de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
(610) 435-8459 FAX

April 27, 2018

Via Overnight Mail

John Grathwol
Division of Environmental Remediation
Remedial Bureau B
New York State DEC
625 Broadway, 12th Floor
Albany, New York, 12233-7016

Reference: **#C241005 - Review Avenue Development II Site (RAD II)**
Long Island City, Queens, New York
Period Review Report #2 – April 1, 2017 through March 31, 2018

Dear Mr. Grathwol:

Attached please find the Periodic Review Report (PRR) and IC/EC Certification Submittal for the Review Avenue Development Site II (RAD II) Site #C241005. This is the second PRR submitted for the Site and covers the operating period of April 2017 through March 2018. As requested, all submittals are being provided in electronic format.

Should you have any questions or comments regarding this submittal or any other aspect of this project, please do not hesitate to contact me at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator

CC: David Kushner, Cresswood Environmental Consultants
Stephanie Selmer, New York State Department of Health
Brent O'Dell, Wood, PLC

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No.C241005

Site Name Review Avenue Development II (a.k.a. Quanta Resources)

Site Address: 37-80 Review Avenue Zip Code: 11101
City/Town: Long Island City
County: Queens County
Site Acreage: 1.8

Reporting Period: April 1, 2017 to March 31, 2018

		YES	NO
1.	Is the information above correct?	X	☐
	If NO, include handwritten above or on a separate sheet.		
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3.	Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
	If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5.	Is the site currently undergoing development?	☐	X

Box 2

		YES	NO
6.	Is the current site use consistent with the use(s) listed below?	X	☐
7.	Are all ICs/ECs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____
Signature of Owner, Remedial Party or Designated Representative Date

Description of Institutional Controls

- The RAD II Site may only be used for restricted use as specified by the SMP;
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.
- Groundwater monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP;
- Access to the RAD II Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated.

Description of Engineering Controls

1. A cover system consisting of asphalt pavement
2. A LNAPL Recovery System – consisting of:
    a. A Vacuum Enhanced/Total Fluids (VER/TF) LNAPL recovery system
    b. A single-phase LNAPL recovery system
3. A packaged SVE, groundwater treatment, LNAPL Storage and Control system

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. C241005

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I R. Craig Coslett (print name) at 1550 Pond Road, Suite 120, Allentown, PA 18104, (print business address)

am certifying as Owner's Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

R Craig Coslett
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

4/27/2018
Date

IC/EC CERTIFICATIONS

Box 7

Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Brent O'Dell, P.E. at 511 Congress Street Suite 200, Portland, ME 04112
print name print business address

am certifying as an Engineer for the Remedial Party
(Owner or Remedial Party)

Signature of the Owner or Remedial Party Rendering Certification

Stamp (Required for PE)

Date 4/27/18

REVIEW AVENUE DEVELOPMENT (RAD) II
QUEENS COUNTY
LONG ISLAND CITY, NEW YORK

PERIODIC REVIEW REPORT No. 2
(April 1, 2017 – MARCH 31, 2018)

NYSDEC Site Number: RAD II – BCP #C241005

Prepared by:

MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, ME 04112

and

Amec Foster Wheeler Environment & Infrastructure, Inc.
200 American Metro Boulevard – Suite 113
Hamilton, New Jersey 08619

APRIL 2018

TABLE OF CONTENTS

LIST OF TABLES

Tables

LIST OF FIGURES

Figure

LIST OF APPENDICES

Appendix

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
DOT	Department of Transportation
EC	Engineering Control
EOR	Engineer of Record
FER	Final Engineering Report
IC	Institutional Control
LEL	Lower Explosive Limit
LGAC	Liquid Granular Activated Carbon
LNAPL	Light Non-Aqueous Phase Liquid
LRGTB	LNAPL Recovery and Groundwater Treatment Building
MSL	Mean Sea Level
ND	Not Detected
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operations and Maintenance
OM&M	Operations, Maintenance and Monitoring
PCB	Polychlorinated Biphenyl
POTW	Publicly-Owned Treatment Works
PRR	Periodic Review Report
RAD	Review Avenue Development
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
ROD	Record of Decision
SCGs	Standards, Criteria Goals
SMP	Site Management Plan
SVE	Soil-Vapor Extraction
TSCA	Toxic Substances Control Act
TF	Total Fluids
UST	Underground Storage Tank
VER	Vacuum-Enhanced Recovery

EXECUTIVE SUMMARY

Cresswood Environmental Consultants, LLC retained Golder Associates, Inc. (Golder) to prepare a Remedial Action Work Plan (RAWP) to satisfy the requirements of the New York State Department of Environmental Conservation (NYSDEC) for the Review Avenue Development (RAD) I and RAD II properties located on Review Avenue in Long Island City, New York, dated February 9, 2007. The RAWP was prepared in accordance with the DER-10 Technical Guidance for Site Investigation and Remediation (DER-10) (NYSDEC, 2010) and Subpart 375.3 Brownfield Cleanup Program (BCP) Regulations (NYSDEC, 2006a) and submitted in November 2011. DMJ Associates, LLC, 37-80 Review Railroad, LLC and Cresswood Environmental Consultants, LLC (collectively referred to as the Volunteer) entered into Brownfield Cleanup Agreement (BCA) #C241005 in October 2005 with the NYSDEC to participate in the Brownfield's Cleanup Program for the RAD II Site.

The RAD II Site is located adjacent to the RAD I Site (BCA #C241089) and have the same physical setting. The RAD Sites have been investigated/remediated concurrently since the early 1980's, but were entered into separate BCA and assigned different BCP numbers. The remedy selected by the NYSDEC for the RAD II Site is found in the Record of Decision (ROD) for the Quanta Resources Site (a.k.a. Review Avenue Development II) Long Island City, Queens, New York issued by the NYSDEC in February 2007.

The RAD II Site is identified as Block 312 and Lot 69 on the Long Island City Tax Map, refer to Figure 1. The RAD II Site is separated from the RAD I property by a right of way (located on RAD I) for Preston Street, which runs from Review Avenue to the Long Island Railroad. To the northeast is Review Avenue and the Calvary Cemetery and to the southwest is the Long Island Railroad and the South Capasso property and the Former Peerless Oil property. The boundaries of the RAD II Site and Site Features are shown on Figure 2.

The RAD Sites are being remediated via LNAPL extraction. LNAPL is extracted using a combination of skimmer (product only) pumps and dual phase extraction (total fluids) pumps. LNAPL extracted by the skimmer pumps is conveyed through underground piping to a storage tank location on the RAD II Property. Liquid (water and LNAPL) extracted through dual phase extraction is conveyed through underground piping to the treatment system located on the RAD II property. Liquids are then processed through an oil water separator, bag and carbon filters to separate LNAPL from water. The collected LNAPL is pumped to a dedicated storage tank and the treated water is discharged to the sewer system. Construction of the remediation system was deemed complete on November 15, 2015 and NYSDEC approved the start of the operation and maintenance (O&M) period on November 16, 2015.

A Site Management Plan (SMP) was prepared by MACTEC Engineering and Consulting, P.C. (MACTEC) and Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Cresswood Environmental Consultants, LLC and Review Ave. System, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated February 2013, and the guidelines provided by the NYSDEC. An Environmental Easement granted to NYSDEC and recorded with the County Clerk of Queens County requires compliance with the SMP and all ECs and ICs placed on the Site. The SMP addresses the means for implementing the ICs and ECs that are required by the Environmental Easement for the RAD II Site and outlines the controls established to meet the ROD requirements. Section 3.0 of this report summarizes the EC and IC requirements and compliance. IC/EC Certification has been bound to the front end of this report.

This is the second Periodic Review Report (PRR) for the RAD II Property. The 1st PRR was submitted to the Department in April 2017 and resubmitted on June 10, 2017 following comments received on the initial submittal. Approval of the 1st PRR was provided by the Department in a letter dated September 8, 2017.

1.0 SITE OVERVIEW

1.1 INTRODUCTION

The RAD II Site is being remediated in accordance with the remedy selected by the NYSDEC in the ROD for the Quanta Resources (a.k.a. RAD II) Site, dated February 9, 2007. The factors considered during the selection of the remedy for the RAD II Site are those listed in 6NYCRR 375-1.8.

In 2008, an IRM was implemented at the RAD II Site for the demolition and removal of the remaining building and fourteen (14) remaining empty and decontaminated steel aboveground storage tanks (ASTs) along with debris piles, below grade foundations, concrete pads, sumps and vaults.

The components of the remedy proposed in the ROD included work elements from the design/investigation phase through remedial action completion. The following provides a summary of the remedy selected for the RAD II Site by media:

LNAPL

The remedy for light non-aqueous phase liquid (LNAPL) beneath the RAD II Site was recovery via a combination of single-phase skimmer pumps and vacuum enhanced (VER) recovery methods at locations where higher viscosity LNAPL is present.

In addition, a long-term monitoring program to monitor the effectiveness of the LNAPL recovery system has been implemented pursuant to the approved Site Management Plan.

Soil

Restricting contact with potentially impacted soils was accomplished by installing a paving system across the entire property. The paving system is composed primarily of at least six inches of asphalt and associated subgrade materials. Other components of the cover system include the LNAPL recovery well and piping vaults which are mostly comprised of concrete with secured metal lids to prevent unauthorized access. The Site Management Plan identifies restoration requirements for future development activities.

Groundwater

The remedy for groundwater was the establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD II Site as a source of potable water.

Soil Vapor

The results of soil vapor investigations on the RAD II Site did not identify a threat for soil vapor beneath the RAD II Site.

Listed below are the primary elements of the selected remedy:

- Operation of the LNAPL recovery system;
- Installation of a paving system at least 6 inches thick to be protective of human health by restricting direct contact with compounds that exceed the soil objectives for restricted use;
- Establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD II Site as a source of potable water;
- The execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the RAD II Site;
- Development and implementation of a SMP for long-term management of remaining contamination as required by the Environmental Easement, which includes plans for the following: (1) ECs and ICs, (2) monitoring, (3) operation and maintenance, and (4) reporting; and
- Periodic certification of the ECs and ICs listed above.

This is the second Periodic Review Report (PRR) for the RAD II Property. The 1st PRR was submitted to the Department in April 2017 and resubmitted on June 10, 2017 following comments received on the initial submittal. Approval of the 1st PRR was provided by the Department in a letter dated September 8, 2017. This Periodic Review Report (PRR) covers the period of performance from April 1 , 2017 to March 31, 2018 and includes:

- Required institutional control/engineering control (IC/EC) certification;
- Summary and documentation of site-related data to support IC/EC certification;
- A description of the LNAPL Recovery System performance; and
- Discharge monitoring data for the certification period.

1.2 SITE HISTORY AND DESCRIPTION

The RAD II Site is approximately 1.8 acres in size and located in a highly industrialized part of Long Island City, County of Queens, New York. The RAD II Site is identified as Block 312 and Lot 69 on the Long Island City Tax Map. The address of the RAD II Site is 37–80 Review Avenue. Figure 1 presents a Site Location Map. Zoning in this area is designated as heavy manufacturing. The RAD II Site is bounded by Review Avenue to the northeast, the Southern

Line of the Long Island Railroad to the southwest, the Former Phoenix Beverage property to the southeast, and the RAD I property to the northwest (see Figure 2). To the northeast of Review Avenue is the Calvary Cemetery and to the southwest of the Long Island Railroad is the South Capasso property and Waste Management.

The RAD II Site was previously used for a variety of commercial and industrial purposes since at least 1898, including petroleum refining, waste oil recycling and more recently commercial vehicle and heavy equipment maintenance. Various companies currently lease portions of the RAD II Site for parking of equipment and vehicles. Figure 2 presents a Site Layout Map for the RAD II Site. All of the structures that previously existed on the RAD II Site were demolished since the property was abandoned in 1981. Much of the RAD II Site was reportedly covered by asphalt or concrete during its operation

Completion of the remedy components identified in the ROD was documented in the Site Management Plan (SMP) and Final Engineering Report (FER) which were submitted to NYSDEC in December 2015. DEC provided approval of the SMP on September 2, 2016.

Note: the DEC found that the LNAPL extraction and treatment system was constructed in accordance with the approved design (RAWP) and issued approval of the O&M start beginning November 16, 2015.

1.3 PHYSICAL SETTING

The RAD II Site and the RAD I Site are adjacent to each other and have the same physical setting.

1.3.1 Geology

The stratigraphy of the RAD II Site and the adjacent properties consists of urban fill overlying glacial deposits, which in turn overlies a clay layer that has been identified as the lower Cretaceous Raritan Formation. The urban fill generally consists of heterogeneous soil ranging from sub angular, loose and compact, silty, fine sand and gravel. Intermixed with the urban fill are debris such as brick fragments, asphalt, wire, and plastic. Soil borings indicate that the urban fill ranges in thickness from 3 feet to 16 feet. The glacial deposits consist of two units distinguishable in color, but not in hydraulic characteristics. The upper section of the glacial deposits is gray to dark gray fine-to-coarse sand and fine-to-coarse gravel. There are local horizontal units of silt interbedded in the upper section of the glacial deposit. The upper section extends to approximately 30 feet below mean sea level (MSL).

The lower section of the glacial deposits is comprised of yellowish-brown, fine to coarse sand and gravel. This unit extends to 71 to 85 feet below MSL. Underlying the coarse sand and gravel is a clay unit referred to as the Lower Clay Unit. The Lower Clay Unit was identified as the Raritan Clay. The Raritan Clay or Lower Clay Unit has been described as a dark gray, finely laminated-to-thin bedded silty clay, silt and clay layer, and white to light gray clay. The clay unit appears to be laterally continuous beneath the Site and adjacent surrounding area.

1.3.2 Hydrogeology

The RAD II Site is located between a local topographic high to the northeast and Newtown Creek, which is a tidally influenced regional groundwater discharge area. Monitoring wells screened in the upper section of the glacial deposits (where LNAPL occurs) and monitoring wells screened in the lower section of the glacial deposits (and cased off from the upper section) have been installed on the RAD II Site and offsite (including the RAD I Site). The locations of the wells are depicted on Figure 2.

The depth to groundwater beneath the RAD II Site has ranged from approximately 15 feet bgs to 20 feet bgs. Groundwater contour maps prepared from the groundwater levels measured in groundwater wells installed in the upper and lower sections of the glacial deposits have indicated a general groundwater flow direction to the south - southwest towards Newtown Creek. A localized groundwater mound, presumably a result of the discontinuous silt and clay layers in the upper section of the glacial deposits, has also been observed to the southwest of the Site between the LIRR tracks and Newtown Creek. The mounding does not appear to influence the direction of groundwater flow at the RAD II site. Groundwater fluctuations of approximately 0.05 to 0.1 feet have been observed beneath the Site as a result of tidal influence in Newtown Creek.

Overall, the horizontal hydraulic gradient beneath the Site can be described as flat, at approximately 0.0015. Vertical gradients are minimal and localized. Slug test data indicates a range of hydraulic conductivity values for the glacial deposits above the Lower Clay Unit of 62.5 feet per day (ft/d) to 0.5 ft/d. A viscous LNAPL is present on the groundwater table across most of the RAD I and RAD II properties (Golder 2005a) with a maximum apparent thickness in monitoring wells of about 4 feet at the time of the Remedial Investigation (RI) and RAWP.

1.4 CLEANUP GOALS AND REMEDIAL PROGRESS

The remediation goals for the RAD II Site, as stipulated by the 2011 RAWP (Golder 2011) and the February 2007 ROD (NYSDEC 2007) are to eliminate or reduce to the extent practicable:

- The presence of LNAPL as a potential source of soil, groundwater and soil gas contamination;
- Potential further migration of LNAPL that could result in soil, groundwater or soil gas contamination;
- Exposures of persons at or around the site to VOCs or exceedances of the lower explosive level (LEL) in soil vapor;
- The potential for ingestion/direct contact with contaminated soil; and
- The release of contaminants from the urban soil and LNAPL into groundwater that may create exceedances of groundwater quality standards over time.

In addition, the remediation goals for the RAD II Site are to meet to the extent practicable:

- Ambient groundwater quality standards; and
- Standards, Criteria Goals (SCGs) for soil to the extent practicable.

The remedies selected for the RAD II site are listed below by media:

LNAPL

The remedy for LNAPL beneath the RAD II Site in areas of lower viscosity product is recovery using single-phase skimmer pumps installed in 15 recovery wells on the RAD II Site, or a total of 38 recovery wells on the combined RAD I and RAD II Sites. The remedy for higher viscosity LNAPL product is recovery using a Vacuum Enhanced Recovery/Total Fluids (VER/TF) technology at 20 recovery wells installed on the RAD II Site, or a total of 30 recovery wells on the combined RAD I and RAD II Sites. A long-term monitoring program to monitor the effectiveness of the LNAPL recovery system has been implemented.

Soil

The remedy for the soil at the RAD II Site was to cover residual contamination in soil and urban fill using materials consistent with the development of the RAD II Site. The RAD II Site was paved with asphalt to serve as a soil cover system to prevent exposure to possible near surface remaining contamination in urban fill/soil. This cover system is comprised of a minimum of 6 inches of asphalt pavement. Development beyond restricted use, as further described in the SMP, is prohibited.

Groundwater

The remedy for groundwater is the establishment of an institutional control that restricts the use of untreated groundwater beneath the RAD II Site as a source of potable water.

Groundwater is monitored pursuant to requirements outlined in the Site Management Plan.

Soil Vapor

The results of soil vapor investigations on the RAD II Site have not identified a threat for migration of soil vapor laterally from the limits of the LNAPL beneath the RAD II Site. As such, no specific soil vapor remedy is being implemented other than the benefit of the existing site pavement system and recovery of LNAPL from the site.

Remedial Progress is summarized as follows:

- The LNAPL Recovery System, consisting of both the single-phase skimming and VER/TF recovery technologies, has been implemented and operational for over 28 months. The LNAPL Recovery System has recovered 285,941 gallons of LNAPL as of March 31, 2018 after the first 28-1/2 months of operation (for both RAD I and RAD II).
- All areas of existing asphalt pavement disturbance due to the LNAPL recovery system installation has been restored.
- The Institutional Controls established for the RAD II site have been maintained per the SMP and FER.

2.0 EVALUATION OF REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

This section describes the required activities under the Site Management Plan, including ICs and ECs, the ongoing monitoring program and the implementation of the Site Operations, Maintenance and Monitoring (OM&M) Plan. A comprehensive SMP has been developed for the Site and includes plans for ICs/ECs, operations and maintenance (O&M), long term monitoring, and associated reporting (MACTEC, 2015).

2.1 SITE MANAGEMENT STATUS

During this reporting period, MACTEC performed O&M for the LNAPL recovery and groundwater treatment system, performed quarterly treated water discharge sampling and reporting, prepared monthly O&M monitoring reports and an Annual Inspection Report. The monthly monitoring reports, which include a summary of site activities for both the RAD I and RAD II sites, are included as Appendix A. The Annual Inspection Report is included in Appendix B and the treated water quarterly compliance sampling reports have been provided in Appendix C. This PRR was completed using site-specific documentation including the Site's ROD (NYSDEC, 2015), annual site inspection and monthly monitoring reports, and the SMP. This review was conducted to confirm that established controls according to the SMP are operational and effective, that the SMP is being implemented and conducted accordingly, and that the remedy remains protective of the environment and/or public health. A summary of Site Management activities completed during this reporting period and an evaluation of the performance, protectiveness, and effectiveness of the remedy is provided below.

2.2 INSTITUTIONAL CONTROLS

A series of ICs are required to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to Track 4 restricted uses only. Adherence to these ICs on the RAD II Site is required by the Environmental Easement and is implemented under the SMP. These ICs are as follows:

- The RAD II Site may only be used for restricted use as specified by the SMP;
- All ECs must be operated and maintained as specified in the SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of

Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC.

- Groundwater monitoring must be performed as defined in the SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP;
- Access to the RAD II Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated.

2.3 ENGINEERING CONTROLS

The following ECs have been implemented at the RAD II Site:

1. A cover system consisting of asphalt pavement
2. A LNAPL Recovery System – consisting of:
    a. A Vacuum Enhanced/Total Fluids (VER/TF) LNAPL recovery system
    b. A single-phase LNAPL recovery system
3. A packaged SVE, groundwater treatment, LNAPL Storage and Control system.

2.3.1 Asphalt Cover System

The RAD II Site was paved with asphalt to serve as a cover system to prevent exposure to possible near surface remaining contamination in urban fill/soil. The extent of the cover system is documented in the as-built drawing included as Figure 2 of the SMP (MACTEC, 2015). The cover system was observed during the reporting period to be intact and continuing to function as a cover system. Pavement maintenance will be performed in the spring, pending weather conditions, and will consist of sealing cracks with asphalt sealer as identified and described in the SMP. The engineer of record (EOR) will coordinate with the remediation project manager and current property owner to affect necessary repairs.

2.3.2 LNAPL Recovery System

LNAPL recovery on the RAD II property is being conducted via single-phase skimmer pump recovery wells and VER/TF recovery well subsystems. The primary purposes of using the skimmer pump and VER subsystems is to recover LNAPL to the extent practical and support the achievement of the remediation goals for the Site. The LNAPL recovery system has recovered and disposed of 285,941 gallons of LNAPL, or an average of 330 gallons per calendar day, (from both RAD I and RAD II) through March 31, 2017 or 28-1/2 months of operation. A total of 107,951 gallons of LNAPL, or an average of 296 gallons per calendar day, has been recovered for the current 12-month reporting period. The current 294 gallon per calendar day average production rate represents a 17% decrease from the 355 gallon per calendar day average production rate realized during the first 16-1/2 month reporting period. When taking into account system uptime and normalizing the production per equivalent system run-day, the LNAPL recovery system averaged 328 gallons per run-day for the current period which represents a 46% decrease from the 604 gallon per run-day average realized during the first 16-1/2 month reporting period. This reduction in production rate is attributed to significant depletion of remaining recoverable LNAPL volume and associated decreasing LNAPL transmissivity as evidenced by the substantial decrease in apparent product thickness (see paragraph 2.4.1 for more detail).

Peak LNAPL recovery rates have exceeded 700 gallons per day during the first reporting period and have exceeded 500 gallons per day during the current reporting period. Using a representative specific gravity of 0.90, according to data provided in the RAWP, this represents a total recovered LNAPL mass of 2,146,280 pounds after the first 28-1/2 months of operation or an average of 2,476 pounds per day.

As the system was modified and become more efficient during the first 16-1/2 months of operation, the energy efficiency of the operation improved from a high specific energy consumption of over 1.75 kWh of electrical energy per gallon of recovered LNAPL to a best of 0.3 kWh/gallon recovered. Since implementation of energy consuming VER operations during the current 12-month reporting period and a reduction in product recovery rates, energy efficiency has begun to decrease and specific energy consumption has risen to approximately 1.5 kWh/gallon recovered.

Monthly monitoring reports are prepared and have been included in Appendix A. A summary of offsite LNAPL disposal is included in Table 4.

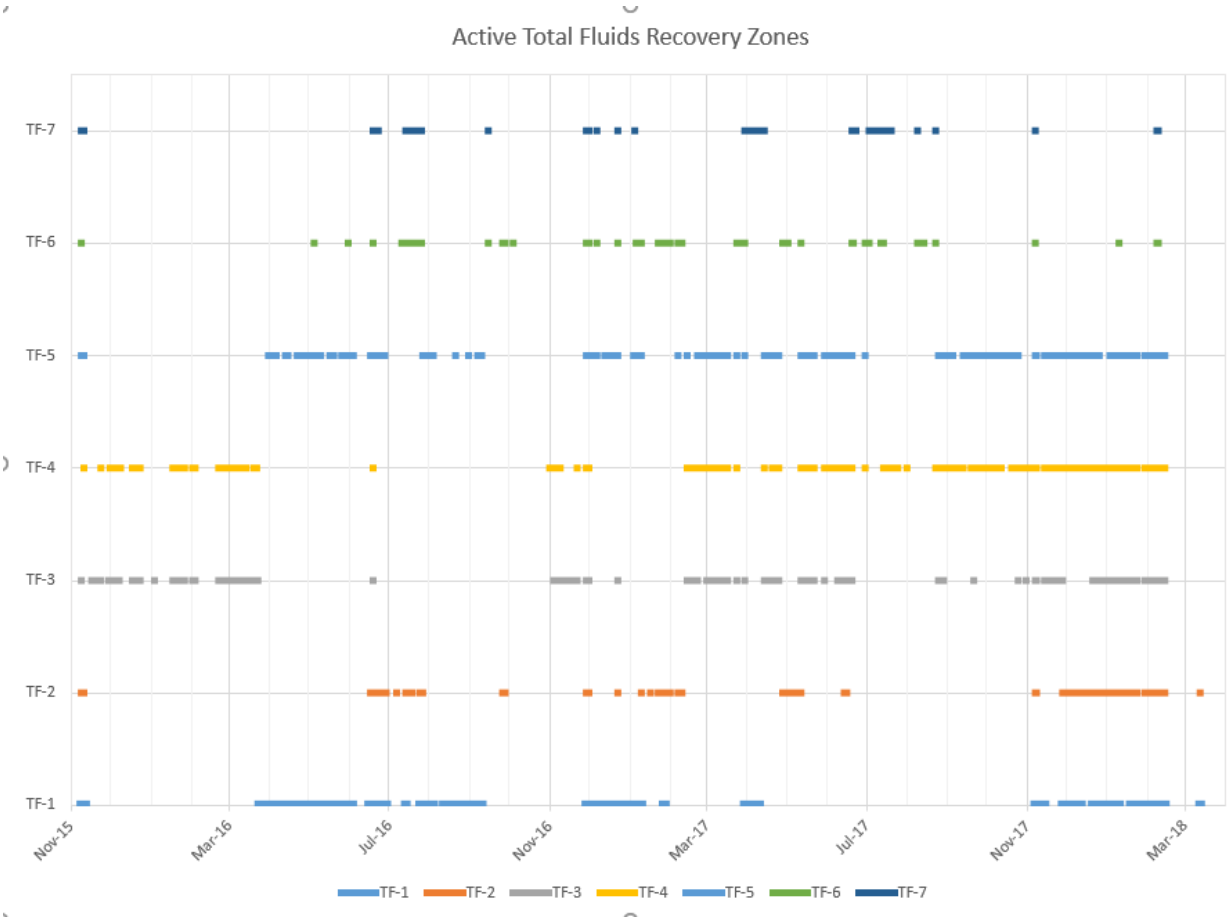
2.3.2.1 Single-Phase Skimming

Twenty-three (23) single-phase skimmer pump wells are installed on RAD I and fifteen (15) single-phase skimmer pump wells are installed on the RAD II Site. Single-phase skimming wells are located in areas with lower viscosity LNAPL. Of the total recovered and disposed of LNAPL volume, 65,552 gallons have been recovered by the single-phase skimming system to date and 21,645 gallons for the reporting period. The skimming system had a monthly average production rate of 48 gallons per calendar day which represents a 47% decrease from the 91 gallons per calendar day average production rate realized during the first 16-1/2 month reporting period. During the reporting period, the skimmer system produced an average monthly peak of 104 gallons per day and a minimum monthly average of 5 gallons per day. The skimming system has been operating a total of 16,418 run hours to date and 6,570 hours for the reporting period. For the reporting period, the skimmer system has been programmed to operate at 18 hours per day, rather than continuous, in an effort to maintain maximum product recovery while minimizing unnecessary equipment wear and energy consumption. Actual system uptime averaged 99.3% for the reporting period and ranged from a low of 92.8% to a high of 100%.

2.3.2.2 VER/TF Recovery

Ten (10) VER/TF wells are installed on RAD I and twenty (20) VER/TF wells are installed on the RAD II Site. VER applies a vacuum at the extraction well head, creating a pneumatic gradient causing air flow and enhanced product flow through the formation towards the extraction well. TF pumping creates a hydraulic cone of depression to further enhance the recovery of LNAPL, along with the VER, in areas where higher viscosity LNAPL present. Thirty (30) VER wells were installed and associated control systems on RAD I and RAD II. Of the total recovered and disposed of LNAPL volume, 221,306 gallons were recovered by the VER/TF recovery system to date and 90,577 gallons for the reporting period. The VER/TF system had a monthly average production of 249 gallons per calendar day with a peak monthly average of 339 gallons per calendar day and a minimum monthly average of 196 gallons per calendar day for the reporting period. When taking into account system uptime and normalizing the production per equivalent system run-day, the VER/TF recovery system averaged 281gallons per run-day which represents a 49% decrease from the 549 gallon per run-day average production rate realized during the first 16-1/2 month reporting period. The VER/TF recovery system had a total of 14,277 run hours to date and 7,827 hours for the reporting period. Actual system uptime averaged 95.9% for the year ranged from a low of 90.92% to a high of 99.68%.

System uptime increased significantly from the 68.02% average realized during the first 16-1/2



months of operation. This uptime improvement is largely a result of upgrading the Oil/Water separation system with the addition of a Tube Skimmer and changing the type of Biocide injected which does not impact the performance of the Sequestering Agent.

2.3.3 Groundwater Treatment System

Groundwater and LNAPL pumped from RAD II (and RAD I) flows through the LNAPL Recovery and Groundwater Treatment Building (LRGTB) located on RAD II. The LNAPL is collected and stored in one of two 6,000-gallon steel aboveground storage tanks located in a secondary containment dikes outside of the LRGTB on RAD II. One storage tank is configured to receive LNAPL recovered from the VER/TF System and the second storage tank is configured to receive LNAPL recovered from the Skimmer System. Since LNAPL Recovery System startup on November 16, 2015, the groundwater treatment system has processed and discharged 5,840,041 gallons of process water (extracted by the VER/TF System) or an average of 6,737 gallons per day. The peak process water treatment/discharge rate reached 21,600 gallons per day. The treated groundwater is sampled in accordance with the site discharge permit and

discharged to the New York City Bowery Bay Publicly Owned Treatment Works (POTW). Quarterly discharge compliance sampling results have been provided in Appendix C.

The extracted groundwater/LNAPL mixture, or Total Fluids (TF) influent, produced by the VER/TF System during the current 12-month reporting period (April 1, 2017 through March 31, 2018) had an average extracted oil/water ratio of 4.06% which is less than the 4.18% average oil/water ratio observed during the first 16-1/2 months of operation (first reporting period). This 3% reduction in oil/water ratio between the first and second reporting periods has been limited by the significant increase in VER operation during the second reporting period. VER operation has served to significantly offset the oil/water ratio reduction and decline in LNAPL production during the second reporting period. Furthermore, the peak monthly oil/water ratio decreased from 6.2% to 5.2% and the minimum monthly oil/water ratio decreased from 3.04% to 2.0% between the first and second reporting periods. The variability in monthly oil/water ratios is largely due to rotating TF/VER operations between various extraction zones which have different amounts of product present on the groundwater and differences in the types of product present (viscosity, slight changes in specific gravity, amount of iron bacteria, etc.).

Recovered LNAPL, stored in both T-1401 (single-phase skimmer wells) and T-108 (VER/TF wells) is analyzed approximately once every 2 – 3 months for PCB concentrations. PCB concentrations in LNAPL recovered from the single-phase skimming wells ranged between ND and just over 4 ppm this reporting period, while PCB concentrations in LNAPL recovered from the VER/TF system have varied between ND to just over 30 ppm during this reporting period. See Table 1 for a summary of recovered LNAPL PCB concentrations.

2.3.4 SVE System

The SVE system is used to employ VER technology along with hydraulic enhancement to further increase radius of influence and recoverability of higher viscosity LNAPL. The SVE system, or VER enhancement, was operated infrequently during the spring and summer of 2017. Full time VER operation was implemented in September, 2017 to counter diminishing product recovery rates from each of the TF Zones without such enhancement. The SVE system has operated for a total of 4,868 hours during the reporting period through March 2018. The SVE system is anticipated to be operated on a full time basis going forward into the third year of operation.

2.3.5 System Operational Challenges and Actions

- Phased out the use of emulsion breaker since installing the tube skimmer as part of our Oil/Water Separation process. Periodic QC testing indicates that we generally meet sewer

discharge compliance for SGT-HEM (< or = 50 ppm SGT-HEM) upstream of our liquid phase carbon treatment.

- Increased VER activity to enhance TF product recovery – have switched to full time VER operation since mid-September, 2017.
- Installed additional auto air relief vents in the skimmer system header network at key high point locations (S-4A, S-5A and 5B) to eliminate air lock and improve product flow through the skimmer system process lines.
- The recovery pumps within two of the TF wells (TF-7A and B) were determined to be stuck and un-removable with heavy duty hoist equipment. In addition, a significant amount of coarse sand is delivered to the GWTS when these pumps are operated. As such, we have concluded that the screens have failed in these wells and we are therefore planning to re-drill and replace these wells during the first half of 2018.
- ***High iron in groundwater –*** Shortly after commencement of VER/TF system operations, the presence of >20ppm Total Iron was detected in the influent to the groundwater treatment system. Prior to the injection of sequestering agent (Redux 330) during the first year of operation, the high iron concentrations caused rapid fouling of the bag filters, LGAC treatment units and strainers which resulted in reduced system uptime. Since implementing, sequestering agent chemical injection has successfully controlled high iron concentrations and maintained high system uptime by allowing for iron mass transfer and minimizing pre-mature fouling of the bag filters and carbon filtration units. The sequestering agent injection has continued to be effective during this reporting period.
- ***Biological growth/Grey Matter –*** Iron related bacteria growth is rapid during warm weather operation and is controlled adequately with the use of biocide. Without biocide, fouling of the bag filters, the LGAC treatment units and the strainers cause significantly reduced run-time. During cooler weather operations, the biocide has not been needed. A new biocide (Redux 620) was employed during the Spring of 2017 (replacing the Verox 8 Biocide) and is designed to limit negative impact to the sequestering agent effectiveness. The new biocide has proven to work effectively during the warmer weather months of 2017 with no significant grey matter formation and impact to the iron sequestration process. As such, the biological growth was successfully controlled and high system up-time was maintained throughout the warmer months of 2017. During the Fall of 2017 we once again ceased injection of the biocide with no adverse effects to system up-time.
- ***Variable LNAPL characteristics*** - Different product characteristics and associated separation difficulties were resolved in late 2016 with the addition of a tube skimmer in the primary separation tank of the two-stage oil water separation process. The addition of the tube skimmer has allowed for excellent oil/water separation at varied flow rates and LNAPL

consistencies and has continued to operate extremely well through this reporting period. Operational uptime for the VER/TF and groundwater treatment system has improved to >95% uptime since installing and optimizing the tube skimmer on December 22, 2016. In addition, product recovered from the TF Zones during 2017 has begun to change from a mostly dark colored, medium viscosity product to a mostly light brown colored product with significantly higher viscosity. Viscosity has increased to a level near and above typical petroleum industry pumpability standards based on laboratory and field viscosity testing. We believe this is an indication that most of the more mobile (darker, less viscous) product has been recovered and more of the less mobile (light brown, more viscous) product is now being recovered with the help of the VER.

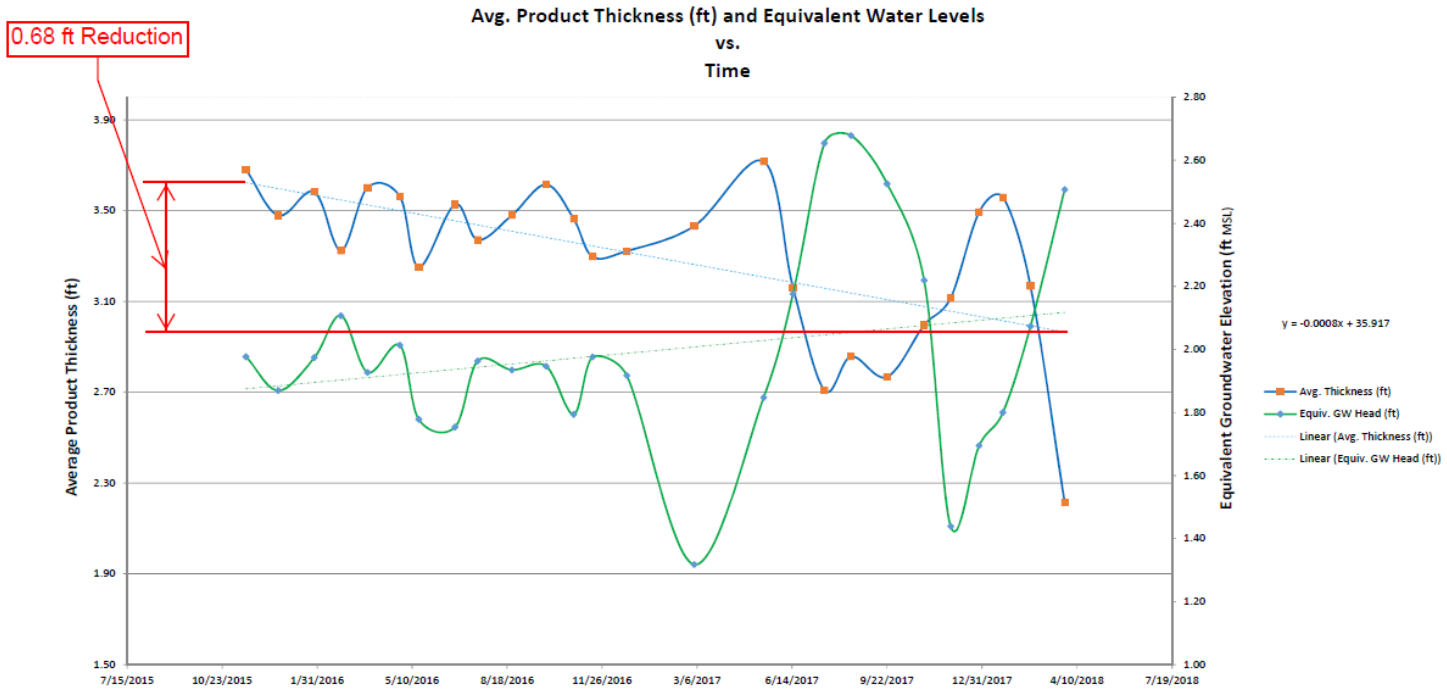
- ***Recovery Well LNAPL PCB Sampling –*** All four (4) identified TSCA PCB impacted recovery wells (TF-3D, 4D, 5D and 6D) were managed separately by pumping and collecting the high PCB product (>50 PPM) independently from the automated Total Fluids system via a Specific Gravity Skimmer Pump into a 55-gallon DOT shippable drum. This process continued at each of the four recovery wells until PCB concentrations in the recovered product was reduced to < 50 PPM for three consecutive rounds of pumping and sampling. The process of managing this LNAPL separate from the rest of the recovery system was approved in the SMP.

2.4 ADDITIONAL ACTIVITIES

In addition to system operation activities, other SMP required activities are also underway to monitor remediation progress and effectiveness as outlined below.

2.4.1 LNAPL Gauging

Site wide LNAPL gauging events at thirty-three (33) LNAPL monitoring wells on RAD I and RAD II provide evidence that average LNAPL thickness is trending downwards across the site and has decreased by approximately 0.68 feet (on average) at the end of March 2018 as illustrated in the figure below. This average thickness decrease is significantly greater than the 0.17 feet average decrease presented one (1) year earlier at the end of March 2017.



2.4.2 High PCB LNAPL Management

LNAPL was sampled from each recovery well and analyzed for PCBs prior to system start-up. Wells with LNAPL PCB concentrations > 25 ppm were re-sampled during the first year of operation. Of the > 25 ppm well locations that were re-sampled, 4 wells contained LNAPL PCB concentrations >/=50 ppm and were not plumbed into the collection system such that high PCB LNAPL (>/=50 ppm) would not be mixed with other recovered LNAPL with concentrations below 50 ppm. These four (4) recovery wells were TF-3D, TF-4D, TF-5D and TF-6D of which all but TF-6D are located on RAD II. Per the SMP, product was recovered from these wells independently from the balance of the system and the high PCB concentration LNAPL was managed and disposed of separately as TSCA regulated Waste. Product was recovered from these wells with a manually controlled single-phase skimmer pump configured to discharge into a DOT-shippable 55-gallon drum until three (3) consecutive rounds of LNAPL PCB sampling indicated that concentrations dropped below 50 ppm. All four (4) high PCB wells successfully followed this process after recovery and disposal of approximately 128 gallons of LNAPL. All

four (4) of these wells have now been re-plumbed into the automated Total Fluids collection system. Refer to Figure 2 for locations and Tables 2 and 3, which summarize the results of baseline and years 1 and 2 sampling as well as results of PCB sampling from product recovered from each of these wells.

2.4.3 LNAPL Disposal Summary

The total volume of RCRA Nonhazardous LNAPL with PCBs <50 ppm disposed offsite from RAD I and RAD II combined was 285,075 gallons through March 31, 2018. This waste stream was transported by Cycle Chem, Inc. to their facility in Elizabeth, NJ for solidification then was transported by Cycle Chem, Inc. to Conestoga Landfill in New Morgan Borough, Pennsylvania for disposal. The total volume of LNAPL with PCBs >/=50 ppm disposed offsite from RAD II was approximately 78 gallons all of which was recovered and disposed of during the reporting period. This waste stream was transported by Cycle Chem, Inc. to Veolia ES in Flanders, New Jersey and Port Arthur, Texas for incineration.

2.4.4 Groundwater Monitoring

The second and third groundwater monitoring sampling events occurred on June 14’th and 15’th and December 7’th and 8’th, 2017. The results of these sampling events were found to be consistent with historic results and were submitted under separate cover in advance of this report.

3.0 IC/EC PLAN COMPLIANCE

3.1 IC/EC REQUIREMENTS AND COMPLIANCE

3.1.1 IC/EC Requirements Summary

A summary of the ICs and ECs implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by the Site Management Plan are outlined below.

Site Identification: RAD II - BCP #C241005, Long Island City, Queens, NY

Institutional Controls:	The property may be used for commercial use; • The RAD II Site may only be used for restricted use. • All EC's must be operated and maintained as specified in the SMP. All EC's must be inspected at a frequency and in a manner defined in the SMP. • The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Queens County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the NYSDEC. This IC is outlined in the deed restriction recorded on 10/21/15 paragraph 2.A.(4). Groundwater monitoring must be performed as defined in the SMP. • Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP. • All future activities that will disturb remaining contaminated material must be conducted in accordance with the SMP. • Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP. • Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in the SMP. • Access to the RAD II Site must be provided to agents, employees or other representatives of the State of New York

Site Identification: RAD II - BCP #C241005, Long Island City, Queens, NY

	with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement. This IC is outlined in the above referenced deed restriction paragraph 2.A.(10). • The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated. • All ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	Cover system – 6-inch asphalt paving system
	LNAPL Recovery and Treatment System • Two 6,000 gallon LNAPL Storage Tanks • Two 8' x 40' Equipment Enclosures • 38 Skimmer well pumps and piping • 30 VER Well pumps, SVE blower air treatment and piping, liquid treatment equipment and discharge piping.

Inspections:	Frequency
Cover inspection	Annually
Treatment System and Equipment Inspections per OM&M Manual	Monthly, Quarterly and Semi-Annual Per OM&M Manual
Monitoring:	
Presence and Absence of LNAPL in Wells Identified on Table 3 of SMP for RAD II	Monthly, Quarterly and Semi-Annual as indicated on Table 3 of SMP for RAD II
Groundwater Monitoring/Sampling of Monitoring Wells Identified on Table 3 of the SMP for RAD II	Semi-Annual as indicated on Table 3 of SMP for RAD II
Maintenance:	
Equipment maintenance per Table of SMP	Per Table 4 of SMP

Site Identification: RAD II - BCP #C241005, Long Island City, Queens, NY

Reporting:	
LNAPL Monitoring	Per Table 3 of SMP
Treated Water Discharge Sampling and Reporting	Quarterly
Periodic Review Report	Annually

3.1.2 Status of IC/ECs

All ICs and ECs have been implemented and are being monitored and maintained in accordance with the SMP. The LNAPL Recovery and Treatment system will continue to be operated, monitored and maintained until such time that the remedial objectives as outlined in the SMP have been achieved. Treated Water quarterly compliance sampling reports are provided in Appendix C. As described above in section 2.4.1, monthly LNAPL gauging events indicate that the LNAPL Recovery System is effective.

3.1.3 Corrective Measures

- ***Treatment Compound Fence –*** The treatment compound fence between the west perimeter of the treatment compound and RAD II has been significantly damaged by the tenant numerous times with further repairs necessary to maintain site security. Such repairs are to be completed by the current property owner.

3.1.4 Conclusions and Recommendations for Changes

- Section 4.3 outlines several identified recommended actions for the asphalt cover and LNAPL recovery system ECs in order to ensure ongoing effective protection for site occupants as well as to enhance, optimize and minimize the duration of the remedy.
- Additional barriers may be warranted to address continued damage to the treatment compound fence.

3.1.5 IC/EC Certification

The NYSDEC Site Management PRR IC/EC Certification Form has been completed and provided and attached at the front this report.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on this review, the remedy continues to be protective of the public health and the environment and is compliant with the Site Management Plan.

4.1 INSTITUTIONAL CONTROLS

The current ICs are adequate to achieve the objective for protection of human health and the environment based on current site use.

4.2 ENGINEERING CONTROLS

The current ECs are adequate to achieve the objectives for protection of human health and the environment based on current site use.

4.3 OTHER SITE-RELATED ACTIVITIES

Based on the information presented in this PRR, the following activities are recommended to be completed within the next annual reporting period in efforts to maintain the asphalt cover system, optimize LNAPL recovery system operations and accelerate the timeframe to site delisting.

- Work more aggressively with the property owner and tenants to complete repairs of several identified asphalt cover potholes.
- CAC area fence and cap repair/completion.
- RAD II west side fence along Preston Avenue repair/completion.
- Portions of the RAD II east side fence along Phoenix Beverage repair/completion.
- Treatment Compound fence repair/completion.
- Continue to optimize production by adjusting the duration and rotation of active VER/TF system zones to maximize product recovery rates while minimizing groundwater discharge to sewer and energy consumption.
- Perform an optimization review of the total fluids extraction system and begin discussions with DEC regarding criteria needed to turn off the system.

5.0 REFERENCES

Golder Associates, Inc. (Golder), 2005. *Remedial Investigation Report, Quanta Resources Site, Long Island City, New York, June 2005*

Golder Associates, Inc. (Golder), 2011. *Remedial Action Work Plan, Review Avenue Development, Long Island City, Queens, New York, November, 2011*

MACTEC Engineering and Consulting, P.C. (MACTEC), 2015. *Site Management Plan, Review Avenue Development (RAD) I, Queens County, Long Island City, New York, December, 2015.*

New York State Department of Environmental Conservation (NYSDEC), 2007. *Declaration Statement – Record of Decision, Quanta Resources Inactive Hazardous Waste Disposal Site (a.k.a. Review Avenue Development II), Long Island City, Queens, New York, Site No. 2-41-005, February 2007.*

TABLES

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-801-0116		T-1401-0116		T-801		T-1401		T-801-0416		T-1401-0416		T-801-052716	
Sample Date:		1/25/2016		1/25/2016		3/7/2016		3/7/2016		4/5/2016		4/5/2016		5/27/2016	
Lab Sample ID:		460-108101-8		460-108101-7		JC15542-1		JC15542-2		JC17676-2		JC17676-3		JC21238-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	15		5.2		12.7		0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	9.35		2.03		6.87	
Aroclor 1254	mg/kg	4.9		0.5	U	0.5	U	0.5	U	5.11		0.5	U	0.5	U
Aroclor 1260	mg/kg	0.5	U	3.3		0.5	U	0.5	U	5.22		0.5	U	5.99	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	19.9		8.5		12.7		0.5	U	19.68		2.03		12.86	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-1401-052716		T-801-071116		T-1401-071116		T-801-083016		T-1401-083016		RA-T801-102116		T-801-010617	
Sample Date:		5/27/2016		7/11/2016		7/11/2016		8/30/2016		8/30/2016		10/21/2016		1/6/2017	
Lab Sample ID:		JC21238-2		JC23844-1		JC23844-2		JC26784-1		JC26784-2		JC30289-2		JC35069-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	0.5	U	0.5	U	4.37		1.24		0.5	U	2.86	
Aroclor 1248	mg/kg	0.5	U	4.32		0.5	U	0.5	U	0.5	U	2.85		0.5	U
Aroclor 1254	mg/kg	0.5	U	7.28		0.5	U	0.5	U	0.5	U	0.5	U	4.16	
Aroclor 1260	mg/kg	0.5	U	6.23		0.5	U	5.29		2.87		4.01		2.22	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	0.5	U	17.83		0.5	U	9.66		4.11		6.86		9.24	
				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-1401-010617		T-801-031717		T-801P-041017		T-1401-042517		T-801-050917		T-801-070317		T-801-101017	
Sample Date:		1/6/2017		3/17/2017		4/10/2017		4/25/2017		5/9/2017		7/3/2017		10/10/2017	
Lab Sample ID:		JC35069-3		JC39231-2		JC40858-1		JC42010-1		JC42990-1		JC35069-3		JC52795-4	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.976		3.37		0.5	U	0.5	U	0.5	U	1.08		0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	20.4	
Aroclor 1254	mg/kg	3.96		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	2.08		0.5	U	0.5	U	0.5	U	0.5	U	2.18		10.4	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	7.016		3.37		0.5	U	0.5	U	0.5	U	3.26		30.8	
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 1
Summary of PCB Analytical Data - LNAPL Storage Tanks
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	T-1401-101017		T-801-0118		T-1401-0118		T-801-031318		T-1401-031318	
Sample Date:		10/10/2017		1/3/2018		1/3/2018		3/13/2018		3/13/2018	
Lab Sample ID:		JC52795-5		JC58353-1		JC58353-2		JC62277-1		JC62277-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	2.23		0.5	U	0.5	U	0.5	U
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	2.89		4.04	U
Aroclor 1254	mg/kg	0.5	U	7.27		0.5	U	0.5	U	0.5	U
Aroclor 1260	mg/kg	0.5	U	0.5	U	0.5	U	1.95		2.71	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	0.5	U	9.5		0.5	U	4.84		4.04	U
		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-1A		TF-1B		TF-1C		TF-1D		TF-2A		TF-2B		TF-2C	
Sample Date:		12/23/2014		3/25/2015		3/25/2015		12/23/2014		12/23/2014		3/25/2015		12/23/2014	
Lab Sample ID:		460-88367-14		460-92207-2		460-92207-1		460-88367-13		460-88367-10		460-92207-3		460-88367-11	
Aroclor 1016	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.21	U	0.21	U	0.43	U	0.43	U	0.21	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.25	U	0.25	U	0.51	U	0.51	U	0.25	U	0.51	U
Aroclor 1242	mg/kg	0.33	U	0.16	U	0.16	U	9.9		0.33	U	0.16	U	0.33	U
Aroclor 1248	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.16	U	0.16	U	0.33	U	0.33	U	0.16	U	0.33	U
Aroclor 1260	mg/kg	0.33	U	0.16	U *	0.16	U *	9.6		0.33	U	5.1	*	17	
Aroclor 1268	mg/kg	0.56	U	0.27	U	0.27	U	0.56	U	0.56	U	0.27	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.27	U	0.27	U	0.56	U	0.56	U	0.27	U	0.56	U
Total PCBs	mg/kg	0.56	U	0.27	U	0.27		19.5		0.56	U	5.1	*	17	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-2D		TF-3A		TF-3B		TF-3C		TF-3D		TF-4A		TF-4B	
Sample Date:		12/23/2014		4/27/2015		12/23/2014		12/23/2014		4/30/2015		12/23/2014		12/23/2014	
Lab Sample ID:		460-88367-12		460-93882-2		460-88367-9		460-88367-8		460-94094-1		460-88367-4		460-88367-5	
Aroclor 1016	mg/kg	0.33	U	0.16	U *	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.21	U	0.43	U	0.43	U	0.22	U	0.43	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.25	U	0.51	U	0.51	U	0.26	U	0.51	U	0.51	U
Aroclor 1242	mg/kg	18		0.16	U	8.9		18		21		0.33	U	5.3	
Aroclor 1248	mg/kg	0.33	U	0.16	U	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.16	U	0.34	U	0.33	U	0.17	U	0.33	U	0.33	U
Aroclor 1260	mg/kg	14		0.16	U *	2		4.9		16		0.33	U	5.8	
Aroclor 1268	mg/kg	0.56	U	0.27	U	0.56	U	0.56	U	0.28	U	0.56	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.27	U	0.56	U	0.56	U	0.28	U	0.56	U	0.56	U
Total PCBs	mg/kg	32		0.27	U	10.9		22.9		37		0.56	U	11.1	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4C		TF-4D		TF-5A		TF-5B		TF-5C		TF-5D		TF-6A	
Sample Date:		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014		1/23/2015	
Lab Sample ID:		460-88367-6		460-88367-7		460-88367-3		460-88367-2		460-88367-1		460-88367-24		460-89644-1	
Aroclor 1016	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1221	mg/kg	0.43	U	0.43	U	0.43	U	0.43	U	0.43	U	0.43	U	0.22	U
Aroclor 1232	mg/kg	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.51	U	0.26	U
Aroclor 1242	mg/kg	29		30		0.33	U	0.34	U	27		30		9.2	
Aroclor 1248	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1254	mg/kg	0.33	U	0.33	U	0.33	U	0.34	U	0.34	U	0.33	U	0.17	U
Aroclor 1260	mg/kg	7.7		15		0.33	U	1.5	J	15		14		11	
Aroclor 1268	mg/kg	0.56	U	0.56	U	0.56	U	0.57	U	0.56	U	0.56	U	0.28	U
Aroclor 1262	mg/kg	0.56	U	0.56	U	0.56	U	0.57	U	0.56	U	0.56	U	0.28	U
Total PCBs	mg/kg	36.7		45		0.56	U	1.5		42		44		20.2	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6B		TF-6C		TF-6D		TF-7A		TF-7B		TF-7C		TF-7D	
Sample Date:		1/23/2015		1/23/2015		1/23/2015		1/23/2015		1/23/2015		4/27/2015		1/23/2015	
Lab Sample ID:		460-89644-3		460-89644-5		460-89644-7		460-89644-2		460-89644-4		460-93882-1		460-89644-6	
Aroclor 1016	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U *	0.17	U
Aroclor 1221	mg/kg	0.21	U	0.22	U	0.43	U	0.22	U	0.22	U	0.21	U	0.22	U
Aroclor 1232	mg/kg	0.25	U	0.26	U	0.51	U	0.26	U	0.26	U	0.25	U	0.26	U
Aroclor 1242	mg/kg	17		9.1		30		3.4		8		0.16	U	11	
Aroclor 1248	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U	0.17	U
Aroclor 1254	mg/kg	0.16	U	0.17	U	0.33	U	0.17	U	0.17	U	0.16	U	0.17	U
Aroclor 1260	mg/kg	13		11		22		4.4		12		0.16	U *	13	
Aroclor 1268	mg/kg	0.27	U	0.28	U	0.56	U	0.28	U	0.28	U	0.27	U	0.28	U
Aroclor 1262	mg/kg	0.27	U	0.28	U	0.56	U	0.28	U	0.28	U	0.27	U	0.28	U
Total PCBs	mg/kg	30		20.1		**52**		7.8		20		0.27	U	24	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-7E		TF-7F		S-1B		S-1C		S-2A		S-2B		S-2C	
Sample Date:		1/23/2015		1/30/2015		12/23/2014		12/23/2014		12/23/2014		12/23/2014		12/23/2014	
Lab Sample ID:		460-89644-8		460-89873-1		460-88367-20		460-88367-19		460-88367-21		460-88367-23		460-88367-22	
Aroclor 1016	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1221	mg/kg	0.21	U	0.42	U	0.43	U	0.43	U	0.43	U	0.22	U	0.22	U
Aroclor 1232	mg/kg	0.25	U	0.5	U	0.51	U	0.51	U	0.51	U	0.26	U	0.26	U
Aroclor 1242	mg/kg	20		27		0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1248	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1254	mg/kg	0.17	U	0.33	U	0.33	U	0.34	U	0.33	U	0.17	U	0.17	U
Aroclor 1260	mg/kg	17		9.8		0.33	U	0.34	U	0.33	U	0.17	U	6.3	
Aroclor 1268	mg/kg	0.28	U	0.55	U	0.56	U	0.57	U	0.56	U	0.28	U	0.28	U
Aroclor 1262	mg/kg	0.28	U	0.55	U	0.56	U	0.57	U	0.56	U	0.28	U	0.28	U
Total PCBs	mg/kg	37		36.8		0.56	U	0.57	U	0.56	U	0.28	U	6.3	

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	S-3A		S-3B		S-3C		S-3E	
Sample Date:		12/23/2014		12/23/2014		12/23/2014		12/23/2014	
Lab Sample ID:		460-88367-18		460-88367-15		460-88367-16		460-88367-17	
Aroclor 1016	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1221	mg/kg	0.43	U	0.43	U	0.43	U	0.43	U
Aroclor 1232	mg/kg	0.51	U	0.51	U	0.51	U	0.51	U
Aroclor 1242	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1248	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1254	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1260	mg/kg	0.33	U	0.33	U	0.34	U	0.33	U
Aroclor 1268	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U
Aroclor 1262	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U
Total PCBs	mg/kg	0.56	U	0.56	U	0.57	U	0.56	U

Table 2
Summary of PCB Analytical Data - Baseline Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:

Bold = PCB Concentration > 50 mg/kg

Definitions:

mg/kg = milligrams per kilogram

PCB = Polychlorinated Biphenyl

RL = Reporting Limit

Data Qualifiers:

J = Indicates an estimated value

U = Not detected at the indicated Reporting Limit

* = Recovery or RPD exceeds control limits

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-2D-083016		TF-3D-061516		TF-3D-061516		TF-3D-090116		TF-3D-082517		TF-3D		TF-3D	
Sample Date:		8/30/2016		6/15/2016		6/15/2016		9/1/2016		8/25/2017		10/25/2017		11/14/2017	
Lab Sample ID:		JC26783-5		JC22334-1		JC22334-1R		JC26925-1		JC49684-2					
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	12.3		25.3		21.9		3.03		11.5		0.5	U	9.33	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	28.7		0.5	U
Aroclor 1254	mg/kg	9.58		26.7		18		0.5	U	20.4		16.7		11	
Aroclor 1260	mg/kg	10.0		0.5	U	14.1		3.2		0.5	U	0.5	U	0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	31.88		52		**54**		6.18		31.9		45.4		20.33	
		w/ Permanganate Cleanup Procedure [1]				w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]		w/ Permanganate Cleanup Procedure [1]	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4C-061516		TF-4C-061516		TF-4C-083016		TF-4D-061516		TF-4D-061516		TF-4D-070517		TF-4D-071417	
Sample Date:		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		7/3/2017		7/14/2017	
Lab Sample ID:		JC22334-2		JC22334-2R		JC26783-6		JC22334-3		JC22334-3R		JC46386-2		JC47048-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	26.4		17.6		18.6		43.2		25.1		13.2		0.5	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	13.7	U
Aroclor 1254	mg/kg	18.2		9.28		0.5	U	50		20.9		0.5	U	18	
Aroclor 1260	mg/kg	0.5	U	8.0		8.1		0.5	U	18.1		9.04		0.5	U
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	44.6		34.9		26.7		93.2		**64.1**		22.24		18.5	
				w/ Permanganate Cleanup Procedure [(1)]		**w/ Permanganate Cleanup Procedure [(1)]**				**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-4D-072017		TF-5C-061516		TF-5C-061516		TF-5C-083016		TF-5D-061516		TF-5D-061516		TF-5D-083016	
Sample Date:		7/20/2017		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		JC47416-1		JC22334-4		JC22334-4R		JC26783-7		JC22334-5		JC22334-5R		JC26783-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	13.6		15.9		10.9		22.2		36.7		22.1		29.2	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	0.5	U	19.6		10.9		12.9		21.1		16.9		20.5	
Aroclor 1260	mg/kg	9.91		0.5	U	8.4		14.2		0.5	U	11.8		11.8	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	23.51		35.5		30.16		49.3		57.8		**50.8**		**61.5**	
		w/ Permanganate Cleanup Procedure [1]				**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**				**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-5D-010617		TF-5D-020717		TF-5D-030617		TF-5D-033017		TF-5D-041417		TF-5D-042817		TF-6B-083016	
Sample Date:		1/6/2017		2/7/2017		3/6/2017		3/30/2017		4/14/2017		4/28/2017		8/30/2016	
Lab Sample ID:		JC35069-1		JC37014-1		JC38433-1		JC40133-1		JC41331-1		JC42594-1		JC26783-4	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	32.6		57.6		34.3		10.3		13.3		0.5	U	8.45	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	27		0.5	U
Aroclor 1254	mg/kg	14.2		23.5		0.5	U	7.73		0.5	U	13		0.5	U
Aroclor 1260	mg/kg	9.8		14.7		16.8		5.5		0.5	U	8.68		5.3	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	**56.56**		**95.8**		**51.1**		23.51		13.3		48.68		13.72	
		w/ Permanganate Cleanup Procedure [(1)]		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**		**w/ Permanganate Cleanup Procedure [(1)]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6D-0416		TF-6D-041316		TF-6D-042616		TF-6D-050516		TF-6D-051216		TF-6D-052716		TF-6D-053116	
Sample Date:		4/5/2016		4/13/2016		4/26/2016		5/5/2016		5/12/2016		5/27/2016		5/31/2016	
Lab Sample ID:		JC17616-1		JC18303-1		JC19129-1		JC19787-1		JC20188-1		JC21237-1		JC21329-1	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	0.5	U	0.5	U	0.5	U	23.9		22.4		0.5	U	21.4	
Aroclor 1248	mg/kg	31.4		21.6		17.9		0.5	U	0.5	U	17.9		0.5	U
Aroclor 1254	mg/kg	16		0.5	U	14.5		18.1		0.5	U	5	U	21.2	
Aroclor 1260	mg/kg	0.5	U	12.5		14.3		12.5		15.0		15.3		12.7	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	47.4		34.1		46.7		54.5		37.4		33.2		55.3	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-6D-053116		TF-6D-061616		TF-6D-061616		TF-6D-062216		TF-6D-063016		TF-6D-070716		TF-6D-071116	
Sample Date:		6/7/2016		6/16/2016		6/16/2016		6/22/2016		6/30/2016		7/7/2016		7/11/2016	
Lab Sample ID:		JC21329-1		JC22334-8		JC22334-8R		JC22828-1		JC23438-1		JC23724-2		JC23844-3	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	21.2		18.2		7.78		0.5	U	10.7		8.47		9.32	
Aroclor 1248	mg/kg	5	U	0.5	U	0.5	U	23.6		0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	13.4		21.4		8.05		25.7		9.49		9.86		11.4	
Aroclor 1260	mg/kg	11.7		100.0	U	3.9		8.2		8.0		5.6		6.3	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	46.3		39.6		19.73		**57.5**		28.17		23.92		27.06	
						w/ Permanganate Cleanup Procedure [1]		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**		**w/ Permanganate Cleanup Procedure [1]**	

Table 3
Summary of PCB Analytical Data - Recovery Well Samples
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	TF-7E-061516		TF-7E-061516		TF-7E-073016		TF-7F-061516		TF-7F-061516		TF-7F-083016	
Sample Date:		6/15/2016		6/15/2016		8/30/2016		6/15/2016		6/15/2016		8/30/2016	
Lab Sample ID:		JC22334-6		JC22334-6R		JC26783-3		JC22334-7		JC22334-7R		JC26783-2	
Aroclor 1016	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1221	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1232	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1242	mg/kg	17.1		16		7.59		35.2		13.9		15.6	
Aroclor 1248	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1254	mg/kg	26.1		16.3		12.9		27.7		15.9		20.3	
Aroclor 1260	mg/kg	0.5	U	0.5	U	5.3		15.6		13.4		7.5	
Aroclor 1268	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Aroclor 1262	mg/kg	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Total PCBs	mg/kg	43.2		32.3		25.74		78.5		43.2		43.41	
				w/ Permanganate Cleanup Procedure (1)		w/ Permanganate Cleanup Procedure (1)				w/ Permanganate Cleanup Procedure (1)		w/ Permanganate Cleanup Procedure (1)	

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

Table 4
Summary of Offsite LNAPL Disposal Quantities
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

LNAPL Waste Oil Disposal Summary (<50 ppm PCBs):

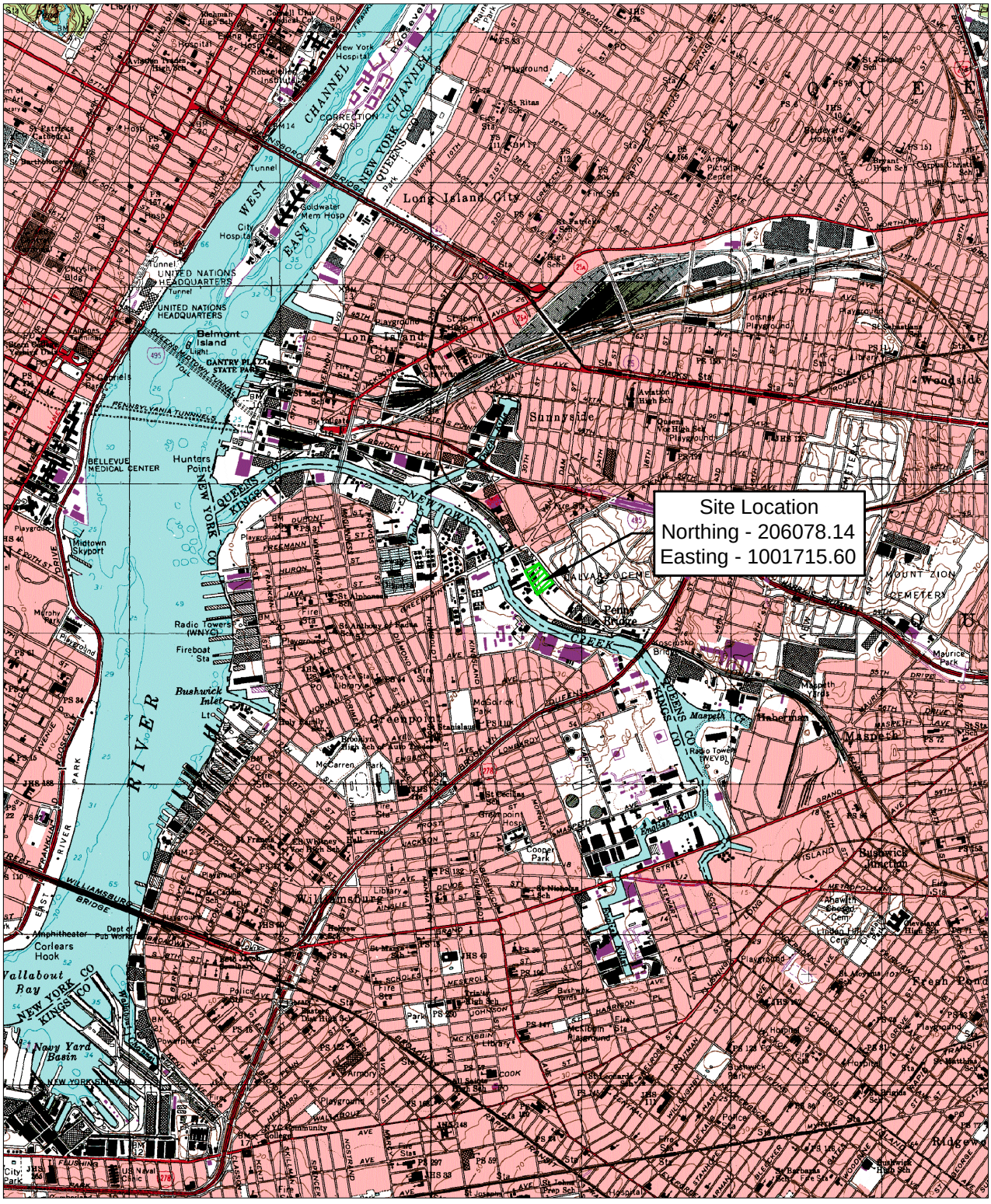
Date	BOL Number	T-801	T-1401	Total
12/18/15	0277706	5,000 gal	-	5,000 gal
01/11/16	0277790	-	4,767 gal	4,767 gal
02/02/16	0277924	5,032 gal	-	5,032 gal
02/04/16	0277942	-	4,900 gal	4,900 gal
03/02/16	278269	2,703 gal	2,592 gal	5,295 gal
03/17/16	0278392	4,613 gal	-	4,613 gal
03/31/16	278518	5,000 gal	-	5,000 gal
04/13/16	278574	5,000 gal	-	5,000 gal
04/27/16	278823	4,880 gal	-	4,880 gal
05/05/16	278889	-	5,000 gal	5,000 gal
05/12/16	278941	5,000 gal		5,000 gal
05/26/16	279054	4,998 gal		4,998 gal
05/31/16	099965	-	3,103 gal	3,103 gal
06/07/16	279111	4,810 gal		4,810 gal
07/01/16	283085	5,026 gal		5,026 gal
07/18/16	283124	4,900 gal		4,900 gal
07/26/16	283125		5,000 gal	5,000 gal
08/09/16	283446	4,800 gal		4,800 gal
08/31/16	283592	5,052 gal		5,052 gal
09/01/16	283600		4,280 gal	4,280 gal
09/22/16	283745	4,950 gal		4,950 gal
10/07/16	180754	4,964 gal		4,964 gal
10/17/16	180744		4,800 gal	4,800 gal
11/04/16	104535	5,500 gal		5,500 gal
11/29/16	104145	5,300 gal		5,300 gal
12/01/16	258577		4,565 gal	4,565 gal
12/20/16	258731	4,869 gal		4,869 gal
01/06/17	258823	4,900 gal		4,900 gal
01/16/17	258893	4,875 gal		4,875 gal
01/25/17	259005	4,850 gal		4,850 gal
02/07/17	259108	4,900 gal		4,900 gal
02/14/17	259137		4,900 gal	4,900 gal
02/16/17	259170	4,860 gal		4,860 gal
03/01/17	259226	4,960 gal		4,960 gal
03/17/17	280224	4,837 gal		4,837 gal
03/30/17	280327	4,960 gal		4,960 gal
4/10/2017	280370	3,436 gal		3,436 gal
4/25/2017	280486		5,000 gal	5,000 gal
4/28/2017	280485	5,000 gal		5,000 gal
5/12/2017	280663	4,081 gal		4,081 gal
5/30/2017	280874	4,964 gal		4,964 gal
6/23/2017	238017	4,936 gal		4,936 gal
7/14/2017	238326		4,884 gal	4,884 gal
7/20/2017	238302	4,964 gal		4,964 gal
8/25/2017	179863	4,936 gal		4,936 gal
9/5/2017	179864	4,195 gal		4,195 gal
9/15/2017	179956		4,859 gal	4,859 gal
9/26/2017	180208	4,936 gal		4,936 gal
10/12/2017	284001	4,838 gal		4,838 gal
10/27/2017	284113	4,892 gal		4,892 gal
11/15/2017	284446	4,857 gal		4,857 gal
12/6/2017	256622	4,636 gal		4,636 gal
1/3/2018	256810	4,633 gal		4,633 gal
1/22/2018	257014	5,032 gal		5,032 gal
2/8/2018	257162	4,936 gal		4,936 gal
2/23/2018	257266	4,936 gal		4,936 gal
3/9/2018	257369		4,964 gal	4,964 gal
3/13/2018	257409	4,857 gal		4,857 gal
3/30/2018	276735	4,857 gal		4,857 gal
	TOTALS:	**221,461 gal**	**63,614 gal**	**285,075 gal**

LNAPL Waste Oil Disposal Summary (>/= 50 ppm PCBs):

Date	Manifest Number	TF-3D	TF-4D	TF-5D	TF-6D	Total
08/30/16	016113060 JJK	0 gal	0 gal	0 gal	50 gal	50 gal
08/08/17	015633471 JJK	0 gal	20 gal	35 gal	0 gal	55 gal
02/06/18	017955324 JJK	23 gal	0 gal	0 gal	0 gal	23 gal
	TOTALS:	**23 gal**	**20 gal**	**35 gal**	**50 gal**	**128 gal**

Prepared by: VMW 02/28/17
Reviewed by: TCK 02/28/17

FIGURES



Coordinate System: NAD 1983 StatePlane New York Long Island. Units: Foot US

0 1000 2000 4000

SCALE IN FEET

Amec Foster Wheeler PROJECT No. 3480160502 *DRAWING:* 3480160502-0600-SLM0-0000	
PREPARED/DATE: VMW 2/28/2017	*CHECKED/DATE:* TCK 2/28/2017

MACTEC

MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, Maine 04112
(207) 775-5401

FIGURE 1
SITE LOCATION MAP
REVIEW AVENUE DEVELOPMENT SITES
RAD I AND RAD II
LONG ISLAND CITY, NEW YORK

P:\CADD\QUANTA\Review Avenue\working drawings\3480160502-0600-SLM0-0000.dwg Tue, 28 Feb 2017 - 11:21am vincent.whelan

P:\CADD\QUANTA\Review Avenue\working drawings\3480160502-0600-SP00-0000.dwg Thu, 16 Mar 2017 - 9:30am vincent.wheton Layout: SITE PLAN

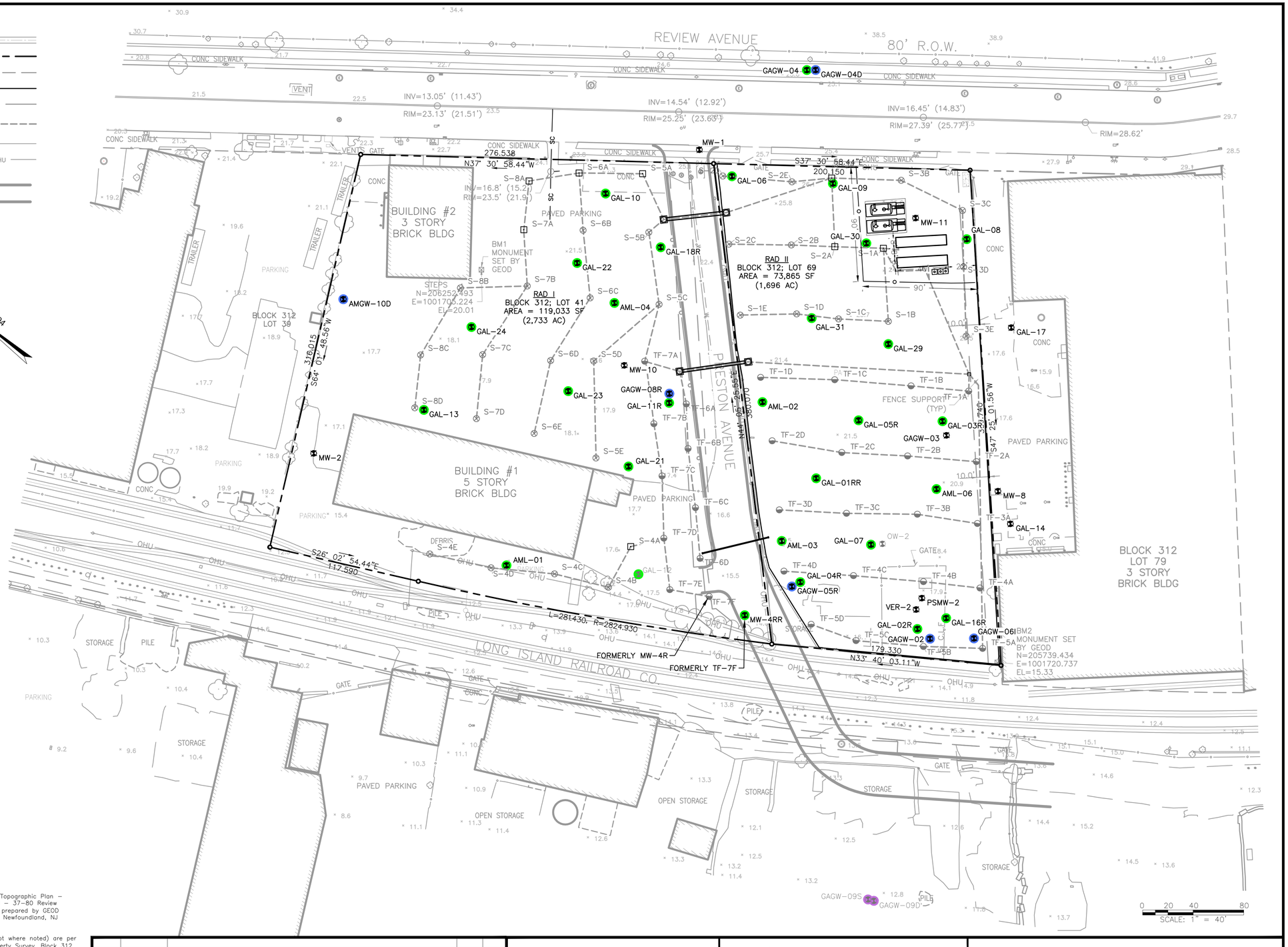
LEGEND

- FIRE HYDRANT
- UNKNOWN VALVE
- LIGHT POLE
- UTILITY POLE
- CATCHBASIN
- ROUND CATCHBASIN
- MONITORING WELL (INCLUDED IN LNAPL MONITORING PROGRAM) — AML–01
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM) — GAGW–02
- MONITORING WELL (INCLUDED IN GROUNDWATER MONITORING PROGRAM IF ACCESSABLE) — GAGW–09S
- MONITORING WELL (NOT INCLUDED IN THESE LNAPL OR GROUNDWATER MONITORING PROGRAMS) — GAL–24
- EXISTING MONITORING WELL (STATUS UNKNOWN) — GAL–20
- PROTECTIVE POST
- LARGE TREE
- SMALL TREE
- GAS VALVE
- WATER VALVE
- WATER BOX
- ELECTRIC MANHOLE
- RAILROAD Elec. VAULT
- RAILROAD SIGNAL
- SANITARY MANHOLE
- WATER MANHOLE
- TELEPHONE MANHOLE
- UNKNOWN MANHOLE
- SKIMMER WELL — S–1B
- SKIMMER WELL WITH CONTROLLER — S–1A
- TOTAL FLUIDS WELL — TF–1A

LINE LEGEND

- RAIL ROAD TRACKS
- PROPERTY LINE
- ADJOINER PROPERTY LINE
- CURBING
- EASEMENT LINE
- REMEDIATION SYSTEM PROCESS PIPING
- CHAIN LINK FENCE
- OVERHEAD WIRES — OHU
- PRESTON AVE

NAD 83-96 N.Y.L.I. 3104



MONITORING WELL NOTES:

1) Suffixes:
   - Where a well is designated with the suffix "R", that well is a replacement for a previous well at that location.
   - Where a well is designated with the suffix "RR", that well is a replacement for a previous replacement well at that location.
2) MW–# are monitoring wells that were installed prior to the Remedial Investigation.
3) The designation GAGW–# indicates a groundwater monitoring well was originally located and installed by Golder Associates. The one exception is GAGW–04 which is screened across the LNAPL zone.
4) The designation GAL–# indicates a LNAPL monitoring well that was screened across the top of the water table.
5) Well GAGW–06I is a smear zone monitoring well.
6) The designation AMGW–# represents a GW monitorng well that was located and installed by AMEC.
7) The designation AML–# is a LNAPL monitoring well located and installed by Amec Foster Wheeler.
8) GAL–04R, GAL–11R, GAL–18R, GAGW–05R, AND GAGW–08R were installed by Waste Management.

NOTES:

1) This drawing references the "Topographic Plan – Block 312 Lots 41, 69 & 79 – 37–80 Review Avenue", dated 12/22/2014, prepared by GEOD Corporation, 24 Kanouse Rd., Newfoundland, NJ 07435.
2) Recovery well locations (except where noted) are per survey drawings named "Property Survey, Block 312 Lot 41, 37–80 Review Avenue" and "Property Survey, Block 312 Lot 69, 37–80 Review Avenue", by GEOD Corporation, dated January 29, 2015. Recovery Wells TF–3A and TF–7C were located via field measurement methods.
3) Horizontal datum is North American Datum of 1983 (NAD83 New York State Plane coordinates, Long Island zone 3104). Vertical datum is North American Vertical Datum of 1988 (NAVD88).

REV.	DATE	STATUS	PRPD BY	CHKD BY
1	03/15/17	PERIODIC REVIEW REPORT	VMW	TCK

MACTEC PROJECT No. 3480160502
DRAWING: 3480160502–0600–SP00–0000

PREPARED/DATE: VMW 01/22/16

CHECKED/DATE: TCK 01/22/16

MACTEC
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511 Congress Street, Suite 200
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FIGURE 2
SITE PLAN
REVIEW AVENUE DEVELOPMENT SITES
RAD I AND RAD II
LONG ISLAND CITY, QUEENS, NY 11101

APPENDIX A

Monthly Reports

Review Ave. LNAPL Recovery System Monthly Summary
April 2017

Work completed in April 2017:

Week of Sat 4/1 – Sat 4/8

- O&M site visit on 4/4
- Influent and Effluent sampled for BTEX and MTBE on 4/4
    - Influent Xylenes concentration (188 µg/L) above NYCDEP Daily (74 µg/L) and Monthly (28 µg/L) Effluent Limits
    - Effluent sample held but not analyzed
- Treatment system and enclosures tested with PID/4-Gas Meter on 4/4
- TF-5D recovery event on 4/4
    - 3 GAL Product recovered with skimmer pump
    - No sample collected

Week of Sun 4/9 – Sat 4/15

- O&M site visits on 4/10 and 4/14
- Product Load-out from T-801 on 4/10
    - 3,436 GAL Product removed (offsite) according to Bill of Lading
- LNAPL Sampling on T-801 on 4/10 – representative of Zones 1 & 7
- TF-5D recovery event on 4/14
    - 3 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis: 13.3 mg/kg

Week of Sun 4/16 – Sat 4/22

- O&M site visits on 4/19 and 4/20
- Carbon change-out on 4/19 and 4/20

Week of Sun 4/23 – Sun 4/30

- O&M site visits on 4/25, 4/28 and 4/30
- Product Load-out from T-1401 on 4/25
    - 5,000 GAL Product removed (offsite) according to Bill of Lading
- TF-5D recovery event on 4/25
    - 3 GAL Product recovered with skimmer pump
    - No sample collected
- Influent and Effluent sampled for BTEX, MTBE and SGT-HEM on 4/25
    - Influent Xylenes concentration (183 µg/L) above NYCDEP Daily (74 µg/L) and Monthly (28 µg/L) Effluent Limits
    - Effluent sample held but not analyzed
- LNAPL Sampling on T-801 on 4/25 – representative of Zones 3, 4 & 5
- T-1401 sampled for PCB analysis on 4/25: PCB concentration not detected
- Product Load-out from T-801 on 4/28
    - 5,000 GAL Product removed (offsite) according to Bill of Lading
- TF-5D sampling event on 4/28
    - Sample collected for PCB analysis: results forthcoming.

O&M Activities:

Week of Sat 4/1 – Sat 4/8

- Changed bag filters on 4/4
- Cleaned basket strainer on 4/4
- Transferred chemicals to drums on 4/4
- Water removal from T-801 on 4/4
- Operating on TF Zones 1 & 7

Prepared By: VMW 5/4/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
April 2017

Week of Sun 4/9 – Sat 4/15

- Product Load-out from T-801 on 4/10
- Changed bag filters on 4/10 and 4/14
- Cleaned basket strainer on 4/10 and 4/14
- Cleaned y-strainer on 4/10
- Backwashed carbon on 4/10 and 4/14
- Pump out backwash totes on 4/10
- Inspect TF vaults in Zones 3, 4 & 5 on 4/14
- Transferred chemicals to drums on 4/10 and 4/14
- Switch active TF recovery zones to TF Zones 3, 4 & 5 on 4/14

Week of Sun 4/16 – Sat 4/22

- Drain LGAC units on 4/19 in preparation for carbon change out
- Carbon change-out on 4/20.
    - LGAC-1101 remains active carbon vessel
- Changed bag filters on 4/19
- Clean skimmer line air vents and strainers on 4/19
- Cleaned basket strainer on 4/19
- Chemical delivery on 4/19 and 4/20
    - Transferred chemicals to drums on 4/20
- Decant water from backwash tote on 4/20
- Operating on TF Zones 3, 4 & 5

Week of Sun 4/23 – Sun 4/30

- Product Load-out from T-1401 on 4/25
- Product Load-out from T-801 on 4/28
- Changed bag filters on 4/25 and 4/30
- Cleaned OWS product pump strainer on 4/25
- Inspect TF vaults in Zones 3, 4 & 5 on 4/25
- Inspect TF vaults in Zones 2 & 6 on 4/28
- Backwash carbon on 4/28
- Transferred chemicals to drums on 4/28
- Cleaned basket and y-strainers on 4/30
- Switch active TF recovery zones to TF Zones 2 & 6 on 4/28
    - Vacuum-enhanced recovery (SVE active) from TF Zone 2

General TF Treatment System Comments:

- TF System Uptime has remained over 90% in April (approx. 92.5%) with flow rates as high as 15 gpm. Increased uptime largely attributable to the Tube Skimmer upgrade and the high-speed motor. Downtime largely attributable to float switch fouling at the OWS effluent tank. Chemical injections rates for the Emulsion Breaker and Sequestering Agent remained at 40% stroke. Recovered TF oil/water concentrations have dropped to approx. 3.3% for the month.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at approximately 77 GPD and remains at 18 hr/day operation in an attempt to minimize entrained air and possible air locking of remote skimmer zones. Product being recovered appears to be getting darker in color.

Prepared By: VMW 5/4/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
April 2017

VER/TF System Production Results:

- TF System uptime for April was 632.49 Actual Run Hours out of 683.80 Available Hours, or 92.5%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down on 4/19 for Carbon Change-Out and restarted on 4/20.
    - TF System shut down on 4/27 due to High Product Level alarm in Pre-Separation tank and restarted on 4/28 after clearing clogged OWS interconnected piping.
    - TF System shut down on 4/28 due to High OWS Product Level and restarted on 4/30 after cleaning basket and y-strainers.
- Approximately 8,718 GAL Product Recovered in April from TF Zones 1 & 7; Zones 3, 4 & 5; and Zones 2 & 6.
    - Average TF Product recovery rate for April was 290.6 GPD, or 330.8 GPD accounting for system downtime.
- Approximately 140,026 GAL Product Recovered Total since system start-up
- 8,436 GAL Product from T-801 disposed of offsite in April
    - 139,975 GAL Product from T-801 disposed of Total since start-up
- Approximately 264,030 GAL Effluent discharged in April
    - Average 8,801 GPD or 10,019 GPD considering downtime
- 3,474,646 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.30%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (540 hours runtime) for April
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 2,151 GAL Product Recovered in April
    - Average Skimmer Product recovery rate for April was 77.1 GPD
- Approximately 50,876 GAL Product Recovered Total since start-up
- 5,000 GAL Product from T-1401 disposed of offsite in April
    - 48,907 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 10,869 GAL Product recovered in April
    - Average Product recovery rate for April was 362 GPD.
- 190,902 GAL Product Recovered Total since system start-up
- 13,436 GAL Product shipped off-site for disposal in April (see attached summary table)
- 188,882 GAL Product shipped off-site for disposal since system start-up as of the end of April 2017 (see attached summary table)
- 109,591 kWh Energy Consumption Total (as of 5/1/17) since system start-up
- 6,182 kWh Energy Consumption for April
- 0.569 kWh/GAL Average Energy Consumed per GAL of Product Recovered for April

Prepared By: VMW 5/4/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2017

Work completed in May 2017:

Week of Mon 5/1 – Sat 5/6

- O&M site visit on 5/5

Week of Sun 5/7 – Sat 5/13

- O&M site visits on 5/7, 5/9 and 5/12
- LNAPL Sampling on T-801 on 5/9 – representative of Zones 2 & 6
- Product Load-out from T-801 on 5/12
    - 4,083 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 5/14 – Sat 5/20

- O&M site visits on 5/16 and 5/18
- Quarterly LNAPL monitoring well gauging event on 5/15
- OWS Cleaning by Allstate Power Vac on 5/18
    - 2,200 GAL of rinseate disposed offsite

Week of Sun 5/21 – Sat 5/27

- O&M site visits on 5/22 and 5/25
- 2nd Quarter 2017 Effluent Discharge Compliance sampling completed on 5/22

Week of Sun 5/28 – Wed 5/31

- O&M site visit on 5/30
- Product Load-out from T-801 on 5/30
    - 4,964 GAL Product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Mon 5/1 – Sat 5/6

- Operating on TF Zones 2 & 6
    - SVE system active on TF Zone 2
- Cleaned basket strainer and pump filters on 5/5
- Backwashed carbon on 5/5
- Transferred chemicals to drums on 5/5
- Water removal from T-801 on 5/5

Week of Sun 5/7 – Sat 5/13

- Switched active TF recovery zones to TF Zones 3, 4 & 5 on 5/12
- Changed bag filters on 5/7 and 5/12
- Backwashed carbon on 5/7, 5/9 and 5/12
- Cleaned y-strainer and pump filters on 5/7
- Flushed force main to storm sewer on 5/7
- Cleaned basket strainer, y-strainer and pump filters on 5/9
- Transferred chemicals to drums on 5/9
- Removed T-801 flow meter and installed bypass on 5/9
- LNAPL tank sampling on 5/9
- Cleaned basket and y-strainers on 5/12
- Product Load-out from T-801 on 5/12
- Pumped purge water from bladder on 5/12
- Increased sequestering agent pump stroke rate from 40% to 50% on 5/12

Prepared By: VMW 6/6/17
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
May 2017

Week of Sun 5/14 – Sat 5/20

- Operating on TF Zones 3, 4 & 5
- Cleaned basket strainer on 5/16
- Process water from totes on 5/16
- Inspect TF vaults/wells in Zones 3, 4 & 5 on 5/16
- Transferred chemicals to drums on 5/16
- Cleaned basket strainer on 5/16
- Backwashed carbon on 5/16 and 5/18
- Changed bag filters on 5/18
- Cleaned basket and y-strainers on 5/18
- OWS cleanout on 5/18 by APV

Week of Sun 5/21 – Sat 5/27

- Operating on TF Zones 3, 4 & 5
- Cleaned basket strainer on 5/22
- Switched active carbon vessel to LGAC-1102 on 5/22
- Transferred chemicals to drums on 5/22
- Collected 2nd Quarter 2017 discharge compliance samples on 5/22
- Water removal from T-801 on 5/25
- Changed bag filters on 5/25
- Cleaned basket strainer and pump filters on 5/25
- Backwashed carbon on 5/25
- Chemical delivery on 5/25
    - Begin biocide treatment with Redux-620 on 5/25
- Repair gate on 5/25 (installed a gate pin to allow for preventing gate from moving due to wind – safety upgrade).

Week of Sun 5/28 – Wed 5/31

- Operating on TF Zones 3, 4 & 5
- Product Load-out from T-801 on 5/30
- Changed bag filters on 5/30
- Cleaned basket and y-strainers on 5/30
- Transferred chemicals to drums on 5/30
- Re-piped biocide lines to biocide pump on 5/30
- Switched active carbon vessel back to LGAC-1101 on 5/30

General TF Treatment System Comments:

- TF System Uptime has remained over 90% in May (approx. 91.2%) with flow rates as high as 11 gpm. Downtime largely attributable to biological fouling of bag filters and carbon. We procured a new biocide (Redux-620) which is formulated to work in conjunction with the sequestering agent. The R-620 was placed on-line on May 25 and appears to be controlling the biological growth and fouling without precipitating the dissolved iron to date. Recovered TF oil/water concentrations have dropped to approx. 2.69% for the month.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at a LNAPL recovery rate below 20 GPD due to very high groundwater elevations (due to high precipitation this month) and submergence of skimmer floats and subsequent high water recovery (>100 GPD). Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer

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zones. Upcoming skimmer pump setting re-adjustment will be performed to eliminate water recovery and restore product recovery production.

VER/TF System Production Results:

- TF System uptime for May was 668.61 Actual Run Hours out of 732.96 Available Hours, or 91.22%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down on 5/6 due to High OWS Water Level alarm and restarted on 5/7 after cleaning bag filters / strainers and backwashing carbon.
    - TF System shut down on 5/8 due to High Product Level alarm in Pre-Separation tank cause by obstructions in the T-801 flow meter; system restarted on 5/9 after cleaning strainers and removing T-801 flow meter.
    - TF System shut down on 5/11 due to High OWS Water Level alarm and restarted on 5/12 after changing bag filters and backwashing carbon.
    - TF System shut down on 5/30 due to High OWS Water Level alarm caused by malfunctioning drain in LGAC-1102; system restarted on 5/30 after switching to LGAC-1101, clearing effluent pipe and removing the effluent flow meter.
- Approximately 8,805 GAL Product Recovered in May from Zones 2 & 6 and Zones 3, 4 & 5.
    - Average TF Product recovery rate for May was 284.0 GPD, or 316.1 GPD accounting for system downtime.
- Approximately 149,044 GAL Product Recovered Total since system start-up
- 9,045 GAL Product from T-801 disposed of offsite in May.
    - 149,020 GAL Product from T-801 disposed of Total since start-up
- Approximately 236,724 GAL Effluent discharged in May
    - Average 10,540 GPD or 11,728 GPD considering downtime
    - Effluent flow meter offline for portion of the month – discharge quantity estimated based on influent total for the month and historic influent/effluent ratios
- 3,801,374 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 2.69%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (558 hours runtime) for May
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 439 GAL Product Recovered in May
    - Average Skimmer Product recovery rate for May was 14.2 GPD
- Approximately 51,315 GAL Product Recovered Total since start-up
- No Product from T-1401 disposed of offsite in May
    - 48,907 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 9,244 GAL Product recovered in May
    - Average Product recovery rate for May was 298 GPD.
- 200,359 GAL Product Recovered Total since system start-up
- 9,045 GAL Product shipped off-site for disposal in May (see attached summary table)
- 197,927 GAL Product shipped off-site for disposal since system start-up as of the end of May 2017 (see attached summary table)
- 116,247 kWh Energy Consumption Total (as of 6/1/17) since system start-up
- 6,656 kWh Energy Consumption for May

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Review Ave. LNAPL Recovery System Monthly Summary
May 2017

- 0.720 kWh/GAL Average Energy Consumed per GAL of Product Recovered for May

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Review Ave. LNAPL Recovery System Monthly Summary
June 2017

Work completed in June 2017:

Week of Thu 6/1 – Sat 6/10

- O&M site visits on 6/5 and 6/9
- Replace upper inlet to LGAC-1102 on 6/9

Week of Sun 6/11 – Sat 6/17

- O&M site visits on 6/14 and 6/15
- Semi-Annual groundwater sampling event on 6/14 and 6/15
- Monthly LNAPL monitoring well gauging event on 6/14

Week of Sun 6/18 – Sat 6/24

- O&M site visits on 6/20 and 6/23
- Product Load-out from T-801 on 6/23
    - 4,936 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 6/25 – Fri 6/30

- O&M site visits on 6/27 and 6/30
- Replace TF-4D pump with skimmer pump on 6/27
    - Reinstall TF pump in TF-5D
- Meet with Cable company technicians on 6/30

O&M Activities:

Week of Thu 6/1 – Sat 6/10

- Operating on TF Zones 3, 4 & 5
- Changed bag filters on 6/5
- Backwashed carbon on 6/5 and 6/9
- Water removal from T-1401 on 6/9
- Reset camera on 6/9
- Repair FIT-801 and FIT-1201 on 6/9

Week of Sun 6/11 – Sat 6/17

- Semi-Annual groundwater sampling event on 6/14 and 6/15
- Well gauging on 6/14
- Repair effluent flow meter (FIT-1201) on 6/15

Week of Sun 6/18 – Sat 6/24

- Operating on TF Zones 3, 4 & 5 until 6/20; switch to TF Zone 7
- Cleaned basket and y-strainer on 6/20
- Changed bag filters on 6/20
- Sampled GAGW-06I (finish sampling event) on 6/20
- Transferred chemicals to drums on 6/20
- Product Load-out from T-801 on 6/23
- Cleaned basket and y-strainer on 6/23
    - Remove y-strainer

Week of Sun 6/25 – Fri 6/30

- Operating on TF Zone 7
- Changed bag filters on 6/27
- Cleaned basket and y-strainer on 6/27
- Transferred chemicals to drums on 6/27

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Review Ave. LNAPL Recovery System Monthly Summary
June 2017

- Cleaned effluent flow meter on 6/27
- Met with cable company technicians onsite on 6/30
- Prepare for carbon changeout on 6/30

General TF Treatment System Comments:

- TF System Uptime exceeded 95% in June (approx. 97.5%) with flow rates as high as 14+ gpm. Downtime largely attributable to biological fouling of product transfer pump suction strainer. The new biocide (Redux-620) appears to be effective with no excessive bag filter or carbon bed fouling occurring. Recovered TF oil/water concentrations have dropped to approx. 2.53% for the month.

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at a LNAPL recovery rate at 90 GPD average for the month. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for June was 665.52 Actual Run Hours out of 682.58 Available Hours, or 97.50%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down for routine maintenance/operations on 6/5, 6/9, 6/14, 6/15, 6/20, 6/27, and 6/30.
    - TF System shut down on 6/22 due to High Product Level alarm in T-801 and restarted on 6/23 following Product Load-out.
- Approximately 6,428 GAL Product Recovered in June from Zones 3, 4 & 5 and Zone 7.
    - Average TF Product recovery rate for June was 214.3 GPD, or 238.1 GPD accounting for system downtime.
- Approximately 155,472 GAL Product Recovered Total since system start-up
- 4,936 GAL Product from T-801 disposed of offsite in June.
    - 153,956 GAL Product from T-801 disposed of Total since start-up
- Approximately 254,101 GAL Effluent discharged in June
    - Average 8,470 GPD or 9,164 GPD considering downtime
    - Effluent flow meter offline for portion of the month – discharge quantity estimated based on influent total for the month and historic influent/effluent ratios
- 4,055,475 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 2.53%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (540 hours runtime) for June
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 2,699 GAL Product Recovered in June
    - Average Skimmer Product recovery rate for June was 90 GPD
- Approximately 54,014 GAL Product Recovered Total since start-up
- No Product from T-1401 disposed of offsite in June
    - 48,907 GAL Product from T-1401 disposed of Total since start-up

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Review Ave. LNAPL Recovery System Monthly Summary
June 2017

Total Product Recovery System Results:

- 9,127 GAL Product recovered in June
    - Average Product recovery rate for June was 304 GPD.
- 209,486 GAL Product Recovered Total since system start-up
- 4,936 GAL Product shipped off-site for disposal in June (see attached summary table)
- 202,863 GAL Product shipped off-site for disposal since system start-up as of the end of June 2017 (see attached summary table)
- 121,647 kWh Energy Consumption Total (as of 7/1/17) since system start-up
- 5,399 kWh Energy Consumption for June
- 0.592 kWh/GAL Average Energy Consumed per GAL of Product Recovered for June

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Review Ave. LNAPL Recovery System Monthly Summary
July 2017

Work completed in July 2017:

Week of Sat 7/1 – Sat 7/8

- O&M site visits on 7/3, 7/5 and 7/6
- Replaced OWS product transfer pump (P-801) on 7/3
- Collected LNAPL sample from T-801 for PCB analysis on 7/3
    - 3.26 ppm Total PCB
- TF-4D recovery event on 7/5
    - 5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 22.24 ppm Total PCB
- Carbon change out on 7/6

Week of Sun 7/9 – Sat 7/15

- O&M site visits on 7/10 and 7/14
- 3rd Quarter 2017 Effluent discharge compliance sampling completed on 7/10
- Chemical delivery on 7/14
- Product Load-out from T-1401 on 7/14
    - 4,884 GAL Product removed (offsite) according to Bill of Lading
- TF-4D recovery event on 7/10
    - 3.5 GAL Product recovered with skimmer pump
    - No sample collected
- TF-4D recovery event on 7/14
    - 2.5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 18.5 ppm Total PCB

Week of Sun 7/16 – Sat 7/22

- O&M site visits on 7/18, 7/20 and 7/21
- Monthly LNAPL monitoring well gauging event on 7/18
- TF-4D recovery event on 7/18
    - 5 GAL Product recovered with skimmer pump
    - No sample collected
- New T-801 flow totalizer (FIT-801) installed on 7/20
- Product Load-out from T-801 on 7/20
    - 4,964 GAL Product removed (offsite) according to Bill of Lading
- TF-4D recovery event on 7/20
    - 4 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 23.51 ppm Total PCB

Week of Sun 7/23 – Mon 7/31

- O&M site visits on 7/25, 7/27 and 7/31
- TF-4D recovery event on 7/25
    - 3 GAL Product recovered with skimmer pump
    - No sample collected
- Collected LNAPL sample from OWS Day Tank for VOC analysis on 7/27

O&M Activities:

Week of Sat 7/1 – Sat 7/8

- Operating on TF Zones 6 & 7 – switch to only Zone 7 on 7/6
- Clean compound, replace pump P-801 with back-up and sample T-801 on 7/3
- Changed bag filters and cleaned basket strainer on 7/5

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Review Ave. LNAPL Recovery System Monthly Summary
July 2017

- Drained LGAC vessels on 7/5 and completed carbon change-out on 7/6
    - Carbon vessel LGAC-1102 active prior to change-out
    - Carbon vessel LGAC-1101 active after change-out

Week of Sun 7/9 – Sat 7/15

- Operating on TF Zone 7
    - TF Zone 6 also active from 7/12 to 7/14
- Cleaned oil transfer pump suction basket strainer on 7/10
- Transferred chemicals to drums on 7/10
- Inspect S-1 line and TF-7 line on 7/10
- Compliance sampling on 7/10
- SVE activated on Zone 7 on 7/14
- Product Load-out from T-1401 on 7/14
- Changed bag filters and cleaned basket strainer on 7/14
- Inspect TF-6 line SVE wells on 7/14
- Drum inventory and chemical delivery on 7/14
- Transferred chemicals to drums on 7/14
- Changed biocide pump settings on 7/14
    - Changed pump interval from 6 hrs to 3 hrs
    - Changed pump runtime from 15 min to 18 min

Week of Sun 7/16 – Sat 7/22

- Operating on TF Zone 7 with SVE
- Cleaned basket and y-strainers on 7/18
- Well gauging on 7/18
- Adjusted biocide pump runtime to 15 min on 7/18
- Changed bag filters and cleaned basket and y-strainers on 7/20
- Water removed from T-1401 on 7/20
- Installed FIT-801 on 7/20
- Product Load-out from T-801 on 7/20
- Transferred chemicals to drums on 7/20
- Onsite only for system restart on 7/21

Week of Sun 7/23 – Mon 7/31

- Operating on TF Zone 7 with SVE
- Water removed from T-1401 on 7/25
- Changed bag filters and cleaned basket and y-strainers on 7/25
- Transferred chemicals to drums on 7/25
- Inspect skimmer wells for water and make adjustments on 7/25
- Cleaned effluent and product pump strainers on 7/27
- Collected day tank samples on 7/27
- Turned off S-1 line on 7/27
- Reconfigured LGAC-1102 vessel from up-flow to down-flow on 7/31

General TF Treatment System Comments:

- TF System Uptime just under 95% in July (94.9%) with flow rates as high as 14+ gpm. Downtime largely attributable to clogging of product transfer pump suction strainer. The new biocide (Redux-620) was increased to a higher dose and appears to be effective with no excessive bag filter or carbon bed fouling occurring. Recovered TF oil/water concentrations have dropped to approx. 1.95% for the month.

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Review Ave. LNAPL Recovery System Monthly Summary
July 2017

General Skimmer System Comments:

- Skimmer system still running at 100% uptime at a LNAPL recovery rate at 104 GPD average for the month. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for July was 659.93 Actual Run Hours out of 695.43 Available Hours, or 94.90%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down for routine maintenance on 7/10, 7/14, 7/25, 7/27 and 7/31
    - TF System shut down on 7/5 due to OWS High Product Level alarm and restarted later that day after cleaning basket strainer
    - TF System shut down to drain LGAC vessels on 7/5 and restarted on 7/6 following carbon change out
    - TF System shut down on 7/19 due to High Product Level alarm in T-801 and restarted on 7/20 following Product Load-out.
    - TF System shut down on 7/20 due to OWS High Product Level alarm and restarted on 7/21. Alarm condition caused by new FIT-801 totalizer tightness – per the manufacturer (this should not be an issue once the new meter breaks-in)
    - TF System shut down on 7/26 due to OWS High Water Level alarm and restarted on 7/27 after cleaning level float switches
- Approximately 4,905 GAL Product Recovered in July from Zones 6 and 7.
    - Average TF Product recovery rate for July was 158.2 GPD, or 178.4 GPD accounting for system downtime.
- Approximately 160,377 GAL Product Recovered Total since system start-up
- 4,964 GAL Product from T-801 disposed of offsite in July.
    - 158,920 GAL Product from T-801 disposed of Total since start-up
- Approximately 251,840 GAL Effluent discharged in July
    - Average 8,124 GPD or 9,159 GPD considering downtime
- 4,307,315 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 1.95%

Skimmer System Production Results:

- Skimmer System uptime remained at 100% (558 hours runtime) for July
    - Skimmer system running @ 18 hrs/day schedule
- Approximately 3,219 GAL Product Recovered in July
    - Average Skimmer Product recovery rate for July was 104 GPD
- Approximately 57,233 GAL Product Recovered Total since start-up
- 4,884 GAL Product from T-1401 disposed of offsite in July
    - 53,791 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 8,124 GAL Product recovered in July
    - Average Product recovery rate for July was 262 GPD.
- 217,610 GAL Product Recovered Total since system start-up
- 9,848 GAL Product shipped off-site for disposal in July (see attached summary table)

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Review Ave. LNAPL Recovery System Monthly Summary
July 2017

- 212,711 GAL Product shipped off-site for disposal since system start-up as of the end of July 2017 (see attached summary table)
- 129,342 kWh Energy Consumption Total (as of 8/1/17) since system start-up
- 7,695 kWh Energy Consumption for July
- 0.947 kWh/GAL Average Energy Consumed per GAL of Product Recovered for July

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Review Ave. LNAPL Recovery System Monthly Summary
August 2017

Work completed in August 2017:

Week of Tue 8/1 – Sat 8/5

- O&M site visit on 8/1
- 3rd Quarter 2017 Effluent discharge compliance sampling completed on 8/1
- Sample LGAC influent and midfluent for SGT-HEM and PCBs on 8/1
- TF-4D recovery event on 8/1
    - 3.5 GAL Product recovered with skimmer pump
    - No sample collected

Week of Sun 8/6 – Sat 8/12

- O&M site visits on 8/8, 8/9 and 8/11
- Waste Drum removal on 8/8
    - 1 Drum TSCA Regulated PCB Oil, 10 Drums Non TSCA/Non RCRA Hazardous Petroleum Impacted PPE and GWTP Spent Filters & Rags removed from site by ACV Environmental (Formerly Clean Venture/Cycle Chem).
- Chemical delivery on 8/11

Week of Sun 8/13 – Sat 8/19

- O&M site visit on 8/14
- Monthly LNAPL monitoring well gauging event on 8/15

Week of Sun 8/20 – Sat 8/26

- O&M site visits on 8/23 and 8/25
- Replaced CMI pump on 8/25
- Product Load-out from T-801 on 8/25
    - 4,936 GAL Product removed (offsite) according to Bill of Lading
- TF-3D recovery event on 8/25
    - 3 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 31.9 ppm Total PCB
- Sample LGAC Influent for SGT-HEM on 8/25

Week of Sun 8/27 – Thu 8/31

- O&M site visit on 8/29
- TF-3D recovery event on 8/29
    - 2 GAL Product recovered with skimmer pump
    - No sample collected

O&M Activities:

Week of Tue 8/1 – Sat 8/5

- Operating on TF Zone 7
    - SVE active
- Compliance sampling on 8/1
- Changed bag filters and cleaned y-strainer on 8/1
- Transferred chemicals to drums on 8/1
- Replaced sample tap on 8/1
- Removed water from drums on 8/1

Week of Sun 8/6 – Sat 8/12

- Operating on TF Zone 7
    - SVE active

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- Transferred chemicals to drums on 8/8
- Changed bag filters and cleaned basket and y-strainer on 8/8
- Remove TF-3D pump and decon on 8/8
- Inspect TF-7, S-7 and S-8 lines on 8/8
- Water removed from T-1401 on 8/8
- Repair blown air hose at TF-7B on 8/9
- Transferred chemicals to drums on 8/11
- Set up skimmer pump in TF-3D on 8/11
- Move pump P-711 to Redux 330 drum on 8/11
- Inspect TF-7A on 8/11
    - Pump stuck

Week of Sun 8/13 – Sat 8/19

- Operating on TF Zone 7
    - Also operating on TF Zone 6 beginning on 8/14
    - SVE active on Zone 6
- Changed bag filters and cleaned basket and y-strainers on 8/14
- Inspect TF-7 wells and crossing vaults on 8/14
- Well gauging on 8/15

Week of Sun 8/20 – Sat 8/26

- Operating on TF Zones 6 and 7 until 8/23
    - SVE active on Zone 6
- Switch to Zones 4 and 5 on 8/23
    - SVE active on Zones 4 and 5
- Changed bag filters and cleaned basket strainer on 8/23
- Backwashed carbon on 8/23
- Transferred chemicals to drums on 8/23
- Shut down skimmer system on 8/23 due to air leak at S-5A
- Water removal from T-801 and T-1401 on 8/23
- Product load-out from T-801 on 8/25
- Cleaned y-strainer on 8/25
- Repaired air hose at S-5A on 8/25 and restarted skimmer system
- Replaced CMI pump on 8/25
- Water removal from T-1401 on 8/25

Week of Sun 8/27 – Thu 8/31

- Changed bag filters and cleaned basket and y-strainers on 8/29
- Switch active LGAC vessel from LGAC-1101 to LGAC-1102 on 8/29
- Transferred chemicals to drums on 8/29
- Repair TF-5D blown air hose on 8/29
- Cleaned and replaced gasket on FIT-1201 flow meter on 8/29
- Cleaned air vents on skimmer lines on 8/29

General TF Treatment System Comments:

- TF System Uptime over 95% in August (97.72%) with flow rates as high as 14 gpm. The new biocide (Redux-620) at higher dose continuing to be effective with no excessive bag filter or carbon bed fouling occurring. Recovered TF oil/water concentrations have increased by 15% to 2.24% for the month and is attributed to switching from TF zones 6 and 7 to zones 4 and 5 on August 23, 2017 which have initially shown significantly higher production rate flowing their OFF cycle. SVE continues to be utilized to enhance product recovery rates.

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Review Ave. LNAPL Recovery System Monthly Summary
August 2017

Prior to ceasing recovery from TF-7A & B, excessive sand/gravel was detected in the Product Transfer Pump (P-801) suction strainer. Pumps 7A and B are stuck in their respective recovery wells. Condition of well screen being evaluated during week of 9/11/17 as a more aggressive means of pump removal will be attempted. Product sample from these wells was sent to lab for VOC analysis.

General Skimmer System Comments:

- Skimmer system uptime below 100% due to air-line failures at well heads. All air line connections are being checked, tightened or replaced during week of 9/11/17. Production remains fairly steady at 75 GPD when operational. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for August was 706.55 Actual Run Hours out of 723.05 Available Hours, or 97.72%
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
  - TF System shut down for routine maintenance on 8/1, 8/8, 8/14, 8/23 and 8/29
  - TF System shut down on 8/9 due to Low Air Pressure alarm and restarted later that day after repairing hose at TF-7B and restarting air compressor
  - TF System shut down on 8/22 due to Low Air Pressure alarm and restarted on 8/23 after shutting off Skimmer system and restarting air compressor
  - TF System shut down on 8/24 due to High Product Level alarm in T-801 and restarted on 8/25 following Product Load-out.
- Approximately 6,137 GAL Product Recovered in August from Zones 4, 5, 6 and 7.
  - Average TF Product recovery rate for August was 198 GPD, or 208.5 GPD accounting for system downtime.
- Approximately 166,514 GAL Product Recovered Total since system start-up
- 4,936 GAL Product from T-801 disposed of offsite in August.
  - 163,856 GAL Product from T-801 disposed of Total since start-up
- Approximately 274,230 GAL Effluent discharged in August
  - Average 8,846 GPD or 9,315 GPD considering downtime
- 4,581,545 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 2.24%

Skimmer System Production Results:

- Skimmer System uptime for August was 517.66 Actual Run Hours out of 558 Available Hours, or 92.77%
  - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
  - Skimmer System shut down on 8/9 due to Low Air Pressure alarm and restarted later that day after repairing hose at TF-7B and restarting air compressor
  - Skimmer System shut down on 8/22 due to Low Air Pressure alarm and restarted on 8/25 after repairing hose at S-5A and restarting air compressor
- Approximately 1,628 GAL Product Recovered in August
  - Average Skimmer Product recovery rate for August was 52.5 GPD, or 75.5 GPD accounting for system downtime.
- Approximately 58,861 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in August
  - 53,791 GAL Product from T-1401 disposed of Total since start-up

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Review Ave. LNAPL Recovery System Monthly Summary
August 2017

Total Product Recovery System Results:

- 7,765 GAL Product recovered in August
    - Average Product recovery rate for August was 250.5 GPD.
- 225,375 GAL Product Recovered Total since system start-up
- 4,936 GAL Product shipped off-site for disposal in August (see attached summary table)
- 217,647 GAL Product shipped off-site for disposal since system start-up as of the end of August 2017 (see attached summary table)
- 139,936 kWh Energy Consumption Total (as of 9/1/17) since system start-up
- 10,594 kWh Energy Consumption for August
- 1.364 kWh/GAL Average Energy Consumed per GAL of Product Recovered for August

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Review Ave. LNAPL Recovery System Monthly Summary
September 2017

Work completed in September 2017:

Week of Fri 9/1 – Sat 9/9

- O&M site visit on 9/5
- Product Load-out from T-801 on 9/5
    - 4,195 GAL Product removed (offsite) according to Bill of Lading
- TF-3D recovery event on 9/5
    - 1 GAL Product recovered with skimmer pump
    - No sample collected

Week of Sun 9/10 – Sat 9/16

- O&M site visits on 9/12, 9/13 and 9/15
- TF well maintenance and pump cleaning on 9/12 & 9/13
- Product Load-out from T-1401 on 9/15
    - 4,859 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 9/17 – Sat 9/23

- O&M site visits on 9/19, 9/21 and 9/22
- OWS cleanout on 9/19
- OWS modifications on 9/19
- TF-3D recovery event on 9/21
    - 1 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis
- Monthly LNAPL monitoring well gauging event on 9/21 & 9/22

Week of Sun 9/24 – Sat 9/30

- O&M site visits on 9/25 and 9/26
- Carbon Change-out on 9/25
- Chemical delivery on 9/25
- Product Load-out from T-801 on 9/26
    - 4,936 GAL Product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Fri 9/1 – Sat 9/9

- Operating on TF Zones 4 & 5
    - SVE active
- Product Load-out from T-801 on 9/5
- Changed bag filters and cleaned basket and y-strainers on 9/5
- Inspect TF wells in Zones 4 & 5 on 9/5
- Repaired air hoses at TF-B and TF-5C on 9/5

Week of Sun 9/10 – Sat 9/16

- Operating on TF Zones 4 & 5
    - SVE active
- Changed bag filters on 9/12
- Backwashed carbon on 9/12
- IP Camera maintenance on 9/12
- TF well maintenance on 9/12
    - Cleaned pumps TF-4B/C and TF-5A/B/C
    - Replaced hoses and caps on TF-5B/C
- Cleaned basket and y-strainers on 9/13

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Review Ave. LNAPL Recovery System Monthly Summary
September 2017

- Transferred chemicals to drums on 9/13
- TF well maintenance on 9/13
    - Cleaned pumps TF-4D & TF-5D
    - Replaced TF-4D intake strainer
    - Attempt to pull TF-7A
    - Changed TF well caps and replaced hose clamps
- Product Load-out from T-1401 on 9/15

Week of Sun 9/17 – Sat 9/23

- Operating on TF Zones 4 & 5
    - SVE active
- OWS cleanout and maintenance on 9/19
- Changed bag filters and cleaned strainers on 9/19
- Water removal from T-801 on 9/21
- Repaired non-conductive liquid sensor on 9/21
- Well gauging on 9/21 & 9/22
- Water removal from T-801 on 9/22
- Blow down carbon vessels on 9/22

Week of Sun 9/24 – Sat 9/30

- Operating on TF Zones 4 and 5
    - SVE active
- Carbon Change-out on 9/25 – LGAC-1101 active
- Chemical delivery on 9/25
    - Transfer chemicals to drums
- Product load-out from T-801 on 9/26
- Changed bag filters and cleaned basket and y-strainer on 9/26
- Replaced taco valves/bled air on skimmer lines on 9/26

General TF Treatment System Comments:

- TF System Uptime just under 92% in September (91.78%) with flow rates as high as 13 gpm. A conductivity probe in the first OWS Tank came loose after the OWS cleaning operation and drove uptime below 95%. The new biocide (Redux-620) at higher dose continuing to be effective with no excessive bag filter or carbon bed fouling occurring. Recovered TF oil/water concentration has increased to 4.85% for the month and production has increased by 26% from the prior month and both are attributed to full time operation on TF zones 4 and 5 which have continued to show significantly higher production rates then the prior operational zones 6 and 7. SVE continues to be utilized to enhance product recovery rates. A greater portion of the recovered product has a lighter color and appears to be significantly higher in viscosity than the darker colored product which is now less prevalent. This has led to slower tanker offloading events and has strained the OWS product transfer pump operation slowing down the pump out cycle and leading to some system shutdowns due to high day tank product level.

General Skimmer System Comments:

- Skimmer system uptime below 100% due to air-line failures at well heads. All air line connections are being checked, tightened or replaced during week of 9/11/17. Production remains fairly steady at 75 GPD when operational. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

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Review Ave. LNAPL Recovery System Monthly Summary
September 2017

VER/TF System Production Results:

- TF System uptime for September was 536.21 Actual Run Hours out of 584.23 Available Hours, or 91.78%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down for routine maintenance on 9/5, 9/12, 9/19, 9/26
    - TF System shut down on 9/4 due to Low Air Pressure alarm and restarted on 9/5 after repairing hose at TF-4B and restarting air compressor
    - TF System shut down on 9/19 due to Non-Conductive Liquid alarm and restarted on 9/21 after repairing Non-Conductive Liquid Sensor.
    - TF System shut down on 9/22 due to High Product Level alarm in T-801. Carbon change-out scheduled for 9/22 (blow down) and 9/25 (change-out) – system remained offline until Product Load-out on 9/26.
- Approximately 7,708 GAL Product Recovered in September from Zones 4 and 5.
    - Average TF Product recovery rate for September was 256.9 GPD, or 345 GPD accounting for system downtime.
- Approximately 174,222 GAL Product Recovered Total since system start-up
- 9,131 GAL Product from T-801 disposed of offsite in September.
    - 172,987 GAL Product from T-801 disposed of Total since start-up
- Approximately 158,780 GAL Effluent discharged in September
    - Average 5,293 GPD or 7,107 GPD considering downtime
- 4,740,325 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.85%

Skimmer System Production Results:

- Skimmer System uptime for September was 517.66 Actual Run Hours out of 558 Available Hours, or 92.77%
    - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
    - Skimmer System shut down on 8/9 due to Low Air Pressure alarm and restarted later that day after repairing hose at TF-7B and restarting air compressor
    - Skimmer System shut down on 8/22 due to Low Air Pressure alarm and restarted on 8/25 after repairing hose at S-5A and restarting air compressor
- Approximately 2,211 GAL Product Recovered in September
    - Average Skimmer Product recovery rate for September was 73.7 GPD, or 98.3 GPD accounting for system downtime.
- Approximately 61,072 GAL Product Recovered Total since start-up
- 4,859 GAL Product from T-1401 disposed of offsite in September
    - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 9,919 GAL Product recovered in September
    - Average Product recovery rate for September was 330.6 GPD.
- 231,637 GAL Product Recovered Total since system start-up
- 13,990 GAL Product shipped off-site for disposal in September (see attached summary table)
- 231,637 GAL Product shipped off-site for disposal since system start-up as of the end of September 2017 (see attached summary table)
- 148,480 kWh Energy Consumption Total (as of 10/1/17) since system start-up
- 8,544 kWh Energy Consumption for September

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September 2017

- 0.861 kWh/GAL Average Energy Consumed per GAL of Product Recovered for September

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Review Ave. LNAPL Recovery System Monthly Summary
October 2017

Work completed in October 2017:

Week of Sun 10/1 – Sat 10/7

- O&M site visits on 10/3 and 10/7

Week of Sun 10/8 – Sat 10/14

- O&M site visits on 10/10 and 10/12
- 3rd Quarter 2017 Effluent discharge compliance sampling completed on 10/10
- Product Load-out from T-801 on 10/12
    - 4,838 GAL Product removed (offsite) according to Bill of Lading
- Replaced Oil Transfer Pump P-801 (Gear Pump) on 10/12

Week of Sun 10/15 – Sat 10/21

- O&M site visit on 10/20
- Switch active carbon vessel to LGAC-1102 on 10/20

Week of Sun 10/22 – Sat 10/28

- O&M site visits on 10/25 and 10/27
- TF-3D recovery event on 10/25
    - 5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 45.4 ppm Total PCB
- Product Load-out from T-801 on 10/27
    - 4,892 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 10/29 – Tue 10/31

- O&M site visit on 10/31
- TF-3D recovery event on 10/31
    - 4.5 GAL Product recovered with skimmer pump
    - No samples collected
- Monthly LNAPL monitoring well gauging event on 10/31

O&M Activities:

Week of Sun 10/1 – Sat 10/7

- Operating on TF Zones 4 and 5
    - SVE active on both zones
- Changed bag filters and cleaned basket strainer on 10/3
- Transferred chemicals to drums on 10/3
- Pulled skimmer pump from TF-3D to clean on 10/3
- Oil gear pump maintenance on 10/3
- SVE Blower maintenance on 10/3
- Cleaned strainers on 10/7
- Replaced FIT-801 flow transmitter with spool piece on 10/7
- Installed temporary cable to HMI on 10/7

Week of Sun 10/8 – Sat 10/14

- Operating on TF Zones 4 and 5
    - SVE active on both zones
- Changed bag filters on 10/10
- Backwashed carbon on 10/10
- Completed quarterly compliance sampling on 10/10
- Product load-out from T-801 on 10/12

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- Cleaned basket and y-strainers on 10/12
- Backwashed carbon on 10/12
- Transferred chemicals to drums on 10/12
- Replaced gear pump on 10/12

Week of Sun 10/15 – Sat 10/21

- Operating on TF Zones 4 and 5
    - SVE active on both zones
- Changed bag filters and cleaned basket strainer on 10/20
- Backwashed carbon on 10/20
- Switched active carbon vessel to LGAC-1102 on 10/20

Week of Sun 10/22 – Sat 10/28

- Operating on TF Zones 4 and 5
    - SVE active on both zones
- Changed bag filters and cleaned basket strainer on 10/25
- Removed y-strainer on 10/25
- Transferred chemicals to drums on 10/25
- Cleaned and reinstalled TF-3D skimmer on 10/25
- Transferred process water from totes on 10/25
- Product load-out from T-801 on 10/27
- Pick up 4 drums on 10/27

Week of Sun 10/29 – Tue 10/31

- Operating on TF Zones 4 and 5
    - SVE active on both zones
- Changed bag filters and cleaned basket strainer on 10/31
- Transferred chemicals to drums on 10/31
- Bleed air from skimmer wells on 10/31
- Cleaned FI-106 and FI-107 on 10/31
- Inspect TF Zone 4 & 5 wells on 10/31

General TF Treatment System Comments:

- TF System uptime over 95% in October (97.72%) with flow rates as high as 14 gpm. The new biocide (Redux-620) at higher dose continuing to be effective with no excessive bag filter or carbon bed fouling occurring. Recovered TF oil/water concentrations have increased by 15% to 2.24% for the month and is attributed to switching from TF zones 6 and 7 to zones 4 and 5 on October 23, 2017 which have initially shown significantly higher production rate flowing their OFF cycle. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for October was 660.96 Actual Run Hours out of 737.48 Available Hours, or 89.62%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).

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Review Ave. LNAPL Recovery System Monthly Summary
October 2017

  - TF System shut down for routine maintenance on 10/3, 10/10, 10/20, 10/25, 10/27 and 10/31
  - TF System shut down on 10/5 due to High Product Level alarm in T-702 OWS Day Tank caused by FIT-801 flow transmitter malfunction. System restarted on 10/7 following the removal of FIT-801.
  - TF System shut down on 10/11 due to High Product Level alarm in T-702 OWS Day Tank caused by gear pump failure. System restarted on 10/12 following gear pump replacement and Product Load-out.
- Approximately 9,773 GAL Product Recovered in October from Zones 4 and 5.
  - Average TF Product recovery rate for October was 315.3 GPD (gallons per calendar day), or 354.9 GPD (gallons per run day) accounting for system downtime.
- Approximately 184,053 GAL Product Recovered Total since system start-up
- 9,730 GAL Product from T-801 disposed of offsite in October.
  - 182,717 GAL Product from T-801 disposed of Total since start-up
- Approximately 238,056 GAL Effluent discharged in October
  - Average 7,679 GPD or 8,644 GPD considering downtime (per run day)
- 4,978,366 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.11%

Skimmer System Production Results:

- Skimmer System uptime for October was 558 Actual Run Hours out of 558 Available Hours, or 100%
  - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 1,464 GAL Product Recovered in October
  - Average Skimmer Product recovery rate for October was 47.2 GPD (calendar days), or 63 GPD (run days) accounting for system downtime.
- Approximately 62,536 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in October
  - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 11,237 GAL Product recovered in October
  - Average Product recovery rate for October was 362.5 GPD.
- 246,589 GAL Product Recovered Total since system start-up
- 9,730 GAL Product shipped off-site for disposal in October (see attached summary table)
- 241,367 GAL Product shipped off-site for disposal since system start-up as of the end of October 2017 (see attached summary table)
- 158,677 kWh Energy Consumption Total (as of 11/1/17) since system start-up
- 10,197 kWh Energy Consumption for October
- 0.908 kWh/GAL Average Energy Consumed per GAL of Product Recovered for October

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Review Ave. LNAPL Recovery System Monthly Summary
November 2017

Work completed in November 2017:

Week of Wed 11/1 – Sat 11/4

- No O&M site visits

Week of Sun 11/5 – Sat 11/11

- O&M site visit on 11/8
- Air Compressor serviced on 11/8 by D&D Electric Motors and Compressors
    - Minor maintenance
    - Replaced oil and air filters
    - Added oil

Week of Sun 11/12 – Sat 11/18

- O&M site visits on 11/14 and 11/15
- Chemical delivery on 11/14
- TF-3D recovery event on 11/14
    - 4 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 20.33 ppm Total PCB
- Collected sample from VGAC-INF for VOC (TO-15) analysis on 11/14
- Product Load-out from T-801 on 11/15
    - 4,857 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 11/19 – Sat 11/25

- O&M site visits on 11/20 and 11/22
- Carbon Change-out (LGAC & VGAC) on 11/22

Week of Sun 11/26 – Thu 11/30

- O&M site visit on 11/28
- Monthly LNAPL monitoring well gauging event on 11/28

O&M Activities:

Week of Wed 11/1 – Sat 11/4

- Operating on TF Zones 4 and 5
    - SVE active on all active zones

Week of Sun 11/5 – Sat 11/11

- Operating on TF Zones 1, 3, 4 and 5
    - SVE active on all active zones
- Cleared clog at flow meter on 11/8
- Changed bag filters and cleaned basket strainer on 11/8
- Transferred chemicals to drums on 11/8
- Completed viscosity test on 11/8

Week of Sun 11/12 – Sat 11/18

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on TF Zones 1, 3, 4 and 5
- Water removal from T-801 on 11/14
- Changed bag filters and cleaned basket strainer on 11/14
- Transferred chemicals to drums on 11/14
- Water removal from T-801 on 11/14
- Product load-out from T-801 on 11/15

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Review Ave. LNAPL Recovery System Monthly Summary
November 2017

Week of Sun 11/19 – Sat 11/25

- Operating on TF Zones 1, 3, 4 and 5
  - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 11/20
- Pumped water from totes on 11/20
- Drained water from carbon vessels on 11/20
- Carbon Change-out (LGAC & VGAC) on 11/22
  - Active LGAC Vessel = LGAC-1101
- Backwashed carbon on 11/22
- Transferred chemicals to drums on 11/22

Week of Sun 11/26 – Thu 11/30

- Operating on TF Zones 1, 2, 4 and 5
  - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 11/28
- Transferred chemicals to drums on 11/28
- Cleaned SVE pitot tube lines on 11/28
- Repaired ASG valve (SV-1401) on skimmer system on 11/28
- Added curbs for CAT-5 line and added shallow patch for trench on 11/28
- Built shelving for storage container on 11/28

General TF Treatment System Comments:

- TF System uptime over 95% in November with flow rates as high as 14 gpm. The new biocide (Redux-620) at higher dose continuing to be effective with no excessive bag filter or carbon bed fouling occurring. TF zones 4 & 5 were transitioned to TF zones 1 through 5 but just wells A&B in each zone per customer's direction on 11/8/17. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system approaching 100%. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for November was 630.39 Actual Run Hours out of 651.33 Available Hours, or 96.78%
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
  - TF System shut down on 11/7 due to air compressor shutdown and restarted on 11/8 following compressor maintenance
  - TF System shut down on 11/13 due to High Product Level alarm in T-801 and restarted on 11/14 following water removal
  - TF System shut down on 11/20 in preparation for Carbon change-out and restarted on 11/22 following carbon change-out
  - TF System shut down for routine maintenance on 11/28
- Approximately 6,760 GAL Product Recovered in November from Zones 1, 2, 3, 4 and 5.
  - Average TF Product recovery rate for November was 218.1 GPD (gallons per calendar day), or 257.4 GPD (gallons per run day) accounting for system downtime.
- Approximately 190,814 GAL Product Recovered Total since system start-up
- 4,857 GAL Product from T-801 disposed of offsite in November.

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  - 187,574 GAL Product from T-801 disposed of Total since start-up
- Approximately 169,720 GAL Effluent discharged in November
  - Average 5,475 GPD or 6,462 GPD considering downtime (per run day)
- 5,148,086 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 3.98%

Skimmer System Production Results:

- Skimmer System uptime for November was 532.41 Actual Run Hours out of 537.50 Available Hours, or 99.05%
  - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 1,125 GAL Product Recovered in November
  - Average Skimmer Product recovery rate for November was 36.3 GPD (calendar days), or 50.7 GPD (run days) accounting for system downtime.
- Approximately 66,661 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in November
  - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 7,885 GAL Product recovered in November
  - Average Product recovery rate for November was 254 GPD.
- 254,474 GAL Product Recovered Total since system start-up
- 4,875 GAL Product shipped off-site for disposal in November (see attached summary table)
- 246,224 GAL Product shipped off-site for disposal since system start-up as of the end of November 2017 (see attached summary table)
- 169,440 kWh Energy Consumption Total (as of 12/1/17) since system start-up
- 10,763 kWh Energy Consumption for November
- 1.365 kWh/GAL Average Energy Consumed per GAL of Product Recovered for November

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Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
December 2017

Work completed in December 2017:

Week of Fri 12/1 – Sat 12/9

- O&M site visit on 12/6
- Product Load-out from T-801 on 12/6
    - 4,636 GAL Product removed (offsite) according to Bill of Lading
- Groundwater sampling on 12/7

Week of Fri 12/10 – Sat 12/16

- O&M site visit on 12/12
- TF-3D recovery event on 12/12
    - 4.5 GAL Product recovered with skimmer pump
    - Sample collected for PCB analysis – 29.1 ppm Total PCB

Week of Fri 12/17 – Sat 12/23

- O&M site visit on 12/21

Week of Fri 12/24 – Sun 12/31

- O&M site visit on 12/26
- Monthly LNAPL monitoring well gauging event on 12/28

O&M Activities:

Week of Fri 12/1 – Sat 12/9

- Operating on TF Zones 1, 2, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 12/6
- Inspect TF Zone 3 line and S-4A and S-6A accessibility on 12/6
- Product load-out on 12/6
- Backwashed carbon on 12/6

Week of Fri 12/10 – Sat 12/16

- Operating on TF Zones 1, 2, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 12/12
- Backwashed carbon on 12/12
- Replaced vent on Skimmer System air scoop on 12/12

Week of Fri 12/17 – Sat 12/23

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 12/21
- Transferred chemicals to drums on 12/21

Week of Fri 12/24 – Sun 12/31

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 12/26
- Backwashed carbon on 12/26
- Transferred chemicals to drums on 12/26
- Added air vent to S-5A on 12/26

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Review Ave. LNAPL Recovery System Monthly Summary
December 2017

General TF Treatment System Comments:

- TF System uptime over 95% in December (97.72%) with flow rates below 10 gpm. Recovered TF oil/water concentrations have increased to over 6% for the month. TF zones switched from TF-1 through 5 A&B to TF Zones 1, 2 and 3 all pumps on 12/21/18. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system approaching 100%. Production remains fairly steady at 50 to 75 GPD when operational. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for December was 736.24 Actual Run Hours out of 736.24 Available Hours, or 100%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down briefly for Product Load-out on 12/6
    - TF System shut down for routine maintenance on 12/12, 12/21 and 12/26
- Approximately 6,144 GAL Product Recovered in December from Zones 1, 2, 3, 4 and 5.
    - Average TF Product recovery rate for December was 198.2 GPD (gallons per calendar day), or 200.3 GPD (gallons per run day) accounting for system downtime.
- Approximately 196,957 GAL Product Recovered Total since system start-up
- 4,636 GAL Product from T-801 disposed of offsite in December.
    - 192,210 GAL Product from T-801 disposed of Total since start-up
- Approximately 118,121 GAL Effluent discharged in December
    - Average 3,810 GPD or 3,850 GPD considering downtime (per run day)
- 5,266,207 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 5.20%

Skimmer System Production Results:

- Skimmer System uptime for December was 558 Actual Run Hours out of 558 Available Hours, or 100%
    - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 417 GAL Product Recovered in December
    - Average Skimmer Product recovery rate for December was 13.4 GPD (calendar days), or 17.9 GPD (run days) accounting for system downtime.
- Approximately 64,078 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in December
    - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 6,561 GAL Product recovered in December
    - Average Product recovery rate for December was 264 GPD.
- 261,035 GAL Product Recovered Total since system start-up
- 4,636 GAL Product shipped off-site for disposal in December (see attached summary table)
- 250,860 GAL Product shipped off-site for disposal since system start-up as of the end of December 2017 (see attached summary table)

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Review Ave. LNAPL Recovery System Monthly Summary
December 2017

- 180,270 kWh Energy Consumption Total (as of 1/1/18) since system start-up
- 10,830 kWh Energy Consumption for December
- 1.651 kWh/GAL Average Energy Consumed per GAL of Product Recovered for December

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2018

Work completed in January 2018:

Week of Mon 1/1 – Sat 1/6

- O&M site visits on 1/2 and 1/3
- Product Load-out from T-801 on 1/3
    - Originally scheduled for 1/2 but cancelled last minute and rescheduled
    - 4,633 GAL Product removed (offsite) according to Bill of Lading
- Sampled T-801 and T-1401 for PCBs on 3/13
    - 9.5 mg/kg Total PCBs in T-801
    - No PCBs detected in T-1401

Week of Sun 1/7 – Sat 1/13

- O&M site visit on 1/10

Week of Sun 1/14 – Sat 1/20

- O&M site visit on 1/19
- Sample LGAC Influent for SGT-HEM on 1/19
    - 164 mg/L SGT-HEM detected in LGAC Influent

Week of Sun 1/21 – Sat 1/27

- O&M site visits on 1/22 and 1/24
- Monthly LNAPL monitoring well gauging event on 1/22
- Product Load-out from T-801 on 1/22
    - 5,032 GAL Product removed (offsite) according to Bill of Lading
- Chemical delivery on 1/24

Week of Sun 1/28 – Wed 1/31

- O&M site visits on 1/30 and 1/31
- OWS cleanout by ACV Environment on 1/30
    - Disposal of 800 GAL of Non-Haz / Non-TSCA water from cleanout
- 1st Quarter 2018 Effluent discharge compliance sampling completed on 1/31
- Sample LGAC influent and midfluent for SGT-HEM and PCBs on 1/31

O&M Activities:

Week of Mon 1/1 – Sat 1/6

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active
- Changed bag filters and cleaned basket strainer on 1/2
- Repair TF-1A vault lid and inspect for leaks on 1/2
- Grind bolt off S-4A vault lid and inspect for leaks on 1/2
- Product load-out on 1/3
- Backwashed carbon on 1/3

Week of Sun 1/7 – Sat 1/13

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Transferred chemicals to drums on 1/10
- Changed bag filters and cleaned basket strainer on 1/10
- Backwashed carbon on 1/10
- RAD II TF well inspections/maintenance on 1/10
- Snow removal on 1/10

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Review Ave. LNAPL Recovery System Monthly Summary
January 2018

- Removed skimmer pump from TF-3D and cleaned on 1/10

Week of Sun 1/14 – Sat 1/20

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 1/19
- Backwashed carbon on 1/19
- Hose delivery on 1/19

Week of Sun 1/21 – Sat 1/27

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Product load-out from T-801 on 1/22
- Changed bag filters and cleaned basket strainer on 1/24
- Backwashed carbon on 1/24
- Transferred chemicals to drums on 1/24
- Inspected well vaults on 1/24

Week of Sun 1/28 – Wed 1/31

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all active zones
- Changed bag filters and cleaned basket strainer on 1/30
- Switch active LGAC vessel from LGAC-1101 to LGAC-1102 on 1/30
- Backwashed carbon on 1/30
- Pumped water from drum back into system on 1/30
- Quarterly sampling on 1/31

General TF Treatment System Comments:

- TF System uptime was 100% in with flow rates below 5 gpm. Recovered TF oil/water concentrations averaged just above 5% for the month. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system uptime approaching 100%. Production has fallen to below 10 GPD. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for January was 682.31 Actual Run Hours out of 682.31 Available Hours, or 100%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down for routine maintenance on 1/10, 1/19, 1/24 and 1/30
    - TF System shut down on 1/1 due to High Product Level alarm in T-801 and restarted on 1/3 following Product Load-out
    - TF System shut down on 1/21 due to High Product Level alarm in T-801 and restarted on 1/22 following Product Load-out
- Approximately 8,028 GAL Product Recovered in January from Zones 1, 2, 3, 4 and 5.
    - Average TF Product recovery rate for January was 259 GPD (gallons per calendar day), or 282.4 GPD (gallons per run day) accounting for system downtime.

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
January 2018

- Approximately 204,986 GAL Product Recovered Total since system start-up
- 9,665 GAL Product from T-801 disposed of offsite in January.
    - 201,875 GAL Product from T-801 disposed of Total since start-up
- Approximately 157,352 GAL Effluent discharged in January
    - Average 5,076 GPD or 5,535 GPD considering downtime (per run day)
- 5,423,559 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 5.10%

Skimmer System Production Results:

- Skimmer System uptime for January was 558 Actual Run Hours out of 558 Available Hours, or 100%
    - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 155 GAL Product Recovered in January
    - Average Skimmer Product recovery rate for January was 5.0 GPD (calendar days), or 6.6 GPD (run days) accounting for system downtime.
- Approximately 64,232 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in January
    - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 8,183 GAL Product recovered in January
    - Average Product recovery rate for January was 264 GPD.
- 269,218 GAL Product Recovered Total since system start-up
- 9,665 GAL Product shipped off-site for disposal in January (see attached summary table)
- 260,525 GAL Product shipped off-site for disposal since system start-up as of the end of January 2018 (see attached summary table)
- 191,863 kWh Energy Consumption Total (as of 2/1/18) since system start-up
- 11,593 kWh Energy Consumption for January
- 1.417 kWh/GAL Average Energy Consumed per GAL of Product Recovered for January

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2018

Work completed in February 2018:

Week of Thu 2/1 – Sat 2/3

- No O&M site visits

Week of Sun 2/4 – Sat 2/10

- O&M site visits on 2/6 and 2/8
- Insurance inspection on 2/6
- Waste Drum removal by ACV on 2/6
    - 1 Drum TSCA Regulated PCB Oil, 2 Drums Non TSCA/Non RCRA Hazardous Petroleum Impacted PPE and GWTP Spent Filters & Rags removed from site by ACV Environmental (Formerly Clean Venture/Cycle Chem).
- Product Load-out from T-801 on 2/8
    - 4,936 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 2/11 – Sat 2/17

- O&M site visits on 2/13 and 2/14

Week of Sun 2/18 – Sat 2/24

- O&M site visits on 2/20 and 2/23
- Monthly LNAPL monitoring well gauging event on 2/20
- Product Load-out from T-801 on 2/23
    - 4,936 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 2/25 – Wed 2/28

- O&M site visit on 2/27

O&M Activities:

Week of Thu 2/1 – Sat 2/3

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all zones

Week of Sun 2/4 – Sat 2/10

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all zones
- Changed bag filters and cleaned basket strainer on 2/6
- Transferred chemicals to drums on 2/6
- Inspected well vaults and replaced bolts as necessary on 2/6
- Inspected tank containment on 2/6
- Product load-out from T-801 on 2/8

Week of Sun 2/11 – Sat 2/17

- Operating on TF Zones 1, 2, 3, 4 and 5
    - SVE active on all zones
- Switched to TF Zone 3 only on 3/14
- Changed bag filters and cleaned basket strainer on 2/13
- Inspect TF-3 and TF-6 wells on 3/13
- Replaced hoses and caps on TF-3A, TF-3B and TF-3D on 2/13
- Restarted system on 2/14 after early morning shutdown
- Cleaned SVE blower filter on 2/14

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2018

Week of Sun 2/18 – Sat 2/24

- Operating on TF Zone 3
    - SVE active
- Well gauging on 2/20
- Water removal from T-1401 on 2/20
- Changed bag filters and cleaned basket strainer on 2/20
- Replace suction tubing and foot valve on CMI pump on 2/20
- Replaced hoses on TF-3C and TF-6C on 2/20
- Product load-out from T-801 on 2/23

Week of Sun 2/25 – Wed 2/28

- Changed bag filters and cleaned basket strainer on 2/27
- Backwashed carbon on 2/27
- Transferred chemicals to drums on 2/27
- Skimmer well/vault inspection on 2/27

General TF Treatment System Comments:

- TF System uptime approached 100% in February with flow rates approaching 5 gpm. Recovered TF oil/water concentrations averaged approximately 4-1/2% for the month. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system was 100%. Production edged up from January to over 12 GPD upon adding more discharge header air vents at key recovery well vaults (high points). Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for February was 622.96 Actual Run Hours out of 630.83 Available Hours, or 98.75%
    - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
    - TF System shut down for routine maintenance on 2/6, 2/13, 2/20 and 2/27
    - TF System shut down on 2/14 due to high Product Level in Day Tank caused by high Product production vs Tube Skimmer capacity. System restarted later on 2/14 after reducing number of active TF zones.
    - TF System shut down on 2/21 and restarted following Product load-out on 2/23
- Approximately 9,504 GAL Product Recovered in February from Zones 1, 2, 3, 4 and 5.
    - Average TF Product recovery rate for February was 306.6 GPD (gallons per calendar day), or 366.1 GPD (gallons per run day) accounting for system downtime.
- Approximately 214,489 GAL Product Recovered Total since system start-up
- 9,872 GAL Product from T-801 disposed of offsite in February.
    - 211,747 GAL Product from T-801 disposed of Total since start-up
- Approximately 209,567 GAL Effluent discharged in February
    - Average 6,760 GPD (calendar days) or 8,074 GPD (run days) considering downtime
- 5,633,126 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.53%

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
February 2018

Skimmer System Production Results:

- Skimmer System uptime for February was 504 Actual Run Hours out of 504 Available Hours, or 100%
    - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 253 GAL Product Recovered in February
    - Average Skimmer Product recovery rate for February was 8.2 GPD (calendar days), or 12.1 GPD (run days) accounting for system downtime.
- Approximately 64,485 GAL Product Recovered Total since start-up
- 0 GAL Product from T-1401 disposed of offsite in February
    - 58,650 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 9,757 GAL Product recovered in February
    - Average Product recovery rate for February was 314.7 GPD.
- 278,975 GAL Product Recovered Total since system start-up
- 9,872 GAL Product shipped off-site for disposal in February (see attached summary table)
- 270,397 GAL Product shipped off-site for disposal since system start-up as of the end of February 2018 (see attached summary table)
- 200,983 kWh Energy Consumption Total (as of 3/1/18) since system start-up
- 9,120 kWh Energy Consumption for February
- 0.935 kWh/GAL Average Energy Consumed per GAL of Product Recovered for February

Prepared By: VMW 4/9/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2018

Work completed in March 2018:

Week of Thu 3/1 – Sat 3/3

- No O&M site visits

Week of Sun 3/4 – Sat 3/10

- O&M site visits on 3/6 and 3/9
- Chemical delivery on 3/6
- Product Load-out from T-1401 on 3/9
    - 4,964 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 3/11 – Sat 3/17

- O&M site visit on 3/13
- Sampled T-801 and T-1401 for PCBs on 3/13
    - 4.84 mg/kg Total PCBs in T-801
    - 6.75 mg/kg Total PCBs in T-1401
- Product Load-out from T-801 on 3/13
    - 4,857 GAL Product removed (offsite) according to Bill of Lading

Week of Sun 3/18 – Sat 3/24

- O&M site visit on 3/20

Week of Sun 3/25 – Sat 3/31

- O&M site visits on 3/27, 3/30 and 3/31
- Monthly LNAPL monitoring well gauging event on 3/28
- Product Load-out from T-801 on 3/30
    - 4,857 GAL Product removed (offsite) according to Bill of Lading

O&M Activities:

Week of Thu 3/1 – Sat 3/3

- No O&M site visits
- Operating on TF Zone 3
    - SVE active

Week of Sun 3/4 – Sat 3/10

- Operating on TF Zone 3
    - SVE active
- Changed bag filters and cleaned basket strainer on 3/6
- Transferred chemicals to drums on 3/6
- Backwashed carbon on 3/6
- Skimmer system inspections on 3/6
- Pumped down totes on 3/6
- Product load-out from T-1401 on 3/9

Week of Sun 3/11 – Sat 3/17

- Operating on TF Zones 1 and 2
    - SVE active
- Product load-out from T-801 on 3/13
- Changed bag filters and cleaned basket strainer on 3/13
- Inspect TF Zones 1 and 2 on 3/13
- Replace hoses at TF-2C on 3/13

Prepared By: VMW 4/5/18
Checked By: TCK

Review Ave. LNAPL Recovery System Monthly Summary
March 2018

Week of Sun 3/18 – Sat 3/24

- Operating on TF Zones 1 and 2
  - SVE active
- Changed bag filters and cleaned basket strainer on 3/20
- Backwashed carbon on 3/20
- Transferred chemicals to drums on 3/20
- Replaced hoses at TF-2B on 3/20

Week of Sun 3/25 – Sat 3/31

- Operating on TF Zones 1 and 2
  - SVE active
- Changed bag filters and cleaned basket strainer on 3/27
- Backwashed carbon on 3/27
- Blow down carbon in LGAC-1 (not active) on 3/27
- Pumped backwash totes on 3/27
- Inspect TF Zone 1 on 3/27
- Pull pump and replace hoses on TF-1B on 3/27
- Pumped water from T-801 on 3/30
- Product load-out from T-801 on 3/30
- Blow down carbon in LGAC-2 on 3/31
- Well gauging on 3/28

General TF Treatment System Comments:

- TF System uptime was 99.2% in March (97.72%) with flow rates just below 4 gpm. TF oil/water concentrations averaged just below 5% as we focused on TF Zones 1 & 2. SVE continues to be utilized to enhance product recovery rates.

General Skimmer System Comments:

- Skimmer system uptime was 100% for the month. Production increased to over 50 GPD for the month. Operation remains at 18 hr/day in an attempt to minimize entrained air and possible air locking of remote skimmer zones.

VER/TF System Production Results:

- TF System uptime for March was 627.27 Actual Run Hours out of 632.30 Available Hours, or 99.20%
  - Available Hours = Scheduled Daily Operating Hours – scheduled maintenance time – product removal time – force majeure time (power outage, weather, etc.).
  - TF System shut down due to High Product Level alarm in T-801 on 3/10 and remained offline until Product Load-out on 3/13.
  - TF System shut down due to High Product Level alarm in T-801 on 3/30 and remained offline through the end of the month due to Carbon Change-out scheduled for 4/2.
- Approximately 7,699 GAL Product Recovered in March from Zones 1, 2 and 3.
  - Average TF Product recovery rate for March was 248.4 GPD (calendar days), or 294.6 GPD (run days) accounting for system downtime.
- Approximately 222,189 GAL Product Recovered Total since system start-up
- 9,714 GAL Product from T-801 disposed of offsite in March.
  - 221,461 GAL Product from T-801 disposed of Total since start-up
- Approximately 154,790 GAL Effluent discharged in March

Prepared By: VMW 4/5/18
Checked By: TCK

  - Average 4,993 GPD or 5,922 GPD considering downtime
- 5,787,916 GAL Effluent discharged Total since start-up.
- Recovered Oil/Extracted Groundwater Ratio = 4.97%

Skimmer System Production Results:

- Skimmer System uptime for March was 558 Actual Run Hours out of 558 Available Hours, or 100%
  - Skimmer system running @ 18 hrs/day schedule (6AM – 12AM)
- Approximately 1,681 GAL Product Recovered in March
  - Average Skimmer Product recovery rate for March was 54.2 GPD (calendar days).
- Approximately 66,167 GAL Product Recovered Total since start-up
- 4,964 GAL Product from T-1401 disposed of offsite in March
  - 63,614 GAL Product from T-1401 disposed of Total since start-up

Total Product Recovery System Results:

- 9,380 GAL Product recovered in March
  - Average Product recovery rate for March was 302.6 GPD.
- 288,355 GAL Product Recovered Total since system start-up
- 14,678 GAL Product shipped off-site for disposal in March (see attached summary table)
- 285,075 GAL Product shipped off-site for disposal since system start-up as of the end of March 2018 (see attached summary table)
- 211,170 kWh Energy Consumption Total (as of 4/1/18) since system start-up
- 10,187 kWh Energy Consumption for March
- 1.086 kWh/GAL Average Energy Consumed per GAL of Product Recovered for March

Prepared By: VMW 4/5/18
Checked By: TCK

APPENDIX B

Annual Inspection Report

Appendix H – Site Inspection Form – RAD II – Annual

I. Site Information		
Site Name:	Review Avenue Development Site II (RAD II)	
NYSDEC Site Number:	BCP #C241005	
Site Address:	37-30 Review Avenue, Long Island City, NY	
Block/Lot:	Block 312; Lot 69	
Date of Inspection:	11/18/16	
Type of Inspection:	Regular ☒	Emergency ☐
Inspected By:	Brent O'Dell	

II. General Information	
Current Site Use: (Warehouse, Parking Lot, Vacant, etc.):	Commercial, Flex Space, Temporary Storage/Parking

Summary of Previous Inspections:

- Fence needs repairs around perimeter of RAD II between phoenix and RAD II
- Minor cracks in pavement area at the entrance of RAD II that needs to be sealed
- Some trailers not supported on wood chalks
- Treatment area in good shape
- Make safety equipment accessible within blower room
- Make space for storage. Spotted an additional Sea Box for storage.

III. Weather Conditions			
Time	**Temperature**	**Condition (Sunny, Overcast, Precipitation, etc.)**	**Wind (Light, Moderate, Heavy, etc.)**
1100	50s	Sunny	Light

IV. On-Site Documents & Records (Stored at RAD II)				
Description	**Readily available**	**Up to date**	**N/A**	**Remarks**
O&M Documents:				
O&M Manual	X			Update for Backwash
As-built drawings	X	yes		
Maintenance logs	X	yes		
Site Health & Safety Plan:				
Contingency Plan/Emergency response plan	X			SPCC on Site add to SMP
O&M and OSHA Training Records:				
O&M and OSHA Training Records	X	yes		Need to update and keep onsite
Permits and Service Agreements:				
NYSDEC Air Permit Exemption	X	X		
NYSDEC Petroleum Bulk Storage Certification	X	X		
NYSDEC Erosion and Sediment Control Exemption	X	X		
NYSDEC Tidal Wetlands Jurisdiction Determination Letter	X	X		
NYCDEP Groundwater Discharge LOA	X	X		
NYCDEP Air Permit Informational Notice	X	X		
NYCDEP Dewatering Scheme and Indemnity Agreement	X	X		
NYCDEP Bureau of Customer Service Groundwater Discharge Permit	X	X		
NYCDOB Certificates of Occupancy	X	X		
Other:				SPCC add to SMP

V. Site Conditions					
Description		**Inspected**			**Comments, Field Observations and Measurements (Dimensions and Depth of Disturbance of Cap), Reference Photo #**
		Yes	**No**	**N/A**	
Engineering Control: Pavement Cover System					
a.	Asphalt Condition (Check for cracking, spalling, and potholes)	X			Good in treatment area Minor cracking near entrance Sealant needed. Use of wood chalks under trailers still required.

b.	Differential Settlement (Check for settlement or subsidence)	X			Settlement under VPGAC. Evidence of point loads without proper support beneath bus engine in back near RR tracks
c.	Disturbance (Check for disturbance e.g. construction or utility repair, etc.)	X			
Engineering Control: LNAPL Recovery System					
a.	Recovery Well Vaults and Pumps (Check for leaks, operation, vault security, etc.)	X			Inspected per OMM. CSS Office. See Attachment A.
b.	LNAPL Storage Tanks (Check capacity, inspect for leaks, corrosion, etc.)	X			
c.	LNAPL Recovery / Groundwater Treatment System (Check for operation, leaks, up-to-date maintenance, etc.)	X			Inspected per OMM.
d.	Equipment Enclosures (Check emergency lights, signs, fire extinguishers, eyewash, condition of doors/exterior, etc.)	X			
	Sea Box • First Aid Kit • Uneven floors and coating and containment of OWS • KO tank run needs sprucing up. • Fence between RAD II and phoenix in the back needs repair. • Accessibility to eye wash and safety equipment needs to be maintained • Spill kit need to be replenished				
Other:					
a.	Monitoring Wells (Check if secured, inspect condition of well, well cap, etc.)	X			Conduct inspections Monthly. Bolts for lids consistently require replacement. See Attachment B.

b.	Security (Check fence, gates, locks, etc.)	X			Consider Jersey barriers installation along west side fence Fence repaired or use mafia blocks with fencing on top.
c.	Site Use (Has site use changed? If so, is it still used for restricted use as specified in the SMP?)	X			Still used for restrictive use.

VI. Institutional Controls

Status of Institutional Controls:

Description	Yes	No	N/A	Remarks
Site conditions imply Institutional Controls not properly implemented		X		
Site conditions imply Institutional Controls not being fully enforced		X		
Permits and records are onsite and up-to-date	X			
Violations (if any) have been reported			X	
Previous suggested correction(s) have been made			X	

Other problems or suggestions:

VII. Groundwater and LNAPL Elevations

Monthly LNAPL Thickness Measurements: SEE ATTACHED

Well ID Location	Date	Time	Depth from TOC to			Measured by:	Remarks: Calibration data found on Instrument Calibration Record
			Product (ft)	Water (ft)	Bottom (ft)		
AML-01							
AML-03							
AML-06							
GAL-01RR							
GAL-02R							

GAL-03R							
GAL-04R							
GAL-05R							
GAL-06							
GAL-07							
GAL-08							
GAL-09							
GAL-16R							
GAL-29							
GAL-30							
GAL-31R							
GAGW-04							

Semi-Annual Groundwater Elevation Measurements: SEE ATTACHED

Well ID Location	Date	Time	Depth from TOC to		Measured by:	Sampled? (Y/N)	Remarks: Calibration data found on Instrument Calibration Record
			Water (ft)	Bottom (ft)			
GAGW-02							
AMGW-05R							
GAGW-6I							

Semi-Annual LNAPL Thickness Measurements
(6 Single Phase LNAPL Recovery Wells from RAD I & RAD II): SEE ATTACHED

Well ID Location	Date	Time	Depth from TOC to			Measured by:	Remarks: Calibration data found on Instrument Calibration Record
			Product (ft)	Water (ft)	Bottom (ft)		

IX. Overall Observations on Remedy Implementation & Site Conditions

- Fence needs repairs around perimeter of RAD II between phoenix and RAD II
- Minor cracks in pavement area at the entrance of RAD II that needs to be sealed
- Some trailers not supported on wood chalks
- Treatment area pavement beneath VPGAC needs repair
- Make better use of additional Sea Box for storage.

November 2017 LNAPL Monitoring Well Gauging Log

Well ID	TOC	Ground	11/28/2017				Nov 2015 to November 2017	October to November Change	August to November Change
			Depth to top of product	Depth to top of water	Product Thickness	Equivalent Water Level Elevation			
Include on Product Thickness Map									
AML-01	15.31	15.67	13.77	16.17	2.40	1.30	-0.48	0.10	-0.24
AML-04	20.00	20.59	18.38	20.4	2.02	1.42	-0.76	0.13	-0.03
GAL-10	23.21	23.75	21.51	22.97	1.46	1.55	-0.38	0.06	0.41
GAL-11R	18.02	18.39	16.3	18.98	2.68	1.45	-0.14	-0.03	0.38
GAL-13	17.74	18.09							
GAL-18R	21.31	21.93	19.71	21.86	2.15	1.39	1.08	0.07	0.47
GAL-21	17.83	17.83	15.8	19.19	3.39	1.69	-1.20	0.01	0.33
GAL-22	21.11	21.27	19.21	20.94	1.73	1.73	-0.49	0.10	0.42
GAL-23	17.55	17.94	15.79	18.95	3.16	1.44	-0.45	0.56	0.78
GAL-24	18.38	18.38	16.2	18.08	1.88	1.99	-0.47	0.07	0.49
MW-4RR	13.86	14.63	12.65	17.2	4.55	0.75	-0.74	1.63	-0.15
GAGW-04	25.53	25.85	23.53	26.05	2.52	1.74		0.85	1.25
AML-02	20.62	21.46	19.2	22.5	3.30	1.09	0.29	-0.09	0.32
AML-03	18.66	19.06	16.98	21.26	4.28	1.25	-0.94	-0.05	-0.20
AML-06	20.96	21.79	19.66	24.08	4.42	0.86	-1.56	0.03	0.50
GAL-01RR	21.36	22.09	21.95	24.05	2.10	-0.80	-3.15	-2.18	-1.99
GAL-02R	16.22	16.72	14.7	18.6	3.90	1.13		-1.23	-1.10
GAL-03R	22.88	23.61	21.55	25.55	4.00	0.93	-1.20	-0.13	0.25
GAL-04R	17.13	17.67	15.88	21.7	5.82	0.67	-0.01	1.96	1.22
GAL-05R	23.53	24.32	22.21	28.11	5.90	0.73	0.69	2.01	3.43
GAL-06	25.66	26.05	Dry	Dry					
GAL-07	19.19	19.64	17.64	21.7	4.06	1.14	-1.60	0.03	-1.29
GAL-08	26.30	26.70	17.69	17.8	0.11	8.60	-0.49	-1.10	-1.04
GAL-09	26.00	26.66	24.43	27.9	3.47	1.22	0.43	0.09	1.44
GAL-16R	16.29	17.09	15.3	20.33	5.03	0.49		0.63	0.48
GAL-29	25.90	26.24	24.17	27.55	3.38	1.39	-0.71	0.00	0.23
GAL-30	26.65	27.31	25.16	27.71	2.55	1.24	-0.62	-0.18	-0.07
GAL-31	24.08	24.65	22.56	25.12	2.56	1.26	-1.08	-0.15	0.01
VER-2	16.85	17.32	15.33	19.76	4.43	1.08	-3.44	0.18	-0.19
GAL-12	16.62	17.31							
MW-4R	15.01	15.31							
MW-11	27.22	27.42							
MW-2	16.42	16.66	No Product	14.87	0.00	1.55	0.00	0.00	0.00
PSMW-2	17.33	17.75							

APPENDIX C

Discharge Compliance Reports

de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
(610) 435-8459 FAX

June 29, 2017

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
2nd Quarter 2017 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 2nd Quarter 2017 Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 1st Quarter 2016:

- Approximately 807,974 gallons of water have been discharged to the sewer system during this reporting period.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 2nd Quarter 2017
CC: John Grathwol, NYDEC (Electronic Mail Only)
Brent O'Dell, Amec FW (Electronic Mail Only)

File: 3216 / 2nd Qrt Compliance Report 2017

June 30, 2017

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **2Q 2017 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, here with submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 13, 2016.

Amec Foster Wheeler collected the 2Q 2017 discharge compliance samples on May 22nd, 2017. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The updated analytical data collected for the 2nd quarter 2017 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 3,705,464 gallons as of the May 22nd sampling event and 807,974 gallons since the last quarterly sampling event.

1. The collection of the 2Q on May 22 was performed in part to confirm the 1Q 2017 discharge compliance sampling event and the xylenes (total) result that exceeded the monthly limit. To date the xylene (total) results for the 6 quarterly samples collected since the start of the system (December 2015) have been 3.2 ug/l, 2.7 ug/l, <1 ug/l “U”, 0.45ug/l “J”, 33.1 ug/l (1Q Result), and <1 ug/l “U”. Based on these results we believe the 1Q result to be an anomaly and not representative of system discharge.

Going forward we plan to collect compliance samples early in the quarter to allow for confirmation samples to be collected if monthly criteria is exceeded.

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
amecfw.com

June 30, 2016
Sean Hulbert, NYCDEP
2Q 2017 Effluent Discharge Compliance Report

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				2Q 2017		2Q 2017	
Sample Date:				5/22/2017		5/22/2017	
Lab Sample ID:				JC43835-1/1R		JC43835-2	
Non-polar material[1]	mg/L	50	NL	5.3	U	-	
pH[2]	SUs	5 - 12	NL	7.47		-	
Temperature[2]	ºF	< 150	NL	62.24		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.01	U	-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	1	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		1	U
Chloroform	µg/L	NL	NL	-		1	U
1,4-Dichlorobenzene	µg/L	NL	NL	1	U	-	
Ethylbenzene	µg/L	380	142	1	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1	U	-	
Napthalene	µg/L	47	19	-		1	U
Phenol	µg/L	NL	NL	-		1	U
Tetrachloroethylene (Perc)	µg/L	20	NL	1	U	-	
Toluene	µg/L	74	28	1	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		1	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		1	U
Xylenes (Total)	µg/L	74	28	1	U	-	
PCBs (Total)	µg/L	1	NL	-		0.056	U
Total Suspended Solids (TSS)	mg/L	350	NL	5.2		-	
CBOD	mg/L	NL	NL	-		8.6	
Chloride	mg/L	NL	NL	193		-	
Total Nitrogen	mg/L	NL	NL	-		0.49	
Total Solids	mg/L	NL	NL	1010		-	

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
H: Sample was prepped or analyzed beyond the specified holding time
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated RL.
F1: MS and/or MSD Recovery is outside acceptance limits.

e-Hardcopy 2.0
Automated Report

Technical Report for

AMEC Environment & Infrastructure, Inc.

Review Avenue, Long Island City, NY

Project # 3480160502 / CO12700305

SGS Accutest Job Number: JC43835

Sampling Date: 05/22/17

Report to:

AMEC Foster Wheeler
200 American Metro Boulevard
Suite 113
Hamilton, NJ 08619

ATTN: Tim Kessler

Total number of pages in report: 24

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Daniel Axelrod 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Table of Contents

Sample Summary

AMEC Environment & Infrastructure, Inc.

Job No: JC43835

Review Avenue, Long Island City, NY
Project No: Project # 3480160502 / CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC43835-1	05/22/17	10:45	DB	05/22/17	AQ	Effluent	RA-EFF-G
JC43835-1R	05/22/17	10:45	DB	05/22/17	AQ	Effluent	RA-EFF-G
JC43835-2	05/22/17	11:00	DB	05/22/17	AQ	Effluent	RA-EFF-C

Summary of Hits

Job Number: JC43835
Account: AMEC Environment & Infrastructure, Inc.
Project: Review Avenue, Long Island City, NY
Collected: 05/22/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC43835-1	**RA-EFF-G**					
Chloride		193	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		1010	10		mg/l	SM2540 B-11
Solids, Total Suspended		5.2	4.0		mg/l	SM2540 D-11
pH [a]		7.07			su	SM4500H+ B-11
JC43835-1R	**RA-EFF-G**					
No hits reported in this sample.						
JC43835-2	**RA-EFF-C**					
Carbonaceous Bod, 5 Day		8.6	5.0		mg/l	SM5210 B-11
Nitrogen, Total [b]		0.49	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		0.43	0.20		mg/l	EPA 351.2/LACHAT

(a) Sample received out of holding time for pH analysis.
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC43835-1	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T224423.D	1	05/26/17 13:54	SC	n/a	n/a	VT9219
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.23	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.24	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.82	ug/l	
108-88-3	Toluene	ND	1.0	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	114%		72-125%
2037-26-5	Toluene-D8 (SUR)	92%		78-119%
460-00-4	4-Bromofluorobenzene (SUR)	108%		74-115%
1868-53-7	Dibromofluoromethane (S)	118%		79-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC43835-1	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [2]	EPA 200.7 [4]
Copper	< 10	10	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [2]	EPA 200.7 [4]
Lead	< 3.0	3.0	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [2]	EPA 200.7 [4]
Mercury	< 0.20	0.20	ug/l	1	05/24/17	05/24/17	JPM	EPA 245.1 [1]	EPA 245.1 [3]
Nickel	< 10	10	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [2]	EPA 200.7 [4]
Zinc	< 20	20	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [2]	EPA 200.7 [4]

(1) Instrument QC Batch: MA42094
(2) Instrument QC Batch: MA42116
(3) Prep QC Batch: MP1012
(4) Prep QC Batch: MP1022

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC43835-1	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	193	2.0	mg/l	1	05/27/17 01:45	TG	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	05/22/17 23:09	AT	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	06/02/17 16:06	AC	SW846 1010A/ASTM D93
Solids, Total	1010	10	mg/l	1	05/23/17 21:44	SA	SM2540 B-11
Solids, Total Suspended	5.2	4.0	mg/l	1	05/24/17 17:05	TZW	SM2540 D-11
pH [a]	7.07		su	1	05/22/17 15:07	SUB	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC43835-1R	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	< 5.3	5.3	mg/l	1	06/01/17 22:50	CB	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC43835-2	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T224424.D	1	05/26/17 14:24	SC	n/a	n/a	VT9219
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.31	ug/l	
67-66-3	Chloroform	ND	1.0	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	115%		72-125%
2037-26-5	Toluene-D8 (SUR)	90%		78-119%
460-00-4	4-Bromofluorobenzene (SUR)	112%		74-115%
1868-53-7	Dibromofluoromethane (S)	116%		79-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC43835-2	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
Method:	EPA 625 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6P38174.D	1	05/27/17 08:09	CS	05/25/17	OP3184	E6P1755
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	2.0	0.39	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		10-110%
4165-62-2	Phenol-d5	37%		10-110%
118-79-6	2,4,6-Tribromophenol	114%		35-147%
4165-60-0	Nitrobenzene-d5	94%		32-132%
321-60-8	2-Fluorobiphenyl	86%		40-117%
1718-51-0	Terphenyl-d14	105%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC43835-2	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX210419.D	1	05/30/17 20:58	RK	05/26/17	OP3182	GXX6031
Run #2							

	Initial Volume	Final Volume
Run #1	900 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.056	0.038	ug/l	
11104-28-2	Aroclor 1221	ND	0.056	0.032	ug/l	
11141-16-5	Aroclor 1232	ND	0.056	0.022	ug/l	
53469-21-9	Aroclor 1242	ND	0.056	0.030	ug/l	
12672-29-6	Aroclor 1248	ND	0.056	0.028	ug/l	
11097-69-1	Aroclor 1254	ND	0.056	0.038	ug/l	
11096-82-5	Aroclor 1260	ND	0.056	0.030	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	45%		10-156%
877-09-8	Tetrachloro-m-xylene	53%		10-156%
2051-24-3	Decachlorobiphenyl	18%		10-143%
2051-24-3	Decachlorobiphenyl	24%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC43835-2	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	05/24/17	05/26/17	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA42116
(2) Prep QC Batch: MP1022

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC43835-2	**Date Sampled:**	05/22/17
Matrix:	AQ - Effluent	**Date Received:**	05/22/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	8.6	5.0	mg/l	1	05/22/17 21:56	SA	SM5210 B-11
Nitrogen, Nitrate [a]	< 0.11	0.11	mg/l	1	05/30/17 16:33	BM	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	05/30/17 16:33	BM	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	05/22/17 22:22	AT	SM4500NO2 B-11
Nitrogen, Total [b]	0.49	0.30	mg/l	1	06/02/17 10:35	BM	SM4500 A-11
Nitrogen, Total Kjeldahl	0.43	0.20	mg/l	1	06/02/17 10:35	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC43835
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Nitrogen, Total		**SM4500 A-11**	AQ	Accutest is not certified for this parameter. [a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

ACCUTEST LABORATORIES

GW

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 2

E COMP

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #: DK4_2016_911
Accutest Job #: JC43835

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City State Zip: Hamilton, NJ 08619
Project Contact / E-mail: Vincent.Whelan@amecfw.com
Phone # / Fax #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Sampler(s) Name(s) / Phone #: D. Berkowitz 848 702 4342

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Flashpoint (Ignitability) - SW846 1010A	Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7; Mercury (Hg) - EPA 245.1	SGT HEM - EPA 1664A SGT	pH (SM4500H+ B-11); Total Solids (SM2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C)	Total Suspended Solids - SM2540 D-11	VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624	Hexavalent Chromium (SM3500 Cr B)	Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625	CBOD5 - SM5210 B-11	Metals (Cadmium Only) - EPA 200.7	PCBs, Low Level (P608PCBLL) - EPA 608	LAB USE ONLY
1	RA-EFF-G		5/23/17	1045	DB	GW	11	5		1						X	X	H	X	X	X	X					E42
	RA-EFF-C			1100	DB	GW	7			1	1												X	X	X	X	A11
	RA-VOC-C1			0730	DB	GW	3	3																			C7
2	RA-VOC-C2			0830	DB	GW	3	3																			V1066
	RA-VOC-C3			0930	DB	GW	3	3																			L19
	RA-VOC-C4		↓	1030	DB	GW	3	3																			COMP

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

~~INITIAL ASESSMENT~~ SNDS
~~LABEL VERIFICATION~~ JK

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. HOLD SGT-HEM SAMPLE

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler: 1 [signature]	Date Time: 5/24/17 1425	Received By: 1 [signature]	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ] On Ice [ ] Cooler Temp. 4.5°C IGT

JC43835: Chain of Custody
Page 1 of 4

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

PAGE 2 OF 2

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
Accutest Quote # DK4_2016_911
Accutest Job # JC43835

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact / E-mail: Vincent.Whelan@amecfw.com
Phone # / Fax #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Sampler(s) Name(s) / Phone #: D. Berkowitz 8487024342

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)
Company Name
Street Address
City State Zip
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		5/22/17	1645	DM	GW	11	5		1									
	RA-EFF-C			1100	DB	GW	7			1	1					X		X	
	RA-VOC-C1			0730	DB	GW	3	3									X		
2	RA-VOC-C2			0830	DB	GW	3	3									X		
	RA-VOC-C3			0930	DB	GW	3	3									X		
	RA-VOC-C4			1030	DB	GW	3	3									X		

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB-Field Blank, EB-Equipment Blank, RB- Rinse Blank, TB-Trip Blank

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. HOLD SGT-HEM SAMPLE

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	5/22/17 1925	1 [signature]	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ] On Ice [ ] Cooler Temp. 4.5 °C IR7

JC43835: Chain of Custody
Page 2 of 4

SGS Accutest Sample Receipt Summary

Job Number: JC43835 **Client:** _____ **Project:** _____

Date / Time Received: 5/22/2017 2:25:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (4.5);

Cooler Temps (Corrected) °C: Cooler 1: (5.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

JC43835: Chain of Custody
Page 3 of 4

Job Change Order: JC43835

Requested Date:	5/26/2017	**Received Date:**	5/22/2017
Account Name:	AMEC Environment & Infrastructu	**Due Date:**	6/5/2017
Project Description:	Review Avenue, Long Island City, NY	**Deliverable:**	NYASPA
CSR:	daniela	**TAT (Days):**	14

==========

Sample #: JC43835-1

Dept:

TAT: 14

RA-EFF-G

Change:
Please activate for PHC1664.

==========

Above Changes Per: Tim Kessler **Date/Time:** 5/26/2017 8:22:00 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

JC43835: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AMEC Environment & Infrastructure, Inc.

Job No: JC43835

Review Avenue, Long Island City, NY
Project No: Project # 3480160502 / CO12700305

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC43835-1 RA-EFF-G	Collected: 22-MAY-17 10:45 By: DB		Received: 22-MAY-17 By: AS			
JC43835-1	SM4500H+ B-11	22-MAY-17 15:07	SUB			PH
JC43835-1	SM3500CR B-11	22-MAY-17 23:09	AT			XCRSM
JC43835-1	SM2540 B-11	23-MAY-17 21:44	SA			TS
JC43835-1	EPA 245.1	24-MAY-17 15:20	JPM	24-MAY-17	JPM	HG
JC43835-1	SM2540 D-11	24-MAY-17 17:05	TZW			TSS
JC43835-1	EPA 624	26-MAY-17 13:54	SC			V624PCE, VMS+ 14DCB, VMS+ BENZ, VMS+ ETHBNZ, VMS+ MTBE, VMS+ TOLUENE, VMS+ XYL
JC43835-1	EPA 200.7	26-MAY-17 15:48	ND	24-MAY-17	DP	CD, CU, NI, PB, ZN
JC43835-1	EPA 300/SW846 9056A	27-MAY-17 01:45	TG	26-MAY-17	TG	CHL
JC43835-1	SW846 1010A/ASTM D93	02-JUN-17 16:06	AC			IGN
JC43835-2 RA-EFF-C	Collected: 22-MAY-17 11:00 By: DB		Received: 22-MAY-17 By: AS			
JC43835-2	SM5210 B-11	22-MAY-17 21:56	SA	22-MAY-17	YR	CBOD5
JC43835-2	SM4500NO2 B-11	22-MAY-17 22:22	AT			NO2
JC43835-2	EPA 624	26-MAY-17 14:24	SC			V624CHLFRM, VMS+ CTC, VMS+ TCA
JC43835-2	EPA 200.7	26-MAY-17 15:51	ND	24-MAY-17	DP	CD
JC43835-2	EPA 625	27-MAY-17 08:09	CS	25-MAY-17	YB	AB625SL2
JC43835-2	EPA353.2/SM4500NO2B	30-MAY-17 16:33	BM			NO3O
JC43835-2	EPA 353.2/LACHAT	30-MAY-17 16:33	BM	30-MAY-17	BM	NO32
JC43835-2	EPA 608	30-MAY-17 20:58	RK	26-MAY-17	RF	P608PCBLL
JC43835-2	SM4500 A-11	02-JUN-17 10:35	BM			TNIT
JC43835-2	EPA 351.2/LACHAT	02-JUN-17 10:35	BM	30-MAY-17	MP	TKN
JC43835-1R RA-EFF-G	Collected: 22-MAY-17 10:45 By: DB		Received: 22-MAY-17 By: AS			
JC43835-1R	EPA 1664A	01-JUN-17 22:50	CB	01-JUN-17	TT	PHC1664

SGS Accutest Internal Chain of Custody

Job Number: JC43835
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue, Long Island City, NY
Received: 05/22/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC43835-1.1	Secured Storage	Eric Barksdale	05/30/17 21:13	Retrieve from Storage
JC43835-1.1	Eric Barksdale	Secured Staging Area	05/30/17 21:14	Return to Storage
JC43835-1.1	Secured Staging Area	Shirley Grzybowski	05/31/17 10:36	Retrieve from Storage
JC43835-1.1	Shirley Grzybowski	Secured Storage	05/31/17 10:37	Return to Storage
JC43835-1.1	Secured Storage	Tyrus Takacs	05/31/17 11:05	Retrieve from Storage
JC43835-1.1	Tyrus Takacs	Mark Setaro	05/31/17 17:20	Custody Transfer
JC43835-1.1	Mark Setaro	Secured Storage	05/31/17 19:05	Return to Storage
JC43835-1.1	Secured Storage	Eric Barksdale	06/01/17 00:21	Retrieve from Storage
JC43835-1.1	Eric Barksdale	Secured Staging Area	06/01/17 00:28	Return to Storage
JC43835-1.1	Secured Staging Area	Tyrus Takacs	06/01/17 09:56	Retrieve from Storage
JC43835-1.1	Tyrus Takacs		06/01/17 10:50	Depleted
JC43835-1.3	Secured Storage	Jennifer Voitovitch	05/24/17 00:22	Retrieve from Storage
JC43835-1.3	Jennifer Voitovitch	Secured Staging Area	05/24/17 00:22	Return to Storage
JC43835-1.3	Secured Staging Area	James Patrick McIlvaine	05/24/17 08:36	Retrieve from Storage
JC43835-1.3	James Patrick McIlvaine	Secured Storage	05/24/17 11:38	Return to Storage
JC43835-1.3	Secured Storage	Sahara Feliciano	05/24/17 13:53	Retrieve from Storage
JC43835-1.3	Sahara Feliciano	Secured Staging Area	05/24/17 13:53	Return to Storage
JC43835-1.3	Secured Staging Area	Deval Patel	05/24/17 15:05	Retrieve from Storage
JC43835-1.3	Deval Patel	Secured Storage	05/24/17 17:34	Return to Storage
JC43835-1.3.1	Deval Patel	Metals Digestion	05/24/17 17:33	Digestate from JC43835-1.3
JC43835-1.3.1	Metals Digestion	Deval Patel	05/24/17 17:33	Digestate from JC43835-1.3
JC43835-1.3.1	Deval Patel	Metals Digestate Storage	05/24/17 17:33	Return to Storage
JC43835-1.5	Secured Storage	Christopher Hall	05/23/17 15:44	Retrieve from Storage
JC43835-1.5	Christopher Hall	Secured Staging Area	05/23/17 15:44	Return to Storage
JC43835-1.5	Secured Staging Area	Sarah Asraf	05/23/17 19:23	Retrieve from Storage
JC43835-1.5	Sarah Asraf	Secured Storage	05/23/17 21:23	Return to Storage
JC43835-1.5	Secured Storage	Timothy Zhen Wei Ho	05/24/17 15:59	Retrieve from Storage
JC43835-1.5	Timothy Zhen Wei Ho	Secured Storage	05/24/17 22:10	Return to Storage
JC43835-1.6	Secured Storage	Edwin Gonzalez	05/22/17 16:54	Retrieve from Storage
JC43835-1.6	Edwin Gonzalez	Secured Staging Area	05/22/17 16:55	Return to Storage
JC43835-1.6	Secured Staging Area	Andray Tandacharry	05/22/17 22:04	Retrieve from Storage
JC43835-1.6	Andray Tandacharry	Secured Storage	05/22/17 23:10	Return to Storage
JC43835-1.7	Secured Storage	Todd Shoemaker	05/26/17 09:31	Retrieve from Storage
JC43835-1.7	Todd Shoemaker	Secured Staging Area	05/26/17 09:31	Return to Storage
JC43835-1.7	Secured Staging Area	Thomas Gabriel	05/26/17 10:02	Retrieve from Storage
JC43835-1.7	Thomas Gabriel	Secured Storage	05/26/17 16:43	Return to Storage
JC43835-1.7	Secured Storage	Eric Barksdale	05/31/17 16:47	Retrieve from Storage
JC43835-1.7	Eric Barksdale	Secured Staging Area	05/31/17 16:47	Return to Storage
JC43835-1.7	Secured Staging Area	Paul Ojugo	05/31/17 17:44	Retrieve from Storage

SGS Accutest Internal Chain of Custody

Job Number: JC43835
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue, Long Island City, NY
Received: 05/22/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC43835-1.7	Paul Ojugo	Secured Storage	05/31/17 23:07	Return to Storage
JC43835-1.7	Secured Storage	Edwin Gonzalez	06/01/17 17:07	Retrieve from Storage
JC43835-1.7	Edwin Gonzalez	Secured Staging Area	06/01/17 17:07	Return to Storage
JC43835-1.7	Secured Staging Area	Paul Ojugo	06/02/17 00:26	Retrieve from Storage
JC43835-1.7	Paul Ojugo	Secured Storage	06/02/17 00:26	Return to Storage
JC43835-1.8	Secured Storage	Todd Shoemaker	06/02/17 09:39	Retrieve from Storage
JC43835-1.8	Todd Shoemaker	Secured Staging Area	06/02/17 09:39	Return to Storage
JC43835-1.8	Secured Staging Area	Andrew Csimbok	06/02/17 10:42	Retrieve from Storage
JC43835-1.8	Andrew Csimbok	Secured Storage	06/02/17 16:53	Return to Storage
JC43835-1.10	Secured Storage	Steven Cordero	05/26/17 12:31	Retrieve from Storage
JC43835-1.10	Steven Cordero	GCMST	05/26/17 12:31	Load on Instrument
JC43835-1.10	GCMST	Steven Cordero	05/30/17 09:44	Unload from Instrument
JC43835-1.10	Steven Cordero	Secured Storage	05/30/17 09:44	Return to Storage
JC43835-1.11	Secured Storage	Steven Cordero	05/25/17 15:20	Retrieve from Storage
JC43835-1.11	Steven Cordero	GCMST	05/25/17 15:20	Load on Instrument
JC43835-1.11	GCMST	Steven Cordero	05/26/17 09:00	Unload from Instrument
JC43835-1.11	Steven Cordero	Secured Storage	05/26/17 09:00	Return to Storage
JC43835-2.2	Secured Storage	Christopher Hall	05/25/17 16:59	Retrieve from Storage
JC43835-2.2	Christopher Hall	Secured Staging Area	05/25/17 16:59	Return to Storage
JC43835-2.2	Secured Staging Area	Ryan Fantasia	05/25/17 17:05	Retrieve from Storage
JC43835-2.2	Ryan Fantasia		05/25/17 22:15	Depleted
JC43835-2.2.1	Ryan Fantasia	Organics Prep	05/25/17 17:05	Extract from JC43835-2.2
JC43835-2.2.1	Organics Prep	Yaw Britwum	05/25/17 23:55	Extract from JC43835-2.2
JC43835-2.2.1	Yaw Britwum	Extract Storage	05/25/17 23:55	Return to Storage
JC43835-2.2.1	Extract Storage	Christopher Sowa	05/27/17 02:28	Retrieve from Storage
JC43835-2.2.1	Christopher Sowa	GCMS6P	05/27/17 02:28	Load on Instrument
JC43835-2.2.1	GCMS6P	Arielle Cocozza	05/31/17 12:02	Unload from Instrument
JC43835-2.2.1	Arielle Cocozza	Extract Freezer	05/31/17 12:02	Return to Storage
JC43835-2.4	Secured Storage	Eric Barksdale	05/25/17 23:37	Retrieve from Storage
JC43835-2.4	Eric Barksdale	Secured Staging Area	05/25/17 23:37	Return to Storage
JC43835-2.4	Secured Staging Area	Nicholas Goydish	05/26/17 07:00	Retrieve from Storage
JC43835-2.4	Nicholas Goydish		05/26/17 16:06	Depleted
JC43835-2.4.1	Nicholas Goydish	Organics Prep	05/26/17 07:06	Extract from JC43835-2.4
JC43835-2.4.1	Organics Prep	Ryan Fantasia	05/26/17 23:59	Extract from JC43835-2.4
JC43835-2.4.1	Ryan Fantasia	Extract Storage	05/26/17 23:59	Return to Storage
JC43835-2.4.1	Extract Storage	Rebecca Krug	05/30/17 15:09	Retrieve from Storage
JC43835-2.4.1	Rebecca Krug	GCXX	05/30/17 15:09	Load on Instrument

SGS Accutest Internal Chain of Custody

Job Number: JC43835
Account: HLANJPR AMEC Environment & Infrastructure, Inc.
Project: Review Avenue, Long Island City, NY
Received: 05/22/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC43835-2.4.1	GCXX	Rebecca Krug	06/05/17 08:52	Unload from Instrument
JC43835-2.4.1	Rebecca Krug	Extract Freezer	06/05/17 08:53	Return to Storage
JC43835-2.5	Secured Storage	Sahara Feliciano	05/24/17 13:53	Retrieve from Storage
JC43835-2.5	Sahara Feliciano	Secured Staging Area	05/24/17 13:53	Return to Storage
JC43835-2.5	Secured Staging Area	Deval Patel	05/24/17 15:05	Retrieve from Storage
JC43835-2.5	Deval Patel	Secured Storage	05/24/17 17:34	Return to Storage
JC43835-2.5.1	Deval Patel	Metals Digestion	05/24/17 17:33	Digestate from JC43835-2.5
JC43835-2.5.1	Metals Digestion	Deval Patel	05/24/17 17:33	Digestate from JC43835-2.5
JC43835-2.5.1	Deval Patel	Metals Digestate Storage	05/24/17 17:33	Return to Storage
JC43835-2.6	Secured Storage	Edwin Gonzalez	05/22/17 16:56	Retrieve from Storage
JC43835-2.6	Edwin Gonzalez	Secured Staging Area	05/22/17 16:56	Return to Storage
JC43835-2.6	Secured Staging Area	Sarah Asraf	05/22/17 17:56	Retrieve from Storage
JC43835-2.6	Sarah Asraf	Secured Storage	05/22/17 23:22	Return to Storage
JC43835-2.6	Secured Storage	Alfredo Crespo	05/23/17 13:04	Retrieve from Storage
JC43835-2.6	Alfredo Crespo	Secured Staging Area	05/23/17 13:04	Return to Storage
JC43835-2.6	Secured Staging Area	Sarah Asraf	05/23/17 18:19	Retrieve from Storage
JC43835-2.6	Sarah Asraf	Secured Storage	05/23/17 21:23	Return to Storage
JC43835-2.7	Secured Storage	Todd Shoemaker	05/30/17 08:46	Retrieve from Storage
JC43835-2.7	Todd Shoemaker	Secured Staging Area	05/30/17 08:47	Return to Storage
JC43835-2.7	Secured Staging Area	Beatrice Marcelino	05/30/17 09:25	Retrieve from Storage
JC43835-2.7	Beatrice Marcelino	Secured Storage	05/31/17 08:32	Return to Storage
JC43835-2.8	Secured Storage	Steven Cordero	05/25/17 15:20	Retrieve from Storage
JC43835-2.8	Steven Cordero	GCMST	05/25/17 15:20	Load on Instrument
JC43835-2.8	GCMST	Steven Cordero	05/26/17 09:00	Unload from Instrument
JC43835-2.8	Steven Cordero	Secured Storage	05/26/17 09:00	Return to Storage
JC43835-2.11	Secured Storage	Steven Cordero	05/26/17 12:31	Retrieve from Storage
JC43835-2.11	Steven Cordero	GCMST	05/26/17 12:31	Load on Instrument
JC43835-2.11	GCMST	Steven Cordero	05/30/17 09:44	Unload from Instrument
JC43835-2.11	Steven Cordero	Secured Storage	05/30/17 09:44	Return to Storage
JC43835-2.14	Secured Storage	Edwin Gonzalez	05/22/17 16:57	Retrieve from Storage
JC43835-2.14	Edwin Gonzalez	Secured Staging Area	05/22/17 16:57	Return to Storage
JC43835-2.14	Secured Staging Area	Dwayne Johnson	05/23/17 10:43	Retrieve from Storage
JC43835-2.14	Dwayne Johnson	Secured Staging Area	05/23/17 10:43	Return to Storage
JC43835-2.14	Secured Staging Area	Shirley Grzybowski	05/26/17 10:43	Retrieve from Storage
JC43835-2.14	Shirley Grzybowski	Secured Storage	05/26/17 10:43	Return to Storage

Amec Foster Wheeler Environment & Infrastructure, Inc.
200 American Metro Blvd., Suite 113
Hamilton, NJ 08619
Phone: (609) 689-2829 Fax: (609) 689-2838

LETTER OF TRANSMITTAL

To: Mr. Sean H. Hulbert Assistant Chemical Engineer NYCDEP, Bureau of Wastewater Treatment 96-05 Horace Harding Expressway, 1st Floor Corona, New York 11368 **FROM:** Timothy Kessler	**DATE:** August 28, 2017 **PROJECT NO.:** 3480160502 **PROJ. NAME:** Review Avenue **SUBJECT:** Review Avenue Development Sites 37-30 and 37-80 Review Avenue File # C-5652 12nd Quarter 2017 Effluent Discharge Compliance Report

WE TRANSMIT TO YOU: ☒ HEREWITH ☐ UNDER SEPARATE COVER

SUBJECT:	**ACTION:**	**SENT BY:**
☐ DRAWINGS	☐ FOR YOUR INFORMATION	☐ MAIL
☐ SPECIFICATIONS	☐ FOR YOUR COMMENT OR APPROVAL	☐ CERTIFIED MAIL
☐ CALCULATIONS	☐ RETURNED FOR CORRECTION: RESUBMIT	☒ EXPRESS
☒ REPORT	☐ APPROVED AS NOTED	☐ COURIER
☐ COST ESTIMATE	☒ AS REQUESTED	☐ HAND DELIVERED
☐ CD		☐ FACSIMILE:

# of pages (including transmittal sheet) 6

COPIES	DATE	DESCRIPTION
1	8/28/17	Compliance Monitoring Report for 3rd Quarter 2017

REMARKS: de maximis, Inc. will forward report to NYSDEC

CC: Craig Coslett, de maximis, Inc.

By: Tim Kessler
(609) 631-2927

If transmission is not received in good order, please call Suzy at 609-689-2829

de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
(610) 435-8459 FAX

August 25, 2017

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
3rd Quarter 2017 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 3rd Quarter 2017 Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 3rd Quarter 2017:

- Approximately 606,431 gallons of water have been discharged to the sewer system during this reporting period.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 3rd Quarter 2017
CC: John Grathwol, NYDEC (electronic mail only)
Brent O'Dell, Amec FW (electronic mail only)
File: 3216/3242 / 3rd Qrt Compliance Report 2017

August 25, 2017

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **3Q 2017 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, here with submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 13, 2016.

Amec Foster Wheeler collected the 3Q 2017 discharge compliance samples on August 1st, 2017. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The updated analytical data collected for the 3rd quarter 2017 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 4,311,895 gallons as of the August 1st sampling event and 606,431 gallons since the last quarterly sampling event.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

Timothy Kessler with Permission by

William J. Mikula, P.E.
Associate Engineer-Civil

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Attachments: Table 1 – Summary of Groundwater Analytical Results
cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
amecfw.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				3Q 2017		3Q 2017	
Sample Date:				8/1/2017		8/1/2017	
Lab Sample ID:				JC48014		JC48014	
Non-polar material[1]	mg/L	50	NL	15.6	U	-	
pH[2]	SUs	5 - 12	NL	6.72		-	
Temperature[2]	ºF	150	NL	84.74		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.01	U	-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	1	J	-	
Carbon Tetrachloride	µg/L	NL	NL	-		1	U
Chloroform	µg/L	NL	NL	-		1	U
1,4-Dichlorobenzene	µg/L	NL	NL	1	U	-	
Ethylbenzene	µg/L	380	142	0.59	J	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1	U	-	
Napthalene	µg/L	47	19	-		1.1	U
Phenol	µg/L	NL	NL	-		2.1	U
Tetrachloroethylene (Perc)	µg/L	20	NL	1	U	-	
Toluene	µg/L	74	28	1	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		1.1	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		1	U
Xylenes (Total)	µg/L	74	28	1.7		-	
PCBs (Total)	µg/L	1	NL	-		0.056	U
Total Suspended Solids (TSS)	mg/L	350	NL	34.2		-	
CBOD	mg/L	NL	NL	-		23.3	
Chloride	mg/L	NL	NL	189		-	
Total Nitrogen	mg/L	NL	NL	-		1.2	
Total Solids	mg/L	NL	NL	893		-	

Prepared by: TCK 8/24/17

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
H: Sample was prepped or analyzed beyond the specified holding time
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated RL.
F1: MS and/or MSD Recovery is outside acceptance limits.

Prepared by: TCK 08/24/17

Amec Foster Wheeler Environment & Infrastructure, Inc.
200 American Metro Blvd., Suite 113
Hamilton, NJ 08619
Phone: (609) 689-2829 Fax: (609) 689-2838

LETTER OF TRANSMITTAL

To: Mr. Sean H. Hulbert Assistant Chemical Engineer NYCDEP, Bureau of Wastewater Treatment 96-05 Horace Harding Expressway, 1st Floor Corona, New York 11368 **FROM:** Timothy Kessler	**DATE:** November 21, 2017 **PROJECT NO.:** 3480160502 **PROJ. NAME:** Review Avenue **SUBJECT:** Review Avenue Development Sites 37-30 and 37-80 Review Avenue File # C-5652 12nd Quarter 2017 Effluent Discharge Compliance Report

WE TRANSMIT TO YOU: ☒ HEREWITH ☐ UNDER SEPARATE COVER

SUBJECT:	**ACTION:**	**SENT BY:**
☐ DRAWINGS	☐ FOR YOUR INFORMATION	☐ MAIL
☐ SPECIFICATIONS	☐ FOR YOUR COMMENT OR APPROVAL	☐ CERTIFIED MAIL
☐ CALCULATIONS	☐ RETURNED FOR CORRECTION: RESUBMIT	☒ EXPRESS
☒ REPORT	☐ APPROVED AS NOTED	☐ COURIER
☐ COST ESTIMATE	☒ AS REQUESTED	☐ HAND DELIVERED
☐ CD		☐ FACSIMILE:

# of pages (including transmittal sheet) 6

COPIES	DATE	DESCRIPTION
1	11/20/17	Compliance Monitoring Report for 4th Quarter 2017

REMARKS: de maximis, Inc. will forward report to NYSDEC

CC: Craig Coslett, de maximis, Inc.

By: Tim Kessler
(609) 631-2927

If transmission is not received in good order, please call Suzy at 609-689-2829

de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
FAX (610) 435-8459

November 21, 2017

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
4th Quarter 2017 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 4th Quarter 2017 Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 3rd Quarter 2017:

- Approximately 495,620 gallons of water have been discharged to the sewer system during this reporting period.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 4th Quarter 2017
CC: John Grathwol, NYDEC (electronic mail only)
Tim Kessler, Wood Group (electronic mail only)
Brent O'Dell, Wood Group (electronic mail only)

File: 3216 / 4th Qrt Compliance Report 2017

November 20, 2017

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **4Q 2017 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, here with submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 17, 2017.

Amec Foster Wheeler collected the 4Q 2017 discharge compliance samples on October 10th, 2017. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The updated analytical data collected for the 4th quarter 2017 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 4,807,515 gallons as of the October 10th sampling event and 495,620 gallons since the last quarterly sampling event.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

Brent C. O'Dell, P.E.
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Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

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Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				4Q 2017		4Q 2017	
Sample Date:				10/10/2017		10/10/2017	
Lab Sample ID:				JC52767		JC52767	
Non-polar material[1]	mg/L	50	NL	24.7		-	
pH[2]	SUs	5 - 12	NL	7.46		-	
Temperature[2]	ºF	150	NL	73.58		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		0.003	U
Chromium (VI)	mg/L	5	NL	0.010	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.01	U	-	
Zinc	mg/L	5	NL	0.02	U	-	
Benzene	µg/L	134	57	1.0	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		1.0	U
Chloroform	µg/L	NL	NL	-		1.0	U
1,4-Dichlorobenzene	µg/L	NL	NL	1.0	U	-	
Ethylbenzene	µg/L	380	142	1.0	J	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1.0	U	-	
Napthalene	µg/L	47	19	-		0.49	J
Phenol	µg/L	NL	NL	-		2.0	U
Tetrachloroethylene (Perc)	µg/L	20	NL	1.0	U, F1	-	
Toluene	µg/L	74	28	1.0	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		1.0	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		1.0	U
Xylenes (Total)	µg/L	74	28	1.0	U	-	
PCBs (Total)	µg/L	1	NL	-		0.050	U
Total Suspended Solids (TSS)	mg/L	350	NL	54.0		-	
CBOD	mg/L	NL	NL	-		20	U
Chloride	mg/L	NL	NL	144		-	
Total Nitrogen	mg/L	NL	NL	-		2.0	
Total Solids	mg/L	NL	NL	870		-	

Prepared by: TCK 8/24/17

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
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F1: MS and/or MSD Recovery is outside acceptance limits.

Prepared by: TCK 08/24/17

e-Hardcopy 2.0
Automated Report

Technical Report for

AMEC Foster Wheeler

Review Avenue, Long Island City, NY

3480160502 CO12700305

SGS Accutest Job Number: JC52767

Sampling Date: 10/10/17

Report to:

AMEC Foster Wheeler
200 American Metro Boulevard Suite 113
Hamilton, NJ 08619
Timothy.Kessler@amecfw.com

ATTN: Tim Kessler

Total number of pages in report: **20**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4

Table of Contents

Sample Summary

AMEC Foster Wheeler

Job No: JC52767

Review Avenue, Long Island City, NY
Project No: 3480160502 CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52767-1	10/10/17	11:30	DB	10/10/17	AQ	Effluent	RA-EFF-G
JC52767-2	10/10/17	11:55	DB	10/10/17	AQ	Effluent	RA-EFF-C

Summary of Hits

Job Number: JC52767
Account: AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Collected: 10/10/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52767-1	**RA-EFF-G**					
Chloride		144	2.0		mg/l	EPA 300/SW846 9056A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		870	10		mg/l	SM2540 B-11
Solids, Total Suspended		54.0	4.0		mg/l	SM2540 D-11
pH [a]		7.05			su	SM4500H+ B-11
JC52767-2	**RA-EFF-C**					
Naphthalene		0.49 J	1.0	0.23	ug/l	EPA 625
Nitrogen, Total [b]		2.0	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		2.0	0.20		mg/l	EPA 351.2/LACHAT

(a) Sample received out of holding time for pH analysis.
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC52767-1	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N265252.D	1	10/12/17 10:04	PR	n/a	n/a	VN11179
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.24	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.24	ug/l	
127-18-4	Tetrachloroethene [a]	ND	1.0	0.82	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	116%		76-122%
2037-26-5	Toluene-D8 (SUR)	97%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	90%		80-120%
1868-53-7	Dibromofluoromethane (S)	107%		80-120%

(a) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC52767-1	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Copper	< 10	10	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Lead	< 3.0	3.0	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	10/13/17	10/13/17	JPM	EPA 245.1 [2]	EPA 245.1 [4]
Nickel	< 10	10	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]
Zinc	< 20	20	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [3]

(1) Instrument QC Batch: MA42994
(2) Instrument QC Batch: MA42999
(3) Prep QC Batch: MP3445
(4) Prep QC Batch: MP3480

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC52767-1	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	144	2.0	mg/l	1	10/12/17 19:19	JN	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	10/10/17 21:21	AT	SM3500CR B-11
Ignitability (Flashpoint)	> 200		Deg. F	1	10/18/17 08:48	RI	SW846 1010A/ASTM D93
Solids, Total	870	10	mg/l	1	10/12/17 22:20	TZW	SM2540 B-11
Solids, Total Suspended	54.0	4.0	mg/l	1	10/12/17 18:30	TZW	SM2540 D-11
pH [a]	7.05		su	1	10/10/17 14:18	SUB	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC52767-2	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T227254.D	1	10/13/17 13:32	CSF	n/a	n/a	VT9331
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.31	ug/l	
67-66-3	Chloroform	ND	1.0	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	96%		76-122%
2037-26-5	Toluene-D8 (SUR)	104%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	96%		80-120%
1868-53-7	Dibromofluoromethane (S)	94%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC52767-2	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
Method:	EPA 625 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F170989.D	1	10/16/17 16:40	CS	10/12/17 12:00	OP6851	EF7258
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	2.0	0.39	ug/l	
91-20-3	Naphthalene	0.49	1.0	0.23	ug/l	J
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		10-110%
4165-62-2	Phenol-d5	33%		10-110%
118-79-6	2,4,6-Tribromophenol	81%		35-147%
4165-60-0	Nitrobenzene-d5	103%		32-132%
321-60-8	2-Fluorobiphenyl	87%		40-117%
1718-51-0	Terphenyl-d14	100%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC52767-2	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	10/11/17	10/12/17	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA42994
(2) Prep QC Batch: MP3445

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC52767-2	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	< 20	20	mg/l	1	10/10/17 19:10	SA	SM5210 B-11
Nitrogen, Nitrate [a]	< 0.11	0.11	mg/l	1	10/12/17 12:21	BM	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	10/12/17 12:21	BM	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	10/10/17 21:33	AT	SM4500NO2 B-11
Nitrogen, Total [b]	2.0	0.30	mg/l	1	10/17/17 09:44	BM	SM4500 A-11
Nitrogen, Total Kjeldahl	2.0	0.20	mg/l	1	10/17/17 09:44	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC52767
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Nitrogen, Total		**SM4500 A-11**	AQ	Accutest is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

ACCUTEST LABORATORIES

GW

CHAIN OF CUSTODY

PAGE 1 OF 2

E
COI

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote # DK4_2016_911	Accutest Job # JC52767

Client / Reporting Information

Company Name	Amec Foster Wheeler
Street Address	200 American Metro BLVD #113
City / State / Zip	Hamilton, NJ 08619
Project Contact / E-mail	Vincent.Whelan@amecfw.com
Phone # / Fax #	M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Sampler(s) Name(s) / Phone #	DBerkowitz 8487024342

Project Information

Project Name:	Review Ave, Long Island City, Queens
Street	37-30 & 37-80 Review Avenue
City / State	Long Island City, Queens, NY
Project #	3480160502
Client Purchase Order #	C012700305
Project Manager	Tim Kessler

Billing Information (if different from Report to)

Company Name	
Street Address	
City / State / Zip	
Attention:	

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB-Field Blank, EB-Equipment Blank, RB- Rinse Blank, TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Flashpoint (Ignitability) - SW846 1010A	Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7; Mercury (Hg) - EPA 245.1	SGT HEM - EPA 1664A SGT	pH (SM4500H+ B-11); Total Solids (SM2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C)	Total Suspended Solids - SM2540 D-11	VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624	Hexavalent Chromium (SM3500 Cr B)	Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625	CBOD5 - SM5210 B-11	Metals (Cadmium Only) - EPA 200.7	PCBs, Low Level (P608PCBLL) - EPA 608	LAB USE ONLY
1	RA-EFF-G		10/10/17	1130	DB	GW	11	5		1		5				X	X	H	X	X	X	X					
2	RA-EFF-C		10/10/17	1155	DB	GW	7			1	1	5											X	X	X	H	L20
2	RA-VOC-C1		10/10/17	0845	DB	GW	3	3																			A39
	RA-VOC-C2		10/10/17	0945	DB	GW	3	3																			C54
	RA-VOC-C3		10/10/17	1045	DB	GW	3	3																			V113
	RA-VOC-C4		10/10/17	1145	DB	GW	3	3																			E108
																											COMP

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

~~INITIAL ASESSMENT~~ 22

~~LABEL VERIFICATION~~

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM & PCB SAMPLE**

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler: 1	Date Time: 10/10/17 1357	Received By: 1 Jeemit Patel	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 576	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp. 2.8°C

JC52767: Chain of Custody
Page 1 of 3

4.2
4

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: DK4_2016_911 | Accutest Job #: JC52767

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact: Vincent.Whelan@amecfw.com | E-mail
Phone #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838 | Fax #
Sampler(s) Name(s): D Berkowitz 8485024372 | Phone #

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		10/10/17	1130	DM	GW	11	5		1		5							
2	RA-EFF-C		10/10/17	1153	DM	GW	7			1		6				X		X	
	RA-VOC-C1		10/10/17	0845	DM	GW	3	3									X		
	RA-VOC-C2		10/10/17	0945	DM	GW	3	3									X		
2	RA-VOC-C3		10/10/17	1045	DM	GW	3	3									X		
	RA-VOC-C4		10/10/17	1145	DM	GW	3	3									X		

Matrix Codes

DW - Drinking Wate
GW - Ground Wate
WW - Water
SW - Surface Wate
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blan
RB- Rinse Blank
TB-Trip Blank

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
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- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM SAMPLE** PLB

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		10/11/17 1357	Jeemit Patel			
2						
3						
4						
5				Custody Seal # 676	Intact / Not Intact	Preserved where applicable / On Ice / Cooler Temp. 2.8°C JP

SGS Accutest Sample Receipt Summary

Job Number: JC52767 **Client:** _____ **Project:** _____

Date / Time Received: 10/10/2017 1:57:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Internal Sample Tracking Chronicle

AMEC Foster Wheeler

Job No: JC52767

Review Avenue, Long Island City, NY
Project No: 3480160502 CO12700305

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC52767-1 RA-EFF-G	Collected: 10-OCT-17 11:30 By: DB		Received: 10-OCT-17 By: AS			
JC52767-1	SM4500H+ B-11	10-OCT-17 14:18	SUB			PH
JC52767-1	SM3500CR B-11	10-OCT-17 21:21	AT			XCRSM
JC52767-1	EPA 624	12-OCT-17 10:04	PR			V624BTXM
JC52767-1	EPA 200.7	12-OCT-17 16:13	ND	11-OCT-17	CH	CD,CU,NI,PB,ZN
JC52767-1	SM2540 D-11	12-OCT-17 18:30	TZW			TSS
JC52767-1	EPA 300/SW846 9056A	12-OCT-17 19:19	JN	12-OCT-17	JN	CHL
JC52767-1	SM2540 B-11	12-OCT-17 22:20	TZW			TS
JC52767-1	EPA 245.1	13-OCT-17 12:25	JPM	13-OCT-17	JPM	HG
JC52767-1	SW846 1010A/ASTM D93	13-OCT-17 08:48	RI			IGN
JC52767-2 RA-EFF-C	Collected: 10-OCT-17 11:55 By: DB		Received: 10-OCT-17 By: AS			
JC52767-2	SM5210 B-11	10-OCT-17 19:10	SA	10-OCT-17	SA	CBOD5
JC52767-2	SM4500NO2 B-11	10-OCT-17 21:33	AT			NO2
JC52767-2	EPA353.2/SM4500NO2B	12-OCT-17 12:21	BM			NO3O
JC52767-2	EPA 353.2/LACHAT	12-OCT-17 12:21	BM	12-OCT-17	BM	NO32
JC52767-2	EPA 200.7	12-OCT-17 16:16	ND	11-OCT-17	CH	CD
JC52767-2	EPA 624	13-OCT-17 13:32	CSF			V624CHLFRM,VMS+ CTC,VMS+ TCA
JC52767-2	EPA 625	16-OCT-17 16:40	CS	12-OCT-17	AC	AB625SL2
JC52767-2	SM4500 A-11	17-OCT-17 09:44	BM			TNIT
JC52767-2	EPA 351.2/LACHAT	17-OCT-17 09:44	BM	16-OCT-17	MP	TKN

SGS Accutest Internal Chain of Custody

Job Number: JC52767
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 10/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52767-1.3	Secured Storage	Sahara Feliciano	10/11/17 14:01	Retrieve from Storage
JC52767-1.3	Sahara Feliciano	Secured Staging Area	10/11/17 14:01	Return to Storage
JC52767-1.3	Secured Staging Area	Colleen Hill	10/11/17 15:09	Retrieve from Storage
JC52767-1.3	Colleen Hill	Secured Storage	10/11/17 18:49	Return to Storage
JC52767-1.3	Secured Storage	Sahara Feliciano	10/12/17 16:02	Retrieve from Storage
JC52767-1.3	Sahara Feliciano	Secured Staging Area	10/12/17 16:02	Return to Storage
JC52767-1.3	Secured Staging Area	James Patrick McIlvaine	10/13/17 09:16	Retrieve from Storage
JC52767-1.3	James Patrick McIlvaine	Secured Storage	10/13/17 11:26	Return to Storage
JC52767-1.3.1	Colleen Hill	Metals Digestion	10/11/17 18:46	Digestate from JC52767-1.3
JC52767-1.3.1	Metals Digestion	Colleen Hill	10/11/17 18:47	Digestate from JC52767-1.3
JC52767-1.3.1	Colleen Hill	Metals Digestate Storage	10/11/17 18:47	Return to Storage
JC52767-1.5	Secured Storage	Todd Shoemaker	10/12/17 14:47	Retrieve from Storage
JC52767-1.5	Todd Shoemaker	Secured Staging Area	10/12/17 14:47	Return to Storage
JC52767-1.5	Secured Staging Area	Timothy Zhen Wei Ho	10/12/17 19:30	Retrieve from Storage
JC52767-1.5	Timothy Zhen Wei Ho	Secured Storage	10/13/17 00:32	Return to Storage
JC52767-1.6	Secured Storage	Luis Villanueva	10/10/17 17:42	Retrieve from Storage
JC52767-1.6	Luis Villanueva	Secured Staging Area	10/10/17 17:42	Return to Storage
JC52767-1.6	Secured Staging Area	Andray Tandacharry	10/10/17 20:29	Retrieve from Storage
JC52767-1.6	Andray Tandacharry	Secured Storage	10/10/17 23:33	Return to Storage
JC52767-1.7	Secured Storage	Dwayne Johnson	10/11/17 09:05	Retrieve from Storage
JC52767-1.7	Dwayne Johnson	Secured Staging Area	10/11/17 09:05	Return to Storage
JC52767-1.7	Secured Staging Area	Jaqueline Nicholas	10/11/17 09:36	Retrieve from Storage
JC52767-1.7	Jaqueline Nicholas	Secured Storage	10/11/17 16:05	Return to Storage
JC52767-1.7	Secured Storage	Todd Shoemaker	10/12/17 10:50	Retrieve from Storage
JC52767-1.7	Todd Shoemaker	Secured Staging Area	10/12/17 10:50	Return to Storage
JC52767-1.7	Secured Staging Area	Jaqueline Nicholas	10/12/17 13:02	Retrieve from Storage
JC52767-1.7	Jaqueline Nicholas	Secured Storage	10/12/17 15:43	Return to Storage
JC52767-1.8	Secured Storage	Todd Shoemaker	10/18/17 08:06	Retrieve from Storage
JC52767-1.8	Todd Shoemaker	Secured Staging Area	10/18/17 08:06	Return to Storage
JC52767-1.8	Secured Staging Area	Rie Iwasaki	10/18/17 08:17	Retrieve from Storage
JC52767-1.8	Rie Iwasaki	Secured Storage	10/18/17 16:14	Return to Storage
JC52767-2.1	Secured Storage	Sahara Feliciano	10/11/17 20:39	Retrieve from Storage
JC52767-2.1	Sahara Feliciano	Secured Staging Area	10/11/17 20:40	Return to Storage
JC52767-2.1	Secured Staging Area	Ishmael Mansaray	10/12/17 01:15	Retrieve from Storage
JC52767-2.1	Ishmael Mansaray	Secured Storage	10/12/17 09:12	Return to Storage
JC52767-2.1	Secured Storage	Allan Chung-yew	10/12/17 10:25	Retrieve from Storage
JC52767-2.1	Allan Chung-yew		10/12/17 17:33	Depleted

SGS Accutest Internal Chain of Custody

Job Number: JC52767
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 10/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52767-2.1.1	Allan Chung-yew	Organics Prep	10/12/17 10:25	Extract from JC52767-2.1
JC52767-2.1.1	Organics Prep	Allan Chung-yew	10/12/17 17:54	Extract from JC52767-2.1
JC52767-2.1.1	Allan Chung-yew	Extract Storage	10/12/17 17:54	Return to Storage
JC52767-2.1.1	Extract Storage	Christopher Sowa	10/16/17 05:50	Retrieve from Storage
JC52767-2.1.1	Christopher Sowa	GCMSF	10/16/17 05:50	Load on Instrument
JC52767-2.1.1	GCMSF	Kristi Schollenberger	10/19/17 14:02	Unload from Instrument
JC52767-2.1.1	Kristi Schollenberger	Extract Freezer	10/19/17 14:02	Return to Storage
JC52767-2.5	Secured Storage	Sahara Feliciano	10/11/17 14:01	Retrieve from Storage
JC52767-2.5	Sahara Feliciano	Secured Staging Area	10/11/17 14:01	Return to Storage
JC52767-2.5	Secured Staging Area	Colleen Hill	10/11/17 15:09	Retrieve from Storage
JC52767-2.5	Colleen Hill	Secured Storage	10/11/17 18:49	Return to Storage
JC52767-2.5.1	Colleen Hill	Metals Digestion	10/11/17 18:46	Digestate from JC52767-2.5
JC52767-2.5.1	Metals Digestion	Colleen Hill	10/11/17 18:47	Digestate from JC52767-2.5
JC52767-2.5.1	Colleen Hill	Metals Digestate Storage	10/11/17 18:47	Return to Storage
JC52767-2.6	Secured Storage	Luis Villanueva	10/10/17 17:42	Retrieve from Storage
JC52767-2.6	Luis Villanueva	Secured Staging Area	10/10/17 17:42	Return to Storage
JC52767-2.6	Secured Staging Area	Sarah Asraf	10/10/17 17:49	Retrieve from Storage
JC52767-2.6	Sarah Asraf	Secured Storage	10/11/17 01:08	Return to Storage
JC52767-2.7	Secured Storage	Sahara Feliciano	10/11/17 16:45	Retrieve from Storage
JC52767-2.7	Sahara Feliciano	Secured Staging Area	10/11/17 16:45	Return to Storage
JC52767-2.7	Secured Staging Area	Beatrice Marcelino	10/12/17 08:32	Retrieve from Storage
JC52767-2.7	Beatrice Marcelino	Secured Storage	10/12/17 15:18	Return to Storage
JC52767-2.7	Secured Storage	Sahara Feliciano	10/15/17 15:17	Retrieve from Storage
JC52767-2.7	Sahara Feliciano	Secured Staging Area	10/15/17 15:17	Return to Storage
JC52767-2.7	Secured Staging Area	Mahendra Patel	10/16/17 08:21	Retrieve from Storage
JC52767-2.7	Mahendra Patel	Secured Storage	10/16/17 18:20	Return to Storage
JC52767-2.8	Secured Storage	Chelsea San Filippo	10/13/17 16:11	Retrieve from Storage
JC52767-2.8	Chelsea San Filippo	GCMST	10/13/17 16:11	Load on Instrument
JC52767-2.8	GCMST	Chelsea San Filippo	10/16/17 11:07	Unload from Instrument
JC52767-2.8	Chelsea San Filippo	Secured Storage	10/16/17 11:07	Return to Storage
JC52767-2.10	Secured Storage	Bridget Kelly	10/13/17 10:59	Retrieve from Storage
JC52767-2.10	Bridget Kelly	Secured Storage	10/13/17 16:49	Return to Storage
JC52767-2.11	Secured Storage	Chelsea San Filippo	10/13/17 10:54	Retrieve from Storage
JC52767-2.11	Chelsea San Filippo		10/13/17 10:55	Depleted

e-Hardcopy 2.0
Automated Report

Technical Report for

AMEC Foster Wheeler

Review Avenue, Long Island City, NY

3480160502 CO12700305

SGS Accutest Job Number: JC52767R

Sampling Date: 10/10/17

Report to:

AMEC Foster Wheeler
200 American Metro Boulevard Suite 113
Hamilton, NJ 08619
Timothy.Kessler@amecfw.com

ATTN: Tim Kessler

Total number of pages in report: **16**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4

Table of Contents

Sample Summary

AMEC Foster Wheeler

Job No: JC52767R

Review Avenue, Long Island City, NY
Project No: 3480160502 CO12700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC52767-1R	10/10/17	11:30	DB	10/10/17	AQ	Effluent	RA-EFF-G
JC52767-2R	10/10/17	11:55	DB	10/10/17	AQ	Effluent	RA-EFF-C

Summary of Hits

Job Number: JC52767R
Account: AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Collected: 10/10/17

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC52767-1R	**RA-EFF-G**					
HEM Petroleum Hydrocarbons		24.7	5.4		mg/l	EPA 1664A
JC52767-2R	**RA-EFF-C**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC52767-1R	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
HEM Petroleum Hydrocarbons	24.7	5.4	mg/l	1	11/01/17 11:25	TT	EPA 1664A

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C		
Lab Sample ID:	JC52767-2R	**Date Sampled:**	10/10/17
Matrix:	AQ - Effluent	**Date Received:**	10/10/17
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX218782.D	1	11/02/17 16:39	EAL	10/31/17 21:10	OP7390	GXX6163
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248	ND	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	91%		10-156%
877-09-8	Tetrachloro-m-xylene	55%		10-156%
2051-24-3	Decachlorobiphenyl	94%		10-143%
2051-24-3	Decachlorobiphenyl	29%		10-143%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

ACCUTEST LABORATORIES

GW

CHAIN OF CUSTODY

PAGE 1 OF 2

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #: DK4_2016_911
Accutest Job #: JC52767

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact / E-mail: Vincent.Whelan@amecfw.com
Phone # / Fax #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Sampler(s) Name(s) / Phone #: D Berkowitz 8487024342

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Analyses: (A) Flashpoint (Ignitability) - SW846 1010A; (B) Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7; Mercury (Hg) - EPA 245.1; (C) SGT HEM - EPA 1664A SGT; (D) pH (SM4500H+ B-11); Total Solids (SM2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C); (E) Total Suspended Solids - SM2540 D-11; (F) VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624; (G) Hexavalent Chromium (SM3500 Cr B); (H) Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625; (I) CBOD5 - SM5210 B-11; (J) Metals (Cadmium Only) - EPA 200.7; (K) PCBs, Low Level (P608PCBLL) - EPA 608

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	A	B	C	D	E	F	G	H	I	J	K	LAB USE ONLY
1	RA-EFF-G		10/10/17	1130	DB	GW	11	5		1		5				X	X	H	X	X	X	X					
2	RA-EFF-C		10/10/17	1155	DB	GW	7			1	1	5											X	X	X	H	L20
2	RA-VOC-C1		10/10/17	0845	DB	GW	3	3																			A39
	RA-VOC-C2		10/10/17	0945	DB	GW	3	3																			C54
	RA-VOC-C3		10/10/17	1045	DB	GW	3	3																			V113
	RA-VOC-C4		10/10/17	1145	DB	GW	3	3																			E108
																											COMP

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

~~INITIAL ASESSMENT~~ 22
~~LABEL VERIFICATION~~

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [x] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. HOLD SGT-HEM & PCB SAMPLE

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10/10/17 1357	1 Jeemit Patel	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 576	☐ Intact ☐ Not intact	Preserved where applicable ☐ On Ice ☐ Cooler Temp. 2.8°C

JC52767R: Chain of Custody

Page 1 of 4

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
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Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact: Vincent.Whelan@amecfw.com
E-mail:
Phone #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Fax #:
Sampler(s) Name(s): D Berkowitz 8485024342
Phone #:

Project Information

Project Name: Review Ave, Long Island City, Queens
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Project Manager: Tim Kessler

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Street Address:
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Attention:

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Matrix Codes: DW - Drinking Wate; GW - Ground Wate; WW - Water; SW - Surface Wate; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blan; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		10/10/17	1130	DM	GW	11	5		1		5							
2	RA-EFF-C		10/10/17	1153	DM	GW	7			1		6				X		X	
	RA-VOC-C1		10/10/17	0845	DM	GW	3	3									X		
	RA-VOC-C2		10/10/17	0945	DM	GW	3	3									X		
2	RA-VOC-C3		10/10/17	1045	DM	GW	3	3									X		
	RA-VOC-C4		10/10/17	1145	DM	GW	3	3									X		

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
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Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM SAMPLE** PLB

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	10/11/17 1357	1 Jeemit Patel	2		2
3		3	4		4
5		5	Custody Seal # 676 [ ] Intact [ ] Not Intact	Preserved where applicable [ ]	On Ice [ ] Cooler Temp. 2.8°C JP

SGS Accutest Sample Receipt Summary

Job Number: JC52767 **Client:** _____ **Project:** _____

Date / Time Received: 10/10/2017 1:57:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.8);

Cooler Temps (Corrected) °C: Cooler 1: (1.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

Job Change Order: JC52767

Requested Date: 10/27/2017 **Received Date:** 10/10/2017

Account Name: AMEC Foster Wheeler **Due Date:** 10/24/2017

Project Description: Review Avenue, Long Island City, NY **Deliverable:** NYASPA

C/O Initiated By: dianek **PM:** KD **TAT (Days):** 8

==========

Sample #: JC52767-1 **Change:**

Dept: Log in PHC1664

TAT: 8

RA-EFF-G

==========

Sample #: JC52767-2 **Change:**

Dept: Log in P608PCBLL

TAT: 8

RA-EFF-C

==========

Above Changes Per: Tim Kessler **Date/Time:** 10/27/2017 1:35:30 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Page 1 of 1

4.1

4

JC52767R: Chain of Custody

Page 4 of 4

Internal Sample Tracking Chronicle

AMEC Foster Wheeler

Job No: JC52767R

Review Avenue, Long Island City, NY
Project No: 3480160502 CO12700305

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC52767-1R	Collected: 10-OCT-17 11:30 By: DB			Received: 10-OCT-17	By: AS	
RA-EFF-G						
JC52767-1R	EPA 1664A	01-NOV-17 11:25	TT	01-NOV-17	TT	PHC1664
JC52767-2R	Collected: 10-OCT-17 11:55 By: DB			Received: 10-OCT-17	By: AS	
RA-EFF-C						
JC52767-2R	EPA 608	02-NOV-17 16:39	EAL	31-OCT-17	YB	P608PCBLL

SGS Accutest Internal Chain of Custody

Job Number: JC52767R
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 10/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52767-1.1	Secured Storage	Jennifer Voitovitch	10/30/17 22:43	Retrieve from Storage
JC52767-1.1	Jennifer Voitovitch	Secured Staging Area	10/30/17 22:43	Return to Storage
JC52767-1.1	Secured Staging Area	Tyrus Takacs	10/31/17 09:31	Retrieve from Storage
JC52767-1.1	Tyrus Takacs		10/31/17 16:43	Depleted
JC52767-1.2	Secured Storage	Jennifer Voitovitch	10/30/17 22:43	Retrieve from Storage
JC52767-1.2	Jennifer Voitovitch	Secured Staging Area	10/30/17 22:43	Return to Storage
JC52767-1.2	Secured Staging Area	Tyrus Takacs	10/31/17 09:31	Retrieve from Storage
JC52767-1.2	Tyrus Takacs		10/31/17 16:43	Depleted
JC52767-1.3	Secured Storage	Sahara Feliciano	10/11/17 14:01	Retrieve from Storage
JC52767-1.3	Sahara Feliciano	Secured Staging Area	10/11/17 14:01	Return to Storage
JC52767-1.3	Secured Staging Area	Colleen Hill	10/11/17 15:09	Retrieve from Storage
JC52767-1.3	Colleen Hill	Secured Storage	10/11/17 18:49	Return to Storage
JC52767-1.3	Secured Storage	Sahara Feliciano	10/12/17 16:02	Retrieve from Storage
JC52767-1.3	Sahara Feliciano	Secured Staging Area	10/12/17 16:02	Return to Storage
JC52767-1.3	Secured Staging Area	James Patrick McIlvaine	10/13/17 09:16	Retrieve from Storage
JC52767-1.3	James Patrick McIlvaine	Secured Storage	10/13/17 11:26	Return to Storage
JC52767-1.3.1	Colleen Hill	Metals Digestion	10/11/17 18:46	Digestate from JC52767-1.3
JC52767-1.3.1	Metals Digestion	Colleen Hill	10/11/17 18:47	Digestate from JC52767-1.3
JC52767-1.3.1	Colleen Hill	Metals Digestate Storage	10/11/17 18:47	Return to Storage
JC52767-1.5	Secured Storage	Todd Shoemaker	10/12/17 14:47	Retrieve from Storage
JC52767-1.5	Todd Shoemaker	Secured Staging Area	10/12/17 14:47	Return to Storage
JC52767-1.5	Secured Staging Area	Timothy Zhen Wei Ho	10/12/17 19:30	Retrieve from Storage
JC52767-1.5	Timothy Zhen Wei Ho	Secured Storage	10/13/17 00:32	Return to Storage
JC52767-1.6	Secured Storage	Luis Villanueva	10/10/17 17:42	Retrieve from Storage
JC52767-1.6	Luis Villanueva	Secured Staging Area	10/10/17 17:42	Return to Storage
JC52767-1.6	Secured Staging Area	Andray Tandacharry	10/10/17 20:29	Retrieve from Storage
JC52767-1.6	Andray Tandacharry	Secured Storage	10/10/17 23:33	Return to Storage
JC52767-1.7	Secured Storage	Dwayne Johnson	10/11/17 09:05	Retrieve from Storage
JC52767-1.7	Dwayne Johnson	Secured Staging Area	10/11/17 09:05	Return to Storage
JC52767-1.7	Secured Staging Area	Jaqueline Nicholas	10/11/17 09:36	Retrieve from Storage
JC52767-1.7	Jaqueline Nicholas	Secured Storage	10/11/17 16:05	Return to Storage
JC52767-1.7	Secured Storage	Todd Shoemaker	10/12/17 10:50	Retrieve from Storage
JC52767-1.7	Todd Shoemaker	Secured Staging Area	10/12/17 10:50	Return to Storage
JC52767-1.7	Secured Staging Area	Jaqueline Nicholas	10/12/17 13:02	Retrieve from Storage
JC52767-1.7	Jaqueline Nicholas	Secured Storage	10/12/17 15:43	Return to Storage
JC52767-1.8	Secured Storage	Todd Shoemaker	10/18/17 08:06	Retrieve from Storage
JC52767-1.8	Todd Shoemaker	Secured Staging Area	10/18/17 08:06	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC52767R
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 10/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52767-1.8	Secured Staging Area	Rie Iwasaki	10/18/17 08:17	Retrieve from Storage
JC52767-1.8	Rie Iwasaki	Secured Storage	10/18/17 16:14	Return to Storage
JC52767-2.1	Secured Storage	Sahara Feliciano	10/11/17 20:39	Retrieve from Storage
JC52767-2.1	Sahara Feliciano	Secured Staging Area	10/11/17 20:40	Return to Storage
JC52767-2.1	Secured Staging Area	Ishmael Mansaray	10/12/17 01:15	Retrieve from Storage
JC52767-2.1	Ishmael Mansaray	Secured Storage	10/12/17 09:12	Return to Storage
JC52767-2.1	Secured Storage	Allan Chung-yew	10/12/17 10:25	Retrieve from Storage
JC52767-2.1	Allan Chung-yew		10/12/17 17:33	Depleted
JC52767-2.1.1	Allan Chung-yew	Organics Prep	10/12/17 10:25	Extract from JC52767-2.1
JC52767-2.1.1	Organics Prep	Allan Chung-yew	10/12/17 17:54	Extract from JC52767-2.1
JC52767-2.1.1	Allan Chung-yew	Extract Storage	10/12/17 17:54	Return to Storage
JC52767-2.1.1	Extract Storage	Christopher Sowa	10/16/17 05:50	Retrieve from Storage
JC52767-2.1.1	Christopher Sowa	GCMSF	10/16/17 05:50	Load on Instrument
JC52767-2.1.1	GCMSF	Kristi Schollenberger	10/19/17 14:02	Unload from Instrument
JC52767-2.1.1	Kristi Schollenberger	Extract Freezer	10/19/17 14:02	Return to Storage
JC52767-2.2	Secured Storage	Jennifer Voitovitch	10/30/17 19:31	Retrieve from Storage
JC52767-2.2	Jennifer Voitovitch	Secured Staging Area	10/30/17 19:32	Return to Storage
JC52767-2.2	Secured Staging Area	Ishmael Mansaray	10/31/17 00:39	Retrieve from Storage
JC52767-2.2	Ishmael Mansaray	Jonathan Stanley	10/31/17 07:33	Custody Transfer
JC52767-2.2	Jonathan Stanley	Secured Storage	10/31/17 07:38	Return to Storage
JC52767-2.2	Secured Storage	Christopher Hall	10/31/17 18:26	Retrieve from Storage
JC52767-2.2	Christopher Hall	Secured Staging Area	10/31/17 18:26	Return to Storage
JC52767-2.2	Secured Staging Area	Yaw Britwum	10/31/17 18:27	Retrieve from Storage
JC52767-2.2	Yaw Britwum		10/31/17 19:00	Depleted
JC52767-2.2.1	Yaw Britwum	Organics Prep	10/31/17 18:29	Extract from JC52767-2.2
JC52767-2.2.1	Organics Prep	Yaw Britwum	10/31/17 22:43	Extract from JC52767-2.2
JC52767-2.2.1	Yaw Britwum	Extract Storage	10/31/17 22:43	Return to Storage
JC52767-2.2.2	Yaw Britwum	Organics Prep	10/31/17 18:32	Extract from JC52767-2.2
JC52767-2.2.3	Yaw Britwum	Organics Prep	10/31/17 18:33	Extract from JC52767-2.2
JC52767-2.2.3	Organics Prep	Yaw Britwum	10/31/17 22:43	Extract from JC52767-2.2
JC52767-2.2.3	Yaw Britwum	Extract Storage	10/31/17 22:43	Return to Storage
JC52767-2.2.3	Extract Storage	Edouard Adrian Lee	11/02/17 14:39	Retrieve from Storage
JC52767-2.2.3	Edouard Adrian Lee	GCXX	11/02/17 14:39	Load on Instrument
JC52767-2.5	Secured Storage	Sahara Feliciano	10/11/17 14:01	Retrieve from Storage
JC52767-2.5	Sahara Feliciano	Secured Staging Area	10/11/17 14:01	Return to Storage
JC52767-2.5	Secured Staging Area	Colleen Hill	10/11/17 15:09	Retrieve from Storage
JC52767-2.5	Colleen Hill	Secured Storage	10/11/17 18:49	Return to Storage

SGS Accutest Internal Chain of Custody

Job Number: JC52767R
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 10/10/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC52767-2.5.1	Colleen Hill	Metals Digestion	10/11/17 18:46	Digestate from JC52767-2.5
JC52767-2.5.1	Metals Digestion	Colleen Hill	10/11/17 18:47	Digestate from JC52767-2.5
JC52767-2.5.1	Colleen Hill	Metals Digestate Storage	10/11/17 18:47	Return to Storage
JC52767-2.6	Secured Storage	Luis Villanueva	10/10/17 17:42	Retrieve from Storage
JC52767-2.6	Luis Villanueva	Secured Staging Area	10/10/17 17:42	Return to Storage
JC52767-2.6	Secured Staging Area	Sarah Asraf	10/10/17 17:49	Retrieve from Storage
JC52767-2.6	Sarah Asraf	Secured Storage	10/11/17 01:08	Return to Storage
JC52767-2.7	Secured Storage	Sahara Feliciano	10/11/17 16:45	Retrieve from Storage
JC52767-2.7	Sahara Feliciano	Secured Staging Area	10/11/17 16:45	Return to Storage
JC52767-2.7	Secured Staging Area	Beatrice Marcelino	10/12/17 08:32	Retrieve from Storage
JC52767-2.7	Beatrice Marcelino	Secured Storage	10/12/17 15:18	Return to Storage
JC52767-2.7	Secured Storage	Sahara Feliciano	10/15/17 15:17	Retrieve from Storage
JC52767-2.7	Sahara Feliciano	Secured Staging Area	10/15/17 15:17	Return to Storage
JC52767-2.7	Secured Staging Area	Mahendra Patel	10/16/17 08:21	Retrieve from Storage
JC52767-2.7	Mahendra Patel	Secured Storage	10/16/17 18:20	Return to Storage
JC52767-2.8	Secured Storage	Chelsea San Filippo	10/13/17 16:11	Retrieve from Storage
JC52767-2.8	Chelsea San Filippo	GCMST	10/13/17 16:11	Load on Instrument
JC52767-2.8	GCMST	Chelsea San Filippo	10/16/17 11:07	Unload from Instrument
JC52767-2.8	Chelsea San Filippo	Secured Storage	10/16/17 11:07	Return to Storage
JC52767-2.10	Secured Storage	Bridget Kelly	10/13/17 10:59	Retrieve from Storage
JC52767-2.10	Bridget Kelly	Secured Storage	10/13/17 16:49	Return to Storage
JC52767-2.11	Secured Storage	Chelsea San Filippo	10/13/17 10:54	Retrieve from Storage
JC52767-2.11	Chelsea San Filippo		10/13/17 10:55	Depleted

Amec Foster Wheeler Environment & Infrastructure, Inc.
200 American Metro Blvd., Suite 113
Hamilton, NJ 08619
Phone: (609) 689-2829 Fax: (609) 689-2838

LETTER OF TRANSMITTAL

To: Mr. Sean H. Hulbert Assistant Chemical Engineer NYCDEP, Bureau of Wastewater Treatment 96-05 Horace Harding Expressway, 1st Floor Corona, New York 11368 **FROM:** Timothy Kessler	**DATE:** March 6, 2018 **PROJECT NO.:** 3480160502 **PROJ. NAME:** Review Avenue **SUBJECT:** Review Avenue Development Sites 37-30 and 37-80 Review Avenue File # C-5652 1st Quarter 2018 Effluent Discharge Compliance Report

WE TRANSMIT TO YOU: ☒ HEREWITH ☐ UNDER SEPARATE COVER

SUBJECT:	**ACTION:**	**SENT BY:**
☐ DRAWINGS	☐ FOR YOUR INFORMATION	☐ MAIL
☐ SPECIFICATIONS	☐ FOR YOUR COMMENT OR APPROVAL	☐ CERTIFIED MAIL
☐ CALCULATIONS	☐ RETURNED FOR CORRECTION: RESUBMIT	☒ EXPRESS
☒ REPORT	☐ APPROVED AS NOTED	☐ COURIER
☐ COST ESTIMATE	☒ AS REQUESTED	☐ HAND DELIVERED
☐ CD		☐ FACSIMILE:

# of pages (including transmittal sheet) 6

COPIES	DATE	DESCRIPTION
1	3/10/18	Compliance Monitoring Report for 1st Quarter 2018

REMARKS: de maximis, Inc. will forward report to NYSDEC

CC: Craig Coslett, de maximis, Inc.

By: Tim Kessler
(609) 631-2927

If transmission is not received in good order, please call Suzy at 609-689-2829

de maximis, inc.

1550 Pond Road
Suite 120
Allentown, PA 18104
(610) 435-1151
(610) 435-8459 FAX

March 6, 2018

Via U.S. Mail

Mr. Sean H. Hulbert
Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, New York 11368

RE: Review Avenue Development Sites - 37-30 and 37-80 Review Avenue
File # C-5652
1st Quarter 2018 Effluent Discharge Compliance Report

Dear Mr. Hulbert:

Enclosed is the 1st Quarter 2018 Effluent Discharge Compliance Report for the Review Avenue Development Sites. This report is being submitted on behalf of the Review Avenue System LLC administering the Review Avenue Development Site Brownfield Projects identified as RAD I and RAD II.

I would like to call to your attention the following, relative to discharge for the 1st Quarter 2018:

- Approximately 634,400 gallons of water have been discharged to the sewer system since the last report was submitted.
- No constituents were reported above discharge criteria.

Please contact me with any questions at (610) 435-1151.

Sincerely,

de maximis, inc.

R. Craig Coslett
Project Coordinator for RADI and RAD II

Enclosures: Compliance Monitoring Report for 1st Quarter 2018
CC: John Grathwol, NYDEC (electronic mail only)
Tim Kessler, Wood Group (electronic mail only)
Brent O'Dell, Wood Group (electronic mail only)
File: 3216 / 1st Qrt Compliance Report 2018

March 6, 2018

Mr. Sean H. Hulbert - Assistant Chemical Engineer
NYCDEP, Bureau of Wastewater Treatment
96-05 Horace Harding Expressway, 1st Floor
Corona, NY 11368

Subject: **1st Quarter 2018 Effluent Discharge Compliance**
Review Avenue Development Sites
37-30 and 37-80 Review Avenue
Long Island City, Queens, New York, File # C-5652

Dear Mr. Hulbert:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), on behalf of Review Avenue System LLC, submits the effluent laboratory analysis data in connection with the letter of approval (LOA) for groundwater discharge to sanitary or combined sewer for the Review Avenue Development (RAD) Sites and LOA Extension dated October 17, 2017.

Amec Foster Wheeler collected the 1st Quarter 2018 discharge compliance samples on January 31, 2018. Analytical results indicate no exceedances of the daily discharge limits for all parameters and no exceedances of the monthly discharge limits for all parameters, and therefore the discharge is in compliance with our LOA requirements. The analytical results collected for the 1st quarter 2018 compliance sampling is summarized on Table 1 attached. The total volume of groundwater discharged to the sanitary or combined sewer, since system start-up was 5,441,915 gallons as of the January 31st sampling event and 634,400 gallons since the last quarterly sampling event.

If you have any questions, please contact either of the undersigned at (609) 689-2829.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

William J. Mikula, P.E.
Associate Engineer-Civil

Brent C. O'Dell, P.E.
Principal Engineer – Civil

Attachments: Table 1 – Summary of Groundwater Analytical Results

cc: R. Craig Coslett – Review Avenue System LLC

200 American Metro Blvd
Suite 113
Hamilton, NJ 08619
609-689-2829
amecfw.com

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Field Sample ID:	Unit	NYCDEP Daily Limit	NYCDEP Monthly Limit	RA-EFF-G		RA-EFF-C	
Compliance Period:				1Q 2018		1Q 2018	
Sample Date:				1/31/2018		1/31/2018	
Lab Sample ID:				JC60019		JC60019	
Non-polar material[1]	mg/L	50	NL	10.2		-	
pH[2]	SUs	5 - 12	NL	6.88		-	
Temperature[2]	ºF	150	NL	57.92		-	
Flash Point[3]	ºF	> 140	NL	> 200		-	
Cadmium (Instantaneous)	mg/L	2	NL	0.003	U	-	
Cadmium (Composite)	mg/L	0.69	NL	-		0.003	U
Chromium (VI)	mg/L	5	NL	0.01	U	-	
Copper	mg/L	5	NL	0.01	U	-	
Lead	mg/L	2	NL	0.003	U	-	
Mercury	mg/L	0.05	NL	0.0002	U	-	
Nickel	mg/L	3	NL	0.0104		-	
Zinc	mg/L	5	NL	0.0545		-	
Benzene	µg/L	134	57	1.0	U	-	
Carbon Tetrachloride	µg/L	NL	NL	-		1.0	U
Chloroform	µg/L	NL	NL	-		1.0	U
1,4-Dichlorobenzene	µg/L	NL	NL	1.0	U	-	
Ethylbenzene	µg/L	380	142	1.0	U	-	
MTBE (Methyl-Tert-Butyl-Ether)	µg/L	50	NL	1.0	U	-	
Napthalene	µg/L	47	19	-		1.0	U
Phenol	µg/L	NL	NL	-		2.0	U
Tetrachloroethylene (Perc)	µg/L	20	NL	1.0	U	-	
Toluene	µg/L	74	28	1.0	U	-	
1,2,4-Trichlorobenzene	µg/L	NL	NL	-		1.0	U
1,1,1-Trichloroethane	µg/L	NL	NL	-		1.0	U
Xylenes (Total)	µg/L	74	28	1.0	U	-	
PCBs (Total)	µg/L	1	NL	-		0.25	
Total Suspended Solids (TSS)	mg/L	350	NL	23.0		-	
CBOD	mg/L	NL	NL	-		10	U
Chloride	mg/L	NL	NL	158		-	
Total Nitrogen	mg/L	NL	NL	-		1.8	
Total Solids	mg/L	NL	NL	590		-	

Prepared by: MS 3/2/18

Table 1
Summary of Analytical Results - Groundwater Treatment System
Review Avenue Development Sites, NYCDEP File # C-5652
Long Island City, Queens, New York

Notes:
RA-EFF-G: Instantaneous (Grab) Sample
RA-EFF-C: 4-Hour Flow Weighted Composite Sample
Bold/Shaded: Concentration exceeds daily limit
Underline: Concentration exceeds monthly limit
1. Non-polar Material reported by lab as "Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)"
2. pH and Temperature measured in field
3. Flash Point reported by lab as Ignitability

Definitions:
MDL: Method Detection Limit
RL: Reporting Limit
NL: No Limit

Data Qualifiers:
H: Sample was prepped or analyzed beyond the specified holding time
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U: Indicates the analyte was not detected at the indicated RL.

Prepared by: MS 3/2/18

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

AMEC Foster Wheeler

Review Avenue, Long Island City, NY

3480160502 PO#C012700305

SGS Job Number: JC60019

Sampling Date: 01/31/18

Report to:

AMEC Foster Wheeler
200 American Metro Boulevard Suite 113
Hamilton, NJ 08619
Timothy.Kessler@amecfw.com; Vincent.Whelan@amecfw.com

ATTN: Tim Kessler

Total number of pages in report: **23**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Nancy Cole
Laboratory Director

Client Service contact: Kristin Degraw 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

Sections: 1 2 3 4

Table of Contents

SGS North America Inc.

Sample Summary

AMEC Foster Wheeler

Job No: JC60019

Review Avenue, Long Island City, NY
Project No: 3480160502 PO#C012700305

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC60019-1	01/31/18	09:00	DB	01/31/18	AQ	Effluent	RA-EFF-G
JC60019-2	01/31/18	09:40	DB	01/31/18	AQ	Effluent	RA-EFF-C1 THRU C4

Summary of Hits

Job Number: JC60019
Account: AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Collected: 01/31/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC60019-1	**RA-EFF-G**					
Nickel		10.4	10		ug/l	EPA 200.7
Zinc		54.5	20		ug/l	EPA 200.7
Chloride		158	2.0		mg/l	EPA 300/SW846 9056A
HEM Petroleum Hydrocarbons		10.2	5.6		mg/l	EPA 1664A
Ignitability (Flashpoint)		> 200			Deg. F	SW846 1010A/ASTM D93
Solids, Total		590	10		mg/l	SM2540 B-11
Solids, Total Suspended		23.0	4.0		mg/l	SM2540 D-11
pH [a]		6.37			su	SM4500H+ B-11
JC60019-2	**RA-EFF-C1 THRU C4**					
Aroclor 1248 [b]		0.25	0.050	0.025	ug/l	EPA 608
Nitrogen, Total [c]		1.8	0.30		mg/l	SM4500 A-11
Nitrogen, Total Kjeldahl		1.8	0.20		mg/l	EPA 351.2/LACHAT

(a) Sample received out of holding time for pH analysis.
(b) Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 15%, so it being used for confirmation only.
(c) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC60019-1	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T229528.D	1	02/02/18 20:01	CSF	n/a	n/a	VT9432
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.24	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.21	ug/l	
1330-20-7	Xylenes (total)	ND	1.0	0.20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.24	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.82	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%		76-122%
2037-26-5	Toluene-D8 (SUR)	103%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	99%		80-120%
1868-53-7	Dibromofluoromethane (S)	95%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC60019-1	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [2]	EPA 200.7 [3]
Copper	< 10	10	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [2]	EPA 200.7 [3]
Lead	< 3.0	3.0	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [2]	EPA 200.7 [3]
Mercury	< 0.20	0.20	ug/l	1	02/02/18	02/02/18	JA	EPA 245.1 [1]	EPA 245.1 [4]
Nickel	10.4	10	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [2]	EPA 200.7 [3]
Zinc	54.5	20	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [2]	EPA 200.7 [3]

(1) Instrument QC Batch: MA43694
(2) Instrument QC Batch: MA43700
(3) Prep QC Batch: MP5533
(4) Prep QC Batch: MP5565

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-G		
Lab Sample ID:	JC60019-1	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	158	2.0	mg/l	1	02/06/18 03:43	JN	EPA 300/SW846 9056A
Chromium, Hexavalent	< 0.010	0.010	mg/l	1	01/31/18 22:10	LS	SM3500CR B-11
HEM Petroleum Hydrocarbons	10.2	5.6	mg/l	1	02/07/18 21:00	CB	EPA 1664A
Ignitability (Flashpoint)	> 200		Deg. F	1	02/09/18 11:54	RI	SW846 1010A/ASTM D93
Solids, Total	590	10	mg/l	1	02/05/18 19:22	AB	SM2540 B-11
Solids, Total Suspended	23.0	4.0	mg/l	1	02/01/18 18:31	AB	SM2540 D-11
pH [a]	6.37		su	1	01/31/18 13:57	SUB	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C1 THRU C4		
Lab Sample ID:	JC60019-2	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
Method:	EPA 624	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	T229529.D	1	02/02/18 20:32	CSF	n/a	n/a	VT9432
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
56-23-5	Carbon tetrachloride	ND	1.0	0.31	ug/l	
67-66-3	Chloroform	ND	1.0	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4 (SUR)	91%		76-122%
2037-26-5	Toluene-D8 (SUR)	101%		80-120%
460-00-4	4-Bromofluorobenzene (SUR)	98%		80-120%
1868-53-7	Dibromofluoromethane (S)	100%		80-120%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C1 THRU C4		
Lab Sample ID:	JC60019-2	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
Method:	EPA 625 EPA 625	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2P77090.D	1	02/03/18 01:17	KLS	02/01/18 15:50	OP9708	E2P3398
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-95-2	Phenol	ND	2.0	0.40	ug/l	
91-20-3	Naphthalene	ND	1.0	0.23	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		10-110%
4165-62-2	Phenol-d5	30%		10-110%
118-79-6	2,4,6-Tribromophenol	118%		35-147%
4165-60-0	Nitrobenzene-d5	107%		32-132%
321-60-8	2-Fluorobiphenyl	107%		40-117%
1718-51-0	Terphenyl-d14	86%		33-126%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C1 THRU C4		
Lab Sample ID:	JC60019-2	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
Method:	EPA 608 EPA 608	**Percent Solids:**	n/a
Project:	Review Avenue, Long Island City, NY		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX223744.D	1	02/13/18 13:18	HB	02/07/18 08:10	OP9857	GXX6248
Run #2 [a]	XX223766.D	1	02/14/18 12:50	MH	02/07/18 08:10	OP9857	GXX6249

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	ND	0.050	0.034	ug/l	
11104-28-2	Aroclor 1221	ND	0.050	0.029	ug/l	
11141-16-5	Aroclor 1232	ND	0.050	0.020	ug/l	
53469-21-9	Aroclor 1242	ND	0.050	0.027	ug/l	
12672-29-6	Aroclor 1248 [b]	0.25	0.050	0.025	ug/l	
11097-69-1	Aroclor 1254	ND	0.050	0.034	ug/l	
11096-82-5	Aroclor 1260	ND	0.050	0.027	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	80%	115%	10-156%
877-09-8	Tetrachloro-m-xylene	79%	112%	10-156%
2051-24-3	Decachlorobiphenyl	87%	116%	10-143%
2051-24-3	Decachlorobiphenyl	103%	153% [c]	10-143%

(a) Confirmation run.
(b) Reported from the 1st signal. The %D of the CCV on the 2nd signal exceeds the method criteria of 15%, so it being used for confirmation only.
(c) Outside control limits due to matrix interference.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RA-EFF-C1 THRU C4		
Lab Sample ID:	JC60019-2	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Cadmium	< 3.0	3.0	ug/l	1	02/01/18	02/03/18	ND	EPA 200.7 [1]	EPA 200.7 [2]

(1) Instrument QC Batch: MA43700
(2) Prep QC Batch: MP5533

RL = Reporting Limit

Report of Analysis

Client Sample ID:	RA-EFF-C1 THRU C4		
Lab Sample ID:	JC60019-2	**Date Sampled:**	01/31/18
Matrix:	AQ - Effluent	**Date Received:**	01/31/18
		Percent Solids:	n/a
Project:	Review Avenue, Long Island City, NY		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Carbonaceous Bod, 5 Day	< 10	10	mg/l	1	01/31/18 21:20	SA	SM5210 B-11
Nitrogen, Nitrate [a]	< 0.11	0.11	mg/l	1	02/01/18 13:49	BM	EPA353.2/SM4500NO2B
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	02/01/18 13:49	BM	EPA 353.2/LACHAT
Nitrogen, Nitrite	< 0.010	0.010	mg/l	1	01/31/18 18:55	LS	SM4500NO2 B-11
Nitrogen, Total [b]	1.8	0.30	mg/l	1	02/06/18 09:06	BM	SM4500 A-11
Nitrogen, Total Kjeldahl	1.8	0.20	mg/l	1	02/06/18 09:06	BM	EPA 351.2/LACHAT

(a) Calculated as: (Nitrogen, Nitrate + Nitrite) - (Nitrogen, Nitrite)
(b) Calculated as: (Nitrogen, Total Kjeldahl) + (Nitrogen, Nitrate + Nitrite)

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

Parameter Certification Exceptions

Job Number: JC60019
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Nitrogen, Total		**SM4500 A-11**	AQ	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

ACCUTEST LABORATORIES

GW

CHAIN OF CUSTODY

PAGE 1 OF 2

E COMP

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #:
Bottle Order Control #:
Accutest Quote #: DK4_2016_911
Accutest Job #: JC60019

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City, State, Zip: Hamilton, NJ 08619
Project Contact / E-mail: Vincent.Whelan@amecfw.com
Phone #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838
Fax #:
Sampler(s) Name(s): Dan Berkowitz
Phone #: 8457024357

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City, State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Flashpoint (Ignitability) - SW846 1010A	Metals (Cd, Cu, Pb, Ni, Zn) - EPA 200.7; Mercury (Hg) - EPA 245.1	SGT HEM - EPA 1664A SGT	pH (SM4500H+ B-11); Total Solids (SM2540 B-11); Chloride (EPA 300.0 / SM4500 Cl-C)	Total Suspended Solids - SM2540 D-11	VOC (V624BTXM, VMS+PCE, VMS+14DCB) - EPA 624	Hexavalent Chromium (SM3500 Cr B)	Phenol, Naphthalene, 1,2,4-Trichlorobenzene - EPA 625	CBOD5 - SM5210 B-11	Metals (Cadmium Only) - EPA 200.7	PCBs, Low Level (P608PCBLL) - EPA 608	LAB USE ONLY
1	RA-EFF-G		1/31/18	0900	DB	GW	11	5		1		5				X	X	H	X	X	X	X					
2	RA-EFF-C		↓	0940	DB	GW	8			1	1	6											X	X	X	H	E59
	RA-VOC-C1		↓	0630	DB	GW	3	3																			A26
	RA-VOC-C2		↓	0730	DB	GW	3	3																			G1
2	RA-VOC-C3		↓	0830	DB	GW	3	3																			V802
	RA-VOC-C4		↓	0930	DB	GW	3	3																			L21
																											COMP

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

INITIAL ASESSMENT 2B (A)

LABEL VERIFICATION ____

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. HOLD SGT-HEM + PCB SAMPLE

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	1/31/18 1450	1 [signature]	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal # 978	[X] Intact [ ] Not intact	Preserved where applicable [ ] On Ice [X] Cooler Temp. 0.9°C

JC60019: Chain of Custody
Page 1 of 4

4.2 4

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
Accutest Quote #: DK4_2016_911 | Accutest Job #: JC 60019

Client / Reporting Information

Company Name: Amec Foster Wheeler
Street Address: 200 American Metro BLVD #113
City / State / Zip: Hamilton, NJ 08619
Project Contact: Vincent.Whelan@amecfw.com | E-mail
Phone #: M: 609-815-6175, D: 609-689-2832, F: 609-689-2838 | Fax #
Sampler(s) Name(s) | Phone #

Project Information

Project Name: Review Ave, Long Island City, Queens
Street: 37-30 & 37-80 Review Avenue
City / State: Long Island City, Queens, NY
Project #: 3480160502
Client Purchase Order #: C012700305
Project Manager: Tim Kessler

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Total Nitrogen (TKN, NO2/NO3) - SM18 4500N	Composite VOCs (4:1 Ratio)	VOC (V624CHLFRM, VMS+CTC, VMS+TCA) - EPA 624	LAB USE ONLY
1	RA-EFF-G		1/31/18	0700	DA	GW	1	5		1		5							
	RA-EFF-C			0940	DA	GW	8			1	1	6				X		X	
	RA-VOC-C1			0630	DA	GW	3	3									X		
2	RA-VOC-C2			0730	DA	GW	3	3									X		
	RA-VOC-C3			0530	DA	GW	3	3									X		
	RA-VOC-C4			0730	DA	GW	3	3									X		

Turnaround Time (Business days)

Approved By (Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [X] Other NYCDEP

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

COMPOSITE RA-VOC-C1 to RA-VOC-C4 IN LAB TO BE USED FOR RA-EFF-C VOC ANALYSIS. **HOLD SGT-HEM SAMPLE** #23

HEX CHROME TEST METHOD ONLY ALLOWS 24HR HOLD TIME

Sample Custody must be documented below each time samples change possession, including courier deli

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	1/31/18 1450	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # 518	Intact / Not intact	Preserved where applicable	On Ice	Cooler Temp.
5		5					

SGS Sample Receipt Summary

Job Number: JC60019 **Client:** _____ **Project:** _____

Date / Time Received: 1/31/2018 2:50:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (0.9);

Cooler Temps (Corrected) °C: Cooler 1: (1.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 216017 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JC60019

Requested Date:	2/6/2018	**Received Date:**	1/31/2018
Account Name:	AMEC Foster Wheeler	**Due Date:**	2/14/2018
Project Description:	Review Avenue, Long Island City, NY	**Deliverable:**	NYASPA
C/O Initiated By:	kristin.degra **PM:** KD	**TAT (Days):**	14

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Sample #: JC60019-1 **Change:**

Dept: Please add PHC1664

TAT: 14

RA-EFF-G

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Sample #: JC60019-2 **Change:**

Dept: Please add P608PCBLL

TAT: 14

RA-EFF-C1 THRU C4

==========

Above Changes Per: Client / Tim Kessler **Date/Time:** 2/6/2018 2:48:28 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JC60019: Chain of Custody
Page 4 of 4

Internal Sample Tracking Chronicle

AMEC Foster Wheeler

Job No: JC60019

Review Avenue, Long Island City, NY
Project No: 3480160502 PO#C012700305

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC60019-1 RA-EFF-G	Collected: 31-JAN-18 09:00 By: DB		Received: 31-JAN-18 By: AS			
JC60019-1	SM4500H+ B-11	31-JAN-18 13:57	SUB			PH
JC60019-1	SM3500CR B-11	31-JAN-18 22:10	LS			XCRSM
JC60019-1	SM2540 D-11	01-FEB-18 18:31	AB			TSS
JC60019-1	EPA 245.1	02-FEB-18 10:41	JA	02-FEB-18	JA	HG
JC60019-1	EPA 624	02-FEB-18 20:01	CSF			V624BTXM
JC60019-1	EPA 200.7	03-FEB-18 03:03	ND	01-FEB-18	BP	CD,CU,NI,PB,ZN
JC60019-1	SM2540 B-11	05-FEB-18 19:22	AB			TS
JC60019-1	EPA 300/SW846 9056A	06-FEB-18 03:43	JN	05-FEB-18	JN	CHL
JC60019-1	EPA 1664A	07-FEB-18 21:00	CB	07-FEB-18	CB	PHC1664
JC60019-1	SW846 1010A/ASTM D93	08-FEB-18 11:54	RI			IGN
JC60019-2 RA-EFF-C1 THRU C4	Collected: 31-JAN-18 09:40 By: DB		Received: 31-JAN-18 By: AS			
JC60019-2	SM4500NO2 B-11	31-JAN-18 18:55	LS			NO2
JC60019-2	SM5210 B-11	31-JAN-18 21:20	SA	31-JAN-18	SA	CBOD5
JC60019-2	EPA353.2/SM4500NO2B	01-FEB-18 13:49	BM			NO3O
JC60019-2	EPA 353.2/LACHAT	01-FEB-18 13:49	BM	01-FEB-18	BM	NO32
JC60019-2	EPA 624	02-FEB-18 20:32	CSF			V624CHLFRM,VMS+ CTC,VMS+ TCA
JC60019-2	EPA 625	03-FEB-18 01:17	KLS	01-FEB-18	LL	AB625SL2
JC60019-2	EPA 200.7	03-FEB-18 03:07	ND	01-FEB-18	BP	CD
JC60019-2	SM4500 A-11	06-FEB-18 09:06	BM			TNIT
JC60019-2	EPA 351.2/LACHAT	06-FEB-18 09:06	BM	05-FEB-18	MP	TKN
JC60019-2	EPA 608	13-FEB-18 13:18	HB	07-FEB-18	JS	P608PCBLL
JC60019-2	EPA 608	14-FEB-18 12:50	MH	07-FEB-18	JS	P608PCBLL

SGS Internal Chain of Custody

Job Number: JC60019
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 01/31/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC60019-1.1	Secured Storage	Sahara Feliciano	02/07/18 13:46	Retrieve from Storage
JC60019-1.1	Sahara Feliciano	Secured Staging Area	02/07/18 13:46	Return to Storage
JC60019-1.1	Secured Staging Area	Chris Brunson	02/07/18 19:20	Retrieve from Storage
JC60019-1.1	Chris Brunson		02/07/18 22:16	Depleted
JC60019-1.2	Secured Storage	Sahara Feliciano	02/07/18 13:46	Retrieve from Storage
JC60019-1.2	Sahara Feliciano	Secured Staging Area	02/07/18 13:46	Return to Storage
JC60019-1.2	Secured Staging Area	Chris Brunson	02/07/18 19:20	Retrieve from Storage
JC60019-1.2	Chris Brunson		02/07/18 22:16	Depleted
JC60019-1.3	Secured Storage	Todd Shoemaker	02/01/18 08:48	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC60019-1.3	Secured Storage	Todd Shoemaker	02/01/18 08:48	Retrieve from Storage
JC60019-1.3	Todd Shoemaker	Secured Staging Area	02/01/18 08:48	Return to Storage
JC60019-1.3	Secured Staging Area	Bhooma Patel	02/01/18 09:00	Retrieve from Storage
JC60019-1.3	Bhooma Patel	Secured Storage	02/01/18 10:54	Return to Storage
JC60019-1.3	Secured Storage	Sahara Feliciano	02/01/18 16:00	Retrieve from Storage
JC60019-1.3	Sahara Feliciano	Secured Staging Area	02/01/18 16:00	Return to Storage
JC60019-1.3	Secured Staging Area	Jessica Adametz	02/02/18 08:26	Retrieve from Storage
JC60019-1.3	Jessica Adametz	Secured Storage	02/02/18 14:40	Return to Storage
JC60019-1.3.1	Bhooma Patel	Metals Digestion	02/01/18 10:51	Digestate from JC60019-1.3
JC60019-1.3.1	Metals Digestion	Bhooma Patel	02/01/18 10:51	Digestate from JC60019-1.3
JC60019-1.3.1	Bhooma Patel	Metals Digestate Storage	02/01/18 10:51	Return to Storage
JC60019-1.4	Secured Storage	Sahara Feliciano	02/01/18 13:56	Retrieve from Storage
JC60019-1.4	Sahara Feliciano	Secured Staging Area	02/01/18 13:56	Return to Storage
JC60019-1.4	Secured Staging Area	Asha Bodepudi	02/01/18 16:13	Retrieve from Storage
JC60019-1.4	Asha Bodepudi	Secured Storage	02/02/18 00:27	Return to Storage
JC60019-1.6	Secured Storage	Todd Shoemaker	01/31/18 15:00	Retrieve from Storage
JC60019-1.6	Todd Shoemaker	Secured Staging Area	01/31/18 15:01	Return to Storage
JC60019-1.6	Secured Staging Area	Lakshman Seshagiri	01/31/18 17:43	Retrieve from Storage
JC60019-1.6	Lakshman Seshagiri	Secured Storage	01/31/18 23:55	Return to Storage
JC60019-1.6	Secured Storage	Todd Shoemaker	02/05/18 14:23	Retrieve from Storage
JC60019-1.6	Todd Shoemaker	Secured Staging Area	02/05/18 14:24	Return to Storage
JC60019-1.6	Secured Staging Area	Asha Bodepudi	02/05/18 16:12	Retrieve from Storage
JC60019-1.6	Asha Bodepudi	Secured Storage	02/06/18 00:13	Return to Storage
JC60019-1.7	Secured Storage	Dwayne Johnson	02/05/18 08:47	Retrieve from Storage
JC60019-1.7	Dwayne Johnson	Secured Staging Area	02/05/18 08:47	Return to Storage
JC60019-1.7	Dwayne Johnson	Secured Staging Area	02/05/18 08:47	Return to Storage
Analyst chain of custody update error.				
JC60019-1.7	Dwayne Johnson	Secured Staging Area	02/05/18 08:47	Return to Storage

SGS Internal Chain of Custody

Job Number: JC60019
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 01/31/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
Analyst chain of custody update error.				
JC60019-1.7	Secured Staging Area	Jaqueline Nicholas	02/05/18 10:46	Retrieve from Storage
JC60019-1.7	Jaqueline Nicholas	Secured Storage	02/05/18 15:31	Return to Storage
JC60019-1.8	Secured Storage	Luis Villanueva	02/08/18 16:00	Retrieve from Storage
JC60019-1.8	Luis Villanueva	Secured Staging Area	02/08/18 16:00	Return to Storage
JC60019-1.8	Secured Staging Area	Rie Iwasaki	02/09/18 09:07	Retrieve from Storage
JC60019-1.8	Rie Iwasaki	Secured Storage	02/09/18 16:58	Return to Storage
JC60019-1.9	Secured Storage	Chelsea San Filippo	02/02/18 12:18	Retrieve from Storage
JC60019-1.9	Chelsea San Filippo	GCMST	02/02/18 12:18	Load on Instrument
JC60019-1.9	GCMST	Chelsea San Filippo	02/05/18 11:48	Unload from Instrument
JC60019-1.9	Chelsea San Filippo	Secured Storage	02/05/18 11:48	Return to Storage
JC60019-2.1	Secured Storage	Dave Hunkele	02/01/18 10:44	Retrieve from Storage
JC60019-2.1	Dave Hunkele	Secured Staging Area	02/01/18 10:45	Return to Storage
JC60019-2.1	Secured Staging Area	Jonathan Stanley	02/01/18 12:47	Retrieve from Storage
JC60019-2.1	Jonathan Stanley		02/01/18 16:30	Depleted
JC60019-2.1.1	Jonathan Stanley	Organics Prep	02/01/18 12:55	Extract from JC60019-2.1
JC60019-2.1.1	Organics Prep	Lindsey Lee	02/01/18 23:11	Extract from JC60019-2.1
JC60019-2.1.1	Lindsey Lee	Extract Storage	02/01/18 23:11	Return to Storage
JC60019-2.1.1	Extract Storage	Kristi Schollenberger	02/02/18 16:17	Retrieve from Storage
JC60019-2.1.1	Kristi Schollenberger	GCMS2P	02/02/18 16:17	Load on Instrument
JC60019-2.1.1	GCMS2P	Kristi Schollenberger	02/04/18 14:01	Unload from Instrument
JC60019-2.1.1	Kristi Schollenberger	Extract Freezer	02/04/18 14:02	Return to Storage
JC60019-2.2	Secured Storage	Christopher Hall	02/07/18 06:11	Retrieve from Storage
JC60019-2.2	Christopher Hall	Secured Staging Area	02/07/18 06:11	Return to Storage
JC60019-2.2	Secured Staging Area	Yaw Britwum	02/07/18 06:53	Retrieve from Storage
JC60019-2.2	Arielle Cocozza		02/08/18 03:31	Depleted
Analyst unavailable for custody transfer.				
JC60019-2.2.1	Yaw Britwum	Organics Prep	02/07/18 07:09	Extract from JC60019-2.2
JC60019-2.2.1	Organics Prep	Jonathan Stanley	02/07/18 16:06	Extract from JC60019-2.2
JC60019-2.2.1	Jonathan Stanley	Extract Storage	02/07/18 16:06	Return to Storage
JC60019-2.2.1	Extract Storage	Humarah Bano	02/08/18 16:45	Retrieve from Storage
JC60019-2.2.1	Humarah Bano	GCXX	02/08/18 16:45	Load on Instrument
JC60019-2.2.2	Yaw Britwum	Organics Prep	02/07/18 07:09	Extract from JC60019-2.2
JC60019-2.3	Secured Storage	Yaw Britwum	02/01/18 15:27	Retrieve from Storage
JC60019-2.3	Yaw Britwum		02/02/18 18:18	Depleted

SGS Internal Chain of Custody

Job Number: JC60019
Account: HLANJPR AMEC Foster Wheeler
Project: Review Avenue, Long Island City, NY
Received: 01/31/18

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JC60019-2.5	Secured Storage	Todd Shoemaker	02/01/18 08:48	Retrieve from Storage
JC60019-2.5	Secured Storage	Todd Shoemaker	02/01/18 08:48	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JC60019-2.5	Todd Shoemaker	Secured Staging Area	02/01/18 08:48	Return to Storage
JC60019-2.5	Secured Staging Area	Bhooma Patel	02/01/18 09:00	Retrieve from Storage
JC60019-2.5	Bhooma Patel	Secured Storage	02/01/18 10:54	Return to Storage
JC60019-2.5.1	Bhooma Patel	Metals Digestion	02/01/18 10:51	Digestate from JC60019-2.5
JC60019-2.5.1	Metals Digestion	Bhooma Patel	02/01/18 10:51	Digestate from JC60019-2.5
JC60019-2.5.1	Bhooma Patel	Metals Digestate Storage	02/01/18 10:51	Return to Storage
JC60019-2.6	Secured Storage	Dave Hunkele	02/01/18 07:41	Retrieve from Storage
JC60019-2.6	Dave Hunkele	Secured Staging Area	02/01/18 07:41	Return to Storage
JC60019-2.6	Secured Staging Area	Beatrice Marcelino	02/01/18 10:51	Retrieve from Storage
JC60019-2.6	Beatrice Marcelino	Secured Storage	02/01/18 15:50	Return to Storage
JC60019-2.6	Secured Storage	Sahara Feliciano	02/04/18 12:49	Retrieve from Storage
JC60019-2.6	Sahara Feliciano	Secured Staging Area	02/04/18 12:49	Return to Storage
JC60019-2.6	Secured Staging Area	Mahendra Patel	02/05/18 11:06	Retrieve from Storage
JC60019-2.6	Mahendra Patel	Secured Storage	02/05/18 18:04	Return to Storage
JC60019-2.7	Secured Storage	Todd Shoemaker	01/31/18 15:02	Retrieve from Storage
JC60019-2.7	Todd Shoemaker	Secured Staging Area	01/31/18 15:03	Return to Storage
JC60019-2.7	Secured Staging Area	Sarah Asraf	01/31/18 18:38	Retrieve from Storage
JC60019-2.7	Sarah Asraf	Secured Storage	01/31/18 22:17	Return to Storage
JC60019-2.8	Secured Storage	Todd Shoemaker	01/31/18 15:00	Retrieve from Storage
JC60019-2.8	Todd Shoemaker	Secured Staging Area	01/31/18 15:01	Return to Storage
JC60019-2.8	Secured Staging Area	Lakshman Seshagiri	01/31/18 17:43	Retrieve from Storage
JC60019-2.8	Lakshman Seshagiri	Secured Storage	01/31/18 23:55	Return to Storage
JC60019-2.9	Secured Storage	Chelsea San Filippo	02/02/18 12:18	Retrieve from Storage
JC60019-2.9	Chelsea San Filippo	GCMST	02/02/18 12:18	Load on Instrument
JC60019-2.9	GCMST	Chelsea San Filippo	02/05/18 11:48	Unload from Instrument
JC60019-2.9	Chelsea San Filippo	Secured Storage	02/05/18 11:48	Return to Storage
JC60019-2.12	Secured Storage	Chelsea San Filippo	02/02/18 12:05	Retrieve from Storage
JC60019-2.12	Chelsea San Filippo		02/02/18 12:06	Depleted