



ADDITIONAL SITE ASSESSMENT REPORT

**North Point Government Center
7701 Wise Avenue
Dundalk, Maryland**

Apex Job No. AMORT-008

May 9, 2017

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1.0 INTRODUCTION AND BACKGROUND

Apex Companies, LLC (Apex) is pleased to submit this report to A. Morton Thomas & Associates, Inc. (AMT) summarizing the results of its additional subsurface investigation at the North Point Government Facility addressed as 7701 Wise Avenue in Dundalk, Maryland (subject property). Apex completed a site investigation in August 2016 that identified petroleum impacted soil and groundwater in the vicinity of a former underground storage tank (UST) system. The UST system was removed in February 2016 and is associated with Oil Control Program (OCP) Case 2016-0467-BA, which was opened following a confirmed release from a supply line associated with the UST located at the subject property. Apex's Site Assessment Report (SAR) dated September 16, 2016, reported concentrations of total petroleum hydrocarbons (TPH) diesel range organics (DRO) at concentrations that exceeded the Maryland Department of the Environment (MDE) Cleanup Standards in soil and groundwater. The highest concentrations were observed in borings completed near the former supply line. Following the results of Apex's SAR, the MDE recommended additional work be completed at the subject property.

This subsurface investigation was completed in accordance with the MDE approved work plan dated January 26, 2017 and approved on February 17, 2017. The work plan was prepared in accordance with the MDE Request for Work Plan dated December 13, 2016, which was associated OCP Case 2016-0467-BA. The MDE Request for Work Plan identified the following requirements: 1) Submit a work plan to install a minimum of three, 4-inch diameter monitoring wells as well as cleaning of the impacted storm drain manway that contained odors, PID readings, and residual petroleum contamination; 2) inspect all basement sumps located in the building for the presence of petroleum impact and detail sampling procedures in the work plan if water is present in the sumps; and 3) address information not yet provided, but required in the Department's September 8, 2016 letter. A copy of the approved work plan is provided in **Attachment 1**. A Site Layout is provided in **Figure 1**.

The scope of work included the installation of three, 4-inch diameter monitoring wells; collection of 3 subsurface soil samples and 3 groundwater samples from each of the new wells; and cleaning of the storm drain manway located near the former piping run. Items #2 and #3 were addressed in the work plan submitted for MDE approval.

2.0 FIELD ACTIVITIES AND SAMPLING METHODOLOGY

Prior to initiating field activities, Apex contacted "Miss Utility" to ensure that subsurface utility locations were identified and marked. The "Miss Utility" system locates underground utilities in public spaces and on easements. Apex also contracted with a private utility locating company to complete utility clearance in the proposed subsurface investigation area.

2.1 Subsurface Investigation

On March 23 and 24, 2017, Apex mobilized to the site with a truck-mounted hollow stem auger (HSA) drill rig, operated by Allied Well Drillers (Allied) to complete soil borings and install three groundwater monitoring wells in the proposed locations at the site. Apex was accompanied by MDE representatives, Ms. Ellen Jackson and Mr. Matt Mueller; AMT representative, Mr. Stephen Jerrick; and Baltimore County representative, Mr. John Messler. Prior to initiating field activities, boring locations were marked with input and approval from MDE. A site plan showing the groundwater monitoring well locations is presented in **Figure 2**.

At each soil boring location, 6.25-inch diameter hollow stem augers (HSA) were advanced into the subsurface to maximum depths of 25 and 30 feet below ground surface (bgs). Soil samples were collected using standard penetration testing (SPT) split spoon sampling during boring advancement and were collected continuously. A portion of each soil sample was placed into a new sealed plastic bag for performing headspace analysis for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID). Soil samples were logged and classified by Apex's on-site geologist and then field screened for evidence of VOCs using the PID. In addition, the samples were checked for visual and/or olfactory evidence of contamination. A log was maintained during field drilling operations that included the sample number, depth interval, field screening results, soil description, and other pertinent information (such as percent sample recovery, and moisture content). Boring logs are provided in **Attachment 3**.

Following the completion of each boring, soil samples were collected from the depth interval exhibiting the highest PID reading or from the depth interval directly above the soil/groundwater interface. Soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH) diesel range organics (DRO), VOCs plus fuel oxygenates, and naphthalene. The soil samples were submitted to Accutest Laboratories (Accutest) of Dayton, New Jersey. Laboratory data sheets and chain of custody for the soil samples are included as **Attachment 4**.

2.2 Monitoring Well Installation

Groundwater monitoring wells were installed at boring locations MW-4 thru MW-6 to collect shallow groundwater samples and static water level data. The groundwater monitoring wells were constructed of four-inch inner diameter schedule 40 PVC casing and a 15-foot length of 0.010-inch factory-slotted well screen with a threaded end cap. All screen and casing was flush-threaded and equipped with "O" rings to prevent leakage at joints. An expansion-sealing well cap was installed at the top of the well casing. The well annulus was filled with washed, #1 quartz filter sand around and above the top of the screened interval. A two-foot granular bentonite seal was placed above the sand filter pack hydrated with potable water. The upper annulus was completed with cement grout and a flush-mount protective well cover was cemented at the ground surface. Monitoring Well construction details are provided on boring logs in **Attachment 3**.

After installation, the monitoring wells were developed using the methodology prescribed in the Environmental Protection Agency (EPA) 1992 Groundwater Forum *Monitoring Well Development Guidelines for Superfund Project Managers*. Monitoring well development for each well consisted of:

1. Initially recording the static water level and depth to bottom of the well;
2. Set a pump, record pumping rate and turbidity; pump until turbidity stabilizes;
3. Discontinue pumping and surge the well;
4. Measure depth to the well bottom, if more than 10% of the bottom well screen is occluded by sediment, remove the sediment by bailing or vacuum;
5. Reset the pump, record pumping rate and turbidity, pump until turbidity stabilizes;
6. Repeat until the well yields acceptable turbidity at the beginning of the pumping cycle.

Following monitoring well development, Apex allowed the groundwater levels to stabilize for a period of 1 week prior to collecting groundwater samples. On April 3, 2017, Apex mobilized to the site to collect groundwater samples in accordance with the EPA *Low Stress Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells* dated January 19, 2010. Groundwater samples were collected from each of the 3 monitoring wells using a variable speed peristaltic pump with dedicated polyethylene tubing. The purged water was monitored through a flow-through cell. Groundwater parameters including pH, temperature, and conductivity were monitored continuously during purging. When the monitoring parameters stabilized (+/- 10%), a groundwater sample was collected. Groundwater samples were collected in laboratory provided glassware and submitted to Accutest for laboratory analysis of TPH-DRO and VOCs plus fuel oxygenates and naphthalene.

2.3 Storm Drain Manway Cleaning

On March 23, 2017, Apex mobilized to the site with AAA Stormwater Management to perform cleaning of the impacted storm drain manway located nearest to the former product piping run where previous indications of petroleum impact were observed. The storm drain manway was cleaned by utilizing a pressure washer to clean out debris and any petroleum observations present during the cleaning. A vacuum truck was mobilized to the site and setup on the storm drain manway immediately downgradient of the impacted manway to contain and recover impacted water generated during the pressure washing of the impacted storm drain manway. Approximately 55 gallons of water was recovered during cleaning and was disposed of offsite at FCC Environmental's disposal facility in Baltimore, Maryland. Documentation of disposal is provided in **Attachment 2**. Upon completion of the cleaning, Apex inspected the storm drain manway and did not observe indications of petroleum impact within the manway structure.

3.0 RESULTS OF SUBSURFACE INVESTIGATION

3.1 Subsurface Conditions

This site is located within the Potomac Group of the Atlantic Coastal Plain Physiographic Province. The Potomac Group is characterized by interbedded quartzose gravels; protoquartzitic to orthoquartzitic argillaceous sands; and white, dark gray and multicolored silts and clays, with a thickness 0 to 800 feet.

Soil borings completed during this investigation were advanced to a maximum depth of 25 to 30 feet bgs. Boring locations are shown in **Figure 2** and boring logs are provided in **Attachment 3**. Based on the observations of the soil samples, fill material was observed from approximately 6 inches to approximately 3.5 feet bgs. Below the fill material, a white to brown medium grain sand was encountered from approximately 3.5 feet to boring completion at 25 feet bgs. In MW-4, a light gray to red sandy clay was encountered at 28 to 30 feet bgs.

On April 3, 2017, depth to groundwater was measured at depths of 19.86 feet, 17.47 feet, 18.82 feet, and 17.99 feet in wells MW-4, MW-5, MW-6, and MW-1, respectively. Free product was not observed during well installations or during well sampling on April 3. Apex also completed a well elevation survey on April 3, 2017. Well gauging data is presented in **Table 1**. A Groundwater Contour Map is provided in **Figure 3**. Based on the well gauging data, groundwater flow is to the northwest in the vicinity of the former UST field.

TABLE 1
Well Gauging Data

North Point Government Center
7701 Wise Avenue
Dundalk, Maryland

Well ID	Date	Depth to Water	Depth to Product	Product Thickness
MW-1	4/3/2017	17.99	-	-
MW-4	4/3/2017	19.86	-	-
MW-5	4/3/2017	17.47		
MW-6	4/3/2017	18.82	-	-

3.2 Field Screening Analysis

Headspace analyses of soil samples collected during installation of the soil borings were conducted using a Minirae 3000 PID, 10.6 eV lamp calibrated to 100-parts per million (ppm) isobutylene in air. This instrument is capable of detecting VOC vapors, typically associated with petroleum fuels and chlorinated solvents. Apex observed elevated PID readings at boring locations MW-5. PID readings ranged from approximately 18.1 ppm to approximately 460 ppm with the highest readings observed at the soil/groundwater interface. Apex also observed light staining and petroleum odors at this depth. Although staining was observed, Apex did not observe free phase liquid petroleum hydrocarbons (LPH) or free product at this location on the site during boring progression.

3.3 Soil Analytical Results

Apex collected a total of 3 soil samples identified as MW-4-S, MW-5-S, and MW-6-S. Based on field observations, these samples were collected at depths that coincided with the soil/groundwater interface. Results of the soil sampling analysis are presented in **Table 2**. Laboratory data sheets and chain of custody records are provided in **Attachment 4**.

3.3.1 Soil Sample Results

Soil samples were collected at each boring location for laboratory analysis of TPH-DRO and VOCs plus fuel oxygenates and naphthalene. Given the current use of the site as a non-residential property, Apex has compared the soil sample analytical results to the Maryland Generic Numeric Cleanup Standards for Non-Residential Soils (Soil Cleanup Standards) published in the MDE Interim Final Guidance dated June 2008.

Laboratory analytical results reported a detection of TPH-DRO in a soil sample from MW-5-S. TPH-DRO was detected at a concentration of 7,390 milligrams per kilogram (mg/kg), which exceeded the Soil Cleanup Standard of 620 mg/kg for TPH-DRO. TPH-DRO was not detected above the laboratory method practical quantitation limit (PQL) in the other 2 soil samples.

VOCs were detected above the laboratory method PQL in the 3 soil samples submitted. Of the VOCs detected, none exceeded their respective Soil Cleanup Standards.

3.4 Groundwater Analytical Results

Apex collected a total of 3 groundwater samples from monitoring wells MW-4, MW-5, and MW-6. Results of the groundwater sampling analysis are presented in **Table 3**. Laboratory data sheets and chain of custody records are provided in **Attachment 4**.

Laboratory analytical results reported detections of TPH-DRO concentrations above the laboratory method PQL. Apex compared the laboratory results to the Maryland Generic Numeric Cleanup Standards for Groundwater. (Groundwater Cleanup Standards). The reported detections are discussed below.

- TPH-DRO was detected in 2 of the 3 groundwater samples collected at concentrations 1.15 milligrams per liter (mg/L) and 0.214 mg/L in MW-5 and MW-6, respectively. These detections of TPH-DRO exceeded the Groundwater Cleanup Standard of 0.047 mg/L with the highest concentrations observed at location MW-5. TPH-DRO was not detected in a groundwater sample collected from MW-4. A TPH-DRO Iso-concentration map is provided in **Figure 4**.

Concentrations of VOCs were detected above the laboratory method PQL in all 1 of the 3 groundwater samples collected with the exception of chloroform. Of the 3 groundwater samples analyzed, only 1 sample had reported concentrations above the Groundwater Cleanup Standards. These samples and concentrations are discussed below.

- Naphthalene was the only VOC detected above the Groundwater Cleanup Standard. Naphthalene was detected at concentrations of 3.0J micrograms per liter ($\mu\text{g/L}$) at location MW-5. This concentration of naphthalene exceeded the Groundwater Cleanup Standard of 0.65 $\mu\text{g/L}$ for Naphthalene.

5.0 CONCLUSIONS

Apex completed additional subsurface investigation activities located at the North Point Government Center addressed as 7701 Wise Avenue in Dundalk, Maryland. The subsurface investigation was completed in accordance with the MDE approved work plan dated January 2017 and approved in February 2017. Onsite activities were completed from March 23 through April 3, 2017, which included the installation of 3 groundwater monitoring wells, collection of soil and groundwater samples, and the cleaning of the storm drain manway.

The findings of this investigation suggest that on-site soils and groundwater have been impacted by the release associated with Case # 2016-0467-BA at the site. In February 2016, the UST system including product piping were removed and the source of the contamination has been mitigated. Impacted soil and groundwater were observed in the vicinity of the former piping run around location MW-5 with petroleum concentrations detected above the MDE Cleanup Standards in soils and groundwater. In addition, petroleum concentrations in groundwater at location MW-6, located approximately 75 feet southwest of MW-5, were detected above the MDE Cleanup Standard. Although petroleum staining was observed at MW-5, Apex did not observe LPH or free product at this location during boring progression or subsequent well gauging.

During this investigation, groundwater flow was determined to the west-northwest which is a deviation from the assumed groundwater flow to the west-southwest during Apex's previous investigation. Based on this determined groundwater flow, an additional well may be necessary downgradient from MW-5 to further delineate the groundwater plume. However, Apex notes that 3 groundwater samples were collected from temporary wells located downgradient from MW-5 in August 2016. These groundwater samples did not identify petroleum concentrations above the MDE Cleanup Standard.

As required by the Work Plan Approval Letter, Apex will perform monthly gauging of monitoring wells MW-1, MW-4, MW-5, and MW-6 as well as quarterly sampling of these four wells. The next groundwater sampling event is scheduled for June 2017. Apex will provide results of the quarterly activities in its Quarterly Status Reports.

TABLES AND FIGURES

Apex Companies, LLC		Table 2 - Soil Results			
Project:		North Point Government Facility, 7701 Wise Avenue, Dundalk, MD			
Project Number:		AMORT-008			
		Legend:		Hit	Exceed
Client Sample ID:		MD Cleanup Standards - Non-Residential Soil (MDE 6/2008)	MW-4-S	MW-5-S	MW-6-S
Lab Sample ID:			JC39699-1	JC39699-2	JC39699-3
Date Sampled:			3/23/2017	3/24/2017	3/23/2017
Matrix:			Soil	Soil	Soil
GC/MS Volatiles (SW846 8260C)					
Acetone	µg/kg	92000000	25	ND (600)	ND (5.7)
Benzene	µg/kg	52000	ND (0.15)	ND (15)	ND (0.14)
Bromobenzene	µg/kg	-	ND (0.19)	ND (19)	ND (0.17)
Bromochloromethane	µg/kg	-	ND (0.39)	ND (39)	ND (0.36)
Bromodichloromethane	µg/kg	46000	ND (0.19)	ND (18)	ND (0.17)
Bromoform	µg/kg	360000	ND (0.33)	ND (32)	ND (0.30)
Bromomethane	µg/kg	140000	ND (0.59)	ND (59)	ND (0.55)
2-Butanone (MEK)	µg/kg	61000000	ND (2.2)	ND (210)	ND (2.0)
n-Butylbenzene	µg/kg	-	ND (0.19)	5220	ND (0.17)
sec-Butylbenzene	µg/kg	-	ND (0.19)	3510	ND (0.17)
tert-Butylbenzene	µg/kg	-	ND (0.19)	102 J	ND (0.18)
Carbon tetrachloride	µg/kg	22000	ND (0.20)	ND (20)	ND (0.19)
Chlorobenzene	µg/kg	2000000	ND (0.20)	ND (20)	ND (0.18)
Chloroethane	µg/kg	990000	ND (0.53)	ND (52)	ND (0.49)
Chloroform	µg/kg	1000000	ND (0.29)	ND (29)	ND (0.27)
Chloromethane	µg/kg	--	ND (0.26)	ND (26)	ND (0.24)
o-Chlorotoluene	µg/kg	-	ND (0.25)	ND (25)	ND (0.23)
p-Chlorotoluene	µg/kg	-	ND (0.30)	ND (30)	ND (0.28)
Di-Isopropyl ether	µg/kg	-	ND (0.16)	ND (16)	ND (0.15)
1,2-Dibromo-3-chloropropane	µg/kg	3600	ND (0.59)	ND (59)	ND (0.55)
Dibromochloromethane	µg/kg	34000	ND (0.18)	ND (18)	ND (0.17)
1,2-Dibromoethane	µg/kg	1400	ND (0.30)	ND (29)	ND (0.27)
1,2-Dichlorobenzene	µg/kg	9200000	ND (0.21)	ND (21)	ND (0.19)
1,3-Dichlorobenzene	µg/kg	310000	ND (0.17)	ND (17)	ND (0.16)
1,4-Dichlorobenzene	µg/kg	120000	ND (0.19)	ND (19)	ND (0.17)
Dichlorodifluoromethane	µg/kg	-	ND (0.67)	ND (66)	ND (0.62)
1,1-Dichloroethane	µg/kg	2000000	ND (0.23)	ND (23)	ND (0.21)
1,2-Dichloroethane	µg/kg	31000	ND (0.21)	ND (21)	ND (0.19)
1,1-Dichloroethene	µg/kg	5100000	ND (0.19)	ND (19)	ND (0.17)
cis-1,2-Dichloroethene	µg/kg	1000000	ND (0.54)	ND (53)	ND (0.50)
trans-1,2-Dichloroethene	µg/kg	2000000	ND (0.19)	ND (19)	ND (0.18)
1,2-Dichloropropane	µg/kg	42000	ND (0.38)	ND (37)	ND (0.35)
1,3-Dichloropropane	µg/kg	-	ND (0.24)	ND (24)	ND (0.22)
2,2-Dichloropropane	µg/kg	-	ND (0.19)	ND (19)	ND (0.17)
1,1-Dichloropropene	µg/kg	-	ND (0.19)	ND (19)	ND (0.18)
cis-1,3-Dichloropropene	µg/kg	29000	ND (0.24)	ND (24)	ND (0.22)
trans-1,3-Dichloropropene	µg/kg	29000	ND (0.27)	ND (27)	ND (0.25)
Ethylbenzene	µg/kg	10000000	0.26 J	603	ND (0.17)
Hexachlorobutadiene	µg/kg	37000	ND (0.19)	ND (19)	ND (0.18)
Isopropylbenzene	µg/kg	10000000	0.33 J	1020	ND (0.17)
p-Isopropyltoluene	µg/kg	-	ND (0.30)	3290	ND (0.28)
Methyl Tert Butyl Ether	µg/kg	720000	ND (0.32)	ND (32)	ND (0.30)
4-Methyl-2-pentanone(MIBK)	µg/kg	--	ND (1.0)	ND (100)	ND (0.96)
Methylene bromide	µg/kg	-	ND (0.46)	ND (45)	ND (0.43)
Methylene chloride	µg/kg	380000	ND (1.2)	ND (120)	ND (1.1)
Naphthalene	µg/kg	2000000	ND (1.2)	20600	ND (1.1)
n-Propylbenzene	µg/kg	-	ND (0.24)	2560	ND (0.22)
Styrene	µg/kg	20000000	ND (0.18)	ND (18)	ND (0.16)
Tert Butyl Alcohol	µg/kg	-	ND (3.7)	ND (370)	ND (3.4)
tert-Amyl Methyl Ether	µg/kg	-	ND (0.65)	ND (64)	ND (0.60)
tert-Butyl Ethyl Ether	µg/kg	-	ND (0.32)	ND (31)	ND (0.29)

Client Sample ID:		MD Cleanup Standards - Non-Residential Soil (MDE 6/2008)	MW-4-S	MW-5-S	MW-6-S
Lab Sample ID:			JC39699-1	JC39699-2	JC39699-3
Date Sampled:			3/23/2017	3/24/2017	3/23/2017
Matrix:			Soil	Soil	Soil
GC/MS Volatiles (SW846 8260C)					
1,1,1,2-Tetrachloroethane	µg/kg	-	ND (0.26)	ND (26)	ND (0.24)
1,1,2,2-Tetrachloroethane	µg/kg	14000	ND (0.29)	ND (29)	ND (0.27)
Tetrachloroethene	µg/kg	5300	ND (0.34)	ND (34)	ND (0.32)
Toluene	µg/kg	8200000	0.47 J	ND (15)	ND (0.14)
1,2,3-Trichlorobenzene	µg/kg	-	ND (0.61)	ND (60)	ND (0.57)
1,2,4-Trichlorobenzene	µg/kg	1000000	ND (0.61)	ND (60)	ND (0.57)
1,1,1-Trichloroethane	µg/kg	200000000	ND (0.20)	ND (20)	ND (0.19)
1,1,2-Trichloroethane	µg/kg	50000	ND (0.40)	ND (39)	ND (0.37)
Trichloroethene	µg/kg	7200	ND (0.23)	ND (23)	ND (0.22)
Trichlorofluoromethane	µg/kg	-	ND (0.77)	ND (76)	ND (0.71)
1,2,3-Trichloropropane	µg/kg	-	ND (0.94)	ND (93)	ND (0.87)
1,2,4-Trimethylbenzene	µg/kg	-	ND (0.21)	18200	ND (0.20)
1,3,5-Trimethylbenzene	µg/kg	-	ND (0.20)	8040	ND (0.19)
Vinyl chloride	µg/kg	4000	ND (0.25)	ND (24)	ND (0.23)
m,p-Xylene	µg/kg	20000000	0.92 J	1160	0.46 J
o-Xylene	µg/kg	20000000	ND (0.25)	1590	ND (0.23)
Xylene (total)	µg/kg	20000000	0.92 J	2750	0.46 J
GC Semi-volatiles (SW846 8015C)					
TPH-DRO (C10-C28)	mg/kg	620	ND (2.7)	7390	ND (2.8)
General Chemistry					
Solids, Percent	%	-	94.9	86.6	95.9
Regulatory limits listed in this document have been obtained from the latest version of the regulations cited and are used for advisory purposes only. SGS Accutest assumes no responsibility for errors in regulatory documents or changes to criteria detailed in later versions of the referenced regulation. It is the responsibility of the user to verify these limits before using or reporting any data.					
1 result exceeded regulatory criteria.					

Apex Companies, LLC		Table 3 - Groundwater Results			
Project:		North Point Government Facility, 7701 Wise Avenue, Dundalk, MD			
Project Number:		AMORT-008			
		Legend:		Hit	Exceed
Client Sample ID:		MD Cleanup Standards - Groundwater Type I and II Aquifers (MDE 6/2008)	MW4	MW5	MW6
Lab Sample ID:			JC40368-1	JC40368-2	JC40368-3
Date Sampled:			4/3/2017	4/3/2017	4/3/2017
Matrix:			Ground Water	Ground Water	Ground Water
GC/MS Volatiles (SW846 8260C)					
Acetone	µg/l	550	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	µg/l	5	ND (0.14)	ND (0.14)	ND (0.14)
Bromobenzene	µg/l	-	ND (0.22)	ND (0.22)	ND (0.22)
Bromochloromethane	µg/l	-	ND (0.46)	ND (0.46)	ND (0.46)
Bromodichloromethane	µg/l	80	ND (0.55)	ND (0.55)	ND (0.55)
Bromoform	µg/l	80	ND (0.34)	ND (0.34)	ND (0.34)
Bromomethane	µg/l	0.85	ND (0.46)	ND (0.46)	ND (0.46)
2-Butanone (MEK)	µg/l	700	ND (1.9)	ND (1.9)	ND (1.9)
n-Butylbenzene	µg/l	-	ND (0.28)	ND (0.28)	ND (0.28)
sec-Butylbenzene	µg/l	-	ND (1.0)	ND (1.0)	ND (1.0)
tert-Butylbenzene	µg/l	-	ND (0.28)	ND (0.28)	ND (0.28)
Carbon tetrachloride	µg/l	5	ND (0.54)	ND (0.54)	ND (0.54)
Chlorobenzene	µg/l	100	ND (0.17)	ND (0.17)	ND (0.17)
Chloroethane	µg/l	3.6	ND (0.44)	ND (0.44)	ND (0.44)
Chloroform	µg/l	80	15.8	2.9	2.3
Chloromethane	µg/l	19	ND (0.96)	ND (0.96)	ND (0.96)
o-Chlorotoluene	µg/l	-	ND (0.18)	ND (0.18)	ND (0.18)
p-Chlorotoluene	µg/l	-	ND (0.29)	ND (0.29)	ND (0.29)
Di-Isopropyl ether	µg/l	-	ND (0.41)	ND (0.41)	ND (0.41)
1,2-Dibromo-3-chloropropane	µg/l	0.2	ND (0.69)	ND (0.69)	ND (0.69)
Dibromochloromethane	µg/l	80	ND (0.23)	ND (0.23)	ND (0.23)
1,2-Dibromoethane	µg/l	0.05	ND (0.22)	ND (0.22)	ND (0.22)
1,2-Dichlorobenzene	µg/l	600	ND (0.23)	ND (0.23)	ND (0.23)
1,3-Dichlorobenzene	µg/l	1.8	ND (0.19)	ND (0.19)	ND (0.19)
1,4-Dichlorobenzene	µg/l	75	ND (0.21)	ND (0.21)	ND (0.21)
Dichlorodifluoromethane	µg/l	-	ND (0.70)	ND (0.70)	ND (0.70)
1,1-Dichloroethane	µg/l	90	ND (0.21)	ND (0.21)	ND (0.21)
1,2-Dichloroethane	µg/l	5	ND (0.39)	ND (0.39)	ND (0.39)
1,1-Dichloroethene	µg/l	7	ND (0.20)	ND (0.20)	ND (0.20)
cis-1,2-Dichloroethene	µg/l	70	ND (0.31)	ND (0.31)	ND (0.31)
trans-1,2-Dichloroethene	µg/l	100	ND (0.36)	ND (0.36)	ND (0.36)
1,2-Dichloropropane	µg/l	5	ND (0.33)	ND (0.33)	ND (0.33)
1,3-Dichloropropane	µg/l	-	ND (0.28)	ND (0.28)	ND (0.28)
2,2-Dichloropropane	µg/l	-	ND (0.42)	ND (0.42)	ND (0.42)
1,1-Dichloropropene	µg/l	-	ND (0.20)	ND (0.20)	ND (0.20)
cis-1,3-Dichloropropene	µg/l	0.44	ND (0.19)	ND (0.19)	ND (0.19)
trans-1,3-Dichloropropene	µg/l	0.44	ND (0.26)	ND (0.26)	ND (0.26)
Ethylbenzene	µg/l	700	ND (0.20)	0.88 J	ND (0.20)
Hexachlorobutadiene	µg/l	0.86	ND (0.22)	ND (0.22)	ND (0.22)
Isopropylbenzene	µg/l	66	ND (0.16)	0.40 J	ND (0.16)
p-Isopropyltoluene	µg/l	-	ND (1.0)	1.3 J	ND (1.0)
Methyl Tert Butyl Ether	µg/l	20	ND (0.34)	ND (0.34)	ND (0.34)
4-Methyl-2-pentanone(MIBK)	µg/l	630	ND (1.2)	ND (1.2)	ND (1.2)
Methylene bromide	µg/l	-	ND (0.28)	ND (0.28)	ND (0.28)
Methylene chloride	µg/l	5	ND (1.0)	ND (1.0)	ND (1.0)
Naphthalene	µg/l	0.65	ND (1.0)	3.0 J	ND (1.0)
n-Propylbenzene	µg/l	-	ND (0.17)	0.54 J	ND (0.17)
Styrene	µg/l	100	ND (0.27)	ND (0.27)	ND (0.27)
Tert Butyl Alcohol	µg/l	-	ND (3.0)	ND (3.0)	ND (3.0)
tert-Amyl Methyl Ether	µg/l	-	ND (0.23)	ND (0.23)	ND (0.23)

Client Sample ID:		MD Cleanup Standards - Groundwater Type I and II Aquifers (MDE 6/2008)	MW4	MW5	MW6
Lab Sample ID:			JC40368-1	JC40368-2	JC40368-3
Date Sampled:			4/3/2017	4/3/2017	4/3/2017
Matrix:			Ground Water	Ground Water	Ground Water
GC/MS Volatiles (SW846 8260C)					
tert-Butyl Ethyl Ether	µg/l	-	ND (0.23)	ND (0.23)	ND (0.23)
1,1,1,2-Tetrachloroethane	µg/l	-	ND (0.17)	ND (0.17)	ND (0.17)
1,1,2,2-Tetrachloroethane	µg/l	0.053	ND (0.39)	ND (0.39)	ND (0.39)
Tetrachloroethene	µg/l	5	ND (0.23)	ND (0.23)	ND (0.23)
Toluene	µg/l	1000	ND (0.23)	ND (0.23)	ND (0.23)
1,2,3-Trichlorobenzene	µg/l	-	ND (0.50)	ND (0.50)	ND (0.50)
1,2,4-Trichlorobenzene	µg/l	70	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1-Trichloroethane	µg/l	200	ND (0.22)	ND (0.22)	ND (0.22)
1,1,2-Trichloroethane	µg/l	5	ND (0.28)	ND (0.28)	ND (0.28)
Trichloroethene	µg/l	5	ND (0.26)	ND (0.26)	ND (0.26)
Trichlorofluoromethane	µg/l	-	ND (0.58)	ND (0.58)	ND (0.58)
1,2,3-Trichloropropane	µg/l	-	ND (0.75)	ND (0.75)	ND (0.75)
1,2,4-Trimethylbenzene	µg/l	-	ND (0.26)	15.3	ND (0.26)
1,3,5-Trimethylbenzene	µg/l	-	ND (0.32)	13.8	ND (0.32)
Vinyl chloride	µg/l	2	ND (0.33)	ND (0.33)	ND (0.33)
m,p-Xylene	µg/l	10000	ND (0.42)	3.8	ND (0.42)
o-Xylene	µg/l	10000	ND (0.21)	8.1	ND (0.21)
Xylene (total)	µg/l	10000	ND (0.21)	11.9	ND (0.21)
GC Semi-volatiles (SW846 8015C)					
TPH-DRO (C10-C28)	mg/l	0.047	ND (0.064)	1.15	0.214
Regulatory limits listed in this document have been obtained from the latest version of the regulations cited and are used for advisory purposes only. SGS Accutest assumes no responsibility for errors in regulatory documents or changes to criteria detailed in later versions of the referenced regulation. It is the responsibility of the user to verify these limits before using or reporting any data.					
3 results exceeded regulatory criteria.					



Merritt Blvd,

Wise Ave.

NORTH POINT
GOVERNMENT FACILITY

Church Rd

MW-1
MW-6

MW-5

MW-4

MW-2

MW-3

LEGEND:

-  Monitoring Well Location
-  Proposed Monitoring Well Location
-  Storm Drain Manway



APEX COMPANIES, LLC
15850 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE: (301) 417-0200
FAX: (301) 975-0169

FIGURE 1
SITE LAYOUT

Date: 1-19-17	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-008	CAD File: AMORT-004	Approx. Scale: 1"=120'	Client: A MORTON THOMAS



Merritt Blvd,

Wise Ave.

NORTH POINT
GOVERNMENT FACILITY

MW-2

MW-1

MW-5

MW-4

MW-6

MW-3

Church Rd

LEGEND:

 Monitoring Well Location



APEX COMPANIES, LLC
15850 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE: (301) 417-0200
FAX: (301) 975-0169

FIGURE 2 MONITORING WELL LOCATIONS

Date: 4-27-17	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO	CAD File: AMORT-008	Approx. Scale: 1"=120'	Client: A MORTON THOMAS



Merritt Blvd,

Wise Ave.

Church Rd

NORTH POINT
GOVERNMENT FACILITY

MW-2

MW-3

(14.24)
MW-1

(14.07)
MW-5

MW-4 (13.92)

MW-6 (13.62)

14.2
14.0
13.8
13.6

LEGEND:

- Monitoring Well Location
- GW Flow Direction



APEX COMPANIES, LLC
15850 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE: (301) 417-0200
FAX: (301) 975-0169

FIGURE 3
GROUNDWATER CONTOUR MAP

Date: 4-28-17	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-008	CAD File: AMORT-008	Approx. Scale: 1"=120'	Client: A MORTON THOMAS

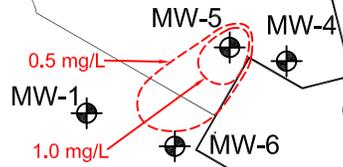


Merritt Blvd,

Wise Ave.

NORTH POINT
GOVERNMENT FACILITY

Church Rd



LEGEND:

- Monitoring Well Location
- Isoconcentration Contours



APEX COMPANIES, LLC
15850 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE: (301) 417-0200
FAX: (301) 975-0169

FIGURE 4
TPH-DRO ISOCONCENTRATION MAP

Date: 5-1-17	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-008	CAD File: AMORT-008	Approx. Scale: 1"=120'	Client: A MORTON THOMAS

ATTACHMENT 1

Work Plan for Site Assessment and
MDE Work Plan Approval Letter



WORKPLAN FOR ADDITIONAL SITE ASSESSMENT

MARYLAND OIL CONTROL PROGRAM (OCP)

**North Point Governmental Facility
1747 Merritt Boulevard/7701 Wise Avenue
Dundalk, Baltimore County, Maryland
MDE OCP Case No. 2016-0467-BA**

Apex Job Number: AMORT-008

January 26, 2017

Submitted To:

Mr. Andrew B. Miller, Chief and Ms. Ellen Jackson, Central Regional Section Head
Oil Control Program
Maryland Department of the Environment
1800 Washington Boulevard
Suite 620
Baltimore, Maryland 21230

Prepared for:

A. Morton Thomas & Associates, Inc
c/o Mr. Stephen Jerrick, Senior Project Manager

1.0 INTRODUCTION

Apex Companies, LLC (Apex) has prepared this Work Plan, on behalf of Baltimore County Government for site assessment activities at the North Point Government Facility addressed as 1747 Merritt Boulevard – 7701 Wise Avenue in Dundalk, Baltimore County, Maryland (subject property or site). This work plan has been prepared in accordance with the Maryland Department of the Environment (MDE) Request for Work Plan dated December 13, 2016. The MDE Request for Work Plan is associated with Oil Control Program (OCP) Case 2016-0467-BA, which was opened following a confirmed release from a supply line associated with an underground storage tank (UST) located at the subject property. The MDE Request for Work Plan identified the following requirements: 1) Submit a work plan for assessment activities to further evaluate the extent of contamination detected along the former product piping run; 2) install a minimum of three, 4-inch diameter groundwater monitoring wells; 3) perform cleaning of the storm drain manway located closest to the former product piping run where residual petroleum contamination (sheen) and petroleum odors were observed; 4) perform an inspection of all basement sumps located in the on-site building for the presence of petroleum contamination; and 5) submit documentation regarding monitoring and maintenance of booms in the storm drain outfall as well as previous site assessment reports that have not been provided.

The planned scope of work includes the installation of three, 4-inch groundwater monitoring wells, the collection of 3 subsurface soil samples from the well installs; the development of three newly installed monitoring wells and subsequent collection of groundwater samples from the three wells. Apex reviewed building site plans and performed a site inspection to identify any basement sumps located in the on-site building. Based on Apex's review and inspection, basement sumps are not located in the on-site building. A Site Layout is provided on **Figure 1**.

2.0 SCOPE OF WORK

The following sections detail the scope of work proposed to achieve the above objectives. Apex will prepare a site-specific health and safety plan (HASP) for the work. The plan will outline the risks associated with this scope of work and the health and safety measures that will be implemented.

As the scope of work will include subsurface borings, as part of its HASP and as legally required prior to initiating any subsurface investigation, underground utilities in on-site areas of investigation will be located. The "Miss Utility" system will be contacted to locate underground utilities. The Miss Utility system will locate underground utilities in public spaces and on easements. Apex Health and Safety Standard Operating Procedures (SOP) for soil boring completion requires contracting a private utility locator service to identify locations of utilities in the areas not identified by Miss Utility. Available as-built drawings and site plans (ALTA Land Title Survey Plat) will also be reviewed in order to identify known subterranean features, and boring locations will be approved by site personnel prior to progression into the subsurface.

2.1 Monitoring Well Installation

To further evaluate the extent of the contaminated area originating from the former product piping run, Apex will complete three borings and install three, 4-inch diameter groundwater monitoring wells, identified as MW-4, MW-5, and MW-6 on the subject property. Proposed boring locations are presented in **Figure 1**. Borings will be advanced using hollow stem augers (HSA) with split spoon soil sampling to a maximum depth of 25 feet below ground surface or approximately 10 feet below the water table, which is consistent with the average groundwater depth of 15 to 16 feet as identified during previous investigations.

At each location, soil samples will be collected continuously from the surface to the terminus of the borings. Apex will field screen soil samples using a calibrated PID. The on-site geologist will document field observations including PID readings, soil lithology, as well as visual and olfactory observations. Apex will collect a soil sample from the depth exhibiting the highest PID readings or from directly above the groundwater/soil interface if no elevated PID readings are observed.

Once the desired depth has been reached at each location, the three monitoring wells will be constructed using 4-inch Schedule 40 polyvinyl chloride (PVC) well screen and casing. The PVC pipe will be factory-slotted and threaded and capped on the bottom. Each well will consist of 15 feet of screen. The annular space around the well screen will have a minimum of 1.5-inch of space on all sides and will be backfilled with filter sand that extends from the base of the well to

two feet above the screen. Above the filter sand, a two-foot bentonite slurry seal will be installed. The remaining annular space around the well casing will be grouted with bentonite Portland cement mixture (60:40). Grouting will extend to the ground surface. A flush mount well cover will be installed at the ground surface to protect the well from damage.

Soil samples from borings collected during the investigation will be submitted to a laboratory for analysis consistent with the concern being investigated (fuel oil release) and will total petroleum hydrocarbons (TPH) diesel range organics (DRO) using EPA Method 8015, and volatile organic compounds (VOCs) using EPA Method 8260. **Table 1** summarizes the proposed soil sampling and analysis plan.

To minimize the risk of cross-contamination (e.g. asphalt particles in a soil sample analyzed for PAHs), samples will be collected carefully from the only the targeted media. Sampling equipment (e.g., split spoons, augers) will be decontaminated between sampling locations using Alconox wash, tap water rinse, distilled water rinse and air dry. Disposable nitrile gloves will be used during sample collection, and decon procedures. Soil cuttings generated during soil boring completion will be placed in 55-gallon drums for disposal offsite. Dedicated and disposable sampling items will be placed in trash bags and transported off site for disposal.

2.2 Groundwater Sampling

Upon completion of the three monitoring, Apex will collect groundwater samples from the subject property. Prior to sample collection, Apex will develop the monitoring wells using the methodology prescribed in the Environmental Protection Agency (EPA) 1992 Groundwater Forum *Monitoring Well Development Guidelines for Superfund Project Managers*. Monitoring well development for each well will consist of:

1. Initially recording the static water level and depth to bottom of the well;
2. Set a pump, record pumping rate and turbidity; pump until turbidity stabilizes;
3. Discontinue pumping and surge the well;
4. Measure depth to the well bottom, if more than 10% of the bottom well screen is occluded by sediment, remove the sediment by bailing or vacuum;
5. Reset the pump, record pumping rate and turbidity, pump until turbidity stabilizes;
6. Repeat until the well yields acceptable turbidity at the beginning of the pumping cycle.

Development water and any other investigation derived waste generated during this project will be containerized into 55-gallon drums, characterized by laboratory testing, and disposed properly.

Representative groundwater samples will be collected using low-flow purging and sampling methodology. Well purging will be conducted using a variable speed low flow air bladder pump or peristaltic pump. Groundwater quality parameters pH, specific conductivity, dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP or Eh) will be measured through a flow cell using a multi-parameter water quality meter for stabilization. Following well purging and stabilization, water samples will be transferred directly into pre-preserved laboratory glass containers with Teflon-lined lids, labeled and stored on ice at a temperature of approximately 4 degrees Centigrade pending delivery to the laboratory. The monitoring well samples will be submitted to the laboratory under proper chain of custody (COC) procedures and analyzed for full-suite VOCs using EPA Method 8260 and TPH-DRO using EPA Method 8015. Sampling equipment (e.g., meters, pumps) will be decontaminated between sampling locations using Alconox wash, tap water rinse, distilled water rinse and air dry. Disposable nitrile gloves will be used during purging, sample collection, and decontamination procedures. **Table 1** summarizes the proposed groundwater sampling and analysis plan.

Apex will conduct a groundwater elevation survey and plot the existing monitoring well locations on a scaled site plan using coordinates determined by portable GPS equipment. Water table elevations will be determined from static water level measurements at each surveyed well location and the elevation data will be utilized to develop a groundwater flow contour map.

2.3 Storm Drain Manway Cleaning

The MDE Request for Work Plan requires the cleaning of the impacted storm drain manway located nearest to the former product piping run due to previous indications of petroleum impact observed in the manway. The storm drain manway will be cleaned by utilizing a pressure washer to clean out debris and any petroleum observations present during the cleaning. A vacuum truck will be mobilized to the site and setup on the storm drain manway immediately downgradient of the impacted manway. The vacuum truck will be utilized to contain and recovery impacted water generated during the pressure washing of the impacted storm drain manway. Water recovered during cleaning will be disposed of offsite at an approved disposal facility.

2.4 Basement Sump Inspection

The MDE Request for Work Plan requires the identification and inspection of basements sumps located within the on-site building for the presence of petroleum impact. On December 21, 2016, Apex mobilized to the site to inspect basement sumps located at the site. Apex was accompanied by Mr. John Messler with Baltimore County, and Mr. Stephen Jerrick with A. Morton

Thomas, during its inspection. Apex inspected the boiler room as suggested by Mr. Messler and did not observe any basement sumps. Mr. Messler indicated that he was unaware of any basement sumps located in the on-site building. In addition to the site inspection, Apex also reviewed site plans provided by Mr. Jerrick. The site plans reviewed did not identify basement sumps on the property. Site plans reviewed by Apex are provided in **Attachment 1**.

2.5 Site Assessment Report

Following completion of field investigation tasks, Apex will prepare a summary report of field activities, the data obtained, and conclusions. The report will include scaled site drawings that depict the sample locations, soil boring logs and well construction logs, well locations, soil and groundwater concentration maps, and the laboratory data reports. The report will also include any additional findings and data that were collected at the subject property.

3.0 STATEMENT REGARDING ITEM #3 OF THE MDE REQUEST FOR WORK PLAN

In response to a possible heating oil seepage at the North Point Government Center on Sunday February 21, 2016, I, John H. Messler, arrived on site and observed that there was a boom at the storm drain outfall. It was my impression that the Maryland Department of the Environment (MDE) Emergency Response Team had placed the boom in the storm drain outfall located on Merritt Blvd. The accompanying photograph (**Attachment 2**) shows that a boom was in place during procedures undertaken by MDE to determine the flow of the seepage. The outfall/boom was checked periodically by myself in the company of an MDE representative as noted within the MDE reports. As noted within subsequent MDE reports the heating oil odor and sheen at the outfall had completely disappeared. Through these action, we thought we were in compliance.

Due to heavy rains during this period of time, an exploration of the stream needed to be undertaken to determine if parts of the boom had traveled downstream. When the boom was not found, it was thought that the petroleum contractor for Baltimore County had removed it. As part of the MDE work plan AMT along with Apex performed an analysis at the outfall. In addition, if any evidence of product was found at the storm drain outfall the work plan called for a boom to be placed at the storm drain outfall and maintained. Two stream explorations were performed with no indication of product from the North Point Government Center heating oil piping seepage. No one was hired by the County to monitor and maintain boom originally and no documentation is available outside of the picture provided in **Attachment 2**.

TABLE 1
Site Assessment – Sampling Plan
North Point Government Facility

SOIL

Sample Location ¹	Description	Sample Depths ²	Analytical Parameters – Methods By Fixed Laboratory
Groundwater Monitoring Wells	3 subsurface soil sample (MW-4, MW-5, MW-6)	Various	TPH-DRO by EPA 8015 VOCs by EPA 8260
	3 groundwater samples (MW-4, MW-5, MW-6)	DTW est. at 15 to 20 ft bgs	TPH-DRO by EPA 8015 VOCs by EPA 8260

Notes:

- 1 – Refer to attached **Figure 1** for proposed soil and water sample locations.
- 2 – Refer to Section 2 of the Work Plan for detailed scope of work.

TABLE 2
Site Assessment – Sampling Plan
QA/QC Parameters

SOIL

Sample Location ¹	Description	Sample Depths ²	Analytical Parameters – Methods By Fixed Laboratory
One blind duplicate soil sample (MW-4, MW-5, MW-6)	Selected subsurface sample location	Subsurface	TPH-DRO by EPA 8015 VOCs by EPA 8260

GROUNDWATER

Sample Location ¹	Description	Analytical Parameters – Methods By Fixed Laboratory
One blind duplicate groundwater sample (MW-4, MW-5, MW-6)	One Blind duplicate water sample	TPH-DRO by EPA 8015 VOCs by EPA 8260



Merritt Blvd,

Wise Ave.

NORTH POINT
GOVERNMENT FACILITY

MW-5

MW-4

MW-2

MW-1

MW-6

MW-3

LEGEND:

-  Monitoring Well Location
-  Proposed Monitoring Well Location
-  Storm Drain Manway

Church Rd



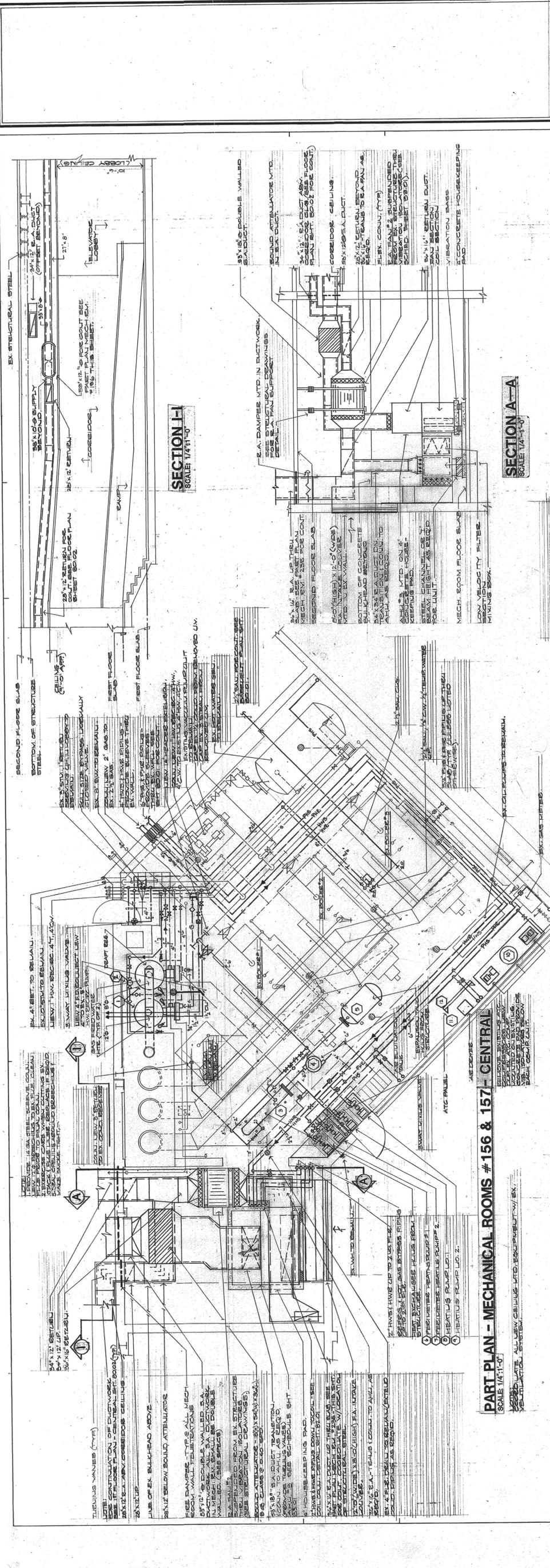
APEX COMPANIES, LLC
15850 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE: (301) 417-0200
FAX: (301) 975-0169

FIGURE 1
SITE LAYOUT

Date: 1-19-17	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-008	CAD File: AMORT-004	Approx. Scale: 1"=120'	Client: A MORTON THOMAS

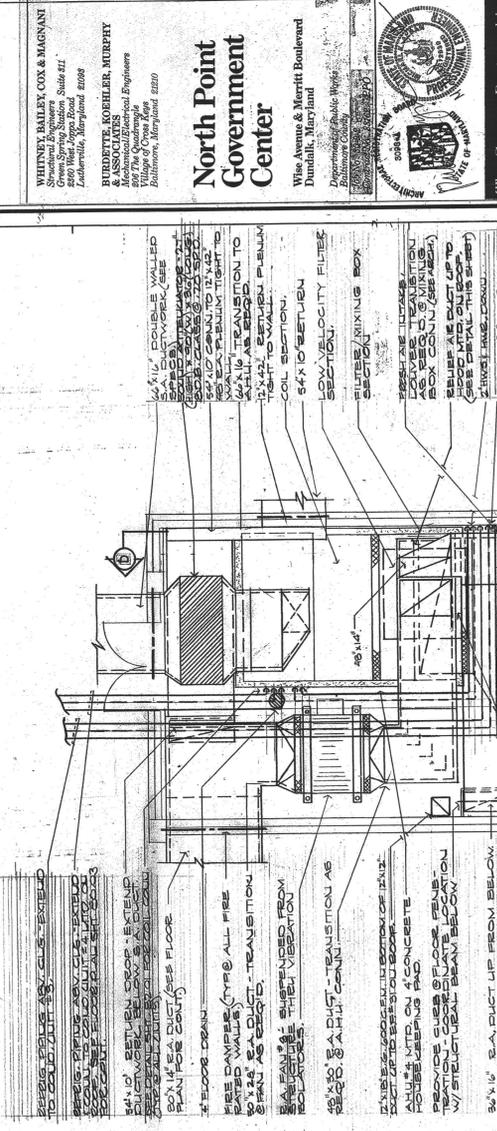
ATTACHMENT 1

Site Plans



PART PLAN - MECHANICAL ROOMS #156 & 157 - CENTRAL
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.

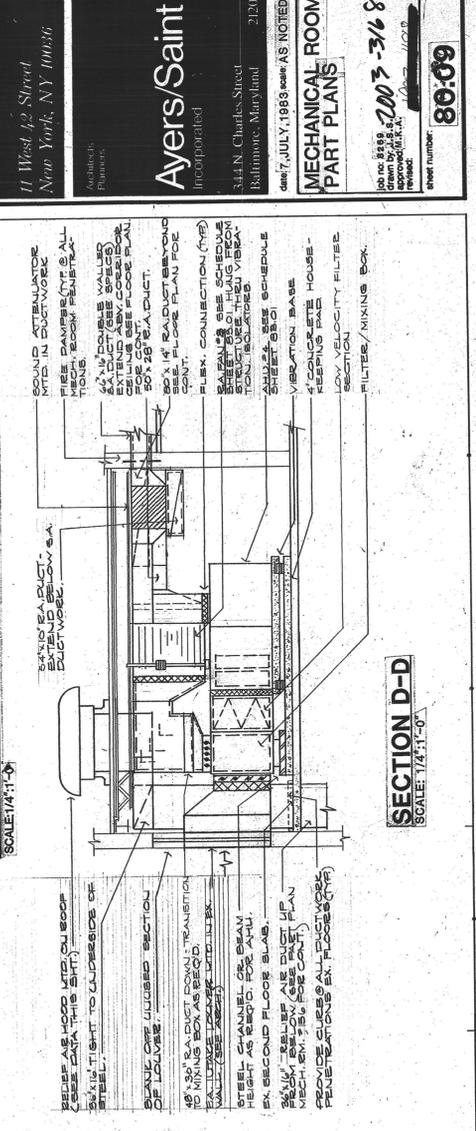


PART PLAN - MECHANICAL ROOM #124 - WEST
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.

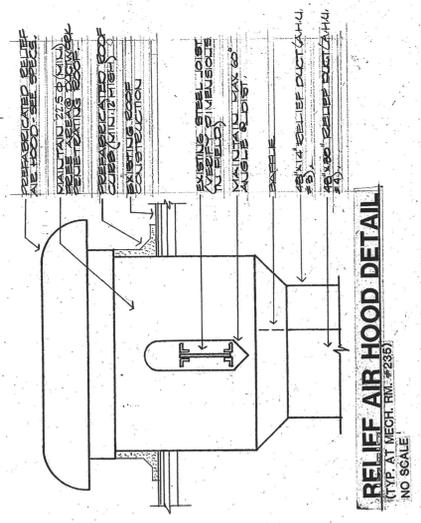
PART PLAN - MECHANICAL ROOM #203 - WEST
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.

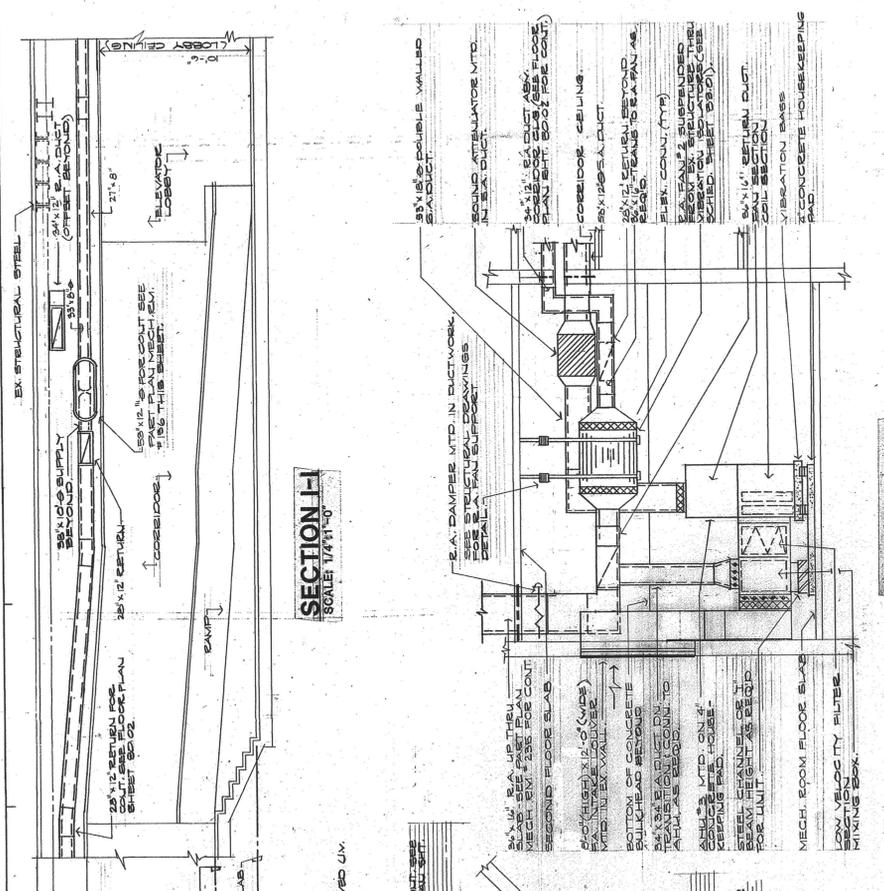


PART PLAN - MECHANICAL ROOM #235 - CENTRAL
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.



RELIEF AIR HOOD DETAIL
(TYPICAL MECH. RM. #235)
NO SCALE

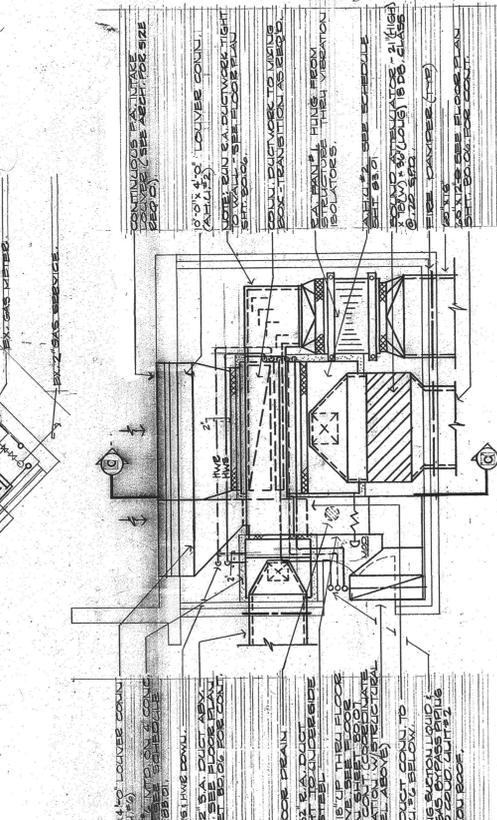


SECTION I-I
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.

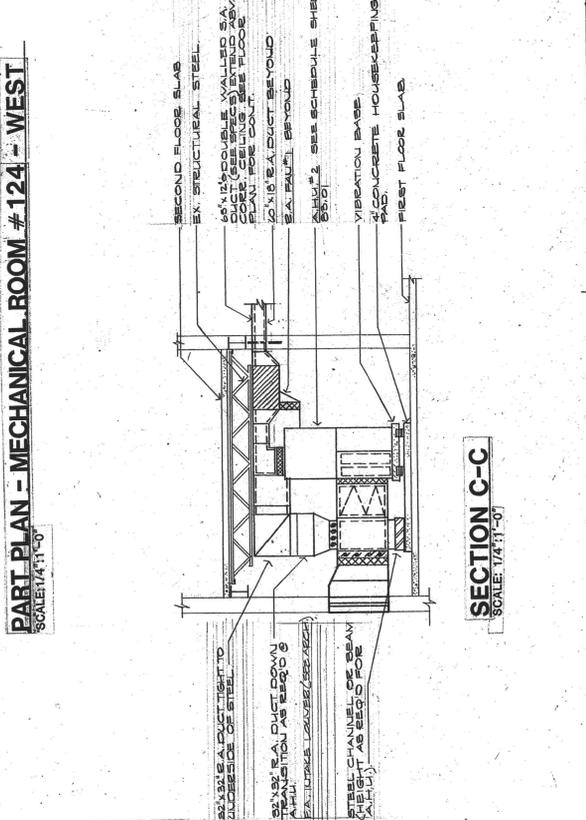
SECTION A-A
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.



SECTION A-A
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.



SECTION D-D
SCALE: 1/4"=1'-0"

RECORD DATE: ALL NEW CEILING LOTS EQUIPMENT/EX. MECHANICAL ROOMS. CONSULT WITH ARCHITECT FOR ALL INFORMATION.

WHITNEY BAILEY, OX & MAGNANT
Green Spring Station, Suite 211
Lutherville, Maryland 21099

RUBINOFF, MORRIS, MORPHY
Mechanical/Electrical Engineers
Village Office Park
Baltimore, Maryland 21202

**North Point
Government
Center**

Wise Avenue & Merritt Boulevard
Dundalk, Maryland
Department of Public Works
Baltimore County

The Grizzan Partnership
Architects, Planners

11 West 42 Street
New York, NY 10036

**Ayers/Saint
Incorporated**

344 N. Charles Street
Baltimore, Maryland 21201

DATE: 7 JULY 1988 (SEE AS NOTED)

**MECHANICAL ROOM
PART PLANS**

DATE: 10/15/88
DRAWN BY: J.S. & R.S.
CHECKED BY: J.S. & R.S.
SCALE: 1/4"=1'-0"

SHEET NUMBER: **80-09**

ATTACHMENT 2

Photograph of Outfall





Maryland
Department of
the Environment

Larry Hogan
Governor

Boyd Rutherford
Lieutenant Governor

Ben Grumbles
Secretary

February 17, 2017

Mr. John Messler
Budget and Finance, Property Management
Baltimore County Government
12200-A Long Green Pike
Glen Arm MD 21057

RE: WORK PLAN APPROVAL
Case No. 2016-0467-BA
North Point Government Facility
1747 Merritt Boulevard / 7701 Wise Avenue
Dundalk, Baltimore County, Maryland
Facility I.D. No. 3893

Dear Mr. Messler,

The Maryland Department of the Environment's (the Department) Oil Control Program recently completed a review of the *Work Plan for Additional Site Assessment*, dated January 26, 2017. Pursuant to the Department's requirements, APEX Companies, LLC, on behalf of Baltimore County, proposes to install and develop three monitoring wells on site, collect soil and groundwater samples, and clean out the storm drain manway located in the former product piping area in order to remove residual fuel oil. According to the *Work Plan*, no basement sumps are present in the building. With the exception of providing requested information regarding prior investigations performed on site (i.e., the presence of existing monitoring wells and evidence of soil borings), the *Work Plan* addresses the Department's previous requirements. The Department approves implementation of the proposed *Work Plan* contingent upon the following modifications:

1. Longer well screens may be necessary pending depth-to-water encountered to ensure well are installed with sufficient screen above and below the water table interface. Well development methods must include active surging of the well in addition to pumping/purging. The monitoring wells must be sampled no sooner than one week after completion of well development activities.
2. All soil samples must be collected and field preserved in accordance with EPA Method 5035.
3. The monitoring wells must continue to be gauged for depth-to-product and depth-to-water on a monthly basis, unless otherwise directed by the Department. If liquid phase hydrocarbons (LPH) are detected, it must be reported to the Department within 2 hours of detection. The monitoring wells must be sampled on a quarterly basis for full-suite volatile organic compounds (VOCs), including fuel oxygenates and naphthalene, using EPA Method 8260 and for total petroleum hydrocarbons - diesel range organics (TPH-DRO). The results of monthly gauging and quarterly sampling must be presented in *Quarterly Status Reports* and submitted to the Oil Control Program.
4. In addition to the three newly installed monitoring wells, existing monitoring well MW-1, located south of the former underground storage tank, must be gauged and sampled in accordance with the frequency established above (monthly gauging and quarterly groundwater sampling, unless otherwise directed).

5. At a minimum, *Quarterly Status Reports* must include the following:
 - a) Summary of all field activities conducted during the quarter, planned field activities for the next quarter, and a brief bulleted chronology of site activities since the case was opened. This information should include dates of field activities, report submittals, Department requirement letters, etc.
 - b) Summary data tables showing all gauging data (depth-to-water, corrected groundwater elevations, depth-to-LPH, LPH thickness) with respect to time and well gauging data, not just for the current reporting period.
 - c) Summary groundwater concentration data tables for each well with respect to time and detected groundwater constituents as well as benzene, toluene, ethylbenzene, xylene, MTBE, and naphthalene should be presented in the summary table.
 - d) To-scale site maps showing groundwater elevations measured at each monitoring well (or corrected elevations), groundwater gradient, groundwater concentrations (benzene, toluene, ethylbenzene, xylenes, naphthalene, MTBE, and detected analytes), and LPH thickness. Separate figures may be appropriate to depict the data required.
 - e) All groundwater sampling forms and laboratory reports.
6. *Quarterly Status Reports* must be submitted to the Oil Control Program no later than 45 days after groundwater samples are collected. Include three hard copies and one electronic copy on a labeled compact disc (CD).
7. All well locations must be field verified by Department staff prior to the initiating drilling activities. Coordinate all field activities with the case manager, Mr. Matt Mueller.
8. Contact the case manager at least five (5) business days prior to all scheduled field work dates so Department personnel have the opportunity to be on site to observe the work performed.

If you have any questions, please contact Mr. Mueller at 410-537-3584 (email: matthew.mueller@maryland.gov) or me at 410-537-3482 (email: ellen.jackson@maryland.gov).

Sincerely,



Ellen Jackson, Central Region Section Head
Remediation and State-Lead Division
Oil Control Program

EJ/nln

cc: Mr. Greg Doran (Baltimore County Govt.)
Mr. Kevin Koepenick (Baltimore County DEPS)
Mr. Todd Passmore (Apex Companies, LLC)
Mr. Andrew B. Miller
Mr. Christopher H. Ralston
Ms. Hilary Miller

ATTACHMENT 2

Stormwater Manway Cleaning Disposal

STORM WATER MANAGEMENT FACILITIES REPAIR GROUP INC.

8345 – A Beechcraft Avenue
Gaithersburg, MD 20879

(301) 869-2200
(800) 335-1503
Fax (301) 330-4610

March 27, 2017

Apex Companies, LLC
Attn: Todd Passmore
15850 Crabbs Branch Way Ste 200
Rockville, MD 20855

Re: NPGC
7701 Wise Avenue
Dundalk, MD 21222
Pertroleum Release

Dear Mr. Passmore,

This letter is to certify that on March 23, 2017, we cleaned a trench drain that was affected by a petroleum release at the above mentioned address. We vacuumed all of the petroleum complete. It was then transported to our shop at 8345A Beechcraft Ave Gaithersburg, MD 20879 and transferred to a 55 gallon drum. The drum is being held for pickup by FCC environmental, which will be transported to their disposal facility at 6305 E. Lombard St, Baltimore, MD 21224. Our Oil Hauler Permit number is 2012-OPV-5951. Please feel free to contact should you have any questions, comments or concerns.

We look forward to working with you again in the future. Thank you

Sincerely,

Rick A. Harbaugh

Rick Harbaugh
President
Storm Water Management, F.R.G., Inc.

ATTACHMENT 3

Soil Boring Logs



Soil/Well Boring Log

Boring No.: MW-4
 Project: North Point Govt. Center
 Project No.: AMORT-008

Client	A. Morton Thomas		Boring Location:	North side of boiler room			GW Readings			Well Construction details		
Drill Method	Hollow Stem Auger			Date	Time	Depth	xxx	xxx	Concrete			
Drilling Company	Allied Well								Cement Grout			
Location	Dundalk Maryland								Silica Sand Pack			
Date Start	3/23/2017	Total Depth		30					Bentonite Seal			
Apex Geologist	T.Passmore		G.S. Elevation						Screen			

Depth (feet)	Sample Interval	Blow Counts	Rec. (inch)	PID (ppm)	Water Table	Lab Sample	USCS	Lithology Description	Well Construction Diagram	
2		14-11-8-4	12	0.0			SM	Surface-Asphalt	xxx	xxx
4		3-4-5-5	10	0.0			CL	Reddish Brown to light brown medium coarse sand, poorly sorted, no odor/staining		
6		2-2-4-2	18	0.0			SM	White to light brown medium grain sandy clay, low plasticity with red sand lenses		
8		1-4-3-3	18	0.0			SM	White to light brown medium grand sand poorly sorted, loose, no odor/staining		
10		3-4-3-5	20	0.0						
12		3-6-5-6	18	0.0						
14		3-4-7-7	20	0.0			SM	Same as above		
16		5-6-7-9	20	0.0						
18		3-8-12-12	20	0.0		MW-4-S		Wet at 19.5 ft, no odor/staining		
20		7-8-11-12	20	0.0			SW-SM	grades to white medium to coarse grain sand small gravels		
22		4-7-10-10	20	0.0						
24		6-8-11-14	20	0.0						
26		5-7-10-12	24	0.0				Same as above		
28		6-4-7-6	24	0.0			CL	Light gray to red sandy clay, hard, low plasticity no odor/staining		
30		5-8-8-8	24	0.0				End boring at 30 feet		
32										
34										
36										
38										
40										
42										
44										
46										
48										
50										
52										
54										

REMARKS: Boring ended at 30 feet bgs. Field Screen method / instrument: RAE PID, 10.6 eV lamp.



Soil/Well Boring Log

Boring No.: MW-5
 Project: North Point Govt. Center
 Project No.: AMORT-008

Client: A. Morton Thomas
 Drill Method: Hollow Stem Auger
 Drilling Company: Allied Well
 Location: Dundalk Maryland
 Date Start: 3/24/2017 Total Depth: 25
 Apex Geologist: T.Passmore G.S. Elevation:

Boring Location: Former piping run near building and AST

GW Readings			Well Construction details			
Date	Time	Depth	xxx	xxx	Concrete	
					Cement Grout	
					Silica Sand Pack	
					Bentonite Seal	
					Screen	

Depth (feet)	Sample Interval	Blow Counts	Rec. (inch)	PID (ppm)	Water Table	Lab Sample	SCS	Lithology Description	Well Construction Diagram
2		35-8-4-4	18	0.0			CL	Surface-Asphalt	<p>Depth</p> <p>5</p> <p>Well riser: 0 to 5 ft 4" ID SCH 40 PVC</p> <p>10</p> <p>15</p> <p>Grout: 0 to 1 ft</p> <p>20</p> <p>25</p> <p>30</p> <p>Bentonite Seal: 1 to 3 ft</p> <p>Sand Pack: 3 to 25 ft</p> <p>Well screen: 5 to 25 ft 4" ID SCH 40 PVC</p> <p>TD - <u>25</u> ft</p>
4		3-3-4-3	16	0.0			SP-SM	White to light brown medium grain sandy clay, low plasticity with red sand lenses	
6		3-1-1-1	12	0.0				Brown medium grain sand with silt	
8		1-1-1-3	4	0.0			SM	White to light brown medium grand sand poorly graded, loose, no odor/staining	
10		2-3-4-4	20	0.0					
12		2-3-4-6	20	0.0					
14		4-7-8-9	18	0.0					
16		3-7-8-9	16	205.0			SM	Same as above	
18		6-6-5-6	20	460.0		MW-5-S		Wet at 16.5 feet, petroleum odor and staining	
20		4-6-5-4	24	320.0					
22		2-5-4-5	20	18.1			SW-SM	grades to white medium to coarse grain sand small gravels, light odor, no staining	
24		2-2-2-3	16	0.0				Light gray to red sandy clay, medium plasticity, hard no odor/staining	
26		2-7-12-16	24	0.0				End boring at 25 feet	
28									
30									
32									
34									
36									
38									
40									
42									
44									
46									
48									
50									
52									
54									

REMARKS: Boring ended at 25 feet bgs. Field Screen method / instrument: RAE PID, 10.6 eV lamp.



Soil/Well Boring Log

Boring No.: MW-6
 Project: North Point Govt. Center
 Project No.: AMORT-008

Client	A. Morton Thomas		Boring Location:	In grass near entrance to DNR building and AST		
Drill Method	Hollow Stem Auger		GW Readings	Date	Time	Depth
Drilling Company	Allied Well		Well Construction details	xxx	xxx	Concrete
Location	Dundalk Maryland					Cement Grout
Date Start	3/23/2017	Total Depth	25			Silica Sand Pack
Apex Geologist	T.Passmore	G.S. Elevation				Bentonite Seal
						Screen

Depth (feet)	Sample Interval	Blow Counts	Rec. (inch)	PID (ppm)	Water Table	Lab Sample	USCS	Lithology Description	Well Construction Diagram
2							CL	Surface-Asphalt	<p>FM Steel Cover</p> <p>Depth</p> <p>5</p> <p>Well riser: 0 to 5 ft 4" ID SCH 40 PVC</p> <p>10</p> <p>15</p> <p>Grout: 0 to 1 ft</p> <p>20</p> <p>25</p> <p>Bentonite Seal: 1 to 3 ft</p> <p>Sand Pack: 3 to 25 ft</p> <p>Well screen: 5 to 25 ft 4" ID SCH 40 PVC</p> <p>TD - <u>25</u> ft</p>
4							SP-SM	White to light brown medium grain sandy clay, low plasticity with red sand lenses	
6		1-1-7-8	12	0.0				Brown medium grain sand with silt	
8		8-8-5-5	4	0.0			SM	White to light brown medium grand sand poorly graded, loose, no odor/staining	
10		1-1-1-3	20	0.0					
12		2-4-8-8	20	0.0					
14		3-4-4-5	18	0.0			SM	Same as above	
16		1-6-8-8	16	0.0					
18		7-8-12-10	20	0.0		MW-6-S		Wet at 18 feet	
20		7-6-7-9	24	0.0			SW-SM	grades to white medium to coarse grain sand small gravels, light odor, no staining	
22		5-5-8-11	20	0.0					
24		7-11-13-21	16	0.0			SW-SM	Same as above	
26		3-10-12-12	24	0.0				End boring at 25 feet	
28									
30									
32									
34									
36									
38									
40									
42									
44									
46									
48									
50									
52									
54									

REMARKS: Boring ended at 25 feet bgs. Field Screen method / instrument: RAE PID, 10.6 eV lamp.

ATTACHMENT 4

Laboratory Analytical Results and Chain of Custody

Technical Report for

Apex Companies, LLC

North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

AMORT-008

SGS Accutest Job Number: JC39699

Sampling Dates: 03/23/17 - 03/24/17



Report to:

**Apex Companies, LLC
15850 Crabbs Branch Way
Rockville, MD 20855
TPassmore@Apexcos.com**

ATTN: Todd Passmore

Total number of pages in report: 53



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

**Nancy Cole
Laboratory Director**

Client Service contact: Daniel Axelrod 732-329-0200

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

This report shall not be reproduced, except in its entirety, without the written approval of SGS Accutest.
Test results relate only to samples analyzed.

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2

3

4

5

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Sample Summary

Apex Companies, LLC

Job No: JC39699

North Point Government Facility, 7701 Wise Avenue, Dundalk, MD
 Project No: AMORT-008

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC39699-1	03/23/17	16:00 TP	03/25/17	SO	Soil	MW-4-S
JC39699-2	03/24/17	11:30 TP	03/25/17	SO	Soil	MW-5-S
JC39699-3	03/23/17	12:45 TP	03/25/17	SO	Soil	MW-6-S

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: JC39699
Account: Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD
Collected: 03/23/17 thru 03/24/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC39699-1		MW-4-S				
Acetone		25.0	12	6.1	ug/kg	SW846 8260C
Ethylbenzene		0.26 J	1.2	0.18	ug/kg	SW846 8260C
Isopropylbenzene		0.33 J	2.5	0.19	ug/kg	SW846 8260C
Toluene		0.47 J	1.2	0.15	ug/kg	SW846 8260C
m,p-Xylene		0.92 J	1.2	0.27	ug/kg	SW846 8260C
Xylene (total)		0.92 J	1.2	0.25	ug/kg	SW846 8260C
JC39699-2		MW-5-S				
n-Butylbenzene		5220	240	18	ug/kg	SW846 8260C
sec-Butylbenzene		3510	240	19	ug/kg	SW846 8260C
tert-Butylbenzene		102 J	240	19	ug/kg	SW846 8260C
Ethylbenzene		603	120	18	ug/kg	SW846 8260C
Isopropylbenzene		1020	240	19	ug/kg	SW846 8260C
p-Isopropyltoluene		3290	240	30	ug/kg	SW846 8260C
Naphthalene		20600	600	120	ug/kg	SW846 8260C
n-Propylbenzene		2560	240	24	ug/kg	SW846 8260C
1,2,4-Trimethylbenzene		18200	240	21	ug/kg	SW846 8260C
1,3,5-Trimethylbenzene		8040	240	20	ug/kg	SW846 8260C
m,p-Xylene		1160	120	26	ug/kg	SW846 8260C
o-Xylene		1590	120	24	ug/kg	SW846 8260C
Xylene (total)		2750	120	24	ug/kg	SW846 8260C
TPH-DRO (C10-C28)		7390	57	16	mg/kg	SW846 8015C
JC39699-3		MW-6-S				
m,p-Xylene		0.46 J	1.1	0.25	ug/kg	SW846 8260C
Xylene (total)		0.46 J	1.1	0.23	ug/kg	SW846 8260C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-4-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-1		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 94.9
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V34066.D	1	04/03/17	TDN	n/a	n/a	V3V1369
Run #2							

Run #	Initial Weight
Run #1	4.3 g
Run #2	

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	25.0	12	6.1	ug/kg	
71-43-2	Benzene	ND	0.61	0.15	ug/kg	
108-86-1	Bromobenzene	ND	6.1	0.19	ug/kg	
74-97-5	Bromochloromethane	ND	6.1	0.39	ug/kg	
75-27-4	Bromodichloromethane	ND	2.5	0.19	ug/kg	
75-25-2	Bromoform	ND	6.1	0.33	ug/kg	
74-83-9	Bromomethane	ND	6.1	0.59	ug/kg	
78-93-3	2-Butanone (MEK)	ND	12	2.2	ug/kg	
104-51-8	n-Butylbenzene	ND	2.5	0.19	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.5	0.19	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.5	0.19	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.5	0.20	ug/kg	
108-90-7	Chlorobenzene	ND	2.5	0.20	ug/kg	
75-00-3	Chloroethane	ND	6.1	0.53	ug/kg	
67-66-3	Chloroform	ND	2.5	0.29	ug/kg	
74-87-3	Chloromethane	ND	6.1	0.26	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.5	0.25	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.5	0.30	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.5	0.16	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.5	0.59	ug/kg	
124-48-1	Dibromochloromethane	ND	2.5	0.18	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.2	0.30	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.2	0.21	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.2	0.17	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.2	0.19	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.1	0.67	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.2	0.23	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.21	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.2	0.19	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.2	0.54	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.2	0.19	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.5	0.38	ug/kg	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-4-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-1		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 94.9
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	2.5	0.24	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.5	0.19	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.5	0.19	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.5	0.24	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.5	0.27	ug/kg	
100-41-4	Ethylbenzene	0.26	1.2	0.18	ug/kg	J
87-68-3	Hexachlorobutadiene	ND	6.1	0.19	ug/kg	
98-82-8	Isopropylbenzene	0.33	2.5	0.19	ug/kg	J
99-87-6	p-Isopropyltoluene	ND	2.5	0.30	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.32	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	6.1	1.0	ug/kg	
74-95-3	Methylene bromide	ND	6.1	0.46	ug/kg	
75-09-2	Methylene chloride	ND	6.1	1.2	ug/kg	
91-20-3	Naphthalene	ND	6.1	1.2	ug/kg	
103-65-1	n-Propylbenzene	ND	2.5	0.24	ug/kg	
100-42-5	Styrene	ND	2.5	0.18	ug/kg	
75-65-0	Tert Butyl Alcohol	ND	31	3.7	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.5	0.65	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.5	0.32	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.5	0.26	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.5	0.29	ug/kg	
127-18-4	Tetrachloroethene	ND	2.5	0.34	ug/kg	
108-88-3	Toluene	0.47	1.2	0.15	ug/kg	J
87-61-6	1,2,3-Trichlorobenzene	ND	6.1	0.61	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	6.1	0.61	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.5	0.20	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.5	0.40	ug/kg	
79-01-6	Trichloroethene	ND	1.2	0.23	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.1	0.77	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	6.1	0.94	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.5	0.21	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.5	0.20	ug/kg	
75-01-4	Vinyl chloride	ND	2.5	0.25	ug/kg	
	m,p-Xylene	0.92	1.2	0.27	ug/kg	J
95-47-6	o-Xylene	ND	1.2	0.25	ug/kg	
1330-20-7	Xylene (total)	0.92	1.2	0.25	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-122%

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

Report of Analysis

Client Sample ID: MW-4-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-1		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 94.9
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	92%		68-124%
2037-26-5	Toluene-D8	97%		77-125%
460-00-4	4-Bromofluorobenzene	103%		72-130%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

3.1
3

Client Sample ID: MW-4-S	Date Sampled: 03/23/17
Lab Sample ID: JC39699-1	Date Received: 03/25/17
Matrix: SO - Soil	Percent Solids: 94.9
Method: SW846 8015C SW846 3546	
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Y82953.D	1	03/29/17	HC	03/28/17	OP1454	G2Y3180
Run #2							

Run #	Initial Weight	Final Volume
Run #1	11.3 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	9.3	2.7	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	60%		18-132%		
16416-32-3	Tetracosane-d50	77%		25-137%		
438-22-2	5a-Androstane	78%		22-134%		

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

Report of Analysis

Client Sample ID: MW-5-S		Date Sampled: 03/24/17
Lab Sample ID: JC39699-2		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 86.6
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E243475.D	1	04/05/17	TDN	n/a	n/a	VE10500
Run #2							

Run #1	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	10.0 ml	100 ul
Run #2			

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	1200	600	ug/kg	
71-43-2	Benzene	ND	60	15	ug/kg	
108-86-1	Bromobenzene	ND	600	19	ug/kg	
74-97-5	Bromochloromethane	ND	600	39	ug/kg	
75-27-4	Bromodichloromethane	ND	240	18	ug/kg	
75-25-2	Bromoform	ND	600	32	ug/kg	
74-83-9	Bromomethane	ND	600	59	ug/kg	
78-93-3	2-Butanone (MEK)	ND	1200	210	ug/kg	
104-51-8	n-Butylbenzene	5220	240	18	ug/kg	
135-98-8	sec-Butylbenzene	3510	240	19	ug/kg	
98-06-6	tert-Butylbenzene	102	240	19	ug/kg	J
56-23-5	Carbon tetrachloride	ND	240	20	ug/kg	
108-90-7	Chlorobenzene	ND	240	20	ug/kg	
75-00-3	Chloroethane	ND	600	52	ug/kg	
67-66-3	Chloroform	ND	240	29	ug/kg	
74-87-3	Chloromethane	ND	600	26	ug/kg	
95-49-8	o-Chlorotoluene	ND	240	25	ug/kg	
106-43-4	p-Chlorotoluene	ND	240	30	ug/kg	
108-20-3	Di-Isopropyl ether	ND	240	16	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	240	59	ug/kg	
124-48-1	Dibromochloromethane	ND	240	18	ug/kg	
106-93-4	1,2-Dibromoethane	ND	120	29	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	120	21	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	120	17	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	120	19	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	600	66	ug/kg	
75-34-3	1,1-Dichloroethane	ND	120	23	ug/kg	
107-06-2	1,2-Dichloroethane	ND	120	21	ug/kg	
75-35-4	1,1-Dichloroethene	ND	120	19	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	120	53	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	120	19	ug/kg	
78-87-5	1,2-Dichloropropane	ND	240	37	ug/kg	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5-S	Date Sampled:	03/24/17
Lab Sample ID:	JC39699-2	Date Received:	03/25/17
Matrix:	SO - Soil	Percent Solids:	86.6
Method:	SW846 8260C		
Project:	North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	240	24	ug/kg	
594-20-7	2,2-Dichloropropane	ND	240	19	ug/kg	
563-58-6	1,1-Dichloropropene	ND	240	19	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	240	24	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	240	27	ug/kg	
100-41-4	Ethylbenzene	603	120	18	ug/kg	
87-68-3	Hexachlorobutadiene	ND	600	19	ug/kg	
98-82-8	Isopropylbenzene	1020	240	19	ug/kg	
99-87-6	p-Isopropyltoluene	3290	240	30	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	120	32	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	600	100	ug/kg	
74-95-3	Methylene bromide	ND	600	45	ug/kg	
75-09-2	Methylene chloride	ND	600	120	ug/kg	
91-20-3	Naphthalene	20600	600	120	ug/kg	
103-65-1	n-Propylbenzene	2560	240	24	ug/kg	
100-42-5	Styrene	ND	240	18	ug/kg	
75-65-0	Tert Butyl Alcohol	ND	3000	370	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	240	64	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	240	31	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	240	26	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	240	29	ug/kg	
127-18-4	Tetrachloroethene	ND	240	34	ug/kg	
108-88-3	Toluene	ND	120	15	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	600	60	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	600	60	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	240	20	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	240	39	ug/kg	
79-01-6	Trichloroethene	ND	120	23	ug/kg	
75-69-4	Trichlorofluoromethane	ND	600	76	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	600	93	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	18200	240	21	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	8040	240	20	ug/kg	
75-01-4	Vinyl chloride	ND	240	24	ug/kg	
	m,p-Xylene	1160	120	26	ug/kg	
95-47-6	o-Xylene	1590	120	24	ug/kg	
1330-20-7	Xylene (total)	2750	120	24	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-122%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-5-S		Date Sampled: 03/24/17
Lab Sample ID: JC39699-2		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 86.6
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	104%		68-124%
2037-26-5	Toluene-D8	96%		77-125%
460-00-4	4-Bromofluorobenzene	86%		72-130%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

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Client Sample ID: MW-5-S		Date Sampled: 03/24/17
Lab Sample ID: JC39699-2		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 86.6
Method: SW846 8015C SW846 3546		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Y82954.D	1	03/29/17	HC	03/28/17	OP1454	G2Y3180
Run #2	2Y82995.D	5	03/30/17	HC	03/28/17	OP1454	G2Y3182

	Initial Weight	Final Volume
Run #1	10.1 g	1.0 ml
Run #2	10.1 g	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	7390 ^a	57	16	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%	90%	18-132%
16416-32-3	Tetracosane-d50	90%	93%	25-137%
438-22-2	5a-Androstane	72%	165% ^b	22-134%

- (a) Result is from Run# 2
- (b) Outside control limits due to matrix interference.

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

Report of Analysis

Client Sample ID: MW-6-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-3		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 95.9
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V34067.D	1	04/03/17	TDN	n/a	n/a	V3V1369
Run #2							

Run #	Initial Weight
Run #1	4.6 g
Run #2	

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	11	5.7	ug/kg	
71-43-2	Benzene	ND	0.57	0.14	ug/kg	
108-86-1	Bromobenzene	ND	5.7	0.17	ug/kg	
74-97-5	Bromochloromethane	ND	5.7	0.36	ug/kg	
75-27-4	Bromodichloromethane	ND	2.3	0.17	ug/kg	
75-25-2	Bromoform	ND	5.7	0.30	ug/kg	
74-83-9	Bromomethane	ND	5.7	0.55	ug/kg	
78-93-3	2-Butanone (MEK)	ND	11	2.0	ug/kg	
104-51-8	n-Butylbenzene	ND	2.3	0.17	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.3	0.17	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.3	0.18	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.3	0.19	ug/kg	
108-90-7	Chlorobenzene	ND	2.3	0.18	ug/kg	
75-00-3	Chloroethane	ND	5.7	0.49	ug/kg	
67-66-3	Chloroform	ND	2.3	0.27	ug/kg	
74-87-3	Chloromethane	ND	5.7	0.24	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.3	0.23	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.3	0.28	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.3	0.15	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.3	0.55	ug/kg	
124-48-1	Dibromochloromethane	ND	2.3	0.17	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.1	0.27	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.1	0.19	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.1	0.16	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.1	0.17	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.7	0.62	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.1	0.21	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.19	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.1	0.17	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.50	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.1	0.18	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.3	0.35	ug/kg	

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

Report of Analysis

Client Sample ID: MW-6-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-3		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 95.9
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	92%		68-124%
2037-26-5	Toluene-D8	97%		77-125%
460-00-4	4-Bromofluorobenzene	103%		72-130%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

Client Sample ID: MW-6-S		Date Sampled: 03/23/17
Lab Sample ID: JC39699-3		Date Received: 03/25/17
Matrix: SO - Soil		Percent Solids: 95.9
Method: SW846 8015C SW846 3546		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Y82955.D	1	03/29/17	HC	03/28/17	OP1454	G2Y3180
Run #2							

	Initial Weight	Final Volume
Run #1	10.9 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	9.6	2.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	58%		18-132%
16416-32-3	Tetracosane-d50	77%		25-137%
438-22-2	5a-Androstane	76%		22-134%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS Accutest Sample Receipt Summary

Job Number: JC39699

Client: _____

Project: _____

Date / Time Received: 3/25/2017 10:15:00 AM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.5);

Cooler Temps (Corrected) °C: Cooler 1: (3.9);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

SM089-02
Rev. Date 12/1/16

JC39699: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-MB1	3V34063.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/kg	
71-43-2	Benzene	ND	0.50	0.12	ug/kg	
108-86-1	Bromobenzene	ND	5.0	0.15	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	0.32	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	0.15	ug/kg	
75-25-2	Bromoform	ND	5.0	0.27	ug/kg	
74-83-9	Bromomethane	ND	5.0	0.49	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	1.8	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	0.15	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	0.15	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	0.16	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	0.17	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	0.16	ug/kg	
75-00-3	Chloroethane	ND	5.0	0.43	ug/kg	
67-66-3	Chloroform	ND	2.0	0.24	ug/kg	
74-87-3	Chloromethane	ND	5.0	0.21	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	0.20	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	0.24	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	0.13	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.48	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	0.15	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	0.24	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.17	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.14	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.15	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	0.55	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	0.19	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.17	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	0.15	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.44	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.16	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	0.31	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	0.20	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	0.15	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	0.16	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	0.20	ug/kg	

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-MB1	3V34063.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	0.22	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.15	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	0.16	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	0.15	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	0.24	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.27	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	0.85	ug/kg	
74-95-3	Methylene bromide	ND	5.0	0.38	ug/kg	
75-09-2	Methylene chloride	ND	5.0	1.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	1.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	0.20	ug/kg	
100-42-5	Styrene	ND	2.0	0.15	ug/kg	
75-65-0	Tert Butyl Alcohol	ND	25	3.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	0.53	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	0.26	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	0.21	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	0.28	ug/kg	
108-88-3	Toluene	ND	1.0	0.13	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	0.50	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.50	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.17	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	0.32	ug/kg	
79-01-6	Trichloroethene	ND	1.0	0.19	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	0.63	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.77	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.17	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.17	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	0.20	ug/kg	
	m,p-Xylene	ND	1.0	0.22	ug/kg	
95-47-6	o-Xylene	ND	1.0	0.20	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.20	ug/kg	

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-MB1	3V34063.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	94% 70-122%
17060-07-0	1,2-Dichloroethane-D4	85% 68-124%
2037-26-5	Toluene-D8	98% 77-125%
460-00-4	4-Bromofluorobenzene	103% 72-130%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	3.20	290	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-MB1	E243470.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	500	250	ug/kg	
71-43-2	Benzene	ND	25	6.0	ug/kg	
108-86-1	Bromobenzene	ND	250	7.7	ug/kg	
74-97-5	Bromochloromethane	ND	250	16	ug/kg	
75-27-4	Bromodichloromethane	ND	100	7.6	ug/kg	
75-25-2	Bromoform	ND	250	13	ug/kg	
74-83-9	Bromomethane	ND	250	24	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	88	ug/kg	
104-51-8	n-Butylbenzene	ND	100	7.6	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	7.7	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	7.9	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	8.3	ug/kg	
108-90-7	Chlorobenzene	ND	100	8.1	ug/kg	
75-00-3	Chloroethane	ND	250	21	ug/kg	
67-66-3	Chloroform	ND	100	12	ug/kg	
74-87-3	Chloromethane	ND	250	11	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	10	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	12	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	6.7	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	24	ug/kg	
124-48-1	Dibromochloromethane	ND	100	7.5	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	12	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	8.6	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	6.9	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	7.7	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	27	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	9.4	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	8.6	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	7.7	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	22	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	7.9	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	15	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	9.8	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	7.7	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	8.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	9.8	ug/kg	

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-MB1	E243470.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	100	11	ug/kg	
100-41-4	Ethylbenzene	ND	50	7.5	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	7.9	ug/kg	
98-82-8	Isopropylbenzene	ND	100	7.7	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	13	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	42	ug/kg	
74-95-3	Methylene bromide	ND	250	19	ug/kg	
75-09-2	Methylene chloride	ND	250	50	ug/kg	
91-20-3	Naphthalene	ND	250	50	ug/kg	
103-65-1	n-Propylbenzene	ND	100	9.9	ug/kg	
100-42-5	Styrene	ND	100	7.3	ug/kg	
75-65-0	Tert Butyl Alcohol	ND	1300	150	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	27	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	13	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	11	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	12	ug/kg	
127-18-4	Tetrachloroethene	ND	100	14	ug/kg	
108-88-3	Toluene	ND	50	6.3	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	25	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	25	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	8.4	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	16	ug/kg	
79-01-6	Trichloroethene	ND	50	9.5	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	31	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	39	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	8.7	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	8.3	ug/kg	
75-01-4	Vinyl chloride	ND	100	10	ug/kg	
	m,p-Xylene	ND	50	11	ug/kg	
95-47-6	o-Xylene	ND	50	10	ug/kg	
1330-20-7	Xylene (total)	ND	50	10	ug/kg	

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-MB1	E243470.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	100%	70-122%
17060-07-0	1,2-Dichloroethane-D4	103%	68-124%
2037-26-5	Toluene-D8	100%	77-125%
460-00-4	4-Bromofluorobenzene	101%	72-130%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-BS	3V34064.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	200	233	117	30-150
71-43-2	Benzene	50	48.9	98	77-122
108-86-1	Bromobenzene	50	49.2	98	80-122
74-97-5	Bromochloromethane	50	50.6	101	81-126
75-27-4	Bromodichloromethane	50	48.1	96	82-130
75-25-2	Bromoform	50	53.6	107	78-134
74-83-9	Bromomethane	50	50.2	100	56-141
78-93-3	2-Butanone (MEK)	200	220	110	61-139
104-51-8	n-Butylbenzene	50	51.5	103	69-127
135-98-8	sec-Butylbenzene	50	52.1	104	70-125
98-06-6	tert-Butylbenzene	50	50.5	101	70-126
56-23-5	Carbon tetrachloride	50	53.8	108	73-139
108-90-7	Chlorobenzene	50	51.6	103	79-120
75-00-3	Chloroethane	50	54.2	108	64-150
67-66-3	Chloroform	50	47.7	95	77-123
74-87-3	Chloromethane	50	47.1	94	50-140
95-49-8	o-Chlorotoluene	50	50.9	102	74-123
106-43-4	p-Chlorotoluene	50	47.7	95	73-121
108-20-3	Di-Isopropyl ether	50	43.8	88	71-130
96-12-8	1,2-Dibromo-3-chloropropane	50	50.9	102	70-128
124-48-1	Dibromochloromethane	50	49.7	99	82-129
106-93-4	1,2-Dibromoethane	50	49.0	98	83-125
95-50-1	1,2-Dichlorobenzene	50	49.9	100	79-118
541-73-1	1,3-Dichlorobenzene	50	49.5	99	76-119
106-46-7	1,4-Dichlorobenzene	50	48.7	97	75-118
75-71-8	Dichlorodifluoromethane	50	46.4	93	31-170
75-34-3	1,1-Dichloroethane	50	48.7	97	78-129
107-06-2	1,2-Dichloroethane	50	46.2	92	77-140
75-35-4	1,1-Dichloroethene	50	48.7	97	71-128
156-59-2	cis-1,2-Dichloroethene	50	46.2	92	73-123
156-60-5	trans-1,2-Dichloroethene	50	48.9	98	72-122
78-87-5	1,2-Dichloropropane	50	50.8	102	80-129
142-28-9	1,3-Dichloropropane	50	47.0	94	81-124
594-20-7	2,2-Dichloropropane	50	45.8	92	62-134
563-58-6	1,1-Dichloropropene	50	50.1	100	72-125
10061-01-5	cis-1,3-Dichloropropene	50	47.1	94	75-124

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-BS	3V34064.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	45.5	91	75-129
100-41-4	Ethylbenzene	50	51.3	103	75-121
87-68-3	Hexachlorobutadiene	50	52.0	104	64-134
98-82-8	Isopropylbenzene	50	53.4	107	70-126
99-87-6	p-Isopropyltoluene	50	50.8	102	70-127
1634-04-4	Methyl Tert Butyl Ether	100	99.8	100	77-121
108-10-1	4-Methyl-2-pentanone(MIBK)	200	227	114	73-141
74-95-3	Methylene bromide	50	48.6	97	83-129
75-09-2	Methylene chloride	50	46.4	93	71-124
91-20-3	Naphthalene	50	47.1	94	74-126
103-65-1	n-Propylbenzene	50	49.9	100	71-132
100-42-5	Styrene	50	52.1	104	79-125
75-65-0	Tert Butyl Alcohol	250	228	91	78-126
994-05-8	tert-Amyl Methyl Ether	50	51.2	102	76-124
637-92-3	tert-Butyl Ethyl Ether	50	48.4	97	74-128
630-20-6	1,1,1,2-Tetrachloroethane	50	51.7	103	81-124
79-34-5	1,1,2,2-Tetrachloroethane	50	47.6	95	72-121
127-18-4	Tetrachloroethene	50	55.5	111	70-135
108-88-3	Toluene	50	50.3	101	75-123
87-61-6	1,2,3-Trichlorobenzene	50	49.4	99	76-128
120-82-1	1,2,4-Trichlorobenzene	50	49.3	99	74-129
71-55-6	1,1,1-Trichloroethane	50	52.2	104	75-134
79-00-5	1,1,2-Trichloroethane	50	48.7	97	78-130
79-01-6	Trichloroethene	50	52.5	105	79-127
75-69-4	Trichlorofluoromethane	50	53.1	106	64-141
96-18-4	1,2,3-Trichloropropane	50	49.6	99	77-124
95-63-6	1,2,4-Trimethylbenzene	50	50.5	101	75-126
108-67-8	1,3,5-Trimethylbenzene	50	48.8	98	72-124
75-01-4	Vinyl chloride	50	55.2	110	57-136
	m,p-Xylene	100	103	103	75-122
95-47-6	o-Xylene	50	52.0	104	76-121
1330-20-7	Xylene (total)	150	155	103	76-121

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1369-BS	3V34064.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	99%	70-122%
17060-07-0	1,2-Dichloroethane-D4	94%	68-124%
2037-26-5	Toluene-D8	98%	77-125%
460-00-4	4-Bromofluorobenzene	97%	72-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-BS	E243471.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
67-64-1	Acetone	10000	10300	103	30-150
71-43-2	Benzene	2500	2260	90	77-122
108-86-1	Bromobenzene	2500	2530	101	80-122
74-97-5	Bromochloromethane	2500	2620	105	81-126
75-27-4	Bromodichloromethane	2500	2550	102	82-130
75-25-2	Bromoform	2500	2680	107	78-134
74-83-9	Bromomethane	2500	2500	100	56-141
78-93-3	2-Butanone (MEK)	10000	10000	100	61-139
104-51-8	n-Butylbenzene	2500	2530	101	69-127
135-98-8	sec-Butylbenzene	2500	2530	101	70-125
98-06-6	tert-Butylbenzene	2500	2570	103	70-126
56-23-5	Carbon tetrachloride	2500	2570	103	73-139
108-90-7	Chlorobenzene	2500	2470	99	79-120
75-00-3	Chloroethane	2500	2480	99	64-150
67-66-3	Chloroform	2500	2490	100	77-123
74-87-3	Chloromethane	2500	2570	103	50-140
95-49-8	o-Chlorotoluene	2500	2480	99	74-123
106-43-4	p-Chlorotoluene	2500	2450	98	73-121
108-20-3	Di-Isopropyl ether	2500	2330	93	71-130
96-12-8	1,2-Dibromo-3-chloropropane	2500	2360	94	70-128
124-48-1	Dibromochloromethane	2500	2520	101	82-129
106-93-4	1,2-Dibromoethane	2500	2580	103	83-125
95-50-1	1,2-Dichlorobenzene	2500	2500	100	79-118
541-73-1	1,3-Dichlorobenzene	2500	2460	98	76-119
106-46-7	1,4-Dichlorobenzene	2500	2360	94	75-118
75-71-8	Dichlorodifluoromethane	2500	2670	107	31-170
75-34-3	1,1-Dichloroethane	2500	2370	95	78-129
107-06-2	1,2-Dichloroethane	2500	2420	97	77-140
75-35-4	1,1-Dichloroethene	2500	2240	90	71-128
156-59-2	cis-1,2-Dichloroethene	2500	2440	98	73-123
156-60-5	trans-1,2-Dichloroethene	2500	2370	95	72-122
78-87-5	1,2-Dichloropropane	2500	2460	98	80-129
142-28-9	1,3-Dichloropropane	2500	2410	96	81-124
594-20-7	2,2-Dichloropropane	2500	2400	96	62-134
563-58-6	1,1-Dichloropropene	2500	2390	96	72-125
10061-01-5	cis-1,3-Dichloropropene	2500	2580	103	75-124

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-BS	E243471.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	2500	2520	101	75-129
100-41-4	Ethylbenzene	2500	2370	95	75-121
87-68-3	Hexachlorobutadiene	2500	2740	110	64-134
98-82-8	Isopropylbenzene	2500	2410	96	70-126
99-87-6	p-Isopropyltoluene	2500	2500	100	70-127
1634-04-4	Methyl Tert Butyl Ether	5000	4780	96	77-121
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	10900	109	73-141
74-95-3	Methylene bromide	2500	2610	104	83-129
75-09-2	Methylene chloride	2500	2310	92	71-124
91-20-3	Naphthalene	2500	2210	88	74-126
103-65-1	n-Propylbenzene	2500	2400	96	71-132
100-42-5	Styrene	2500	2500	100	79-125
75-65-0	Tert Butyl Alcohol	12500	12200	98	78-126
994-05-8	tert-Amyl Methyl Ether	2500	2480	99	76-124
637-92-3	tert-Butyl Ethyl Ether	2500	2480	99	74-128
630-20-6	1,1,1,2-Tetrachloroethane	2500	2470	99	81-124
79-34-5	1,1,2,2-Tetrachloroethane	2500	2490	100	72-121
127-18-4	Tetrachloroethene	2500	2550	102	70-135
108-88-3	Toluene	2500	2410	96	75-123
87-61-6	1,2,3-Trichlorobenzene	2500	2320	93	76-128
120-82-1	1,2,4-Trichlorobenzene	2500	2360	94	74-129
71-55-6	1,1,1-Trichloroethane	2500	2610	104	75-134
79-00-5	1,1,2-Trichloroethane	2500	2470	99	78-130
79-01-6	Trichloroethene	2500	2530	101	79-127
75-69-4	Trichlorofluoromethane	2500	2610	104	64-141
96-18-4	1,2,3-Trichloropropane	2500	2600	104	77-124
95-63-6	1,2,4-Trimethylbenzene	2500	2440	98	75-126
108-67-8	1,3,5-Trimethylbenzene	2500	2450	98	72-124
75-01-4	Vinyl chloride	2500	2480	99	57-136
	m,p-Xylene	5000	4820	96	75-122
95-47-6	o-Xylene	2500	2410	96	76-121
1330-20-7	Xylene (total)	7500	7230	96	76-121

* = Outside of Control Limits.

5.2.2
5

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE10500-BS	E243471.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	102%	70-122%
17060-07-0	1,2-Dichloroethane-D4	107%	68-124%
2037-26-5	Toluene-D8	98%	77-125%
460-00-4	4-Bromofluorobenzene	102%	72-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-1MS	3V34071.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-1	3V34066.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	JC39699-1 ug/kg	Spike Q	MS ug/kg	MS %	Limits
67-64-1	Acetone	25.0		234	299	117
71-43-2	Benzene	ND		58.5	46.5	79
108-86-1	Bromobenzene	ND		58.5	48.7	83
74-97-5	Bromochloromethane	ND		58.5	49.9	85
75-27-4	Bromodichloromethane	ND		58.5	48.4	83
75-25-2	Bromoform	ND		58.5	54.7	93
74-83-9	Bromomethane	ND		58.5	50.6	86
78-93-3	2-Butanone (MEK)	ND		234	255	109
104-51-8	n-Butylbenzene	ND		58.5	48.6	83
135-98-8	sec-Butylbenzene	ND		58.5	50.3	86
98-06-6	tert-Butylbenzene	ND		58.5	48.4	83
56-23-5	Carbon tetrachloride	ND		58.5	52.3	89
108-90-7	Chlorobenzene	ND		58.5	49.4	84
75-00-3	Chloroethane	ND		58.5	54.0	92
67-66-3	Chloroform	ND		58.5	46.2	79
74-87-3	Chloromethane	ND		58.5	46.6	80
95-49-8	o-Chlorotoluene	ND		58.5	50.0	85
106-43-4	p-Chlorotoluene	ND		58.5	47.0	80
108-20-3	Di-Isopropyl ether	ND		58.5	43.5	74
96-12-8	1,2-Dibromo-3-chloropropane	ND		58.5	52.7	90
124-48-1	Dibromochloromethane	ND		58.5	49.4	84
106-93-4	1,2-Dibromoethane	ND		58.5	50.2	86
95-50-1	1,2-Dichlorobenzene	ND		58.5	50.0	85
541-73-1	1,3-Dichlorobenzene	ND		58.5	49.1	84
106-46-7	1,4-Dichlorobenzene	ND		58.5	49.1	84
75-71-8	Dichlorodifluoromethane	ND		58.5	49.8	85
75-34-3	1,1-Dichloroethane	ND		58.5	46.6	80
107-06-2	1,2-Dichloroethane	ND		58.5	46.7	80
75-35-4	1,1-Dichloroethene	ND		58.5	46.0	79
156-59-2	cis-1,2-Dichloroethene	ND		58.5	44.5	76
156-60-5	trans-1,2-Dichloroethene	ND		58.5	45.9	78
78-87-5	1,2-Dichloropropane	ND		58.5	49.7	85
142-28-9	1,3-Dichloropropane	ND		58.5	48.3	83
594-20-7	2,2-Dichloropropane	ND		58.5	47.8	82
563-58-6	1,1-Dichloropropene	ND		58.5	48.0	82
10061-01-5	cis-1,3-Dichloropropene	ND		58.5	48.4	83

* = Outside of Control Limits.

5.3.1
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Matrix Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-1MS	3V34071.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-1	3V34066.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	JC39699-1 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		58.5	46.1	79	36-148
100-41-4	Ethylbenzene	0.26	J	58.5	48.6	83	34-145
87-68-3	Hexachlorobutadiene	ND		58.5	41.0	70	10-163
98-82-8	Isopropylbenzene	0.33	J	58.5	50.6	86	36-145
99-87-6	p-Isopropyltoluene	ND		58.5	48.7	83	21-153
1634-04-4	Methyl Tert Butyl Ether	ND		117	100	85	54-129
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		234	244	104	33-154
74-95-3	Methylene bromide	ND		58.5	50.0	85	49-139
75-09-2	Methylene chloride	ND		58.5	45.2	77	47-133
91-20-3	Naphthalene	ND		58.5	46.6	80	12-160
103-65-1	n-Propylbenzene	ND		58.5	49.1	84	26-148
100-42-5	Styrene	ND		58.5	50.7	87	32-156
75-65-0	Tert Butyl Alcohol	ND		293	260	89	57-148
994-05-8	tert-Amyl Methyl Ether	ND		58.5	51.5	88	56-129
637-92-3	tert-Butyl Ethyl Ether	ND		58.5	48.7	83	58-132
630-20-6	1,1,1,2-Tetrachloroethane	ND		58.5	49.7	85	47-144
79-34-5	1,1,2,2-Tetrachloroethane	ND		58.5	49.4	84	31-149
127-18-4	Tetrachloroethene	ND		58.5	53.1	91	34-163
108-88-3	Toluene	0.47	J	58.5	47.1	80	40-141
87-61-6	1,2,3-Trichlorobenzene	ND		58.5	46.3	79	14-153
120-82-1	1,2,4-Trichlorobenzene	ND		58.5	46.5	79	14-156
71-55-6	1,1,1-Trichloroethane	ND		58.5	49.6	85	48-144
79-00-5	1,1,2-Trichloroethane	ND		58.5	49.2	84	43-146
79-01-6	Trichloroethene	ND		58.5	50.0	85	42-152
75-69-4	Trichlorofluoromethane	ND		58.5	55.2	94	39-153
96-18-4	1,2,3-Trichloropropane	ND		58.5	51.5	88	36-153
95-63-6	1,2,4-Trimethylbenzene	ND		58.5	49.4	84	23-152
108-67-8	1,3,5-Trimethylbenzene	ND		58.5	47.9	82	26-150
75-01-4	Vinyl chloride	ND		58.5	54.9	94	38-149
	m,p-Xylene	0.92	J	117	99.5	84	32-148
95-47-6	o-Xylene	ND		58.5	50.3	86	36-145
1330-20-7	Xylene (total)	0.92	J	176	150	85	34-146

* = Outside of Control Limits.

5.3.1
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Matrix Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-1MS	3V34071.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-1	3V34066.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Surrogate Recoveries	MS	JC39699-1	Limits
1868-53-7	Dibromofluoromethane	99%	98%	70-122%
17060-07-0	1,2-Dichloroethane-D4	95%	92%	68-124%
2037-26-5	Toluene-D8	96%	97%	77-125%
460-00-4	4-Bromofluorobenzene	98%	103%	72-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39848-7AMS	E243480.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7AMSD	E243481.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7A ^a	E243473.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	JC39848-7A Spike		MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
		ug/kg	Q								
67-64-1	Acetone	473	J	9890	10500	101	9890	9860	95	6	10-180/33
71-43-2	Benzene	48.7		2470	2220	88	2470	2190	87	1	48-136/30
108-86-1	Bromobenzene	ND		2470	2170	88	2470	2170	88	0	37-145/28
74-97-5	Bromochloromethane	ND		2470	2550	103	2470	2530	102	1	53-137/26
75-27-4	Bromodichloromethane	ND		2470	2420	98	2470	2420	98	0	50-145/28
75-25-2	Bromoform	ND		2470	2470	100	2470	2390	97	3	39-148/24
74-83-9	Bromomethane	ND		2470	1870	76	2470	1930	78	3	12-156/32
78-93-3	2-Butanone (MEK)	ND		9890	9530	96	9890	8980	91	6	26-164/30
104-51-8	n-Butylbenzene	677		2470	3210	102	2470	3150	100	2	10-156/37
135-98-8	sec-Butylbenzene	380		2470	2850	100	2470	2740	95	4	23-151/34
98-06-6	tert-Butylbenzene	64.3	J	2470	2590	102	2470	2560	101	1	30-149/34
56-23-5	Carbon tetrachloride	ND		2470	2410	97	2470	2380	96	1	43-152/31
108-90-7	Chlorobenzene	ND		2470	2340	95	2470	2310	93	1	38-144/29
75-00-3	Chloroethane	ND		2470	1950	79	2470	2100	85	7	26-154/34
67-66-3	Chloroform	ND		2470	2440	99	2470	2430	98	0	52-134/27
74-87-3	Chloromethane	ND		2470	2350	95	2470	2170	88	8	41-142/28
95-49-8	o-Chlorotoluene	ND		2470	2240	91	2470	2190	89	2	34-147/29
106-43-4	p-Chlorotoluene	ND		2470	2200	89	2470	2190	89	0	34-143/32
108-20-3	Di-Isopropyl ether	ND		2470	2280	92	2470	2260	91	1	54-135/25
96-12-8	1,2-Dibromo-3-chloropropane	ND		2470	2150	87	2470	2010	81	7	29-145/26
124-48-1	Dibromochloromethane	ND		2470	2290	93	2470	2290	93	0	49-142/24
106-93-4	1,2-Dibromoethane	ND		2470	2300	93	2470	2320	94	1	46-139/24
95-50-1	1,2-Dichlorobenzene	ND		2470	2390	97	2470	2330	94	3	30-144/30
541-73-1	1,3-Dichlorobenzene	ND		2470	2330	94	2470	2300	93	1	28-148/31
106-46-7	1,4-Dichlorobenzene	ND		2470	2280	92	2470	2260	91	1	30-142/31
75-71-8	Dichlorodifluoromethane	ND		2470	2420	98	2470	2470	100	2	31-161/28
75-34-3	1,1-Dichloroethane	ND		2470	2320	94	2470	2290	93	1	54-137/28
107-06-2	1,2-Dichloroethane	ND		2470	2280	92	2470	2270	92	0	56-140/24
75-35-4	1,1-Dichloroethene	ND		2470	2200	89	2470	2150	87	2	41-143/30
156-59-2	cis-1,2-Dichloroethene	ND		2470	2440	99	2470	2410	97	1	45-137/28
156-60-5	trans-1,2-Dichloroethene	ND		2470	2280	92	2470	2250	91	1	42-141/30
78-87-5	1,2-Dichloropropane	ND		2470	2360	95	2470	2360	95	0	53-139/27
142-28-9	1,3-Dichloropropane	ND		2470	2200	89	2470	2210	89	0	51-134/24
594-20-7	2,2-Dichloropropane	ND		2470	2240	91	2470	2200	89	2	26-151/29
563-58-6	1,1-Dichloropropene	ND		2470	2230	90	2470	2230	90	0	42-144/32
10061-01-5	cis-1,3-Dichloropropene	ND		2470	2350	95	2470	2420	98	3	41-144/26

* = Outside of Control Limits.

5.4.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39848-7AMS	E243480.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7AMSD	E243481.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7A ^a	E243473.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Compound	JC39848-7A ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
10061-02-6	trans-1,3-Dichloropropene	ND		2470	2260	91	2470	2300	93	2	36-148/27
100-41-4	Ethylbenzene	427		2470	2640	90	2470	2600	88	2	34-145/29
87-68-3	Hexachlorobutadiene	ND		2470	2890	117	2470	2910	118	1	10-163/39
98-82-8	Isopropylbenzene	243		2470	2680	99	2470	2580	95	4	36-145/33
99-87-6	p-Isopropyltoluene	489		2470	2970	100	2470	2880	97	3	21-153/33
1634-04-4	Methyl Tert Butyl Ether	ND		4940	4630	94	4940	4550	92	2	54-129/25
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		9890	11100	112	9890	10700	108	4	33-154/29
74-95-3	Methylene bromide	ND		2470	2510	102	2470	2470	100	2	49-139/24
75-09-2	Methylene chloride	ND		2470	2270	92	2470	2210	89	3	47-133/25
91-20-3	Naphthalene	4020		2470	5790	72	2470	5690	68	2	12-160/33
103-65-1	n-Propylbenzene	499		2470	2610	85	2470	2570	84	2	26-148/33
100-42-5	Styrene	ND		2470	2460	100	2470	2430	98	1	32-156/31
75-65-0	Tert Butyl Alcohol	ND		12400	11000	89	12400	11300	91	3	57-148/25
994-05-8	tert-Amyl Methyl Ether	ND		2470	2580	104	2470	2450	99	5	56-129/23
637-92-3	tert-Butyl Ethyl Ether	ND		2470	2460	100	2470	2390	97	3	58-132/25
630-20-6	1,1,1,2-Tetrachloroethane	ND		2470	2460	100	2470	2360	95	4	47-144/26
79-34-5	1,1,2,2-Tetrachloroethane	ND		2470	2900	117	2470	2720	110	6	31-149/25
127-18-4	Tetrachloroethene	ND		2470	2370	96	2470	2400	97	1	34-163/31
108-88-3	Toluene	295		2470	2480	88	2470	2480	88	0	40-141/30
87-61-6	1,2,3-Trichlorobenzene	ND		2470	2090	85	2470	2070	84	1	14-153/35
120-82-1	1,2,4-Trichlorobenzene	ND		2470	2310	93	2470	2250	91	3	14-156/36
71-55-6	1,1,1-Trichloroethane	ND		2470	2430	98	2470	2400	97	1	48-144/29
79-00-5	1,1,2-Trichloroethane	ND		2470	2500	101	2470	2480	100	1	43-146/27
79-01-6	Trichloroethene	162		2470	2550	97	2470	2590	98	2	42-152/29
75-69-4	Trichlorofluoromethane	ND		2470	2270	92	2470	2340	95	3	39-153/27
96-18-4	1,2,3-Trichloropropane	ND		2470	2580	104	2470	2530	102	2	36-153/26
95-63-6	1,2,4-Trimethylbenzene	4560		2470	6670	85	2470	6510	79	2	23-152/31
108-67-8	1,3,5-Trimethylbenzene	1800		2470	4040	91	2470	3940	87	3	26-150/32
75-01-4	Vinyl chloride	ND		2470	2370	96	2470	2400	97	1	38-149/29
	m,p-Xylene	1440		4940	6120	95	4940	6060	93	1	32-148/30
95-47-6	o-Xylene	873		2470	3170	93	2470	3090	90	3	36-145/30
1330-20-7	Xylene (total)	2310		7420	9290	94	7420	9150	92	2	34-146/29

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39848-7AMS	E243480.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7AMSD	E243481.D	1	04/05/17	TDN	n/a	n/a	VE10500
JC39848-7A ^a	E243473.D	1	04/05/17	TDN	n/a	n/a	VE10500

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-2

CAS No.	Surrogate Recoveries	MS	MSD	JC39848-7A	Limits
1868-53-7	Dibromofluoromethane	103%	103%	100%	70-122%
17060-07-0	1,2-Dichloroethane-D4	101%	101%	103%	68-124%
2037-26-5	Toluene-D8	96%	97%	98%	77-125%
460-00-4	4-Bromofluorobenzene	89%	90%	88%	72-130%

(a) Dilution required due to matrix interference.

* = Outside of Control Limits.

5.4.1
5

Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-3DUP	3V34073.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-3	3V34067.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	JC39699-3 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
67-64-1	Acetone	ND		ND		nc	35
71-43-2	Benzene	ND		ND		nc	17
108-86-1	Bromobenzene	ND		ND		nc	30
74-97-5	Bromochloromethane	ND		ND		nc	30
75-27-4	Bromodichloromethane	ND		ND		nc	30
75-25-2	Bromoform	ND		ND		nc	30
74-83-9	Bromomethane	ND		ND		nc	30
78-93-3	2-Butanone (MEK)	ND		ND		nc	30
104-51-8	n-Butylbenzene	ND		ND		nc	30
135-98-8	sec-Butylbenzene	ND		ND		nc	30
98-06-6	tert-Butylbenzene	ND		ND		nc	30
56-23-5	Carbon tetrachloride	ND		ND		nc	30
108-90-7	Chlorobenzene	ND		ND		nc	30
75-00-3	Chloroethane	ND		ND		nc	30
67-66-3	Chloroform	ND		ND		nc	30
74-87-3	Chloromethane	ND		ND		nc	30
95-49-8	o-Chlorotoluene	ND		ND		nc	30
106-43-4	p-Chlorotoluene	ND		ND		nc	30
108-20-3	Di-Isopropyl ether	ND		ND		nc	30
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	30
124-48-1	Dibromochloromethane	ND		ND		nc	30
106-93-4	1,2-Dibromoethane	ND		ND		nc	30
95-50-1	1,2-Dichlorobenzene	ND		ND		nc	30
541-73-1	1,3-Dichlorobenzene	ND		ND		nc	30
106-46-7	1,4-Dichlorobenzene	ND		ND		nc	30
75-71-8	Dichlorodifluoromethane	ND		ND		nc	30
75-34-3	1,1-Dichloroethane	ND		ND		nc	30
107-06-2	1,2-Dichloroethane	ND		ND		nc	30
75-35-4	1,1-Dichloroethene	ND		ND		nc	30
156-59-2	cis-1,2-Dichloroethene	ND		ND		nc	30
156-60-5	trans-1,2-Dichloroethene	ND		ND		nc	30
78-87-5	1,2-Dichloropropane	ND		ND		nc	30
142-28-9	1,3-Dichloropropane	ND		ND		nc	30
594-20-7	2,2-Dichloropropane	ND		ND		nc	30
563-58-6	1,1-Dichloropropene	ND		ND		nc	30
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC39699
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-3DUP	3V34073.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-3	3V34067.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Compound	JC39699-3 ug/kg	DUP Q	ug/kg	Q	RPD	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	23
87-68-3	Hexachlorobutadiene	ND		ND		nc	30
98-82-8	Isopropylbenzene	ND		ND		nc	22
99-87-6	p-Isopropyltoluene	ND		ND		nc	30
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	30
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		ND		nc	30
74-95-3	Methylene bromide	ND		ND		nc	30
75-09-2	Methylene chloride	ND		ND		nc	37
91-20-3	Naphthalene	ND		ND		nc	30
103-65-1	n-Propylbenzene	ND		ND		nc	16
100-42-5	Styrene	ND		ND		nc	30
75-65-0	Tert Butyl Alcohol	ND		ND		nc	30
994-05-8	tert-Amyl Methyl Ether	ND		ND		nc	30
637-92-3	tert-Butyl Ethyl Ether	ND		ND		nc	30
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	30
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	30
127-18-4	Tetrachloroethene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	22
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	30
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	30
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	30
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	30
79-01-6	Trichloroethene	ND		ND		nc	17
75-69-4	Trichlorofluoromethane	ND		ND		nc	30
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	30
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	30
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	30
75-01-4	Vinyl chloride	ND		ND		nc	30
	m,p-Xylene	0.46	J	0.34	J	30* a	20
95-47-6	o-Xylene	ND		ND		nc	19
1330-20-7	Xylene (total)	0.46	J	0.34	J	30* a	21

* = Outside of Control Limits.

5.5.1
 5

Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC39699-3DUP	3V34073.D	1	04/03/17	TDN	n/a	n/a	V3V1369
JC39699-3	3V34067.D	1	04/03/17	TDN	n/a	n/a	V3V1369

The QC reported here applies to the following samples:

Method: SW846 8260C

JC39699-1, JC39699-3

CAS No.	Surrogate Recoveries	DUP	JC39699-3	Limits
1868-53-7	Dibromofluoromethane	100%	99%	70-122%
17060-07-0	1,2-Dichloroethane-D4	95%	92%	68-124%
2037-26-5	Toluene-D8	96%	97%	77-125%
460-00-4	4-Bromofluorobenzene	102%	103%	72-130%

(a) High RPD due to possible sample nonhomogeneity.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC39699
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: V3V1352-BFB	Injection Date: 03/09/17
Lab File ID: 3V33619.D	Injection Time: 08:13
Instrument ID: GCMS3V	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	18253	18.0	Pass
75	30.0 - 60.0% of mass 95	47739	47.0	Pass
95	Base peak, 100% relative abundance	101653	100.0	Pass
96	5.0 - 9.0% of mass 95	6858	6.75	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	88771	87.3	Pass
175	5.0 - 9.0% of mass 174	6923	6.81 (7.80) ^a	Pass
176	95.0 - 101.0% of mass 174	86581	85.2 (97.5) ^a	Pass
177	5.0 - 9.0% of mass 176	5666	5.57 (6.54) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3V1352-IC1352	3V33620.D	03/09/17	08:53	00:40	Initial cal 0.2
V3V1352-IC1352	3V33621.D	03/09/17	09:21	01:08	Initial cal 0.5
V3V1352-IC1352	3V33622.D	03/09/17	09:49	01:36	Initial cal 1
V3V1352-IC1352	3V33623.D	03/09/17	10:18	02:05	Initial cal 2
V3V1352-IC1352	3V33624.D	03/09/17	10:46	02:33	Initial cal 4
V3V1352-IC1352	3V33625.D	03/09/17	11:14	03:01	Initial cal 8
V3V1352-IC1352	3V33626.D	03/09/17	11:43	03:30	Initial cal 20
V3V1352-ICC1352	3V33627.D	03/09/17	12:11	03:58	Initial cal 50
V3V1352-IC1352	3V33628.D	03/09/17	12:39	04:26	Initial cal 100
V3V1352-IC1352	3V33630.D	03/09/17	13:56	05:43	Initial cal 200
V3V1352-ICV1352	3V33633.D	03/09/17	15:21	07:08	Initial cal verification 50

5.6.1
5

Instrument Performance Check (BFB)

Job Number: JC39699
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: V3V1369-BFB	Injection Date: 04/03/17
Lab File ID: 3V34060A.D	Injection Time: 10:54
Instrument ID: GCMS3V	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	15867	16.0	Pass
75	30.0 - 60.0% of mass 95	43275	43.6	Pass
95	Base peak, 100% relative abundance	99229	100.0	Pass
96	5.0 - 9.0% of mass 95	6605	6.66	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	86656	87.3	Pass
175	5.0 - 9.0% of mass 174	6429	6.48 (7.42) ^a	Pass
176	95.0 - 101.0% of mass 174	83944	84.6 (96.9) ^a	Pass
177	5.0 - 9.0% of mass 176	5682	5.73 (6.77) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3V1369-CC1352	3V34060.D	04/03/17	10:54	00:00	Continuing cal 20
V3V1369-CC1352	3V34061.D	04/03/17	11:31	00:37	Continuing cal 20
V3V1369-MB1	3V34063.D	04/03/17	13:18	02:24	Method Blank
V3V1369-BS	3V34064.D	04/03/17	14:19	03:25	Blank Spike
JC39699-1	3V34066.D	04/03/17	15:15	04:21	MW-4-S
JC39699-3	3V34067.D	04/03/17	15:44	04:50	MW-6-S
ZZZZZZ	3V34069.D	04/03/17	16:40	05:46	(unrelated sample)
ZZZZZZ	3V34070.D	04/03/17	17:08	06:14	(unrelated sample)
JC39699-1MS	3V34071.D	04/03/17	17:37	06:43	Matrix Spike
JC39699-3DUP	3V34073.D	04/03/17	18:33	07:39	Duplicate
ZZZZZZ	3V34074.D	04/03/17	19:02	08:08	(unrelated sample)
ZZZZZZ	3V34075.D	04/03/17	19:30	08:36	(unrelated sample)
ZZZZZZ	3V34076.D	04/03/17	19:58	09:04	(unrelated sample)
ZZZZZZ	3V34077.D	04/03/17	20:26	09:32	(unrelated sample)
ZZZZZZ	3V34078.D	04/03/17	20:54	10:00	(unrelated sample)
ZZZZZZ	3V34079.D	04/03/17	21:22	10:28	(unrelated sample)
ZZZZZZ	3V34080.D	04/03/17	21:50	10:56	(unrelated sample)
ZZZZZZ	3V34081.D	04/03/17	22:18	11:24	(unrelated sample)

5.6.2
5

Instrument Performance Check (BFB)

Job Number: JC39699
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: VE10483-BFB	Injection Date: 03/17/17
Lab File ID: E242981.D	Injection Time: 12:01
Instrument ID: GCMSE	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	7747	18.2	Pass
75	30.0 - 60.0% of mass 95	19896	46.7	Pass
95	Base peak, 100% relative abundance	42568	100.0	Pass
96	5.0 - 9.0% of mass 95	2918	6.85	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 150.0% of mass 95	38237	89.8	Pass
175	5.0 - 9.0% of mass 174	3207	7.53 (8.39) ^a	Pass
176	95.0 - 101.0% of mass 174	37989	89.2 (99.4) ^a	Pass
177	5.0 - 9.0% of mass 176	2607	6.12 (6.86) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VE10483-IC10483	E242982.D	03/17/17	12:45	00:44	Initial cal 0.2
VE10483-IC10483	E242983.D	03/17/17	13:24	01:23	Initial cal 0.5
VE10483-IC10483	E242984.D	03/17/17	13:53	01:52	Initial cal 1
VE10483-IC10483	E242985.D	03/17/17	14:22	02:21	Initial cal 2
VE10483-IC10483	E242986.D	03/17/17	14:51	02:50	Initial cal 4
VE10483-IC10483	E242987.D	03/17/17	15:20	03:19	Initial cal 8
VE10483-IC10483	E242988.D	03/17/17	15:49	03:48	Initial cal 20
VE10483-ICC10483	E242989.D	03/17/17	16:18	04:17	Initial cal 50
VE10483-IC10483	E242990.D	03/17/17	16:47	04:46	Initial cal 100
VE10483-IC10483	E242991.D	03/17/17	17:17	05:16	Initial cal 200
VE10483-ICV10483	E242994.D	03/17/17	18:45	06:44	Initial cal verification 50
VE10483-ICV10483	E242995.D	03/17/17	19:14	07:13	Initial cal verification 50

5.6.3
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Instrument Performance Check (BFB)

Job Number: JC39699
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: VE10500-BFB	Injection Date: 04/05/17
Lab File ID: E243467.D	Injection Time: 08:06
Instrument ID: GCMSE	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	8618	17.4	Pass
75	30.0 - 60.0% of mass 95	22738	46.0	Pass
95	Base peak, 100% relative abundance	49413	100.0	Pass
96	5.0 - 9.0% of mass 95	3407	6.89	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 150.0% of mass 95	46048	93.2	Pass
175	5.0 - 9.0% of mass 174	3560	7.20 (7.73) ^a	Pass
176	95.0 - 101.0% of mass 174	44517	90.1 (96.7) ^a	Pass
177	5.0 - 9.0% of mass 176	3128	6.33 (7.03) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VE10500-CC10483	E243468.D	04/05/17	08:36	00:30	Continuing cal 20
ZZZZZZ	E243470B.D	04/05/17	09:43	01:37	(unrelated sample)
VE10500-MB1	E243470.D	04/05/17	09:43	01:37	Method Blank
VE10500-BS	E243471.D	04/05/17	10:12	02:06	Blank Spike
JC39848-7A	E243473.D	04/05/17	11:10	03:04	(used for QC only; not part of job JC39699)
ZZZZZZ	E243474.D	04/05/17	11:39	03:33	(unrelated sample)
JC39699-2	E243475.D	04/05/17	12:09	04:03	MW-5-S
ZZZZZZ	E243479.D	04/05/17	14:10	06:04	(unrelated sample)
JC39848-7AMS	E243480.D	04/05/17	14:39	06:33	Matrix Spike
JC39848-7AMSD	E243481.D	04/05/17	15:08	07:02	Matrix Spike Duplicate

5.6.4
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Volatile Surrogate Recovery Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Method: SW846 8260C	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC39699-1	3V34066.D	98	92	97	103
JC39699-2	E243475.D	100	104	96	86
JC39699-3	3V34067.D	99	92	97	103
JC39699-1MS	3V34071.D	99	95	96	98
JC39699-3DUP	3V34073.D	100	95	96	102
JC39848-7AMS	E243480.D	103	101	96	89
JC39848-7AMSD	E243481.D	103	101	97	90
V3V1369-BS	3V34064.D	99	94	98	97
V3V1369-MB1	3V34063.D	94	85	98	103
VE10500-BS	E243471.D	102	107	98	102
VE10500-MB1	E243470.D	100	103	100	101

Surrogate Compounds

Recovery Limits

S1 = Dibromofluoromethane	70-122%
S2 = 1,2-Dichloroethane-D4	68-124%
S3 = Toluene-D8	77-125%
S4 = 4-Bromofluorobenzene	72-130%

5.7.1
5

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1454-MB1	2Y82927.D	1	03/28/17	HC	03/28/17	OP1454	G2Y3180

The QC reported here applies to the following samples:

Method: SW846 8015C

JC39699-1, JC39699-2, JC39699-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	10	2.9	mg/kg	

CAS No.	Surrogate Recoveries	Limits	
84-15-1	o-Terphenyl	60%	18-132%
16416-32-3	Tetracosane-d50	75%	25-137%
438-22-2	5a-Androstane	79%	22-134%

Blank Spike Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1454-BS1	2Y82928.D	1	03/28/17	HC	03/28/17	OP1454	G2Y3180

The QC reported here applies to the following samples:

Method: SW846 8015C

JC39699-1, JC39699-2, JC39699-3

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	100	57.3	57	44-120

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	65%	18-132%
16416-32-3	Tetracosane-d50	75%	25-137%
438-22-2	5a-Androstane	79%	22-134%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1454-MS	2Y82933.D	1	03/28/17	HC	03/28/17	OP1454	G2Y3180
OP1454-MSD	2Y82934.D	1	03/28/17	HC	03/28/17	OP1454	G2Y3180
JC39638-1	2Y82932.D	1	03/28/17	HC	03/28/17	OP1454	G2Y3180

The QC reported here applies to the following samples:

Method: SW846 8015C

JC39699-1, JC39699-2, JC39699-3

CAS No.	Compound	JC39638-1 mg/kg	Spike Q mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	113	108	193	74	110	167	49	14	10-145/50

CAS No.	Surrogate Recoveries	MS	MSD	JC39638-1	Limits
84-15-1	o-Terphenyl	61%	59%	56%	18-132%
16416-32-3	Tetracosane-d50	74%	71%	73%	25-137%
438-22-2	5a-Androstane	74%	71%	74%	22-134%

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: JC39699

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Method: SW846 8015C	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S2 ^a	S3 ^a
JC39699-1	2Y82953.D	60	77	78
JC39699-2	2Y82995.D	90	93	165* ^b
JC39699-2	2Y82954.D	75	90	72
JC39699-3	2Y82955.D	58	77	76
OP1454-BS1	2Y82928.D	65	75	79
OP1454-MB1	2Y82927.D	60	75	79
OP1454-MS	2Y82933.D	61	74	74
OP1454-MSD	2Y82934.D	59	71	71

Surrogate Compounds	Recovery Limits
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S1 = o-Terphenyl	18-132%
S2 = Tetracosane-d50	25-137%
S3 = 5a-Androstane	22-134%

- (a) Recovery from GC signal #1
- (b) Outside control limits due to matrix interference.

Technical Report for

Apex Companies, LLC

North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

AMORT-008

SGS Accutest Job Number: JC40368

Sampling Date: 04/03/17

Report to:

Apex Companies, LLC
15850 Crabbs Branch Way
Rockville, MD 20855
TPassmore@Apexcos.com

ATTN: Todd Passmore

Total number of pages in report: **41**



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

Nancy Cole
Laboratory Director

Client Service contact: Daniel Axelrod 732-329-0200

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

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Test results relate only to samples analyzed.

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Sample Summary

Apex Companies, LLC

Job No: JC40368

North Point Government Facility, 7701 Wise Avenue, Dundalk, MD
 Project No: AMORT-008

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
JC40368-1	04/03/17	09:05 TRP	04/04/17	AQ	Ground Water	MW4
JC40368-2	04/03/17	10:45 TRP	04/04/17	AQ	Ground Water	MW5
JC40368-3	04/03/17	10:00 TRP	04/04/17	AQ	Ground Water	MW6

Summary of Hits

Job Number: JC40368
Account: Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD
Collected: 04/03/17

2

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC40368-1	MW4					
Chloroform		15.8	1.0	0.23	ug/l	SW846 8260C
JC40368-2	MW5					
Chloroform		2.9	1.0	0.23	ug/l	SW846 8260C
Ethylbenzene		0.88 J	1.0	0.20	ug/l	SW846 8260C
Isopropylbenzene		0.40 J	1.0	0.16	ug/l	SW846 8260C
p-Isopropyltoluene		1.3 J	2.0	1.0	ug/l	SW846 8260C
Naphthalene		3.0 J	5.0	1.0	ug/l	SW846 8260C
n-Propylbenzene		0.54 J	2.0	0.17	ug/l	SW846 8260C
1,2,4-Trimethylbenzene		15.3	2.0	0.26	ug/l	SW846 8260C
1,3,5-Trimethylbenzene		13.8	2.0	0.32	ug/l	SW846 8260C
m,p-Xylene		3.8	1.0	0.42	ug/l	SW846 8260C
o-Xylene		8.1	1.0	0.21	ug/l	SW846 8260C
Xylene (total)		11.9	1.0	0.21	ug/l	SW846 8260C
TPH-DRO (C10-C28)		1.15	0.083	0.064	mg/l	SW846 8015C
JC40368-3	MW6					
Chloroform		2.3	1.0	0.23	ug/l	SW846 8260C
TPH-DRO (C10-C28)		0.214	0.083	0.064	mg/l	SW846 8015C

Sample Results

Report of Analysis

Report of Analysis

3.1
3

Client Sample ID: MW4		Date Sampled: 04/03/17
Lab Sample ID: JC40368-1		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D78131.D	1	04/13/17	XC	n/a	n/a	V4D3378
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.22	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.46	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.28	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	15.8	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.18	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.29	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.22	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.23	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.19	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.21	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	

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

Report of Analysis

Client Sample ID: MW4		Date Sampled: 04/03/17
Lab Sample ID: JC40368-1		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	85%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	92%		78-117%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

3.1
3

Client Sample ID: MW4		Date Sampled: 04/03/17
Lab Sample ID: JC40368-1		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8015C SW846 3510C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Z61140.D	1	04/08/17	HC	04/07/17	OP1722	G2Z2310
Run #2							

Run #	Initial Volume	Final Volume
Run #1	300 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.083	0.064	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	62%		22-140%		
16416-32-3	Tetracosane-d50	34%		13-139%		
438-22-2	5a-Androstane	36%		10-135%		

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

Report of Analysis

Client Sample ID: MW5		Date Sampled: 04/03/17
Lab Sample ID: JC40368-2		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D78133.D	1	04/13/17	XC	n/a	n/a	V4D3378
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.22	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.46	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.28	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	2.9	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.18	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.29	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.22	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.23	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.19	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.21	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	

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

Report of Analysis

Client Sample ID:	MW5	Date Sampled:	04/03/17
Lab Sample ID:	JC40368-2	Date Received:	04/04/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C		
Project:	North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	1.0	0.28	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.42	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.20	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.88	1.0	0.20	ug/l	J
87-68-3	Hexachlorobutadiene	ND	2.0	0.22	ug/l	
98-82-8	Isopropylbenzene	0.40	1.0	0.16	ug/l	J
99-87-6	p-Isopropyltoluene	1.3	2.0	1.0	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.34	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.28	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	3.0	5.0	1.0	ug/l	J
103-65-1	n-Propylbenzene	0.54	2.0	0.17	ug/l	J
100-42-5	Styrene	ND	1.0	0.27	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	3.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	0.23	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	0.23	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.58	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.75	ug/l	
95-63-6	1,2,4-Trimethylbenzene	15.3	2.0	0.26	ug/l	
108-67-8	1,3,5-Trimethylbenzene	13.8	2.0	0.32	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	3.8	1.0	0.42	ug/l	
95-47-6	o-Xylene	8.1	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	11.9	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		76-120%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW5		Date Sampled: 04/03/17
Lab Sample ID: JC40368-2		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	84%		73-122%
2037-26-5	Toluene-D8	96%		84-119%
460-00-4	4-Bromofluorobenzene	93%		78-117%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

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3

Client Sample ID: MW5		Date Sampled: 04/03/17
Lab Sample ID: JC40368-2		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8015C SW846 3510C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Z61141.D	1	04/08/17	HC	04/07/17	OP1722	G2Z2310
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1.15	0.083	0.064	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	64%		22-140%		
16416-32-3	Tetracosane-d50	46%		13-139%		
438-22-2	5a-Androstane	44%		10-135%		

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

Report of Analysis

Client Sample ID: MW6		Date Sampled: 04/03/17
Lab Sample ID: JC40368-3		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D78132.D	1	04/13/17	XC	n/a	n/a	V4D3378
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Full List + Oxygenates

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.22	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.46	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.28	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	2.3	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.18	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.29	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.22	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.23	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.19	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.21	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW6		Date Sampled: 04/03/17
Lab Sample ID: JC40368-3		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

VOA Full List + Oxygenates

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	85%		73-122%
2037-26-5	Toluene-D8	96%		84-119%
460-00-4	4-Bromofluorobenzene	94%		78-117%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit

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

Report of Analysis

Client Sample ID: MW6		Date Sampled: 04/03/17
Lab Sample ID: JC40368-3		Date Received: 04/04/17
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8015C SW846 3510C		
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Z61142.D	1	04/08/17	HC	04/07/17	OP1722	G2Z2310
Run #2							

	Initial Volume	Final Volume
Run #1	300 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.214	0.083	0.064	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	61%		22-140%		
16416-32-3	Tetracosane-d50	24%		13-139%		
438-22-2	5a-Androstane	24%		10-135%		

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SGS Accutest Sample Receipt Summary

Job Number: JC40368

Client: _____

Project: _____

Date / Time Received: 4/4/2017 5:15:00 PM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9);

Cooler Temps (Corrected) °C: Cooler 1: (3.3);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

SM089-02
Rev. Date 12/1/16

JC40368: Chain of Custody

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4.1
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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-MB	4D78129.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	10	5.0	ug/l	
71-43-2	Benzene	ND	0.50	0.14	ug/l	
108-86-1	Bromobenzene	ND	1.0	0.22	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.46	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.55	ug/l	
75-25-2	Bromoform	ND	1.0	0.34	ug/l	
74-83-9	Bromomethane	ND	2.0	0.46	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	1.9	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	0.28	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	1.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	0.28	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.54	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.17	ug/l	
75-00-3	Chloroethane	ND	1.0	0.44	ug/l	
67-66-3	Chloroform	ND	1.0	0.23	ug/l	
74-87-3	Chloromethane	ND	1.0	0.96	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	0.18	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	0.29	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	0.41	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	0.69	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.23	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	0.22	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.23	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.19	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.21	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.70	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.21	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.39	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.31	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.36	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.33	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	0.28	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	0.42	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	0.20	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.19	ug/l	

Method Blank Summary

Job Number: JC40368**Account:** ACMDR Apex Companies, LLC**Project:** North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-MB	4D78129.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:**Method:** SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.22	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.16	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.34	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	1.2	ug/l	
74-95-3	Methylene bromide	ND	1.0	0.28	ug/l	
75-09-2	Methylene chloride	ND	2.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	0.17	ug/l	
100-42-5	Styrene	ND	1.0	0.27	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	3.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	0.23	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	0.23	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	0.17	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.39	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.23	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	0.50	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.22	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.26	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.58	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.75	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.26	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.32	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.33	ug/l	
	m,p-Xylene	ND	1.0	0.42	ug/l	
95-47-6	o-Xylene	ND	1.0	0.21	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.21	ug/l	

Method Blank Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-MB	4D78129.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	96% 76-120%
17060-07-0	1,2-Dichloroethane-D4	85% 73-122%
2037-26-5	Toluene-D8	97% 84-119%
460-00-4	4-Bromofluorobenzene	96% 78-117%

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Blank Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-BS	4D78130.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	250	275	110	49-137
71-43-2	Benzene	50	46.9	94	80-118
108-86-1	Bromobenzene	50	47.9	96	81-117
74-97-5	Bromochloromethane	50	49.6	99	84-120
75-27-4	Bromodichloromethane	50	45.3	91	83-119
75-25-2	Bromoform	50	47.9	96	77-126
74-83-9	Bromomethane	50	46.1	92	57-133
78-93-3	2-Butanone (MEK)	250	256	102	71-127
104-51-8	n-Butylbenzene	50	50.8	102	80-121
135-98-8	sec-Butylbenzene	50	50.8	102	80-121
98-06-6	tert-Butylbenzene	50	52.0	104	78-124
56-23-5	Carbon tetrachloride	50	45.5	91	77-134
108-90-7	Chlorobenzene	50	49.1	98	85-116
75-00-3	Chloroethane	50	42.6	85	62-133
67-66-3	Chloroform	50	43.1	86	84-125
74-87-3	Chloromethane	50	33.6	67	51-134
95-49-8	o-Chlorotoluene	50	48.9	98	81-117
106-43-4	p-Chlorotoluene	50	45.3	91	82-117
108-20-3	Di-Isopropyl ether	50	43.9	88	72-129
96-12-8	1,2-Dibromo-3-chloropropane	50	40.7	81	71-124
124-48-1	Dibromochloromethane	50	46.7	93	82-121
106-93-4	1,2-Dibromoethane	50	45.9	92	79-120
95-50-1	1,2-Dichlorobenzene	50	50.0	100	84-117
541-73-1	1,3-Dichlorobenzene	50	49.5	99	83-114
106-46-7	1,4-Dichlorobenzene	50	47.9	96	83-115
75-71-8	Dichlorodifluoromethane	50	30.8	62	43-135
75-34-3	1,1-Dichloroethane	50	43.9	88	79-124
107-06-2	1,2-Dichloroethane	50	42.5	85	81-127
75-35-4	1,1-Dichloroethene	50	46.9	94	69-136
156-59-2	cis-1,2-Dichloroethene	50	48.9	98	79-118
156-60-5	trans-1,2-Dichloroethene	50	46.3	93	73-125
78-87-5	1,2-Dichloropropane	50	47.2	94	81-118
142-28-9	1,3-Dichloropropane	50	44.8	90	83-115
594-20-7	2,2-Dichloropropane	50	44.9	90	63-139
563-58-6	1,1-Dichloropropene	50	45.7	91	82-124
10061-01-5	cis-1,3-Dichloropropene	50	46.9	94	86-119

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-BS	4D78130.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	43.7	87	84-121
100-41-4	Ethylbenzene	50	47.8	96	84-115
87-68-3	Hexachlorobutadiene	50	53.2	106	71-128
98-82-8	Isopropylbenzene	50	49.0	98	80-121
99-87-6	p-Isopropyltoluene	50	51.1	102	83-122
1634-04-4	Methyl Tert Butyl Ether	100	94.3	94	80-121
108-10-1	4-Methyl-2-pentanone(MIBK)	250	236	94	77-123
74-95-3	Methylene bromide	50	46.8	94	86-118
75-09-2	Methylene chloride	50	46.7	93	75-122
91-20-3	Naphthalene	50	47.2	94	70-126
103-65-1	n-Propylbenzene	50	48.4	97	82-123
100-42-5	Styrene	50	50.2	100	86-118
75-65-0	Tert Butyl Alcohol	250	257	103	81-126
994-05-8	tert-Amyl Methyl Ether	50	50.0	100	79-119
637-92-3	tert-Butyl Ethyl Ether	50	47.4	95	78-125
630-20-6	1,1,1,2-Tetrachloroethane	50	47.2	94	81-119
79-34-5	1,1,2,2-Tetrachloroethane	50	44.3	89	74-119
127-18-4	Tetrachloroethene	50	51.1	102	70-134
108-88-3	Toluene	50	46.6	93	84-117
87-61-6	1,2,3-Trichlorobenzene	50	55.9	112	73-130
120-82-1	1,2,4-Trichlorobenzene	50	57.1	114	79-129
71-55-6	1,1,1-Trichloroethane	50	44.6	89	83-134
79-00-5	1,1,2-Trichloroethane	50	46.1	92	84-119
79-01-6	Trichloroethene	50	50.2	100	84-120
75-69-4	Trichlorofluoromethane	50	40.6	81	63-133
96-18-4	1,2,3-Trichloropropane	50	44.7	89	78-118
95-63-6	1,2,4-Trimethylbenzene	50	48.9	98	84-120
108-67-8	1,3,5-Trimethylbenzene	50	48.6	97	82-120
75-01-4	Vinyl chloride	50	38.7	77	55-121
	m,p-Xylene	100	99.3	99	85-117
95-47-6	o-Xylene	50	49.3	99	85-119
1330-20-7	Xylene (total)	150	149	99	85-117

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D3378-BS	4D78130.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	96%	76-120%
17060-07-0	1,2-Dichloroethane-D4	85%	73-122%
2037-26-5	Toluene-D8	95%	84-119%
460-00-4	4-Bromofluorobenzene	90%	78-117%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-2MS	4D78139.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-2	4D78133.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	JC40368-2 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	250	232	93	39-143
71-43-2	Benzene	ND	50	49.1	98	54-138
108-86-1	Bromobenzene	ND	50	49.4	99	76-122
74-97-5	Bromochloromethane	ND	50	50.0	100	79-123
75-27-4	Bromodichloromethane	ND	50	47.1	94	78-123
75-25-2	Bromoform	ND	50	47.1	94	71-128
74-83-9	Bromomethane	ND	50	46.2	92	52-140
78-93-3	2-Butanone (MEK)	ND	250	235	94	57-141
104-51-8	n-Butylbenzene	ND	50	54.0	108	71-133
135-98-8	sec-Butylbenzene	ND	50	55.3	111	71-133
98-06-6	tert-Butylbenzene	ND	50	56.1	112	71-132
56-23-5	Carbon tetrachloride	ND	50	49.7	99	65-148
108-90-7	Chlorobenzene	ND	50	51.3	103	76-125
75-00-3	Chloroethane	ND	50	43.1	86	55-142
67-66-3	Chloroform	2.9	50	47.8	90	77-131
74-87-3	Chloromethane	ND	50	33.4	67	43-144
95-49-8	o-Chlorotoluene	ND	50	51.6	103	74-124
106-43-4	p-Chlorotoluene	ND	50	47.0	94	76-123
108-20-3	Di-Isopropyl ether	ND	50	42.3	85	67-132
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	40.5	81	66-128
124-48-1	Dibromochloromethane	ND	50	47.2	94	77-124
106-93-4	1,2-Dibromoethane	ND	50	45.6	91	77-119
95-50-1	1,2-Dichlorobenzene	ND	50	51.4	103	78-122
541-73-1	1,3-Dichlorobenzene	ND	50	51.1	102	77-120
106-46-7	1,4-Dichlorobenzene	ND	50	50.2	100	75-122
75-71-8	Dichlorodifluoromethane	ND	50	34.0	68	31-155
75-34-3	1,1-Dichloroethane	ND	50	45.4	91	71-131
107-06-2	1,2-Dichloroethane	ND	50	42.6	85	72-135
75-35-4	1,1-Dichloroethene	ND	50	50.1	100	57-149
156-59-2	cis-1,2-Dichloroethene	ND	50	50.3	101	59-134
156-60-5	trans-1,2-Dichloroethene	ND	50	48.9	98	64-134
78-87-5	1,2-Dichloropropane	ND	50	48.2	96	76-122
142-28-9	1,3-Dichloropropane	ND	50	44.4	89	78-118
594-20-7	2,2-Dichloropropane	ND	50	48.0	96	56-149
563-58-6	1,1-Dichloropropene	ND	50	49.1	98	71-139
10061-01-5	cis-1,3-Dichloropropene	ND	50	47.7	95	80-124

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC40368
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-2MS	4D78139.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-2	4D78133.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	JC40368-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		50	43.9	88	78-124
100-41-4	Ethylbenzene	0.88	J	50	51.7	102	48-143
87-68-3	Hexachlorobutadiene	ND		50	57.1	114	59-142
98-82-8	Isopropylbenzene	0.40	J	50	53.1	105	70-131
99-87-6	p-Isopropyltoluene	1.3	J	50	55.6	109	75-133
1634-04-4	Methyl Tert Butyl Ether	ND		100	89.7	90	70-127
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		250	240	96	71-131
74-95-3	Methylene bromide	ND		50	47.0	94	80-121
75-09-2	Methylene chloride	ND		50	47.3	95	69-127
91-20-3	Naphthalene	3.0	J	50	50.4	95	59-139
103-65-1	n-Propylbenzene	0.54	J	50	52.0	103	66-138
100-42-5	Styrene	ND		50	52.6	105	76-128
75-65-0	Tert Butyl Alcohol	ND		250	265	106	73-136
994-05-8	tert-Amyl Methyl Ether	ND		50	48.9	98	71-125
637-92-3	tert-Butyl Ethyl Ether	ND		50	45.8	92	74-128
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	49.6	99	75-124
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	42.9	86	70-122
127-18-4	Tetrachloroethene	ND		50	56.1	112	55-144
108-88-3	Toluene	ND		50	49.4	99	61-136
87-61-6	1,2,3-Trichlorobenzene	ND		50	56.3	113	68-135
120-82-1	1,2,4-Trichlorobenzene	ND		50	58.0	116	73-136
71-55-6	1,1,1-Trichloroethane	ND		50	48.4	97	70-147
79-00-5	1,1,2-Trichloroethane	ND		50	46.0	92	78-122
79-01-6	Trichloroethene	ND		50	54.4	109	62-141
75-69-4	Trichlorofluoromethane	ND		50	44.5	89	50-152
96-18-4	1,2,3-Trichloropropane	ND		50	43.6	87	73-121
95-63-6	1,2,4-Trimethylbenzene	15.3		50	65.7	101	55-143
108-67-8	1,3,5-Trimethylbenzene	13.8		50	63.5	99	66-133
75-01-4	Vinyl chloride	ND		50	39.6	79	44-136
	m,p-Xylene	3.8		100	109	105	50-144
95-47-6	o-Xylene	8.1		50	60.6	105	62-137
1330-20-7	Xylene (total)	11.9		150	170	105	56-141

* = Outside of Control Limits.

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Matrix Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-2MS	4D78139.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-2	4D78133.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Surrogate Recoveries	MS	JC40368-2	Limits
1868-53-7	Dibromofluoromethane	96%	97%	76-120%
17060-07-0	1,2-Dichloroethane-D4	84%	84%	73-122%
2037-26-5	Toluene-D8	94%	96%	84-119%
460-00-4	4-Bromofluorobenzene	90%	93%	78-117%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-3DUP	4D78138.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-3	4D78132.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	JC40368-3		Q	RPD	Limits
		ug/l	DUP ug/l			
67-64-1	Acetone	ND	ND		nc	20
71-43-2	Benzene	ND	ND		nc	20
108-86-1	Bromobenzene	ND	ND		nc	20
74-97-5	Bromochloromethane	ND	ND		nc	20
75-27-4	Bromodichloromethane	ND	ND		nc	20
75-25-2	Bromoform	ND	ND		nc	20
74-83-9	Bromomethane	ND	ND		nc	20
78-93-3	2-Butanone (MEK)	ND	ND		nc	20
104-51-8	n-Butylbenzene	ND	ND		nc	20
135-98-8	sec-Butylbenzene	ND	ND		nc	20
98-06-6	tert-Butylbenzene	ND	ND		nc	20
56-23-5	Carbon tetrachloride	ND	ND		nc	20
108-90-7	Chlorobenzene	ND	ND		nc	20
75-00-3	Chloroethane	ND	ND		nc	20
67-66-3	Chloroform	2.3	2.4		4	20
74-87-3	Chloromethane	ND	ND		nc	20
95-49-8	o-Chlorotoluene	ND	ND		nc	20
106-43-4	p-Chlorotoluene	ND	ND		nc	20
108-20-3	Di-Isopropyl ether	ND	ND		nc	20
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND		nc	20
124-48-1	Dibromochloromethane	ND	ND		nc	20
106-93-4	1,2-Dibromoethane	ND	ND		nc	20
95-50-1	1,2-Dichlorobenzene	ND	ND		nc	20
541-73-1	1,3-Dichlorobenzene	ND	ND		nc	20
106-46-7	1,4-Dichlorobenzene	ND	ND		nc	20
75-71-8	Dichlorodifluoromethane	ND	ND		nc	20
75-34-3	1,1-Dichloroethane	ND	ND		nc	20
107-06-2	1,2-Dichloroethane	ND	ND		nc	20
75-35-4	1,1-Dichloroethene	ND	ND		nc	20
156-59-2	cis-1,2-Dichloroethene	ND	ND		nc	20
156-60-5	trans-1,2-Dichloroethene	ND	ND		nc	20
78-87-5	1,2-Dichloropropane	ND	ND		nc	20
142-28-9	1,3-Dichloropropane	ND	ND		nc	20
594-20-7	2,2-Dichloropropane	ND	ND		nc	20
563-58-6	1,1-Dichloropropene	ND	ND		nc	20
10061-01-5	cis-1,3-Dichloropropene	ND	ND		nc	20

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC40368
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-3DUP	4D78138.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-3	4D78132.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	JC40368-3 ug/l	DUP Q	ug/l	Q	RPD	Limits
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
100-41-4	Ethylbenzene	ND		ND		nc	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
98-82-8	Isopropylbenzene	ND		ND		nc	20
99-87-6	p-Isopropyltoluene	ND		ND		nc	20
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
108-10-1	4-Methyl-2-pentanone(MIBK)	ND		ND		nc	20
74-95-3	Methylene bromide	ND		ND		nc	20
75-09-2	Methylene chloride	ND		ND		nc	20
91-20-3	Naphthalene	ND		ND		nc	20
103-65-1	n-Propylbenzene	ND		ND		nc	20
100-42-5	Styrene	ND		ND		nc	20
75-65-0	Tert Butyl Alcohol	ND		ND		nc	20
994-05-8	tert-Amyl Methyl Ether	ND		ND		nc	20
637-92-3	tert-Butyl Ethyl Ether	ND		ND		nc	20
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
127-18-4	Tetrachloroethene	ND		ND		nc	20
108-88-3	Toluene	ND		ND		nc	20
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
79-01-6	Trichloroethene	ND		ND		nc	20
75-69-4	Trichlorofluoromethane	ND		ND		nc	20
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	20
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	20
75-01-4	Vinyl chloride	ND		ND		nc	20
	m,p-Xylene	ND		ND		nc	20
95-47-6	o-Xylene	ND		ND		nc	20
1330-20-7	Xylene (total)	ND		ND		nc	20

* = Outside of Control Limits.

5.4.1
 5

Duplicate Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC40368-3DUP	4D78138.D	1	04/13/17	XC	n/a	n/a	V4D3378
JC40368-3	4D78132.D	1	04/13/17	XC	n/a	n/a	V4D3378

The QC reported here applies to the following samples:

Method: SW846 8260C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Surrogate Recoveries	DUP	JC40368-3	Limits
1868-53-7	Dibromofluoromethane	96%	95%	76-120%
17060-07-0	1,2-Dichloroethane-D4	85%	85%	73-122%
2037-26-5	Toluene-D8	95%	96%	84-119%
460-00-4	4-Bromofluorobenzene	93%	94%	78-117%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC40368
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: V4D3338-BFB	Injection Date: 03/10/17
Lab File ID: 4D77142.D	Injection Time: 12:26
Instrument ID: GCMS4D	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	14767	17.0	Pass
75	30.0 - 60.0% of mass 95	39491	45.5	Pass
95	Base peak, 100% relative abundance	86888	100.0	Pass
96	5.0 - 9.0% of mass 95	5857	6.74	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	76523	88.1	Pass
175	5.0 - 9.0% of mass 174	5971	6.87 (7.80) ^a	Pass
176	95.0 - 101.0% of mass 174	74680	85.9 (97.6) ^a	Pass
177	5.0 - 9.0% of mass 176	5036	5.80 (6.74) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D3338-IC3338	4D77143.D	03/10/17	12:58	00:32	Initial cal 0.2
V4D3338-IC3338	4D77144.D	03/10/17	13:26	01:00	Initial cal 0.5
V4D3338-IC3338	4D77145.D	03/10/17	13:54	01:28	Initial cal 1
V4D3338-IC3338	4D77146.D	03/10/17	14:21	01:55	Initial cal 2
V4D3338-IC3338	4D77147.D	03/10/17	14:49	02:23	Initial cal 5
V4D3338-IC3338	4D77148.D	03/10/17	15:17	02:51	Initial cal 10
V4D3338-IC3338	4D77149.D	03/10/17	15:45	03:19	Initial cal 20
V4D3338-ICC3338	4D77150.D	03/10/17	16:12	03:46	Initial cal 50
V4D3338-IC3338	4D77151.D	03/10/17	16:40	04:14	Initial cal 100
V4D3338-IC3338	4D77152.D	03/10/17	17:08	04:42	Initial cal 200
V4D3338-ICV3338	4D77155.D	03/10/17	18:32	06:06	Initial cal verification 50

5.5.1
5

Instrument Performance Check (BFB)

Job Number: JC40368
Account: ACMDR Apex Companies, LLC
Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample: V4D3378-BFB	Injection Date: 04/13/17
Lab File ID: 4D78127A.D	Injection Time: 10:50
Instrument ID: GCMS4D	

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	19384	15.8	Pass
75	30.0 - 60.0% of mass 95	53499	43.7	Pass
95	Base peak, 100% relative abundance	122480	100.0	Pass
96	5.0 - 9.0% of mass 95	8135	6.64	Pass
173	Less than 2.0% of mass 174	0	0.00 (0.00) ^a	Pass
174	50.0 - 120.0% of mass 95	112187	91.6	Pass
175	5.0 - 9.0% of mass 174	8792	7.18 (7.84) ^a	Pass
176	95.0 - 101.0% of mass 174	110648	90.3 (98.6) ^a	Pass
177	5.0 - 9.0% of mass 176	7334	5.99 (6.63) ^b	Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D3378-CC3338	4D78127.D	04/13/17	10:50	00:00	Continuing cal 20
V4D3378-CC3338	4D78128.D	04/13/17	11:23	00:33	Continuing cal 20
V4D3378-MB	4D78129.D	04/13/17	12:06	01:16	Method Blank
V4D3378-BS	4D78130.D	04/13/17	12:38	01:48	Blank Spike
JC40368-1	4D78131.D	04/13/17	13:16	02:26	MW4
JC40368-3	4D78132.D	04/13/17	13:43	02:53	MW6
JC40368-2	4D78133.D	04/13/17	14:11	03:21	MW5
ZZZZZZ	4D78134.D	04/13/17	14:38	03:48	(unrelated sample)
ZZZZZZ	4D78135.D	04/13/17	15:06	04:16	(unrelated sample)
ZZZZZZ	4D78137.D	04/13/17	16:04	05:14	(unrelated sample)
JC40368-3DUP	4D78138.D	04/13/17	16:48	05:58	Duplicate
JC40368-2MS	4D78139.D	04/13/17	17:15	06:25	Matrix Spike

5.5.2
5

Volatile Surrogate Recovery Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Method: SW846 8260C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JC40368-1	4D78131.D	96	85	98	92
JC40368-2	4D78133.D	97	84	96	93
JC40368-3	4D78132.D	95	85	96	94
JC40368-2MS	4D78139.D	96	84	94	90
JC40368-3DUP	4D78138.D	96	85	95	93
V4D3378-BS	4D78130.D	96	85	95	90
V4D3378-MB	4D78129.D	96	85	97	96

Surrogate Compounds

Recovery Limits

S1 = Dibromofluoromethane	76-120%
S2 = 1,2-Dichloroethane-D4	73-122%
S3 = Toluene-D8	84-119%
S4 = 4-Bromofluorobenzene	78-117%

5.6.1
5

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1722-MB1	2Z61119.D	1	04/07/17	HC	04/07/17	OP1722	G2Z2310

The QC reported here applies to the following samples:

Method: SW846 8015C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.083	0.064	mg/l	

CAS No.	Surrogate Recoveries	Limits	
84-15-1	o-Terphenyl	85%	22-140%
16416-32-3	Tetracosane-d50	76%	13-139%
438-22-2	5a-Androstane	82%	10-135%

Blank Spike Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1722-BS1	2Z61120.D	1	04/07/17	HC	04/07/17	OP1722	G2Z2310

The QC reported here applies to the following samples:

Method: SW846 8015C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	3.33	1.48	44	29-114

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	64%	22-140%
16416-32-3	Tetracosane-d50	64%	13-139%
438-22-2	5a-Androstane	68%	10-135%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP1722-MS	2Z61123.D	1	04/07/17	HC	04/07/17	OP1722	G2Z2310
OP1722-MSD	2Z61124.D	1	04/07/17	HC	04/07/17	OP1722	G2Z2310
JC40425-1	2Z61122.D	1	04/07/17	HC	04/07/17	OP1722	G2Z2310

The QC reported here applies to the following samples:

Method: SW846 8015C

JC40368-1, JC40368-2, JC40368-3

CAS No.	Compound	JC40425-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	6.67	3.61	54	6.67	2.51	38	36* a	10-141/14

CAS No.	Surrogate Recoveries	MS	MSD	JC40425-1	Limits
84-15-1	o-Terphenyl	77%	55%	32%	22-140%
16416-32-3	Tetracosane-d50	71%	49%	14%	13-139%
438-22-2	5a-Androstane	77%	54%	14%	10-135%

(a) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Semivolatile Surrogate Recovery Summary

Job Number: JC40368

Account: ACMDR Apex Companies, LLC

Project: North Point Government Facility, 7701 Wise Avenue, Dundalk, MD

Method: SW846 8015C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 ^a	S2 ^a	S3 ^a
JC40368-1	2Z61140.D	62	34	36
JC40368-2	2Z61141.D	64	46	44
JC40368-3	2Z61142.D	61	24	24
OP1722-BS1	2Z61120.D	64	64	68
OP1722-MB1	2Z61119.D	85	76	82
OP1722-MS	2Z61123.D	77	71	77
OP1722-MSD	2Z61124.D	55	49	54

Surrogate Compounds	Recovery Limits
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S1 = o-Terphenyl	22-140%
S2 = Tetracosane-d50	13-139%
S3 = 5a-Androstane	10-135%

(a) Recovery from GC signal #1