p>Full Lists: Pl. Pol. TCL Organics TAL MethCN Full TCLP Full App. IX Part 360-Routine Part 360-Residue Part 360-Special Part 360-Subst NYDEP Sewer NYDEP Sewer TAGM</p>		<p>Container Description: 1x1L amber, 4x40ml HCl vials</p>	
Sample Identification	Date+Time Sampled	Matrix	Analysis Requested (List above includes common analysis)										
MW-01-20160927	9/27/2016	GW	CP-51 full list VOCs + SVOCs										
MW-02-20160927													
MW-03-20160927													
MW-04-20160927													
MW-05-20160927													
MW-06-20160927													
MW-07-20160927													
MW-08-20160927													
MW-09-20160927													
<p>Comments:</p> <p>Preservation (check all applicable): 4°C <input type="checkbox"/> Frozen <input type="checkbox"/> HCl <input type="checkbox"/> MeOH <input type="checkbox"/> H<sub>2</sub>O <input type="checkbox"/> NaOH <input type="checkbox"/></p> <p>Special Instructions: <input type="checkbox"/> Field Filtered <input type="checkbox"/> Lab to Filter <input type="checkbox"/></p> <p>Samples Relinquished By: <u>Ontario Chemical</u> Date/Time: <u>9/28/16 12:50</u></p> <p>Samples Relinquished By: <u>U. P. Kelley</u> Date/Time: <u>9-28-16 16:57</u></p> <p>Temperature on Receipt: <u>3.5°C</u></p>													





Ecosystems Strategies, Inc.

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## **APPENDIX E**

### ***Subsurface Investigation Work Plan***

**SUPPLEMENTAL  
SUBSURFACE INVESTIGATION  
WORK PLAN**

**Ocean Bay Houses – Former Filling Station**

**52-21 Beach Channel Drive  
Borough of Queens, New York City, New York**

**NYSDEC Spill Number: 03-06202**

**December 17, 2015**

**ESI File: NQ15100.40**

**Prepared By:**



**Ecosystems Strategies, Inc.**

24 Davis Avenue, Poughkeepsie, NY 12603

phone 845.452.1658 | fax 845.485.7083 | [ecosystemsstrategies.com](http://ecosystemsstrategies.com)

**SUPPLEMENTAL  
SUBSURFACE INVESTIGATION  
WORK PLAN**

**December 17, 2015**

**ESI File: NQ15100.40**

**Prepared By:**

**Ecosystems Strategies, Inc.  
24 Davis Avenue  
Poughkeepsie, New York 12603**

**Prepared For:**

**New York City Housing Authority (NYCHA)  
23-02 49th Avenue  
Long Island City, New York 11101**

The undersigned has reviewed this Supplemental Subsurface Investigation Work Plan and certifies to the New York City Housing Authority that the information provided in this document is accurate as of the date of issuance by this office.

Any and all questions or comments, including requests for additional information, should be submitted to the undersigned.

Paul H. Ciminello

December 17, 2015



Qualified Environmental Professional

Date

Signature



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## **1.0 INTRODUCTION**

### **1.1 Purpose**

This Supplemental Subsurface Investigation Work Plan (Work Plan) has been prepared to address previously identified petroleum contamination at the property located at 53-21 Beach Channel Drive, Borough of Queens, New York City, New York. The proposed investigative and analytical work is intended to:

- Further define the extent of previously identified subsurface soil and groundwater contamination associated with New York State Department of Environmental Conservation (NYSDEC) spill number 03-06202;
- Provide additional data to supplement the findings of the Subsurface Investigation Report (SSI Report) issued by Ecosystems Strategies, Inc. (ESI) on December 4, 2015; and,
- Produce data of sufficient quantity and quality to support the development of an acceptable Remedial Action Plan.

### **1.2 Site Information**

#### **1.2.1 Site Location and Description**

The property is a 0.19-acre parcel that is bounded by a vacant lot to the east, commercial buildings to the south, Beach 54<sup>th</sup> Street to the west, and Beach Channel Drive to the north. The impacted portion of the property (hereafter referred to as the "Site") consists of the northern portion of the property, which formerly contained a filling station. A Site Location Map is provided in Appendix A.

#### **1.2.2 Site Topography and Hydrogeology**

Information on the subject property's topography was obtained from the review of the United States Geological Survey Topographic Map of the Far Rockaway, New York Quadrangle. According to the Topographic Map, the property is located in a relatively flat area between Jamaica Bay (to the north) and the Atlantic Ocean (to the south). The property has a surface elevation between 5 and 10 feet above mean sea level.

Subsurface soils encountered during the previous subsurface investigation generally consisted of 1-3 feet of urban fill materials (variable color and texture sand with solid debris) overlying tan, medium to fine sands and peat. Groundwater was encountered at 4.5 to 5 feet below surface grade (bsg) during the extension of soil borings and depth to groundwater ranged from 4.32 to 5.34 feet bsg in monitoring wells installed at the Site. Based on field observations and a comparison of static groundwater elevations, groundwater flow was inferred to be in an overall west-southwesterly direction.

#### **1.2.3 Surrounding Land Uses**

The subject property is located in an urban, mixed-use area comprised primarily of multi-family residential and commercial properties.

### **1.3 Site Background**

The Site formerly contained a gasoline filling station (the property, however, does not appear in NYSDEC PBS database records). NYSDEC spill number 03-06202 was reported for the Site on September 11, 2003 based on contaminated soil and groundwater encountered during a previous Phase II Environmental Site Assessment.

### **1.4 Previous Environmental Reports**

A fieldwork map provided to ESI by NYSDEC personnel indicates that a subsurface investigation was conducted at the Site on September 4, 2003 by URS (likely the Phase II investigation referenced in the spill database file). Significantly elevated concentrations of volatile organic compounds (VOCs) were documented in groundwater at the northern-central and northwestern portions of the property, in the vicinity of the former filling station. The map depicts two potential source areas and an inferred groundwater contamination plume extending west from the Site.

The following findings were provided in ESI's December 2015 SSI Report:

- Overt field evidence of petroleum contamination (elevated PID readings, odors and/or soil staining) was observed in all soil borings extended at the Site. The most significant impacts were documented in shallow soils at the groundwater interface (4 to 6 feet bsg) between the former pump islands (MW-02) and at the northwestern corner of the property (MW-03). Gray staining and odors were encountered in all soils encountered below the water table (odors significantly subsided below 10 feet bsg). Elevated VOCs were detected in shallow soil samples (4 to 6 feet bsg) collected from MW-02 and MW-03, with peak concentrations detected at MW-03.
- Elevated concentrations of dissolved VOCs were documented at monitoring wells MW-02, MW-03, and MW-04. No concentrations of dissolved VOCs, however, were found at MW-01 (likely to be hydraulically upgradient from the former pump islands). Hydraulically down-gradient wells (MW-03 and MW-04) documented the most elevated concentrations of VOCs, indicating likely movement of dissolved petroleum compounds to the west and off-site.
- The existing data are insufficient to provide definition to the lateral extent of contamination and the locations of existing on-site groundwater monitoring wells limit the ability to determine the direction of groundwater flow with a high level of confidence.

Based on the presence of documented petroleum-contaminated soil and groundwater at the Site, an additional subsurface investigation was recommended to delineate potential off-site impacts and provide guidance on potential appropriate remedial response actions to the open spill event.

## **2.0 PROPOSED INVESTIGATION ACTIVITIES**

This section of the Work Plan details activities that are proposed to delineate subsurface soil and groundwater contamination at the Site, as defined in Section 1.4, above.

This Work Plan is divided as follows:

- Section 2.1: Services to be conducted prior to implementation of the Work Plan;
- Section 2.2: Site investigation services to be conducted by a New York City Housing Authority (NYCHA)-approved geologist, engineer, or environmental professional (the "Contractor");
- Section 2.3: Analytical services and procedures; and,
- Section 3.0: Project deliverables (i.e., written reports).

### **2.1 Site Preparation Services**

#### **2.1.1 Agency Notification**

NYCHA and NYSDEC will be notified in writing at least five business days prior to the start of fieldwork. All relevant project communications between NYCHA personnel and/or the Contractor will be made available to NYSDEC. Agency notification of subsequent field activities will be in accordance with reasonable business practice, with verbal notification for immediate (within 72 hours) activities and written notification otherwise. Written notifications will be transmitted via facsimile or electronic mail.

#### **2.1.2 Utility Markout**

Prior to the initiation of fieldwork, a request for a complete utility markout of the subject property will be submitted by the Contractor as required by New York State Department of Labor regulations. Confirmation of underground utility locations will be secured, and a field check of the utility markout will be conducted prior to any intrusive activities.

A geophysical survey will be performed to document the presence or absence of underground utilities, tanks, etc. in the proposed fieldwork area and in areas potentially subject to future intrusive investigation and/or excavation activities. The geophysical survey will be performed by a qualified professional using ground penetrating radar and/or magnetometer equipment, as warranted.

#### **2.1.3 Subcontractor Coordination and Site Safety**

Subcontractors will perform requested services, as necessary, as specified by the Contractor. All subcontracted work (excluding laboratory analyses) will be directly supervised by the Contractor.

The selected Contractor will be responsible for preparing and implementing a site-specific Health and Safety Plan (HASp). All on-site fieldwork personnel will wear "Level D" personnel protective equipment (PPE) consisting of: 1) hard hat, 2) steel-toe work boots, 3) eye protection, 4) disposable nitrile or latex gloves and, 5) hearing protection.

## **2.2 Investigative Services**

### **2.2.1 Soil and Groundwater Summary**

Soil and groundwater sampling will be performed to investigate potential off-site petroleum impacts associated with contamination previously identified at the Site. The proposed sampling event will provide additional horizontal characterization of petroleum impacts in support of developing an appropriate remedial response action. This Work Plan provides for completion of the following services:

- Extension of up to five soil borings;
- Completion of all soil borings as permanent monitoring wells; and,
- Sampling and laboratory analysis of subsurface soil and groundwater samples for VOCs and semi-volatile organic compounds (SVOCs).

Borings MW-05 through MW-08 will be advanced in the locations depicted in the Proposed Fieldwork Map, provided in Appendix A. Boring MW-09 will only be advanced if no field evidence of contamination is encountered at both MW-07 and MW-08. Boring locations may be relocated based on field conditions and geophysical survey findings. Additional “step out” borings may be extended in any location where contamination is encountered and where the extension of additional borings may provide meaningful information.

Fieldwork activities and analytical information obtained upon completion of this Work Plan will be documented in a Supplemental Subsurface Investigation Report (see Section 3.0 below).

### **2.2.2 Extension of Soil Borings**

Up to five mechanical soil borings (MW-05 through MW-09) will be extended using rotary-auger or direct-push drilling equipment. All drilling equipment will be properly cleaned and decontaminated in order to prevent cross-contamination between samples. Soil borings will be extended at least seven feet below the water table (previously encountered at approximately 5 feet bsg) or at least two feet below the strata with the most significant evidence of contamination, whichever is deeper.

Continuous soil sampling will be performed at each boring location. An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns, or odors), and instrument indications of contamination (i.e., PID readings) will be performed at each boring location. Physical characteristics, PID readings, and any field indications of contamination for all encountered material will be recorded in an independent filed log. Soil boring logs will be provided in the Supplemental Subsurface Investigation Report.

### **2.2.3 Monitoring Well Installation and Development**

All soil boring locations will be completed as permanent monitoring wells. Wells will be constructed of a minimum two-inch diameter, Schedule 40 PVC casing with 0.02-inch slotted PVC casing, extending at least 2 feet above and five feet below the soil/groundwater interface, respectively. The annular space between the well screen and the borehole will be backfilled with clean #1 silica sand, extending 1 foot above the screen, and a one-foot thick bentonite seal will

be placed above the sand pack. The annular space above the bentonite seal will then be grouted with cement. Well casings will be equipped with gripper caps and finished with steel “drive-over” covers.

Monitoring wells will be developed at least one week after installation, in order to clear fine-grained material that might have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Prior to development, each well casing will be opened and the internal headspace will be immediately screened with a PID to document the presence of any volatile organic vapors. Wells will then be gauged with a water level meter to record a depth to groundwater reading (to 0.01 feet), and if necessary, with an interface meter to determine the thickness of any light or dense non-aqueous phase liquid (LNAPL or DNAPL).

A submersible pump and dedicated polyethylene tubing will be used to clear fine-grained material that may have settled around the well screen and at the base of the well. Well development will begin at the top of the water column to prevent clogging of the pump by excessive sediment. The pump body will act as a surge-block by being raised and lowered within portions of the screened interval to force water back and forth through the screen. Repeated surging and pumping will be conducted to the bottom of the well casing until the discharged water appears free of sediment. The pump assembly will be removed from the well while the pump is still running to avoid discharge of purged water back into the well. Development is considered complete when the length of the screen has been fully impacted by surging and purged water no longer appears to be turbid. Between wells, all non-dedicated equipment will be properly decontaminated.

Water removed from each well will be visually inspected for indications of contamination and fieldwork observations (e.g., PID readings, sheens, depth to product/water) will be recorded in a field log.

Prior to sampling, all new and existing well casings will be surveyed by a trained environmental professional and/or NYS licensed surveyor to a vertical accuracy of 0.01 foot, relative to a fixed, on-site artificial benchmark elevation of 100 feet. Well surveying will facilitate preparation of a groundwater contour map and a better assessment of the direction of groundwater flow.

#### **2.2.4 Soil and Groundwater Sampling**

All soil and groundwater samples will be collected in accordance with applicable NYSDEC guidance documents. Dedicated, disposable gloves, will be worn during sample assessment and collection activities. Field personnel will place samples into laboratory-supplied glassware, and maintain all samples at cold temperatures under appropriate chain of custody procedures.

##### *Soil*

Two soil samples will be collected from each boring (for a total of ten soil samples) for field characterization and laboratory analysis. Subsurface soil samples will be collected at the soil/groundwater interface and the strata exhibiting the most significant staining, odors and/or elevated PID readings. If no evidence of contamination is identified in a boring, the second sample will be collected from the final interval at the base of the boring.

Soil samples submitted for VOC analysis will be collected using laboratory-supplied volatile organic analysis (VOA) kits and dedicated disposable soil syringes. All soil samples will be collected directly from the acetate sleeves or split-spoon sampler of the boring rig and placed into laboratory-supplied containers.

#### *Groundwater*

A representative groundwater sample will be collected from each new well and all pre-existing wells (MW-01 through MW-04). Immediately prior to sampling, well casings will be opened and screened with a PID, and depth to water will be gauged with a water level meter (to 0.01 feet), and if necessary, with an interface meter to determine the thickness of any LNAPL or DNAPL. Sampling will be conducted using dedicated plastic tubing and a peristaltic pump (or comparable equipment). Depth to water measurements will be used to calculate well volume, and at least three well volumes of water will be purged prior to sample collection. Groundwater samples will be collected into 40 ml vials and 1 liter amber jars (preserved with acid as appropriate for the specific analysis). Observations from all sample collection activities will be recorded in field logs.

### **2.3 Analytical Services**

Soil and groundwater samples will be submitted to a NYSDOH Environmental Laboratory Accreditation Program (ELAP)-certified laboratory for analysis of VOCs using USEPA Method 8260 and SVOCs using USEPA Method 8270, NYSDEC CP-51 full petroleum list.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for product characterization and identification, and NYCHA and the NYSDEC will be promptly notified.

#### **2.3.1 Quality Assurance/Quality Control Procedures**

##### *Equipment*

Prior to the initiation of fieldwork, and during fieldwork (as needed), all field equipment that will contact soil and/or groundwater will be properly decontaminated in accordance with NYSDEC guidelines, and all field instruments will be properly calibrated in accordance with procedures set forth by the equipment manufacturer(s). The PID used during fieldwork activities will be calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene. Instrument calibration will be performed no more than 24 hours prior to the commencement of fieldwork, and a written record of calibration results will be provided in the project files.

##### *QA/QC Sampling*

QA/QC procedures will be used to provide performance information with regard to accuracy, precision, sensitivity, representation, completeness, and comparability associated with the sampling and analysis for this investigation. Field QA/QC procedures will be used (1) to document that samples are representative of actual conditions at the Site and (2) identify possible cross-contamination from field activities or sample transit. Laboratory QA/QC procedures and analyses will be used to demonstrate whether analytical results have been biased either by interfering compounds in the sample matrix, or by laboratory techniques that may have introduced systematic or random errors to the analytical process. Trip blanks (one for every sample cooler, for each day of sampling) and duplicate samples (one soil and one groundwater) will be analyzed at an ELAP-certified laboratory for QA/QC purposes.

### **2.3.2 Investigative-Derived Waste**

Soil cuttings may not be disposed of within boreholes that are to be converted to monitoring wells. At locations not planned to be converted to monitoring wells, soil cuttings may be disposed within the borehole to within 24 inches of the surface unless:

- Free product or grossly contaminated soil are present in the cuttings;
- The borehole has penetrated an aquitard, aquiclude or other confining layer; or extends significantly into bedrock;
- Backfilling the borehole with cuttings will create a significant path for vertical movement of contaminants. Soil additives (bentonite) may be added to the cuttings to reduce permeability; and,
- The soil cannot fit into the borehole.

Those soil cuttings needing to be managed on-site will be containerized in properly labeled DOT-approved 55-gallon drums for future off-site disposal at a permitted facility. All boreholes that receive soil cuttings will be filled with bentonite chips (hydrated) and capped with asphalt/concrete as appropriate.

Purge water from monitoring well development and sampling that exhibits no overt evidence of petroleum impacts (odors, sheen/NAPL, significant discoloration, PID readings) may be discharged into the stormwater system following gravity filtering through an active carbon filter. All overtly impacted groundwater will be containerized and disposed off-site site at a permitted facility.

Disposable sampling equipment, including acetate sleeves, gloves, bags, paper towels, etc. that came in contact with environmental media will be double bagged and disposed as non-hazardous, municipal waste.

### 3.0 REPORTING

A Supplemental Subsurface Investigation Report (SSI Report) and a stand-alone Groundwater Remediation Work Plan will be prepared upon completion of investigative services included in this Work Plan. The SSI Report will include the following:

- Documentation of field activities, including all relevant supporting documents (e.g., sampling logs).
- All laboratory reports and associated deliverables generated as a result of the investigation.
- A summary of laboratory analytical data, including a comparison to applicable standards, criteria and guidance (NYSDEC CP-51 for soil and NYSDEC TOGS 1.1.1 for groundwater).
- Maps and drawings of sufficient specificity to provide a working description of Site, with all sample points, groundwater elevations, general direction of groundwater flow and isogradients of documented concentrations of dissolved VOCs.
- An assessment of documented contaminants present on the Site, including an assessment of likely off-site impacts associated with known on-site conditions and a qualitative exposure assessment.

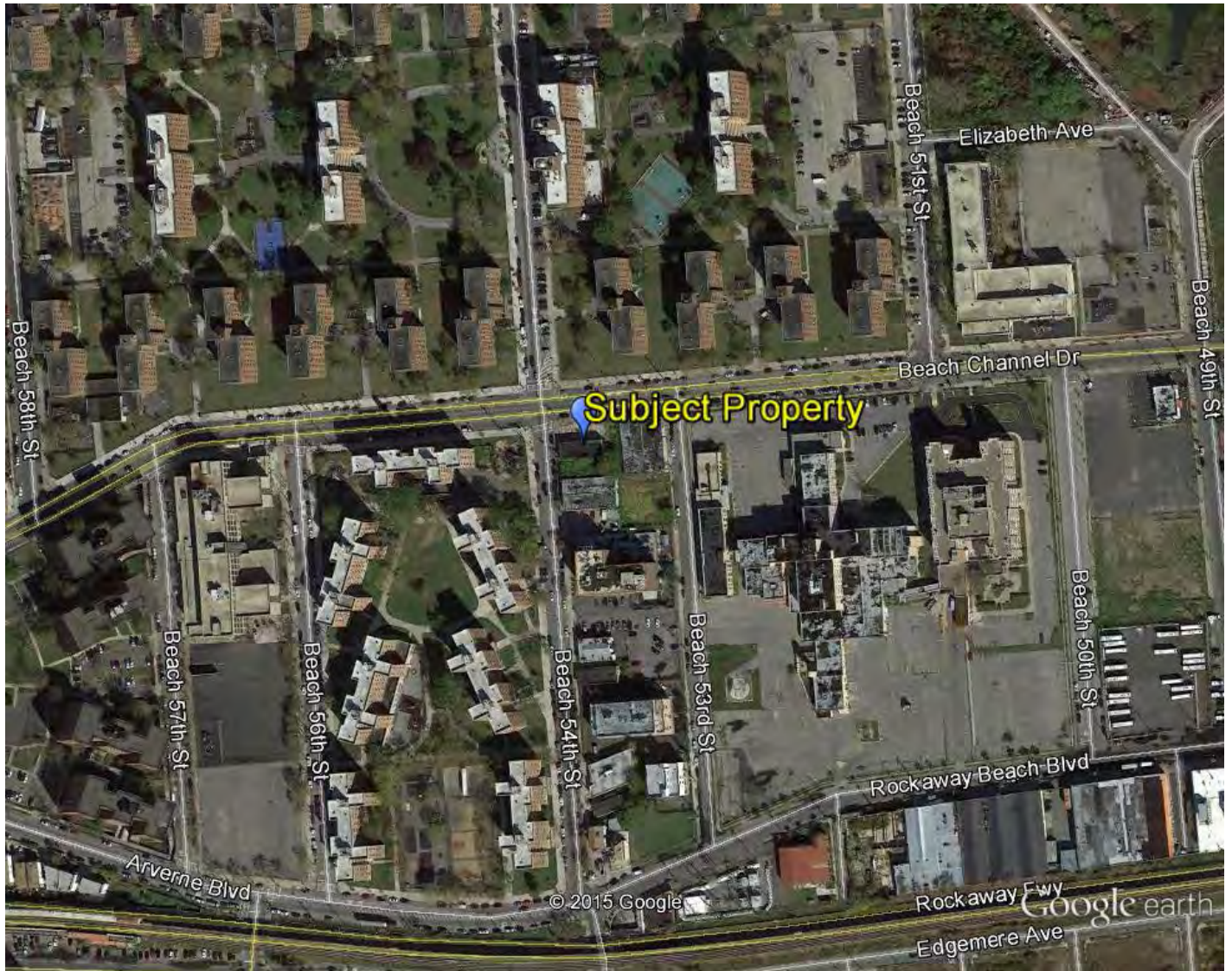
The Groundwater Remediation Work Plan will include the following:

- A summary of all relevant groundwater data, including graphic representations of the direction of groundwater flow and isogradients of documented concentrations of dissolved VOCs.
- A stated objective of proposed cleanup standards to be used for the proposed remedial approach.
- Documentation (and mapping) of all groundwater supply wells within 0.5 miles of the Site if dissolved contamination extends beyond perimeter wells.
- Identification and comparative analysis of various remedial options determined by the consultant to be viable at this Site. Such analysis must include the “do nothing” option.
- Selection of the preferred alternative, with a detailed discussion of the remedial approach with sufficient specificity to permit implementation.
- A schedule for the completion of remedial work and the achievement of the stated remedial objectives.

The Final Report and Work Plan will be submitted to NYCHA personnel for review and comment, prior to submission to the NYSDEC.

## **APPENDIX A**

### ***Maps***



**Figure 1: Site Location Map**

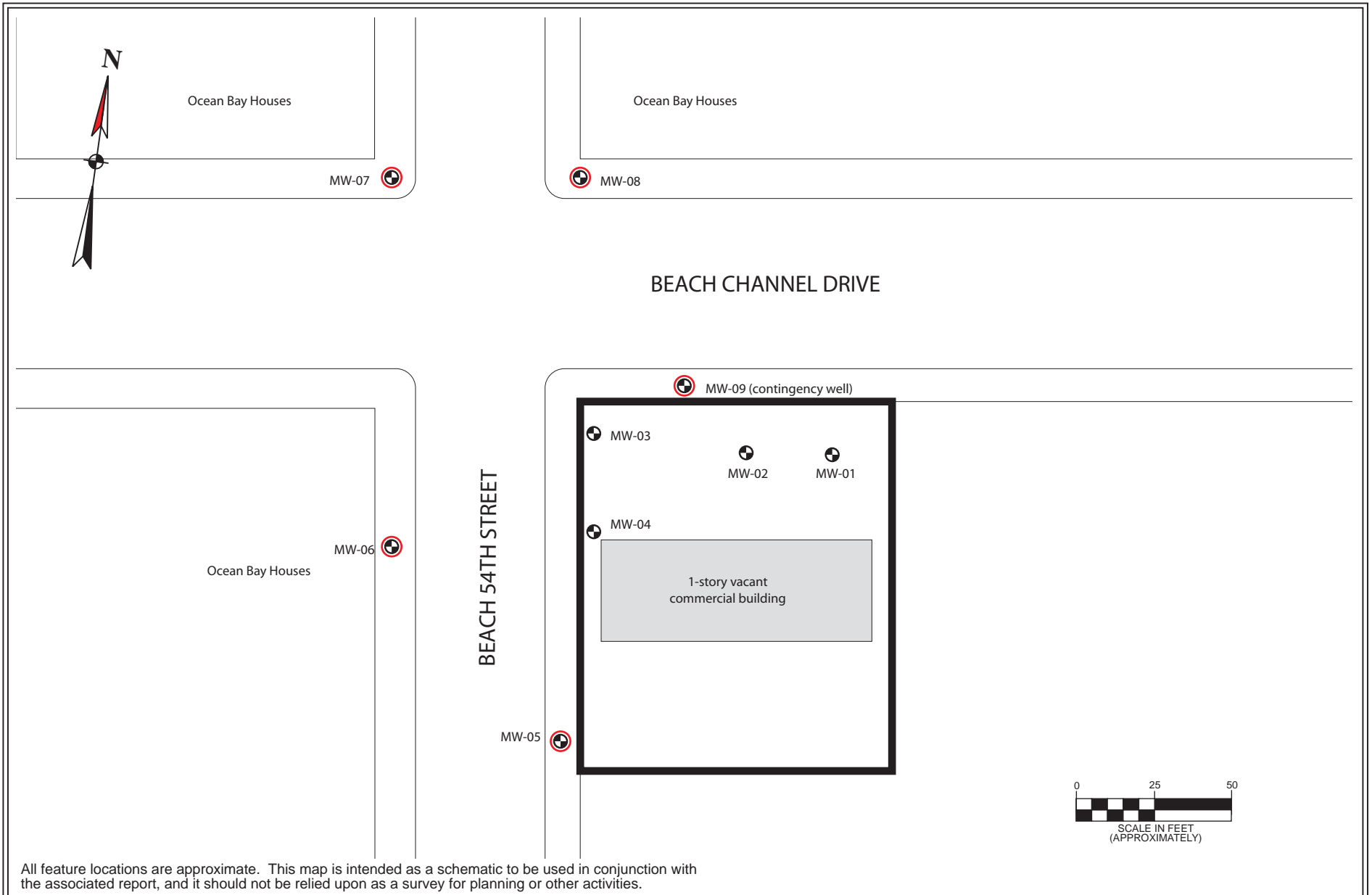
Ocean Bay Houses  
Former Filling Station  
53-21 Beach Channel Drive  
Borough of Queens, New York



ESI File: NQ15100.40

December 2015




Appendix A



**Figure 2: Proposed Fieldwork Map**

Ocean Bay Houses  
 Former Filling Station  
 53-21 Beach Channel Drive  
 Borough of Queens, New York

Legend:

-  subject property border
-  monitoring well location
-  proposed soil boring/monitoiring well location

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Scale as shown

Appendix A