PHASE II ENVIRONMENTAL SITE INVESTIGATION

OF

PROPOSED P.S. 97X ADDITION
BLOCK 4474, PART OF LOT 1
1375 MACE AVENUE
BRONX, NY 10469

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EXECUTIVE SUMMARY

At the request of the New York City School Construction Authority (NYCSCA), AKRF Engineering, P.C. (AKRF) conducted a Phase II Environmental Site Investigation (ESI) at 1375 Mace Avenue in the Bronx, New York 10469 (the "Site"). The Site consists of the outdoor portions of an approximately 85,000-square foot (SF) lot, improved with an asphalt-paved playground area, a Temporary Classroom Building (X917), and Transportable Classroom Units (X997). The existing P.S. 97X building is located on the same lot south-adjacent to the Site, and contains three stories and a basement. The Site lot is bounded to the north by private dwellings; to the south by Mace Avenue, followed by private dwellings; to the east by Seymour Avenue, followed by private dwellings; and to the west by Fish Avenue, followed by private dwellings.

AKRF previously performed a Phase I Environmental Site Assessment (ESA) for the Site dated June 2016. On-site Recognized Environmental Conditions (RECs) identified by the Phase I ESA included: potential historic fill of unknown origin associated with raising the elevation of the Site and filling of a tributary of the Hutchinson River on the southwestern portion of the Site. Off-site RECs included: a nearby gasoline station, approximately 650 feet northwest of the Site, which is also listed with one active-status and two closed-status New York State Department of Environmental Conservation (NYSDEC) spills. The Phase I ESA also revealed environmental concerns associated with: potential methane generation associated with buried organic deposits related to the former stream, suspect asbestos-containing materials (ACM), lead based paint (LBP), and polychlorinated biphenyl (PCB)-containing electrical fixtures, light ballasts, and/or window caulking in the existing structure and in fill materials beneath the Site.

The purpose of the Phase II ESI was to determine whether the RECs identified in the Phase I ESA Report have affected the suitability of the Site for use as a public school facility and to preliminarily characterize the soil anticipated to be excavated for construction of the school facility. Phase II ESI field activities were performed on June 29 and July 6, 2016, and consisted of a geophysical survey and the completion of six soil borings, one temporary monitoring well, and five soil vapor sampling points. A total of seven soil samples, one groundwater sample, and five soil vapor samples were collected for laboratory analysis.

- Groundwater was encountered at approximately 15.25 feet below grade in the temporary well installed on-site during the Phase II ESI.
- Subsurface soil generally consisted of sand with gravel fragments. Evidence of historic fill (brick fragments) was identified in one soil boring.
- No anomalies indicative of underground storage tanks were identified during the geophysical survey.
- Trichloroethene was detected in two soil vapor samples slightly above the NYSDOH Air Guideline Value. Petroleum-related volatile organic compounds (VOCs) and other chlorinated compounds detected in soil vapor above the corresponding NYSDOH background ranges are likely attributable to off-site sources.
- Metals detected in soil above the Unrestricted Use Soil Cleanup Objectives (SCOs) (barium, cadmium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc) are likely attributable to background conditions and are not indicative of an on-site release or spill.
- Total and dissolved manganese detected in the groundwater sample above the Class GA Water Quality Standard is attributed to naturally occurring (background) conditions and is not indicative of an on-site release or spill.

AKRF recommends the following measures to make the Site suitable for use as a public school facility.

- A sub-slab depressurization system and soil vapor barrier should be incorporated into the new building design to prevent potential soil vapor intrusion. The vapor barrier should be appropriately integrated with any proposed damp-proofing or waterproofing design components.
- All material excavated during construction activities should be properly characterized prior to transportation to an off-site disposal facility. Results from the limited soil sampling conducted during this investigation should not be used in lieu of data from a full soil waste characterization.
- Fill material should be evaluated for the presence of ACM. In addition, any suspect ACM, LBP and/or PCB-containing materials affected by the proposed demolition or construction work should be identified prior to and properly managed during construction activities.
- Any dewatering required during construction should be minimized to mitigate influx of potentially contaminated water from off-site sources. Treatment to remove sediment and other potential contaminants from dewatering effluent may be required prior to discharge to the municipal sewer. All appropriate permits should be procured and pre-treatment should be conducted as required to meet applicable sewer effluent limitations for discharge of the dewatering fluids.
- After the proposed new building and grounds are constructed, if exposed soil (landscaped areas) is incorporated into the development of the Site, a minimum of two feet of environmentally clean fill should be placed over existing soil in these areas.

1.0 INTRODUCTION

1.1 Purpose

At the request of the New York City School Construction Authority (NYCSCA), AKRF Engineering, P.C. (AKRF) conducted a Phase II Environmental Site Investigation (ESI) of the property located at 1375 Mace Avenue in the Bronx, New York (the "Site"). The legal description of the Site is a portion of Block 4474, Lot 1. A Site Location map is provided as Figure 1. The Site consists of the outdoor portions of an approximately 85,000-square foot (SF) lot, occupied by an asphalt-paved play area, a Temporary Classroom Building (X917), and Transportable Classroom Units (X997). The existing P.S. 97X building (constructed in 1930) is located on the same lot south-adjacent to the Site, and contains three stories and a basement. The Site lot is bounded to the north by private dwellings; to the south by Mace Avenue, followed by private dwellings; to the east by Seymour Avenue, followed by private dwellings; and to the west by Fish Avenue, followed by private dwellings. A Site plan indicating Site features and the tax block and lot numbers is provided as Figure 2.

This Phase II ESI was performed to determine whether the recognized environmental conditions (RECs) and/or Vapor Encroachment Conditions (VECs) identified in the Phase I Environmental Site Assessment (ESA) Report prepared by AKRF for the NYCSCA, dated June 22, 2016, have affected the suitability of the Site for use as a public school facility and to preliminarily characterize the soil anticipated to be excavated for construction of the school facility. Soil, groundwater, and soil vapor were sampled as part of the Phase II ESI to accomplish these objectives.

1.2 Recognized Environmental Conditions and Environmental Concerns

A Phase I ESA of the Site was previously performed by AKRF. The Phase I ESA Report, dated June 22, 2016, identified several RECs associated with the Site, which are as follows:

<u>On-Site RECs:</u>

- The Site was noted to be at a lower elevation on the 1947 topographic map than on subsequent maps. In addition, a stream/tributary of the Hutchinson River is shown on the southwestern portion of the Site Lot (possibly extending under the Site) on the 1897 to 1900 maps, but was not shown on subsequent maps. These findings indicate that the Site may have undergone filling with materials of unknown origin.

<u>Off-Site RECs:</u>

- A Sunoco gasoline service station is located at 1280 Allerton Avenue, approximately 650 feet northwest of the Site. This facility is listed in the regulatory database report as a Historic Auto site, hazardous waste generator, and petroleum bulk storage facility with one active-status and two closed-status NYSDEC Spills.

The Phase I ESA Update also revealed environmental concerns associated with potential methane generation from former stream deposits, and suspect asbestos-containing materials (ACM), suspect interior and exterior lead-based paint (LBP), and suspect polychlorinated biphenyl- (PCB-) containing light ballasts and caulking material in the P.S. 97X building and in fill materials beneath the Site.

Based on these findings, a Phase II ESI was recommended to determine whether the identified RECs and environmental concern associated with methane generation have affected the suitability of the Site for use as a public school facility.

2.0 DESCRIPTION OF PHASE II ESI FIELD ACTIVITIES

Phase II ESI field activities were performed on June 29 and July 6, 2016. The field activities included the following:

- A geophysical survey of accessible areas of the Site;
- Advancement of six soil borings and collection and analysis of seven soil samples from those borings;
- Installation of one temporary monitoring well and collection and analysis of one groundwater sample; and
- Installation of five soil vapor sampling points and collection and analysis of five soil vapor samples.

A Site Plan showing all the sampling locations, Site features, tax block and lot numbers, and anticipated groundwater flow direction is provided as Figure 2. Representative Site photographs are included in Appendix A. The soil boring, temporary well, and soil vapor sampling locations were located within or directly adjacent to the proposed addition footprint as depicted in the NYCSCA Test Fit/Sketch Study, dated June 15, 2016.

The Phase II ESI was conducted in accordance with the AKRF's Phase II ESI Scope of Work (SOW) dated June 23, 2016, with the following exceptions:

- Temporary monitoring wells were not installed at locations SB-1, SB-2, SB-3, SB-5, and SB-6, as groundwater was not encountered before refusal (apparent bedrock) at approximately 6 to 12 feet below ground surface.
- One temporary monitoring well was installed at location SB-4, as the boring was advanced to 20 feet below ground surface and groundwater was encountered.

2.1 Geophysical Survey

A geophysical survey was performed on June 29, 2016 by Nova Geophysical Services of Douglaston, NY, to attempt to locate potential abandoned underground storage tanks (USTs) or other buried structures, and to verify that the proposed boring locations were clear of subsurface structures and utilities. The investigation was conducted in accessible areas of the Site using a Noggin's cart-mounted Ground Penetrating Radar (GPR) unit with a 250 MHz shielded antenna and the 3M Dynatel locator. GPR profiles were collected and inspected for reflections that could be indicative of USTs, utility lines, or other subsurface structures. Sample locations were established in areas that did not conflict with subsurface structures or utilities. A copy of the geophysical survey report is attached as Appendix B.

2.2 Soil Vapor Sampling

Soil vapor sampling was conducted as part of the Phase II ESI to determine the concentration of volatile organic compounds (VOCs) and methane in soil vapor beneath the Site. Figure 2 shows the locations of the five soil vapor sampling points (SV-1, SV-2, SV-3, SV-5, and SV-6) installed at the Site as a part of this Phase II ESI.

Soil vapor sampling points were installed and sampled on July 6, 2016. All sampling was conducted in conformance with the applicable procedures described in ASTM E 2600-08 "Standard Practice for Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions" and the October 2006 New York State Department of Health (NYSDOH) Soil Vapor Intrusion Guidance

Document protocols. Cascade Technical Services LLC of Lynnbrook, New York (Cascade) was retained as a subcontractor for drilling services.

All soil vapor sampling points were installed using a direct-push probe (i.e., Geoprobe®) system to advance a 0.75-inch diameter hollow probe rod fitted with an expendable 6-inch long stainless steel screened implant to a depth of 5 feet below ground surface (bgs). Dedicated Teflon tubing with threaded fittings was connected to the probe. The hollow probe rod was then removed and the boring was backfilled with clean silica sand to one foot above the screen. Hydrated bentonite was used to fill the remaining void around the sampling tubing to ground surface.

Prior to sampling, each soil vapor point was purged of three sample volumes using a peristaltic pump. During purging, an inverted one-gallon bucket was placed over the sampling point and helium gas was introduced through a small hole in the bucket to saturate the atmosphere around the sample point with helium gas. The purged vapors were collected into a Tedlar bag and monitored using a portable helium detector to check for short-circuiting of ambient air into the vapor sampling point and to verify the adequacy of the bentonite seal. Helium concentrations of less than 10 percent were considered sufficient to verify a tight seal. All soil vapor points passed the seal integrity tests, with helium detections up to 350 parts per million (ppm) identified. Purged vapors were also field-screened for organic vapors using a photoionization detector (PID) calibrated with 100 ppm isobutylene. PID readings up to 4.2 ppm were detected at the soil vapor points. After purging, each probe was connected via Teflon tubing to a laboratory-supplied 6-liter SUMMA canister equipped with a 0.1 liter per minute (L/min) flow regulator. Soil vapor samples were collected in individually-certified clean Summa canisters for an approximately one-hour sampling period. Five (5) samples (SV-1, SV-2, SV-3, SV-5, and SV-6) were submitted for laboratory analysis for the following VOCs by USEPA Method TO-15:

Summary of VOCs Analyzed for in Soil Vapor Samples

Chloromethane	1,2-Dichloroethane	Ethylbenzene
Vinyl Chloride	1,1,1-Trichloroethane	*m,p*-Xylenes
Chloroethane	Benzene	o-Xylene
1,1-Dichloroethene	Carbon Tetrachloride	1,3,5-Trimethylbenzene
Methylene chloride	1,2-Dichloropropane	1,2,4-Trimethylbenzene
trans-1,2-Dichloroethene	Trichloroethene	1,3-Dichlorobenzene
1,1-Dichloroethane	Toluene	1,2-Dichlorobenzene
Methyl tert-Butyl Ether	Tetrachloroethene	Naphthalene
cis-1,2-Dichloroethene	Chlorobenzene	

The soil vapor samples were additionally analyzed for methane by USEPA Method 3C. The Summa canisters were properly labeled and delivered by courier to Alpha Analytical of Mansfield, Massachusetts (Alpha). Alpha Analytical is a NYSDOH Environmental Laboratory Approval Program- (ELAP) certified analytical laboratory.

Soil vapor sampling logs are provided in Appendix C. Summaries of the soil vapor sample analytical results are provided in Tables 1 and 2, and copies of the analytical laboratory reports are attached in Appendix D.

2.3 Soil Investigation

Soil samples were collected to assess the current environmental conditions and to characterize subsurface soil at the Site. Figure 2 shows the locations of the six soil borings (SB-1 through SB-6) advanced at the Site

as part of the Phase II ESI. The subsurface soil sampling program was performed on July 6, 2016. Cascade was retained as a subcontractor for drilling services.

A track-mounted Geoprobe® drill rig was used to advance the soil borings and retrieve soil samples to approximately 20 feet below ground surface (bgs) at boring SB-4 and approximately 6 to 12 feet bgs at borings SB-1, SB-2, SB-3, SB-5, and SB-6 where shallow refusal (suspected bedrock) was encountered. Soil samples were collected and screened for evidence of field contamination continuously from the ground surface to the boring completion depth in 5-foot long, 2-inch diameter macro-core samplers lined with acetate sleeves. A description of the soil retained in each Geoprobe® sample core was logged by AKRF's on-site environmental scientist, and the soil was screened in the field for the presence of VOCs with a PID calibrated at the start of the work day with 100 ppm isobutylene. Soil boring logs, including the PID responses for each sample, are provided in Appendix C. A description of each boring location is presented in the following table:

Summary of Soil Boring Locations and Rationale

Soil Boring	Location	Rationale
SB-1	Northern portion of proposed addition footprint	• General fill conditions • Potential contamination from off-site REC to the northwest
SB-2	North Site boundary	• General fill conditions • Potential contamination from off-site REC to the northwest
SB-3	Center of the Site/eastern portion of proposed addition footprint	• General fill conditions
SB-4	Eastern portion of the Site, near the pad-mounted transformers	• General fill conditions • Potential releases from transformers
SB-5	Southwestern corner of the Site/proposed addition footprint	• General fill conditions
SB-6	Southeastern corner of Site	• General fill conditions

No evidence of obvious contamination (e.g., elevated PID readings, odors, staining, etc.) was observed in soil borings SB-1, SB-2, SB-3, SB-4, or SB-6 advanced during the investigation; therefore, one soil sample from each of these borings was selected for laboratory analysis. Apparent fill material was observed from 0-2 feet in SB-5; therefore, one soil sample was collected from within the fill layer (1-2') and a second sample was collected from just below the fill (4-5') for laboratory analysis. Care was taken to avoid including asphalt or asphaltic sub-base materials in the samples collected for laboratory analysis.

All soil samples were submitted for laboratory analysis and were analyzed for: combined Target Compound List (TCL) and CP-51 list VOCs plus tentatively identified compounds (TICs) and semivolatile organic compounds (SVOCs) plus TICs by EPA Methods 8260 and 8270, respectively; polychlorinated biphenyls (PCBs) by EPA Method 8082; and Target Analyte List (TAL) metals by EPA Method 6000/7000 series. For waste characterization purposes, samples were also analyzed for cyanide by EPA Method 9012, hexavalent chromium by EPA Method 7196, and diesel and gasoline range total petroleum hydrocarbons (TPH) by EPA Method 8015-modified. A summary of the soil sampling program is presented in the following table:

Summary of PID Screening and Soil Sample Analytical Plan

Sample ID/ Soil Boring Number	Boring Depth* (feet bgs)	Sample Depth Interval Selected for Analysis* (ft)	Max PID Reading (PPM)	TCL/CP-51 VOCs[1]	TCL/CP-51 SVOCs[1]	PCBs	TAL Metals	Cyanide	Hexavalent Chromium	DRO and GRO TPH
SB-1	12	9-10	ND	X	X	X	X	X	X	X
SB-2	10	9-10	ND	X	X	X	X	X	X	X
SB-3	6	5-6	ND	X	X	X	X	X	X	X
SB-4	20	4-5	ND	X	X	X	X	X	X	X
SB-5	6	1-2	ND	X	X	X	X	X	X	X
SB-5	6	4-5	ND	X	X	X	X	X	X	X
SB-6	12	11-12	ND	X	X	X	X	X	X	X

ND – Not Detected
X – Sample analysis performed
PPM – Parts per million
[1]Plus tentatively identified compounds (TICs)

The samples were collected and containerized in accordance with NYSDEC/USEPA protocols. Each container was properly labeled, preserved, and placed in an ice-filled cooler for transport via courier to Chemtech of Mountainside, New Jersey, a NYSDOH ELAP-certified analytical laboratory. Standard chain-of-custody procedures were followed. Summaries of the analytical results for the soil samples are provided in Tables 3 through 7, and copies of the analytical laboratory reports are attached in Appendix D.

2.4 Groundwater Investigation

Groundwater sampling was conducted as part of the Phase II ESI to assess the current environmental condition of groundwater beneath the Site. Figure 2 shows the locations of the groundwater sample collected at the Site as part of the Phase II ESI. The groundwater sampling was completed on July 6, 2016. Cascade was retained by AKRF as a subcontractor for drilling services.

Due to shallow refusal encountered at the five boring locations where temporary wells were proposed, groundwater sampling was conducted in a temporary well (TW-4) installed at soil boring location SB-4. The temporary well was installed using a track-mounted Geoprobe® rig. After encountering groundwater at the location, a temporary well was installed using 1-inch diameter, 10-foot long PVC well screen set at approximately 10 to 20 feet below grade. Following installation, a peristaltic pump was used to purge approximately three well volumes from the well, and the purged water was monitored for temperature, pH, turbidity, and conductivity using a water quality meter (Horiba U52-2 Water Quality Meter). Measurements were recorded every five minutes, and purging continued until water quality indicators stabilized. Following completion of the groundwater sampling, the temporary well was removed from the ground and the boring was backfilled with drill cuttings and sand.

The groundwater sample was analyzed for combined TCL and CP-51 list VOCs and SVOCs by EPA Methods 8260 and 8270, respectively, TAL metals by EPA Method 6000/7000 series (filtered and unfiltered analyses), and PCBs by EPA Method 8082. In addition, in support of potential dewatering for

school construction, additional sample volume was collected from TW-4 and analyzed for the New York City Department of Environmental Protection (NYCDEP) Industrial Pretreatment Program's "Limitations for Effluent to Sanitary or Combined Sewers" parameters, per NYCDEP's Dewatering Permit Guidelines. One aqueous trip blank accompanied the sample shipment and was analyzed for TCL/CP-51 list VOCs. A summary of groundwater field screening results and the groundwater sample analytical plan is presented in the following table:

Groundwater Sample Analytical Plan

Sample ID/ Well Number	Depth to Water (ft bgs)	Screened Interval (ft bgs)	Field Observations (PID readings, sheen, odor, etc.)	TCL CP-51 VOCs	TCL CP-51 SVOCs	TAL Metals[1]	PCBs	NYCDEP Parameters
TW-4	15.25	10-20	ND	X	X	X	X	X

Notes:
X - Sample analysis performed
ND - Not Detected
[1]Unfiltered and filtered samples

The samples were collected and containerized in accordance with NYSDEC/USEPA protocols. Each container was properly labeled, preserved, and placed in a cooler for transport via courier to Chemtech of Mountainside, New Jersey a NYSDOH ELAP-certified analytical laboratory. Standard chain-of-custody procedures were followed. Summaries of the analytical results for the groundwater sample are provided in Tables 8 through 12, and copies of the analytical laboratory reports are attached in Appendix D.

3.0 SITE DESCRIPTION AND PHYSICAL CHARACTERISTICS

The Site is located at 1375 Mace Avenue in the Bronx, New York. The legal description of the Site is portion of Block 4474, Lot 1. The Site consists of the outdoor portions of an approximately 85,000-SF lot, improved with an asphalt-paved play area, a Temporary Classroom Building, and Transportable Classroom Units. The existing P.S. 97X building (constructed in 1930) is located on the same lot south-adjacent to the Site, and contains three stories and a basement. The Site lot is bounded to the north by private dwellings; to the south by Mace Avenue, followed by private dwellings; to the east by Seymour Avenue, followed by private dwellings; and to the west by Fish Avenue, followed by private dwellings.

The NYCSCA is proposing to construct an addition to the existing adjacent public school facility. Based on the NYCSCA Test Fit/Sketch Study, dated June 15, 2016, the proposed addition would be located north-adjacent to the existing building on the western side of the Site.

3.1 Topography

According to the United States Geological Survey (USGS) 7.5-Minute Quadrangle Maps, *Flushing, NY*, dated 2013, the elevation of the Site is approximately 65 feet above the North American Datum of 1983 (an approximation of mean sea level). The topography of the immediate Site is generally flat. The nearest surface water body is the Hutchinson River, located approximately 1.25 miles east of the Site.

3.2 Geology

According to the *USGS Bedrock and Engineering Maps of Bronx County and Parts of New York and Queens Counties* (1992), bedrock is approximately 10 to 20 feet below grade in the vicinity of the Site and consists of Pelham Bay Member of the middle Ordovician-Cambrian Hartland Formation, primarily silimanite-grade gneiss. Bedrock in Bronx County is typically overlain by a relatively thin covering of sandy loam and glacial deposits, mainly till.

Soil borings were advanced to a maximum depth of 20 feet below grade, with samples collected to a maximum depth of 20 feet below grade (i.e., below street level) during the Phase II ESI field program. Shallow refusal on apparent bedrock was encountered between 6 to 12 feet below grade at SB-1, SB-2, SB-3, SB-5, and SB-6. Subsurface soil generally consisted of sand with gravel (apparent native material, potentially reworked and used as fill). Historic fill (sand with trace amounts of brick and gravel) was encountered at SB-5 from 0 to 2 feet below grade and was underlain by apparent native sand and silt.

3.3 Hydrology

Groundwater was measured at approximately 15.25 feet below grade in the temporary well (TW-4) installed during the Phase II ESI. Based on surface topography, groundwater is anticipated to flow in an east-southeasterly direction toward the Hutchinson River (approximately 1.25 miles east of the Site). There are no surface water bodies on or immediately adjacent to the Site. According to AKRF's Phase I ESA, historic topographic maps from 1897, 1898, and 1900 show an unnamed stream on the southeastern portion of the Site lot. The stream appears to flow in a southeasterly direction toward the Hutchinson River. The stream is not present on the 1947 topographic map, indicating that it was filled in sometime between 1900 and 1947. A 1927 survey provided in the June 2016 NYCSCA Test Fit/Sketch Study also noted an extinct brook; however, it was depicted extending through Site, from the southwest to the northeast.

4.0 DISCUSSION OF FINDINGS

This section presents a discussion of the findings of the Phase II ESI. A summary of the laboratory results is presented in Tables 1 to 12. The definitions of all data qualifiers/acronyms contained in the tables are provided on the first page of the tables section of the report. The sample collection logs and the complete laboratory analytical data packages are included in Appendices C and D, respectively.

4.1 Applicable Regulatory Standards

This subsection identifies the USEPA, NYSDEC, NYSDOH and/or NYCDEP regulatory standards and guidelines used to evaluate the results of the soil vapor, subsurface soil, and groundwater sampling. The standards and guidelines used to evaluate the specific data are described individually below.

4.1.1 Soil Vapor Guidelines

Analytical results for VOCs in the soil vapor samples were compared to the NYSDOH Air Guideline Values (AGVs) and to background levels of VOCs in indoor air presented in Appendix C of the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 "NYSDOH Vapor Intrusion Guidance Document", including:

- Upper Fence Limit indoor air values from "Table C-1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes";
- 90th Percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method"; and
- The 95th Percentile Indoor Air Values from Table C-5, Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air".

Tetrachloroethene (PCE) and trichloroethene (TCE) levels were compared to the AGV presented in the NYSDOH Fact Sheet on Tetrachloroethene in Indoor and Outdoor Air, dated September 2013 and the August 2015 NYSDOH Fact Sheet update for trichloroethene (TCE), dated August 2015.

There are no NYSDOH or other State regulatory guidance values for methane in soil gas. Therefore, analytical results for methane in the soil vapor samples were compared to the 25% of the Lower Explosive Limit (LEL) of 5% for methane (25% of 5% methane = 1.25% methane = 12,500 parts per million by volume [ppmV]). This comparison value was selected based on Federal regulations for municipal solid waste landfills, which require that methane must not exceed 25% of the LEL within buildings or other structures at the facilities.

4.1.2 Soil Cleanup Objectives (SCOs)

The Unrestricted Use Soil Cleanup Objectives (SCOs) found in 6 NYCRR 375-6, Remedial Program Soil Cleanup Objectives, are the appropriate standards for use in evaluating the results of the analyses of the Phase II ESI soil samples. Soil that is free of contaminants above these standards is suitable for "unrestricted use", which is the land use category without imposed restrictions, such as environmental easements or other land use controls. Soil analytical results for compounds not listed in 6 NYCRR 375-6 were compared to the lower of the Supplemental Soil Cleanup Objectives (SSCOs) for Protection of Groundwater or Ecological Resources established by NYSDEC Commissioners Policy CP-51 – Soil Cleanup Guidance, dated October 21, 2010.

4.1.3 Groundwater Quality Standards and Guidance Values

Analytical results for groundwater were compared to New York State Class GA groundwater standards and guidance values, provided in the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1, "Ambient Water Quality Standards and Guidance Values." Ambient water quality standards are enforceable regulatory limits. Where ambient water quality standards do not exist, ambient water quality guidance values were used to evaluate the groundwater results. Groundwater data for sample TW-4-DEP were also compared to the daily limits set forth in the NYCDEP Bureau of Wastewater Treatment "Limitations for Effluent to Sanitary or Combined Sewers."

4.2 Geophysical Survey Findings

During the June 29, 2016 geophysical survey, the proposed boring locations were identified within the survey area. An area of approximately 10 feet by 10 feet around each boring location was investigated with the GPR to clear for utilities. All designated anomalies were marked on-site with spray paint. Due to an electric line and scattered anomalies (potential storm sewer lines) identified near the pad-mounted transformers (between the Transportable Classroom Units and the Temporary Classroom Building), soil boring location SB-4 was relocated southeast-adjacent to the Transportable Classroom Units. No anomalies indicative of underground storage tanks were identified. The suspected storm sewer, gas, and electric lines identified during the geophysical survey are depicted on Figure 2, and a copy of the geophysical report is provided in Appendix B.

4.3 Soil Vapor Survey Findings

A review of the soil vapor sample analytical results indicates that 20 of the 26 VOCs analyzed for utilizing USEPA Method TO-15 were detected in one or more of the samples. Twelve VOCs were detected at concentrations greater than the anticipated background ranges or AGVs, as summarized in the following table:

Detected VOC Concentrations Greater than AGVs or Background Range in Soil Vapor

Client ID Date Sampled Units = µg/m^3	NYSDOH AGVs	NYSDOH Background Range	SV-1 07/06/16	SV-2 07/06/16	SV-3 07/06/16	SV-5 07/06/16	SV-6 07/06/16
1,2,4-Trimethylbenzene	***NS***	***9.5 - 9.8***	**65.9**	**32.0**	**58.0**	**53.6**	**68.3**
1,3,5-Trimethylbenzene	***NS***	***3.7 - 3.9***	**19.0**	**9.78**	**17.2**	**14.8**	**18.4**
1,3-Dichlorobenzene	***NS***	***0.5 - 2.4***	0.24 U	**6.13**	0.24 U	0.12 U	0.173
Benzene	***NS***	***9.4 - 13***	**76.0**	**20.3**	**61.7**	**46.3**	**28.2**
Chloroethane	***NS***	***0.4-1.1***	**5.57**	0.343	**2.59**	**1.88**	0.771
Chloromethane	***NS***	***3.7-4.2***	**19.7**	1.90	**4.27**	**9.19**	0.516 U
Ethylbenzene	***NS***	***5.7 - 7.62***	**165**	**93.8**	**183**	**145**	**172**
Toluene	***NS***	***39.8 - 57***	**233**	**124**	**294**	**228 D**	**207**
Trichloroethene	***2***	***0.5 – 4.2***	2.02	0.215 U	3.89	0.892	0.202
Vinyl Chloride	***NS***	***0.4-1.9***	**3.45**	0.230	0.312	1.30	0.276
Xylene (m,p)	***NS***	***11 - 22.2***	**860**	**482**	**890 D**	**843 D**	**1,030 D**
Xylene (o)	***NS***	***7.1 - 7.9***	**289**	**157**	**302**	**264 D**	**321 D**

Notes:
U – Not detected.
µg/m^3 – micrograms per cubic meter
Bold = result exceeds background range
Shaded = results exceeds AGV
NS = No standard or guidance value

The NYSDOH has established AGVs for three of the VOCs analyzed (methylene chloride, PCE, and TCE). PCE was detected in all of the soil vapor samples at levels ranging from 7.87 to 15.1 micrograms per cubic meter (µg/m^3), below the AGV of 30 µg/m^3. TCE was detected in four of five soil vapor samples, with concentrations in two samples (SV-1 [2.02 µg/m3] and SV-3 [3.89 µg/m^3]) exceeding the AGV of 2 µg/m^3. Methylene chloride was not detected in any of the samples.

The petroleum-related compounds (trimethylbenzenes, benzene, ethylbenzene, toluene, and xylenes) identified above their background concentrations in soil vapor are likely associated with historic uses in the Site vicinity, and not necessarily to an on-site release or spill. TCE, chloroethane, chloromethane, and vinyl chloride identified in soil vapor may also be attributed to former surrounding uses, and are not likely to be associated with an on-site release based on the Site's history and review of the laboratory results for on-site soil and groundwater samples collected as part of this investigation.

A review of the soil vapor sample analytical results indicates that methane was detected at low levels in all five of the soil vapor samples, ranging from 4.01 to 49 ppmV. These concentrations correspond to 0.00802 to 0.098 percent of the LEL for methane (5% by volume), well below the comparison criteria of 25% of the LEL.

Analytical results for VOCs and methane in soil vapor are summarized in Tables 1 and 2, respectively. The complete analytical data report is presented in Appendix D.

4.4 Soil Sampling Findings

4.4.1 Volatile Organic Compounds (VOCs) in Soil

A review of the subsurface soil sampling analytical results indicates that two of the VOCs (acetone and toluene) analyzed for was detected in one of the soil samples. Acetone, a common laboratory contaminant, was detected in sample SB-4 (4-5) at a concentration of 120 micrograms per kilogram (µg/kg), which is above the Unrestricted Use SCO (UUSCO) of 50 µg/kg. This sample was rerun and acetone was detected at a lower concentration (97.2 µg/kg), but still above the UUSCO. Toluene was detected in SB-4 (4-5) at estimated concentrations of 2.2 µg/kg and 4 µg/kg on the initial run and reanalysis, respectively. Both concentrations are well below the UUSCO of 700 µg/kg. No other VOCs were detected in soil samples above laboratory reporting limits. Analytical results for VOCs in soil are summarized in Table 3.

4.4.2 Semivolatile Organic Compounds (SVOCs) in Soil

A review of the subsurface soil sampling analytical results indicates that 19 of the SVOCs analyzed were detected in one or more of the samples. The detected SVOCs, which included mainly polycyclic aromatic hydrocarbons (PAHs) and phthalates, were identified at concentrations below the UUSCOs and SSCOs. Analytical results for SVOCs in soil are summarized in Table 4.

4.4.3 PCBs in Soil

A review of the analytical results indicates that no PCBs were detected in any of the samples. Analytical results for PCBs in soil are summarized in Table 5.

4.4.4 Metals and Cyanide in Soil

A review of the subsurface soil sampling analytical results indicates that 20 of the 24 metals analyzed were detected in one or more of the samples. Cyanide was detected in three of the soil samples analyzed at estimated concentrations ranging from 0.035 to 0.108 milligrams per kilogram (mg/kg), well below the USCO of 27 mg/kg. Hexavalent chromium was detected in six of the seven samples at estimated concentrations ranging from 0.098 to 0.181 mg/kg, below the Part 375 UUSCO of 1 mg/kg. Of the 16 metals typically of concern for NYCSCA Phase II ESIs (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium, selenium, silver, vanadium, and zinc), nine were detected at concentrations exceeding their respective USCOs/SSCOs, as follows:

Detected Metals Greater Than USCOs/SSCOs in Soil

Client ID Date Sampled Units = mg/kg	NYSDEC UUSCO/ SSCO	SB-1 (9-10) 07/06/16	SB-4 (4-5) 07/06/16
Barium	***350***	**386**	81.5
Cadmium	***2.5***	**5.34**	1.23
Chromium	***30***	**35.8**	23.1
Cobalt	***20***	**37.9**	10.6
Copper	***50***	**142**	24.8
Lead	***63***	6.36	**74.9**
Nickel	***30***	**32.1**	19.7
Vanadium	***39***	**155**	30.9
Zinc	***109***	**120**	**136**

Notes:
U – Not detected.
mg/kg – milligrams per kilograms
Bold = result exceeds applicable standard

Although historic fill was not identified in the SB-1 or SB-4 soil boring, in the absence of other indications of contamination, the reported concentrations of these metals are not indicative of a spill or other source area and are attributed to background conditions. Analytical results for metals (including hexavalent chromium) and cyanide in soil are summarized in Table 6.

4.4.5 Total Petroleum Hydrocarbons in Soil

Analytical results for TPH analysis of the soil samples collected are included in Table 7. GRO TPH was not detected in any of the samples analyzed. DRO TPH was detected in all samples at concentrations ranging from 2,303 and 28,079 µg/kg, respectively. A summary of the concentrations is provided as follows:

Summary of Total Petroleum Hydrocarbons Detected in Soil

Client ID Date Sampled Units = µg/kg	SB-1 (9-10) 07/06/16	SB-2 (9-10) 07/06/16	SB-3 (5-6) 07/06/16	SB-4 (4-5) 07/06/16	SB-5 (1-2) 07/06/16	SB-5 (4-5) 07/06/16	SB-6 (11-12) 07/06/16
GRO	23.5 U	25.5 U	25 U	24.5 U	24 U	25.5 U	28 U
DRO	4,586	3,046	2,465	28,079	2,303	2,439	2,434

Notes:
µg/kg = micrograms per kilogram
ft bgs = feet below ground surface

There are no applicable regulatory criteria for TPH in New York State. TPH results provide information on soil disposal options for soil excavated during construction, since disposal facilities in the New York City metropolitan area typically require TPH analyses prior to accepting soil for disposal. The concentrations of TPH noted in the samples are not anticipated to impact potential soil disposal options.

4.5 Groundwater Sampling Findings

Groundwater was measured at approximately 15.25 feet below grade in the one temporary well (TW-4) installed during the Phase II ESI. Groundwater was not encountered in other soil borings before encountering shallow refusal (suspected bedrock). The regional groundwater flow direction in the areas surrounding the Site is assumed to be east-southeast (with potential local variations). No visual evidence of contamination (e.g., discoloration, free product, orange precipitate, etc.) was observed in the groundwater sample. The results of the analyses of the groundwater sample are presented in Tables 8 through 12. The complete analytical data reports are presented in Appendix D. A review of the groundwater analytical results is presented in the following sections.

4.5.1 Volatile Organic Compounds (VOCs) in Groundwater

The laboratory analytical results indicate VOCs were not detected in the groundwater sample. A summary of the analytical results for VOCs in groundwater is presented in Table 8.

4.5.2 Semi-Volatile Organic Compounds (SVOCs) in Groundwater

SVOCs were not detected in the groundwater sample. A summary of the analytical results for SVOCs in groundwater is presented in Table 9.

4.5.3 Polychlorinated Biphenyls (PCBs) in Groundwater

PCBs were not detected in the groundwater sample. A summary of the analytical results for PCBs in groundwater is presented in Table 10.

4.5.4 Metals in Groundwater

A summary of the analytical results for metals in groundwater is presented in Table 11.

Total Metals

A review of the analytical results for the unfiltered groundwater sample indicates that 15 of the 23 metals analyzed were detected in one or more samples. Of the 16 metals typically of concern for NYCSCA Phase II ESIs (arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium, selenium, silver, vanadium, and zinc), one was detected above its Class GA Ambient Water Quality Standard (AWQS). Manganese was detected at a concentration of 2,200 micrograms per liter (µg/L), above the AWQS of 300 µg/L. Manganese is a naturally occurring metal often found in groundwater. Based on the history of the Site, this detection likely is attributable to natural conditions and/or background conditions, and not to a release or spill.

Dissolved Metals

A review of the analytical results for the filtered groundwater sample indicates that 12 of the 23 metals analyzed were detected in the sample. Manganese was detected at a concentration of 2,080 micrograms per liter (µg/L), above the AWQS of 300 µg/L. No other metals were detected above their respective AWQSs. As discussed above, manganese is a naturally occurring metal often found in groundwater, and

this detection is likely attributable to natural conditions and/or background conditions, and not to a release or spill.

4.5.5 NYCDEP Discharge Parameters in Groundwater

A summary of the analytical results for NYCDEP sewer discharge parameters in groundwater is presented in Table 12. No exceedances of the NYCDEP Discharge criteria were detected in the groundwater sample collected from TW-4. Nevertheless, treatment of dewatering effluent, particularly for sediment/suspended solids, may be required prior to discharge to the municipal sewers under a Waste Water Quality Control Application submitted to the NYCDEP for approval.

4.6 Summary of Findings

AKRF performed a Phase II ESI consisting of a soil, groundwater, and soil vapor sampling at the Site. The results of the Phase II ESI indicate the following:

- No anomalies indicative of underground storage tanks were identified during the geophysical survey.
- Groundwater was measured at approximately 15.25 feet below grade in the temporary well installed during the Phase II ESI. The regional groundwater flow direction in the areas surrounding the Site is assumed to be east-southeast (with potential local variations).
- Subsurface soil generally consisted of sand with gravel fragments (apparent native material, potentially reworked and used as fill). Evidence of historic fill (brick fragments) was observed from 0 to 2 feet at SB-5 on the southwestern portion of the Site. Refusal (apparent bedrock) was encountered at approximately 6 to 12 feet below grade at SB-1, SB-2, SB-3, SB-5, and SB-6.
- Petroleum-related compounds (trimethylbenzenes, benzene, ethylbenzene, toluene, and xylenes) and chloroethane, chloromethane, and vinyl chloride detected in soil vapor at concentrations above their anticipated background levels are likely associated with historic uses in the Site vicinity, and not to an on-site release or spill. Trichloroethene detected in soil vapor above its AGV may also be attributed to surrounding uses, and is not likely to be associated with an on-site release based on the Site's history.
- Acetone, a common laboratory contaminant, was detected above its Part 375 Unrestricted Use SCO in one soil sample. The only other VOC identified in soil (toluene) was detected at a concentration below its respective Unrestricted Use SCO.
- Nineteen SVOCs were detected in one or more of the samples, all of which were below their respective Unrestricted Use SCOs/CP-51 Supplemental SCOs.
- Cyanide was detected in three of the soil samples analyzed for this compound below the Unrestricted Use SCO. Hexavalent chromium was detected in all of the samples at concentrations below the Unrestricted Use SCO. Of the 16 metals typically of concern for NYCSCA Phase II ESIs, nine (barium, cadmium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc) were detected at concentrations exceeding their respective Unrestricted Use SCOs in one sample.
- No PCBs were detected in any of the soil samples.
- VOCs, SVOCs, and PCBs were not detected in the groundwater sample collected during the Phase II ESI.
- Of the 16 metals typically of concern for NYCSCA Phase II ESIs, one (manganese) was detected in the filtered and unfiltered sample at a concentration exceeding the respective Class GA Ambient Water Quality Standards. The detections can be attributed to naturally occurring or background conditions in groundwater, and not to a release or spill.

- The groundwater sample analyzed for the discharge parameters did not exceed the NYCDEP sewer discharge criteria.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase II ESI, AKRF concludes the following:

- Groundwater was encountered at approximately 15.25 feet below grade in the temporary well installed on-site during the Phase II ESI.
- Subsurface soil generally consisted of sand with gravel fragments. Evidence of historic fill (brick fragments) was identified in one soil boring.
- No anomalies indicative of underground storage tanks were identified during the geophysical survey.
- Trichloroethene was detected in two soil vapor samples slightly above the NYSDOH Air Guideline Value. Petroleum-related VOCs and other chlorinated compounds detected in soil vapor above the corresponding NYSDOH background ranges are likely attributable to off-site sources.
- Metals detected in soil above the Unrestricted Use SCOs (barium, cadmium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc) are likely attributable to background conditions and are not indicative of an on-site release or spill.
- Total and dissolved manganese detected in the groundwater sample above the Class GA Water Quality Standard is attributed to naturally occurring (background) conditions and is not indicative of an on-site release or spill.

AKRF recommends the following measures to make the Site suitable for use as a public school facility.

- A sub-slab depressurization system and soil vapor barrier should be incorporated into the new building design to prevent potential soil vapor intrusion. The vapor barrier should be appropriately integrated with any proposed damp-proofing or waterproofing design components.
- All material excavated during construction activities should be properly characterized prior to transportation to an off-site disposal facility. Results from the limited soil sampling conducted during this investigation should not be used in lieu of data from a full soil waste characterization.
- Fill material should be evaluated for the presence of asbestos-containing materials (ACM). In addition, any suspect ACM, lead based paint (LBP) and/or PCB-containing materials affected by the proposed demolition or construction work should be identified prior to and properly managed during construction activities.
- Any dewatering required during construction should be minimized to mitigate influx of potentially contaminated water from off-site sources. Treatment to remove sediment and other potential contaminants from dewatering effluent may be required prior to discharge to the municipal sewer. All appropriate permits should be procured and pre-treatment should be conducted as required to meet applicable sewer effluent limitations for discharge of the dewatering fluids.
- After the proposed new building and grounds are constructed, if exposed soil (landscaped areas) is incorporated into the development of the Site, a minimum of two feet of environmentally clean fill should be placed over existing soil in these areas.

A description of the recommended engineering controls including a remediation cost estimate is included in Appendix E.

6.0 LIMITATIONS

AKRF has prepared this Phase II ESI using reasonable efforts in each phase of its work to investigate RECs/VECs associated with hazardous substances, wastes and petroleum products at the Site. Findings within this report are based on information collected from observations made at the time of the investigation and associated data. This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation, or other construction purposes. This report was prepared for the sole use of NYCSCA and related New York City municipal agencies pursuant to the AKRF Contract dated August 1, 2014.

7.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

AKRF has performed a Phase II Environmental Site Investigation of the 1375 Mace Avenue Site in the Bronx, New York. The scope of the Phase II ESI was consistent with the scope of work dated June 23, 2016, as stated in Section 2.0.

PREPARED BY: _____
Margo Davis
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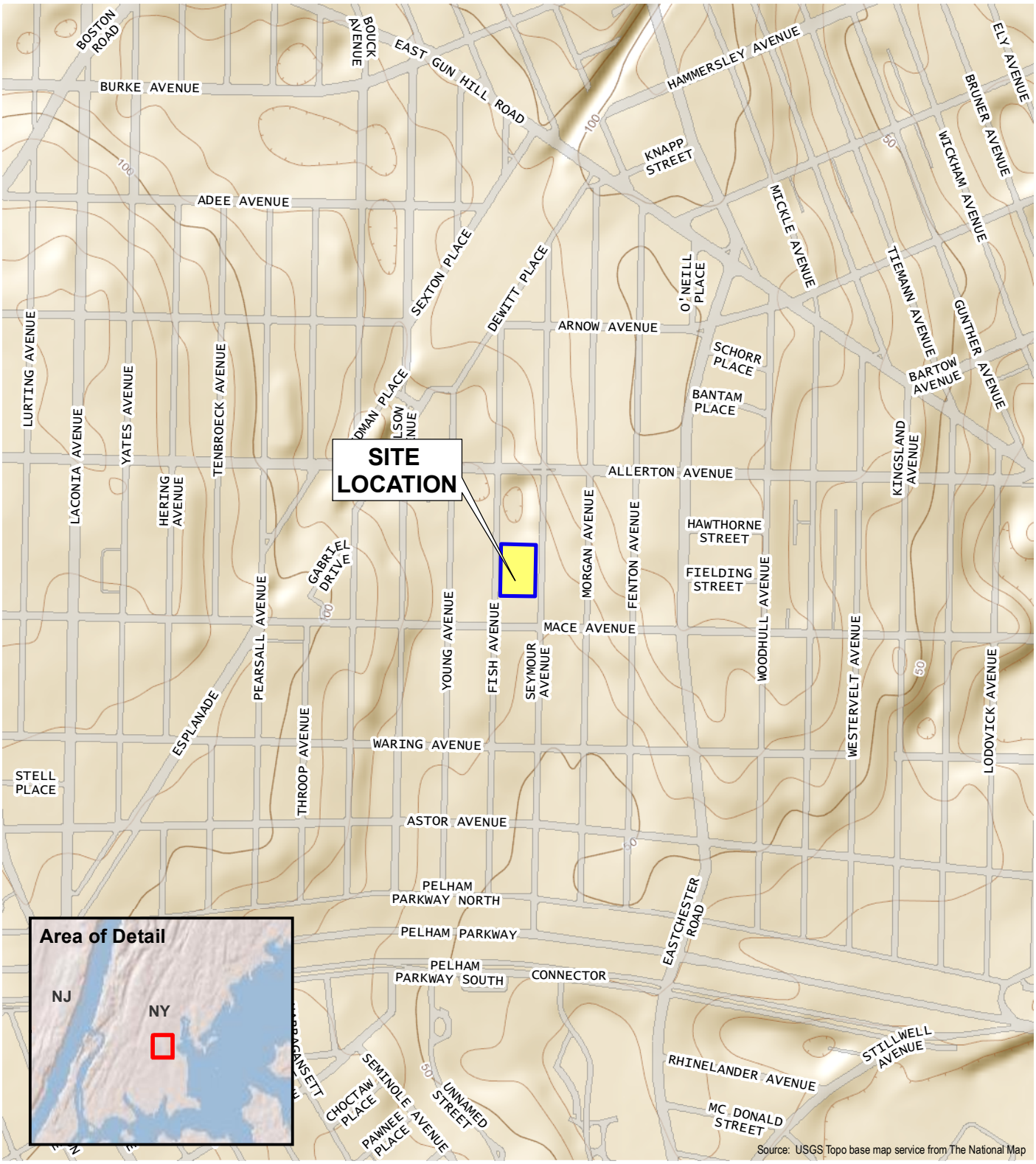
PREPARED BY: _____
Rebecca A. Kinal, P.E.
Vice President (Project Manager)

REVIEWED BY: _____
Marc Godick, LEP
Sr. Vice President (Acting QC Officer)

8.0 REFERENCES

- 6 NYCRR § 375, effective December 14, 2006, New York State Department of Environmental Conservation Rules and Regulations, Remedial Program Requirements.
- 6 NYCRR Chapter X § 700 – 706, New York State Department of Environmental Conservation Water Quality Regulations, Surface Water and Ground Water Classifications and Standards.
- ASTM E 2600-08 "Standard Practice for Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions."
- ASTM Standards Related to the Phase II Environmental Site Assessment Process, 2nd Edition.
- CP-51/Soil Cleanup Guidance; New York State Department of Environmental Conservation, October 21, 2010.
- DER-10 Technical Guidance for Site Investigation and Remediation (5/3/2010).
- Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, New York State Department of Health Center for Environmental Health, Bureau of Environmental Exposure Investigation.
- Phase I Environmental Site Assessment Report of 1375 Mace Avenue, Bronx, NY, 10469, AKRF Engineering, P.C., June 22, 2016.
- Phase II Environmental Site Investigation Proposal/Scope of Work for 1375 Mace Avenue, Bronx NY, 10469, AKRF Engineering, P.C., June 23, 2016.

FIGURES



0 400 800 1,600

Scale in Feet

P.S. 97X Addition
1375 Mace Avenue
Bronx, New York

SITE LOCATION

AKRF

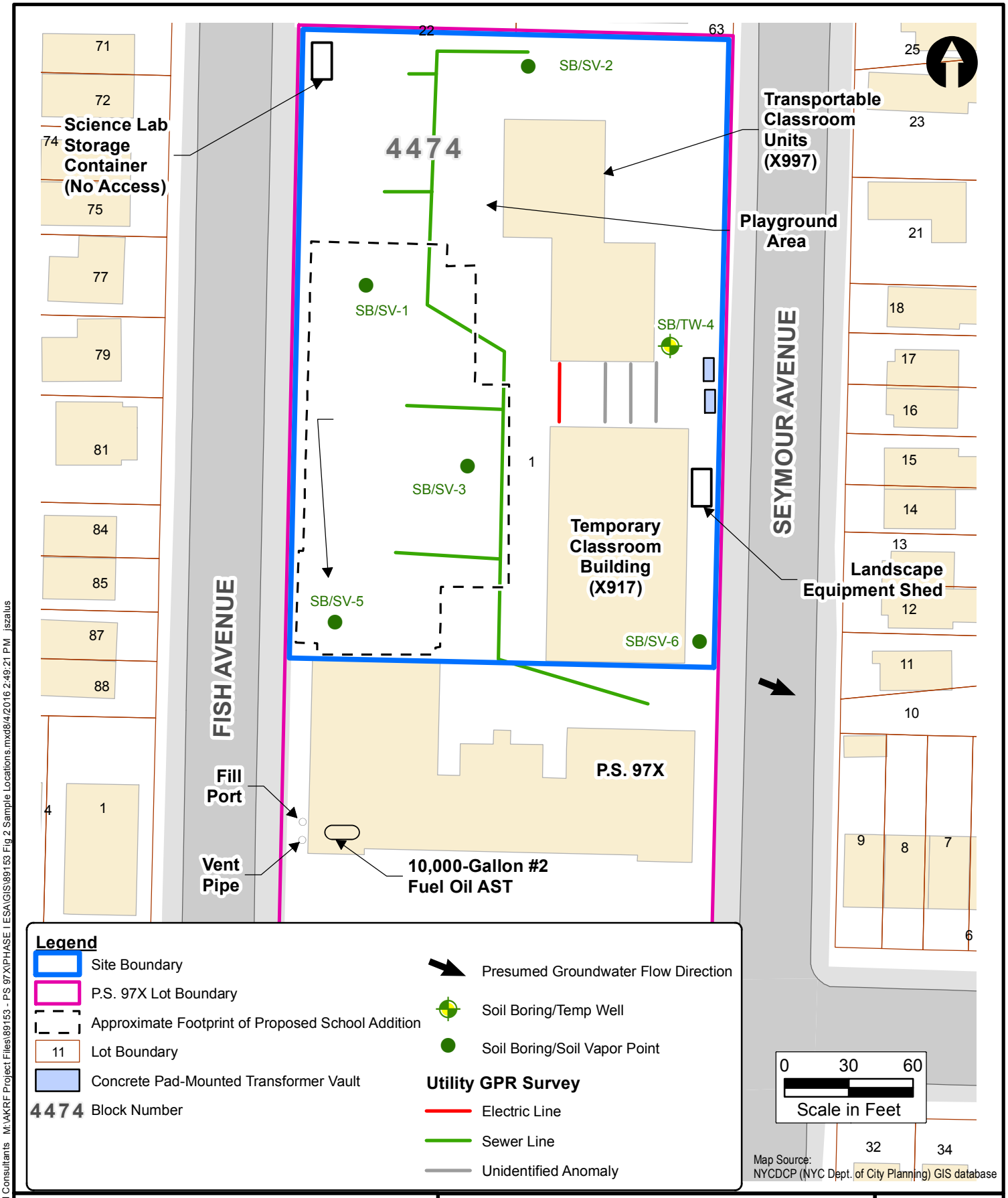
Engineering, P.C.
440 Park Avenue South, New York, NY 10016

DATE
7/22/2016

PROJECT NO.
89153

FIGURE
1

© 2016 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\89153 - PS 97X\PHASE I ESA\GIS\89153 Fig 1 Site Loc Map.mxd 7/22/2016 1:37:25 PM jszalus



P.S. 97X Addition
1375 Mace Avenue
Bronx, New York

SITE PLAN AND SAMPLE LOCATIONS

AKRF Engineering, P.C.
440 Park Avenue South, New York, NY 10016

DATE **8/4/2016**
PROJECT NO. **89153**
FIGURE **2**

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TABLES

GENERAL

NS	:	No standard, guidance value or criteria listed.
ND	:	Non Detect
NA	:	Not Analyzed
U	:	The analyte was not detected at the indicated concentration.
J	:	The concentration given is an estimated value.
D	:	Analyte concentration is from diluted analysis.
N	:	Spiked sample recovery not within control limits
Q	:	Laboratory control sample (LCS) control criteria did not meet requirements

SOIL

Exceedences of NYSDEC SCOs and CP-51 SCLs are highlighted in bold font.

Part 375 Soil Cleanup Objectives	:	Soil Clean-up Objectives listed in NYSDEC (New York State Department of Environmental Conservation) "Part 375" Regulations (6 NYCRR Park 375).
CP-51 Supplemental Soil Cleanup Objectives	:	Supplemental Soil Clean-up Objectives listed in Table 1 of NYSDEC "CP-51/Soil Cleanup Guidance".
µg/kg	:	micrograms per kilogram = parts per billion (ppb)
mg/kg	:	milligrams per kilogram = parts per million (ppm)

GROUNDWATER

Exceedences of NYSDEC Class GA Ambient Standards are highlighted in bold font.

NYSDEC Class GA Ambient	:	New York State Department of Environmental Conservation Technical and Operational Guidance Series (1.1.1): Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
µg/L	:	micrograms per Liter = parts per billion (ppb)

SOIL VAPOR

Exceedences of NYSDOH Background Range are highlighted in bold font.
Exceedences of NYSDOH AGVs are highlighted with shaded cells.

NYSDOH Soil Vapor Intrusion Air Guidance Value	:	NYSDOH Air Guideline Values (AGVs) presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"). Exceedance are indicated by gray shading.
NYSDOH 2003 Soil Vapor Indoor Upper Fence	:	Upper fence indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes", published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).
EPA 2001 BASE 90th percentile	:	90th Percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method", published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).
HEI RIOPA 2005 95th percentile	:	95th Percentile Indoor Air Values from Table C-5, Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air, published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006).
$\mu g/m^3$	:	micrograms per cubic meter of air
ppmV	:	parts per million by volume

Table 1
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Volatile Organic Compounds in Soil Vapor

Client ID Lab Sample ID Sample Date Dilution	NYSDOH 2003 Soil Vapor Intrusion Air Guideline Value ug/m3	EPA 2001 BASE 90th percentile ug/m3	NYSDOH 2003 Soil Vapor Indoor Upper Fence ug/m3	HEI RIOPA 2005 95th Percentile Indoor ug/m3	SV-1 L1620811-01 7/6/16 2	SV-2 L1620811-02 7/6/16 2	SV-3 L1620811-03 7/6/16 2/5	SV-5 L1620811-04 7/6/16 1/5	SV-6 L1620811-05 7/6/16 1.25/3.33
1,1,1-Trichloroethane	NS	20.6	2.5	NS	0.382	0.218 U	1.30	0.540	0.307
1,1-Dichloroethane	NS	<0.7	0.4	NS	0.162 U	0.162 U	0.623	0.542	0.101 U
1,1-Dichloroethene	NS	<1.4	0.4	NS	0.159 U	0.159 U	0.159 U	0.079 U	0.099 U
1,2,4-Trimethylbenzene	NS	9.5	9.8	NS	65.9	32.0	58.0	53.6	68.3
1,2-Dichlorobenzene	NS	<1.2	0.5	NS	0.240 U	0.613	0.24 U	0.120 U	0.150 U
1,2-Dichloroethane	NS	<0.9	0.4	NS	0.162 U	0.162 U	0.162 U	0.081 U	0.101 U
1,2-Dichloropropane	NS	<1.6	0.4	NS	0.185 U	0.185 U	0.185 U	0.092 U	0.116 U
1,3,5-Trimethylbenzene	NS	3.7	3.9	NS	19.0	9.78	17.2	14.8	18.4
1,3-Dichlorobenzene	NS	<2.4	0.5	NS	0.240 U	6.13	0.240 U	0.120 U	0.173
Benzene	NS	9.4	13	10	76.0	20.3	61.7	46.3	28.2
Carbon tetrachloride	NS	<1.3	1.3	1.1	0.403	0.252 U	0.327	0.34	0.642
Chlorobenzene	NS	<0.9	0.4	NS	0.921 U	0.921 U	0.921 U	0.461 U	0.576 U
Chloroethane	NS	<1.1	0.4	NS	5.57	0.343	2.59	1.88	0.771
Chloromethane	NS	3.7	4.2	NS	19.7	1.90	4.27	9.19	0.516 U
cis-1,2-Dichloroethene	NS	<1.9	0.4	NS	0.159 U	0.159 U	0.396	0.079	0.099 U
Ethylbenzene	NS	5.7	6.4	7.62	165	93.8	183	145	172
Methyl tert butyl ether	NS	11.5	14	36	1.44 U	1.44 U	1.44 U	0.721 U	0.901 U
Methylene chloride	60	10	16	7.5	3.47 U	3.47 U	3.47 U	1.74 U	2.17 U
Naphthalene	NS	5.1	NS	NS	4.33	3.14	2.93	2.40	4.01
o-Xylene	NS	7.9	7.1	7.24	289	157	302	264 D	321 D
p/m-Xylene	NS	22.2	11	22.2	860	482	890 D	843 D	1,030 D
Tetrachloroethene	30	15.9	2.5	6.01	11.2	7.87	15.1	9.36	12.1
Toluene	NS	43	57	39.8	233	124	294	228 D	207
trans-1,2-Dichloroethene	NS	NS	NS	NS	0.174	0.159 U	0.167	0.079 U	0.099 U
Trichloroethene	2	4.2	0.5	1.36	2.02	0.215 U	3.89	0.892	0.202
Vinyl chloride	NS	<1.9	0.4	NS	3.45	0.230	0.312	1.30	0.276

Table 2

P.S. 97X Addition, 1375 Mace Avenue

Bronx, NY

Phase II Environmental Site Investigation Analytical Results

Methane in Soil Vapor

Client ID **Lab Sample ID** **Sample Date** **Dilution** **Units = ppmV**	**25% Lower Explosive Limit**	**SV-1** **L1620811-01** **7/6/16** **2.01**	**SV-2** **L1620811-02** **7/6/16** **1.826**	**SV-3** **L1620811-03** **7/6/16** **2.03**	**SV-5** **L1620811-04** **7/6/16** **2.03**	**SV-6** **L1620811-05** **7/6/16** **1.877**
Methane	**12,500**	34.9	4.29	49.0	9.85	4.01

Table 3
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Volatile Organic Compounds in Soil

Client ID Lab Sample ID Date Sampled Dilution ug/kg	NYSDEC Part 375 Unrestricted SCO ug/kg	NYSDEC CP-51 Supplemental SCO ug/kg	SB-1(9-10) H3936-01 7/6/2016 1	SB-1(9-10)RE H3936-01RE 7/6/2016 1	SB-2(9-10) H3936-02 7/6/2016	SB-3(5-6) H3936-03 7/6/2016
1,1,1-Trichloroethane	680	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,1,2,2-Tetrachloroethane	NS	600	0.54 U	0.58 U	0.75 U	0.57 U
1,1,2-Trichloroethane	NS	NS	1.1 U	1.2 U	1.5 U	1.1 U
1,1,2-Trichlorotrifluoroethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,1-Dichloroethane	270	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,1-Dichloroethene	330	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,2,3-Trichlorobenzene	NS	20000	1.1 U	1.2 U	1.5 U	1.1 U
1,2,4-Trichlorobenzene	NS	20000	0.54 U	0.58 U	0.75 U	0.57 U
1,2,4-Trimethylbenzene	3600	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,2-Dibromo-3-Chloropropane	NS	NS	5.4 U	5.8 U	7.5 U	5.7 U
1,2-Dibromoethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,2-Dichlorobenzene	1100	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,2-Dichloroethane	20	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,2-Dichloropropane	NS	700000	0.54 U	0.58 U	0.75 U	0.57 U
1,3,5-Trimethylbenzene	8400	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,3-Dichlorobenzene	2400	NS	0.54 U	0.58 U	0.75 U	0.57 U
1,4-Dichlorobenzene	1800	NS	0.54 U	0.58 U	0.75 U	0.57 U
2-Butanone	120	NS	8.2 U	8.7 U	11.3 U	8.6 U
2-Hexanone	NS	NS	2.7 U	2.9 U	3.8 U	2.9 U
4-Methyl-2-Pentanone	NS	1000	2.7 U	2.9 U	3.8 U	2.9 U
Acetone	50	NS	2.7 U	2.9 U	3.8 U	2.9 U
Benzene	60	NS	0.54 U	0.58 U	0.75 U	0.57 U
Bromochloromethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Bromodichloromethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Bromoform	NS	NS	1.6 U	1.7 U	2.3 U	1.7 U
Bromomethane	NS	NS	1.1 U	1.2 U	1.5 U	1.1 U
Carbon Disulfide	NS	2700	0.54 U	0.58 U	0.75 U	0.57 U
Carbon Tetrachloride	760	NS	0.54 U	0.58 U	0.75 U	0.57 U
Chlorobenzene	1100	NS	0.54 U	0.58 U	0.75 U	0.57 U
Chloroethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Chloroform	370	NS	0.54 U	0.58 U	0.75 U	0.57 U
Chloromethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
cis-1,2-Dichloroethene	250	NS	0.54 U	0.58 U	0.75 U	0.57 U
cis-1,3-Dichloropropene	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Cyclohexane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Dibromochloromethane	NS	10000	0.54 U	0.58 U	0.75 U	0.57 U
Dichlorodifluoromethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Ethyl Benzene	1000	NS	0.54 U	0.58 U	0.75 U	0.57 U
Isopropylbenzene	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
m/p-Xylenes	260	2300	1.1 U	1.2 U	1.5 U	1.1 U
Methyl Acetate	NS	NS	1.1 U	1.2 U	1.5 U	1.1 U
Methyl tert-butyl Ether	930	NS	0.54 U	0.58 U	0.75 U	0.57 U
Methylcyclohexane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Methylene Chloride	50	NS	0.54 U	0.58 U	0.75 U	0.57 U
Naphthalene	12000	NS	0.54 U	0.58 U	0.75 U	0.57 U
n-Butylbenzene	12000	NS	0.54 U	0.58 U	0.75 U	0.57 U
n-propylbenzene	3900	NS	0.54 U	0.58 U	0.75 U	0.57 U
o-Xylene	260	NS	0.54 U	0.58 U	0.75 U	0.57 U
p-Isopropyltoluene	NS	10000	0.54 U	0.58 U	0.75 U	0.57 U
sec-Butylbenzene	11000	NS	0.54 U	0.58 U	0.75 U	0.57 U
Styrene	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
trans-1,3-Dichloropropene	NS	300000	0.54 U	0.58 U	0.75 U	0.57 U
tert-Butylbenzene	5900	NS	0.54 U	0.58 U	0.75 U	0.57 U
Tetrachloroethene	1300	NS	0.54 U	0.58 U	0.75 U	0.57 U
Toluene	700	NS	0.54 U	0.58 U	0.75 U	0.57 U
trans-1,2-Dichloroethene	190	NS	0.54 U	0.58 U	0.75 U	0.57 U
Trichloroethene	470	NS	0.54 U	0.58 U	0.75 U	0.57 U
Trichlorofluoromethane	NS	NS	0.54 U	0.58 U	0.75 U	0.57 U
Vinyl Chloride	20	NS	0.54 U	0.58 U	0.75 U	0.57 U

Table 3
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Volatile Organic Compounds in Soil

Client ID Lab Sample ID Date Sampled Dilution ug/kg	NYSDEC Part 375 Unrestricted SCO ug/kg	NYSDEC CP-51 Supplemental SCO ug/kg	SB-4(4-5) H3936-04 7/6/2016	SB-4(4-5)RE H3936-04RE 7/6/2016	SB-5(1-2) H3936-05 7/6/2016	SB-5(4-5) H3936-06 7/6/2016	SB-6(11-12) H3936-09 7/6/2016
1,1,1-Trichloroethane	680	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,1,2,2-Tetrachloroethane	NS	600	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,1,2-Trichloroethane	NS	NS	2.2 U	2.7 U	1.1 U	1.1 U	4 U
1,1,2-Trichlorotrifluoroethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,1-Dichloroethane	270	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,1-Dichloroethene	330	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2,3-Trichlorobenzene	NS	20000	2.2 U	2.7 U	1.1 U	1.1 U	4 U
1,2,4-Trichlorobenzene	NS	20000	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2,4-Trimethylbenzene	3600	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2-Dibromo-3-Chloropropane	NS	NS	11 U	13.6 U	5.4 U	5.4 U	19.9 U
1,2-Dibromoethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2-Dichlorobenzene	1100	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2-Dichloroethane	20	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,2-Dichloropropane	NS	700000	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,3,5-Trimethylbenzene	8400	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,3-Dichlorobenzene	2400	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
1,4-Dichlorobenzene	1800	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
2-Butanone	120	NS	16.5 U	20.4 U	8.1 U	8.1 U	29.8 U
2-Hexanone	NS	NS	5.5 U	6.8 U	2.7 U	2.7 U	9.9 U
4-Methyl-2-Pentanone	NS	1000	5.5 U	6.8 U	2.7 U	2.7 U	9.9 U
Acetone	50	NS	**120**	**97.2**	2.7 U	2.7 U	9.9 U
Benzene	60	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Bromochloromethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Bromodichloromethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Bromoform	NS	NS	3.3 U	4.1 U	1.6 U	1.6 U	6 U
Bromomethane	NS	NS	2.2 U	2.7 U	1.1 U	1.1 U	4 U
Carbon Disulfide	NS	2700	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Carbon Tetrachloride	760	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Chlorobenzene	1100	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Chloroethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Chloroform	370	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Chloromethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
cis-1,2-Dichloroethene	250	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
cis-1,3-Dichloropropene	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Cyclohexane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Dibromochloromethane	NS	10000	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Dichlorodifluoromethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Ethyl Benzene	1000	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Isopropylbenzene	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
m/p-Xylenes	260	2300	2.2 U	2.7 U	1.1 U	1.1 U	4 U
Methyl Acetate	NS	NS	2.2 U	2.7 U	1.1 U	1.1 U	4 U
Methyl tert-butyl Ether	930	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Methylcyclohexane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Methylene Chloride	50	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Naphthalene	12000	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
n-Butylbenzene	12000	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
n-propylbenzene	3900	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
o-Xylene	260	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
p-Isopropyltoluene	NS	10000	1.1 U	1.4 U	0.54 U	0.54 U	2 U
sec-Butylbenzene	11000	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Styrene	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
trans-1,3-Dichloropropene	NS	300000	1.1 U	1.4 U	0.54 U	0.54 U	2 U
tert-Butylbenzene	5900	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Tetrachloroethene	1300	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Toluene	700	NS	2.2 J	4 J	0.54 U	0.54 U	2 U
trans-1,2-Dichloroethene	190	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Trichloroethene	470	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Trichlorofluoromethane	NS	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U
Vinyl Chloride	20	NS	1.1 U	1.4 U	0.54 U	0.54 U	2 U

Table 4
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Semi-Volatile Organic Compounds in Soil

Client ID Lab Sample ID Date Sampled Dilution ug/kg	NYSDEC Part 375 Unrestricted SCO ug/kg	NYSDEC CP-51 Supplemental SCO ug/kg	SB-1(9-10) H3936-01 7/6/2016	SB-2(9-10) H3936-02 7/6/2016	SB-3(5-6) H3936-03 7/6/2016	SB-4(4-5) H3936-04 7/6/2016	SB-5(1-2) H3936-05 7/6/2016	SB-5(4-5) H3936-06 7/6/2016	SB-6(11-12) H3936-09 7/6/2016
1,1-Biphenyl	NS	NS	34.9 U	38 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
1,2,4,5-Tetrachlorobenzene	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
1,4-Dioxane	100	NS	69.9 U	76.1 U	74.5 U	73.2 U	72 U	76.2 U	82.5 U
2-Chloronaphthalene	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2-Chlorophenol	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2-Methylnaphthalene	NS	410	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2-Methylphenol	330	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2-Nitroaniline	NS	400	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2-Nitrophenol	NS	300	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,2-oxybis(1-Chloropropane)	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,3,4,6-Tetrachlorophenol	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,4-Dichlorophenol	NS	400	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,4-Dimethylphenol	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,4-Dinitrophenol	NS	200	280 U	300 U	300 U	290 U	290 U	300 U	330 U
2,4-Dinitrotoluene	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,4,5-Trichlorophenol	NS	100	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,4,6-Trichlorophenol	NS	10,000	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
2,6-Dinitrotoluene	NS	1000	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
3-Nitroaniline	NS	500	69.9 U	76.1 U	74.5 U	73.2 U	72 U	76.2 U	82.5 U
3,3-Dichlorobenzidine	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
3+4-Methylphenols	NS	NS	34.9 U	38.1 U	37.3 U	75.4 J	36 U	38.1 U	41.3 U
4-Bromophenyl-phenylether	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
4-Chloro-3-methylphenol	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
4-Chloroaniline	NS	220	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
4-Chlorophenyl-phenylether	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
4-Nitroaniline	NS	NS	69.9 U	76.1 U	74.5 U	73.2 U	72 U	76.2 U	82.5 U
4-Nitrophenol	NS	100	170 U	190 U	190 U	180 U	180 U	190 U	210 U
4,6-Dinitro-2-methylphenol	NS	NS	170 U	190 U	190 U	180 U	180 U	190 U	210 U
Acenaphthene	20,000	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Acenaphthylene	100,000	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Acetophenone	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Anthracene	100,000	NS	34.9 U	38.1 U	37.3 U	120 J	36 U	38.1 U	41.3 U
Atrazine	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Benzaldehyde	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Benzo(a)anthracene	1000	NS	34.9 U	38.1 U	37.3 U	350 J	36 U	38.1 U	41.3 U
Benzo(a)pyrene	1000	NS	34.9 U	38.1 U	37.3 U	360	36 U	38.1 U	41.3 U
Benzo(b)fluoranthene	1000	NS	34.9 U	38.1 U	37.3 U	510	36 U	38.1 U	41.3 U
Benzo(g,h,i)perylene	100,000	NS	34.9 U	38.1 U	37.3 U	220 J	36 U	38.1 U	41.3 U
Benzo(k)fluoranthene	800	NS	34.9 U	38.1 U	37.3 U	340 J	36 U	38.1 U	41.3 U
bis(2-Chloroethoxy)methane	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
bis(2-Chloroethyl)ether	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Bis(2-ethylhexyl)phthalate	NS	50,000	34.9 U	38.1 U	37.3 U	610	36 U	38.1 U	41.3 U
Butylbenzylphthalate	NS	100,000	34.9 U	38.1 U	37.3 U	130 J	36 U	38.1 U	41.3 U
Caprolactam	NS	NS	69.9 U	76.1 U	74.5 U	73.2 U	72 U	76.2 U	82.5 U
Carbazole	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Chrysene	1000	NS	34.9 U	38.1 U	37.3 U	400	36 U	38.1 U	41.3 U
Di-n-butylphthalate	NS	8,100	34.9 U	38.1 U	37.3 U	180 J	36 U	38.1 U	41.3 U
Di-n-octyl phthalate	NS	100,000	34.9 U	38.1 U	37.3 U	190 J	36 U	38.1 U	41.3 U
Dibenzo(a,h)anthracene	330	NS	34.9 U	38.1 U	37.3 U	120 J	36 U	38.1 U	41.3 U
Dibenzofuran	7000	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Diethylphthalate	NS	7100	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Dimethylphthalate	NS	27,000	390	560	900	360	450	850	340 J
Fluoranthene	100,000	NS	34.9 U	38.1 U	37.3 U	630	36 U	38.1 U	41.3 U
Fluorene	30,000	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Hexachlorobenzene	330	410	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Hexachlorobutadiene	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Hexachlorocyclopentadiene	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Hexachloroethane	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Indeno(1,2,3-cd)pyrene	500	NS	34.9 U	38.1 U	37.3 U	200 J	36 U	38.1 U	41.3 U
Isophorone	NS	4400	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
n-Nitroso-di-n-propylamine	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
n-Nitrosodiphenylamine	NS	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Naphthalene	12,000	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Nitrobenzene	NS	170	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Pentachlorophenol	800	NS	34.9 U	38.1 U	37.3 U	36.6 U	36 U	38.1 U	41.3 U
Phenanthrene	100,000	NS	34.9 U	38.1 U	37.3 U	410	36 U	38.1 U	41.3 U
Phenol	330	NS	34.9 U	38.1 U	37.3 U	91.2 J	36 U	38.1 U	41.3 U
Pyrene	100,000	NS	34.9 U	38.1 U	37.3 U	400	36 U	38.1 U	41.3 U

Table 5
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Polychlorinated Biphenyls in Soil

Client ID Lab Sample ID Date Sampled Dilution ug/kg	NYSDEC Part 375 Unrestricted SCO ug/kg	NYSDEC CP-51 Supplemental SCO ug/kg	SB-1(9-10) H3936-01 7/6/2016	SB-2(9-10) H3936-02 7/6/2016	SB-3(5-6) H3936-03 7/6/2016	SB-4(4-5) H3936-04 7/6/2016	SB-5(1-2) H3936-05 7/6/2016	SB-5(4-5) H3936-06 7/6/2016	SB-6(11-12) H3936-09 7/6/2016
Aroclor-1016	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1221	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1232	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1242	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1248	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1254	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1262	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1268	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Aroclor-1260	**NS**	**NS**	3.5 U	3.8 U	3.7 U	3.7 U	3.6 U	3.8 U	4.1 U
Total PCBs	**100**	**NS**	ND	ND	ND	ND	ND	ND	ND

Table 6
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Metals and Cyanide in Soil

Client ID Lab Sample ID Date Sampled Dilution ug/kg	NYSDEC Part 375 Unrestricted SCO mg/kg	NYSDEC CP-51 Supplemental SCO mg/kg	SB-1(9-10) H3936-01 7/6/2016	SB-2(9-10) H3936-02 7/6/2016	SB-3(5-6) H3936-03 7/6/2016	SB-4(4-5) H3936-04 7/6/2016	SB-5(1-2) H3936-05 7/6/2016	SB-5(4-5) H3936-06 7/6/2016	SB-6(11-12) H3936-09 7/6/2016
Aluminum	**NS**	**10000**	**39100**	**10300**	8590	**11700**	8530	**15900**	8840
Antimony	**NS**	**12**	0.933 JN	0.606 UN	0.567 UN	0.595 UN	0.576 UN	0.589 UN	0.644 UN
Arsenic	**13**	**NS**	0.215 U	1.65	0.886 J	3.34	1.71	2.07	2.19
Barium	**350**	**NS**	**386**	66.4	56.9	81.5	47.1	53.5	80.8
Beryllium	**7.2**	**NS**	0.739	0.561	0.48	0.578	0.414	0.701	0.382
Cadmium	**2.5**	**NS**	**5.34**	1.06	0.881	1.23	0.746	1.3	0.772
Calcium	**NS**	**10000**	3590	1410	1280	**13100**	2690	1390	3580
Chromium	**30**	**NS**	**35.8**	21.8	21.1	23.1	22.2	28.7	23.2
Cobalt	**NS**	**20**	**37.9**	11.9	10.2	10.6	7.97	12.2	8.99
Copper	**50**	**NS**	**142**	23.4	20.1	24.8	19.8	25.3	23.7
Cyanide	**27**	**NS**	0.126 U	0.13 U	0.139 U	0.108 J	0.035 J	0.134 U	0.041 J
Hexavalent Chromium	**1**	**NS**	0.168 J	0.181 J	0.177 J	0.217 U	0.17 J	0.179 J	0.098 J
Iron	**NS**	**2000**	**18600**	**10500**	**9260**	**10100**	**8020**	**11100**	**9460**
Lead	**63**	**NS**	6.36	14.3	4.64	**74.9**	18.9	9.87	30.6
Magnesium	**NS**	**NS**	31500	3330	3070	4160	2360	3470	3740
Manganese	**1,600**	**NS**	345	332	255	284	297	215	349
Mercury	**0.18**	**NS**	0.008 J	0.024	0.01 J	0.14	0.047	0.046	0.032
Nickel	**30**	**NS**	**32.1**	20.2	17.9	19.7	17.9	22	23.1
Potassium	**NS**	**NS**	16000	2100	1930	2330	947	693	1570
Selenium	**3.9**	**NS**	0.215 U	0.242 U	0.227 U	0.238 U	0.23 U	0.235 U	0.257 U
Silver	**2**	**NS**	0.107 UN	0.121 UN	0.113 UN	0.119 UN	0.115 UN	0.118 UN	0.129 UN
Sodium	**NS**	**NS**	978	81.8 J	244	439	257	337	100 J
Thallium	**NS**	**5**	0.43 U	0.485 U	0.454 U	0.476 U	0.461 U	0.471 U	0.515 U
Vanadium	**NS**	**39**	**155**	30.7	28.1	30.9	20.8	35.7	26.1
Zinc	**109**	**NS**	**120**	58.8	42.9	136	43.8	41	77.4

Table 7
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Total Petroleum Hydrocarbons in Soil

Client ID	**SB-1(9-10)**	**SB-2(9-10)**	**SB-3(5-6)**	**SB-4(4-5)**	**SB-5(1-2)**	**SB-5(4-5)**	**SB-6(11-12)**
Lab Sample ID	**H3936-01**	**H3936-02**	**H3936-03**	**H3936-04**	**H3936-05**	**H3936-06**	**H3936-09**
Date Sampled	**7/6/2016**	**7/6/2016**	**7/6/2016**	**7/6/2016**	**7/6/2016**	**7/6/2016**	**7/6/2016**
Dilution	**1**						
ug/kg							
GRO	23.5 U	25.5 U	25 U	24.5 U	24 U	25.5 U	28 U
DRO	4586	3046	2465	28079	2303	2439	2434

Table 8

P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Volatile Organic Compounds in Groundwater

Client ID Lab Sample ID Date Sampled Dilution ug/L	NYSDEC Class GA Ambient Standard	TW-4 H3936-07 7/6/2016 1	Trip Blank H3936-10 7/6/2016 1
1,1,1-Trichloroethane	5	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	5	0.2 U	0.2 U
1,1,2-Trichloroethane	1	0.2 U	0.2 U
1,1,2-Trichlorotrifluoroethane	5	0.2 U	0.2 U
1,1-Dichloroethane	5	0.2 U	0.2 U
1,1-Dichloroethene	5	0.2 U	0.2 U
1,2,3-Trichlorobenzene	5	0.2 U	0.2 U
1,2,4-Trichlorobenzene	5	0.2 U	0.2 U
1,2,4-Trimethylbenzene	5	0.2 U	0.2 U
1,2-Dibromo-3-Chloropropane	0.04	0.2 U	0.2 U
1,2-Dibromoethane	0.0006	0.2 U	0.2 U
1,2-Dichlorobenzene	3	0.2 U	0.2 U
1,2-Dichloroethane	0.6	0.2 U	0.2 U
1,2-Dichloropropane	1	0.2 U	0.2 U
1,3,5-Trimethylbenzene	5	0.2 U	0.2 U
1,3-Dichlorobenzene	3	0.2 U	0.2 U
1,4-Dichlorobenzene	3	0.2 U	0.2 U
2-Butanone	50	2.5 U	2.5 U
2-Hexanone	50	2.5 U	2.5 U
4-Methyl-2-Pentanone	NS	1 U	1 U
Acetone	50	1 U	1 U
Benzene	1	0.2 U	0.2 U
Bromochloromethane	5	0.5 U	0.5 U
Bromodichloromethane	50	0.2 U	0.2 U
Bromoform	50	0.2 U	0.2 U
Bromomethane	5	0.2 U	0.2 U
Carbon Disulfide	60	0.2 U	0.2 U
Carbon Tetrachloride	5	0.2 U	0.2 U
Chlorobenzene	5	0.2 U	0.2 U
Chloroethane	5	0.5 U	0.5 U
Chloroform	7	0.2 U	0.2 U
Chloromethane	5	0.2 U	0.2 U
cis-1,2-Dichloroethene	5	0.2 U	0.2 U
cis-1,3-Dichloropropene	NS	0.2 U	0.2 U
Cyclohexane	NS	0.2 U	0.2 U
Dibromochloromethane	50	0.2 U	0.2 U
Dichlorodifluoromethane	5	0.2 U	0.2 U
Ethyl Benzene	5	0.2 U	0.2 U
Isopropylbenzene	5	0.2 U	0.2 U
m/p-Xylenes	5	0.4 U	0.4 U
Methyl Acetate	NS	0.5 U	0.5 U
Methyl tert-butyl Ether	10	0.5 U	0.5 U
Methylcyclohexane	NS	0.2 U	0.2 U
Methylene Chloride	5	0.2 U	0.2 U
Naphthalene	10	0.2 U	0.2 U
n-Butylbenzene	5	0.2 U	0.2 U
n-propylbenzene	5	0.2 U	0.2 U
o-Xylene	5	0.2 U	0.2 U
p-Isopropyltoluene	5	0.2 U	0.2 U
sec-Butylbenzene	5	0.2 U	0.2 U
Styrene	5	0.2 U	0.2 U
t-1,3-Dichloropropene	NS	0.2 U	0.2 U
tert-Butylbenzene	5	0.2 U	0.2 U
Tetrachloroethene	5	0.2 U	0.2 U
Toluene	5	0.2 U	0.2 U
trans-1,2-Dichloroethene	5	0.2 U	0.2 U
Trichloroethene	5	0.2 U	0.2 U
Trichlorofluoromethane	5	0.2 U	0.2 U
Vinyl Chloride	2	0.2 U	0.2 U

Table 9
P.S. 97X Addition, 1375 Mace Avenue
Bronx, NY
Phase II Environmental Site Investigation Analytical Results
Semi-Volatile Organic Compounds in Groundwater

Client ID Lab Sample ID Date Sampled Dilution ug/L	NYSDEC Class GA Ambient Standard	TW-4 H3936-07 7/6/2016 1
1,1-Biphenyl	5	1.4 U
1,2,4,5-Tetrachlorobenzene	5	1.4 U
1,4-Dioxane	NS	7.1 UQ
2,2-oxybis(1-Chloropropane)	5	1.4 U
2,3,4,6-Tetrachlorophenol	NS	1.4 U
2,4,5-Trichlorophenol	NS	1.4 U
2,4,6-Trichlorophenol	NS	1.4 U
2,4-Dichlorophenol	5	1.4 U
2,4-Dimethylphenol	50	1.4 U
2,4-Dinitrophenol	10	11.4 U
2,4-Dinitrotoluene	5	1.4 U
2,6-Dinitrotoluene	5	1.4 U
2-Chloronaphthalene	10	1.4 U
2-Chlorophenol	NS	1.4 U
2-Methylnaphthalene	NS	1.4 U
2-Methylphenol	NS	1.4 UQ
2-Nitroaniline	5	1.4 U
2-Nitrophenol	NS	1.4 U
3,3-Dichlorobenzidine	5	1.4 U
3+4-Methylphenols	NS	1.4 UQ
3-Nitroaniline	5	1.4 U
4,6-Dinitro-2-methylphenol	NS	2.9 U
4-Bromophenyl-phenylether	NS	1.4 U
4-Chloro-3-methylphenol	NS	1.4 U
4-Chloroaniline	5	1.4 U
4-Chlorophenyl-phenylether	NS	1.4 U
4-Nitroaniline	5	2.9 U
4-Nitrophenol	NS	7.1 U
Acenaphthene	20	1.4 U
Acenaphthylene	NS	1.4 U
Acetophenone	NS	1.4 U
Anthracene	50	1.4 U
Atrazine	7.5	1.4 U
Benzaldehyde	NS	1.4 U
Benzo(a)anthracene	0.002	1.4 U
Benzo(a)pyrene	ND	1.4 U
Benzo(b)fluoranthene	0.002	1.4 U
Benzo(g,h,i)perylene	NS	1.4 U
Benzo(k)fluoranthene	0.002	1.4 U
bis(2-Chloroethoxy)methane	5	1.4 U
bis(2-Chloroethyl)ether	1	1.4 U
Bis(2-ethylhexyl)phthalate	5	1.4 U
Butylbenzylphthalate	50	1.4 U
Caprolactam	NS	1.4 U
Carbazole	NS	1.4 U
Chrysene	0.002	1.4 U
Dibenzo(a,h)anthracene	NS	1.4 U
Dibenzofuran	NS	1.4 U
Diethylphthalate	50	1.4 U
Dimethylphthalate	50	1.4 U
Di-n-butylphthalate	50	1.4 U
Di-n-octyl phthalate	50	1.4 U
Fluoranthene	50	1.4 U
Fluorene	50	1.4 U
Hexachlorobenzene	0.04	1.4 U
Hexachlorobutadiene	0.5	1.4 U
Hexachlorocyclopentadiene	5	1.4 U
Hexachloroethane	5	1.4 U
Indeno(1,2,3-cd)pyrene	0.002	1.4 U
Isophorone	50	1.4 U
Naphthalene	10	1.4 U
Nitrobenzene	0.4	1.4 U
n-Nitroso-di-n-propylamine	NS	1.4 U
n-Nitrosodiphenylamine	50	1.4 U
Pentachlorophenol	NS	1.4 U
Phenanthrene	50	1.4 U
Phenol	NS	1.4 U
Pyrene	50	1.4 U

Table 10

P.S. 97X Addition, 1375 Mace Avenue

Bronx, NY

Phase II Environmental Site Investigation Analytical Results

Polychlorinated Biphenyls in Groundwater

Client ID Lab Sample ID Date Sampled Dilution ug/L	NYSDEC Class GA Ambient Standard	TW-4 H3936-07 7/6/2016 1
Aroclor-1016	**NS**	0.139 U
Aroclor-1221	**NS**	0.139 U
Aroclor-1232	**NS**	0.139 U
Aroclor-1242	**NS**	0.139 U
Aroclor-1248	**NS**	0.139 U
Aroclor-1254	**NS**	0.139 U
Aroclor-1262	**NS**	0.139 U
Aroclor-1268	**NS**	0.139 U
Aroclor-1260	**NS**	0.139 U
Total PCBS	**0.09**	ND

Table 11

P.S. 97X Addition, 1375 Mace Avenue

Bronx, NY

Phase II Environmental Site Investigation Analytical Results

Total and Dissolved Metals in Groundwater

Total Metals		
Client ID	**NYSDEC**	**TW-4**
Lab Sample ID	**Class GA**	**H3936-07**
Date Sampled	**Ambient**	**7/6/2016**
Dilution	**Standard**	**1**
ug/L		
Aluminum	**NS**	489
Antimony	**3**	6.25 U
Arsenic	**25**	2.65 J
Barium	**1,000**	224
Beryllium	**3**	0.75 U
Cadmium	**5**	0.75 U
Calcium	**NS**	136000
Chromium	**50**	2.9 J
Cobalt	**NS**	6.65 J
Copper	**200**	2.99 J
Iron	**300+**	**602**
Lead	**25**	1.5 U
Magnesium	**35,000**	31300
Manganese	**300+**	**2200**
Mercury	**0.7**	0.1 U
Nickel	**100**	18.5 J
Potassium	**NS**	13000
Selenium	**10**	5.16 J
Silver	**50**	1.25 U
Sodium	**20,000**	**232000**
Thallium	**0.5**	5 U
Vanadium	**NS**	5 U
Zinc	**2,000**	8.14 J

Dissolved Metals		
Client ID	**NYSDEC**	**TW-4**
Lab Sample ID	**Class GA**	**H3936-11**
Date Sampled	**Ambient**	**7/6/2016**
Dilution	**Standard**	**1**
ug/L		
Aluminum	**NS**	172
Antimony	**3**	6.25 U
Arsenic	**25**	3.16 J
Barium	**1,000**	211
Beryllium	**3**	0.75 U
Cadmium	**5**	0.75 U
Calcium	**NS**	130000
Chromium	**50**	1.25 U
Cobalt	**NS**	5.8 J
Copper	**200**	2.71 J
Iron	**300+**	12.5 U
Lead	**25**	1.5 U
Magnesium	**35,000**	30000
Manganese	**300+**	**2080**
Mercury	**0.7**	0.1 U
Nickel	**100**	16.4 J
Potassium	**NS**	12200
Selenium	**10**	5 U
Silver	**50**	1.25 U
Sodium	**20,000**	**225000**
Thallium	**0.5**	5 U
Vanadium	**NS**	5 U
Zinc	**2,000**	7.5 J

Table 12

P.S. 97X Addition, 1375 Mace Avenue

Bronx, NY

Phase II Environmental Site Investigation Analytical Results

NYCDEP Sewer Discharge Parameters in Groundwater

Client ID Lab Sample ID Date Sampled Dilution Units as shown	DEP Combined Sewer Discharge	TW-4-DEP H3936-08 7/6/2016 1
1,1,1-Trichloroethane - µg/L	NS	2.5 U
1,4-Dichlorobenzene µg/L	NS	2.5 U
Benzene - µg/L	134	2.5 U
Carbon Tetrachloride - µg/L	NS	2.5 U
Chloroform - µg/L	NS	2.5 U
Ethyl Benzene - µg/L	380	2.5 U
Methyl tert-Butyl Ether - µg/L	50	2.5 U
Tetrachloroethene - µg/L	20	2.5 U
Toluene - µg/L	74	2.5 U
Xylene, Total - µg/L	74	7.5 U
1,2,4-Trichlorobenzene - µg/L	NS	1.3 U
Naphthalene - µg/L	47	1.3 U
Phenol - µg/L	NS	1.3 U
Cadmium - µg/L	2000	1.5 U
Chromium, Hexavalent - mg/L	5	0.003 J
Copper - µg/L	5000	5 J
Lead - µg/L	2000	3 U
Mercury - µg/L	50	0.1 U
Nickel - mg/L	3000	20.9
Zinc - µg/L	5000	8.66 J
Total PCBs - µg/L	1	ND
CBOD5	NS	2 U
Chloride - mg/L	NS	570
Nitrate+Nitrite - mg/L	NS	1.51
Total Nitrogen mg/L	5000	1.85
Flashpoint °F	>140°	>212
Nonpolar Material - mg/L	50	2.5 U
Phenolics - mg/L	NS	0.006 J
TKN - mg/L	NS	0.344 J
TS - mg/L	NS	1605
TSS - mg/L	350	4.4

Appendix A
Photographic Log

Photograph 1. Soil boring installation at SB-6.

Photograph 2. Macro-core from SB-6.

Photograph 3. Macro-core from SB-3.

Photograph 4. Purging soil vapor point SV-2.

Photograph 5. Patched asphalt at SB-1.

Photograph 6. Patched asphalt at SB-4.

Appendix B

Geophysical Survey Report

GEOPHYSICAL ENGINEERING SURVEY REPORT

P.S. 97X

1375 Mace Avenue
Bronx, New York 10469

NOVA PROJECT NUMBER
16-0341

DATED
July 11, 2016

PREPARED FOR:

AKRF, Inc.
440 Park Avenue South
7th Floor
New York, New York 10016

PREPARED BY:

NOVA
GEOPHYSICAL
ENGINEERING
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July 11, 2016

Margo Davis
Environmental Scientist
AKRF, Inc.
440 Park Avenue South
7th Floor
New York, New York 10016
Direct: 646.388.9570

Re: Geophysical Engineering Survey (GES) Report
P.S. 97X
1375 Mace Avenue
Bronx, New York 10469

Dear Ms. Davis:

Nova Geophysical Services (NOVA) is pleased to provide findings of the geophysical engineering survey (GES) at the above referenced project site: P.S. 97X, 1375 Mace Avenue, Bronx, New York (the "Site"). Please see attached Site Location and Geophysical Survey maps for more details.

INTRODUCTION TO GEOPHYSICAL ENGINEERING SURVEY (GES)

NOVA performed a Geophysical engineering surveys (GES) consisting of a Ground Penetrating Radar (GPR) survey at the site. The purpose of this survey is to locate and identify USTs, anomalies, utilities and other substructures and to clear and mark proposed environmental boring areas on June 29th, 2016.

The equipment selected for this investigation was a Noggin 250 MHz ground penetrating radar (GPR) shielded antenna and 3M DYNATL.

A GPR system consists of a radar control unit, control cable and a transducer (antenna). The control unit transmits a trigger pulse at a normal repetition rate of 250 MHz. The trigger pulse is sent to the transmitter electronics in the transducer via the control cable. The transmitter electronics amplify the trigger pulses into bipolar pulses that are radiated to the surface. The transformed pulses vary in shape and frequency according to the transducer used. In the subsurface, variations of the signal occur at boundaries where there is a dielectric contrast (void, steel, soil type, etc.). Signal reflections travel back to the control unit and are represented as color graphic images for interpolation.

GEOPHYSICAL METHODS

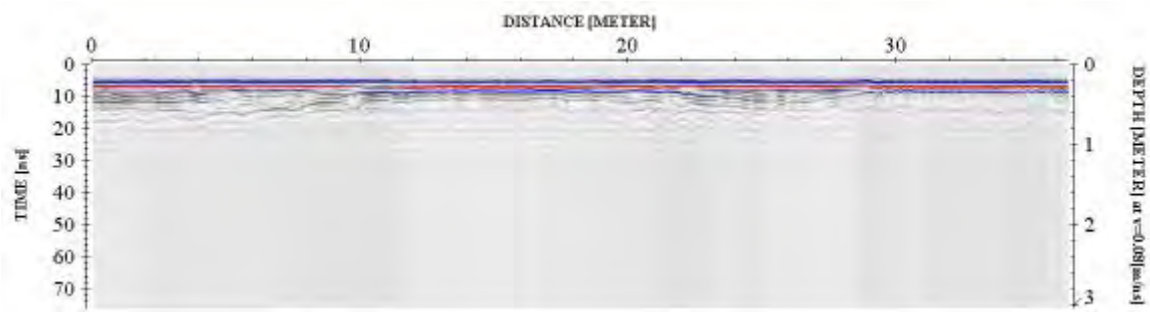
The project site was screened using the GPR to search the entire area and inspected for reflections, which could be indicative of major anomalies and substructures.

GPR data profiles were collected for the areas of the Site specified by the client. The surveyed areas consisted of asphalt surfaces.

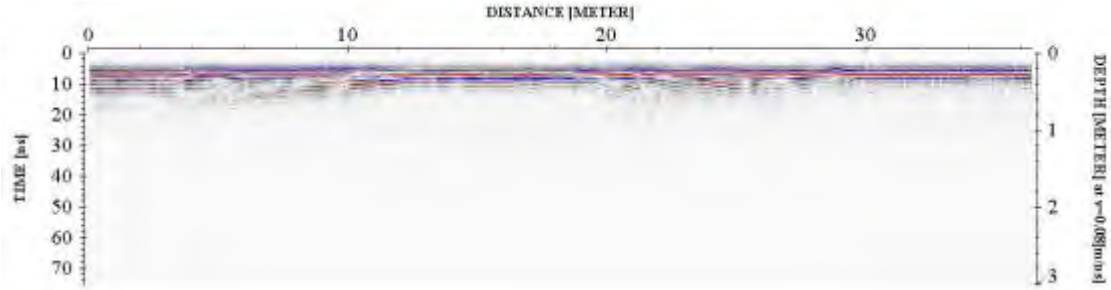
DATA PROCESSING

In order to improve the quality of the results and to better identify subsurface anomalies NOVA processed the collected data. The processes flow is briefly described at this section.

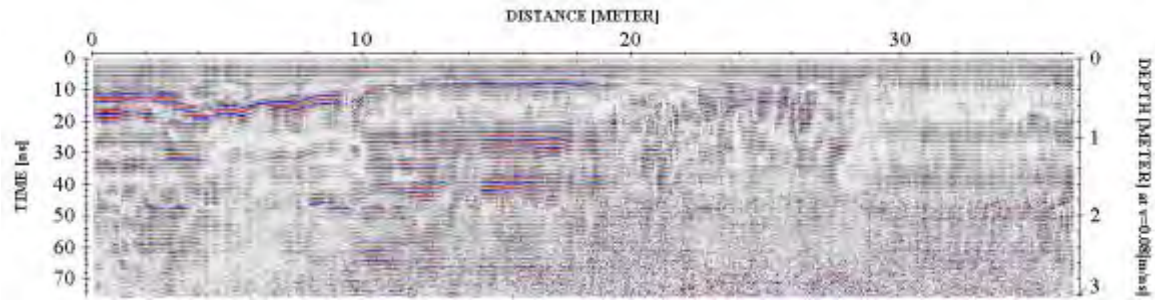
Step 1. Import raw RAMAC data to standard processing format



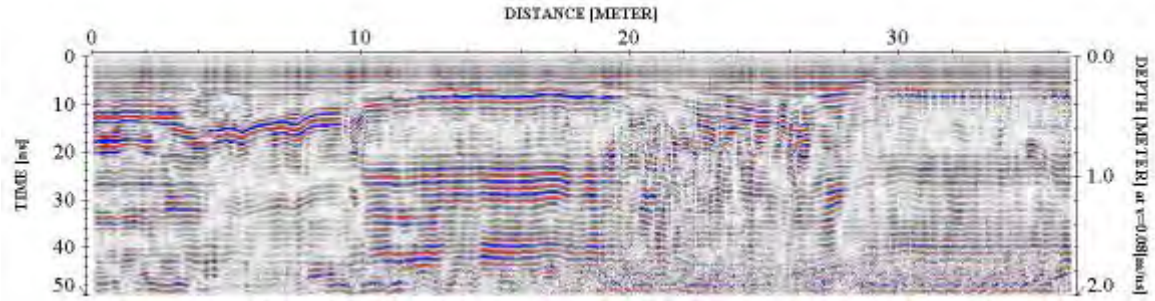
Step 2. Remove instrument noise *(dewow)*



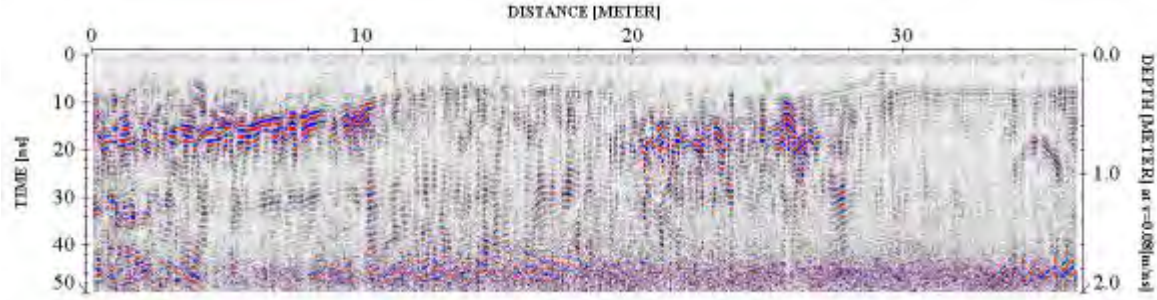
Step 3. Correct for attenuation losses *(energy decay function)*



Step 4. Remove static from bottom of profile *(time cut)*



Step 5. Mute horizontal ringing/noise *(subtracting average)*



The above example shows the significance of data processing. The last image (step 5) has higher resolution than the starting image (raw data – step 1) and describes the subsurface anomalies more accurately.

PHYSICAL SETTINGS

Nova observed following physical conditions at the time of the survey:

The weather: Sunny

Temp: 85 Degrees (F).

Surface: Asphalt surfaces

Geophysical Noise Level (GNL): Geophysical Noise Level (GNL) was medium to high at the site. The noise was a result of the site being located in an urban environment.

RESULTS

The results of the geophysical engineering survey (GES) identified following at the project Site:

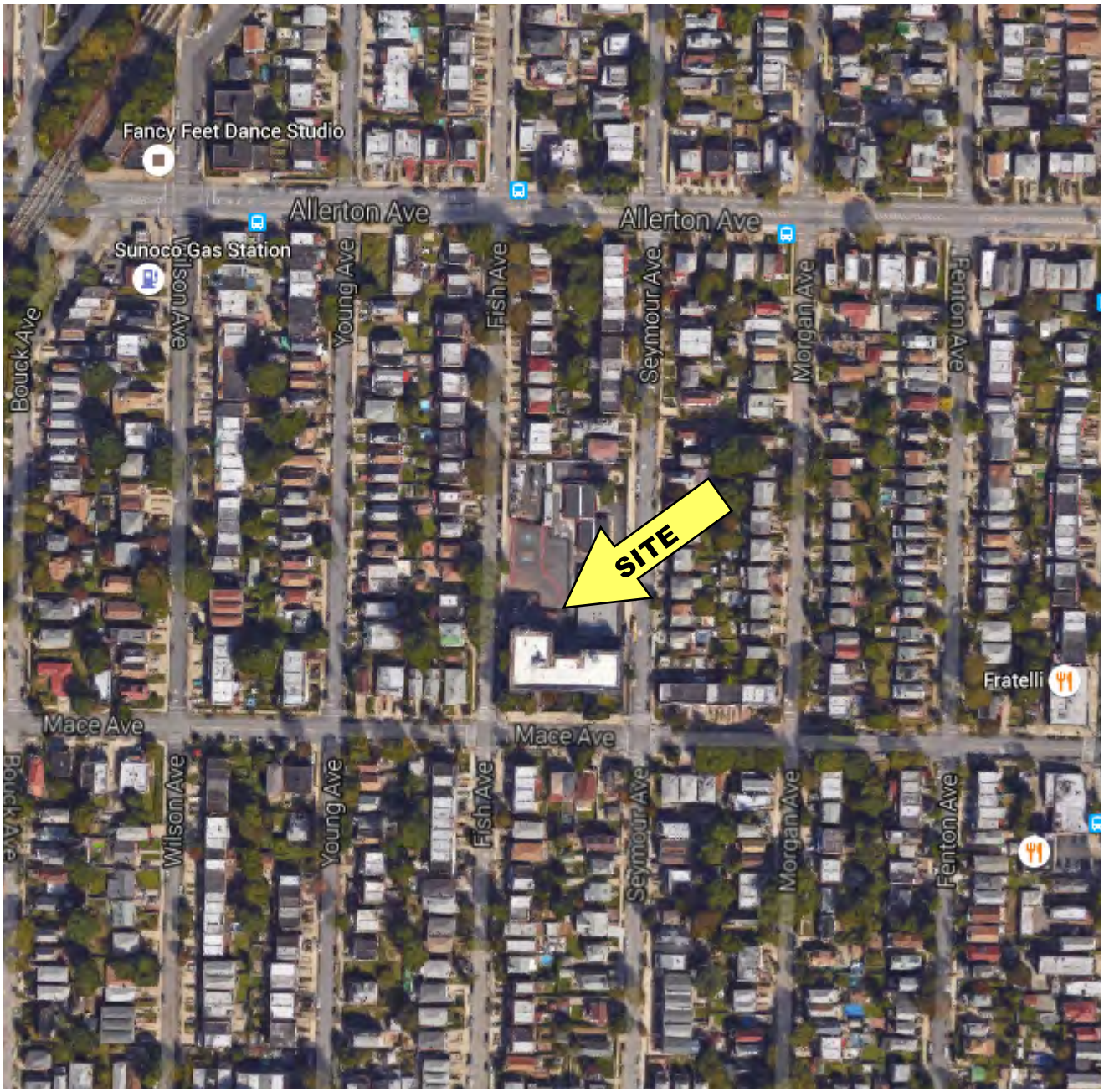
- GES survey identified scattered anomalies located throughout the project site. Based on their rates and proximity, these anomalies were inconsistent with any USTs. These areas were indicated on the on-site markout.
- Several utilities (sewer and electric) were located on the site. These utilities were marked out both at the site and on the survey map (subsurface only).
- Geophysical Survey Plan portrays the areas investigated during the geophysical survey.

If you have any questions please do not hesitate to contact the undersigned.
Sincerely,

NOVA Geophysical Services

Levent Eskicakit, P.G., E.P.
Project Engineer

Attachments:
Figure 1 Site Location Map
Geophysical Survey Plan
Geophysical Images



N

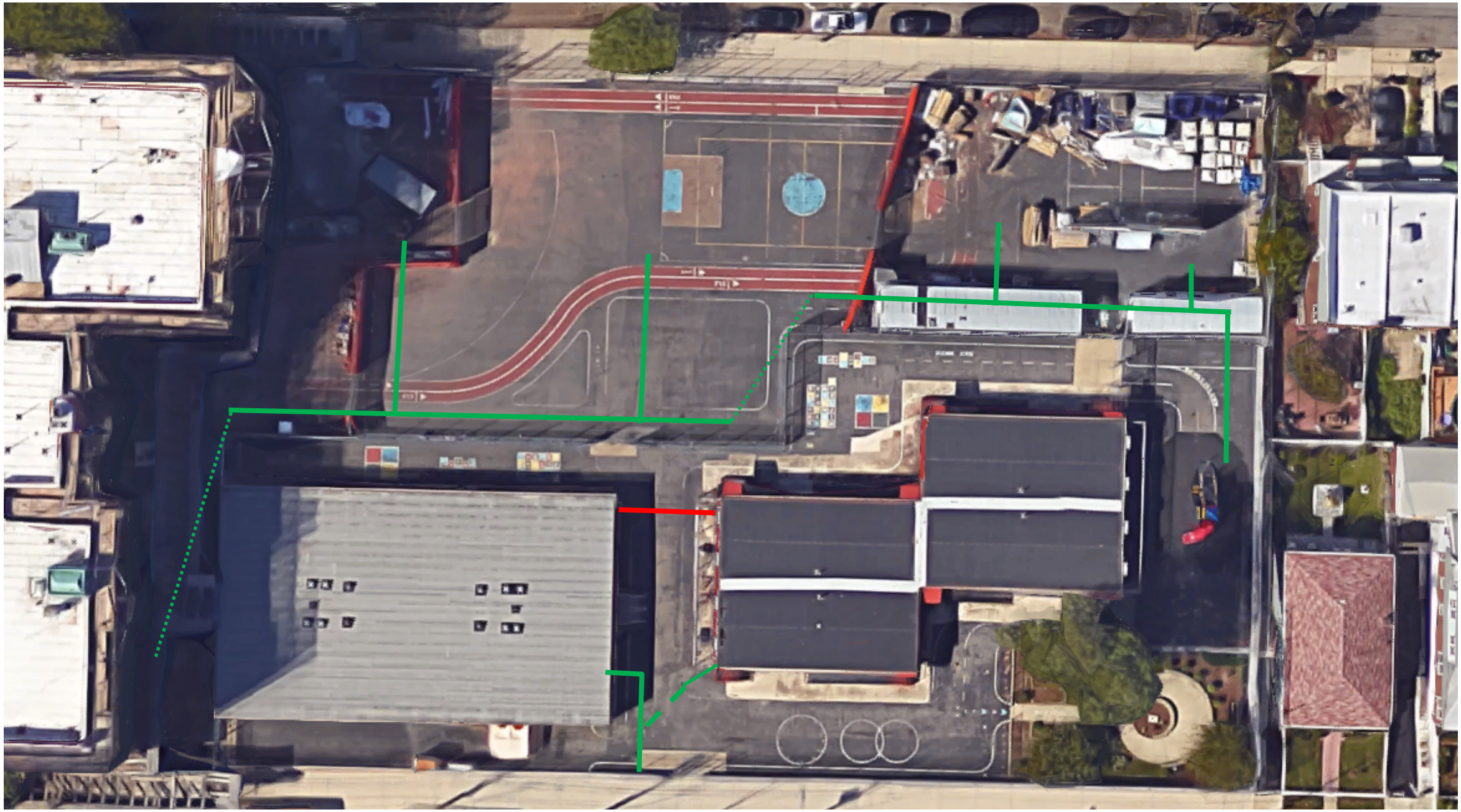
200 ft.

FIGURE 1
SITE LOCATION MAP

NOVA
Geophysical Services
Subsurface Mapping Solutions
56-01 Marathon Pkwy, # 765, Douglaston, NY11362
(347) 556-7787 Fax (718) 261-1528
www.nova-gsi.com

SITE: **P.S. 97X**
1375 Mace Avenue
Bronx, New York 10469

SCALE: See Map



1- All anomalies were marked in the field.

NOVA
Geophysical Services
Subsurface Mapping Solutions
56-01 Marathon Parkway, PO Box 765
Douglaston, New York11362
Phone (347) 556-7787 * Fax (718) 261-1527
www.nova-gsi.com

GEOPHYSICAL SURVEY PLAN

SITE : **P.S. 97X**
1375 Mace Avenue
Bronx, New York 10469

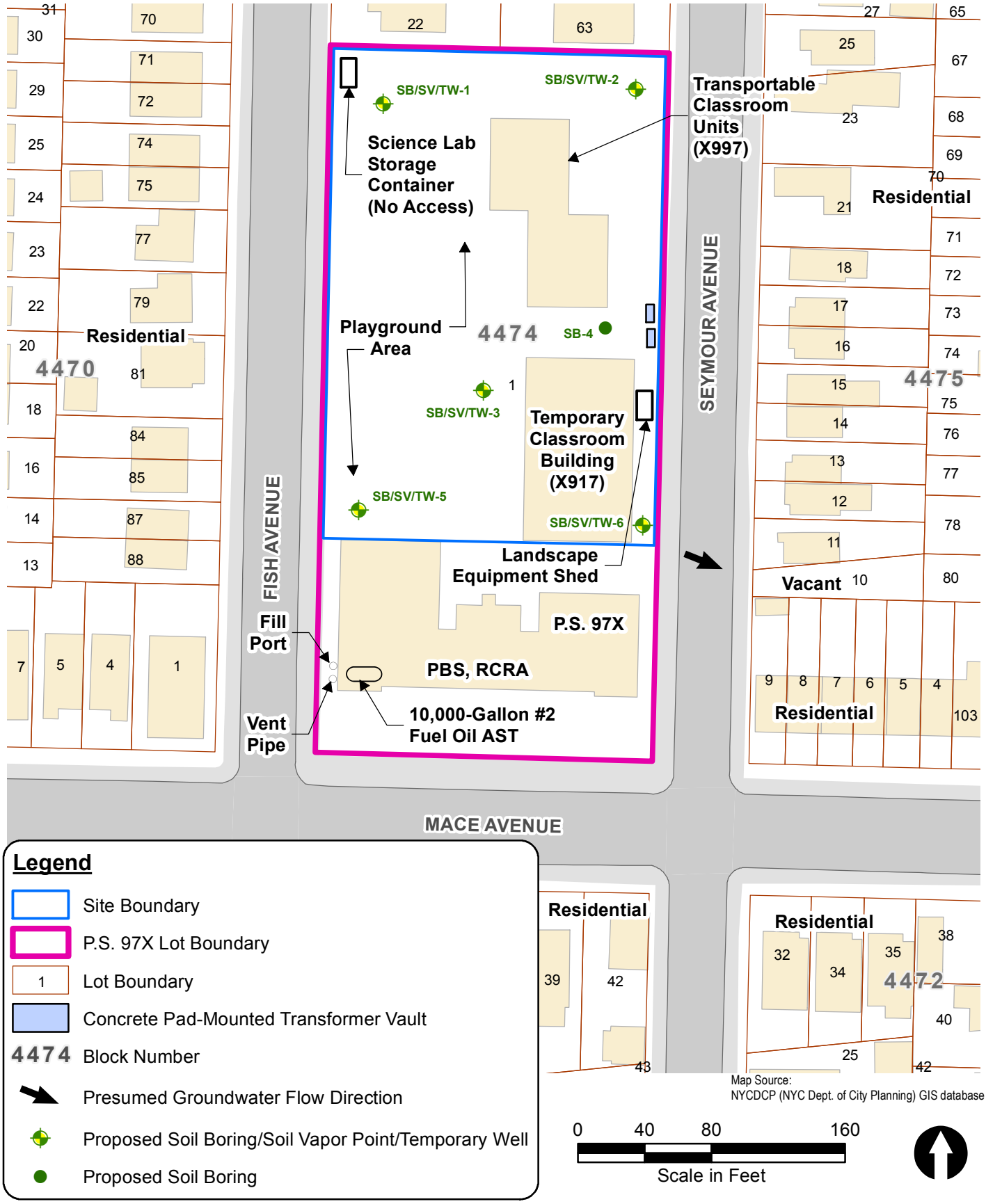
CLIENT: **AKRF, Inc.**
DATE: June 29, 2016
Scale See Map

INFORMATION

Survey Area
Sewer Line
Electric Line

N

30 ft.



Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database

P.S. 97X Addition
1375 Mace Avenue
Bronx, New York

PROPOSED SAMPLE LOCATIONS

AKRF Engineering, P.C.
440 Park Avenue South, New York, NY 10016

DATE **5/23/2016**
PROJECT NO. **89153**
FIGURE **1**

© 2016 AKRF, Inc. Environmental Consultants M:\AKRF Project Files\89153 - PS 97X\PHASE I ESA\GIS\89153 Fig 1 Sample Locations.mxd 5/23/2016 2:13:24 PM mvelleux

GEOPHYSICAL IMAGES

P.S. 97X
1375 Mace Avenue
Bronx, New York 10469
June 29th, 2016

GEOPHYSICAL IMAGES

P.S. 97X
1375 Mace Avenue
Bronx, New York 10469
June 29th, 2016

Appendix C

Soil Boring, Soil Vapor, and Groundwater Sample Collection Logs

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-1**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	12:00	**Finish Time**	12:15
Date	7/6/2016		

Surface Condition: **Asphalt**

Depth (feet)	Recovery (Inches)		Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	56	Top 7": ASPHALT.	ND	Dry	ND	ND	
2			ND	Dry	ND	ND	
3		Bottom 49": Brown SAND, little Asphalt.	ND	Dry	ND	ND	
4			ND	Dry	ND	ND	
5							
6	22	Brown SAND, trace Gravel.	ND	Dry	ND	ND	
7			ND	Dry	ND	ND	
8			ND	Dry	ND	ND	
9			ND	Dry	ND	ND	**SB-1 (9-10')**
10							
11	16	Brown SAND, trace Gravel.	ND	Dry	ND	ND	
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: **End of boring at 12 feet below ground surface due to refusal (on suspected bedrock).**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-2**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	12:35	**Finish Time**	12:50
Date	7/6/2016		

Depth (feet)	Recovery (Inches)	**Surface Condition:** Asphalt	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	32	Top 8": ASPHALT.	ND	Dry	ND	ND	
2			ND	Dry	ND	ND	
3		Bottom 32": Brown SAND, trace Gravel.	ND	Dry	ND	ND	
4			ND	Dry	ND	ND	
5							
6	45	Brown SAND, little Gravel.	ND	Dry	ND	ND	
7			ND	Dry	ND	ND	
8			ND	Dry	ND	ND	
9			ND	Dry	ND	ND	**SB-2 (9-10')**
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: **End of boring at 10 feet below ground surface due to refusal (on suspected bedrock).**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-3**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	9:10	**Finish Time**	9:20
Date	7/6/2016		

Depth (feet)	Recovery (Inches)	**Surface Condition:** Asphalt	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	42	Top 9": ASPHALT.	ND	Dry	ND	ND	
2			ND	Dry	ND	ND	**SB-3 (2-3')**
3		Bottom 33": Brown SAND, trace Gravel.	ND	Dry	ND	ND	
4			ND	Dry	ND	ND	
5							
6	12	Brown SAND, trace Silt.	ND	Dry	ND	ND	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: **End of boring at 6 feet below ground surface due to refusal (on suspected bedrock).**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-4**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	11:00	**Finish Time**	11:45
Date	7/6/2016		

Depth (feet)	Recovery (Inches)	**Surface Condition:** **Asphalt**	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	39	Top 12": ASPHALT.	ND	Dry	ND	ND	
2			ND	Dry	ND	ND	
3		Bottom 27": Brown SAND, little Gravel.	ND	Dry	ND	ND	
4			ND	Dry	ND	ND	**SB-4 (4-5')**
5							
6	0	No recovery.					
7							
8							
9							
10							
11	19	Top 7": Brown SAND, little Gravel.	ND	Dry	ND	ND	
12		Next 7": Brown SAND, trace Clay.	ND	Moist	ND	ND	
13			ND	Moist	ND	ND	
14		Bottom 5": Brown SAND, little Gravel.	ND	Wet	ND	ND	
15							
16	36	Brown SAND, little Gravel.	ND	Wet	ND	ND	
17							
18							
19							
20							

Notes: **End of boring at 20 feet below ground surface.**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was encountered at 15 feet below ground surface.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-5**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	8:35	**Finish Time**	8:45
Date	7/6/2016		

Depth (feet)	Recovery (Inches)	**Surface Condition:** **Asphalt**	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	46	Top 8": ASPHALT.	ND	Dry	ND	ND	
2		Next 10": Brown SAND, little Gravel, trace Brick.	ND	Dry	ND	ND	**SB-5 (1-2')**
3			ND	Dry	ND	ND	
4		Bottom 28": Brown fine SAND, trace Silt.	ND	Dry	ND	ND	**SB-5 (4-5')**
5							
6	27	Brown fine SAND, trace Silt.	ND	Dry	ND	ND	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Notes: **End of boring at 6 feet below ground surface due to refusal (on suspected bedrock).**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

SOIL BORING LOG

P.S. 97X Addition

AKRF Project Number: 89153

Boring No. **SB-6**

Sheet 1 **of 1**

AKRF
440 Park Avenue South, New York, NY 10016
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe - DPP
Sampling Method:	5' Macrocore
Driller :	Zebra
Weather:	90 °F, Sunny
Sampler:	A. Bosco/W. Grossett

Drilling			
Start Time	9:45	**Finish Time**	10:00
Date	7/6/2016		

Depth (feet)	Recovery (Inches)	**Surface Condition:** **Asphalt**	Odor	Moisture	PID	NAPL	Samples Collected for Lab Analysis
1	36	Top 10": ASPHALT.	ND	Dry	ND	ND	
2			ND	Dry	ND	ND	
3		Bottom 26": Brown SAND, trace Gravel and Silt.	ND	Dry	ND	ND	
4			ND	Dry	ND	ND	
5							
6	25	Brown SAND, little Gravel.	ND	Dry	ND	ND	
7			ND	Dry	ND	ND	
8			ND	Dry	ND	ND	
9			ND	Dry	ND	ND	
10							
11	20	Brown SAND, little Gravel.	ND	Dry	ND	ND	**SB-6 (11-12')**
12			ND	Moist	ND	ND	
13							
14							
15							
16							
17							
18							
19							
20							

Notes: **End of boring at 12 feet below ground surface due to refusal (on suspected bedrock).**

Soil samples were analyzed for VOCs (8260), SVOCs (8270), PCBs (8082), TAL metals (6000/7000), Cyanide (9012), Hexavalent Chromium (7196), and TPH DRO/GRO (8015-modified).

Groundwater was not encountered.

PID = photoionization detector ppm = parts per million ND = Not Detected

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	89153	**Client:**	NYCSCA
Project Location:	P.S. 97X - 1375 Mace Ave, Bronx, NY	**Sampled By:**	AB/WG
Date:	7/6/2016		

Sample ID: SV-6

Canister ID: 972

Flow Controller ID: 0479

Purging

Time Started: 10:12

Time Stopped: 10:22

Vol. Purged: 1.0 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	10:24	**Vacuum:**	-29.92 inHg
Time Stopped:	11:35	**Vacuum:**	-4.79 inHg

Field Sample

PID Reading: ND

He Reading: 350 ppm

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	89153	**Client:**	NYCSCA
Project Location:	P.S. 97X - 1375 Mace Ave, Bronx, NY	**Sampled By:**	AB/WG
Date:	7/6/2016		

Sample ID: SV-1

Canister ID: 1821

Flow Controller ID: 0449

Purging

Time Started: 12:30

Time Stopped: 12:40

Vol. Purged: 1.0 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	12:43	**Vacuum:**	-30.70 inHg
Time Stopped:	13:52	**Vacuum:**	-7.23 inHg

Field Sample

PID Reading: ND

He Reading: ND

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	89153	**Client:**	NYCSCA
Project Location:	P.S. 97X - 1375 Mace Ave, Bronx, NY	**Sampled By:**	AB/WG
Date:	7/6/2016		

Sample ID: SV-2

Canister ID: 1981

Flow Controller ID: 0438

Purging

Time Started: 13:40

Time Stopped: 13:50

Vol. Purged: 1.0 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	13:50	**Vacuum:**	-29.96 inHg
Time Stopped:	14:54	**Vacuum:**	-3.93 inHg

Field Sample

PID Reading: 4.2 ppm

He Reading: 100 ppm

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	89153	**Client:**	NYCSCA
Project Location:	P.S. 97X - 1375 Mace Ave, Bronx, NY	**Sampled By:**	AB/WG
Date:	7/6/2016		

Sample ID: SV-5

Canister ID: 1705

Flow Controller ID: 0083

Purging

Time Started: 9:05

Time Stopped: 9:15

Vol. Purged: 1.0 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	9:22	**Vacuum:**	-30.58 inHg
Time Stopped:	10:22	**Vacuum:**	-7.65 inHg

Field Sample

PID Reading: ND

He Reading: 0.4 ppm

AKRF, Inc.
Environmental Consultants

Soil Gas Sampling Log

Job No:	89153	**Client:**	NYCSCA
Project Location:	P.S. 97X - 1375 Mace Ave, Bronx, NY	**Sampled By:**	AB/WG
Date:	7/6/2016		

Sample ID: SV-3

Canister ID: 1565

Flow Controller ID: 0211

Purging

Time Started: 9:25

Time Stopped: 9:35

Vol. Purged: 1.0 liters

Flow Rate: 0.1 L/min

Laboratory Sample (Summa Canister)

Time Started:	9:38	**Vacuum:**	-29.84 inHg
Time Stopped:	10:50	**Vacuum:**	-7.74 inHg

Field Sample

PID Reading: ND

He Reading: 150 ppm

Well Sampling Log

Job No:	**89153**	**Client:**	SCA	**Well No:**
Project Location:	**P.S. 97X - 1375 Mace Avenue, Bronx, NY**	**Sampled By:**	AB/WG	**TW-4**
Date:	**7/6/2016**	**Sampling Time:**	12:45	
LEL at surface:	ND			
PID at surface:	ND			
Total Depth:	20.00 ft. below top of casing	**Water Column (WC):**	4.75 feet	*= 0.163 * WC for 2" wells
Depth to Water:	15.25 ft. below top of casing	**Well Volume*:**	0.77 gallons	*= 0.653 * WC for 4" wells
Depth to Product:	ND ft. below top of casing	**Volume Purged:**	2 gallons	*= 1.469 * WC for 6" wells
Depth to top of screen:	10.00 ft. below top of casing	**Well Diam.:**	1 inch	Target maximum flow rate is 100 ml/min
Depth to bottom of screen:	20.00 ft. below top of casing	**Purging Device (pump type):**	Geopump Peristaltic Pump	
Approx. Pump Intake:	17.00 ft. below top of casing			

Time	**Depth to Water** (Ft.)	**Purge Rate** (ml/min)	**Temp** (^oC)	**Conductivity** (mS/cm)	**pH**	**Turbidity** (NTU)	**Comments** (problems, odor, sheen)
11:55	15.25	100	26.02	1.42	7.24	370	No odor/sheen
12:00	15.25	100	21.61	1.77	6.86	MAX	
12:05	15.25	100	22.17	2.02	6.66	MAX	
12:10	15.25	100	20.65	2.10	6.43	217	
12:15	15.25	100	19.69	2.00	6.45	85.2	
12:20	15.25	100	19.48	2.07	6.45	56.6	
12:25	15.25	100	19.60	2.07	6.45	43.3	
12:30	15.25	100	19.53	2.07	6.45	42.1	
12:35	15.25	100	19.43	2.00	6.45	48.8	
12:40	15.25	100	19.45	2.00	6.45	47.9	
SAMPLING							
12:55	15.25	100	19.45	2.01	6.43	46.1	
Stabilization Criteria:				**+/- 3 mS/cm**	**+/- 0.1 pH units**	**<50 NTU**	If water quality parameters do not stabilize and/or turbidity is greater than 50 NTU within two hours, discontinue purging and collect sample.

Groundwater samples analyzed for: TCL + CP51 VOCs + TICs 8260, TCL + CP51 SVOCs + TICs 8270, PCBs 8082, TAL Metals 6000/7000, + NYCDEP Sewer Discharge Parameters

Appendix D
Laboratory Analytical Data Reports

CHEMTECH

DATA PACKAGE

GENERAL CHEMISTRY
METALS
GC SEMI-VOLATILES
SEMI-VOLATILE ORGANICS
VOLATILE ORGANICS

PROJECT NAME : NYCSCA - PS 97X ADDITION

AKRF ENGINEERING, P.C.

34 South Broadway, Suite 401

White Plains, NY - 10601

Phone No: 9149497336

ORDER ID : H3936

ATTENTION : Rebecca Kinal, PE

ACCREDITED IN ACCORDANCE WITH nelac

DoD ELAP

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2.3) Gasoline Range Organics- Case Narrative 8

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2.5) SVOCMS Group2- Case Narrative 12

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10) PCB Data 310

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15.2) ROC 728

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15.4) Internal COC 734

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : H3936

Project ID : NYCSCA - PS 97X Addition

Client : AKRF Engineering, P.C.

Lab Sample Number	Client Sample Number
H3936-01	SB-1(9-10)
H3936-02	SB-2(9-10)
H3936-03	SB-3(5-6)
H3936-04	SB-4(4-5)
H3936-05	SB-5(1-2)
H3936-06	SB-5(4-5)
H3936-07	TW-4
H3936-08	TW-4-DEP
H3936-09	SB-6(11-12)
H3936-10	TRIPBLANK
H3936-11	TW-4

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : Mildred V Reyes

APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:24 pm, Jul 20, 2016

Date: 7/20/2016

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: VOCMS Group1

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for VOCMS Group1.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis performed on instrument MSVOA_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of VOCMS Group1 was based on method 8260-Low,8260C.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for SB-4(4-5) [Dibromofluoromethane - 26%], SB-4(4-5)RE [Dibromofluoromethane - 18%].
The Internal Standards Areas met the acceptable requirements except for SB-1(9-10), SB-1(9-10)RE.
The Retention Times were acceptable for all samples.
The MS {H3943-02MS} with File ID: VD050561.D recoveries met the requirements for all compounds except for 1,1,2,2-Tetrachloroethane[179%] .
The MSD recoveries met the acceptable requirements .
The RPD for {H3943-03MSD} with File ID: VD050562.D recoveries met criteria except for 1,1,2,2-Tetrachloroethane[35%] .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 15 % in the Initial Calibration (Method 82D070816S.M) for Acetone & Methyl Acetate these compounds are passing on Linear Regression .

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The %RSD is greater than 15 % in the Initial Calibration (Method 82D071216S.M) for Dichlorodifluoromethane, Bromomethane, Acetone, 2-Butanone, 4-Methyl-2-Pentanone & 2-Hexanone thesee compounds are passing on Linear Regression
The %RSD is greater than 15% in the Initial Calibration (Method 82U070816W.M) for Chloromethane, Bromomethane, Acetone, Methylene Chloride, Cyclohexane,Naphthalene these compounds are passing on Linear regression
The Continuous Calibration File ID VD050558.D met the requirements except for Chloroethane .
The Tuning criteria met requirements.

E. Additional Comments:

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature____ Mildred V Reyes _

APPROVED
By Mildred V Reyes, QAQC Supervisor at 2:27 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: VOCMS Group2

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for VOCMS Group2.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_H were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied BY OI Analytical, OI #10 Trap , OI Eclipse 4660 Concentrator.The analysis of VOCMS Group2 was based on method 624.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The RPD for {VH0711WBSD02} with File ID: VH058961.D recoveries met criteria except for 1,1,1-Trichloroethane[30%], Benzene[35%], Carbon Tetrachloride[22%] and Methyl tert-butyl Ether[41%] .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Additional Comments:

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F. Manual Integration Comments:

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APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:24 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: Gasoline Range Organics

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for Gasoline Range Organics.

C. Analytical Techniques:
The analysis performed on instrument FID_B were done using GC column RTX502.2 which is 60 meters, 0.53mm ID, 3.0 um df, cat#10909. The analysis of Gasoline Range Organics was based on method 8015B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD for File ID: FB007397.D recoveries met criteria except for GRO[36.4%] .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:

F. Manual Integration Comments:

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By Mildred V Reyes, QAQC Supervisor at 2:24 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: SVOCMS Group1

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for SVOCMS Group1.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_G using GC Column RXI-5 SILMS which is 30 meters, 0.25 mm ID, 0.50 um df, Catalog # 13638-124.The analysis of SVOCMS Group1 was based on method 8270D and extraction was done based on method 3510.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for SB-4(4-5) [2,4,6-Tribromophenol - 16%].
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {H3946-15MS} with File ID: BG023076.D recoveries met the requirements for all compounds except for 1,2,4,5-Tetrachlorobenzene[43%] and Hexachlorobutadiene[47%] .
The MSD recoveries met the acceptable requirements .
The RPD for {PB91977BSD} with File ID: BG022954.D recoveries met criteria except for 4-Chloroaniline[28%] .
The RPD for {H3946-15MSD} with File ID: BG023077.D recoveries do not meet criteria except for 3-Nitroaniline[9%] & 1,4-Dioxane[6%].
The Blank Spike for {PB91977BS} with File ID: BG022953.D met requirements for all samples except for 2-Methylphenol[97%], 3+4-Methylphenols[95%] and 1,4-Dioxane[0%].

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The Blank Spike Duplicate for {PB91977BSD} with File ID: BG022954.D met requirements for all samples except for 3+4-Methylphenols[92%] and 1,4-Dioxane[0%].
The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 15 % in the Initial Calibration (Method 8270-BG070816.M) for Terphenyl-d14 these compounds are passing on Quadratic Regression .
The Continuous Calibration File ID BG022935.D met the requirements except for 2,4-Dinitrophenol .
The Continuous Calibration File ID BG022951.D met the requirements except for 2,4-Dinitrophenol .
The Continuous Calibration File ID BG023035.D met the requirements except for 2,4-Dinitrophenol .
The Continuous Calibration File ID BG023050.D met the requirements except for 2,4-Dinitrophenol .
The Continuous Calibration File ID BG023068.D met the requirements except for 2,4-Dinitrophenol .
The Continuous Calibration File ID BG023082.D met the requirements except for 2,4-Dinitrophenol .
The Tuning criteria met requirements.

E. Additional Comments:

F. Manual Integration Comments:

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By Mildred V Reyes, QAQC Supervisor at 2:24 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: SVOCMS Group2

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for SVOCMS Group2.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_G using GC Column RXI-5 SILMS which is 30 meters, 0.25 mm ID, 0.50 um df, Catalog # 13638-124.The analysis of SVOCMS Group2 was based on method 625 and extraction was done based on method 3510.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 15 % in the Initial Calibration (Method 8270-BG070816.M) for Terphenyl-d14 these compounds are passing on Quadratic Regression .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Additional Comments:

F. Manual Integration Comments:

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APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:23 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: PCB

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_Q.The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analyses were performed on instrument GCECD_O. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCBs was based on method 8082A and extraction was done based on method 3510.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for SB-5(4-5) [Decachlorobiphenyl(1) - 55%].
The Retention Times were acceptable for all samples.
The MS {H3975-04MS} with File ID: PQ010144.D recoveries met the requirements for all compounds except for AR1016[161%] .
The MSD recoveries met the acceptable requirements .
The RPD for {H3975-04MSD} with File ID: PQ010145.D recoveries met criteria except for AR1016[31%] .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .

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The Continuous Calibration File ID PO028788.D met the requirements except for Aroclor-1016(Peak-01) is failing in 1st column but passing in 2nd column .
The Continuous Calibration File ID PO028803.D met the requirements except for Aroclor-1016(Peak-01) is failing in 1st column but passing in 2nd column .
The Continuous Calibration File ID PO028839.D met the requirements except for Aroclor-1016(Peak-01,02,03,04),Aroclor-1260(Peak-01) and Tetrachloro-m-xylene are failing in 1st column but passing in 2nd column .
The Continuous Calibration File ID PO028851.D met the requirements except for Aroclor-1016(Peak-01,02,03,04,05),Aroclor-1260(Peak-01,02) and Tetrachloro-m-xylene are failing in 1st column but passing in 2nd column .
The Continuous Calibration File ID PO028895.D met the requirements except for Aroclor-1016(Peak-02) is failing in 1st column but passing in 2nd column and Aroclor-1016(Peak-03) is failing in 2nd column but passing in 1st column while Aroclor-1016(Peak-01,04) is failing in both column .
The Continuous Calibration File ID PO028905.D met the requirements except for Aroclor-1016(Peak-02,05) & Tetrachloro-m-xylene are failing in 2nd column but passing in 1st column while Aroclor-1016(Peak-01,03,04) is failing in both column.
The Continuous Calibration File ID PQ010170.D met the requirements except for Aroclor-1260(Peak-02) is failing in 2nd column but is passing in 1st column.

E. Additional Comments:

F. Manual Integration Comments:

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Signature___ Mildred V Reyes ___

APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:23 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: PCB Group2

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for PCB Group2.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_Q.The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analyses were performed on instrument GCECD_O. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCB Group2s was based on method 608 and extraction was done based on method 3510.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration File ID PQ009990.D met the requirements except for Aroclor-1016(Peak-02) is failing in 2nd column but passing in 1st column.
The Continuous Calibration File ID PQ010001.D met the requirements except for Aroclor-1016(Peak-02,03,04),Aroclor-1260(Peak-01,02,03,04) and Tetrachloro-m-xylene are failing in 2nd column but passing in 1st column

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E. Additional Comments:

F. Manual Integration Comments:

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Signature_____ Mildred V Reyes _

APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:23 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: Diesel Range Organics

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for Diesel Range Organics.

C. Analytical Techniques:
The analyses were performed on instrument FID_E. The column is Rxi-1ms which is 20 meters, 0.18mm ID, 0.18 um df, catalog 10224. The analysis of Diesel Range Organics was based on method 8015B and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries for {H3936-01MS} with File ID: FE017068.D met requirements for all samples except for DRO[33%] .
The MSD {H3936-01MSD} with File ID: FE017069.D recoveries met requirements for all samples except for DRO[32%] .
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

Sample SB-4(4-5) was diluted due to bad matrix.

E. Additional Comments:

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F. Manual Integration Comments:

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Signature____ Mildred V Reyes __

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By Mildred V Reyes, QAQC Supervisor at 2:23 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: Dissolved ICP-TAL Metals, Dissolved Mercury, Mercury, Metals ICP-Group, Metals ICP-TAL

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for Dissolved ICP-TAL Metals, Dissolved Mercury, Mercury, Metals ICP-Group, Metals ICP-TAL.

C. Analytical Techniques:
The analysis and digestion of Metals ICP-Group was based on 200.7, The analysis and digestion of Mercury was based on 245.1, The analysis of Metals ICP-TAL was based on method 6010B, digestion based on method 3050 (soils).The analysis of Dissolved ICP-TAL Metals, Metals ICP-TAL was based on method 6010C, digestion based on method 3010 (waters).The analysis and digestion of Dissolved Mercury, Mercury was based on method 7470A. The analysis of Mercury was based on method 7471A and digestion was based on method 7471B (soils).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (C2.2-01MS) analysis met criteria for all samples except for Antimony.
The Matrix Spike Duplicate (C2.2-01MSD) analysis met criteria for all samples except for Antimony, Silver.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution(C2.2-01L) met criteria for all samples except for Iron.

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E. Additional Comments:

LLCCV & LLICV is not required for 6010B analytical method.

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APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:22 pm, Jul 20, 2016

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CASE NARRATIVE

AKRF Engineering, P.C.
Project Name: NYCSCA - PS 97X Addition
Project # N/A
Chemtech Project # H3936
Test Name: Hexavalent Chromium, Total Nitrogen, TS, CBOD5, Non-Polar Material, Cyanide, Flash Point, Phenolics, TKN, Nitrate+Nitrite, Chloride, TSS

A. Number of Samples and Date of Receipt:
7 Solid samples were received on 07/06/2016.
4 Water samples were received on 07/06/2016.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: CBOD5, Chloride, Cyanide, Diesel Range Organics, Dissolved ICP-TAL Metals, Dissolved Mercury, DISSOLVED METALS-TAL, Flash Point, Gasoline Range Organics, Hexavalent Chromium, Mercury, Metals Group2, Metals ICP-Group, Metals ICP-TAL, METALS-TAL, Nitrate+Nitrite, Non-Polar Material, PCB, PCB Group2, Phenolics, SVOCMS Group1, SVOCMS Group2, TKN, Total Nitrogen, TotalNitrogen, TS, TSS, VOCMS Group1 and VOCMS Group2. This data package contains results for Hexavalent Chromium,Total Nitrogen,TS,CBOD5,Non-Polar Material,Cyanide,Flash Point,Phenolics,TKN,Nitrate+Nitrite,Chloride,TSS.

C. Analytical Techniques:
The analysis of Flash Point was based on method 1010A, The analysis of Non-Polar Material was based on method 1664A, The analysis of Nitrate+Nitrite was based on method 300, The analysis of Phenolics was based on method 420.1, The analysis of Hexavalent Chromium was based on method 7196A, The analysis of Cyanide was based on method 9012B, The analysis of Total Nitrogen was based on method Cal, The analysis of TS was based on method SM2540 B, The analysis of TSS was based on method SM2540 D, The analysis of Hexavalent Chromium was based on method SM3500-Cr B, The analysis of TKN was based on method SM4500 N Org B or C, The analysis of Chloride was based on method SM4500-CL C and The analysis of CBOD5 was based on method SM5210 B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Sample TW-4-DEP was diluted due to high concentrations for Chloride.
The Blank Spike met criteria for all samples.
The Duplicate (C3-8D) analysis met criteria for all samples except for Cyanide.
The Duplicate (TW-4-DEPD) analysis met criteria for all samples except for Phenolics.
The Matrix Spike (C3-8S) analysis met criteria for all samples except for Cyanide.
The Matrix Spike (TW-4-DEPS) analysis met criteria for all samples except for Chloride.

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The Matrix Spike Duplicate (C3-8SD) analysis met criteria for all samples except for Cyanide.
The Matrix Spike Duplicate (TW-4-DEPSD) analysis met criteria for all samples except for Chloride.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature___ Mildred V Reyes ___

APPROVED

By Mildred V Reyes, QAQC Supervisor at 2:22 pm, Jul 20, 2016

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DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).

U Indicates the analyte was analyzed for, but not detected.

ND Indicates the analyte was analyzed for, but not detected

E Indicates the reported value is estimated because of the presence of interference

M Indicates Duplicate injection precision not met.

N Indicates the spiked sample recovery is not within control limits.

S Indicates the reported value was determined by the Method of Standard Addition (MSA).

***** Indicates that the duplicate analysis is not within control limits.

+ Indicates the correlation coefficient for the MSA is less than 0.995.

D Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

M Method qualifiers
"P" for ICP instrument
"PM" for ICP when Microwave Digestion is used
"CV" for Manual Cold Vapor AA
"AV" for automated Cold Vapor AA
"CA" for MIDI-Distillation Spectrophotometric
"AS" for Semi –Automated Spectrophotometric
"C" for Manual Spectrophotometric
"T" for Titrimetric
"NR" for analyte not required to be analyzed

OR Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.

Q Indicates the LCS did not meet the control limits requirements

H Sample Analysis Out Of Hold Time

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DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

QA Control # A3040960

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: H3936

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: POONAM PATEL **Date:** 07/20/2016

2nd Level QA Review Signature: Mildred V Reyes **Date:**

APPROVED
By Mildred V Reyes, QAQC Supervisor at 2:22 pm, Jul 20, 2016

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284 Sheffield Street, Mountainside, New Jersey - 07092
Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	H3936	**OrderDate:**	7/6/2016 5:13:22 PM
Client:	AKRF Engineering, P.C.	**Project:**	NYCSCA - PS 97X Addition
Contact:	Rebecca Kinal, PE	**Location:**	P63

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
H3936-01	**SB-1(9-10)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-01RE	**SB-1(9-10)RE**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/12/16	
H3936-02	**SB-2(9-10)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-03	**SB-3(5-6)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-04	**SB-4(4-5)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-04RE	**SB-4(4-5)RE**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/12/16	
H3936-05	**SB-5(1-2)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-06	**SB-5(4-5)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-07	**TW-4**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260-Low			07/12/16	
H3936-08	**TW-4-DEP**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group2	624			07/11/16	
H3936-09	**SB-6(11-12)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-10	**TRIPBLANK**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260-Low			07/12/16	

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Hit Summary Sheet
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID:	**SB-4(4-5)**								
H3936-04	SB-4(4-5)	SOIL	Acetone	120.00		5.5	5.5	55	ug/Kg
H3936-04	SB-4(4-5)	SOIL	Toluene	2.20	J	1.1	1.1	11	ug/Kg
			Total Voc :	122.2					
			Total Concentration:	122.2					
Client ID:	**SB-4(4-5)RE**								
H3936-04RE	SB-4(4-5)RE	SOIL	Acetone	97.20		6.8	6.8	68.1	ug/Kg
H3936-04RE	SB-4(4-5)RE	SOIL	Toluene	4.00	J	1.4	1.4	13.6	ug/Kg
			Total Voc :	101.2					
			Total Concentration:	101.2					

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.83 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050572.D	1		07/11/16 17:56	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
74-87-3	Chloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-01-4	Vinyl Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
74-83-9	Bromomethane	1.1	U	1.1	1.1	5.4	ug/Kg
75-00-3	Chloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-69-4	Trichlorofluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-35-4	1,1-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
67-64-1	Acetone	2.7	U	2.7	2.7	27.2	ug/Kg
75-15-0	Carbon Disulfide	0.54	U	0.54	0.54	5.4	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.54	U	0.54	0.54	5.4	ug/Kg
79-20-9	Methyl Acetate	1.1	U	1.1	1.1	5.4	ug/Kg
75-09-2	Methylene Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
75-34-3	1,1-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
110-82-7	Cyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
78-93-3	2-Butanone	8.2	U	3.4	8.2	27.2	ug/Kg
56-23-5	Carbon Tetrachloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
74-97-5	Bromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
67-66-3	Chloroform	0.54	U	0.54	0.54	5.4	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-87-2	Methylcyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
71-43-2	Benzene	0.54	U	0.41	0.54	5.4	ug/Kg
107-06-2	1,2-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
79-01-6	Trichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
78-87-5	1,2-Dichloropropane	0.54	U	0.28	0.54	5.4	ug/Kg
75-27-4	Bromodichloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.7	U	2.7	2.7	27.2	ug/Kg
108-88-3	Toluene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.83 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050572.D	1		07/11/16 17:56	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.1	U	0.98	1.1	5.4	ug/Kg
591-78-6	2-Hexanone	2.7	U	2.7	2.7	27.2	ug/Kg
124-48-1	Dibromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
106-93-4	1,2-Dibromoethane	0.54	U	0.54	0.54	5.4	ug/Kg
127-18-4	Tetrachloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
108-90-7	Chlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
100-41-4	Ethyl Benzene	0.54	U	0.54	0.54	5.4	ug/Kg
179601-23-1	m/p-Xylenes	1.1	U	0.78	1.1	10.9	ug/Kg
95-47-6	o-Xylene	0.54	U	0.54	0.54	5.4	ug/Kg
100-42-5	Styrene	0.54	U	0.49	0.54	5.4	ug/Kg
75-25-2	Bromoform	1.6	U	0.81	1.6	5.4	ug/Kg
98-82-8	Isopropylbenzene	0.54	U	0.52	0.54	5.4	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U	0.5	0.54	5.4	ug/Kg
103-65-1	n-propylbenzene	0.54	U	0.39	0.54	5.4	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.54	U	0.49	0.54	5.4	ug/Kg
98-06-6	tert-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
135-98-8	sec-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
99-87-6	p-Isopropyltoluene	0.54	U	0.32	0.54	5.4	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.54	U	0.4	0.54	5.4	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.54	U	0.45	0.54	5.4	ug/Kg
104-51-8	n-Butylbenzene	0.54	U	0.5	0.54	5.4	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.4	U	0.95	5.4	5.4	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
91-20-3	Naphthalene	0.54	U	0.49	0.54	5.4	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.1	U	0.54	1.1	5.4	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	53.3		56 - 120		107%	SPK: 50
1868-53-7	Dibromofluoromethane	55.8		57 - 135		112%	SPK: 50
2037-26-5	Toluene-d8	51.7		67 - 123		103%	SPK: 50
460-00-4	4-Bromofluorobenzene	35.6		33 - 141		71%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.83 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050572.D	1		07/11/16 17:56	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	306632	6.18				
540-36-3	1,4-Difluorobenzene	570536	7.3				
3114-55-4	Chlorobenzene-d5	473382	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	119679	13.82				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)RE	SDG No.:	H3936
Lab Sample ID:	H3936-01RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050617.D	1		07/12/16 17:07	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.58	U	0.58	0.58	5.8	ug/Kg
74-87-3	Chloromethane	0.58	U	0.58	0.58	5.8	ug/Kg
75-01-4	Vinyl Chloride	0.58	U	0.58	0.58	5.8	ug/Kg
74-83-9	Bromomethane	1.2	U	1.2	1.2	5.8	ug/Kg
75-00-3	Chloroethane	0.58	U	0.58	0.58	5.8	ug/Kg
75-69-4	Trichlorofluoromethane	0.58	U	0.58	0.58	5.8	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.58	U	0.58	0.58	5.8	ug/Kg
75-35-4	1,1-Dichloroethene	0.58	U	0.58	0.58	5.8	ug/Kg
67-64-1	Acetone	2.9	U	2.9	2.9	28.9	ug/Kg
75-15-0	Carbon Disulfide	0.58	U	0.58	0.58	5.8	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.58	U	0.58	0.58	5.8	ug/Kg
79-20-9	Methyl Acetate	1.2	U	1.2	1.2	5.8	ug/Kg
75-09-2	Methylene Chloride	0.58	U	0.58	0.58	5.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.58	U	0.58	0.58	5.8	ug/Kg
75-34-3	1,1-Dichloroethane	0.58	U	0.58	0.58	5.8	ug/Kg
110-82-7	Cyclohexane	0.58	U	0.58	0.58	5.8	ug/Kg
78-93-3	2-Butanone	8.7	U	3.6	8.7	28.9	ug/Kg
56-23-5	Carbon Tetrachloride	0.58	U	0.58	0.58	5.8	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.58	U	0.58	0.58	5.8	ug/Kg
74-97-5	Bromochloromethane	0.58	U	0.58	0.58	5.8	ug/Kg
67-66-3	Chloroform	0.58	U	0.58	0.58	5.8	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.58	U	0.58	0.58	5.8	ug/Kg
108-87-2	Methylcyclohexane	0.58	U	0.58	0.58	5.8	ug/Kg
71-43-2	Benzene	0.58	U	0.44	0.58	5.8	ug/Kg
107-06-2	1,2-Dichloroethane	0.58	U	0.58	0.58	5.8	ug/Kg
79-01-6	Trichloroethene	0.58	U	0.58	0.58	5.8	ug/Kg
78-87-5	1,2-Dichloropropane	0.58	U	0.3	0.58	5.8	ug/Kg
75-27-4	Bromodichloromethane	0.58	U	0.58	0.58	5.8	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.9	U	2.9	2.9	28.9	ug/Kg
108-88-3	Toluene	0.58	U	0.58	0.58	5.8	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.58	U	0.58	0.58	5.8	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.58	U	0.58	0.58	5.8	ug/Kg

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)RE	SDG No.:	H3936
Lab Sample ID:	H3936-01RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050617.D	1		07/12/16 17:07	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.2	U	1	1.2	5.8	ug/Kg
591-78-6	2-Hexanone	2.9	U	2.9	2.9	28.9	ug/Kg
124-48-1	Dibromochloromethane	0.58	U	0.58	0.58	5.8	ug/Kg
106-93-4	1,2-Dibromoethane	0.58	U	0.58	0.58	5.8	ug/Kg
127-18-4	Tetrachloroethene	0.58	U	0.58	0.58	5.8	ug/Kg
108-90-7	Chlorobenzene	0.58	U	0.58	0.58	5.8	ug/Kg
100-41-4	Ethyl Benzene	0.58	U	0.58	0.58	5.8	ug/Kg
179601-23-1	m/p-Xylenes	1.2	U	0.83	1.2	11.6	ug/Kg
95-47-6	o-Xylene	0.58	U	0.58	0.58	5.8	ug/Kg
100-42-5	Styrene	0.58	U	0.52	0.58	5.8	ug/Kg
75-25-2	Bromoform	1.7	U	0.86	1.7	5.8	ug/Kg
98-82-8	Isopropylbenzene	0.58	U	0.56	0.58	5.8	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.58	U	0.53	0.58	5.8	ug/Kg
103-65-1	n-propylbenzene	0.58	U	0.42	0.58	5.8	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.58	U	0.52	0.58	5.8	ug/Kg
98-06-6	tert-Butylbenzene	0.58	U	0.58	0.58	5.8	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.58	U	0.58	0.58	5.8	ug/Kg
135-98-8	sec-Butylbenzene	0.58	U	0.58	0.58	5.8	ug/Kg
99-87-6	p-Isopropyltoluene	0.58	U	0.34	0.58	5.8	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.58	U	0.43	0.58	5.8	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.58	U	0.47	0.58	5.8	ug/Kg
104-51-8	n-Butylbenzene	0.58	U	0.53	0.58	5.8	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.58	U	0.58	0.58	5.8	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.8	U	1	5.8	5.8	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.58	U	0.58	0.58	5.8	ug/Kg
91-20-3	Naphthalene	0.58	U	0.52	0.58	5.8	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.2	U	0.58	1.2	5.8	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	51.6		56 - 120		103%	SPK: 50
1868-53-7	Dibromofluoromethane	53.3		57 - 135		107%	SPK: 50
2037-26-5	Toluene-d8	50.3		67 - 123		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	32.3		33 - 141		65%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-1(9-10)RE	SDG No.:	H3936
Lab Sample ID:	H3936-01RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5
Sample Wt/Vol:	4.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050617.D	1		07/12/16 17:07	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	254170	6.17				
540-36-3	1,4-Difluorobenzene	466328	7.3				
3114-55-4	Chlorobenzene-d5	396832	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	97225	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-2(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-02	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	3.81 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050573.D	1		07/11/16 18:23	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.75	U	0.75	0.75	7.5	ug/Kg
74-87-3	Chloromethane	0.75	U	0.75	0.75	7.5	ug/Kg
75-01-4	Vinyl Chloride	0.75	U	0.75	0.75	7.5	ug/Kg
74-83-9	Bromomethane	1.5	U	1.5	1.5	7.5	ug/Kg
75-00-3	Chloroethane	0.75	U	0.75	0.75	7.5	ug/Kg
75-69-4	Trichlorofluoromethane	0.75	U	0.75	0.75	7.5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.75	U	0.75	0.75	7.5	ug/Kg
75-35-4	1,1-Dichloroethene	0.75	U	0.75	0.75	7.5	ug/Kg
67-64-1	Acetone	3.8	U	3.8	3.8	37.5	ug/Kg
75-15-0	Carbon Disulfide	0.75	U	0.75	0.75	7.5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.75	U	0.75	0.75	7.5	ug/Kg
79-20-9	Methyl Acetate	1.5	U	1.5	1.5	7.5	ug/Kg
75-09-2	Methylene Chloride	0.75	U	0.75	0.75	7.5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.75	U	0.75	0.75	7.5	ug/Kg
75-34-3	1,1-Dichloroethane	0.75	U	0.75	0.75	7.5	ug/Kg
110-82-7	Cyclohexane	0.75	U	0.75	0.75	7.5	ug/Kg
78-93-3	2-Butanone	11.3	U	4.7	11.3	37.5	ug/Kg
56-23-5	Carbon Tetrachloride	0.75	U	0.75	0.75	7.5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.75	0.75	7.5	ug/Kg
74-97-5	Bromochloromethane	0.75	U	0.75	0.75	7.5	ug/Kg
67-66-3	Chloroform	0.75	U	0.75	0.75	7.5	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.75	U	0.75	0.75	7.5	ug/Kg
108-87-2	Methylcyclohexane	0.75	U	0.75	0.75	7.5	ug/Kg
71-43-2	Benzene	0.75	U	0.57	0.75	7.5	ug/Kg
107-06-2	1,2-Dichloroethane	0.75	U	0.75	0.75	7.5	ug/Kg
79-01-6	Trichloroethene	0.75	U	0.75	0.75	7.5	ug/Kg
78-87-5	1,2-Dichloropropane	0.75	U	0.39	0.75	7.5	ug/Kg
75-27-4	Bromodichloromethane	0.75	U	0.75	0.75	7.5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	3.8	U	3.8	3.8	37.5	ug/Kg
108-88-3	Toluene	0.75	U	0.75	0.75	7.5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.75	U	0.75	0.75	7.5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.75	U	0.75	0.75	7.5	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-2(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-02	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	3.81 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050573.D	1		07/11/16 18:23	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.5	U	1.4	1.5	7.5	ug/Kg
591-78-6	2-Hexanone	3.8	U	3.8	3.8	37.5	ug/Kg
124-48-1	Dibromochloromethane	0.75	U	0.75	0.75	7.5	ug/Kg
106-93-4	1,2-Dibromoethane	0.75	U	0.75	0.75	7.5	ug/Kg
127-18-4	Tetrachloroethene	0.75	U	0.75	0.75	7.5	ug/Kg
108-90-7	Chlorobenzene	0.75	U	0.75	0.75	7.5	ug/Kg
100-41-4	Ethyl Benzene	0.75	U	0.75	0.75	7.5	ug/Kg
179601-23-1	m/p-Xylenes	1.5	U	1.1	1.5	15	ug/Kg
95-47-6	o-Xylene	0.75	U	0.75	0.75	7.5	ug/Kg
100-42-5	Styrene	0.75	U	0.68	0.75	7.5	ug/Kg
75-25-2	Bromoform	2.3	U	1.1	2.3	7.5	ug/Kg
98-82-8	Isopropylbenzene	0.75	U	0.72	0.75	7.5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.75	U	0.69	0.75	7.5	ug/Kg
103-65-1	n-propylbenzene	0.75	U	0.54	0.75	7.5	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.75	U	0.68	0.75	7.5	ug/Kg
98-06-6	tert-Butylbenzene	0.75	U	0.75	0.75	7.5	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.75	U	0.75	0.75	7.5	ug/Kg
135-98-8	sec-Butylbenzene	0.75	U	0.75	0.75	7.5	ug/Kg
99-87-6	p-Isopropyltoluene	0.75	U	0.44	0.75	7.5	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.75	U	0.56	0.75	7.5	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.75	U	0.62	0.75	7.5	ug/Kg
104-51-8	n-Butylbenzene	0.75	U	0.69	0.75	7.5	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.75	U	0.75	0.75	7.5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	7.5	U	1.3	7.5	7.5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.75	U	0.75	0.75	7.5	ug/Kg
91-20-3	Naphthalene	0.75	U	0.68	0.75	7.5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.5	U	0.75	1.5	7.5	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	54.7		56 - 120		109%	SPK: 50
1868-53-7	Dibromofluoromethane	58.1		57 - 135		116%	SPK: 50
2037-26-5	Toluene-d8	55.3		67 - 123		111%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.7		33 - 141		91%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-2(9-10)	SDG No.:	H3936
Lab Sample ID:	H3936-02	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	3.81 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050573.D	1		07/11/16 18:23	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	305672	6.18				
540-36-3	1,4-Difluorobenzene	563150	7.3				
3114-55-4	Chlorobenzene-d5	511623	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	171832	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-3(5-6)	SDG No.:	H3936
Lab Sample ID:	H3936-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.8
Sample Wt/Vol:	4.88 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050574.D	1		07/11/16 18:50	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.57	U	0.57	0.57	5.7	ug/Kg
74-87-3	Chloromethane	0.57	U	0.57	0.57	5.7	ug/Kg
75-01-4	Vinyl Chloride	0.57	U	0.57	0.57	5.7	ug/Kg
74-83-9	Bromomethane	1.1	U	1.1	1.1	5.7	ug/Kg
75-00-3	Chloroethane	0.57	U	0.57	0.57	5.7	ug/Kg
75-69-4	Trichlorofluoromethane	0.57	U	0.57	0.57	5.7	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.57	U	0.57	0.57	5.7	ug/Kg
75-35-4	1,1-Dichloroethene	0.57	U	0.57	0.57	5.7	ug/Kg
67-64-1	Acetone	2.9	U	2.9	2.9	28.7	ug/Kg
75-15-0	Carbon Disulfide	0.57	U	0.57	0.57	5.7	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.57	U	0.57	0.57	5.7	ug/Kg
79-20-9	Methyl Acetate	1.1	U	1.1	1.1	5.7	ug/Kg
75-09-2	Methylene Chloride	0.57	U	0.57	0.57	5.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.57	U	0.57	0.57	5.7	ug/Kg
75-34-3	1,1-Dichloroethane	0.57	U	0.57	0.57	5.7	ug/Kg
110-82-7	Cyclohexane	0.57	U	0.57	0.57	5.7	ug/Kg
78-93-3	2-Butanone	8.6	U	3.6	8.6	28.7	ug/Kg
56-23-5	Carbon Tetrachloride	0.57	U	0.57	0.57	5.7	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.57	U	0.57	0.57	5.7	ug/Kg
74-97-5	Bromochloromethane	0.57	U	0.57	0.57	5.7	ug/Kg
67-66-3	Chloroform	0.57	U	0.57	0.57	5.7	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.57	U	0.57	0.57	5.7	ug/Kg
108-87-2	Methylcyclohexane	0.57	U	0.57	0.57	5.7	ug/Kg
71-43-2	Benzene	0.57	U	0.44	0.57	5.7	ug/Kg
107-06-2	1,2-Dichloroethane	0.57	U	0.57	0.57	5.7	ug/Kg
79-01-6	Trichloroethene	0.57	U	0.57	0.57	5.7	ug/Kg
78-87-5	1,2-Dichloropropane	0.57	U	0.3	0.57	5.7	ug/Kg
75-27-4	Bromodichloromethane	0.57	U	0.57	0.57	5.7	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.9	U	2.9	2.9	28.7	ug/Kg
108-88-3	Toluene	0.57	U	0.57	0.57	5.7	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.57	U	0.57	0.57	5.7	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.57	U	0.57	0.57	5.7	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-3(5-6)	SDG No.:	H3936
Lab Sample ID:	H3936-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.8
Sample Wt/Vol:	4.88 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050574.D	1		07/11/16 18:50	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.1	U	1	1.1	5.7	ug/Kg
591-78-6	2-Hexanone	2.9	U	2.9	2.9	28.7	ug/Kg
124-48-1	Dibromochloromethane	0.57	U	0.57	0.57	5.7	ug/Kg
106-93-4	1,2-Dibromoethane	0.57	U	0.57	0.57	5.7	ug/Kg
127-18-4	Tetrachloroethene	0.57	U	0.57	0.57	5.7	ug/Kg
108-90-7	Chlorobenzene	0.57	U	0.57	0.57	5.7	ug/Kg
100-41-4	Ethyl Benzene	0.57	U	0.57	0.57	5.7	ug/Kg
179601-23-1	m/p-Xylenes	1.1	U	0.83	1.1	11.5	ug/Kg
95-47-6	o-Xylene	0.57	U	0.57	0.57	5.7	ug/Kg
100-42-5	Styrene	0.57	U	0.52	0.57	5.7	ug/Kg
75-25-2	Bromoform	1.7	U	0.85	1.7	5.7	ug/Kg
98-82-8	Isopropylbenzene	0.57	U	0.55	0.57	5.7	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.57	U	0.53	0.57	5.7	ug/Kg
103-65-1	n-propylbenzene	0.57	U	0.41	0.57	5.7	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.57	U	0.52	0.57	5.7	ug/Kg
98-06-6	tert-Butylbenzene	0.57	U	0.57	0.57	5.7	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.57	U	0.57	0.57	5.7	ug/Kg
135-98-8	sec-Butylbenzene	0.57	U	0.57	0.57	5.7	ug/Kg
99-87-6	p-Isopropyltoluene	0.57	U	0.33	0.57	5.7	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.57	U	0.42	0.57	5.7	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.57	U	0.47	0.57	5.7	ug/Kg
104-51-8	n-Butylbenzene	0.57	U	0.53	0.57	5.7	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.57	U	0.57	0.57	5.7	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.7	U	1	5.7	5.7	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.57	U	0.57	0.57	5.7	ug/Kg
91-20-3	Naphthalene	0.57	U	0.52	0.57	5.7	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.1	U	0.57	1.1	5.7	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	54.6		56 - 120		109%	SPK: 50
1868-53-7	Dibromofluoromethane	56.1		57 - 135		112%	SPK: 50
2037-26-5	Toluene-d8	54.5		67 - 123		109%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.5		33 - 141		97%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-3(5-6)	SDG No.:	H3936
Lab Sample ID:	H3936-03	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	10.8
Sample Wt/Vol:	4.88 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050574.D	1		07/11/16 18:50	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	306368	6.17				
540-36-3	1,4-Difluorobenzene	570787	7.3				
3114-55-4	Chlorobenzene-d5	535680	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	193809	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050575.D	1		07/11/16 19:17	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	1.1	U	1.1	1.1	11	ug/Kg
74-87-3	Chloromethane	1.1	U	1.1	1.1	11	ug/Kg
75-01-4	Vinyl Chloride	1.1	U	1.1	1.1	11	ug/Kg
74-83-9	Bromomethane	2.2	U	2.2	2.2	11	ug/Kg
75-00-3	Chloroethane	1.1	U	1.1	1.1	11	ug/Kg
75-69-4	Trichlorofluoromethane	1.1	U	1.1	1.1	11	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.1	U	1.1	1.1	11	ug/Kg
75-35-4	1,1-Dichloroethene	1.1	U	1.1	1.1	11	ug/Kg
67-64-1	Acetone	120		5.5	5.5	55	ug/Kg
75-15-0	Carbon Disulfide	1.1	U	1.1	1.1	11	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.1	U	1.1	1.1	11	ug/Kg
79-20-9	Methyl Acetate	2.2	U	2.2	2.2	11	ug/Kg
75-09-2	Methylene Chloride	1.1	U	1.1	1.1	11	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.1	U	1.1	1.1	11	ug/Kg
75-34-3	1,1-Dichloroethane	1.1	U	1.1	1.1	11	ug/Kg
110-82-7	Cyclohexane	1.1	U	1.1	1.1	11	ug/Kg
78-93-3	2-Butanone	16.5	U	6.8	16.5	55	ug/Kg
56-23-5	Carbon Tetrachloride	1.1	U	1.1	1.1	11	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.1	U	1.1	1.1	11	ug/Kg
74-97-5	Bromochloromethane	1.1	U	1.1	1.1	11	ug/Kg
67-66-3	Chloroform	1.1	U	1.1	1.1	11	ug/Kg
71-55-6	1,1,1-Trichloroethane	1.1	U	1.1	1.1	11	ug/Kg
108-87-2	Methylcyclohexane	1.1	U	1.1	1.1	11	ug/Kg
71-43-2	Benzene	1.1	U	0.84	1.1	11	ug/Kg
107-06-2	1,2-Dichloroethane	1.1	U	1.1	1.1	11	ug/Kg
79-01-6	Trichloroethene	1.1	U	1.1	1.1	11	ug/Kg
78-87-5	1,2-Dichloropropane	1.1	U	0.57	1.1	11	ug/Kg
75-27-4	Bromodichloromethane	1.1	U	1.1	1.1	11	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.5	U	5.5	5.5	55	ug/Kg
108-88-3	Toluene	2.2	J	1.1	1.1	11	ug/Kg
10061-02-6	t-1,3-Dichloropropene	1.1	U	1.1	1.1	11	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	1.1	U	1.1	1.1	11	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050575.D	1		07/11/16 19:17	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	2.2	U	2	2.2	11	ug/Kg
591-78-6	2-Hexanone	5.5	U	5.5	5.5	55	ug/Kg
124-48-1	Dibromochloromethane	1.1	U	1.1	1.1	11	ug/Kg
106-93-4	1,2-Dibromoethane	1.1	U	1.1	1.1	11	ug/Kg
127-18-4	Tetrachloroethene	1.1	U	1.1	1.1	11	ug/Kg
108-90-7	Chlorobenzene	1.1	U	1.1	1.1	11	ug/Kg
100-41-4	Ethyl Benzene	1.1	U	1.1	1.1	11	ug/Kg
179601-23-1	m/p-Xylenes	2.2	U	1.6	2.2	22	ug/Kg
95-47-6	o-Xylene	1.1	U	1.1	1.1	11	ug/Kg
100-42-5	Styrene	1.1	U	0.99	1.1	11	ug/Kg
75-25-2	Bromoform	3.3	U	1.6	3.3	11	ug/Kg
98-82-8	Isopropylbenzene	1.1	U	1.1	1.1	11	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	1.1	U	1	1.1	11	ug/Kg
103-65-1	n-propylbenzene	1.1	U	0.79	1.1	11	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	1.1	U	0.99	1.1	11	ug/Kg
98-06-6	tert-Butylbenzene	1.1	U	1.1	1.1	11	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	1.1	U	1.1	1.1	11	ug/Kg
135-98-8	sec-Butylbenzene	1.1	U	1.1	1.1	11	ug/Kg
99-87-6	p-Isopropyltoluene	1.1	U	0.64	1.1	11	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.1	U	0.81	1.1	11	ug/Kg
106-46-7	1,4-Dichlorobenzene	1.1	U	0.9	1.1	11	ug/Kg
104-51-8	n-Butylbenzene	1.1	U	1	1.1	11	ug/Kg
95-50-1	1,2-Dichlorobenzene	1.1	U	1.1	1.1	11	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	11	U	1.9	11	11	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.1	U	1.1	1.1	11	ug/Kg
91-20-3	Naphthalene	1.1	U	0.99	1.1	11	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.2	U	1.1	2.2	11	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	53.1		56 - 120		106%	SPK: 50
1868-53-7	Dibromofluoromethane	12.9	*	57 - 135		26%	SPK: 50
2037-26-5	Toluene-d8	50.7		67 - 123		101%	SPK: 50
460-00-4	4-Bromofluorobenzene	41.7		33 - 141		83%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050575.D	1		07/11/16 19:17	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	304334	6.17				
540-36-3	1,4-Difluorobenzene	578218	7.3				
3114-55-4	Chlorobenzene-d5	518401	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	164585	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)RE	SDG No.:	H3936
Lab Sample ID:	H3936-04RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050618.D	1		07/12/16 17:34	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	1.4	U	1.4	1.4	13.6	ug/Kg
74-87-3	Chloromethane	1.4	U	1.4	1.4	13.6	ug/Kg
75-01-4	Vinyl Chloride	1.4	U	1.4	1.4	13.6	ug/Kg
74-83-9	Bromomethane	2.7	U	2.7	2.7	13.6	ug/Kg
75-00-3	Chloroethane	1.4	U	1.4	1.4	13.6	ug/Kg
75-69-4	Trichlorofluoromethane	1.4	U	1.4	1.4	13.6	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.4	U	1.4	1.4	13.6	ug/Kg
75-35-4	1,1-Dichloroethene	1.4	U	1.4	1.4	13.6	ug/Kg
67-64-1	Acetone	97.2		6.8	6.8	68.1	ug/Kg
75-15-0	Carbon Disulfide	1.4	U	1.4	1.4	13.6	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.4	U	1.4	1.4	13.6	ug/Kg
79-20-9	Methyl Acetate	2.7	U	2.7	2.7	13.6	ug/Kg
75-09-2	Methylene Chloride	1.4	U	1.4	1.4	13.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.4	U	1.4	1.4	13.6	ug/Kg
75-34-3	1,1-Dichloroethane	1.4	U	1.4	1.4	13.6	ug/Kg
110-82-7	Cyclohexane	1.4	U	1.4	1.4	13.6	ug/Kg
78-93-3	2-Butanone	20.4	U	8.5	20.4	68.1	ug/Kg
56-23-5	Carbon Tetrachloride	1.4	U	1.4	1.4	13.6	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.4	U	1.4	1.4	13.6	ug/Kg
74-97-5	Bromochloromethane	1.4	U	1.4	1.4	13.6	ug/Kg
67-66-3	Chloroform	1.4	U	1.4	1.4	13.6	ug/Kg
71-55-6	1,1,1-Trichloroethane	1.4	U	1.4	1.4	13.6	ug/Kg
108-87-2	Methylcyclohexane	1.4	U	1.4	1.4	13.6	ug/Kg
71-43-2	Benzene	1.4	U	1	1.4	13.6	ug/Kg
107-06-2	1,2-Dichloroethane	1.4	U	1.4	1.4	13.6	ug/Kg
79-01-6	Trichloroethene	1.4	U	1.4	1.4	13.6	ug/Kg
78-87-5	1,2-Dichloropropane	1.4	U	0.71	1.4	13.6	ug/Kg
75-27-4	Bromodichloromethane	1.4	U	1.4	1.4	13.6	ug/Kg
108-10-1	4-Methyl-2-Pentanone	6.8	U	6.8	6.8	68.1	ug/Kg
108-88-3	Toluene	4	J	1.4	1.4	13.6	ug/Kg
10061-02-6	t-1,3-Dichloropropene	1.4	U	1.4	1.4	13.6	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	1.4	U	1.4	1.4	13.6	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)RE	SDG No.:	H3936
Lab Sample ID:	H3936-04RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050618.D	1		07/12/16 17:34	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	2.7	U	2.5	2.7	13.6	ug/Kg
591-78-6	2-Hexanone	6.8	U	6.8	6.8	68.1	ug/Kg
124-48-1	Dibromochloromethane	1.4	U	1.4	1.4	13.6	ug/Kg
106-93-4	1,2-Dibromoethane	1.4	U	1.4	1.4	13.6	ug/Kg
127-18-4	Tetrachloroethene	1.4	U	1.4	1.4	13.6	ug/Kg
108-90-7	Chlorobenzene	1.4	U	1.4	1.4	13.6	ug/Kg
100-41-4	Ethyl Benzene	1.4	U	1.4	1.4	13.6	ug/Kg
179601-23-1	m/p-Xylenes	2.7	U	2	2.7	27.2	ug/Kg
95-47-6	o-Xylene	1.4	U	1.4	1.4	13.6	ug/Kg
100-42-5	Styrene	1.4	U	1.2	1.4	13.6	ug/Kg
75-25-2	Bromoform	4.1	U	2	4.1	13.6	ug/Kg
98-82-8	Isopropylbenzene	1.4	U	1.3	1.4	13.6	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	1.4	U	1.3	1.4	13.6	ug/Kg
103-65-1	n-propylbenzene	1.4	U	0.98	1.4	13.6	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	1.4	U	1.2	1.4	13.6	ug/Kg
98-06-6	tert-Butylbenzene	1.4	U	1.4	1.4	13.6	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	1.4	U	1.4	1.4	13.6	ug/Kg
135-98-8	sec-Butylbenzene	1.4	U	1.4	1.4	13.6	ug/Kg
99-87-6	p-Isopropyltoluene	1.4	U	0.79	1.4	13.6	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.4	U	1	1.4	13.6	ug/Kg
106-46-7	1,4-Dichlorobenzene	1.4	U	1.1	1.4	13.6	ug/Kg
104-51-8	n-Butylbenzene	1.4	U	1.3	1.4	13.6	ug/Kg
95-50-1	1,2-Dichlorobenzene	1.4	U	1.4	1.4	13.6	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	13.6	U	2.4	13.6	13.6	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.4	U	1.4	1.4	13.6	ug/Kg
91-20-3	Naphthalene	1.4	U	1.2	1.4	13.6	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	2.7	U	1.4	2.7	13.6	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	48.3		56 - 120		97%	SPK: 50
1868-53-7	Dibromofluoromethane	9	*	57 - 135		18%	SPK: 50
2037-26-5	Toluene-d8	47.7		67 - 123		95%	SPK: 50
460-00-4	4-Bromofluorobenzene	37.3		33 - 141		75%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-4(4-5)RE	SDG No.:	H3936
Lab Sample ID:	H3936-04RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	9.1
Sample Wt/Vol:	2.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050618.D	1		07/12/16 17:34	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	253126	6.17				
540-36-3	1,4-Difluorobenzene	475248	7.3				
3114-55-4	Chlorobenzene-d5	439273	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	131192	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(1-2)	SDG No.:	H3936
Lab Sample ID:	H3936-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.6
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050576.D	1		07/11/16 19:44	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
74-87-3	Chloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-01-4	Vinyl Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
74-83-9	Bromomethane	1.1	U	1.1	1.1	5.4	ug/Kg
75-00-3	Chloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-69-4	Trichlorofluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-35-4	1,1-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
67-64-1	Acetone	2.7	U	2.7	2.7	27.1	ug/Kg
75-15-0	Carbon Disulfide	0.54	U	0.54	0.54	5.4	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.54	U	0.54	0.54	5.4	ug/Kg
79-20-9	Methyl Acetate	1.1	U	1.1	1.1	5.4	ug/Kg
75-09-2	Methylene Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
75-34-3	1,1-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
110-82-7	Cyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
78-93-3	2-Butanone	8.1	U	3.4	8.1	27.1	ug/Kg
56-23-5	Carbon Tetrachloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
74-97-5	Bromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
67-66-3	Chloroform	0.54	U	0.54	0.54	5.4	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-87-2	Methylcyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
71-43-2	Benzene	0.54	U	0.41	0.54	5.4	ug/Kg
107-06-2	1,2-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
79-01-6	Trichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
78-87-5	1,2-Dichloropropane	0.54	U	0.28	0.54	5.4	ug/Kg
75-27-4	Bromodichloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.7	U	2.7	2.7	27.1	ug/Kg
108-88-3	Toluene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(1-2)	SDG No.:	H3936
Lab Sample ID:	H3936-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.6
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050576.D	1		07/11/16 19:44	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.1	U	0.97	1.1	5.4	ug/Kg
591-78-6	2-Hexanone	2.7	U	2.7	2.7	27.1	ug/Kg
124-48-1	Dibromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
106-93-4	1,2-Dibromoethane	0.54	U	0.54	0.54	5.4	ug/Kg
127-18-4	Tetrachloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
108-90-7	Chlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
100-41-4	Ethyl Benzene	0.54	U	0.54	0.54	5.4	ug/Kg
179601-23-1	m/p-Xylenes	1.1	U	0.78	1.1	10.8	ug/Kg
95-47-6	o-Xylene	0.54	U	0.54	0.54	5.4	ug/Kg
100-42-5	Styrene	0.54	U	0.49	0.54	5.4	ug/Kg
75-25-2	Bromoform	1.6	U	0.8	1.6	5.4	ug/Kg
98-82-8	Isopropylbenzene	0.54	U	0.52	0.54	5.4	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U	0.5	0.54	5.4	ug/Kg
103-65-1	n-propylbenzene	0.54	U	0.39	0.54	5.4	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.54	U	0.49	0.54	5.4	ug/Kg
98-06-6	tert-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
135-98-8	sec-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
99-87-6	p-Isopropyltoluene	0.54	U	0.31	0.54	5.4	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.54	U	0.4	0.54	5.4	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.54	U	0.44	0.54	5.4	ug/Kg
104-51-8	n-Butylbenzene	0.54	U	0.5	0.54	5.4	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.4	U	0.94	5.4	5.4	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
91-20-3	Naphthalene	0.54	U	0.49	0.54	5.4	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.1	U	0.54	1.1	5.4	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	49.3		56 - 120		99%	SPK: 50
1868-53-7	Dibromofluoromethane	51.3		57 - 135		103%	SPK: 50
2037-26-5	Toluene-d8	49.8		67 - 123		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	43		33 - 141		86%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(1-2)	SDG No.:	H3936
Lab Sample ID:	H3936-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.6
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050576.D	1		07/11/16 19:44	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	303869	6.18				
540-36-3	1,4-Difluorobenzene	572362	7.29				
3114-55-4	Chlorobenzene-d5	544264	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	194509	13.82				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	5.31 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050577.D	1		07/11/16 20:11	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
74-87-3	Chloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-01-4	Vinyl Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
74-83-9	Bromomethane	1.1	U	1.1	1.1	5.4	ug/Kg
75-00-3	Chloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-69-4	Trichlorofluoromethane	0.54	U	0.54	0.54	5.4	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.54	U	0.54	0.54	5.4	ug/Kg
75-35-4	1,1-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
67-64-1	Acetone	2.7	U	2.7	2.7	26.9	ug/Kg
75-15-0	Carbon Disulfide	0.54	U	0.54	0.54	5.4	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.54	U	0.54	0.54	5.4	ug/Kg
79-20-9	Methyl Acetate	1.1	U	1.1	1.1	5.4	ug/Kg
75-09-2	Methylene Chloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
75-34-3	1,1-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
110-82-7	Cyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
78-93-3	2-Butanone	8.1	U	3.4	8.1	26.9	ug/Kg
56-23-5	Carbon Tetrachloride	0.54	U	0.54	0.54	5.4	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
74-97-5	Bromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
67-66-3	Chloroform	0.54	U	0.54	0.54	5.4	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-87-2	Methylcyclohexane	0.54	U	0.54	0.54	5.4	ug/Kg
71-43-2	Benzene	0.54	U	0.41	0.54	5.4	ug/Kg
107-06-2	1,2-Dichloroethane	0.54	U	0.54	0.54	5.4	ug/Kg
79-01-6	Trichloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
78-87-5	1,2-Dichloropropane	0.54	U	0.28	0.54	5.4	ug/Kg
75-27-4	Bromodichloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.7	U	2.7	2.7	26.9	ug/Kg
108-88-3	Toluene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.54	U	0.54	0.54	5.4	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	5.31 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050577.D	1		07/11/16 20:11	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.1	U	0.97	1.1	5.4	ug/Kg
591-78-6	2-Hexanone	2.7	U	2.7	2.7	26.9	ug/Kg
124-48-1	Dibromochloromethane	0.54	U	0.54	0.54	5.4	ug/Kg
106-93-4	1,2-Dibromoethane	0.54	U	0.54	0.54	5.4	ug/Kg
127-18-4	Tetrachloroethene	0.54	U	0.54	0.54	5.4	ug/Kg
108-90-7	Chlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
100-41-4	Ethyl Benzene	0.54	U	0.54	0.54	5.4	ug/Kg
179601-23-1	m/p-Xylenes	1.1	U	0.78	1.1	10.8	ug/Kg
95-47-6	o-Xylene	0.54	U	0.54	0.54	5.4	ug/Kg
100-42-5	Styrene	0.54	U	0.48	0.54	5.4	ug/Kg
75-25-2	Bromoform	1.6	U	0.8	1.6	5.4	ug/Kg
98-82-8	Isopropylbenzene	0.54	U	0.52	0.54	5.4	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U	0.5	0.54	5.4	ug/Kg
103-65-1	n-propylbenzene	0.54	U	0.39	0.54	5.4	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.54	U	0.48	0.54	5.4	ug/Kg
98-06-6	tert-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
135-98-8	sec-Butylbenzene	0.54	U	0.54	0.54	5.4	ug/Kg
99-87-6	p-Isopropyltoluene	0.54	U	0.31	0.54	5.4	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.54	U	0.4	0.54	5.4	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.54	U	0.44	0.54	5.4	ug/Kg
104-51-8	n-Butylbenzene	0.54	U	0.5	0.54	5.4	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.4	U	0.94	5.4	5.4	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.54	U	0.54	0.54	5.4	ug/Kg
91-20-3	Naphthalene	0.54	U	0.48	0.54	5.4	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.1	U	0.54	1.1	5.4	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	51.4		56 - 120		103%	SPK: 50
1868-53-7	Dibromofluoromethane	49.3		57 - 135		99%	SPK: 50
2037-26-5	Toluene-d8	49.6		67 - 123		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.5		33 - 141		91%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-5(4-5)	SDG No.:	H3936
Lab Sample ID:	H3936-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	12.6
Sample Wt/Vol:	5.31 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050577.D	1		07/11/16 20:11	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	314903	6.17				
540-36-3	1,4-Difluorobenzene	613690	7.3				
3114-55-4	Chlorobenzene-d5	593684	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	222699	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TW-4	SDG No.:	H3936
Lab Sample ID:	H3936-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010088.D	1		07/12/16 13:31	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TW-4	SDG No.:	H3936
Lab Sample ID:	H3936-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010088.D	1		07/12/16 13:31	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	52.7		61 - 141		105%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		69 - 133		94%	SPK: 50
2037-26-5	Toluene-d8	49		65 - 126		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.5		58 - 135		95%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TW-4	SDG No.:	H3936
Lab Sample ID:	H3936-07	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010088.D	1		07/12/16 13:31	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	257819	5				
540-36-3	1,4-Difluorobenzene	473625	5.9				
3114-55-4	Chlorobenzene-d5	439081	9.1				
3855-82-1	1,4-Dichlorobenzene-d4	206121	11.49				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-6(11-12)	SDG No.:	H3936
Lab Sample ID:	H3936-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	19.4
Sample Wt/Vol:	1.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050578.D	1		07/11/16 20:38	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	2	U	2	2	19.9	ug/Kg
74-87-3	Chloromethane	2	U	2	2	19.9	ug/Kg
75-01-4	Vinyl Chloride	2	U	2	2	19.9	ug/Kg
74-83-9	Bromomethane	4	U	4	4	19.9	ug/Kg
75-00-3	Chloroethane	2	U	2	2	19.9	ug/Kg
75-69-4	Trichlorofluoromethane	2	U	2	2	19.9	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2	U	2	2	19.9	ug/Kg
75-35-4	1,1-Dichloroethene	2	U	2	2	19.9	ug/Kg
67-64-1	Acetone	9.9	U	9.9	9.9	99.4	ug/Kg
75-15-0	Carbon Disulfide	2	U	2	2	19.9	ug/Kg
1634-04-4	Methyl tert-butyl Ether	2	U	2	2	19.9	ug/Kg
79-20-9	Methyl Acetate	4	U	4	4	19.9	ug/Kg
75-09-2	Methylene Chloride	2	U	2	2	19.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	2	U	2	2	19.9	ug/Kg
75-34-3	1,1-Dichloroethane	2	U	2	2	19.9	ug/Kg
110-82-7	Cyclohexane	2	U	2	2	19.9	ug/Kg
78-93-3	2-Butanone	29.8	U	12.4	29.8	99.4	ug/Kg
56-23-5	Carbon Tetrachloride	2	U	2	2	19.9	ug/Kg
156-59-2	cis-1,2-Dichloroethene	2	U	2	2	19.9	ug/Kg
74-97-5	Bromochloromethane	2	U	2	2	19.9	ug/Kg
67-66-3	Chloroform	2	U	2	2	19.9	ug/Kg
71-55-6	1,1,1-Trichloroethane	2	U	2	2	19.9	ug/Kg
108-87-2	Methylcyclohexane	2	U	2	2	19.9	ug/Kg
71-43-2	Benzene	2	U	1.5	2	19.9	ug/Kg
107-06-2	1,2-Dichloroethane	2	U	2	2	19.9	ug/Kg
79-01-6	Trichloroethene	2	U	2	2	19.9	ug/Kg
78-87-5	1,2-Dichloropropane	2	U	1	2	19.9	ug/Kg
75-27-4	Bromodichloromethane	2	U	2	2	19.9	ug/Kg
108-10-1	4-Methyl-2-Pentanone	9.9	U	9.9	9.9	99.4	ug/Kg
108-88-3	Toluene	2	U	2	2	19.9	ug/Kg
10061-02-6	t-1,3-Dichloropropene	2	U	2	2	19.9	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	2	U	2	2	19.9	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-6(11-12)	SDG No.:	H3936
Lab Sample ID:	H3936-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	19.4
Sample Wt/Vol:	1.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050578.D	1		07/11/16 20:38	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	4	U	3.6	4	19.9	ug/Kg
591-78-6	2-Hexanone	9.9	U	9.9	9.9	99.4	ug/Kg
124-48-1	Dibromochloromethane	2	U	2	2	19.9	ug/Kg
106-93-4	1,2-Dibromoethane	2	U	2	2	19.9	ug/Kg
127-18-4	Tetrachloroethene	2	U	2	2	19.9	ug/Kg
108-90-7	Chlorobenzene	2	U	2	2	19.9	ug/Kg
100-41-4	Ethyl Benzene	2	U	2	2	19.9	ug/Kg
179601-23-1	m/p-Xylenes	4	U	2.9	4	39.8	ug/Kg
95-47-6	o-Xylene	2	U	2	2	19.9	ug/Kg
100-42-5	Styrene	2	U	1.8	2	19.9	ug/Kg
75-25-2	Bromoform	6	U	2.9	6	19.9	ug/Kg
98-82-8	Isopropylbenzene	2	U	1.9	2	19.9	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	2	U	1.8	2	19.9	ug/Kg
103-65-1	n-propylbenzene	2	U	1.4	2	19.9	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	2	U	1.8	2	19.9	ug/Kg
98-06-6	tert-Butylbenzene	2	U	2	2	19.9	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	2	U	2	2	19.9	ug/Kg
135-98-8	sec-Butylbenzene	2	U	2	2	19.9	ug/Kg
99-87-6	p-Isopropyltoluene	2	U	1.2	2	19.9	ug/Kg
541-73-1	1,3-Dichlorobenzene	2	U	1.5	2	19.9	ug/Kg
106-46-7	1,4-Dichlorobenzene	2	U	1.6	2	19.9	ug/Kg
104-51-8	n-Butylbenzene	2	U	1.8	2	19.9	ug/Kg
95-50-1	1,2-Dichlorobenzene	2	U	2	2	19.9	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	19.9	U	3.5	19.9	19.9	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	2	U	2	2	19.9	ug/Kg
91-20-3	Naphthalene	2	U	1.8	2	19.9	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	4	U	2	4	19.9	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	54.1		56 - 120		108%	SPK: 50
1868-53-7	Dibromofluoromethane	52.7		57 - 135		105%	SPK: 50
2037-26-5	Toluene-d8	49.9		67 - 123		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	41.3		33 - 141		83%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	SB-6(11-12)	SDG No.:	H3936
Lab Sample ID:	H3936-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	19.4
Sample Wt/Vol:	1.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050578.D	1		07/11/16 20:38	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	288917	6.17				
540-36-3	1,4-Difluorobenzene	559555	7.29				
3114-55-4	Chlorobenzene-d5	516227	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	159672	13.82				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TRIPBLANK	SDG No.:	H3936
Lab Sample ID:	H3936-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010087.D	1		07/12/16 13:05	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TRIPBLANK	SDG No.:	H3936
Lab Sample ID:	H3936-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010087.D	1		07/12/16 13:05	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	51.3		61 - 141		103%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		69 - 133		97%	SPK: 50
2037-26-5	Toluene-d8	48.8		65 - 126		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.4		58 - 135		95%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/06/16
Client Sample ID:	TRIPBLANK	SDG No.:	H3936
Lab Sample ID:	H3936-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010087.D	1		07/12/16 13:05	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	241758	5				
540-36-3	1,4-Difluorobenzene	420289	5.9				
3114-55-4	Chlorobenzene-d5	387172	9.1				
3855-82-1	1,4-Dichlorobenzene-d4	179403	11.49				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

QC SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Surrogate Summary

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Lab Sample ID	Client ID	Parameter	Spike	Result	Recovery	Qual	Limits Low	Limits High
H3936-01	SB-1(9-10)	1,2-Dichloroethane-d4	50	53.32	107		56	120
		Dibromofluoromethane	50	55.76	112		57	135
		Toluene-d8	50	51.66	103		67	123
		4-Bromofluorobenzene	50	35.62	71		33	141
H3936-01RE	SB-1(9-10)RE	1,2-Dichloroethane-d4	50	51.56	103		56	120
		Dibromofluoromethane	50	53.33	107		57	135
		Toluene-d8	50	50.27	101		67	123
		4-Bromofluorobenzene	50	32.3	65		33	141
H3936-02	SB-2(9-10)	1,2-Dichloroethane-d4	50	54.69	109		56	120
		Dibromofluoromethane	50	58.12	116		57	135
		Toluene-d8	50	55.32	111		67	123
		4-Bromofluorobenzene	50	45.66	91		33	141
H3936-03	SB-3(5-6)	1,2-Dichloroethane-d4	50	54.59	109		56	120
		Dibromofluoromethane	50	56.1	112		57	135
		Toluene-d8	50	54.5	109		67	123
		4-Bromofluorobenzene	50	48.46	97		33	141
H3936-04	SB-4(4-5)	1,2-Dichloroethane-d4	50	53.07	106		56	120
		Dibromofluoromethane	50	12.89	26	*	57	135
		Toluene-d8	50	50.71	101		67	123
		4-Bromofluorobenzene	50	41.67	83		33	141
H3936-04RE	SB-4(4-5)RE	1,2-Dichloroethane-d4	50	48.33	97		56	120
		Dibromofluoromethane	50	8.95	18	*	57	135
		Toluene-d8	50	47.66	95		67	123
		4-Bromofluorobenzene	50	37.31	75		33	141
H3936-05	SB-5(1-2)	1,2-Dichloroethane-d4	50	49.34	99		56	120
		Dibromofluoromethane	50	51.26	103		57	135
		Toluene-d8	50	49.81	100		67	123
		4-Bromofluorobenzene	50	43.03	86		33	141
H3936-06	SB-5(4-5)	1,2-Dichloroethane-d4	50	51.36	103		56	120
		Dibromofluoromethane	50	49.27	99		57	135
		Toluene-d8	50	49.64	99		67	123
		4-Bromofluorobenzene	50	45.48	91		33	141
H3936-09	SB-6(11-12)	1,2-Dichloroethane-d4	50	54.1	108		56	120
		Dibromofluoromethane	50	52.72	105		57	135
		Toluene-d8	50	49.87	100		67	123
		4-Bromofluorobenzene	50	41.33	83		33	141
H3943-02MS	KY030LC068-S-160706MS	1,2-Dichloroethane-d4	50	48.58	97		56	120
		Dibromofluoromethane	50	50.88	102		57	135
		Toluene-d8	50	48.57	97		67	123
		4-Bromofluorobenzene	50	43.61	87		33	141
H3943-03MSD	KY030LC068-S-160706MSD	1,2-Dichloroethane-d4	50	50.46	101		56	120
		Dibromofluoromethane	50	53.21	106		57	135
		Toluene-d8	50	50.91	102		67	123
		4-Bromofluorobenzene	50	45.48	91		33	141
VD0711SBL01	VD0711SBL01	1,2-Dichloroethane-d4	50	53.03	106		56	120
		Dibromofluoromethane	50	52.85	106		57	135
		Toluene-d8	50	51.19	102		67	123
		4-Bromofluorobenzene	50	51.25	103		33	141
VD0711SBS01	VD0711SBS01	1,2-Dichloroethane-d4	50	50.44	101		56	120
		Dibromofluoromethane	50	49.93	100		57	135
		Toluene-d8	50	48.87	98		67	123
		4-Bromofluorobenzene	50	50.36	101		33	141

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Surrogate Summary

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
VD0712SBL01	VD0712SBL01	1,2-Dichloroethane-d4	50	44.6	89	56	120
		Dibromofluoromethane	50	46.83	94	57	135
		Toluene-d8	50	46.76	94	67	123
		4-Bromofluorobenzene	50	46.6	93	33	141
VD0712SBS01	VD0712SBS01	1,2-Dichloroethane-d4	50	47.62	95	56	120
		Dibromofluoromethane	50	49.23	98	57	135
		Toluene-d8	50	48.58	97	67	123
		4-Bromofluorobenzene	50	49.76	100	33	141

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Surrogate Summary

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260-Low

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
H3936-07	TW-4	1,2-Dichloroethane-d4	50	52.67	105	61	141
		Dibromofluoromethane	50	46.79	94	69	133
		Toluene-d8	50	48.95	98	65	126
		4-Bromofluorobenzene	50	47.54	95	58	135
H3936-10	TRIPBLANK	1,2-Dichloroethane-d4	50	51.26	103	61	141
		Dibromofluoromethane	50	48.3	97	69	133
		Toluene-d8	50	48.76	98	65	126
		4-Bromofluorobenzene	50	47.44	95	58	135
VU0712WBL01	VU0712WBL01	1,2-Dichloroethane-d4	50	51.47	103	61	141
		Dibromofluoromethane	50	48.91	98	69	133
		Toluene-d8	50	49.01	98	65	126
		4-Bromofluorobenzene	50	46.6	93	58	135
VU0712WBS01	VU0712WBS01	1,2-Dichloroethane-d4	50	49.29	99	61	141
		Dibromofluoromethane	50	48.12	96	69	133
		Toluene-d8	50	51.42	103	65	126
		4-Bromofluorobenzene	50	51.69	103	58	135
VU0712WBSD0	VU0712WBSD02	1,2-Dichloroethane-d4	50	49.03	98	61	141
		Dibromofluoromethane	50	47.61	95	69	133
		Toluene-d8	50	47.81	96	65	126
		4-Bromofluorobenzene	50	47.86	96	58	135

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Lab Sample ID : H3943-02MS **Client Sample ID :** KY030LC068-S-160706MS **Datafile :** VD050561.D

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
Dichlorodifluoromethane	78.1	0	77.4	ug/Kg	99				44	157	
Chloromethane	78.1	0	75.5	ug/Kg	97				51	144	
Vinyl chloride	78.1	0	86.5	ug/Kg	111				56	145	
Bromomethane	78.1	0	88.9	ug/Kg	114				47	151	
Chloroethane	78.1	0	92.5	ug/Kg	118				55	158	
Trichlorofluoromethane	78.1	0	85	ug/Kg	109				63	145	
1,1,2-Trichlorotrifluoroethane	78.1	0	79.9	ug/Kg	102				63	141	
1,1-Dichloroethene	78.1	0	87.9	ug/Kg	113				64	140	
Acetone	390	69.2	490	ug/Kg	108				41	145	
Carbon disulfide	78.1	0	86.8	ug/Kg	111				56	139	
Methyl tert-butyl Ether	78.1	0	75.8	ug/Kg	97				64	132	
Methyl Acetate	78.1	0	95.6	ug/Kg	122				21	221	
Methylene Chloride	78.1	0	78.2	ug/Kg	100				59	133	
trans-1,2-Dichloroethene	78.1	0	80.8	ug/Kg	103				64	135	
1,1-Dichloroethane	78.1	0	79.3	ug/Kg	102				66	135	
Cyclohexane	78.1	0	60.1	ug/Kg	77				59	140	
2-Butanone	390	15.2	390	ug/Kg	96				54	137	
Carbon Tetrachloride	78.1	0	82	ug/Kg	105				66	137	
cis-1,2-Dichloroethene	78.1	0	80.8	ug/Kg	103				65	132	
Bromochloromethane	78.1	0	73.7	ug/Kg	94				62	125	
Chloroform	78.1	0	78.6	ug/Kg	101				68	132	
1,1,1-Trichloroethane	78.1	0	83.6	ug/Kg	107				69	138	
Methylcyclohexane	78.1	0	52.3	ug/Kg	67				54	134	
Benzene	78.1	0	79.9	ug/Kg	102				68	130	
1,2-Dichloroethane	78.1	0	80.9	ug/Kg	104				68	130	
Trichloroethene	78.1	0	84.3	ug/Kg	108				54	149	
1,2-Dichloropropane	78.1	0	77.9	ug/Kg	100				65	136	
Bromodichloromethane	78.1	0	78.4	ug/Kg	100				68	132	
4-Methyl-2-Pentanone	390	0	390	ug/Kg	100				59	137	
Toluene	78.1	0	77.5	ug/Kg	99				65	133	
t-1,3-Dichloropropene	78.1	0	76.4	ug/Kg	98				64	129	
cis-1,3-Dichloropropene	78.1	0	79	ug/Kg	101				65	129	
1,1,2-Trichloroethane	78.1	0	76.3	ug/Kg	98				66	131	
2-Hexanone	390	0	420	ug/Kg	108				58	133	
Dibromochloromethane	78.1	0	76.1	ug/Kg	97				67	131	
1,2-Dibromoethane	78.1	0	77.5	ug/Kg	99				65	130	
Tetrachloroethene	78.1	0	79.1	ug/Kg	101				37	161	
Chlorobenzene	78.1	0	81.7	ug/Kg	105				66	128	
Ethyl Benzene	78.1	0	77.7	ug/Kg	99				65	133	
m/p-Xylenes	160	0	150	ug/Kg	94				62	134	
o-Xylene	78.1	0	77.4	ug/Kg	99				65	133	
Styrene	78.1	0	77.2	ug/Kg	99				66	127	
Bromoform	78.1	0	85.1	ug/Kg	109				68	131	
Isopropylbenzene	78.1	0	81.1	ug/Kg	104				64	139	
1,1,2,2-Tetrachloroethane	78.1	0	140	ug/Kg	179	*			48	150	
N-propylbenzene	78.1	0	72.7	ug/Kg	93				61	136	
1,3,5-Trimethylbenzene	78.1	0	69.4	ug/Kg	89				65	133	

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	RPD
tert-Butylbenzene	78.1	3.1	64.6	ug/Kg	79				61	139	
1,2,4-Trimethylbenzene	78.1	0	68.4	ug/Kg	88				59	137	
Sec-butylbenzene	78.1	0	58.8	ug/Kg	75				58	138	
p-Isopropyltoluene	78.1	0	55.6	ug/Kg	71				61	133	
1,3-Dichlorobenzene	78.1	0	75.1	ug/Kg	96				60	129	
1,4-Dichlorobenzene	78.1	0	76.1	ug/Kg	97				59	128	
n-Butylbenzene	78.1	0	53.1	ug/Kg	68				45	141	
1,2-Dichlorobenzene	78.1	0	73	ug/Kg	93				63	127	
1,2-Dibromo-3-Chloropropane	78.1	0	89.6	ug/Kg	115				65	137	
1,2,4-Trichlorobenzene	78.1	0	48	ug/Kg	61				38	131	
Naphthalene	78.1	0	61.4	ug/Kg	79				29	140	
1,2,3-Trichlorobenzene	78.1	0	56	ug/Kg	72				26	131	

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Lab Sample ID : H3943-03MSD **Client Sample ID :** KY030LC068-S-160706MSD **Datafile :** VD050562.D

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Dichlorodifluoromethane	77.6	0	68.4	ug/Kg	88		12		44	157	20
Chloromethane	77.6	0	76.4	ug/Kg	98		2		51	144	20
Vinyl chloride	77.6	0	82.3	ug/Kg	106		4		56	145	20
Bromomethane	77.6	0	90.4	ug/Kg	116		2		47	151	20
Chloroethane	77.6	0	93.7	ug/Kg	121		2		55	158	20
Trichlorofluoromethane	77.6	0	78.3	ug/Kg	101		8		63	145	20
1,1,2-Trichlorotrifluoroethane	77.6	0	79.5	ug/Kg	102		0		63	141	20
1,1-Dichloroethene	77.6	0	87.9	ug/Kg	113		1		64	140	20
Acetone	390	69.2	530	ug/Kg	118		9		41	145	20
Carbon disulfide	77.6	0	84.3	ug/Kg	109		2		56	139	20
Methyl tert-butyl Ether	77.6	0	73.2	ug/Kg	94		3		64	132	20
Methyl Acetate	77.6	0	98.2	ug/Kg	127		3		21	221	20
Methylene Chloride	77.6	0	76.1	ug/Kg	98		2		59	133	20
trans-1,2-Dichloroethene	77.6	0	77.8	ug/Kg	100		3		64	135	20
1,1-Dichloroethane	77.6	0	74.4	ug/Kg	96		6		66	135	20
Cyclohexane	77.6	0	62.2	ug/Kg	80		4		59	140	20
2-Butanone	390	15.2	380	ug/Kg	94		2		54	137	20
Carbon Tetrachloride	77.6	0	76.1	ug/Kg	98		7		66	137	20
cis-1,2-Dichloroethene	77.6	0	76.2	ug/Kg	98		5		65	132	20
Bromochloromethane	77.6	0	76.9	ug/Kg	99		5		62	125	20
Chloroform	77.6	0	74.1	ug/Kg	95		5		68	132	20
1,1,1-Trichloroethane	77.6	0	78.6	ug/Kg	101		6		69	138	20
Methylcyclohexane	77.6	0	55.6	ug/Kg	72		7		54	134	20
Benzene	77.6	0	74.9	ug/Kg	97		6		68	130	20
1,2-Dichloroethane	77.6	0	74.5	ug/Kg	96		8		68	130	20
Trichloroethene	77.6	0	77.3	ug/Kg	100		8		54	149	20
1,2-Dichloropropane	77.6	0	71.8	ug/Kg	93		8		65	136	20
Bromodichloromethane	77.6	0	72.3	ug/Kg	93		7		68	132	20
4-Methyl-2-Pentanone	390	0	370	ug/Kg	95		5		59	137	20
Toluene	77.6	0	74.8	ug/Kg	96		3		65	133	20
t-1,3-Dichloropropene	77.6	0	72.8	ug/Kg	94		4		64	129	20
cis-1,3-Dichloropropene	77.6	0	72	ug/Kg	93		9		65	129	20
1,1,2-Trichloroethane	77.6	0	71.8	ug/Kg	93		5		66	131	20
2-Hexanone	390	0	380	ug/Kg	97		10		58	133	20
Dibromochloromethane	77.6	0	72.2	ug/Kg	93		5		67	131	20
1,2-Dibromoethane	77.6	0	73.3	ug/Kg	94		5		65	130	20
Tetrachloroethene	77.6	0	77.5	ug/Kg	100		1		37	161	20
Chlorobenzene	77.6	0	77.1	ug/Kg	99		5		66	128	20
Ethyl Benzene	77.6	0	76.4	ug/Kg	98		1		65	133	20
m/p-Xylenes	160	0	150	ug/Kg	94		0		62	134	20
o-Xylene	77.6	0	77.2	ug/Kg	99		0		65	133	20
Styrene	77.6	0	76.1	ug/Kg	98		1		66	127	20
Bromoform	77.6	0	82.2	ug/Kg	106		3		68	131	20
Isopropylbenzene	77.6	0	79.3	ug/Kg	102		2		64	139	20
1,1,2,2-Tetrachloroethane	77.6	0	97.9	ug/Kg	126		35	*	48	150	20
N-propylbenzene	77.6	0	73.6	ug/Kg	95		2		61	136	20
1,3,5-Trimethylbenzene	77.6	0	72.4	ug/Kg	93		5		65	133	20

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
tert-Butylbenzene	77.6	3.1	68.9	ug/Kg	85		7		61	139	20
1,2,4-Trimethylbenzene	77.6	0	71.6	ug/Kg	92		5		59	137	20
Sec-butylbenzene	77.6	0	64.4	ug/Kg	83		10		58	138	20
p-Isopropyltoluene	77.6	0	62.7	ug/Kg	81		13		61	133	20
1,3-Dichlorobenzene	77.6	0	76.3	ug/Kg	98		2		60	129	20
1,4-Dichlorobenzene	77.6	0	74.3	ug/Kg	96		2		59	128	20
n-Butylbenzene	77.6	0	57.6	ug/Kg	74		9		45	141	20
1,2-Dichlorobenzene	77.6	0	74.8	ug/Kg	96		3		63	127	20
1,2-Dibromo-3-Chloropropane	77.6	0	91	ug/Kg	117		2		65	137	20
1,2,4-Trichlorobenzene	77.6	0	54.7	ug/Kg	70		14		38	131	20
Naphthalene	77.6	0	68.5	ug/Kg	88		12		29	140	20
1,2,3-Trichlorobenzene	77.6	0	50.7	ug/Kg	65		9		26	131	20

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C **Datafile :** VD050560.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0711SBS01	Dichlorodifluoromethane	20	23.1	ug/Kg	116			50	142	
	Chloromethane	20	21.9	ug/Kg	110			65	131	
	Vinyl chloride	20	22.8	ug/Kg	114			67	130	
	Bromomethane	20	22	ug/Kg	110			64	136	
	Chloroethane	20	23.6	ug/Kg	118			66	146	
	Trichlorofluoromethane	20	21.9	ug/Kg	110			72	134	
	1,1,2-Trichlorotrifluoroethane	20	22.8	ug/Kg	114			73	133	
	1,1-Dichloroethene	20	22.6	ug/Kg	113			74	130	
	Acetone	100	120	ug/Kg	120			57	135	
	Carbon disulfide	20	22.5	ug/Kg	113			71	130	
	Methyl tert-butyl Ether	20	21	ug/Kg	105			76	123	
	Methyl Acetate	20	21.7	ug/Kg	109			62	146	
	Methylene Chloride	20	21.2	ug/Kg	106			73	134	
	trans-1,2-Dichloroethene	20	21.3	ug/Kg	106			76	125	
	1,1-Dichloroethane	20	20.8	ug/Kg	104			78	124	
	Cyclohexane	20	20.1	ug/Kg	101			72	130	
	2-Butanone	100	100	ug/Kg	100			68	132	
	Carbon Tetrachloride	20	22.1	ug/Kg	111			76	127	
	cis-1,2-Dichloroethene	20	21.6	ug/Kg	108			78	122	
	Bromochloromethane	20	20.1	ug/Kg	101			66	133	
	Chloroform	20	20.9	ug/Kg	104			79	122	
	1,1,1-Trichloroethane	20	20.8	ug/Kg	104			76	126	
	Methylcyclohexane	20	20.2	ug/Kg	101			75	127	
	Benzene	20	20.8	ug/Kg	104			79	124	
	1,2-Dichloroethane	20	21.2	ug/Kg	106			78	124	
	Trichloroethene	20	20.9	ug/Kg	104			78	124	
	1,2-Dichloropropane	20	20.4	ug/Kg	102			76	124	
	Bromodichloromethane	20	21.1	ug/Kg	106			78	122	
	4-Methyl-2-Pentanone	100	110	ug/Kg	110			73	135	
	Toluene	20	21.6	ug/Kg	108			78	124	
	t-1,3-Dichloropropene	20	20.7	ug/Kg	104			77	123	
	cis-1,3-Dichloropropene	20	20.5	ug/Kg	103			79	120	
	1,1,2-Trichloroethane	20	21.2	ug/Kg	106			78	123	
	2-Hexanone	100	110	ug/Kg	110			71	134	
	Dibromochloromethane	20	21.6	ug/Kg	108			77	121	
	1,2-Dibromoethane	20	21.3	ug/Kg	106			78	123	
	Tetrachloroethene	20	20.2	ug/Kg	101			67	134	
	Chlorobenzene	20	20.9	ug/Kg	104			80	121	
	Ethyl Benzene	20	21	ug/Kg	105			80	123	
	m/p-Xylenes	40	42.9	ug/Kg	107			79	126	
	o-Xylene	20	20.8	ug/Kg	104			80	122	
	Styrene	20	21	ug/Kg	105			81	121	
	Bromoform	20	21.6	ug/Kg	108			73	124	
	Isopropylbenzene	20	20.4	ug/Kg	102			79	123	
	1,1,2,2-Tetrachloroethane	20	20.3	ug/Kg	102			79	124	
	N-propylbenzene	20	20.4	ug/Kg	102			80	125	
	1,3,5-Trimethylbenzene	20	20.8	ug/Kg	104			81	123	
	tert-Butylbenzene	20	20	ug/Kg	100			81	123	
	1,2,4-Trimethylbenzene	20	20.5	ug/Kg	103			81	122	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C **Datafile :** VD050560.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0711SBS01	Sec-butylbenzene	20	20.5	ug/Kg	103			81	126	
	p-Isopropyltoluene	20	20.8	ug/Kg	104			81	124	
	1,3-Dichlorobenzene	20	20.7	ug/Kg	104			82	120	
	1,4-Dichlorobenzene	20	20.8	ug/Kg	104			81	120	
	n-Butylbenzene	20	20.5	ug/Kg	103			75	129	
	1,2-Dichlorobenzene	20	20.7	ug/Kg	104			82	118	
	1,2-Dibromo-3-Chloropropane	20	19.9	ug/Kg	100			72	127	
	1,2,4-Trichlorobenzene	20	20.6	ug/Kg	103			75	125	
	Naphthalene	20	20.4	ug/Kg	102			71	126	
	1,2,3-Trichlorobenzene	20	20.5	ug/Kg	103			79	123	

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C **Datafile :** VD050613.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0712SBS01	Dichlorodifluoromethane	20	22.9	ug/Kg	115			50	142	
	Chloromethane	20	22.2	ug/Kg	111			65	131	
	Vinyl chloride	20	19.3	ug/Kg	97			67	130	
	Bromomethane	20	22.2	ug/Kg	111			64	136	
	Chloroethane	20	19.2	ug/Kg	96			66	146	
	Trichlorofluoromethane	20	21.4	ug/Kg	107			72	134	
	1,1,2-Trichlorotrifluoroethane	20	21.1	ug/Kg	106			73	133	
	1,1-Dichloroethene	20	21	ug/Kg	105			74	130	
	Acetone	100	97	ug/Kg	97			57	135	
	Carbon disulfide	20	20.8	ug/Kg	104			71	130	
	Methyl tert-butyl Ether	20	21.1	ug/Kg	106			76	123	
	Methyl Acetate	20	18.7	ug/Kg	94			62	146	
	Methylene Chloride	20	23.6	ug/Kg	118			73	134	
	trans-1,2-Dichloroethene	20	20.3	ug/Kg	102			76	125	
	1,1-Dichloroethane	20	19.9	ug/Kg	100			78	124	
	Cyclohexane	20	19.7	ug/Kg	99			72	130	
	2-Butanone	100	92.9	ug/Kg	93			68	132	
	Carbon Tetrachloride	20	20	ug/Kg	100			76	127	
	cis-1,2-Dichloroethene	20	20.6	ug/Kg	103			78	122	
	Bromochloromethane	20	20.7	ug/Kg	104			66	133	
	Chloroform	20	20.7	ug/Kg	104			79	122	
	1,1,1-Trichloroethane	20	19.4	ug/Kg	97			76	126	
	Methylcyclohexane	20	22.1	ug/Kg	111			75	127	
	Benzene	20	21.8	ug/Kg	109			79	124	
	1,2-Dichloroethane	20	20.1	ug/Kg	101			78	124	
	Trichloroethene	20	20.6	ug/Kg	103			78	124	
	1,2-Dichloropropane	20	20.8	ug/Kg	104			76	124	
	Bromodichloromethane	20	21.5	ug/Kg	108			78	122	
	4-Methyl-2-Pentanone	100	93.9	ug/Kg	94			73	135	
	Toluene	20	20.9	ug/Kg	104			78	124	
	t-1,3-Dichloropropene	20	20.9	ug/Kg	104			77	123	
	cis-1,3-Dichloropropene	20	21.2	ug/Kg	106			79	120	
	1,1,2-Trichloroethane	20	19.8	ug/Kg	99			78	123	
	2-Hexanone	100	92.2	ug/Kg	92			71	134	
	Dibromochloromethane	20	20.1	ug/Kg	101			77	121	
	1,2-Dibromoethane	20	19.3	ug/Kg	97			78	123	
	Tetrachloroethene	20	19.9	ug/Kg	100			67	134	
	Chlorobenzene	20	19.8	ug/Kg	99			80	121	
	Ethyl Benzene	20	21.2	ug/Kg	106			80	123	
	m/p-Xylenes	40	41.2	ug/Kg	103			79	126	
	o-Xylene	20	20.6	ug/Kg	103			80	122	
	Styrene	20	20.8	ug/Kg	104			81	121	
	Bromoform	20	19.7	ug/Kg	99			73	124	
	Isopropylbenzene	20	19.8	ug/Kg	99			79	123	
	1,1,2,2-Tetrachloroethane	20	19.3	ug/Kg	97			79	124	
	N-propylbenzene	20	20.3	ug/Kg	102			80	125	
	1,3,5-Trimethylbenzene	20	19.9	ug/Kg	100			81	123	
	tert-Butylbenzene	20	19.6	ug/Kg	98			81	123	
	1,2,4-Trimethylbenzene	20	19.7	ug/Kg	99			81	122	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260C **Datafile :** VD050613.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VD0712SBS01	Sec-butylbenzene	20	19.8	ug/Kg	99			81	126	
	p-Isopropyltoluene	20	19.9	ug/Kg	100			81	124	
	1,3-Dichlorobenzene	20	20.4	ug/Kg	102			82	120	
	1,4-Dichlorobenzene	20	20.2	ug/Kg	101			81	120	
	n-Butylbenzene	20	20.3	ug/Kg	102			75	129	
	1,2-Dichlorobenzene	20	20.5	ug/Kg	103			82	118	
	1,2-Dibromo-3-Chloropropane	20	18.9	ug/Kg	95			72	127	
	1,2,4-Trichlorobenzene	20	19.8	ug/Kg	99			75	125	
	Naphthalene	20	19.8	ug/Kg	99			71	126	
	1,2,3-Trichlorobenzene	20	19.4	ug/Kg	97			79	123	

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260-Low **Datafile :** VU010085.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VU0712WBS01	Dichlorodifluoromethane	20	19.5	ug/L	98			46	139	
	Chloromethane	20	16.6	ug/L	83			58	139	
	Vinyl chloride	20	19.2	ug/L	96			65	137	
	Bromomethane	20	27.3	ug/L	137			50	162	
	Chloroethane	20	19.4	ug/L	97			54	160	
	Trichlorofluoromethane	20	19.6	ug/L	98			67	143	
	1,1,2-Trichlorotrifluoroethane	20	20.2	ug/L	101			71	136	
	1,1-Dichloroethene	20	19.9	ug/L	100			69	134	
	Acetone	100	100	ug/L	100			41	181	
	Carbon disulfide	20	19.3	ug/L	97			63	138	
	Methyl tert-butyl Ether	20	20	ug/L	100			72	136	
	Methyl Acetate	20	19.5	ug/L	98			51	158	
	Methylene Chloride	20	20.9	ug/L	104			67	138	
	trans-1,2-Dichloroethene	20	19.9	ug/L	100			72	132	
	1,1-Dichloroethane	20	19.8	ug/L	99			74	135	
	Cyclohexane	20	20	ug/L	100			67	132	
	2-Butanone	100	98.7	ug/L	99			64	146	
	Carbon Tetrachloride	20	18.3	ug/L	92			71	134	
	cis-1,2-Dichloroethene	20	19.6	ug/L	98			74	130	
	Bromochloromethane	20	18.8	ug/L	94			71	136	
	Chloroform	20	19.3	ug/L	97			74	134	
	1,1,1-Trichloroethane	20	19.6	ug/L	98			74	133	
	Methylcyclohexane	20	19.3	ug/L	97			71	125	
	Benzene	20	19.2	ug/L	96			75	125	
	1,2-Dichloroethane	20	19.1	ug/L	96			76	130	
	Trichloroethene	20	18.4	ug/L	92			73	127	
	1,2-Dichloropropane	20	19.1	ug/L	96			76	125	
	Bromodichloromethane	20	19	ug/L	95			78	127	
	4-Methyl-2-Pentanone	100	98.1	ug/L	98			71	140	
	Toluene	20	20.3	ug/L	102			74	125	
	t-1,3-Dichloropropene	20	19.4	ug/L	97			74	131	
	cis-1,3-Dichloropropene	20	19.8	ug/L	99			74	128	
	1,1,2-Trichloroethane	20	19.7	ug/L	99			75	129	
	2-Hexanone	100	98.8	ug/L	99			62	153	
	Dibromochloromethane	20	19.4	ug/L	97			74	131	
	1,2-Dibromoethane	20	20.2	ug/L	101			74	129	
	Tetrachloroethene	20	18.3	ug/L	92			46	157	
	Chlorobenzene	20	19.1	ug/L	96			76	123	
	Ethyl Benzene	20	19.4	ug/L	97			75	126	
	m/p-Xylenes	40	38.9	ug/L	97			74	126	
	o-Xylene	20	19.8	ug/L	99			73	127	
	Styrene	20	19.8	ug/L	99			75	126	
	Bromoform	20	18.2	ug/L	91			66	130	
	Isopropylbenzene	20	19.5	ug/L	98			70	127	
	1,1,2,2-Tetrachloroethane	20	18.8	ug/L	94			66	131	
	N-propylbenzene	20	19.8	ug/L	99			71	126	
	1,3,5-Trimethylbenzene	20	19.7	ug/L	99			71	127	
	tert-Butylbenzene	20	19.2	ug/L	96			66	129	
	1,2,4-Trimethylbenzene	20	19.9	ug/L	100			69	130	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260-Low **Datafile :** VU010085.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VU0712WBS01	Sec-butylbenzene	20	19.8	ug/L	99			72	126	
	p-Isopropyltoluene	20	19.8	ug/L	99			71	125	
	1,3-Dichlorobenzene	20	18.8	ug/L	94			70	125	
	1,4-Dichlorobenzene	20	19	ug/L	95			71	124	
	n-Butylbenzene	20	19.6	ug/L	98			68	128	
	1,2-Dichlorobenzene	20	18.6	ug/L	93			71	126	
	1,2-Dibromo-3-Chloropropane	20	18.9	ug/L	95			62	134	
	1,2,4-Trichlorobenzene	20	19.2	ug/L	96			62	129	
	Naphthalene	20	18.1	ug/L	91			62	130	
	1,2,3-Trichlorobenzene	20	19.2	ug/L	96			58	130	

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260-Low **Datafile :** VU010095.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VU0712WBSD02	Dichlorodifluoromethane	20	17.6	ug/L	88	8		46	139	20
	Chloromethane	20	15.5	ug/L	78	4		58	139	20
	Vinyl chloride	20	17.9	ug/L	90	5		65	137	20
	Bromomethane	20	24.9	ug/L	125	11		50	162	20
	Chloroethane	20	18.3	ug/L	92	4		54	160	20
	Trichlorofluoromethane	20	17.9	ug/L	90	6		67	143	20
	1,1,2-Trichlorotrifluoroethane	20	19.1	ug/L	96	3		71	136	20
	1,1-Dichloroethene	20	18.3	ug/L	92	7		69	134	20
	Acetone	100	90.7	ug/L	91	2		41	181	20
	Carbon disulfide	20	17.9	ug/L	90	6		63	138	20
	Methyl tert-butyl Ether	20	20.2	ug/L	101	2		72	136	20
	Methyl Acetate	20	20.3	ug/L	102	6		51	158	20
	Methylene Chloride	20	21	ug/L	105	2		67	138	20
	trans-1,2-Dichloroethene	20	19	ug/L	95	4		72	132	20
	1,1-Dichloroethane	20	19.6	ug/L	98	2		74	135	20
	Cyclohexane	20	18.9	ug/L	95	4		67	132	20
	2-Butanone	100	96.4	ug/L	96	1		64	146	20
	Carbon Tetrachloride	20	18.1	ug/L	91	0		71	134	20
	cis-1,2-Dichloroethene	20	19.8	ug/L	99	0		74	130	20
	Bromochloromethane	20	18.8	ug/L	94	1		71	136	20
	Chloroform	20	19.7	ug/L	99	2		74	134	20
	1,1,1-Trichloroethane	20	19.1	ug/L	96	2		74	133	20
	Methylcyclohexane	20	18.3	ug/L	92	4		71	125	20
	Benzene	20	19	ug/L	95	1		75	125	20
	1,2-Dichloroethane	20	19.6	ug/L	98	2		76	130	20
	Trichloroethene	20	18	ug/L	90	2		73	127	20
	1,2-Dichloropropane	20	19.4	ug/L	97	1		76	125	20
	Bromodichloromethane	20	19.4	ug/L	97	2		78	127	20
	4-Methyl-2-Pentanone	100	100	ug/L	100	3		71	140	20
	Toluene	20	19.5	ug/L	98	1		74	125	20
	t-1,3-Dichloropropene	20	19.3	ug/L	97	2		74	131	20
	cis-1,3-Dichloropropene	20	19.4	ug/L	97	1		74	128	20
	1,1,2-Trichloroethane	20	19.6	ug/L	98	2		75	129	20
	2-Hexanone	100	99.5	ug/L	100	3		62	153	20
	Dibromochloromethane	20	19.7	ug/L	99	3		74	131	20
	1,2-Dibromoethane	20	20.2	ug/L	101	3		74	129	20
	Tetrachloroethene	20	17.9	ug/L	90	2		46	157	20
	Chlorobenzene	20	19	ug/L	95	1		76	123	20
	Ethyl Benzene	20	19.1	ug/L	96	3		75	126	20
	m/p-Xylenes	40	38.5	ug/L	96	2		74	126	20
	o-Xylene	20	19.5	ug/L	98	0		73	127	20
	Styrene	20	19.5	ug/L	98	2		75	126	20
	Bromoform	20	19.5	ug/L	98	7		66	130	20
	Isopropylbenzene	20	19.9	ug/L	100	4		70	127	20
	1,1,2,2-Tetrachloroethane	20	20.8	ug/L	104	11		66	131	20
	N-propylbenzene	20	19.8	ug/L	99	1		71	126	20
	1,3,5-Trimethylbenzene	20	20.2	ug/L	101	3		71	127	20
	tert-Butylbenzene	20	19.7	ug/L	99	2		66	129	20
	1,2,4-Trimethylbenzene	20	20.5	ug/L	103	3		69	130	20

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Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Analytical Method: SW8260-Low **Datafile :** VU010095.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VU0712WBSD02	Sec-butylbenzene	20	19.8	ug/L	99	0		72	126	20
	p-Isopropyltoluene	20	19.7	ug/L	99	0		71	125	20
	1,3-Dichlorobenzene	20	19.1	ug/L	96	1		70	125	20
	1,4-Dichlorobenzene	20	19	ug/L	95	1		71	124	20
	n-Butylbenzene	20	18.9	ug/L	95	3		68	128	20
	1,2-Dichlorobenzene	20	19.5	ug/L	98	5		71	126	20
	1,2-Dibromo-3-Chloropropane	20	20.1	ug/L	101	7		62	134	20
	1,2,4-Trichlorobenzene	20	19.1	ug/L	96	1		62	129	20
	Naphthalene	20	18.7	ug/L	94	2		62	130	20
	1,2,3-Trichlorobenzene	20	19.1	ug/L	96	1		58	130	20

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0711SBL01

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050559.D Lab Sample ID: VD0711SBL01

Date Analyzed: 07/11/2016 Time Analyzed: 12:01

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0711SBS01	VD0711SBS01	VD050560.D	07/11/2016
KY030LC068-S-160706MS	H3943-02MS	VD050561.D	07/11/2016
KY030LC068-S-160706MSD	H3943-03MSD	VD050562.D	07/11/2016
SB-1(9-10)	H3936-01	VD050572.D	07/11/2016
SB-2(9-10)	H3936-02	VD050573.D	07/11/2016
SB-3(5-6)	H3936-03	VD050574.D	07/11/2016
SB-4(4-5)	H3936-04	VD050575.D	07/11/2016
SB-5(1-2)	H3936-05	VD050576.D	07/11/2016
SB-5(4-5)	H3936-06	VD050577.D	07/11/2016
SB-6(11-12)	H3936-09	VD050578.D	07/11/2016

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VD0712SBL01

Lab Name: CHEMTECH

Contract: AKRF02

Lab Code: CHEM

Case No.: H3936

SAS No.: H3936

SDG NO.: H3936

Lab File ID: VD050612.D

Lab Sample ID: VD0712SBL01

Date Analyzed: 07/12/2016

Time Analyzed: 14:51

GC Column: RTX-VMS

ID: 0.18 (mm)

Heated Purge: (Y/N) Y

Instrument ID: MSVOA_D

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VD0712SBS01	VD0712SBS01	VD050613.D	07/12/2016
SB-1(9-10)RE	H3936-01RE	VD050617.D	07/12/2016
SB-4(4-5)RE	H3936-04RE	VD050618.D	07/12/2016

COMMENTS:

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VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VU0712WBL01

Lab Name: CHEMTECH

Contract: AKRF02

Lab Code: CHEM

Case No.: H3936

SAS No.: H3936

SDG NO.: H3936

Lab File ID: VU010083.D

Lab Sample ID: VU0712WBL01

Date Analyzed: 07/12/2016

Time Analyzed: 11:22

GC Column: DB-624UI

ID: 0.18 (mm)

Heated Purge: (Y/N) N

Instrument ID: MSVOA_U

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VU0712WBS01	VU0712WBS01	VU010085.D	07/12/2016
TRIPBLANK	H3936-10	VU010087.D	07/12/2016
TW-4	H3936-07	VU010088.D	07/12/2016
VU0712WBSD02	VU0712WBSD02	VU010095.D	07/12/2016

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050486.D BFB Injection Date: 07/08/2016

Instrument ID: MSVOA_D BFB Injection Time: 11:08

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.8
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.2 (0.3) 1
174	50.0 - 100.0% of mass 95	56.4
175	5.0 - 9.0% of mass 174	4.2 (7.5) 1
176	95.0 - 101.0% of mass 174	55.1 (97.8) 1
177	5.0 - 9.0% of mass 176	3.5 (6.3) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VD050487.D	07/08/2016	11:41
VSTDICC010	VSTDICC010	VD050488.D	07/08/2016	12:08
VSTDICC020	VSTDICC020	VD050489.D	07/08/2016	12:35
VSTDICCC050	VSTDICCC050	VD050490.D	07/08/2016	13:01
VSTDICC100	VSTDICC100	VD050491.D	07/08/2016	13:28
VSTDICC150	VSTDICC150	VD050492.D	07/08/2016	13:56

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050557.D BFB Injection Date: 07/11/2016

Instrument ID: MSVOA_D BFB Injection Time: 10:26

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.7
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.2 (0.3) 1
174	50.0 - 100.0% of mass 95	65.9
175	5.0 - 9.0% of mass 174	4.6 (7) 1
176	95.0 - 101.0% of mass 174	64.6 (98) 1
177	5.0 - 9.0% of mass 176	4.2 (6.5) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VD050558.D	07/11/2016	11:34
VD0711SBL01	VD0711SBL01	VD050559.D	07/11/2016	12:01
VD0711SBS01	VD0711SBS01	VD050560.D	07/11/2016	12:31
KY030LC068-S-160706MS	H3943-02MS	VD050561.D	07/11/2016	12:58
KY030LC068-S-160706MSD	H3943-03MSD	VD050562.D	07/11/2016	13:25
SB-1(9-10)	H3936-01	VD050572.D	07/11/2016	17:56
SB-2(9-10)	H3936-02	VD050573.D	07/11/2016	18:23
SB-3(5-6)	H3936-03	VD050574.D	07/11/2016	18:50
SB-4(4-5)	H3936-04	VD050575.D	07/11/2016	19:17
SB-5(1-2)	H3936-05	VD050576.D	07/11/2016	19:44
SB-5(4-5)	H3936-06	VD050577.D	07/11/2016	20:11
SB-6(11-12)	H3936-09	VD050578.D	07/11/2016	20:38

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050604.D BFB Injection Date: 07/12/2016

Instrument ID: MSVOA_D BFB Injection Time: 11:14

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: Y/N Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.6
75	30.0 - 60.0% of mass 95	45.5
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0) 1
174	50.0 - 100.0% of mass 95	65.4
175	5.0 - 9.0% of mass 174	4.6 (7) 1
176	95.0 - 101.0% of mass 174	64 (97.9) 1
177	5.0 - 9.0% of mass 176	4 (6.2) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC005	VSTDICC005	VD050605.D	07/12/2016	11:41
VSTDICC010	VSTDICC010	VD050606.D	07/12/2016	12:09
VSTDICC020	VSTDICC020	VD050607.D	07/12/2016	12:36
VSTDICCC050	VSTDICCC050	VD050608.D	07/12/2016	13:03
VSTDICC100	VSTDICC100	VD050609.D	07/12/2016	13:30
VSTDICC150	VSTDICC150	VD050610.D	07/12/2016	13:57
VD0712SBL01	VD0712SBL01	VD050612.D	07/12/2016	14:51
VD0712SBS01	VD0712SBS01	VD050613.D	07/12/2016	15:19
SB-1(9-10)RE	H3936-01RE	VD050617.D	07/12/2016	17:07
SB-4(4-5)RE	H3936-04RE	VD050618.D	07/12/2016	17:34

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH
Contract: AKRF02
Lab Code: CHEM
Case No.: H3936
SAS No.: H3936
SDG NO.: H3936
Lab File ID: VU009960.D
BFB Injection Date: 07/08/2016
Instrument ID: MSVOA_U
BFB Injection Time: 10:08
GC Column: DB-624UI ID: 0.18 (mm)
Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.5
75	30.0 - 60.0% of mass 95	49.3
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1 (1.3) 1
174	50.0 - 100.0% of mass 95	79.8
175	5.0 - 9.0% of mass 174	6.3 (7.9) 1
176	95.0 - 101.0% of mass 174	76.5 (95.8) 1
177	5.0 - 9.0% of mass 176	4.8 (6.3) 2

1-Value is % mass 174
2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC001	VSTDICC001	VU009961.D	07/08/2016	10:40
VSTDICC005	VSTDICC005	VU009962.D	07/08/2016	11:06
VSTDICC020	VSTDICC020	VU009963.D	07/08/2016	11:32
VSTDICCC050	VSTDICCC050	VU009964.D	07/08/2016	11:57
VSTDICC100	VSTDICC100	VU009965.D	07/08/2016	12:23
VSTDICC200	VSTDICC200	VU009966.D	07/08/2016	12:48

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH
Contract: AKRF02
Lab Code: CHEM
Case No.: H3936
SAS No.: H3936
SDG NO.: H3936
Lab File ID: VU010081.D
BFB Injection Date: 07/12/2016
Instrument ID: MSVOA_U
BFB Injection Time: 10:16
GC Column: DB-624UI ID: 0.18 (mm)
Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.3
75	30.0 - 60.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	1 (1.3) 1
174	50.0 - 100.0% of mass 95	78.1
175	5.0 - 9.0% of mass 174	5.9 (7.6) 1
176	95.0 - 101.0% of mass 174	75.2 (96.3) 1
177	5.0 - 9.0% of mass 176	4.9 (6.5) 2

1-Value is % mass 174
2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VU010082.D	07/12/2016	10:48
VU0712WBL01	VU0712WBL01	VU010083.D	07/12/2016	11:22
VU0712WBS01	VU0712WBS01	VU010085.D	07/12/2016	12:14
TRIPBLANK	H3936-10	VU010087.D	07/12/2016	13:05
TW-4	H3936-07	VU010088.D	07/12/2016	13:31
VU0712WBSD02	VU0712WBSD02	VU010095.D	07/12/2016	16:30

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050558.D Date Analyzed: 07/11/2016

Instrument ID: MSVOA_D Time Analyzed: 11:34

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	296792	6.16	566409	7.29	582739	11.47
UPPER LIMIT	593584	6.66	1132820	7.79	1165480	11.97
LOWER LIMIT	148396	5.66	283205	6.79	291370	10.97
EPA SAMPLE NO.						
SB-1(9-10)	306632	6.18	570536	7.30	473382	11.47
SB-2(9-10)	305672	6.18	563150	7.30	511623	11.47
SB-3(5-6)	306368	6.17	570787	7.30	535680	11.47
SB-4(4-5)	304334	6.17	578218	7.30	518401	11.47
SB-5(1-2)	303869	6.18	572362	7.29	544264	11.47
SB-5(4-5)	314903	6.17	613690	7.30	593684	11.47
SB-6(11-12)	288917	6.17	559555	7.29	516227	11.47
KY030LC068-S-160706MS	286191	6.17	532149	7.30	485317	11.47
KY030LC068-S-160706MSD	277478	6.18	522158	7.30	473018	11.47
VD0711SBL01	279762	6.17	526773	7.30	545000	11.47
VD0711SBS01	274678	6.17	527339	7.29	549085	11.47

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050558.D Date Analyzed: 07/11/2016

Instrument ID: MSVOA_D Time Analyzed: 11:34

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #	RT #				
12 HOUR STD	250657	13.83				
UPPER LIMIT	501314	14.33				
LOWER LIMIT	125329	13.33				
EPA SAMPLE NO.						
SB-1(9-10)	119679 *	13.82				
SB-2(9-10)	171832	13.83				
SB-3(5-6)	193809	13.83				
SB-4(4-5)	164585	13.83				
SB-5(1-2)	194509	13.82				
SB-5(4-5)	222699	13.83				
SB-6(11-12)	159672	13.82				
KY030LC068-S-160706MS	171155	13.83				
KY030LC068-S-160706MSD	175412	13.83				
VD0711SBL01	223095	13.83				
VD0711SBS01	240106	13.83				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050608.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_D Time Analyzed: 13:03

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	268413	6.17	520586	7.30	535007	11.47
UPPER LIMIT	536826	6.67	1041170	7.8	1070010	11.97
LOWER LIMIT	134207	5.67	260293	6.8	267504	10.97
EPA SAMPLE NO.						
SB-1(9-10)RE	254170	6.17	466328	7.30	396832	11.47
SB-4(4-5)RE	253126	6.17	475248	7.30	439273	11.47
VD0712SBL01	271776	6.17	506715	7.30	519526	11.47
VD0712SBS01	257977	6.18	486082	7.30	509021	11.47

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VD050608.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_D Time Analyzed: 13:03

GC Column: RTX-VMS ID: 0.18 (mm) Heated Purge: (Y/N) Y

	IS4 AREA #	RT #				
12 HOUR STD	234322	13.83				
UPPER LIMIT	468644	14.33				
LOWER LIMIT	117161	13.33				
EPA SAMPLE NO.						
SB-1(9-10)RE	97225 *	13.83				
SB-4(4-5)RE	131192	13.83				
VD0712SBL01	214561	13.83				
VD0712SBS01	230477	13.83				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VU010082.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_U Time Analyzed: 10:48

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	268042	4.99	438819	5.90	406505	9.10
UPPER LIMIT	536084	5.49	877638	6.4	813010	9.6
LOWER LIMIT	134021	4.49	219410	5.4	203253	8.6
EPA SAMPLE NO.						
TW-4	257819	5.00	473625	5.90	439081	9.10
TRIPBLANK	241758	5.00	420289	5.90	387172	9.10
VU0712WBL01	273003	4.99	476923	5.90	438108	9.10
VU0712WBS01	269242	5.00	451302	5.90	430041	9.10

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VU010082.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_U Time Analyzed: 10:48

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	212053	11.49				
UPPER LIMIT	424106	11.99				
LOWER LIMIT	106027	10.99				
EPA SAMPLE NO.						
TW-4	206121	11.49				
TRIPBLANK	179403	11.49				
VU0712WBL01	201552	11.49				
VU0712WBS01	218997	11.49				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VU010091.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_U Time Analyzed: 14:48

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	257191	5.00	431555	5.90	418774	9.10
UPPER LIMIT	514382	5.5	863110	6.4	837548	9.6
LOWER LIMIT	128596	4.5	215778	5.4	209387	8.6
EPA SAMPLE NO.						
VU0712WBSD02	258653	5.00	430039	5.90	396710	9.10

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG NO.: H3936

Lab File ID: VU010091.D Date Analyzed: 07/12/2016

Instrument ID: MSVOA_U Time Analyzed: 14:48

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	217754	11.49				
UPPER LIMIT	435508	11.99				
LOWER LIMIT	108877	10.99				
EPA SAMPLE NO.						
VU0712WBSD02	193758	11.49				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

QC SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBL01	SDG No.:	H3936
Lab Sample ID:	VD0711SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050559.D	1		07/11/16 12:01	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.5	0.5	5	ug/Kg
74-87-3	Chloromethane	0.5	U	0.5	0.5	5	ug/Kg
75-01-4	Vinyl Chloride	0.5	U	0.5	0.5	5	ug/Kg
74-83-9	Bromomethane	1	U	1	1	5	ug/Kg
75-00-3	Chloroethane	0.5	U	0.5	0.5	5	ug/Kg
75-69-4	Trichlorofluoromethane	0.5	U	0.5	0.5	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.5	0.5	5	ug/Kg
75-35-4	1,1-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
67-64-1	Acetone	2.5	U	2.5	2.5	25	ug/Kg
75-15-0	Carbon Disulfide	0.5	U	0.5	0.5	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.5	0.5	5	ug/Kg
79-20-9	Methyl Acetate	1	U	1	1	5	ug/Kg
75-09-2	Methylene Chloride	0.5	U	0.5	0.5	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
75-34-3	1,1-Dichloroethane	0.5	U	0.5	0.5	5	ug/Kg
110-82-7	Cyclohexane	0.5	U	0.5	0.5	5	ug/Kg
78-93-3	2-Butanone	7.5	U	3.1	7.5	25	ug/Kg
56-23-5	Carbon Tetrachloride	0.5	U	0.5	0.5	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
74-97-5	Bromochloromethane	0.5	U	0.5	0.5	5	ug/Kg
67-66-3	Chloroform	0.5	U	0.5	0.5	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.5	U	0.5	0.5	5	ug/Kg
108-87-2	Methylcyclohexane	0.5	U	0.5	0.5	5	ug/Kg
71-43-2	Benzene	0.5	U	0.38	0.5	5	ug/Kg
107-06-2	1,2-Dichloroethane	0.5	U	0.5	0.5	5	ug/Kg
79-01-6	Trichloroethene	0.5	U	0.5	0.5	5	ug/Kg
78-87-5	1,2-Dichloropropane	0.5	U	0.26	0.5	5	ug/Kg
75-27-4	Bromodichloromethane	0.5	U	0.5	0.5	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.5	2.5	25	ug/Kg
108-88-3	Toluene	0.5	U	0.5	0.5	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.5	0.5	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.5	0.5	5	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBL01	SDG No.:	H3936
Lab Sample ID:	VD0711SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050559.D	1		07/11/16 12:01	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1	U	0.9	1	5	ug/Kg
591-78-6	2-Hexanone	2.5	U	2.5	2.5	25	ug/Kg
124-48-1	Dibromochloromethane	0.5	U	0.5	0.5	5	ug/Kg
106-93-4	1,2-Dibromoethane	0.5	U	0.5	0.5	5	ug/Kg
127-18-4	Tetrachloroethene	0.5	U	0.5	0.5	5	ug/Kg
108-90-7	Chlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	0.5	U	0.5	0.5	5	ug/Kg
179601-23-1	m/p-Xylenes	1	U	0.72	1	10	ug/Kg
95-47-6	o-Xylene	0.5	U	0.5	0.5	5	ug/Kg
100-42-5	Styrene	0.5	U	0.45	0.5	5	ug/Kg
75-25-2	Bromoform	1.5	U	0.74	1.5	5	ug/Kg
98-82-8	Isopropylbenzene	0.5	U	0.48	0.5	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.46	0.5	5	ug/Kg
103-65-1	n-propylbenzene	0.5	U	0.36	0.5	5	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.45	0.5	5	ug/Kg
98-06-6	tert-Butylbenzene	0.5	U	0.5	0.5	5	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.5	U	0.5	0.5	5	ug/Kg
135-98-8	sec-Butylbenzene	0.5	U	0.5	0.5	5	ug/Kg
99-87-6	p-Isopropyltoluene	0.5	U	0.29	0.5	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.5	U	0.37	0.5	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.5	U	0.41	0.5	5	ug/Kg
104-51-8	n-Butylbenzene	0.5	U	0.46	0.5	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5	U	0.87	5	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
91-20-3	Naphthalene	0.5	U	0.45	0.5	5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1	U	0.5	1	5	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	53		56 - 120		106%	SPK: 50
1868-53-7	Dibromofluoromethane	52.9		57 - 135		106%	SPK: 50
2037-26-5	Toluene-d8	51.2		67 - 123		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.3		33 - 141		103%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBL01	SDG No.:	H3936
Lab Sample ID:	VD0711SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050559.D	1		07/11/16 12:01	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	279762	6.17				
540-36-3	1,4-Difluorobenzene	526773	7.3				
3114-55-4	Chlorobenzene-d5	545000	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	223095	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBL01	SDG No.:	H3936
Lab Sample ID:	VD0712SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050612.D	1		07/12/16 14:51	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.5	0.5	5	ug/Kg
74-87-3	Chloromethane	0.5	U	0.5	0.5	5	ug/Kg
75-01-4	Vinyl Chloride	0.5	U	0.5	0.5	5	ug/Kg
74-83-9	Bromomethane	1	U	1	1	5	ug/Kg
75-00-3	Chloroethane	0.5	U	0.5	0.5	5	ug/Kg
75-69-4	Trichlorofluoromethane	0.5	U	0.5	0.5	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.5	0.5	5	ug/Kg
75-35-4	1,1-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
67-64-1	Acetone	2.5	U	2.5	2.5	25	ug/Kg
75-15-0	Carbon Disulfide	0.5	U	0.5	0.5	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.5	0.5	5	ug/Kg
79-20-9	Methyl Acetate	1	U	1	1	5	ug/Kg
75-09-2	Methylene Chloride	0.5	U	0.5	0.5	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
75-34-3	1,1-Dichloroethane	0.5	U	0.5	0.5	5	ug/Kg
110-82-7	Cyclohexane	0.5	U	0.5	0.5	5	ug/Kg
78-93-3	2-Butanone	7.5	U	3.1	7.5	25	ug/Kg
56-23-5	Carbon Tetrachloride	0.5	U	0.5	0.5	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.5	U	0.5	0.5	5	ug/Kg
74-97-5	Bromochloromethane	0.5	U	0.5	0.5	5	ug/Kg
67-66-3	Chloroform	0.5	U	0.5	0.5	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.5	U	0.5	0.5	5	ug/Kg
108-87-2	Methylcyclohexane	0.5	U	0.5	0.5	5	ug/Kg
71-43-2	Benzene	0.5	U	0.38	0.5	5	ug/Kg
107-06-2	1,2-Dichloroethane	0.5	U	0.5	0.5	5	ug/Kg
79-01-6	Trichloroethene	0.5	U	0.5	0.5	5	ug/Kg
78-87-5	1,2-Dichloropropane	0.5	U	0.26	0.5	5	ug/Kg
75-27-4	Bromodichloromethane	0.5	U	0.5	0.5	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	2.5	U	2.5	2.5	25	ug/Kg
108-88-3	Toluene	0.5	U	0.5	0.5	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.5	U	0.5	0.5	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.5	0.5	5	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBL01	SDG No.:	H3936
Lab Sample ID:	VD0712SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050612.D	1		07/12/16 14:51	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1	U	0.9	1	5	ug/Kg
591-78-6	2-Hexanone	2.5	U	2.5	2.5	25	ug/Kg
124-48-1	Dibromochloromethane	0.5	U	0.5	0.5	5	ug/Kg
106-93-4	1,2-Dibromoethane	0.5	U	0.5	0.5	5	ug/Kg
127-18-4	Tetrachloroethene	0.5	U	0.5	0.5	5	ug/Kg
108-90-7	Chlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	0.5	U	0.5	0.5	5	ug/Kg
179601-23-1	m/p-Xylenes	1	U	0.72	1	10	ug/Kg
95-47-6	o-Xylene	0.5	U	0.5	0.5	5	ug/Kg
100-42-5	Styrene	0.5	U	0.45	0.5	5	ug/Kg
75-25-2	Bromoform	1.5	U	0.74	1.5	5	ug/Kg
98-82-8	Isopropylbenzene	0.5	U	0.48	0.5	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.46	0.5	5	ug/Kg
103-65-1	n-propylbenzene	0.5	U	0.36	0.5	5	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	0.5	U	0.45	0.5	5	ug/Kg
98-06-6	tert-Butylbenzene	0.5	U	0.5	0.5	5	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	0.5	U	0.5	0.5	5	ug/Kg
135-98-8	sec-Butylbenzene	0.5	U	0.5	0.5	5	ug/Kg
99-87-6	p-Isopropyltoluene	0.5	U	0.29	0.5	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.5	U	0.37	0.5	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.5	U	0.41	0.5	5	ug/Kg
104-51-8	n-Butylbenzene	0.5	U	0.46	0.5	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5	U	0.87	5	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.5	0.5	5	ug/Kg
91-20-3	Naphthalene	0.5	U	0.45	0.5	5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1	U	0.5	1	5	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	44.6		56 - 120		89%	SPK: 50
1868-53-7	Dibromofluoromethane	46.8		57 - 135		94%	SPK: 50
2037-26-5	Toluene-d8	46.8		67 - 123		94%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.6		33 - 141		93%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBL01	SDG No.:	H3936
Lab Sample ID:	VD0712SBL01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050612.D	1		07/12/16 14:51	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	271776	6.17				
540-36-3	1,4-Difluorobenzene	506715	7.3				
3114-55-4	Chlorobenzene-d5	519526	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	214561	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBL01	SDG No.:	H3936
Lab Sample ID:	VU0712WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010083.D	1		07/12/16 11:22	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.2	U	0.2	0.2	1	ug/L
74-87-3	Chloromethane	0.2	U	0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	0.2	U	0.2	0.2	1	ug/L
74-83-9	Bromomethane	0.2	U	0.2	0.2	1	ug/L
75-00-3	Chloroethane	0.5	U	0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	0.2	U	0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.2	U	0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
67-64-1	Acetone	1	U	0.5	1	5	ug/L
75-15-0	Carbon Disulfide	0.2	U	0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.5	U	0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	0.5	U	0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	0.2	U	0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
110-82-7	Cyclohexane	0.2	U	0.2	0.2	1	ug/L
78-93-3	2-Butanone	2.5	U	1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.2	U	0.2	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.2	U	0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	0.5	U	0.2	0.5	1	ug/L
67-66-3	Chloroform	0.2	U	0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	0.2	U	0.2	0.2	1	ug/L
71-43-2	Benzene	0.2	U	0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	0.2	U	0.2	0.2	1	ug/L
79-01-6	Trichloroethene	0.2	U	0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	0.2	U	0.2	0.2	1	ug/L
75-27-4	Bromodichloromethane	0.2	U	0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	1	U	1	1	5	ug/L
108-88-3	Toluene	0.2	U	0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.2	U	0.2	0.2	1	ug/L

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBL01	SDG No.:	H3936
Lab Sample ID:	VU0712WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010083.D	1		07/12/16 11:22	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.2	U	0.2	0.2	1	ug/L
591-78-6	2-Hexanone	2.5	U	1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	0.2	U	0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	0.2	U	0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	0.2	U	0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	0.2	U	0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	0.2	U	0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	0.4	U	0.4	0.4	2	ug/L
95-47-6	o-Xylene	0.2	U	0.2	0.2	1	ug/L
100-42-5	Styrene	0.2	U	0.2	0.2	1	ug/L
75-25-2	Bromoform	0.2	U	0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	0.2	U	0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.2	U	0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	0.2	U	0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	0.2	U	0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	0.2	U	0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	0.2	U	0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.2	U	0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.2	U	0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
91-20-3	Naphthalene	0.2	U	0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.2	U	0.2	0.2	1	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	51.5		61 - 141		103%	SPK: 50
1868-53-7	Dibromofluoromethane	48.9		69 - 133		98%	SPK: 50
2037-26-5	Toluene-d8	49		65 - 126		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.6		58 - 135		93%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBL01	SDG No.:	H3936
Lab Sample ID:	VU0712WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010083.D	1		07/12/16 11:22	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	273003	4.99				
540-36-3	1,4-Difluorobenzene	476923	5.9				
3114-55-4	Chlorobenzene-d5	438108	9.1				
3855-82-1	1,4-Dichlorobenzene-d4	201552	11.49				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBS01	SDG No.:	H3936
Lab Sample ID:	VD0711SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050560.D	1		07/11/16 12:31	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	23.1		0.5	0.5	5	ug/Kg
74-87-3	Chloromethane	21.9		0.5	0.5	5	ug/Kg
75-01-4	Vinyl Chloride	22.8		0.5	0.5	5	ug/Kg
74-83-9	Bromomethane	22		1	1	5	ug/Kg
75-00-3	Chloroethane	23.6		0.5	0.5	5	ug/Kg
75-69-4	Trichlorofluoromethane	21.9		0.5	0.5	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	22.8		0.5	0.5	5	ug/Kg
75-35-4	1,1-Dichloroethene	22.6		0.5	0.5	5	ug/Kg
67-64-1	Acetone	120		2.5	2.5	25	ug/Kg
75-15-0	Carbon Disulfide	22.5		0.5	0.5	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	21		0.5	0.5	5	ug/Kg
79-20-9	Methyl Acetate	21.7		1	1	5	ug/Kg
75-09-2	Methylene Chloride	21.2		0.5	0.5	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	21.3		0.5	0.5	5	ug/Kg
75-34-3	1,1-Dichloroethane	20.8		0.5	0.5	5	ug/Kg
110-82-7	Cyclohexane	20.1		0.5	0.5	5	ug/Kg
78-93-3	2-Butanone	100		3.1	7.5	25	ug/Kg
56-23-5	Carbon Tetrachloride	22.1		0.5	0.5	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	21.6		0.5	0.5	5	ug/Kg
74-97-5	Bromochloromethane	20.1		0.5	0.5	5	ug/Kg
67-66-3	Chloroform	20.9		0.5	0.5	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	20.8		0.5	0.5	5	ug/Kg
108-87-2	Methylcyclohexane	20.2		0.5	0.5	5	ug/Kg
71-43-2	Benzene	20.8		0.38	0.5	5	ug/Kg
107-06-2	1,2-Dichloroethane	21.2		0.5	0.5	5	ug/Kg
79-01-6	Trichloroethene	20.9		0.5	0.5	5	ug/Kg
78-87-5	1,2-Dichloropropane	20.4		0.26	0.5	5	ug/Kg
75-27-4	Bromodichloromethane	21.1		0.5	0.5	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	110		2.5	2.5	25	ug/Kg
108-88-3	Toluene	21.6		0.5	0.5	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.7		0.5	0.5	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	20.5		0.5	0.5	5	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBS01	SDG No.:	H3936
Lab Sample ID:	VD0711SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050560.D	1		07/11/16 12:31	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	21.2		0.9	1	5	ug/Kg
591-78-6	2-Hexanone	110		2.5	2.5	25	ug/Kg
124-48-1	Dibromochloromethane	21.6		0.5	0.5	5	ug/Kg
106-93-4	1,2-Dibromoethane	21.3		0.5	0.5	5	ug/Kg
127-18-4	Tetrachloroethene	20.2		0.5	0.5	5	ug/Kg
108-90-7	Chlorobenzene	20.9		0.5	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	21		0.5	0.5	5	ug/Kg
179601-23-1	m/p-Xylenes	42.9		0.72	1	10	ug/Kg
95-47-6	o-Xylene	20.8		0.5	0.5	5	ug/Kg
100-42-5	Styrene	21		0.45	0.5	5	ug/Kg
75-25-2	Bromoform	21.6		0.74	1.5	5	ug/Kg
98-82-8	Isopropylbenzene	20.4		0.48	0.5	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	20.3		0.46	0.5	5	ug/Kg
103-65-1	n-propylbenzene	20.4		0.36	0.5	5	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	20.8		0.45	0.5	5	ug/Kg
98-06-6	tert-Butylbenzene	20		0.5	0.5	5	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	20.5		0.5	0.5	5	ug/Kg
135-98-8	sec-Butylbenzene	20.5		0.5	0.5	5	ug/Kg
99-87-6	p-Isopropyltoluene	20.8		0.29	0.5	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.7		0.37	0.5	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.8		0.41	0.5	5	ug/Kg
104-51-8	n-Butylbenzene	20.5		0.46	0.5	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.7		0.5	0.5	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	19.9		0.87	5	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	20.6		0.5	0.5	5	ug/Kg
91-20-3	Naphthalene	20.4		0.45	0.5	5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	20.5		0.5	1	5	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.4		56 - 120		101%	SPK: 50
1868-53-7	Dibromofluoromethane	49.9		57 - 135		100%	SPK: 50
2037-26-5	Toluene-d8	48.9		67 - 123		98%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.4		33 - 141		101%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0711SBS01	SDG No.:	H3936
Lab Sample ID:	VD0711SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050560.D	1		07/11/16 12:31	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	274678	6.17				
540-36-3	1,4-Difluorobenzene	527339	7.29				
3114-55-4	Chlorobenzene-d5	549085	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	240106	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBS01	SDG No.:	H3936
Lab Sample ID:	VD0712SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050613.D	1		07/12/16 15:19	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	22.9		0.5	0.5	5	ug/Kg
74-87-3	Chloromethane	22.2		0.5	0.5	5	ug/Kg
75-01-4	Vinyl Chloride	19.3		0.5	0.5	5	ug/Kg
74-83-9	Bromomethane	22.2		1	1	5	ug/Kg
75-00-3	Chloroethane	19.2		0.5	0.5	5	ug/Kg
75-69-4	Trichlorofluoromethane	21.4		0.5	0.5	5	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	21.1		0.5	0.5	5	ug/Kg
75-35-4	1,1-Dichloroethene	21		0.5	0.5	5	ug/Kg
67-64-1	Acetone	97		2.5	2.5	25	ug/Kg
75-15-0	Carbon Disulfide	20.8		0.5	0.5	5	ug/Kg
1634-04-4	Methyl tert-butyl Ether	21.1		0.5	0.5	5	ug/Kg
79-20-9	Methyl Acetate	18.7		1	1	5	ug/Kg
75-09-2	Methylene Chloride	23.6		0.5	0.5	5	ug/Kg
156-60-5	trans-1,2-Dichloroethene	20.3		0.5	0.5	5	ug/Kg
75-34-3	1,1-Dichloroethane	19.9		0.5	0.5	5	ug/Kg
110-82-7	Cyclohexane	19.7		0.5	0.5	5	ug/Kg
78-93-3	2-Butanone	92.9		3.1	7.5	25	ug/Kg
56-23-5	Carbon Tetrachloride	20		0.5	0.5	5	ug/Kg
156-59-2	cis-1,2-Dichloroethene	20.6		0.5	0.5	5	ug/Kg
74-97-5	Bromochloromethane	20.7		0.5	0.5	5	ug/Kg
67-66-3	Chloroform	20.7		0.5	0.5	5	ug/Kg
71-55-6	1,1,1-Trichloroethane	19.4		0.5	0.5	5	ug/Kg
108-87-2	Methylcyclohexane	22.1		0.5	0.5	5	ug/Kg
71-43-2	Benzene	21.8		0.38	0.5	5	ug/Kg
107-06-2	1,2-Dichloroethane	20.1		0.5	0.5	5	ug/Kg
79-01-6	Trichloroethene	20.6		0.5	0.5	5	ug/Kg
78-87-5	1,2-Dichloropropane	20.8		0.26	0.5	5	ug/Kg
75-27-4	Bromodichloromethane	21.5		0.5	0.5	5	ug/Kg
108-10-1	4-Methyl-2-Pentanone	93.9		2.5	2.5	25	ug/Kg
108-88-3	Toluene	20.9		0.5	0.5	5	ug/Kg
10061-02-6	t-1,3-Dichloropropene	20.9		0.5	0.5	5	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	21.2		0.5	0.5	5	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBS01	SDG No.:	H3936
Lab Sample ID:	VD0712SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050613.D	1		07/12/16 15:19	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	19.8		0.9	1	5	ug/Kg
591-78-6	2-Hexanone	92.2		2.5	2.5	25	ug/Kg
124-48-1	Dibromochloromethane	20.1		0.5	0.5	5	ug/Kg
106-93-4	1,2-Dibromoethane	19.3		0.5	0.5	5	ug/Kg
127-18-4	Tetrachloroethene	19.9		0.5	0.5	5	ug/Kg
108-90-7	Chlorobenzene	19.8		0.5	0.5	5	ug/Kg
100-41-4	Ethyl Benzene	21.2		0.5	0.5	5	ug/Kg
179601-23-1	m/p-Xylenes	41.2		0.72	1	10	ug/Kg
95-47-6	o-Xylene	20.6		0.5	0.5	5	ug/Kg
100-42-5	Styrene	20.8		0.45	0.5	5	ug/Kg
75-25-2	Bromoform	19.7		0.74	1.5	5	ug/Kg
98-82-8	Isopropylbenzene	19.8		0.48	0.5	5	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	19.3		0.46	0.5	5	ug/Kg
103-65-1	n-propylbenzene	20.3		0.36	0.5	5	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	19.9		0.45	0.5	5	ug/Kg
98-06-6	tert-Butylbenzene	19.6		0.5	0.5	5	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	19.7		0.5	0.5	5	ug/Kg
135-98-8	sec-Butylbenzene	19.8		0.5	0.5	5	ug/Kg
99-87-6	p-Isopropyltoluene	19.9		0.29	0.5	5	ug/Kg
541-73-1	1,3-Dichlorobenzene	20.4		0.37	0.5	5	ug/Kg
106-46-7	1,4-Dichlorobenzene	20.2		0.41	0.5	5	ug/Kg
104-51-8	n-Butylbenzene	20.3		0.46	0.5	5	ug/Kg
95-50-1	1,2-Dichlorobenzene	20.5		0.5	0.5	5	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	18.9		0.87	5	5	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	19.8		0.5	0.5	5	ug/Kg
91-20-3	Naphthalene	19.8		0.45	0.5	5	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	19.4		0.5	1	5	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	47.6		56 - 120		95%	SPK: 50
1868-53-7	Dibromofluoromethane	49.2		57 - 135		98%	SPK: 50
2037-26-5	Toluene-d8	48.6		67 - 123		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.8		33 - 141		100%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VD0712SBS01	SDG No.:	H3936
Lab Sample ID:	VD0712SBS01	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0
Sample Wt/Vol:	5 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050613.D	1		07/12/16 15:19	VD071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	257977	6.18				
540-36-3	1,4-Difluorobenzene	486082	7.3				
3114-55-4	Chlorobenzene-d5	509021	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	230477	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBS01	SDG No.:	H3936
Lab Sample ID:	VU0712WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010085.D	1		07/12/16 12:14	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	19.5		0.2	0.2	1	ug/L
74-87-3	Chloromethane	16.6		0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	19.2		0.2	0.2	1	ug/L
74-83-9	Bromomethane	27.3		0.2	0.2	1	ug/L
75-00-3	Chloroethane	19.4		0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	19.6		0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	20.2		0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	19.9		0.2	0.2	1	ug/L
67-64-1	Acetone	100		0.5	1	5	ug/L
75-15-0	Carbon Disulfide	19.3		0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	20		0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	19.5		0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	20.9		0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	19.9		0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	19.8		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	20		0.2	0.2	1	ug/L
78-93-3	2-Butanone	98.7		1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	18.3		0.2	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	19.6		0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	18.8		0.2	0.5	1	ug/L
67-66-3	Chloroform	19.3		0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	19.6		0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	19.3		0.2	0.2	1	ug/L
71-43-2	Benzene	19.2		0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	19.1		0.2	0.2	1	ug/L
79-01-6	Trichloroethene	18.4		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	19.1		0.2	0.2	1	ug/L
75-27-4	Bromodichloromethane	19		0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	98.1		1	1	5	ug/L
108-88-3	Toluene	20.3		0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	19.4		0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	19.8		0.2	0.2	1	ug/L

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBS01	SDG No.:	H3936
Lab Sample ID:	VU0712WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010085.D	1		07/12/16 12:14	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	19.7		0.2	0.2	1	ug/L
591-78-6	2-Hexanone	98.8		1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	19.4		0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	20.2		0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	18.3		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	19.1		0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	19.4		0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	38.9		0.4	0.4	2	ug/L
95-47-6	o-Xylene	19.8		0.2	0.2	1	ug/L
100-42-5	Styrene	19.8		0.2	0.2	1	ug/L
75-25-2	Bromoform	18.2		0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	19.5		0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	18.8		0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	19.8		0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	19.7		0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	19.2		0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	19.9		0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	19.8		0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	19.8		0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	18.8		0.2	0.2	1	ug/L
106-46-7	1,4-Dichlorobenzene	19		0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	19.6		0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	18.6		0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	18.9		0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	19.2		0.2	0.2	1	ug/L
91-20-3	Naphthalene	18.1		0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	19.2		0.2	0.2	1	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	49.3		61 - 141		99%	SPK: 50
1868-53-7	Dibromofluoromethane	48.1		69 - 133		96%	SPK: 50
2037-26-5	Toluene-d8	51.4		65 - 126		103%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.7		58 - 135		103%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBS01	SDG No.:	H3936
Lab Sample ID:	VU0712WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010085.D	1		07/12/16 12:14	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	269242	5				
540-36-3	1,4-Difluorobenzene	451302	5.9				
3114-55-4	Chlorobenzene-d5	430041	9.1				
3855-82-1	1,4-Dichlorobenzene-d4	218997	11.49				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBSD02	SDG No.:	H3936
Lab Sample ID:	VU0712WBSD02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010095.D	1		07/12/16 16:30	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	17.6		0.2	0.2	1	ug/L
74-87-3	Chloromethane	15.5		0.2	0.2	1	ug/L
75-01-4	Vinyl Chloride	17.9		0.2	0.2	1	ug/L
74-83-9	Bromomethane	24.9		0.2	0.2	1	ug/L
75-00-3	Chloroethane	18.3		0.2	0.5	1	ug/L
75-69-4	Trichlorofluoromethane	17.9		0.2	0.2	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	19.1		0.2	0.2	1	ug/L
75-35-4	1,1-Dichloroethene	18.3		0.2	0.2	1	ug/L
67-64-1	Acetone	90.7		0.5	1	5	ug/L
75-15-0	Carbon Disulfide	17.9		0.2	0.2	1	ug/L
1634-04-4	Methyl tert-butyl Ether	20.2		0.35	0.5	1	ug/L
79-20-9	Methyl Acetate	20.3		0.2	0.5	1	ug/L
75-09-2	Methylene Chloride	21		0.2	0.2	1	ug/L
156-60-5	trans-1,2-Dichloroethene	19		0.2	0.2	1	ug/L
75-34-3	1,1-Dichloroethane	19.6		0.2	0.2	1	ug/L
110-82-7	Cyclohexane	18.9		0.2	0.2	1	ug/L
78-93-3	2-Butanone	96.4		1.3	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	18.1		0.2	0.2	1	ug/L
156-59-2	cis-1,2-Dichloroethene	19.8		0.2	0.2	1	ug/L
74-97-5	Bromochloromethane	18.8		0.2	0.5	1	ug/L
67-66-3	Chloroform	19.7		0.2	0.2	1	ug/L
71-55-6	1,1,1-Trichloroethane	19.1		0.2	0.2	1	ug/L
108-87-2	Methylcyclohexane	18.3		0.2	0.2	1	ug/L
71-43-2	Benzene	19		0.2	0.2	1	ug/L
107-06-2	1,2-Dichloroethane	19.6		0.2	0.2	1	ug/L
79-01-6	Trichloroethene	18		0.2	0.2	1	ug/L
78-87-5	1,2-Dichloropropane	19.4		0.2	0.2	1	ug/L
75-27-4	Bromodichloromethane	19.4		0.2	0.2	1	ug/L
108-10-1	4-Methyl-2-Pentanone	100		1	1	5	ug/L
108-88-3	Toluene	19.5		0.2	0.2	1	ug/L
10061-02-6	t-1,3-Dichloropropene	19.3		0.2	0.2	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	19.4		0.2	0.2	1	ug/L

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBSD02	SDG No.:	H3936
Lab Sample ID:	VU0712WBSD02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010095.D	1		07/12/16 16:30	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	19.6		0.2	0.2	1	ug/L
591-78-6	2-Hexanone	99.5		1.9	2.5	5	ug/L
124-48-1	Dibromochloromethane	19.7		0.2	0.2	1	ug/L
106-93-4	1,2-Dibromoethane	20.2		0.2	0.2	1	ug/L
127-18-4	Tetrachloroethene	17.9		0.2	0.2	1	ug/L
108-90-7	Chlorobenzene	19		0.2	0.2	1	ug/L
100-41-4	Ethyl Benzene	19.1		0.2	0.2	1	ug/L
179601-23-1	m/p-Xylenes	38.5		0.4	0.4	2	ug/L
95-47-6	o-Xylene	19.5		0.2	0.2	1	ug/L
100-42-5	Styrene	19.5		0.2	0.2	1	ug/L
75-25-2	Bromoform	19.5		0.2	0.2	1	ug/L
98-82-8	Isopropylbenzene	19.9		0.2	0.2	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	20.8		0.2	0.2	1	ug/L
103-65-1	n-propylbenzene	19.8		0.2	0.2	1	ug/L
108-67-8	1,3,5-Trimethylbenzene	20.2		0.2	0.2	1	ug/L
98-06-6	tert-Butylbenzene	19.7		0.2	0.2	1	ug/L
95-63-6	1,2,4-Trimethylbenzene	20.5		0.2	0.2	1	ug/L
135-98-8	sec-Butylbenzene	19.8		0.2	0.2	1	ug/L
99-87-6	p-Isopropyltoluene	19.7		0.2	0.2	1	ug/L
541-73-1	1,3-Dichlorobenzene	19.1		0.2	0.2	1	ug/L
106-46-7	1,4-Dichlorobenzene	19		0.2	0.2	1	ug/L
104-51-8	n-Butylbenzene	18.9		0.2	0.2	1	ug/L
95-50-1	1,2-Dichlorobenzene	19.5		0.2	0.2	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	20.1		0.2	0.2	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	19.1		0.2	0.2	1	ug/L
91-20-3	Naphthalene	18.7		0.2	0.2	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	19.1		0.2	0.2	1	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	49		61 - 141		98%	SPK: 50
1868-53-7	Dibromofluoromethane	47.6		69 - 133		95%	SPK: 50
2037-26-5	Toluene-d8	47.8		65 - 126		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.9		58 - 135		96%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	
Project:	NYCSCA - PS 97X Addition	Date Received:	
Client Sample ID:	VU0712WBSD02	SDG No.:	H3936
Lab Sample ID:	VU0712WBSD02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VU010095.D	1		07/12/16 16:30	VU071216

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	258653	5				
540-36-3	1,4-Difluorobenzene	430039	5.9				
3114-55-4	Chlorobenzene-d5	396710	9.1				
3855-82-1	1,4-Dichlorobenzene-d4	193758	11.49				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MS	SDG No.:	H3936
Lab Sample ID:	H3943-02MS	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050561.D	1		07/11/16 12:58	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	77.4		0.78	0.78	7.8	ug/Kg
74-87-3	Chloromethane	75.5		0.78	0.78	7.8	ug/Kg
75-01-4	Vinyl Chloride	86.5		0.78	0.78	7.8	ug/Kg
74-83-9	Bromomethane	88.9		1.6	1.6	7.8	ug/Kg
75-00-3	Chloroethane	92.5		0.78	0.78	7.8	ug/Kg
75-69-4	Trichlorofluoromethane	85		0.78	0.78	7.8	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	79.9		0.78	0.78	7.8	ug/Kg
75-35-4	1,1-Dichloroethene	87.9		0.78	0.78	7.8	ug/Kg
67-64-1	Acetone	490		3.9	3.9	39	ug/Kg
75-15-0	Carbon Disulfide	86.8		0.78	0.78	7.8	ug/Kg
1634-04-4	Methyl tert-butyl Ether	75.8		0.78	0.78	7.8	ug/Kg
79-20-9	Methyl Acetate	95.6		1.6	1.6	7.8	ug/Kg
75-09-2	Methylene Chloride	78.2		0.78	0.78	7.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	80.8		0.78	0.78	7.8	ug/Kg
75-34-3	1,1-Dichloroethane	79.3		0.78	0.78	7.8	ug/Kg
110-82-7	Cyclohexane	60.1		0.78	0.78	7.8	ug/Kg
78-93-3	2-Butanone	390		4.9	11.7	39	ug/Kg
56-23-5	Carbon Tetrachloride	82		0.78	0.78	7.8	ug/Kg
156-59-2	cis-1,2-Dichloroethene	80.8		0.78	0.78	7.8	ug/Kg
74-97-5	Bromochloromethane	73.7		0.78	0.78	7.8	ug/Kg
67-66-3	Chloroform	78.6		0.78	0.78	7.8	ug/Kg
71-55-6	1,1,1-Trichloroethane	83.6		0.78	0.78	7.8	ug/Kg
108-87-2	Methylcyclohexane	52.3		0.78	0.78	7.8	ug/Kg
71-43-2	Benzene	79.9		0.59	0.78	7.8	ug/Kg
107-06-2	1,2-Dichloroethane	80.9		0.78	0.78	7.8	ug/Kg
79-01-6	Trichloroethene	84.3		0.78	0.78	7.8	ug/Kg
78-87-5	1,2-Dichloropropane	77.9		0.41	0.78	7.8	ug/Kg
75-27-4	Bromodichloromethane	78.4		0.78	0.78	7.8	ug/Kg
108-10-1	4-Methyl-2-Pentanone	390		3.9	3.9	39	ug/Kg
108-88-3	Toluene	77.5		0.78	0.78	7.8	ug/Kg
10061-02-6	t-1,3-Dichloropropene	76.4		0.78	0.78	7.8	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	79		0.78	0.78	7.8	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MS	SDG No.:	H3936
Lab Sample ID:	H3943-02MS	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050561.D	1		07/11/16 12:58	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	76.3		1.4	1.6	7.8	ug/Kg
591-78-6	2-Hexanone	420		3.9	3.9	39	ug/Kg
124-48-1	Dibromochloromethane	76.1		0.78	0.78	7.8	ug/Kg
106-93-4	1,2-Dibromoethane	77.5		0.78	0.78	7.8	ug/Kg
127-18-4	Tetrachloroethene	79.1		0.78	0.78	7.8	ug/Kg
108-90-7	Chlorobenzene	81.7		0.78	0.78	7.8	ug/Kg
100-41-4	Ethyl Benzene	77.7		0.78	0.78	7.8	ug/Kg
179601-23-1	m/p-Xylenes	150		1.1	1.6	15.6	ug/Kg
95-47-6	o-Xylene	77.4		0.78	0.78	7.8	ug/Kg
100-42-5	Styrene	77.2		0.7	0.78	7.8	ug/Kg
75-25-2	Bromoform	85.1		1.2	2.3	7.8	ug/Kg
98-82-8	Isopropylbenzene	81.1		0.75	0.78	7.8	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	140		0.72	0.78	7.8	ug/Kg
103-65-1	n-propylbenzene	72.7		0.56	0.78	7.8	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	69.4		0.7	0.78	7.8	ug/Kg
98-06-6	tert-Butylbenzene	64.6		0.78	0.78	7.8	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	68.4		0.78	0.78	7.8	ug/Kg
135-98-8	sec-Butylbenzene	58.8		0.78	0.78	7.8	ug/Kg
99-87-6	p-Isopropyltoluene	55.6		0.45	0.78	7.8	ug/Kg
541-73-1	1,3-Dichlorobenzene	75.1		0.58	0.78	7.8	ug/Kg
106-46-7	1,4-Dichlorobenzene	76.1		0.64	0.78	7.8	ug/Kg
104-51-8	n-Butylbenzene	53.1		0.72	0.78	7.8	ug/Kg
95-50-1	1,2-Dichlorobenzene	73		0.78	0.78	7.8	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	89.6		1.4	7.8	7.8	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	48		0.78	0.78	7.8	ug/Kg
91-20-3	Naphthalene	61.4		0.7	0.78	7.8	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	56		0.78	1.6	7.8	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	48.6		56 - 120		97%	SPK: 50
1868-53-7	Dibromofluoromethane	50.9		57 - 135		102%	SPK: 50
2037-26-5	Toluene-d8	48.6		67 - 123		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		33 - 141		87%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MS	SDG No.:	H3936
Lab Sample ID:	H3943-02MS	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	4.98 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050561.D	1		07/11/16 12:58	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	286191	6.17				
540-36-3	1,4-Difluorobenzene	532149	7.3				
3114-55-4	Chlorobenzene-d5	485317	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	171155	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MSD	SDG No.:	H3936
Lab Sample ID:	H3943-03MSD	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050562.D	1		07/11/16 13:25	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
TARGETS							
75-71-8	Dichlorodifluoromethane	68.4		0.78	0.78	7.8	ug/Kg
74-87-3	Chloromethane	76.4		0.78	0.78	7.8	ug/Kg
75-01-4	Vinyl Chloride	82.3		0.78	0.78	7.8	ug/Kg
74-83-9	Bromomethane	90.4		1.6	1.6	7.8	ug/Kg
75-00-3	Chloroethane	93.7		0.78	0.78	7.8	ug/Kg
75-69-4	Trichlorofluoromethane	78.3		0.78	0.78	7.8	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	79.5		0.78	0.78	7.8	ug/Kg
75-35-4	1,1-Dichloroethene	87.9		0.78	0.78	7.8	ug/Kg
67-64-1	Acetone	530		3.9	3.9	38.8	ug/Kg
75-15-0	Carbon Disulfide	84.3		0.78	0.78	7.8	ug/Kg
1634-04-4	Methyl tert-butyl Ether	73.2		0.78	0.78	7.8	ug/Kg
79-20-9	Methyl Acetate	98.2		1.6	1.6	7.8	ug/Kg
75-09-2	Methylene Chloride	76.1		0.78	0.78	7.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	77.8		0.78	0.78	7.8	ug/Kg
75-34-3	1,1-Dichloroethane	74.4		0.78	0.78	7.8	ug/Kg
110-82-7	Cyclohexane	62.2		0.78	0.78	7.8	ug/Kg
78-93-3	2-Butanone	380		4.8	11.6	38.8	ug/Kg
56-23-5	Carbon Tetrachloride	76.1		0.78	0.78	7.8	ug/Kg
156-59-2	cis-1,2-Dichloroethene	76.2		0.78	0.78	7.8	ug/Kg
74-97-5	Bromochloromethane	76.9		0.78	0.78	7.8	ug/Kg
67-66-3	Chloroform	74.1		0.78	0.78	7.8	ug/Kg
71-55-6	1,1,1-Trichloroethane	78.6		0.78	0.78	7.8	ug/Kg
108-87-2	Methylcyclohexane	55.6		0.78	0.78	7.8	ug/Kg
71-43-2	Benzene	74.9		0.59	0.78	7.8	ug/Kg
107-06-2	1,2-Dichloroethane	74.5		0.78	0.78	7.8	ug/Kg
79-01-6	Trichloroethene	77.3		0.78	0.78	7.8	ug/Kg
78-87-5	1,2-Dichloropropane	71.8		0.4	0.78	7.8	ug/Kg
75-27-4	Bromodichloromethane	72.3		0.78	0.78	7.8	ug/Kg
108-10-1	4-Methyl-2-Pentanone	370		3.9	3.9	38.8	ug/Kg
108-88-3	Toluene	74.8		0.78	0.78	7.8	ug/Kg
10061-02-6	t-1,3-Dichloropropene	72.8		0.78	0.78	7.8	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	72		0.78	0.78	7.8	ug/Kg

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MSD	SDG No.:	H3936
Lab Sample ID:	H3943-03MSD	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050562.D	1		07/11/16 13:25	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	71.8		1.4	1.6	7.8	ug/Kg
591-78-6	2-Hexanone	380		3.9	3.9	38.8	ug/Kg
124-48-1	Dibromochloromethane	72.2		0.78	0.78	7.8	ug/Kg
106-93-4	1,2-Dibromoethane	73.3		0.78	0.78	7.8	ug/Kg
127-18-4	Tetrachloroethene	77.5		0.78	0.78	7.8	ug/Kg
108-90-7	Chlorobenzene	77.1		0.78	0.78	7.8	ug/Kg
100-41-4	Ethyl Benzene	76.4		0.78	0.78	7.8	ug/Kg
179601-23-1	m/p-Xylenes	150		1.1	1.6	15.5	ug/Kg
95-47-6	o-Xylene	77.2		0.78	0.78	7.8	ug/Kg
100-42-5	Styrene	76.1		0.7	0.78	7.8	ug/Kg
75-25-2	Bromoform	82.2		1.1	2.3	7.8	ug/Kg
98-82-8	Isopropylbenzene	79.3		0.75	0.78	7.8	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	97.9		0.71	0.78	7.8	ug/Kg
103-65-1	n-propylbenzene	73.6		0.56	0.78	7.8	ug/Kg
108-67-8	1,3,5-Trimethylbenzene	72.4		0.7	0.78	7.8	ug/Kg
98-06-6	tert-Butylbenzene	68.9		0.78	0.78	7.8	ug/Kg
95-63-6	1,2,4-Trimethylbenzene	71.6		0.78	0.78	7.8	ug/Kg
135-98-8	sec-Butylbenzene	64.4		0.78	0.78	7.8	ug/Kg
99-87-6	p-Isopropyltoluene	62.7		0.45	0.78	7.8	ug/Kg
541-73-1	1,3-Dichlorobenzene	76.3		0.57	0.78	7.8	ug/Kg
106-46-7	1,4-Dichlorobenzene	74.3		0.64	0.78	7.8	ug/Kg
104-51-8	n-Butylbenzene	57.6		0.71	0.78	7.8	ug/Kg
95-50-1	1,2-Dichlorobenzene	74.8		0.78	0.78	7.8	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	91		1.4	7.8	7.8	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	54.7		0.78	0.78	7.8	ug/Kg
91-20-3	Naphthalene	68.5		0.7	0.78	7.8	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	50.7		0.78	1.6	7.8	ug/Kg
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.5		56 - 120		101%	SPK: 50
1868-53-7	Dibromofluoromethane	53.2		57 - 135		106%	SPK: 50
2037-26-5	Toluene-d8	50.9		67 - 123		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.5		33 - 141		91%	SPK: 50
INTERNAL STANDARDS							

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Report of Analysis

Client:	AKRF Engineering, P.C.	Date Collected:	07/06/16
Project:	NYCSCA - PS 97X Addition	Date Received:	07/07/16
Client Sample ID:	KY030LC068-S-160706MSD	SDG No.:	H3936
Lab Sample ID:	H3943-03MSD	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	35.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD050562.D	1		07/11/16 13:25	VD071116

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
363-72-4	Pentafluorobenzene	277478	6.18				
540-36-3	1,4-Difluorobenzene	522158	7.3				
3114-55-4	Chlorobenzene-d5	473018	11.47				
3855-82-1	1,4-Dichlorobenzene-d4	175412	13.83				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit

CALIBRATION SUMMARY

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) Y Calibration Time(s): 11:41 13:56

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD050487.D RRF010 = VD050488.D RRF020 = VD050489.D
RRF050 = VD050490.D RRF100 = VD050491.D RRF150 = VD050492.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.711	0.782	0.768	0.595	0.586	0.563	0.668	14.6
Chloromethane	0.540	0.538	0.560	0.456	0.477	0.482	0.509	8.3
Vinyl Chloride	0.387	0.426	0.433	0.375	0.383	0.377	0.397	6.5
Bromomethane	0.271	0.260	0.222	0.225	0.213	0.190	0.230	13.2
Chloroethane	0.166	0.190	0.188	0.178	0.173	0.160	0.176	6.6
Trichlorofluoromethane	0.650	0.669	0.666	0.597	0.591	0.564	0.623	7.2
1,1,2-Trichlorotrifluoroethane	0.323	0.356	0.360	0.319	0.323	0.311	0.332	6.1
1,1-Dichloroethene	0.259	0.277	0.287	0.267	0.269	0.267	0.271	3.6
Acetone	0.123	0.097	0.090	0.086	0.081	0.080	0.093	17
Carbon Disulfide	0.917	1.014	1.018	0.927	0.930	0.935	0.957	4.8
Methyl tert-butyl Ether	1.367	1.361	1.373	1.354	1.299	1.263	1.336	3.3
Methyl Acetate	0.319	0.254	0.246	0.226	0.213	0.203	0.243	17.2
Methylene Chloride	0.399	0.350	0.330	0.300	0.294	0.291	0.327	12.9
trans-1,2-Dichloroethene	0.665	0.669	0.672	0.621	0.596	0.578	0.633	6.4
1,1-Dichloroethane	1.164	1.225	1.241	1.149	1.132	1.113	1.170	4.4
Cyclohexane	1.351	1.293	1.284	1.134	1.089	1.045	1.199	10.5
2-Butanone	0.281	0.262	0.258	0.251	0.239	0.222	0.252	7.9
Carbon Tetrachloride	0.371	0.407	0.404	0.391	0.386	0.370	0.388	4.1
cis-1,2-Dichloroethene	0.723	0.746	0.760	0.722	0.696	0.683	0.721	4
Bromochloromethane	0.627	0.633	0.647	0.620	0.604	0.585	0.619	3.6
Chloroform	1.210	1.257	1.296	1.202	1.187	1.163	1.219	4
1,1,1-Trichloroethane	0.830	0.892	0.922	0.875	0.865	0.854	0.873	3.6
Methylcyclohexane	0.551	0.634	0.635	0.604	0.584	0.551	0.593	6.4
Benzene	1.444	1.514	1.535	1.370	1.339	1.243	1.408	7.9
1,2-Dichloroethane	0.406	0.423	0.428	0.414	0.400	0.382	0.409	4.1
Trichloroethene	0.368	0.400	0.403	0.382	0.379	0.360	0.382	4.5
1,2-Dichloropropane	0.414	0.442	0.449	0.425	0.414	0.388	0.422	5.2
Bromodichloromethane	0.512	0.527	0.539	0.520	0.511	0.492	0.517	3.1
4-Methyl-2-Pentanone	0.388	0.375	0.361	0.355	0.319	0.299	0.350	9.7
Toluene	0.895	0.962	0.971	0.892	0.869	0.822	0.902	6.3
t-1,3-Dichloropropene	0.500	0.533	0.541	0.549	0.536	0.518	0.530	3.3
cis-1,3-Dichloropropene	0.627	0.658	0.669	0.657	0.650	0.611	0.645	3.4
1,1,2-Trichloroethane	0.313	0.314	0.321	0.307	0.296	0.280	0.305	4.9

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) Y Calibration Time(s): 11:41 13:56

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD050487.D RRF010 = VD050488.D RRF020 = VD050489.D
RRF050 = VD050490.D RRF100 = VD050491.D RRF150 = VD050492.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.292	0.284	0.272	0.273	0.243	0.227	0.265	9.4
Dibromochloromethane	0.358	0.389	0.384	0.383	0.378	0.360	0.375	3.5
1,2-Dibromoethane	0.327	0.331	0.331	0.322	0.318	0.301	0.322	3.5
Tetrachloroethene	0.281	0.305	0.300	0.286	0.280	0.277	0.288	4.1
Chlorobenzene	1.029	1.105	1.106	1.051	1.025	0.989	1.051	4.4
Ethyl Benzene	1.779	1.964	1.975	1.838	1.753	1.667	1.829	6.7
m/p-Xylenes	0.627	0.682	0.699	0.658	0.625	0.600	0.648	5.8
o-Xylene	0.591	0.642	0.650	0.644	0.625	0.601	0.625	3.9
Styrene	1.028	1.136	1.167	1.125	1.084	1.058	1.100	4.7
Bromoform	0.188	0.189	0.202	0.207	0.203	0.203	0.198	4.1
Isopropylbenzene	3.826	4.182	4.325	3.972	3.816	3.588	3.951	6.8
1,1,2,2-Tetrachloroethane	1.067	1.086	1.028	0.970	0.897	0.842	0.982	9.9
n-propylbenzene	5.204	5.666	5.653	5.235	4.923	4.651	5.222	7.7
1,3,5-Trimethylbenzene	3.051	3.348	3.426	3.171	3.041	2.837	3.146	6.9
tert-Butylbenzene	2.654	3.169	3.041	2.880	2.694	2.641	2.847	7.8
1,2,4-Trimethylbenzene	3.123	3.461	3.538	3.261	3.101	2.925	3.235	7.2
sec-Butylbenzene	3.851	4.363	4.351	4.099	3.926	3.701	4.049	6.7
p-Isopropyltoluene	3.126	3.492	3.521	3.349	3.213	3.029	3.288	6.1
1,3-Dichlorobenzene	1.605	1.759	1.793	1.707	1.688	1.626	1.696	4.3
1,4-Dichlorobenzene	1.752	1.813	1.830	1.737	1.691	1.613	1.739	4.6
n-Butylbenzene	3.344	3.740	3.758	3.518	3.374	3.147	3.480	6.9
1,2-Dichlorobenzene	1.466	1.596	1.598	1.533	1.508	1.433	1.522	4.4
1,2-Dibromo-3-Chloropropane	0.130	0.128	0.131	0.135	0.130	0.127	0.130	2.4
1,2,4-Trichlorobenzene	0.793	0.844	0.882	0.858	0.878	0.864	0.853	3.8
Naphthalene	1.633	1.726	1.776	1.859	1.862	1.845	1.783	5.1
1,2,3-Trichlorobenzene	0.682	0.737	0.757	0.758	0.763	0.754	0.742	4.1
1,2-Dichloroethane-d4	0.625	0.644	0.634	0.614	0.609	0.607	0.622	2.4
Dibromofluoromethane	0.352	0.373	0.371	0.367	0.360	0.355	0.363	2.4
Toluene-d8	1.219	1.267	1.224	1.201	1.164	1.121	1.199	4.2
4-Bromofluorobenzene	0.547	0.544	0.519	0.517	0.506	0.488	0.520	4.3

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date(s): 07/12/2016 07/12/2016

Heated Purge: (Y/N) Y Calibration Time(s): 11:41 13:57

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD050605.D RRF010 = VD050606.D RRF020 = VD050607.D
RRF050 = VD050608.D RRF100 = VD050609.D RRF150 = VD050610.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.831	0.879	0.884	0.633	0.645	0.631	0.751	16.9
Chloromethane	0.640	0.659	0.658	0.537	0.556	0.569	0.603	9.2
Vinyl Chloride	0.477	0.499	0.519	0.452	0.467	0.447	0.477	5.8
Bromomethane	0.348	0.357	0.295	0.279	0.267	0.236	0.297	15.9
Chloroethane	0.234	0.256	0.247	0.227	0.222	0.205	0.232	7.9
Trichlorofluoromethane	0.739	0.754	0.752	0.661	0.676	0.651	0.705	6.8
1,1,2-Trichlorotrifluoroethane	0.391	0.404	0.438	0.369	0.380	0.378	0.393	6.4
1,1-Dichloroethene	0.323	0.339	0.351	0.312	0.327	0.322	0.329	4.2
Acetone	0.122	0.152	0.106	0.107	0.099	0.094	0.113	18.8
Carbon Disulfide	1.192	1.228	1.259	1.109	1.129	1.119	1.173	5.4
Methyl tert-butyl Ether	1.262	1.563	1.414	1.461	1.380	1.348	1.404	7.3
Methyl Acetate	0.378	0.432	0.325	0.333	0.327	0.285	0.347	14.7
Methylene Chloride	0.450	0.416	0.408	0.368	0.355	0.354	0.392	9.9
trans-1,2-Dichloroethene	0.651	0.755	0.731	0.647	0.639	0.636	0.676	7.7
1,1-Dichloroethane	1.235	1.349	1.314	1.211	1.209	1.214	1.255	4.8
Cyclohexane	1.377	1.316	1.325	1.129	1.133	1.113	1.232	9.7
2-Butanone	0.257	0.355	0.262	0.284	0.254	0.237	0.275	15.4
Carbon Tetrachloride	0.433	0.456	0.471	0.422	0.421	0.409	0.435	5.4
cis-1,2-Dichloroethene	0.759	0.799	0.804	0.758	0.748	0.730	0.766	3.8
Bromochloromethane	0.600	0.747	0.695	0.690	0.637	0.613	0.664	8.5
Chloroform	1.314	1.399	1.391	1.296	1.281	1.277	1.326	4.1
1,1,1-Trichloroethane	0.935	1.016	1.012	0.927	0.936	0.934	0.960	4.4
Methylcyclohexane	0.556	0.569	0.666	0.588	0.597	0.584	0.593	6.5
Benzene	1.481	1.571	1.631	1.425	1.403	1.339	1.475	7.4
1,2-Dichloroethane	0.433	0.519	0.469	0.447	0.436	0.422	0.454	7.8
Trichloroethene	0.394	0.422	0.441	0.388	0.396	0.391	0.405	5.3
1,2-Dichloropropane	0.422	0.464	0.469	0.434	0.423	0.407	0.437	5.7
Bromodichloromethane	0.530	0.585	0.588	0.540	0.539	0.522	0.551	5.2
4-Methyl-2-Pentanone	0.340	0.480	0.368	0.383	0.339	0.310	0.370	16.1
Toluene	0.930	1.032	1.053	0.931	0.925	0.887	0.960	6.9
t-1,3-Dichloropropene	0.484	0.607	0.566	0.566	0.558	0.538	0.553	7.3
cis-1,3-Dichloropropene	0.611	0.683	0.699	0.679	0.669	0.641	0.664	4.8
1,1,2-Trichloroethane	0.324	0.398	0.342	0.331	0.310	0.299	0.334	10.5

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date(s): 07/12/2016 07/12/2016

Heated Purge: (Y/N) Y Calibration Time(s): 11:41 13:57

GC Column: RTX-VMS ID: 0.18 (mm)

LAB FILE ID: RRF005 = VD050605.D RRF010 = VD050606.D RRF020 = VD050607.D
RRF050 = VD050608.D RRF100 = VD050609.D RRF150 = VD050610.D

COMPOUND	RRF005	RRF010	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.249	0.367	0.277	0.292	0.256	0.234	0.279	17.1
Dibromochloromethane	0.406	0.477	0.422	0.417	0.403	0.391	0.419	7.3
1,2-Dibromoethane	0.325	0.420	0.350	0.349	0.338	0.328	0.352	10
Tetrachloroethene	0.300	0.310	0.318	0.281	0.291	0.286	0.298	4.8
Chlorobenzene	1.113	1.163	1.198	1.088	1.073	1.046	1.113	5.1
Ethyl Benzene	1.827	1.933	2.093	1.853	1.804	1.754	1.877	6.4
m/p-Xylenes	0.670	0.699	0.738	0.670	0.654	0.628	0.676	5.6
o-Xylene	0.602	0.634	0.701	0.649	0.650	0.636	0.645	5
Styrene	1.061	1.161	1.246	1.164	1.129	1.106	1.144	5.5
Bromoform	0.184	0.244	0.224	0.227	0.219	0.216	0.219	9
Isopropylbenzene	3.808	3.969	4.367	3.926	3.952	3.823	3.974	5.1
1,1,2,2-Tetrachloroethane	1.046	1.249	1.035	1.030	0.933	0.881	1.029	12.3
n-propylbenzene	5.101	5.408	5.913	5.196	5.126	4.861	5.267	6.9
1,3,5-Trimethylbenzene	3.011	3.186	3.531	3.157	3.136	3.004	3.171	6.1
tert-Butylbenzene	2.706	2.791	3.111	2.842	2.865	2.687	2.834	5.4
1,2,4-Trimethylbenzene	3.184	3.323	3.682	3.247	3.181	3.084	3.283	6.4
sec-Butylbenzene	4.007	4.128	4.567	4.075	4.141	3.974	4.148	5.2
p-Isopropyltoluene	3.260	3.331	3.728	3.289	3.348	3.223	3.363	5.5
1,3-Dichlorobenzene	1.739	1.801	1.925	1.754	1.771	1.722	1.785	4.1
1,4-Dichlorobenzene	1.886	1.895	1.943	1.754	1.763	1.726	1.828	5
n-Butylbenzene	3.433	3.506	3.957	3.454	3.466	3.334	3.525	6.2
1,2-Dichlorobenzene	1.544	1.673	1.679	1.585	1.577	1.537	1.599	3.9
1,2-Dibromo-3-Chloropropane	0.121	0.164	0.131	0.138	0.131	0.127	0.135	11.2
1,2,4-Trichlorobenzene	0.791	0.893	0.901	0.887	0.930	0.936	0.890	5.9
Naphthalene	1.515	2.036	1.845	2.004	2.036	2.010	1.908	10.8
1,2,3-Trichlorobenzene	0.702	0.803	0.781	0.822	0.812	0.820	0.790	5.8
1,2-Dichloroethane-d4	0.744	0.751	0.690	0.687	0.667	0.630	0.695	6.6
Dibromofluoromethane	0.423	0.416	0.405	0.384	0.381	0.360	0.395	6.1
Toluene-d8	1.301	1.303	1.318	1.243	1.222	1.148	1.256	5.2
4-Bromofluorobenzene	0.609	0.564	0.573	0.544	0.469	0.482	0.540	10.1

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_U Calibration Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) N Calibration Time(s): 10:40 12:48

GC Column: DB-624UI ID: 0.18 (mm)

LAB FILE ID: RRF001 = VU009961.D RRF005 = VU009962.D RRF020 = VU009963.D
RRF050 = VU009964.D RRF100 = VU009965.D RRF200 = VU009966.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.716	0.630	0.619	0.636	0.620	0.633	0.642	5.7
Chloromethane	1.357	1.050	0.908	0.951	0.946	0.915	1.021	16.9
Vinyl Chloride	0.968	0.843	0.796	0.825	0.817	0.817	0.844	7.4
Bromomethane	0.423	0.357	0.297	0.295	0.287		0.332	17.5
Chloroethane	0.602	0.515	0.477	0.495	0.478	0.450	0.503	10.5
Trichlorofluoromethane	1.043	0.912	0.856	0.873	0.843	0.833	0.893	8.8
1,1,2-Trichlorotrifluoroethane	0.617	0.544	0.528	0.532	0.509	0.502	0.539	7.7
1,1-Dichloroethene	0.643	0.537	0.513	0.525	0.511	0.502	0.539	9.8
Acetone	0.748	0.524	0.458	0.448	0.414	0.388	0.497	26.5
Carbon Disulfide	1.756	1.518	1.474	1.621	1.618	1.647	1.606	6.2
Methyl tert-butyl Ether	2.334	1.964	1.891	1.960	1.909	1.881	1.990	8.6
Methyl Acetate	1.250	1.139	1.069	1.124	1.083	1.077	1.124	6
Methylene Chloride	0.925	0.674	0.638	0.642	0.617	0.604	0.684	17.7
trans-1,2-Dichloroethene	0.653	0.581	0.545	0.559	0.542	0.535	0.569	7.7
1,1-Dichloroethane	1.247	1.163	1.097	1.139	1.086	1.092	1.137	5.4
Cyclohexane	2.200	1.205	1.066	1.097	1.071	1.080	1.287	35
2-Butanone	0.640	0.573	0.560	0.591	0.583	0.574	0.587	4.8
Carbon Tetrachloride	0.412	0.406	0.400	0.420	0.424	0.423	0.414	2.4
cis-1,2-Dichloroethene	0.704	0.635	0.591	0.626	0.625	0.622	0.634	5.9
Bromochloromethane	0.604	0.545	0.628	0.573	0.582	0.576	0.585	4.8
Chloroform	1.246	1.082	1.024	1.050	1.029	1.008	1.073	8.2
1,1,1-Trichloroethane	0.896	0.809	0.767	0.816	0.810	0.817	0.819	5.2
Methylcyclohexane	0.599	0.551	0.575	0.631	0.632	0.637	0.604	5.9
Benzene	1.712	1.588	1.515	1.575	1.541	1.503	1.572	4.8
1,2-Dichloroethane	0.602	0.536	0.513	0.534	0.529	0.515	0.538	6
Trichloroethene	0.457	0.373	0.351	0.369	0.369	0.362	0.380	10.2
1,2-Dichloropropane	0.477	0.420	0.422	0.439	0.428	0.421	0.434	5.1
Bromodichloromethane	0.493	0.433	0.442	0.476	0.475	0.482	0.467	5.1
4-Methyl-2-Pentanone	0.595	0.604	0.626	0.670	0.675	0.662	0.639	5.5
Toluene	0.919	0.893	0.898	0.946	0.933	0.918	0.918	2.2
t-1,3-Dichloropropene	0.431	0.424	0.448	0.512	0.541	0.573	0.488	12.8
cis-1,3-Dichloropropene	0.499	0.514	0.540	0.601	0.614	0.628	0.566	9.7
1,1,2-Trichloroethane	0.407	0.369	0.368	0.375	0.369	0.370	0.376	4.1

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_U Calibration Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) N Calibration Time(s): 10:40 12:48

GC Column: DB-624UI ID: 0.18 (mm)

LAB FILE ID: RRF001 = VU009961.D RRF005 = VU009962.D RRF020 = VU009963.D
RRF050 = VU009964.D RRF100 = VU009965.D RRF200 = VU009966.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF200	$\overline{RRF}$	% RSD
2-Hexanone	0.452	0.464	0.491	0.526	0.531	0.522	0.497	6.8
Dibromochloromethane	0.313	0.301	0.321	0.348	0.362	0.372	0.336	8.5
1,2-Dibromoethane	0.349	0.341	0.339	0.374	0.377	0.382	0.360	5.4
Tetrachloroethene	0.377	0.348	0.328	0.337	0.332	0.324	0.341	5.8
Chlorobenzene	1.217	1.060	1.041	1.089	1.079	1.068	1.092	5.8
Ethyl Benzene	1.817	1.708	1.759	1.906	1.915	1.897	1.834	4.7
m/p-Xylenes	0.630	0.630	0.678	0.733	0.729	0.719	0.687	7
o-Xylene	0.605	0.601	0.643	0.703	0.704	0.701	0.660	7.5
Styrene	0.972	0.977	1.096	1.206	1.212	1.206	1.112	10.3
Bromoform	0.254	0.227	0.240	0.273	0.291	0.306	0.265	11.5
Isopropylbenzene	3.551	3.233	3.497	3.660	3.616	3.522	3.513	4.3
1,1,2,2-Tetrachloroethane	1.562	1.410	1.318	1.343	1.335	1.304	1.379	7
n-propylbenzene	3.887	3.852	4.176	4.471	4.417	4.299	4.184	6.3
1,3,5-Trimethylbenzene	2.735	2.607	2.934	3.110	3.071	2.996	2.909	6.8
tert-Butylbenzene	2.759	2.571	2.691	2.895	2.892	2.856	2.778	4.7
1,2,4-Trimethylbenzene	2.654	2.640	2.971	3.174	3.155	3.036	2.938	8.1
sec-Butylbenzene	3.337	3.260	3.524	3.788	3.775	3.679	3.560	6.3
p-Isopropyltoluene	2.688	2.688	3.020	3.278	3.233	3.162	3.012	8.8
1,3-Dichlorobenzene	1.773	1.602	1.564	1.643	1.630	1.583	1.633	4.6
1,4-Dichlorobenzene	1.916	1.649	1.614	1.659	1.634	1.595	1.678	7.1
n-Butylbenzene	2.623	2.461	2.703	3.068	3.144	3.119	2.853	10.3
1,2-Dichlorobenzene	1.811	1.585	1.538	1.618	1.592	1.568	1.619	6
1,2-Dibromo-3-Chloropropane	0.295	0.249	0.261	0.280	0.294	0.296	0.279	7.1
1,2,4-Trichlorobenzene	0.987	0.895	0.975	1.085	1.121	1.132	1.033	9.2
Naphthalene	2.842	2.699	3.284	3.740	3.861	3.819	3.374	15.2
1,2,3-Trichlorobenzene	1.051	0.912	1.023	1.092	1.112	1.117	1.051	7.4
1,2-Dichloroethane-d4	0.741	0.687	0.720	0.709	0.693	0.658	0.701	4.1
Dibromofluoromethane	0.335	0.328	0.347	0.342	0.334	0.308	0.332	4
Toluene-d8	1.187	1.231	1.381	1.377	1.361	1.263	1.300	6.4
4-Bromofluorobenzene	0.421	0.399	0.479	0.498	0.503	0.480	0.463	9.3

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date/Time: 07/11/2016 11:34

Lab File ID: VD050558.D Init. Calib. Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) Y Init. Calib. Time(s): 11:41 13:56

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.668	0.644		-3.6	20
Chloromethane	0.509	0.506	0.1	-0.45	20
Vinyl Chloride	0.397	0.428		7.84	20
Bromomethane	0.230	0.246		6.91	20
Chloroethane	0.176	0.211		20.01	20
Trichlorofluoromethane	0.623	0.672		7.92	20
1,1,2-Trichlorotrifluoroethane	0.332	0.375		12.91	20
1,1-Dichloroethene	0.271	0.299		10.3	20
Acetone	0.093	0.099		6.57	20
Carbon Disulfide	0.957	1.061		10.87	20
Methyl tert-butyl Ether	1.336	1.407		5.25	20
Methyl Acetate	0.243	0.258		5.91	20
Methylene Chloride	0.327	0.326		-0.49	20
trans-1,2-Dichloroethene	0.633	0.646		1.97	20
1,1-Dichloroethane	1.170	1.172	0.1	0.16	20
Cyclohexane	1.199	1.149		-4.17	20
2-Butanone	0.252	0.261		3.69	20
Carbon Tetrachloride	0.388	0.424		9.28	20
cis-1,2-Dichloroethene	0.721	0.749		3.83	20
Bromochloromethane	0.619	0.636		2.65	20
Chloroform	1.219	1.244		2	20
1,1,1-Trichloroethane	0.873	0.936		7.23	20
Methylcyclohexane	0.593	0.621		4.7	20
Benzene	1.408	1.408		0.04	20
1,2-Dichloroethane	0.409	0.432		5.8	20
Trichloroethene	0.382	0.400		4.69	20
1,2-Dichloropropane	0.422	0.422		0.05	20
Bromodichloromethane	0.517	0.538		4.1	20
4-Methyl-2-Pentanone	0.350	0.364		4.26	20
Toluene	0.902	0.927		2.78	20
t-1,3-Dichloropropene	0.530	0.565		6.65	20
cis-1,3-Dichloropropene	0.645	0.665		3.01	20
1,1,2-Trichloroethane	0.305	0.321		5.01	20
2-Hexanone	0.265	0.285		7.27	20
Dibromochloromethane	0.375	0.409		9.09	20
1,2-Dibromoethane	0.322	0.349		8.55	20
Tetrachloroethene	0.288	0.294		2.05	20
Chlorobenzene	1.051	1.074	0.3	2.2	20
Ethyl Benzene	1.829	1.864		1.9	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_D Calibration Date/Time: 07/11/2016 11:34

Lab File ID: VD050558.D Init. Calib. Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) Y Init. Calib. Time(s): 11:41 13:56

GC Column: RTX-VMS ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.648	0.663		2.21	20
o-Xylene	0.625	0.653		4.35	20
Styrene	1.100	1.145		4.12	20
Bromoform	0.198	0.220	0.1	10.99	20
Isopropylbenzene	3.951	4.033		2.06	20
1,1,2,2-Tetrachloroethane	0.982	1.009	0.3	2.79	20
n-propylbenzene	5.222	5.376		2.95	20
1,3,5-Trimethylbenzene	3.146	3.211		2.07	20
tert-Butylbenzene	2.847	2.974		4.48	20
1,2,4-Trimethylbenzene	3.235	3.323		2.73	20
sec-Butylbenzene	4.049	4.198		3.68	20
p-Isopropyltoluene	3.288	3.460		5.21	20
1,3-Dichlorobenzene	1.696	1.775		4.65	20
1,4-Dichlorobenzene	1.739	1.801		3.56	20
n-Butylbenzene	3.480	3.625		4.17	20
1,2-Dichlorobenzene	1.522	1.611		5.83	20
1,2-Dibromo-3-Chloropropane	0.130	0.139		6.99	20
1,2,4-Trichlorobenzene	0.853	0.896		4.99	20
Naphthalene	1.783	2.027		13.63	20
1,2,3-Trichlorobenzene	0.742	0.788		6.23	20
1,2-Dichloroethane-d4	0.622	0.640		2.88	20
Dibromofluoromethane	0.363	0.375		3.17	20
Toluene-d8	1.199	1.203		0.32	20
4-Bromofluorobenzene	0.520	0.533		2.46	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_U Calibration Date/Time: 07/12/2016 10:48

Lab File ID: VU010082.D Init. Calib. Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) N Init. Calib. Time(s): 10:40 12:48

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.642	0.667		3.88	20
Chloromethane	1.021	0.847	0.1	-17.09	20
Vinyl Chloride	0.844	0.847		0.34	20
Bromomethane	0.332	0.368		10.79	20
Chloroethane	0.503	0.513		2.09	20
Trichlorofluoromethane	0.893	0.926		3.7	20
1,1,2-Trichlorotrifluoroethane	0.539	0.583		8.11	20
1,1-Dichloroethene	0.539	0.558		3.64	20
Acetone	0.497	0.478		-3.74	20
Carbon Disulfide	1.606	1.660		3.38	20
Methyl tert-butyl Ether	1.990	2.077		4.4	20
Methyl Acetate	1.124	1.128		0.35	20
Methylene Chloride	0.684	0.680		-0.58	20
trans-1,2-Dichloroethene	0.569	0.606		6.54	20
1,1-Dichloroethane	1.137	1.175	0.1	3.29	20
Cyclohexane	1.287	1.144		-11.05	20
2-Butanone	0.587	0.606		3.29	20
Carbon Tetrachloride	0.414	0.420		1.52	20
cis-1,2-Dichloroethene	0.634	0.663		4.57	20
Bromochloromethane	0.585	0.581		-0.67	20
Chloroform	1.073	1.096		2.13	20
1,1,1-Trichloroethane	0.819	0.855		4.35	20
Methylcyclohexane	0.604	0.671		10.99	20
Benzene	1.572	1.630		3.66	20
1,2-Dichloroethane	0.538	0.556		3.25	20
Trichloroethene	0.380	0.381		0.37	20
1,2-Dichloropropane	0.434	0.452		4.1	20
Bromodichloromethane	0.467	0.489		4.86	20
4-Methyl-2-Pentanone	0.639	0.676		5.82	20
Toluene	0.918	0.976		6.33	20
t-1,3-Dichloropropene	0.488	0.547		12.15	20
cis-1,3-Dichloropropene	0.566	0.622		9.94	20
1,1,2-Trichloroethane	0.376	0.387		2.76	20
2-Hexanone	0.497	0.532		6.88	20
Dibromochloromethane	0.336	0.361		7.37	20
1,2-Dibromoethane	0.360	0.392		8.77	20
Tetrachloroethene	0.341	0.340		-0.35	20
Chlorobenzene	1.092	1.139	0.3	4.31	20
Ethyl Benzene	1.834	2.017		9.99	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: AKRF02

Lab Code: CHEM Case No.: H3936 SAS No.: H3936 SDG No.: H3936

Instrument ID: MSVOA_U Calibration Date/Time: 07/12/2016 10:48

Lab File ID: VU010082.D Init. Calib. Date(s): 07/08/2016 07/08/2016

Heated Purge: (Y/N) N Init. Calib. Time(s): 10:40 12:48

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.687	0.764		11.23	20
o-Xylene	0.660	0.732		11.01	20
Styrene	1.112	1.260		13.37	20
Bromoform	0.265	0.283	0.1	6.94	20
Isopropylbenzene	3.513	3.799		8.15	20
1,1,2,2-Tetrachloroethane	1.379	1.401	0.3	1.63	20
n-propylbenzene	4.184	4.673		11.7	20
1,3,5-Trimethylbenzene	2.909	3.214		10.49	20
tert-Butylbenzene	2.778	3.001		8.04	20
1,2,4-Trimethylbenzene	2.938	3.302		12.38	20
sec-Butylbenzene	3.560	3.982		11.85	20
p-Isopropyltoluene	3.012	3.429		13.86	20
1,3-Dichlorobenzene	1.633	1.702		4.26	20
1,4-Dichlorobenzene	1.678	1.726		2.86	20
n-Butylbenzene	2.853	3.319		16.33	20
1,2-Dichlorobenzene	1.619	1.678		3.66	20
1,2-Dibromo-3-Chloropropane	0.279	0.296		5.88	20
1,2,4-Trichlorobenzene	1.033	1.153		11.71	20
Naphthalene	3.374	3.813		13.02	20
1,2,3-Trichlorobenzene	1.051	1.135		8.01	20
1,2-Dichloroethane-d4	0.701	0.680		-3.09	20
Dibromofluoromethane	0.332	0.321		-3.37	20
Toluene-d8	1.300	1.301		0.09	20
4-Bromofluorobenzene	0.463	0.487		5.2	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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LAB CHRONICLE

OrderID:	H3936	**OrderDate:**	7/6/2016 5:13:22 PM
Client:	AKRF Engineering, P.C.	**Project:**	NYCSCA - PS 97X Addition
Contact:	Rebecca Kinal, PE	**Location:**	P63

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
H3936-01	**SB-1(9-10)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-01RE	**SB-1(9-10)RE**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/12/16	
H3936-02	**SB-2(9-10)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-03	**SB-3(5-6)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-04	**SB-4(4-5)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-04RE	**SB-4(4-5)RE**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/12/16	
H3936-05	**SB-5(1-2)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-06	**SB-5(4-5)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-07	**TW-4**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260-Low			07/12/16	
H3936-08	**TW-4-DEP**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group2	624			07/11/16	
H3936-09	**SB-6(11-12)**	**SOIL**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260C			07/11/16	
H3936-10	**TRIPBLANK**	**Water**			**07/06/16**			**07/06/16**
			VOCMS Group1	8260-Low			07/12/16	

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Hit Summary Sheet
SW-846

SDG No.: H3936

Client: AKRF Engineering, P.C.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units

Client ID:

Total Concentration: